Agricultural Policy Monitoring and Evaluation 2024

INNOVATION FOR SUSTAINABLE PRODUCTIVITY GROWTH

OECD

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BETTER POLICIES FOR BETTER LIVES

Please cite this publication as:
OECD (2024), *Agricultural Policy Monitoring and Evaluation 2024: Innovation for Sustainable Productivity Growth*, OECD Publishing, Paris, https://doi.org/10.1787/74da57ed-en.

ISBN 978-92-64-56436-7 (print)
ISBN 978-92-64-79719-2 (PDF)
ISBN 978-92-64-99683-0 (HTML)
ISBN 978-92-64-95185-3 (epub)

Agricultural Policy Monitoring and Evaluation
ISSN 2221-7363 (print)
ISSN 2221-7371 (online)

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Corrigenda to OECD publications may be found at: https://www.oecd.org/en/publications/support/corrigenda.html.

Foreword

This Agricultural Policy Monitoring and Evaluation 2024 report provides up-to-date monitoring and evaluation of agricultural policies across 54 countries from across the world, including the 38 OECD countries and the five non-OECD EU Member States, and eleven emerging and developing economies: Argentina, Brazil, the People's Republic of China, India, Indonesia, Kazakhstan, the Philippines, the Russian Federation,[*] South Africa, Ukraine and Viet Nam. It is the 37th in the series of the OECD Agricultural Policy Monitoring and Evaluation reports, and the 12th report to include both OECD countries and emerging and developing economies.

The report provides insights into the increasingly complex nature of agricultural policy and is based on the OECD's comprehensive system for measuring and classifying support to agriculture — the Producer and Consumer Support Estimates (PSE and CSE) and related indicators. These indicators provide comparable information across countries on the nature and extent of support and serve as a basis for the OECD's Agricultural Policy Monitoring and Evaluation. This 2024 report also focuses on the role of policies fostering innovation for sustainable productivity growth in agriculture.

The report is structured as follows. The Executive Summary synthesises the key findings. Chapter 1 provides a high-level analysis of developments in the level and structure of support to agriculture. A special section describes sustainable productivity growth and how it can be encouraged, along with examples of related activities and policies currently in place. Chapter 2 reviews policy developments in 2023-24 across the countries covered, and reports on the latest data on agricultural policy support by country. The report then includes individual chapters for each of the countries covered (the European Union, which has a Common Agricultural Policy, is presented as a single chapter). Country chapters begin with snapshots containing brief summaries of developments in agricultural policies and support as well as country-specific policy recommendations. This is followed by more comprehensive descriptions of agricultural policy developments, including related to efforts towards fostering sustainable productivity growth in agriculture. The chapter on the European Union also includes a series of snapshots for individual Member States.

The Executive Summary as well as Chapters 1 and 2 are published under the responsibility of the OECD Committee for Agriculture. The remainder of the report is published under the responsibility of the Secretary-General of the OECD.

[*] This report does not contain a country chapter on the Russian Federation, nor any tables with support indicators in the Statistical Annex. However, aggregate data for the 11 emerging economies and for all 54 countries covered in this report continue to include those for Russia.

Acknowledgements

This report was prepared by the Trade and Agriculture Directorate of the OECD, under the general oversight of Marion Jansen, with the active participation of countries included in this report. The preparation was led by Martin von Lampe (project leader and overall co-ordinator), Urszula Ziębińska (co-ordinator of the Technical Team) and Guillaume Gruère (Head of Division).

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All chapters were peer-reviewed by other team members listed above who provided valuable comments and suggestions for finalising them. In addition, all country chapters were reviewed by Martina Abderrahmane, Guillaume Gruère, Roger Martini and Martin von Lampe. Contributions from capitals in the form of policy information, data and reviews are gratefully acknowledged.

Technical and statistical assistance was provided by the Technical Team: Florence Bossard, Amaani Hoddoon, Clarisse Legendre, Tarja Mård, Daniela Rodriguez and Noura Takrouri-Jolly. Technical assistance for the production of the Webbook was provided by Marc Regnier.

Administrative and editing services were provided by Martina Abderrahmane.

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Acronyms and Abbreviations

AEIs	Agri-environmental Indicators
AFOLU	Agriculture, Forestry and Other Land Use
AIS	Agricultural Innovation System
AKIS	Agricultural Knowledge and Innovation System
APMC	Agricultural Produce Marketing Committee (India)
ASEAN	Association of Southeast Asian Nations
ASF	African Swine Fever
BPNT	Food assistance programme (Indonesia)
BRM programmes	Business Risk Management programmes (Canada)
BULOG	Food Logistics Agency (Indonesia)
CAP	Canadian Agricultural Partnership
CAP	Common Agricultural Policy (of the European Union)
CEPA	Comprehensive Economic Partnership Agreement
CMU	Cabinet of Ministers of Ukraine
COVID-19	Corona Virus Disease, first recorded in 2019
CRISS	Complementary Redistributive Income Support for Sustainability (European Union)
EAEU	Eurasian Economic Union (Kazakhstan)
EBT	Electronic Benefit Transfer
EE	Emerging Economies
EEA	European Economic Agreement
EFTA	European Free Trade Association
EGD	European Green Deal
EIP-AGRI	European Innovation Partnership for Agricultural Productivity and Sustainability
EMBRAPA	Brazilian Agricultural Research Corporation
ERA	European Research Area
FAO	Food and Agriculture Organization of the United Nations
FTA	Free Trade Agreement
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GI	Geographical Indication
GRA	Global Research Alliance on Agricultural Greenhouse Gases (New Zealand)
GFR	Gross Farm Receipts
IHS	Import Health Standards (New Zealand)
INDAP	The smallholders' agency (Chile)
INRAE	National Research Institute for Agriculture, Food and Environment (France)
INTA	National Institute of Innovation and Transfer in Agricultural Technology (Costa Rica)
IPCC	Intergovernmental Panel on Climate Change
LFP	Livestock Forage Disaster Program (United States)
LULUCF	Land Use, Land Use Change and Forestry
MAFF	Ministry of Agriculture, Forestry and Fisheries (Japan)
MAPA	Ministry of Agriculture and Livestock (Brazil)
MARA	Ministry of Agriculture and Rural Affairs (China)
MARD	Ministry of Agriculture and Rural Development (Israel)
NAFTA	North American Free Trade Agreement

NARO	National Agricultural Research Organisations (Japan)
NDC	Nationally Determined Contribution
NMSA	National Mission for Sustainable Agriculture (India)
NPLG	National Rural Area Programme (Netherlands)
OECD	Organisation for Economic Co-operation and Development
OG	Operational Group
PEM	Policy Evaluation Model
PMEF	Performance, Monitoring and Evaluation Framework (European Union)
PROAGRO	General agriculture insurance programme (Brazil)
PROCAMPO	System of direct income support payments (Mexico)
RCEF	Rice Competitiveness Enhancement Fund (the Philippines)
RCEP	Regional Comprehensive Economic Partnership
R&D	Research and Development
R&D&I	Research, Development and Innovation
RDP	Rural Development Programme
RTA	Regional Trade Agreement
SIGESS	Sustainable Soil Management System (Chile)
SPG	Sustainable Productivity Growth
TEU	20-Foot Equivalent Unit
TFP	Total Factor Productivity
TFPN	Network on Agricultural Total Factor Productivity and the Environment
TFW	Temporary Foreign Worker
TRQ	Tariff Rate Quota
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
USDA	United States Department of Agriculture
VAT	Value Added Tax
WHO	World Health Organization
WTO	World Trade Organization
OECD indicators of support	
ACT	All Commodity Transfers
CSE	Consumer Support Estimate
GCT	Group Commodity Transfers
GSSE	General Services Support Estimate
MPS	Market Price Support
NAC	Nominal Assistance Coefficient
NPC	Nominal Protection Coefficient
OTP	Other Transfers to Producers
PSE	Producer Support Estimate
SCT	Single Commodity Transfers
TBSE	Total Budgetary Support Estimate
TSE	Total Support Estimate
Currencies	
ARS	Argentinian peso
AUD	Australian dollar
BRL	Brazilian real
CAD	Canadian dollar
CLP	Chilean peso
COP	Colombian peso
CHF	Swiss frank
CNY	Chinese yuan renminbi
CRC	Costa Rican colon
EUR	Euro
GBP	British pound
IDR	Indonesian roupiah
INR	Indian rupee
ILS	Israeli shekel

ISK	Icelandic krona
JPY	Japanese yen
KRW	Korean won
KZT	Kazakh tenge
MXN	Mexican peso
NOK	Norwegian krone
NZD	New Zealand dollar
PHP	Philippines peso
RUR	Russian rouble
TRY	New Turkish lira
UAH	Ukrainian hryvnia
USD	United States dollar
VND	Vietnamese dong
ZAR	South African rand

Executive Summary

Agriculture faces a multitude of challenges

National and international markets for agricultural products continue to be affected by a series of short- and long-term events, including Russia's war of aggression against Ukraine, the evolving conflicts in the Middle East and the increased frequency and intensity of extreme weather events resulting from climate change. Export restrictions by some countries have put additional pressure on the international trading system. At the same time intensified farmers' protests in several countries highlight the economic, social and political challenges agriculture is facing.

In light of these and other developments, agricultural policies have been both reactive and proactive, boosting the sector's capacity to respond to current challenges and aiming to ensure that food systems are fit for purpose as future conditions evolve. Encouraging innovation has been recognised as critical for fostering sustainable productivity growth. Different approaches are emerging to increase agricultural productivity whilst at the same time reducing negative environmental externalities and enhancing environmental and social contributions of the sector. However, the growth in global agricultural productivity has slowed. Significant reform or reorientation of support towards general services, including well-targeted investments in innovation will need to be made to boost robust and sustainable productivity growth. This year's Agricultural Policy Monitoring and Evaluation Report assesses what the role of agricultural policies can be in this context.

Support to agriculture remains high, but declined relative to its 2021 peak

Total support to the agricultural sector across the 54 countries covered by this report averaged USD 842 billion per year during 2021-23. Transfers to the sector have declined in 2022 and 2023 relative to their peak in 2021 but remain significantly above those just before the COVID-19 pandemic. Increased output and continued high prices have boosted the value of production of the sector, helping to reduce the demand for support. Higher world commodity prices have brought down Market Price Support (MPS) by USD 28 billion (or 8%) between 2021 and 2023 and budgetary support is down by USD 30 billion (or 10%) over that same period.

Support to the sector includes transfers to producers (both individually or collectively) and to consumers of agricultural commodities. The relative composition of support has not fundamentally changed in recent years as reforms in most countries have stalled. Most support (USD 629 billion on average between 2021-23) is aimed at individual producers, with over half of the total (USD 334 billion) arising from MPS policies that lift domestic prices above world prices, and the remaining USD 295 billion in the form of budgetary support. At the same time, policies in several countries lower domestic prices for some commodities relative to world prices, generating transfers *away* from producers averaging USD 192 billion per year in 2021-23. These policies often aim at protecting consumers from high world prices, or at generating border tax revenues for public budgets, but are as distortive for domestic and international markets as MPS policies that lift domestic prices.

Budgetary support to individual producers was provided based on output, input use, area, animal numbers, revenue or income, or on criteria not related to commodity production. Similar to market price support, output payments and support for the unconstrained use of variable inputs such as fertilisers or fuel are among the potentially most production and market distortive measures and jointly averaged USD 75 billion per year. Other forms of budgetary support tend to be less or not distorting, but some of them can still hamper productivity growth. Increasingly, countries link their payments to production requirements, including farming practices aimed, among others, at keeping land in good agricultural conditions. Payments linked to additional conditions can encourage farmers to take action beyond what is legally required and can be used to improve environmental, animal welfare and other outcomes relative to unconditional payments. In the past, environmental constraints have been found to often be unsuccessful in achieving their objectives and their effectiveness will depend on their design and implementation. Payments directed to the supply of environmental public goods may be more beneficial, such as the planting of hedges that provide space for insects and birds, thereby contributing to improving farm biodiversity. During 2021-23, such payments averaged USD 1.7 billion per year, less than 0.3% of all positive producer support, although this share has tripled relative to 2000-02, suggesting significant scope for further investment in such activities. All these efforts vary in their effects and require careful monitoring and evaluation to verify their effectiveness and efficiency.

Governments also invest in general services to improve the overall performance of the sector. USD 106 billion were spent annually for such services, about 12.6% of all positive support for agriculture, a share that has declined from 16% during 2000-02. Agricultural research and innovation, control and inspection services and agricultural infrastructure (half of which related to irrigation) are key areas here and receive 23%, 8% and 48% of these investments, respectively. Expenditures for general services have also been declining relative to the size of the agricultural sector: in 2021-23, they were equivalent to just 2.3% of the sector's production value, down from 4.7% in the early 2000s. More specifically, estimated expenditures for agricultural research and innovation declined from 0.9% to 0.5% of the production value. These trends risk slowing advances in sustainable productivity growth.

Finally, consumers and other first-stage buyers[1] of agricultural commodities benefitted from budgetary support averaging USD 107 billion per year in 2021-23. At the same time, higher prices arising from price policies in many countries implicitly taxed consumers. Overall, consumers across the 54 countries covered were taxed in the amount of USD 138 billion, or 3% of their expenditures at farm-gate prices, which adds to consumers' cost of living.

The global landscape of support has shifted towards some large emerging economies, as their agriculture sectors have developed and grown

In 2021-23, almost four-fifths of all positive support to agriculture was provided in four large economies: the People's Republic of China (hereafter "China") (37%), the United States (15%), India (14%) and the European Union (13%). This is a major change from the early 2000s, when the European Union, the United States and Japan represented 26%, 20% and 16% of the total, respectively, whereas China and India at that time jointly accounted for less than 15% of total positive support. On the other hand, support in some other important producing countries is low. For example, Brazil, representing almost 5% of the combined agricultural value of production covered by this report, accounted for less than 1% of all positive support to the sector in 2021-23.

Regional concentration is even more important for budgetary support to consumers: 67% and 29% of these transfers were made in the United States and in India, respectively. These shares highlight the importance of domestic consumer support programmes in these countries, where they represent 56% and 27% of all positive support to the sector overall, respectively.

The shares of agricultural support in producer receipts and consumer expenditures have mostly declined, with significant differences across countries

In total, producers benefit from positive support equivalent to 12.9% of their gross farm receipts (GFR). This share is slightly higher on average in OECD countries (13.7%) than across the 11 emerging economies covered by the report (12.5%), several of whom also use negative price support (-6% of the combined GFR across the 11 emerging economies). Taken together, net producer support across the 54 countries averaged 9% of GFR in 2021-23, down from 18% of GFR in 2000-02. China is the only country that increased its producer support relative to gross farm receipts since the early 2000s.

Average figures mask substantial differences across countries. On average in 2021-23, Norway, Iceland, Switzerland, and Korea all offered support greater than 40% of GFR, followed by Japan's 33%. Levels in the Philippines, the United Kingdom, the European Union, China, Israel, Türkiye and Mexico were below 20% but still above the average. Support in Indonesia, Colombia, the United States and Canada was between 5% and 9% of GFR, while lower levels of producer support were provided in Kazakhstan, Costa Rica, Brazil, Chile, South Africa and Australia, and net producer support was less than 1% in New Zealand and Ukraine. In contrast, negative price support in some countries more than offset positive support to farmers, resulting in negative producer support in India (-15% of GFR), Viet Nam (-12%) and Argentina (-10%).

Consumer support, which results from both market price support policies (which generally result in transfers paid by consumers) and budgetary support benefitting them, ranges from an implicit taxation by 38% of consumption expenditures at farm-gate prices in Korea to a 39% net support for consumers in India. Consumers in most countries are implicitly taxed by pricing policies and the pattern of consumer support is largely the inverse of producer MPS. That means little to no consumer support in Brazil, New Zealand, Chile, Türkiye, Australia, Ukraine and Kazakhstan, and positive net support for consumers in Viet Nam and Argentina due to negative price support, India (due to both negative price support and consumer assistance) and the United States (due to significant consumer assistance).

The significance of public investments in general services also varies across countries. Japan, Switzerland and Korea spend most relative to their market size, each providing the equivalent of more than 7% of the respective value of production. While investments in general services relative to the sectors' size are generally on the decline, Switzerland, the Philippines and Chile each have increased their expenditures by more than one percentage point of the value of production between 2000-02 and 2021-23 (from 5.9% to 8.8%, from 2.5% to 4%, and from 2.1% to 3.3%, respectively). Overall, infrastructure investments (half of which for irrigation) account for nearly half of the General Services Support Estimate (GSSE), while investments in agricultural knowledge and innovation systems account for almost one-quarter. However, these latter investments have declined relative to the size of the sector: in 2021-23, they averaged 0.5% of the combined value of production, down from 0.9% in 2000-02.

Policies to promote sustainable productivity growth can align economic and environmental objectives

Productivity growth has been a major driver behind the substantial increase in agricultural production in the past decades. Feeding the growing world population while at the same time reducing pressures on natural resources relies on continued productivity growth. But productivity growth has slowed or stalled in many places. For many countries, accelerating the pace of innovation is seen as the main way that government policies can help restart the engine of productivity growth while minimising negative externalities. However, productivity growth alone does not guarantee improvements in the environmental or social performance of the sector. Achieving the balance between productivity and sustainability by

exploiting synergies and managing possible trade-offs between these objectives is at the heart of innovation for sustainable productivity growth.

Countries have already committed to doing this. At the OECD Meeting of Agricultural Ministers in November 2022, ministers and high representatives of 42 OECD member countries and emerging economies as well as of the European Union jointly agreed to "take action to achieve sustainable productivity growth consistent with SDG 2.4"[2] and to "invest in research, innovation and extension services that can facilitate sustainable productivity growth and offer climate change mitigation and adaptation solutions".

While priorities and exact definitions differ, governments have been taking steps to promote sustainable productivity growth by developing strategies and frameworks, investing in research and development (R&D), institutions and agricultural knowledge and innovation systems, and by providing incentives to producers to develop and adopt new production methods. Many countries see innovation as a key part of their efforts, but not all countries are investing heavily in this. Spending on agricultural innovation systems was 32% of estimated general support in the OECD with little change in the past decade, but only 15% in the emerging economies, down from 26% of the GSSE in 2013 (emerging economies invest relatively more in infrastructure). Across all countries covered in this report, innovation expenditures as measured by the GSSE accounted for less than 3% of the estimated total positive support to the sector in 2021-23.

However, investment in innovation by itself is often not enough to find solutions that reconcile both productivity and environmental sustainability outcomes, and conducive policy settings are needed to ensure that environmental objectives are achieved. Indeed, public policies can be a powerful driver of the innovation system.

Governments acknowledged the need to examine harmful and beneficial support measures and committed to "intensify efforts as appropriate to reform or reorient agricultural policy, and in particular to address those support measures that are harmful to the environment, to move towards more sustainable agriculture and food systems" in 2022 (OECD, 2022[1]). In addition to the creation of appropriate disincentives for environmentally harmful practices, governments can use well-designed and targeted producer support policies to provide incentives to farmers for applying more sustainable practices and investing in productivity-enhancing equipment. Robust monitoring and evaluation of such policies will help to ensure their effectiveness. Using voluntary and mandatory constraints can change farmers' actions on-farm, while public funds can be used to leverage private investments. Yet just 20% of support to producers is subject to some kind of mandatory constraints generally based on existing regulations targeting environmental or other outcomes, only about 5% of support is currently used to encourage voluntary and additional environmental action, and the effectiveness of such measures depends on their design and implementation. Making more effective use of producer support to promote innovation and environmental sustainability on the farm, and refocusing overall support towards targeted R&D, can better leverage public spending to deliver public goods and sustainable productivity growth.

A policy agenda for sustainable productivity growth and robust agricultural production systems

In the face of multiple tensions, and considering the continued challenges facing food systems, as indicated above, it is critical for agriculture to become more sustainable, productive and resilient. A comprehensive policy approach in this direction would entail the following elements:

- Set clear objectives for sustainable productivity growth strategies and invest in the capacity to measure results and adjust policies to ensure that sustainability outcomes are achieved. OECD's

work on the measurement of total factor productivity (TFP) and its agri-environmental indicators (AEIs) are possible avenues for measuring sustainable productivity growth in the future.

- Reduce the negative environmental impact from agricultural support by identifying and addressing environmentally harmful measures and reorienting agricultural support towards environmentally beneficial measures and key general services. This would help reverse the trend of declining investments in agricultural knowledge and innovation systems, biosecurity services and key physical and digital infrastructure within overall expenditures for the sector.
- Increase the share of producer support that is linked to environmentally sustainable production practices and make sustainable management and use of natural resources a core part of agricultural policy. Use results-based policies and continuously monitor, measure and evaluate them to improve their effectiveness.
- Better target innovation systems towards the combined objective of improved productivity and improved environmental performance to reverse downward trends observed in several OECD agri-environmental indicators, for example by setting clear environmental requirements for farmers that the innovation system can help reach.

While doing so, governments should take steps to improve the effectiveness and efficiency of their producer support measures and of agricultural markets while freeing up fiscal resources for targeted innovation and sustainable productivity growth. This requires in particular:

- Phasing out the potentially most distorting forms of support and measures that reduce the capacity of the international trading system to fulfil its role in balancing food supplies between surplus and deficit regions – a capacity that is becoming even more important in times of regional shocks and increasingly volatile growing conditions due to climate change.
- Ensuring well-functioning risk management systems, based on OECD's established risk management framework. This involves enhancing the capacity and readiness of producers to cover normal business risks, facilitating private market solutions for insurable risks, and responding to catastrophic risks that are beyond the capacity of farmers or private institutions to bear.
- Reducing income support measures with low transfer efficiencies.

Reference

OECD (2022), *Declaration on Transformative Solutions for Sustainable Agriculture and Food Systems*, OECD/LEGAL/0483, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0483. [1]

Notes

[1] Industry consumers who transform agricultural commodities into processed products.

[2] Sustainable Development Goal Target 2.4: “By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality” (https://sdgs.un.org/goals/goal2#targets_and_indicators).

1. Agricultural support and innovation for sustainable productivity growth

This chapter presents developments in agriculture policy based on information and support estimates gathered for 54 countries covered in OECD's *Agricultural Policy Monitoring and Evaluation 2024*. It starts with an overview of recent economic and market developments that contextualise the implementation of agricultural policies. It then provides an analysis of developments in the level and structure of support to agriculture. A special section describes sustainable productivity growth and how it can be encouraged, along with examples of activities and policies currently in place that support innovation for sustainable productivity growth.

Key messages

- Agricultural support policies generated on test average USD 842 billion per year in transfers towards agriculture in 2021-23 across the 54 countries covered in this report. Transfers in 2023 declined slightly relative to the two preceding years but remain significantly above those in the pre-pandemic era. The global landscape of support has shifted towards some large emerging economies, led by the People's Republic of China (hereafter "China") and India.
- Market price support (MPS) is still the dominant form of support to producers. MPS generated USD 334 billion per year or more than half of the positive support to producers in 2021-23. At the same time, several countries use policies which caused negative market price support (lowering domestic prices) which cost producers USD 191 billion per year during the same period.
- Despite international commitments to reform, the share of MPS and other most distorting forms of support in overall positive producer support has been relatively stable, declining only 5 percentage points over the last 20 years to 65% in 2021-23. Reforming or reorienting support towards general services, including innovation, can support sustainable productivity growth.
- However, net producer support overall across all 54 countries has declined as a share of gross farm receipts (%PSE) over the past 20 years, from 18% in 2000-02 to 9% in 2021-23. MPS has fallen from 11.6% of gross farm receipts at the start of the century to 6.9% today. Producer support in OECD countries fell from 29% of gross farm receipts in the early 2000s to 14% in 2021-23. Similar trends can be seen for most of the 11 emerging economies in the report, where producer support has declined or become more negative. China is the only country that increased its producer support relative to gross farm receipts since the early 2000s.
- Policy continues to be responsive to shocks including Russia's[1] war of aggression against Ukraine, evolving conflicts in the Middle East affecting trade on the Suez Canal, drought affecting the Panama Canal, and extreme weather events. The resulting trade disruptions have sharpened focus on food security as a stated policy objective.
- Sustainable productivity growth will need to increase if global food security objectives are to be met whilst reducing the environmental footprint of the agricultural sector.
- In OECD countries, agricultural TFP grew by 1.4% annually between 1991-2000, but only by 0.85% in 2011-21. Yet, spending on innovation, a key element of TFP, is only a small share of total support and is not growing substantially. General support to the sector, public investments that underpin its health and performance, amounted to USD 106 billion in 2021-23 making up only 12.6% of total support towards the sector (positive TSE) down from 16% two decades earlier.
- Investment in innovation by itself is not enough to find solutions that reconcile both productivity and environmental sustainability outcomes, and the right policy settings are needed to ensure that environmental objectives are achieved. The share of payments subject to specific requirements for sustainable farming practices or for environmental public goods is increasing, but remains relatively low, at about 5% of producer support. Increasing the share of producer support that promotes innovation and environmental sustainability will make it more effective at delivering public goods and sustainable productivity growth.

Agriculture policy in 2023 and 2024 was conducted in the context of a global economy characterised by value chain disruptions and high energy prices. The global economy has narrowly avoided recession, but the recovery in GDP growth both globally and in the OECD area remains fragile. Food price inflation, an especially volatile component of the economy, has fallen substantially from 2022 highs, but food prices remain elevated and this has put continued pressure on consumers' food budgets.

This chapter begins with an overview of some of the important drivers of agricultural policies and a description of developments of support to agriculture based on the latest data available. This is followed by a special section that looks at the evidence on sustainable productivity growth (SPG) and how governments may take action to promote it. This includes examples of some actions currently being undertaken by governments to support innovation for SPG.

Global drivers of agricultural policies in 2023-24

Inflation and slow growth remained features of the global economy in 2023 and 2024

Conditions in agricultural markets are strongly influenced by macro-economic factors such as economic growth (measured by gross domestic product, GDP), which drives demand for agricultural and food products, as well as by prices for crude oil, natural gas, and other energy sources that underpin many production inputs in agriculture, notably fuel, chemicals and fertiliser. Energy prices also affect the demand for cereals, sugar crops, and oilseeds through the market for biofuels produced from these feedstocks.

Headline inflation fell rapidly in 2023 in most economies, helped by restrictive monetary policies, lower energy prices, and the continued easing of supply chain pressures. Food price inflation also decreased sharply in most countries, as good harvests for key crops such as wheat and corn resulted in prices falling rapidly from the highs reached after the start of Russia's war of aggression against Ukraine. Average inflation in the median advanced economy fell from 9.9% in the last quarter of 2022 to 3% in the first quarter of 2024 (OECD, 2024[1]).

GDP growth remained moderate due to tighter financial conditions, weak trade growth, and lower business and consumer confidence. This is expected to continue. Across countries, there are clear signs that strong near-term momentum will continue in India, of relative weakness in Europe, and of mild near-term growth in most other major economies. Global growth, which rose by 3.1% in 2023, is projected to remain at 3.1% in 2024. Business surveys, however, point to improving activity in both manufacturing and services, helped by strong momentum in India and signs of stronger than anticipated outcomes in China and most major advanced economies (OECD, 2024[1]).

Strong growth in the labour force and higher labour participation rates in 2023 improved supply in labour markets. On the demand side, employment growth slowed, the number of vacancies declined, and the total hours worked eased in several countries. Unemployment rates generally remained close to historical lows. Overall, survey evidence suggests that firms had fewer pressing labour shortages, and that supply and demand of labour was more balanced (OECD, 2024[1]).

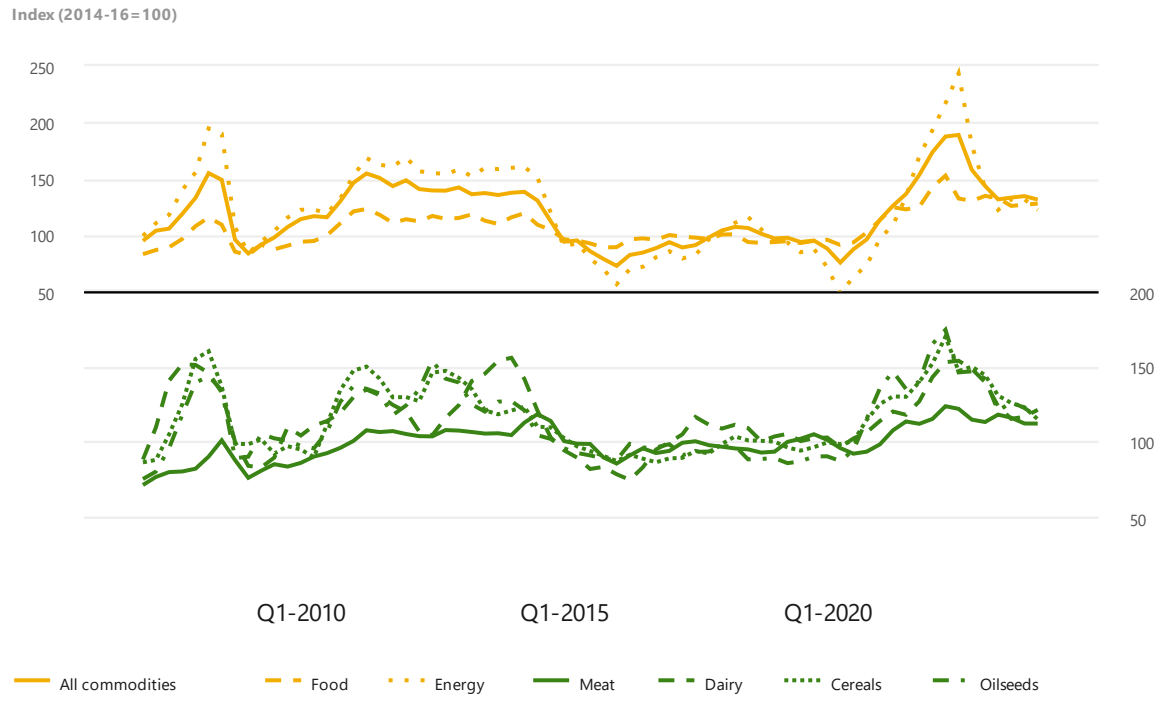
Commodity and input prices remain high

The effects of Russia's war of aggression against Ukraine on food prices and trade have been substantial, but markets are adapting and increases in food prices and input costs have moderated on the global market, especially in more developed economies. Ukraine has increased its exports via the Black Sea corridor and trade volumes have approached prewar levels. However, several regions dependent on agricultural products from Ukraine continue to face both reduced imports to meet their food needs and rising food import bills.[2]

Shipping has been unusually disrupted in 2023, affecting food and input prices. Traffic through the Panama Canal has been restricted since mid-2023 by low water levels, while ships have avoided the Suez Canal since late 2023 due to evolving conflicts in the Middle East. These restrictions have forced many ships to take alternative routes, adding time and expenses to each trip. Many ships are taking the route around the Cape of Good Hope on the southern tip of Africa, which adds about 30% more time and 30% more fuel. For example, the average cost of transporting a standard container (measured as a 20-foot equivalent unit, TEU) increased from about USD 700 in November 2023 to over USD 1 900 in January 2024. The situation in the Suez Canal is expected to push near-term shipping prices even higher, with projections indicating that shipping rates could surpass USD 3 000 per TEU.[3]

The 2022 fertiliser price spike exposed the vulnerability of import-dependent countries to trade shocks. In 2024, fertiliser prices have so far been significantly lower than in 2022 and 2023, but a small number of large producing countries continue to dominate global exports. This, and slow progress of green alternatives means importers remain vulnerable to supply shocks. The Russian Federation (hereafter "Russia") has largely benefited from the market disruptions despite sanctions imposed on it. Russia increased exports of potash, urea, and diammonium phosphate (as well as commodities such as wheat).[4]

Figure 1.1. Commodity world prices, 2007 to 2024



Note: The top part of the graph relates to the left scale, while the bottom part of the graph to the right scale.
Source: IMF (2024), Commodity Market Review, for all commodities, food and energy indices (base year: 2016), www.imf.org/external/np/res/commod/index.aspx; FAO (2024), FAO Food Price Index dataset, for meat, dairy and cereal indices (base period: 2014-16), www.fao.org/worldfoodsituation/foodpricesindex/en

Farmers are concerned about future prospects

Farmer protests are not a new phenomenon, but their discontent reached new heights in 2023 and 2024, with protests spreading in several countries. The reasons behind the protests are complex, and include rising production costs, foreign competition, falling incomes, environmental constraints, and burdensome administrative procedures.

In a number of countries bordering Ukraine, protests followed the fall in cereal prices due to increased imports from Ukraine when the war disrupted alternative trade routes. In other countries, plans to reduce tax rebates on agricultural diesel, growing environmental obligations under the Green Deal of the European Union, and concerns about free trade agreements provoked farmers' discontent.[5] Protests in India in 2024 called for a minimum purchase price for crops, echoing those emitted in 2021 against laws to liberalise the sector.

Progress on agriculture negotiations at the World Trade Organization remains elusive

The thirteenth Ministerial Conference (MC13) of the World Trade Organization (WTO), held in February 2024, ended with no outcomes of agriculture reform under the WTO Agreement on Agriculture. A draft text covering all negotiating issues such as domestic support to agriculture, including public stockholding for food security purposes, market access, and export prohibitions or restrictions was discussed, but wide divergences amongst Members prevented consensus. The disagreements notably centred around developing countries' public stockholding programmes. In 2013, WTO Members had agreed to an interim "peace clause" under which such support could not be challenged under WTO dispute settlement if certain conditions were met. Agreement on a permanent solution has so far not been possible as no consensus was reached at MC13 on reducing trade-distorting domestic support to agriculture, nor on exempting least-developed countries from export prohibitions or restrictions on foodstuffs.

The harvest in the 2023/24 season was generally good at the global level, though some regions suffered from bad weather

Although *El Niño*, which began in mid-2023, provoked a series of global temperature records that made 2023 one of the warmest years on record, it did not have much effect on global agricultural output or commodity prices. Its effects at a regional level have been, however, large in some cases. In July 2024, FAO forecasted an increase of 1.2% in world cereal production in 2023/24, led by global rice production which was expected to increase by 2.9 million tonnes. Global wheat production in 2024 was expected to increase by 0.5% from 2023. Agriculture production should be higher in North America and Asia, but lower in Europe based on lower plantings and in North Africa due to low rainfall. Severe drought in southern Africa has sharply reduced grain harvests and has led to water shortages and power cuts. This is one factor for the disappointing growth rate of low-income countries as a group in 2023 (OECD, 2024[1]). Total value of agricultural production for the 54 countries covered in this report was USD 4.7 trillion in 2023, only slightly down from 2022 and a consequence of lower average prices, not lower production quantities.

Overview of the evolution of support to agriculture

This section provides an overview on developments in policy support in agriculture, building on the OECD estimates of agricultural policy support that are comparable across countries and time. These show the diversity of support measures implemented across different countries and focus on different dimensions of these policies. Complete definitions are shown in Annex 1.A.

The **Total Support Estimate (TSE)** is the broadest of the OECD support indicators. It combines three distinct elements: a) transfers to or from agricultural producers individually; b) policy expenditures for the primary agricultural sector collectively; and c) budgetary support to consumers of agricultural commodities (Figure 1.2).

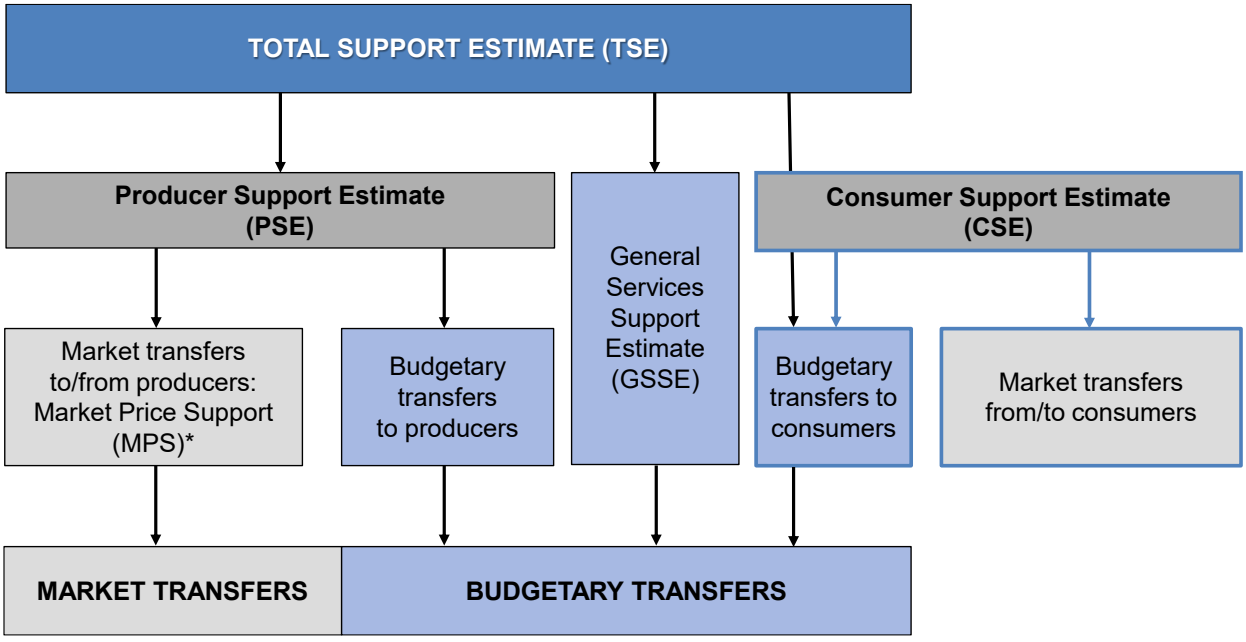
The **Producer Support Estimate (PSE)** measures all transfers to agricultural producers individually. Two major types of transfers can be distinguished: **Market Price Support (MPS)** represents transfers from taxpayers and consumers to agricultural producers through domestic prices that are higher than their international reference prices due to domestic and trade policies. MPS can also be negative, representing

transfers from producers to consumers through domestic prices that are lower than references prices. **Budgetary support** is financed by taxpayers. The PSE indicator is expressed as a net transfer, including both positive and negative elements.

The **General Services Support Estimate (GSSE)** measures policy expenditures that benefit the primary agricultural sector as a whole, rather than going directly to individual producers. Different types of expenditures are represented in specific categories of the GSSE.

Similar to the PSE, the **Consumer Support Estimate (CSE)** reports support to consumers of agricultural commodities, distinguishes between market transfers that mirror the MPS, and budgetary support. To avoid double-counting, only the budgetary part of the CSE is included in the TSE.

Figure 1.2. Structure of agricultural support indicators



Note: *Market Price Support (MPS) is net of producer levies and excess feed cost.
Source: Annex 1.A.

Total support to agriculture remains around record highs, but declined relative to its 2021 peak

The 54 countries covered in this report collectively provided USD 842 billion in support to the sector per year on average over 2021-23 (Figure 1.3). Most frequently this was in the form of market price support (MPS) policies that increase the domestic price of agricultural commodities. In addition, some countries (mainly **India**) implicitly tax their farmers (negative MPS) by lowering the price of agricultural commodities to benefit consumers. This tax amounted to USD 192 billion per year on average. In net terms, the Total Support Estimate (**TSE**) amounted to USD 650 billion per year in 2021-23.[6]

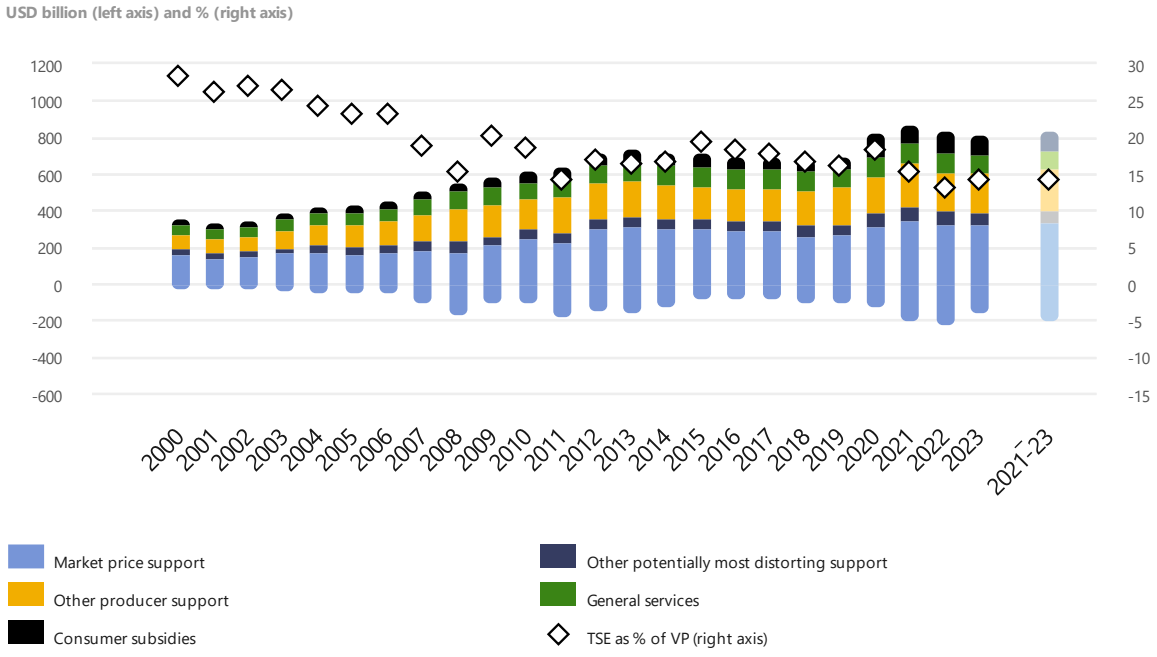
Of the USD 842 billion in positive support, 75% (USD 629 billion) goes to producers individually, 12.5% goes to consumers of agricultural products (**CSE**) and 12.5% goes to general services that benefit the sector overall (**GSSE**). The net producer support (**PSE)**, which includes negative MPS, amounts to USD 437 billion per year.

The PSE is made up of many different categories, some of which are potentially more distorting of production and trade than others (Box 1.1). The potentially most distorting forms of support comprised

65% of the positive producer support (USD 409 billion) on average over 2021-23 while less distorting forms made up 35% (USD 219 billion). These shares have been relatively stable since 2000; most distorting forms of support were 70% of the positive PSE in 2000-02.

Support has been elevated in the post-COVID era and the drivers behind this have only partially abated. But total support in nominal terms has declined in the last two years and support as a share of value of production continues to moderate. Total net support was 0.72% of GDP overall, but higher in emerging economies (about 1%), reflecting the generally larger role of agriculture in those economies.

Figure 1.3. Breakdown of agricultural support, all countries, 2000 to 2023



Note: Data refer to the total of OECD countries, non-OECD EU Member States, and the 11 emerging economies: Argentina, Brazil, China, India, Indonesia, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam.
"Negative market price support" comes from implicit taxation of producers through lower prices, "Other potentially most distorting support" refers to budgetary support based on output payments and on the unconstrained use of variable inputs. "Other support" contains all other PSE categories, which are considered less distorting—for example, payments based on area, based on historical entitlements or for non-commodity outputs. "General services" refers to the General services support estimate, "Consumer support" is transfers to consumers from taxpayers. "TSE as % of VP" refers to the total support estimate relative to the value of production.
Source: Based on OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

The OECD has been using quantitative models to estimate the relative effects of different support policies for more than two decades (OECD, 2001[2]; Martini, 2011[3]; Valin, Henderson and Lankoski, 2023[4]). These analyses showed that MPS, support based on output payments and on the unconstrained use of variable inputs potentially have the most distorting effect on production and trade.

OECD work has shown that these measures also have the potential to harm the environment (Henderson and Lankoski, 2019[5]), though the effects of these policies on the environment is not as clear cut as for production and trade. Environmental impacts from agricultural policy depend on several factors. Individual responses to economic incentives created by agricultural policies vary, producing variations in environmental impacts. Variation also occurs due to location-specific physical factors, including landscape characteristics, as well as the cumulative effects of decisions across actors and across time (DeBoe,

2020[6]). Reforming these policies can improve the policy setting for sustainable productivity growth and, in the case of budgetary support, can provide additional resources for investment in targeted and beneficial measures (Valin, Henderson and Lankoski, 2023[4]).

Box 1.1. Budgetary components of the PSE

The PSE is composed of MPS and budgetary support. Budgetary support is delivered in many different forms and allocated to different categories according to the PSE classification system. These budgetary categories identify the following distinctions in the way policies are implemented:

- Payments based on current output of a specific agricultural commodity.
- Payments based on-farm use of inputs. These either reduce the cost of purchased inputs like fertiliser or chemicals, fixed capital like farm buildings and equipment, or on-farm services that reduce the cost of technical, accounting, commercial, sanitary and phytosanitary assistance and training provided to individual farmers.
- Payments based on current area, animals, revenue or income (A/An/R/I) that require production.
- Payments based on non-current (i.e. historical or fixed) A/An/R/I, with current production of any commodity required.
- Payments based on non-current A/An/R/I, with current production of any commodity not required but optional.
- Payments based either on the long-term retirement of factors of production from commodity production, for the use of farm resources to produce specific non-commodity outputs of goods and services, or transfers provided equally to all farmers, such as a flat rate or lump sum payment.

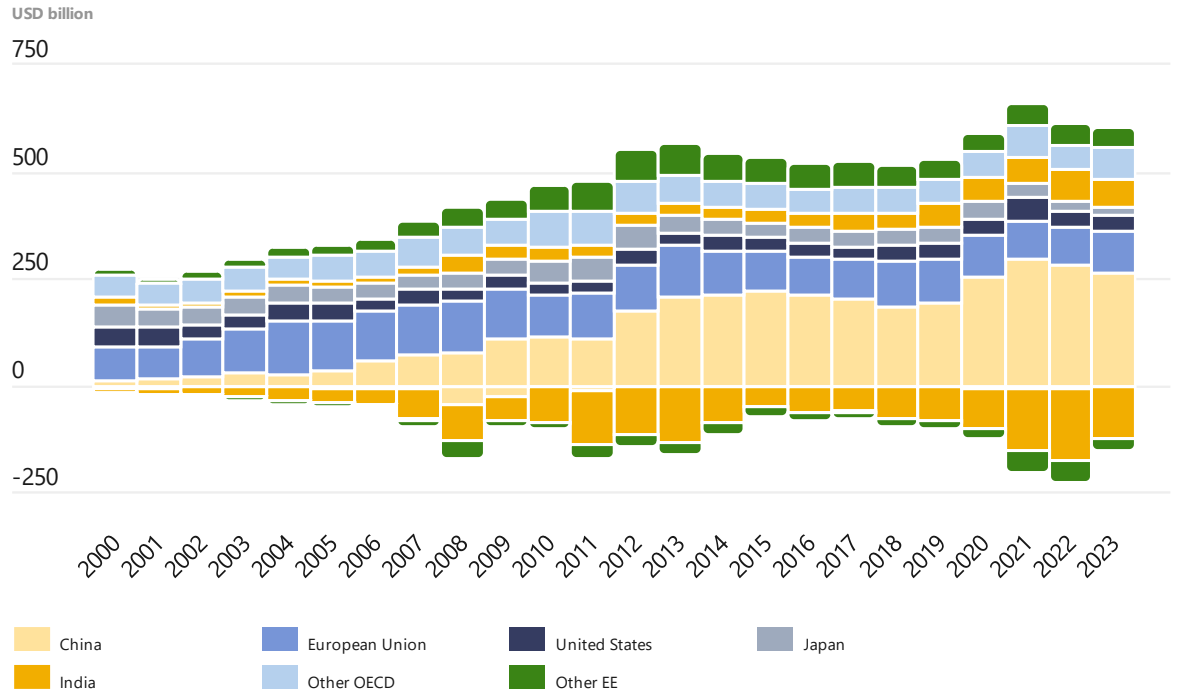
Payments for which there is a lack of information to allocate them among the appropriate categories have their own miscellaneous category.

More information on the PSE classification system and the indicators used in this chapter can be found in Annex 1A.

The global landscape of support has shifted towards large emerging economies

Four economies – **China**, **Japan**, the **European Union**, and the **United States** – account for roughly 70% of all positive producer support over the past 20 years. However, the relative shares among these economies have changed dramatically over this time (Figure 1.4). In 2000-02, the **European Union**[7] accounted for the largest share with 30% of all positive producer support, followed by **Japan** (17%), the **United States** (17%) and **China** (7%). In 2021-23, **China** represented about 45% of producer support, while the **European Union** (15%), the **United States** (7%) and **Japan** (4%) collectively provided about 26% of producer support. India's already large share of implicit taxation among countries has grown from 61% of all negative support in 2000-02 to 75% in 2021-23.

Figure 1.4. Producer support by country, 2000 to 2023



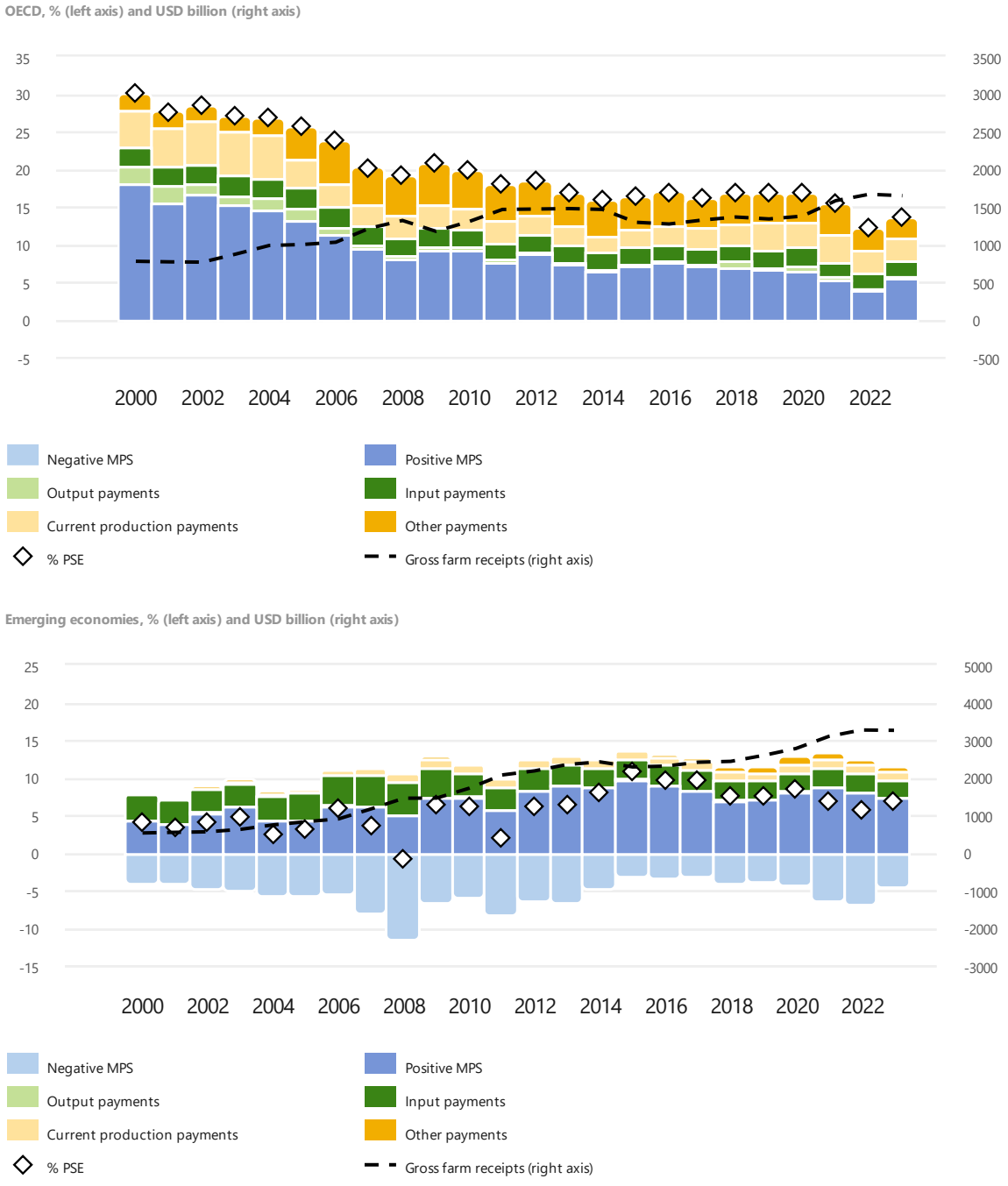
Note: European Union refers to EU15 for 2000-03, EU25 for 2004-06, EU27 for 2007-13, EU28 for 2014-19, EU27 and the United Kingdom for 2020, and EU27 from 2021. "Other EE" refers to Argentina, Brazil, Indonesia, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

While support in nominal amounts has been increasing over time, this has been outpaced by growth in gross farm receipts (**GFR**). As a result, the share of support as a proportion of GFR (the percentage PSE, **%PSE**) among OECD countries has been in long-term decline, although the pace of this decline has slowed since the early 2010s (Figure 1.5). In the emerging economies in this report, growth in GFR has been even stronger, but so has growth in nominal support such that the change in %PSE on average in these countries has been flat to slightly rising.

The %PSE in the OECD averaged 14% over 2021-23, compared to 18% in 2010-12 and 28% in 2000-02. The average %PSE in emerging economies averaged 6.5% in 2021-23, compared to 3.8% in 2000-02. However, these figures for average support to producers include the effects of negative MPS. Excluding this, the %PSE among emerging economies was 12.5% in 2021-23, close to but still below the OECD average.

MPS is the largest category of support in both OECD and emerging economies. However, OECD countries tend to make more use of budgetary support based on land while emerging economies make more use of input support as well as negative MPS. In OECD countries, MPS has declined as a share of total support since 2000. Positive MPS has been increasing in emerging economies, mostly in **China**, though their use of budgetary support has become less dominated by input support (considered one of the most distorting forms of support) over time.

Figure 1.5. Evolution of the percentage Producer Support Estimate (PSE), 2000 to 2023



Note: MPS refers to the market price support. The OECD total does not include the non-OECD EU Member States. Latvia and Lithuania are included only from 2004. The 11 emerging economies include Argentina, Brazil, China, India, Indonesia, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

In 2021-23, USD 411 billion per year, or two-thirds of the USD 630 billion in positive support to producers across the 54 countries covered in this report, was in forms considered to be the potentially most distorting

to production and trade (9% of gross farm receipts). Across the OECD, such support amounted to USD 103 billion, while for the 11 emerging economies such transfers to producers totalled to USD 308 billion per year. Policies reducing domestic prices (benefitting consumers) additionally gave rise to USD 179 billion in implicit taxation in 2021-23 and these also have a distorting effect.

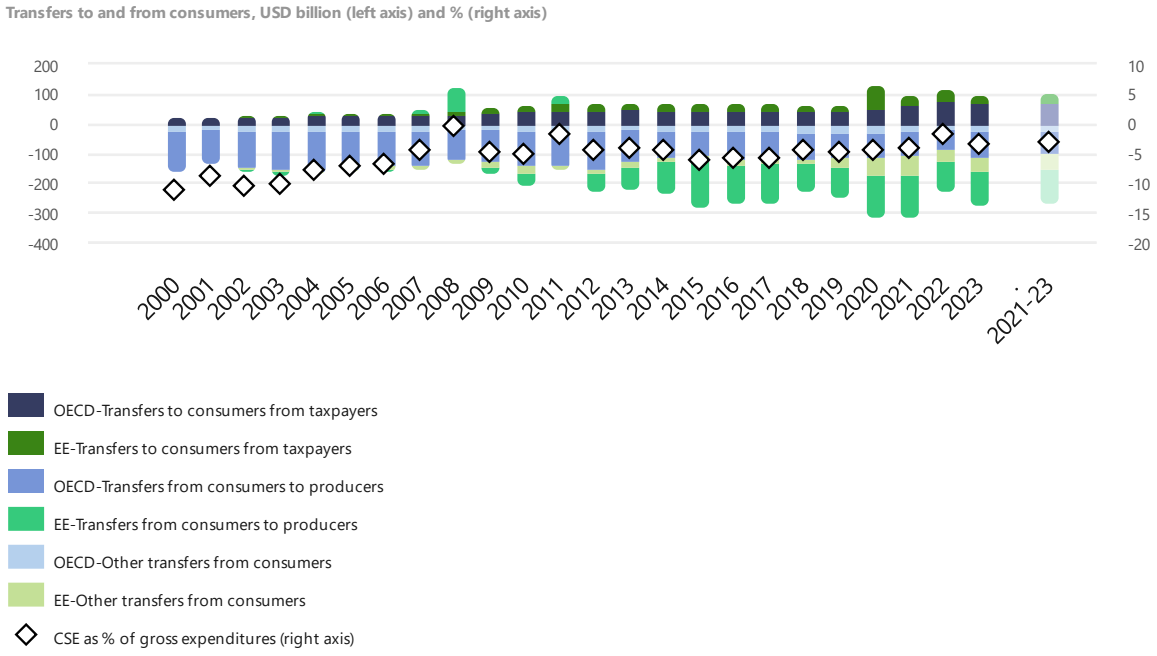
Consumers face higher food prices on average in part due to government policies

Consumer support includes support to both final consumers of agricultural products as well as industry consumers who transform agricultural commodities into processed products (first-stage buyers). Between 2021 and 2023 policy support increased the cost of agricultural commodities to consumers by 3.2% of gross consumer expenditures measured at farm gate prices (**%CSE**) (Figure 1.6). This net transfer from consumers to producers comes mainly from MPS policies that raise domestic prices, such as when governments set minimum prices or use tariffs. Still, budgetary consumer support rose dramatically following the outbreak of the COVID-19 pandemic. Before the pandemic, governments provided USD 65 billion in budgetary support to consumers, but this support averaged USD 107 billion between 2021 and 2023, due to increases in both OECD and emerging economies. In the OECD, the **United States** is the largest provider of food assistance to low-income consumers (accounting for 98.6% of OECD budgetary transfers to consumers).

Many emerging economies seek to find a balance between producers or consumers. Several of them use price policies that benefit consumers (negative MPS). The emerging economies are a diverse grouping, some of whom offer mainly positive MPS (**China**) and others mainly negative MPS (**India** and **Argentina**) and others make almost no use of MPS at all (**Brazil**). Positive MPS in the covered emerging economies countries (transfers *from* consumers) was USD 254 billion and negative MPS (transfers *to* consumers) was USD 191 billion on average over 2021-23. Some countries aim to keep consumer prices within a certain range, using budgetary transfers, preferential distribution of food or other interventions. For example, **India** has an important programme for public distribution of food grains.

In OECD countries, the %CSE was -18.3% in the early 2000s but only -1.9% in 2021-23, a substantial reduction in the effect of policy on consumer prices. Conversely, consumers in emerging economies have seen the %CSE move from near zero 20 years ago to average -3.7% in 2021-23. This largely reflects increasing market price support starting around 2012 (when MPS in **China** approximately doubled).

Figure 1.6. Composition of the Consumer Support Estimate (CSE), OECD and Emerging economies, 2000 to 2023



Note: CSE, consumer support estimate, is the total of positive and negative components. The OECD total does not include the non-OECD EU Member States. The 11 emerging economies include Argentina, Brazil, China, India, Indonesia, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

Support to general services is focused on improving infrastructure

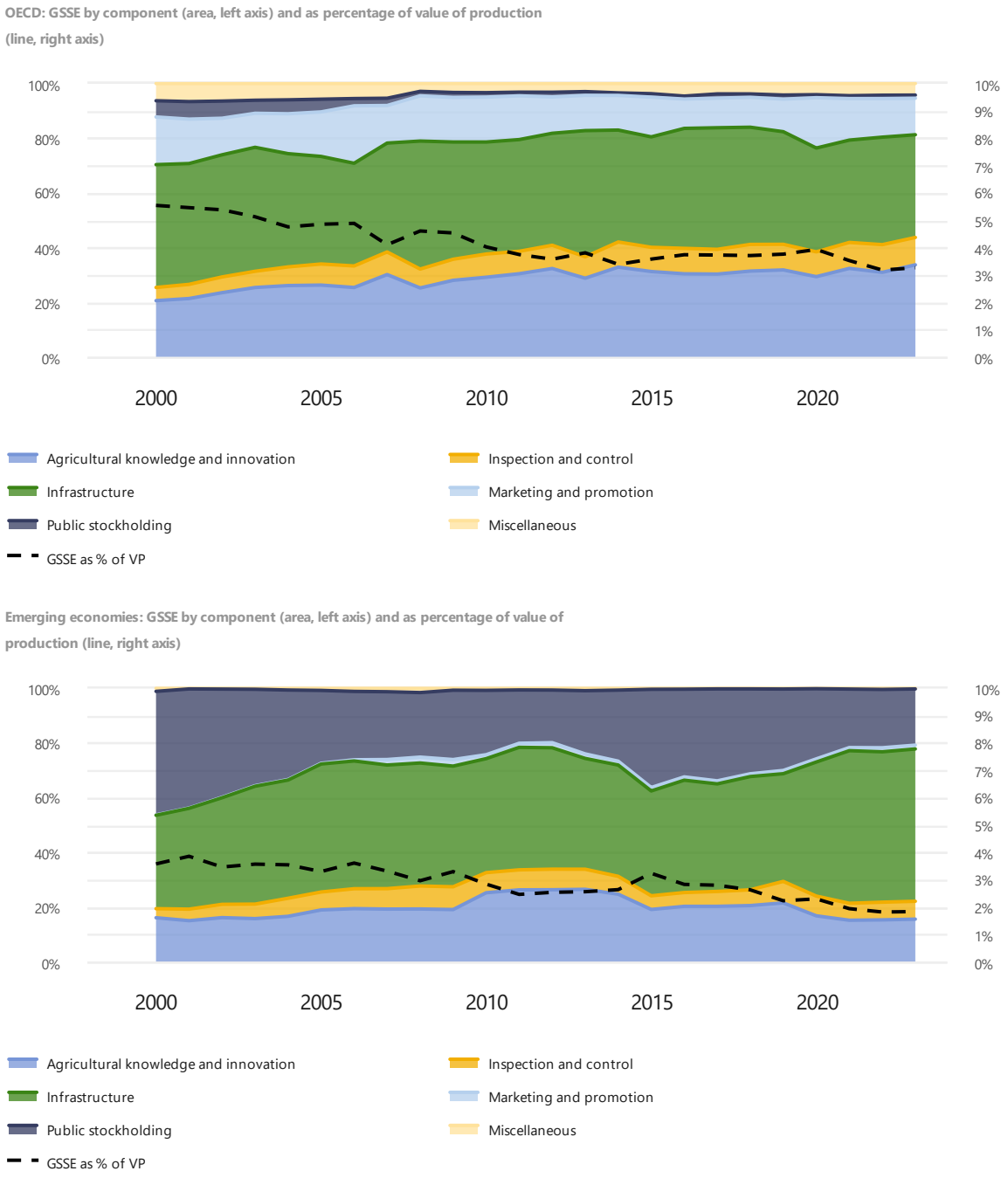
Countries provided USD 106 billion in support for general services to the agricultural sector (**GSSE**) on average over 2021-23. This is about 2.2% of the value of production of the sector, a decline from 4.7% in 2000-02. In OECD countries, GSSE equalled 3.3% of the value of production, down one percentage point from 2000-02 and in emerging economies it was 1.9%, down by 1.8 percentage points (Figure 1.7).

General services support arises from policies that are aimed to benefit the broader agricultural sector and are not directed at producers or consumers individually. Investments in general services can help the agricultural sector to become more productive, sustainable and resilient. For example, infrastructure development can make irrigation more accessible, or rail or port storage which makes transport and marketing of products easier and reduces wastage. It includes inspection services to ensure food quality and safety or the efficient control and handling of pests and diseases, investments in knowledge and innovation and institutional investments that support farm organisations or help farmers sell their products at home and abroad.

Infrastructure is the largest component of the GSSE, though this share is decreasing in the OECD (was 38% in 2021-23) and increasing in EEs (55% in 2021-23). Public stockholding is important in EE countries (21%), but little used in the OECD area since the mid-2000s (1.1%).[8] OECD countries dedicate a larger share of GSSE spending to marketing and promotion (about 13%) while emerging economies spend only about 1.4% of their general support in this area. Spending on agricultural knowledge and innovation systems (AKIS) was USD 25 billion, 32% of the OECD GSSE and increasing but only 15% in the emerging

economies, where this spending peaked at 26% of the GSSE in 2013 and has been declining as a share of the GSSE since then.

Figure 1.7. Composition of General Services Support Estimate (GSSE), 2000 to 2023

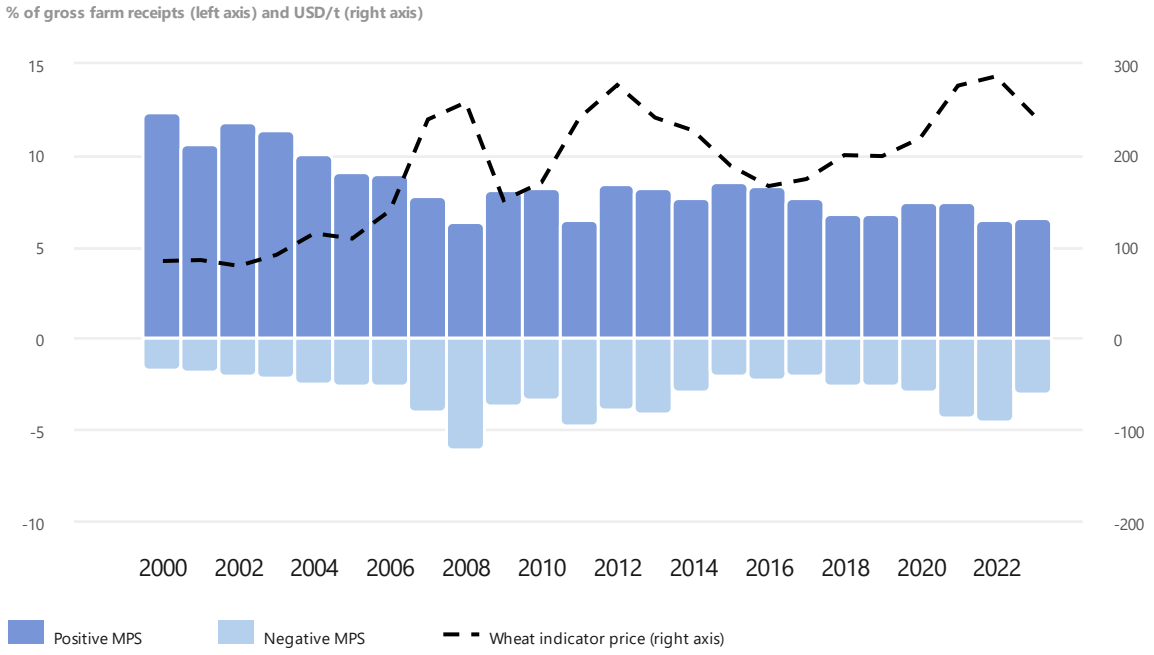


Note: The OECD total does not include the non-OECD EU Member States. The 11 emerging economies include Argentina, Brazil, China, India, Indonesia, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Negative MPS moderated in 2023 while positive MPS remained nearly unchanged

Preliminary estimates indicate that net market price support increased in 2023. Positive MPS increased by an estimated USD 2 billion (that is, nearly unchanged) and negative MPS became USD 72 billion less negative (Figure 1.8). Market price support moves in response to changes world prices if supported domestic prices do not change to match (Box 1.2). In 2023, the change in negative MPS comes mainly from **India**, whose policies are in part designed to insulate domestic prices from fluctuations in world prices, and so its MPS varies with world prices. Overall, the gap between domestic prices and world prices has narrowed over the past 20 years. On average over all countries effective prices received by farmers were 4% higher than world prices in 2021-23, down 10 percentage points from the 14% higher prices in 2000-02.

Figure 1.8. Market price support (MPS) and global wheat indicator price, 2000 to 2023



Note: Wheat indicator price refers to export price of wheat from Ukraine with less than 11% protein content. The price is free on board denominated in USD per tonne. Both positive and negative market price support include MPS for all 54 countries and all commodities.
Source: International Grains Council (2024), OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

Box 1.2. Understanding market price support

Market price support (MPS) estimates the benefit or loss farmers receive when there is a difference between domestic prices and world prices. This price gap is calculated by measuring the difference between the actual domestic market price and price farmers would have received were there no price-distorting policies in place (OECD, 2016[7]).

The price gap for a specific commodity measures the difference between two prices: the average domestic price and a reference price calculated at the same level in the value chain (generally at the farm gate). This reference price corresponds to the country's border price, i.e. the import price (for net-imported commodities) or the export price (for net-exported commodities). The reference price can be

observed directly, estimated based on prices in similar or neighbouring countries or in rare cases using tariff data.

If the price gap is such that the domestic price is twice the reference price, the MPS as a share of commodity gross receipts should be 50% and producers receive double the revenue they would have otherwise (assuming there were no other forms of support offered). If domestic prices are five times border prices, the MPS as a share of commodity gross receipts would be 80%. For negative MPS, if the domestic price is half the world price (such as would result from a 50% tax), MPS as a share of commodity gross receipts would be -100%. Market developments (such as exchange rate movements affecting world prices expressed in local currencies) may influence the price gap, so changes in MPS do not always mean that a policy has changed.

The price gap is calculated only if policies exist that could cause such a gap, such as border measures that restrict or promote imports or exports, and government purchases, sales and intervention prices in the domestic market. If countries do not implement such policies, the price gap is assumed to be zero. The price gap for individual commodities is adjusted for differences in product qualities, processing and transportation margins, to compare like with like.

MPS is not a measure of public expenditures but an estimation of implicit or explicit transfers. MPS estimates published by the OECD therefore often differ from, and should not be confused with, those published by other organisations, including by the World Trade Organization, which may use very different concepts to calculate their indicators, despite similar names.

Source: OECD (2020[8]).

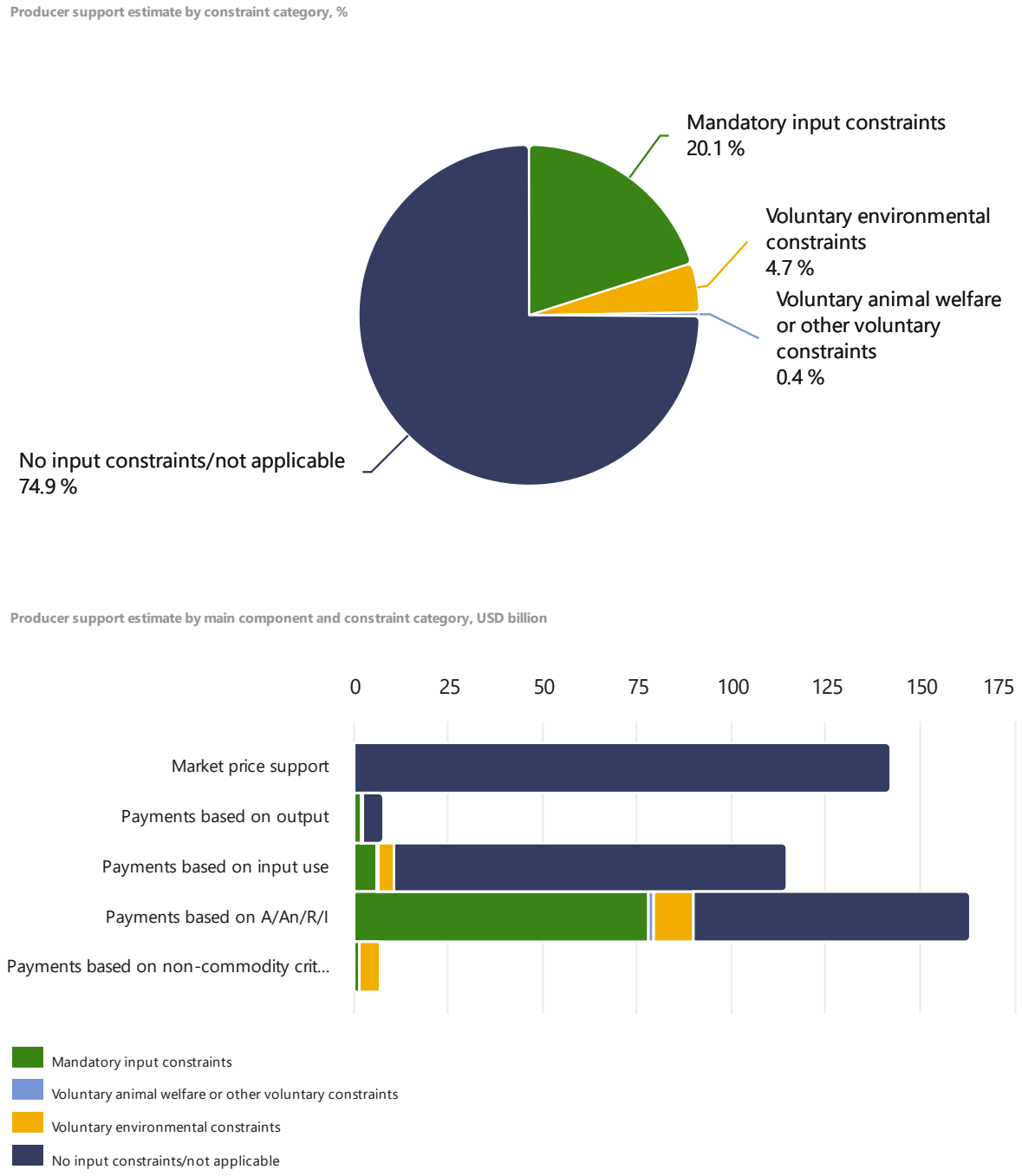
Measures providing positive MPS to producers provided USD 334 billion per year on average between 2021-23 across all covered economies (6.9% of annual gross farm receipts). Negative MPS caused by policies which reduce domestic prices was worth USD 191 billion or 3.9% of gross farm receipts over that time. Import tariffs, tariff rate quotas and minimum support prices are the most frequently applied policies which give rise to positive MPS, whereas export restrictions, quotas, bans or export taxes are most frequent for negative MPS.

Only a quarter of support is provided subject to specific requirements

Payments made to producers are often subject to conditionality that sets out obligations that farmers must meet to be eligible. These conditions involve actions that may be “mandatory” or “voluntary”. The former include requirements that relate to a generally applicable regulation, while the latter go beyond general regulations and are adopted by farmers in exchange for receiving the payment. Within the “voluntary” input constraint label, a further distinction is introduced to identify the character of constraint, i.e. whether it concerns (i) environmental practices, (ii) animal welfare, or (iii) other practices (Box 1.3). Benefiting from market price support cannot be made conditional on such constraints as beneficiaries cannot be excluded from higher prices. Budgetary payments however can be, and often are, subject to additional requirements.

In 2021-23, 25% of support to all countries covered in this report was delivered subject to constraints, with the majority of these being mandatory input constraints (20.1% of support). Voluntary environmental constraints apply to 4.7% of all transfers to producers, and other constraints accounting for less than 1% (Figure 1.9). Constraints are almost always applied to support that is based on non-commodity criteria, which is to be expected given the nature of this form of support. Nearly half of support based on A/An/R/I have some conditions attached. Payments based on input use are less often subject to input constraints (about 12%).

Figure 1.9. Share of support with mandatory or voluntary constraints, all countries, 2021-23



Note: A/An/R/I:Area planted/Animal numbers/Receipts/Income. Payments based on A/An/R/I includes 3 payments' categories: 1. Payments based on current A/An/R/I, production required, 2. Payments based on non-current A/An/R/I, production required and 3. Payments based on non-current A/An/R/I, production not required. The All countries total includes all OECD countries, non-OECD EU Member States, and the Emerging economies: Argentina, Brazil, China, India, Indonesia, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam.

Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Box 1.3. Examples of input constraints

Mandatory constraints give farmers extra incentives to be in compliance with applicable laws

In the **United States**, the **Livestock Forage Disaster Program (LFP)** provides compensation to eligible livestock producers who have suffered grazing losses on native or improved pastureland due to a qualifying drought. As part of the requirements for eligibility, participants must have been in compliance with the applicable provisions of federal regulations pertaining to highly erodible land conservation and wetland conservation. As these regulations are generally applicable to relevant producers, this programme is classified as having mandatory input constraints.

Voluntary environmental constraints encourage additional actions to benefit the environment

Eco-schemes are the big new building block of the **European Union** Common Agricultural Policy 2023-27 to encourage the adoption of specific farming practices with additional environmental benefits. Eco-schemes, as part of Pillar 1, are fully financed by the EU budget and the related payments are granted per hectare or per livestock unit in two forms: either as compensation for additional costs incurred or income foregone, similar to the agri-environmental support schemes of Pillar 2, or as fixed top-up payments in addition to decoupled direct payments. Each Member State sets up individual eco-schemes for their farmers based on the framework given in the EU Regulation 2021/2115. Farmers who opt-in to these schemes must follow the specified requirements, so these programmes are classified as having voluntary environmental constraints.

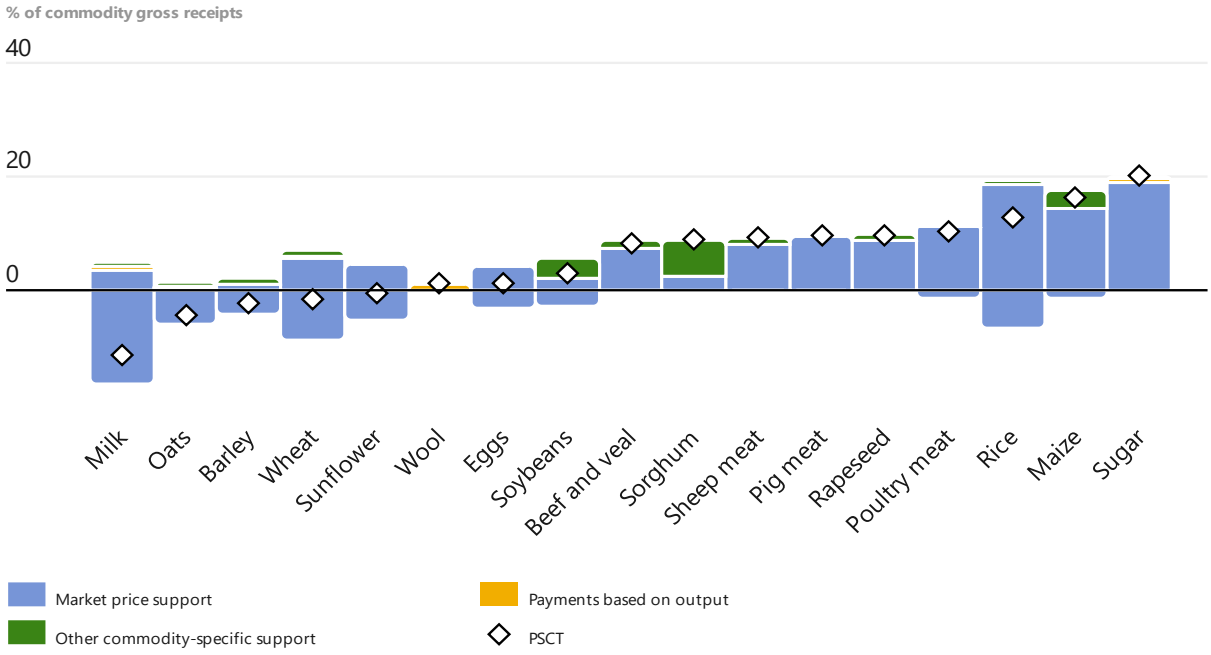
Certain commodities are singled out for support

Policies are often designed to affect specific commodities. For example, a tariff put on imports of wheat results in market price support which advantages domestic producers of wheat to the exclusion of producers of other commodities. By their construction, policies providing MPS and payments for outputs are commodity specific, while other budgetary payments may or may not be targeted to a specific commodity. For example, payments based on inputs or other production factors often stipulate terms that make them commodity specific such as when a fertiliser subsidy is granted only for production of maize, or a payment that is made per head of livestock. The total value of such payments taken together with MPS are reported for each commodity as single-commodity transfers (**SCT**).

SCTs are highest for sugar, maize and rice where they each represented over 15% of the gross receipts for the respective commodity in 2021-23 (Figure 1.10). However, there is significant variation in the level of commodity support among the covered countries. For sugar and maize, almost all SCT support is positive, indicating that most countries' objectives for these policies centre on the producers of these commodities. Rice is more mixed. While the preponderance of support benefits producers (positive SCT for rice is 18% of GFR), there is significant support for consumers also observed in the negative MPS, which is equal to about 6% of GFR.

For some commodities, there are clear difference in policy objectives in different countries. Net SCT for wheat, eggs, sunflower and soybeans are all near zero, but with substantial amounts of positive and negative MPS. In 2021-23, positive and negative MPS for wheat combined amounted to 15% of GFR. For sunflower it was 9%, eggs 8%, and soybeans 5%. Looked at in this way, the commodities that receive the most overall policy attention are (in order), rice, milk, sugar, maize, wheat and poultry. Some countries act to raise the prices of these commodities, others lower them.

Figure 1.10. Transfers to specific commodities (SCT), all countries, 2021-23



Note: Data refer to the All countries total, including all OECD countries, non-OECD EU Member States, and the 11 emerging economies. Commodities are ranked according to their net percentage Specific Commodity Transfers (PSCT).
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Commodity-specific support can influence production choices by changing the relative returns of commodities or groups of commodities. For example, a payment per bale of cotton produced can lead to more area being planted to cotton instead of other alternatives. In this way, support that is targeted to a few specific commodities can be more distorting of production than the same level of support that is distributed evenly across commodities or that is not commodity specific. To the extent the commodities targeted by SCTs are more intensive users of natural resources or generate higher pollution than those not benefitting from this support, commodity-specific support can also increase environmental pressures. Vice versa, support to specific products that have a lower impact on the environment may have a positive impact on sustainability. Pearl millet is an example of highly nutritious and climate-resilient crop whose support could help combine enhanced food security and reduced use of natural resources.

Towards sustainable productivity growth

Productivity growth has been a major driver behind the substantial increase in agricultural production in the past decades, contributing to feed the growing world population and to a reduction of GHG emissions intensity (Mrówczyńska-Kamińska et al., 2021[9]). However, productivity growth has slowed or stalled in many places. For many countries, accelerating the pace of innovation is seen as a potent tool to restart the engine of productivity growth.

However, productivity growth alone does not guarantee improvements in the environmental or social performance of the sector. The concept of "sustainable productivity growth" (SPG), increasingly at the forefront of global policy dialogues, takes this into account and reflects the objective to produce more with

less by using innovative technologies and practices that increase productivity while reducing demands on the environment.

Sustainable productivity growth will be key to overcome the triple challenge of providing adequate, affordable, safe and nutritious food for a growing global population; providing opportunities for livelihoods all along the food value chain; and doing so while increasing the environmental sustainability of the sector (OECD, 2022[10]). Governments have made substantial effort to develop supporting frameworks to direct research and development (R&D) towards SPG and deploy its results on farms. This includes using support provided to producers to encourage a more innovative perspective to the production and marketing of agricultural products, while avoiding support that may slow SPG. However, only 3% of support is allocated to innovation, as measured by the GSSE. There is substantial scope for action in this regard.

Investment in innovation alone may not be enough to find solutions that reconcile both productivity and environmental sustainability and other outcomes. Such investments may need to be accompanied by other policies driving farmers to meet environmental objectives. Part of the SPG challenge will be to clearly identify desired outcomes and develop the capacity to measure progress towards improved sustainability.

Defining and measuring sustainable agricultural productivity growth

Measuring productivity growth in agriculture is challenging. Total factor productivity (TFP) is the most comprehensive standard measure of agricultural productivity and aims to include most of the marketed output and inputs of the sector. However, TFP does not directly include relevant environmental and social outcomes. Thus, measuring SPG must go beyond productivity to incorporate important environmental and social impacts of agricultural production.

The OECD Productivity, Sustainability and Resilience Framework (OECD, 2020[11]) starts from the basis that sustainable agricultural productivity growth refers to productivity growth compatible with the preservation of natural capital in the short and long run. The Framework identifies innovation, structural change and natural resource use and climate change as the main drivers of productivity, sustainability and resilience in food and agriculture. Sustainable productivity growth is also understood more broadly as agricultural productivity growth that "advances social, environmental, and economic development objectives to meet the food and nutrition needs of current and future generations".[9] This concept of sustainable agricultural productivity has multiple dimensions with different sensitivities and different approaches to measure in different countries.

Encouraging SPG has been a priority for OECD countries for some time. In 2016, OECD Agricultural Ministers endorsed the Declaration on Better Policies to Achieve a Productive, Sustainable and Resilient Global Food System in which they agreed to "make innovation a priority in order to achieve sustainable productivity growth" (OECD, 2016[12]). In 2022, OECD Agriculture Ministers and high representatives of 42 OECD member countries and emerging economies as well as of the European Union adopted the Declaration on Transformative Solutions for Sustainable Agriculture and Food Systems in which they committed to "take action to achieve sustainable productivity growth consistent with SDG 2.4" (OECD, 2022[10]). With the OECD Network on Agricultural Total Factor Productivity and the Environment, the OECD has been working to compare approaches, methods and datasets to measure TFP over the past years, including ways forward to measure environmentally sustainable agricultural productivity (Box 1.4).

Box 1.4. The OECD Network on Total Factor Productivity and the Environment

The Network on Agricultural Total Factor Productivity and the Environment (TFPN) is an OECD expert group sharing experiences and best practices for cross-country agricultural total factor productivity comparisons and for the measurement of sustainable productivity growth in agriculture. The ambition of the network is to find ways to jointly measure environmental sustainability and agricultural productivity into developing appropriate and scientifically sound indexes that measure countries' agricultural sector performance. The TFPN organises annual meetings of experts to share knowledge on the topic since 2015 with participants that include researchers from the academy, and country experts and delegates.

As part of the TFPN activities, a relevant dedicated conference on "Sustainable Agricultural Productivity to Address Food Systems Challenges: Measurement, Data, Drivers and Policies" will take place on 28 October 2024, followed by the OECD Global Forum on Agriculture addressing the theme "Steering Policies towards Sustainable Agricultural Productivity" on 29 October 2024.

Source: https://www.oecd.org/en/networks/network-on-agricultural-total-factor-productivity-and-the-environment.html.

Measuring and tracking trends in agricultural productivity is a complex undertaking that covers many inputs and outputs in a production system that varies depending on weather conditions. However, substantial progress has been made and there are now several indicators and measures of agricultural productivity (Bureau and Antón, 2022[13]; OECD, 2022[14]; Fuglie, Morgan and Jelliffe, 2024[15]). Productivity is commonly defined as a ratio of a volume measure of output to a volume measure of input use. The United States Department of Agriculture (USDA) (2023[16]) regularly assembles comparable and consistent estimates of agricultural output and agricultural inputs for many countries and is a world reference on TFP databases. TFP growth measurement assesses improvements in the efficiency of resource use and captures the idea of "producing more with less" (OECD, 2022[14]).

Measuring environmentally sustainable productivity growth adds an additional layer of complexity (Bureau and Antón, 2022[13]; OECD, 2022[14]). A complementary dataset on the environmental performance of agriculture is needed to combine with the TFP database. The OECD's Agri-Environmental indicators database, being a world reference in this domain, could be used for this purpose (Box 1.5) (OECD, 2024[17]).

Box 1.5. Measuring the environmental performance of agriculture across OECD countries: The agri-environmental indicators database

Agriculture is intimately connected with its environment. It can harm the environment when it pollutes or degrades soil, water, and air. It can also provide ecosystem services, such as attractive and diverse landscapes or mitigating flood risks through the adoption of certain farming practices.

OECD countries use agri-environmental indicators to monitor environmental impacts and provide evidence of the state and trends in the environmental performance of agriculture (OECD, 2024[17]). Agri-environmental indicators support analysis to explain the effects of different policies on the environment and to assess whether budgets for policies are used effectively in terms of environmental outcomes and economic efficiency. The OECD agri-environmental indicators provide a reliable and robust source of data that can be used to benchmark environmental performance and inform policy action.

Covering the OECD as a whole and all individual OECD countries over the period 1990-18, the data show that, while most OECD countries increased their agricultural production in the last decade, the

environmental performance of agriculture was mixed (OECD, 2023[18]). Progress was achieved reducing ammonia emissions phosphorus and nitrogen surpluses. Less progress was observed in reducing GHG emissions and in improving biodiversity as measured by the presence of farmland birds. While there is compelling evidence that TFP growth has helped countries to expand agricultural output and reduce GHG emissions per unit of output, there is room to steer innovation in the sector in a more environmentally sustainable direction in many OECD countries (Lankoski and Thiem, 2020[19]; Henderson and Lankoski, 2023[20]).

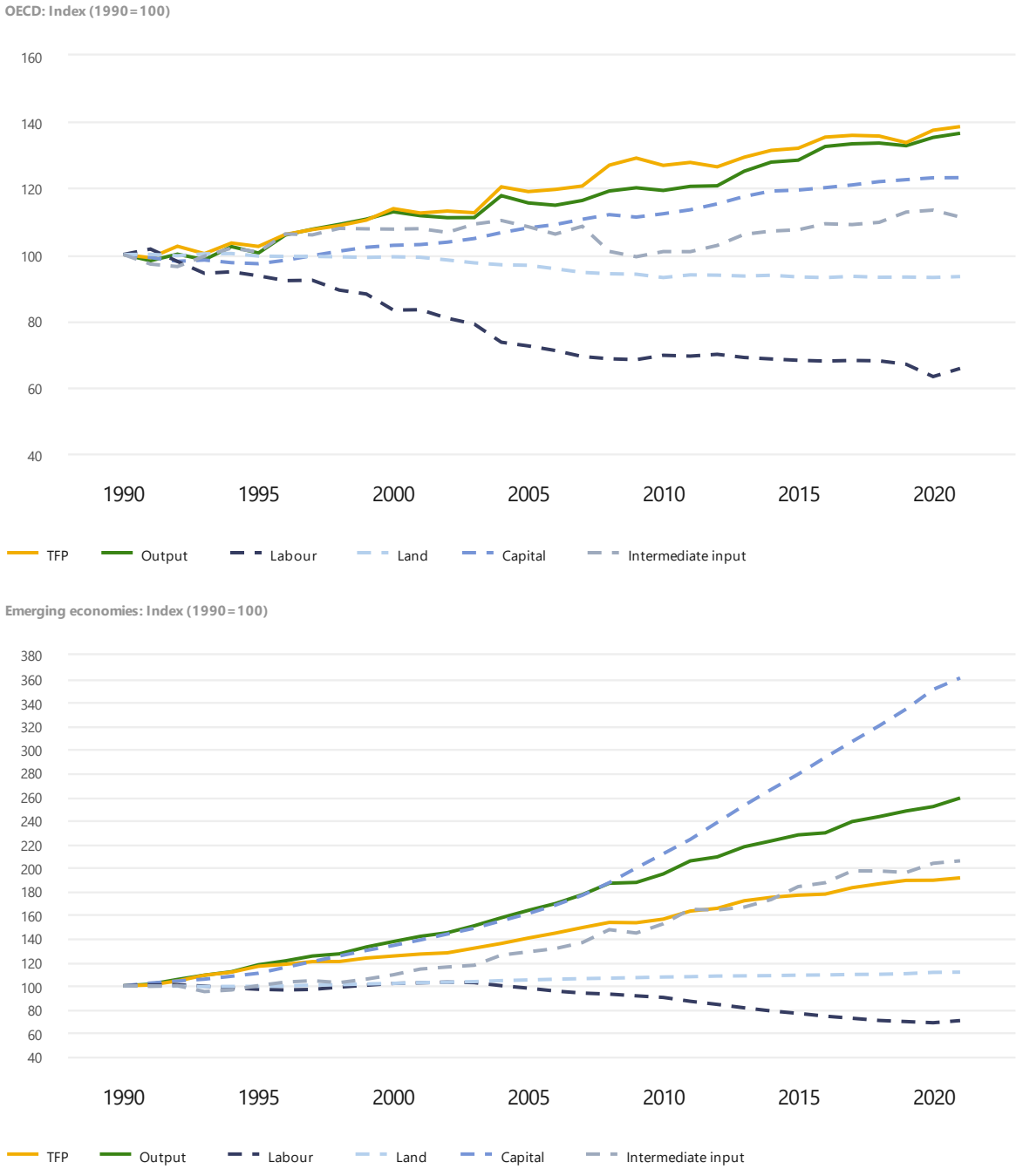
The productivity and environmental sustainability performance of agriculture

Between 1961 and 2021, agricultural output increased nearly fourfold, while the global population grew by 2.6 times, a 53% increase in agricultural output per capita. Most of the growth in agricultural production was achieved by raising productivity rather than expanding resource use. Capital and intermediate inputs (such as feed and fertilisers) increased more slowly than output, while labour and land significantly decreased. The main driver of productivity growth was efficiency gains and technological change, linked to progress in improved management practices, crop genetic improvements, including the development of genetically modified crops with pest and disease resistance, and digital technologies (Fuglie, Morgan and Jelliffe, 2024[15]). Since the 1990s, the pace of output and productivity growth in world agriculture has slowed and some places have relied on a more intensive use of inputs to maintain growth in agriculture production (Fuglie, Jelliffe and Morgan, 2021[21]).

Agricultural output has increased by more than 37% in OECD countries since 1990, but agricultural land area and labour have declined by about 7% and 34%, respectively. The use of other inputs has increased by 23% in the case of capital and 11% in the case of intermediate inputs over that same period (Figure 1.11, panel A). This translates to TFP growth that averaged 1.4% per year between 1991 and 2000, 1.6% in 2001-10, but only 0.8% per year between 2011 and 2021.

In emerging economies agricultural TFP and output has grown more rapidly, increasing by 2.4% per year between 1991 and 2000, 2.6% over 2001-10 and 1.6% per year between 2011 and 2021, which implies an increase of 91% in the period 1991-21 The use of capital increased at an annual growth rate of 1% between 2011 and 2021. Intermediate inputs also increased by 0.3% per year, land modestly grew by less than 0.1% per year, while labour decreased by 0.9% per year over the same period (Figure 1.11, panel B).

Figure 1.11. Evolution of agricultural output, input use and total factor productivity (TFP), 1990 to 2021



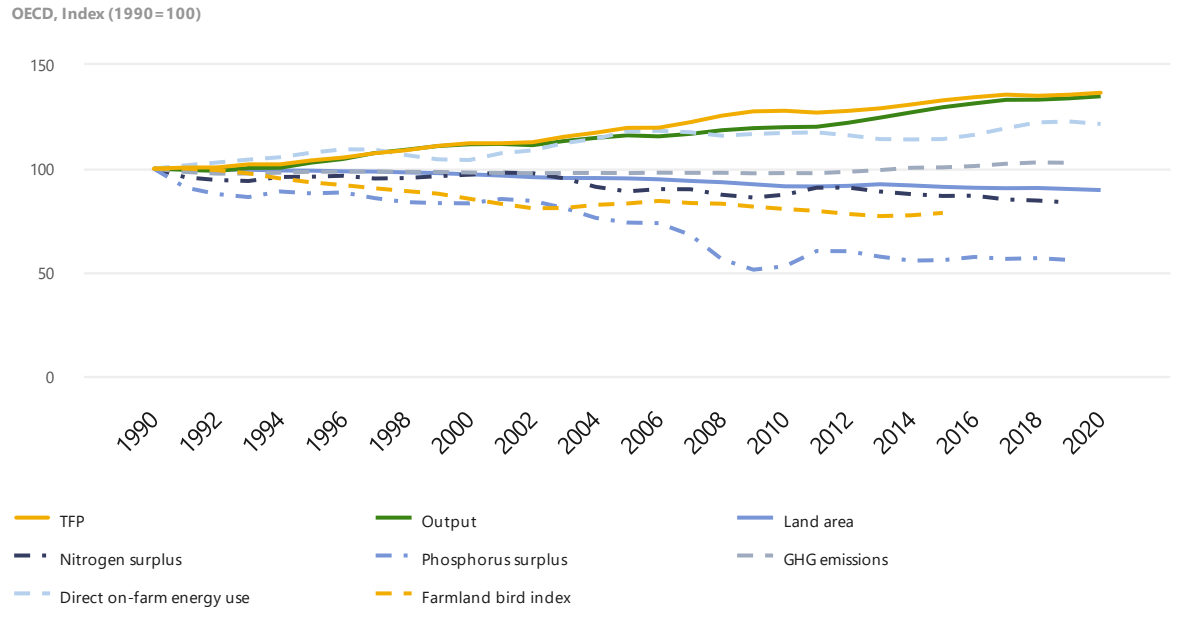
Note: Capital comprises livestock and investments in capital goods, including machinery, breeding stock, tree stock, and structures, while intermediate input includes feed and fertiliser. The 11 emerging economies include Argentina, Brazil, China, India, Indonesia, Kazakhstan, Philippines, Russia, South Africa, Ukraine and Viet Nam.
Source: Based on USDA (2023[16]).

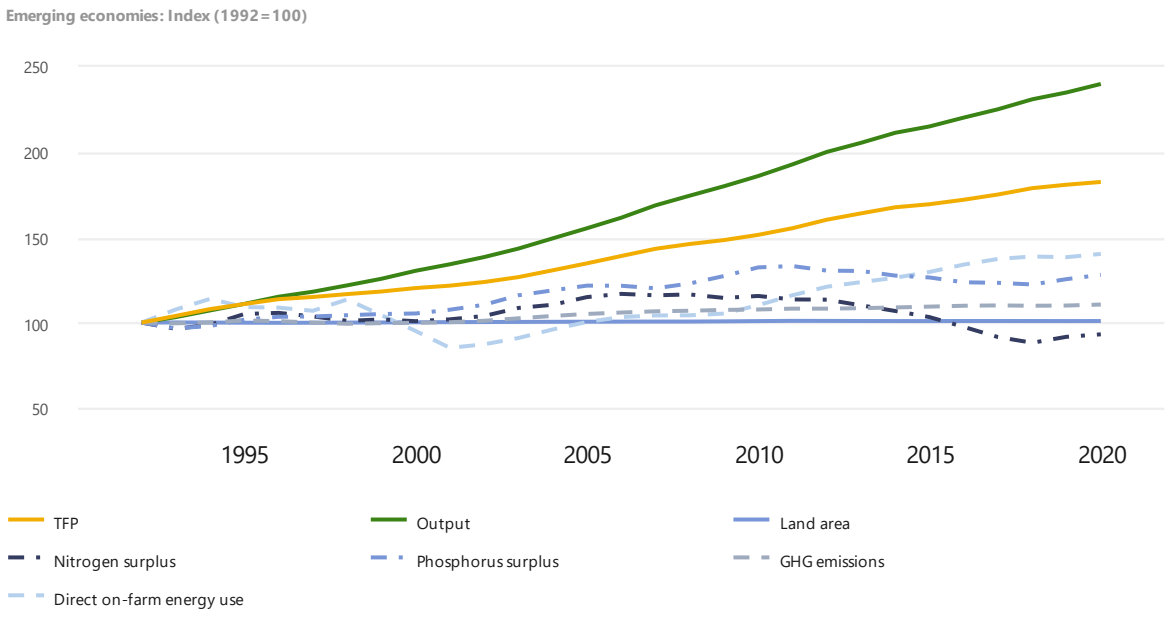
Agri-environmental indicators in OECD countries show only modest improvements and, in some cases, have gone backwards since 1990. Biodiversity, as measured by the farmland birds index,[10] has declined

by about 20% and direct farm energy use has increased. GHG emissions are up slightly, but nitrogen and phosphorus balances have improved (although are not at sustainable levels in many places) (Figure 1.12, panel A). Agricultural production in the OECD region shows modest output growth, slowing productivity gains and mixed progress on the environment. Growing output combined with decreased environmental impact is a sign of improved productivity with respect to environmental inputs.

In the emerging economies more agri-environmental indicators show declines over time (Figure 1.12, panel B). Direct farm energy use has increased by 40%, GHG emissions increased by 11% between 1990 and 2020, and nitrogen and phosphorus surpluses increased during most of the period, with a modest decrease in the 2010s until a new upward trend apparently starts in 2018. The general story in the emerging economies is one of relatively rapid growth driven in part by more intensive production and resulting deterioration in environmental performance.

Figure 1.12. Relative change in agricultural production, total factor productivity (TFP) and main agri-environmental indicators, 1990 to 2020





Note: Farmland bird index is shown until 2015, and nitrogen and phosphorus surpluses until 2019, due to missing data for some countries after that date. For GHG emissions, data for Colombia and Costa Rica are missing in 2019 and extrapolations are used for these countries to derive the OECD trend. All indicators are averaged over three years to smooth changes.
The 11 emerging economies include: Argentina, Brazil, China, India, Indonesia, Kazakhstan, Philippines, Russia, South Africa, Ukraine and Viet Nam.
Source: OECD Agri-environmental indicators database and USDA (2023[16]).

Knowledge and innovation for sustainable productivity growth

Generating, exchanging, and diffusing knowledge is a process involving many interconnected activities and actors, including universities, farmers, research institutions, public sector organisations, and input suppliers. While the public sector historically had a prominent role in agricultural R&D the private sector has gained relevance in more recent decades (Fuglie and Toole, 2014[22]; Pardey et al., 2016[23]; Fuglie and Echeverria, 2024[24]). The rising importance of private R&D does not imply a diminished role of the public sector, as these may complement each other (Pray and Fuglie, 2015[25]). Public funding of agricultural R&D provides stable funds for knowledge institutions, can focus on research in the public interest that might be missed by private entities, and can foster public-private partnerships to increase the impact of research (OECD, 2019[26]).

Farmers have a key role in agricultural innovation (OECD, 2012[27]). Farmers' learning by doing and learning by using add practical experience that can lead to adaptations, refinements and novel uses for innovations (Stuiver, Leeuwis and Van der Ploeg, 2004[28]). Farmers can help identify subjects for R&D and participate in research projects. Extension services and education and training programmes in turn play a pivotal role in helping farmers adopt sustainable practices and innovations. Integrating local, indigenous and farmers' knowledge can enhance sustainability and resilience (Šūmane et al., 2018[29]; Mazzocchi, 2020[30]).

Bringing farmers, researchers, policy makers, and private sector actors together in R&D activities can be done through collaborative and participatory programmes to define priorities, or participatory research where farmers or consumers help to identify the relevant research needs. Strong networks and research co-operation can strengthen linkages within the agricultural innovation system and between it and other sectors (OECD, 2019[26]). To make the most effective use of resources for innovation, an interactive

approach may be needed in which feedback from users guides the development of new technologies and serves to align research with emerging needs (OECD/FAO, 2012[31]).

R&D and innovation are manifested in the many technologies, processes and practices on farm that lead to increased agricultural productivity (Box 1.6). Some parts of farming today would be familiar to a farmer from 100 years ago, and others would be wholly unrecognisable. Impressive progress has been made in improved genetic varieties that can maintain or improve crop yields under more extreme conditions (such as drought, extreme temperatures, saline soils, and flooding) or that resist specific pests or diseases (Wezel et al., 2013[32]). Precision agriculture is another technology that has come a long way by using data analysis and remote sensing to optimise resource allocation, including water, fertilisers and agrochemicals (Campi et al., 2024[33]).

Box 1.6. Examples of practices, processes and technologies for sustainable productivity growth in agriculture

There are many innovative tools that, used in different circumstances, can potentially contribute to sustainable productivity growth. Some of these are relatively new, like robotics and artificial intelligence, while others like conservation tillage have long been used. All of them have seen continued improvement that expand the bounds of what is possible to achieve on a plot of land.

- **Conservation practices** such as minimal soil disturbance (i.e. zero-till farming), crop rotation, and cover cropping, aim to improve soil health, reduce erosion, and increase water retention.
- **Precision agriculture** refers to the use of digital technologies (i.e. GPS, drones, and sensors) to monitor field conditions and apply inputs (water, fertilisers, pesticides) more precisely to increase efficiency, thus, reducing input waste and environmental impacts.
- **Organic fertilisation, split fertilisation and bio-fertilisers** aim to substitute or reduce inorganic fertiliser use, improve the efficiency of fertilisation and general soil fertility, reducing environmental pollution while improving nutrient availability.
- **Crop choice, crop spatial distribution and crop temporal succession** management is used to optimise positive interactions and synergies between crops.
- **Crop genetic improvement** to develop crop varieties with enhanced resistance to pests and diseases, better adaptability to climate stressors, improved nutritional content, and reduce need for agrochemicals.
- **Agroforestry** integrates trees and shrubs into agricultural landscapes, which can enhance biodiversity, improve soil health, and increase farm resilience to environmental stresses.
- **Integrated pest management** refers to strategies that use a combination of biological, physical, and chemical tools minimising economic, health, and environmental risks of pest management.
- **Carbon sequestration** is the process of capturing and storing atmospheric carbon dioxide (CO_2) in soils, plants, and other organic matter through agricultural practices, which can help mitigate climate change by reducing the amount of CO_2 in the atmosphere.
- **Biocontrol agents** use natural organisms such as insects, mites, or microorganisms to control agricultural pests and diseases, reducing reliance on chemical pesticides.
- **Water-saving irrigation technologies**, including drip irrigation and sprinkler systems, deliver water directly to the plant roots, reducing water loss and increasing water use efficiency.
- **Robotics and automation** can perform tasks like weeding, harvesting, and planting, monitoring crop health, increasing efficiency and reducing labour costs. Artificial intelligence is quickly expanding the capabilities of automated systems.

- **Farm management software** combines data from several sources (crop performance, soil, weather) to help farmers make better decisions about planting, managing and harvesting crops.

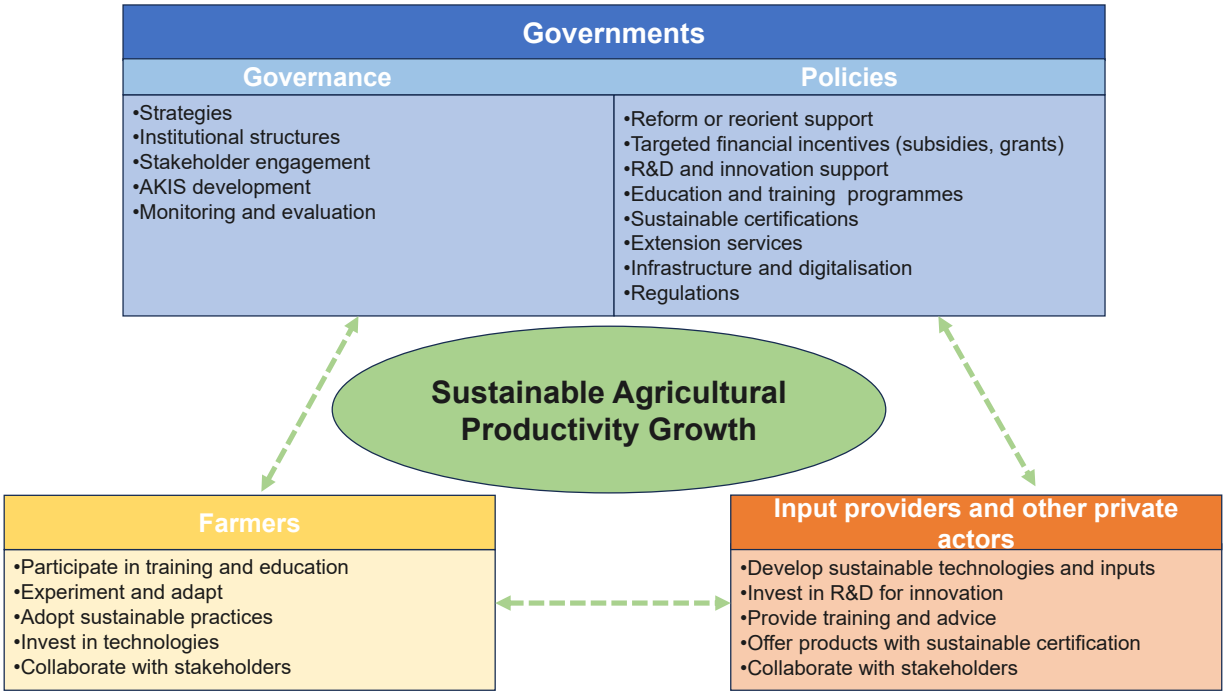
Source: Authors' own elaboration based on Pannell et al. (2006[34]); OECD (2012[31]); Wezel et al. (2013[32]); Steensland and Zeigler (2020[35]); and Campi et al. (2024[33]).

Sustainable agricultural productivity growth is not defined by any particular practice, process or technology. It is the outcome of actions that, when taken together, lead to improved outcomes over time. Finding the best combination of practices or technologies in each farm or location is a learning process that involves all actors in the agricultural knowledge and innovation system.

The role of different actors

Various actors have a role to play in fostering productivity and environmental sustainability (Figure 1.13). Private firms produce improved inputs, farmers adopt practices and invest in the latest technologies, and governments provide resources, institutions and incentives for all stakeholders.

Figure 1.13. What governments, farmers and others can do for sustainable productivity growth



Note: The figure is a simplification and provides a non-exhaustive overview of possible actions for agricultural sustainable productivity growth.
AKIS: agricultural knowledge and innovation system; R&D: research and development.
Source: Authors' own elaboration.

Farmers have an important role in agricultural innovation. SPG is ultimately manifested on the farm and must benefit farmers. Farmers contribute to SPG in many ways. They can:

- **Participate in training and education** to improve their knowledge and awareness about the environmental sustainability of their farms and the latest techniques and technologies for enhancing productivity while preserving natural resources.
- **Experiment, test and adapt** technologies and practices to their operations considering the specificity of their contexts.

- **Adopt sustainable practices** to improve soil health, reduce erosion, improve water retention and optimise the use of chemical inputs. This can enhance soil health and resource efficiency.
- **Invest in technologies** to enhance productivity while minimising negative environmental impacts. On-farm data on environmental performance, digital technologies and precision agriculture tools, such as GPS-guided machinery and drones, are particularly important.

Enhanced SPG also involves private actors higher up in the production chain. Input suppliers and other participants in the agricultural knowledge and innovation system can:

- **Develop sustainable technologies and inputs, investing in R&D**: Input producers can invest in R&D to create innovative products to support sustainable farming practices. For example, improved chemicals, precision farming systems, and new genetic varieties.
- **Provide education, training and advice**: Input providers can offer educational resources and training programmes to farmers on the proper use of their products in a sustainable manner. Private advisors or extension agents can provide knowledge of best practices and new technologies.
- **Offer products with sustainability certification**: Implementing sustainability certification programmes for inputs, companies can demonstrate their commitment and assure farmers and consumers that the inputs they use meet certain environmental and social standards.

Both farmers and input providers should collaborate with other stakeholders, including agricultural organisations, research institutions, and government agencies to develop and promote sustainable agriculture initiatives. By working together, farmers can put forward their experience and needs and input providers can leverage expertise and resources to address common challenges and advance sustainability goals. Governments facilitate and participate in these collaborations and have produced many strategies and approaches to help assess the extent to which they advance SPG and then leverage lessons learned to achieve SPG (Box 1.7). Many approaches can have similar aims and share common features. However, they can also differ in their scope, definitions, and extent to which they have been adopted by farmers and taken up in policy (OECD, 2023[36]). Ultimately, regardless of the nomenclature applied to any agricultural production approach, whether the approach advances environmentally sustainable productivity growth depends on its impacts on production efficiencies including as related to impacts on natural resources.

Box 1.7. Examples of some approaches promoted by governments to advance environmental objectives

Governments may choose to promote specific farming practices as part of their sustainability strategies. These can produce some environmental benefits but may also have other effects, including being less productive. The net benefits of these depend on the context in which they are implemented and the particular sustainability characteristics including as related to food security, food prices, farmer income, and particular environmental benefits and their distribution, sought by governments, producers and consumers. These practices include, for example:

Organic agriculture is a holistic production management system that promotes agro-ecosystem health, including biodiversity, biological cycles, and soil biological activity, using mainly agronomic, biological, and mechanical methods instead of synthetic materials. The main characteristics are the prohibition of most synthetic inputs and the use of mandatory crop rotations. Standards for organic production have been developed by several associations and governments, aiming to differentiate products and segment markets through food labels (Rousset et al., 2015[37]). Organic products command a price premium and market segmentation that reflects consumer's interest in health, safety, quality and environmental protection (Popa et al., 2019[38]; Eyinade, Mushunje and Yusuf, 2021[39]). It offers environmental benefits like lower pesticide residues, richer biodiversity, and greater drought

resilience, although its environmental, particularly climate, performance per unit of output is context-dependent (OECD, 2016[40]; Seufert and Ramankutty, 2017[41]; Gaudaré et al., 2023[42]).

Agroecology is "a holistic and integrated approach that simultaneously applies ecological and social concepts and principles to the design and management of sustainable agriculture and food systems, seeking to optimize the interactions between plants, animals, humans and the environment while also addressing the need for socially equitable food systems" (FAO, 2020[43]). It gained prominence in the 1990s in the United States and Latin America, it is seen as a science, a set of agricultural practices, and a social movement (Wezel et al., 2009[44]). There are no national or international standards, but the concept is increasingly incorporated in policy. A study of 15 cases in Europe found that agroecological farms tend to enhance biodiversity and water quality compared to non-agroecological farms, though no clear patterns were found regarding soil quality or economic performance (Landert et al., 2020[45]). The study also suggested that while some agroecological practices lead to reduced greenhouse gas emissions, in certain contexts, some practices can increase the energy use of the farms.

Regenerative agriculture involves various practices and ideas. It can be defined by processes (e.g. using cover crops, integrating livestock, reduced or no tillage), outcomes (e.g. improving soil health, carbon sequestration, increased biodiversity), or both (Newton et al., 2020[46]). According to the European Academies' Science Advisory Council, regenerative agriculture emphasises soil restoration and the interplay of crops and farm animals and is broader and less prescriptive than agroecology and organic agriculture, allowing targeted use of modern technology, tilling, and inorganic inputs (EASAC, 2022[47]). The United Nations Intergovernmental Panel on Climate Change's Special Report on Climate Change and Land lists regenerative agriculture as one of the sustainable land management practices effective in building agro-ecosystem resilience. In the United States, some municipal governments have incorporated it into their climate action plans (The Climate Reality Project, 2019[48]). While no national or international standards exist, private standards are emerging.

Circular agriculture focuses on using minimal external inputs, closing nutrient loops, regenerating soils, and minimising environmental impact. It is based on the circular economy concept, where re-using and recycling are integral to production and use choices (Philp and Winickoff, 2018[49]). This includes using manure as organic fertiliser and wastewater in irrigation. Circular agriculture is not defined by specific farm practices or standards but is often associated with mixed crop-livestock production, organic production, and agroforestry. Since 2018, the Dutch Government has promoted a transition towards circular agriculture, emphasising ecological principles combined with modern technology, new partnerships, economic models, and social services (OECD, 2023[50]). This approach aims for good yields, resource and energy efficiency, and minimal environmental, nature, and climate impact (WUR, 2018[51]).

Bioeconomy refers to the sustainable production and use of biological resources (instead of fossil resources), processes, and principles (notably, biogenic instead of fossil resources) to provide goods and services across all economic sectors. **Biotechnology** and the life sciences contribute centrally to primary production (and industry) through the conversion of biomass into food, materials, chemicals, and fuels. In the last decade, the bioeconomy has outgrown just biotechnology, and it is embedded in the far-reaching transitions that are taking place in energy, transport and industrial production (Philp and Winickoff, 2019[52]). In agriculture and food systems, the bioeconomy focuses on integrating biological innovations and biotechnologies to enhance productivity, environmental sustainability, and economic resilience (Diakosavvas and Frezal, 2019[53]). This includes the use of bio-based fertilisers, advanced plant breeding techniques, and bioprocesses to convert agricultural residues into valuable products such as bioenergy, bioplastics, and bio-based chemicals. The bioeconomy approach aims to reduce dependence on fossil resources, minimise GHG emissions, and promote circularity within agricultural systems. As a holistic concept, the bioeconomy in agriculture not only enhances resource

efficiency and reduces environmental impact but also fosters rural development and economic opportunities.

Source: Based on OECD (2023[36]).

The main policy challenge for governments is to create the enabling environment and the right incentives to optimise resource use from an economic, environmental and social perspective (Steensland and Zeigler, 2020[35]). In doing so, governments should consider potential spillover effects, including transboundary spillovers, and trade-offs. The governance framework, regulations and the set of policies can define the right incentives to direct innovation for SPG. In this context, governments could focus on the following actions:

- **Governance** can create an enabling environment that supports SPG. It involves the formulation and implementation of **comprehensive strategies** that prioritise innovation and provide incentives for all stakeholders. It also includes **institutional structures** (agencies, co-ordinating groups, independent assessment bodies, as well as horizontal and vertical co-ordination in governments) that ensure that strategies are effectively translated into actions and provide stability and continuity in the efforts to enhance SPG. Governance should **facilitate stakeholder's engagement** and **strengthen the AKIS system** to integrate research, education, and extension services (OECD, 2013[54]).
- **Policies**: governments can implement policies to incentivise sustainable agriculture practices and accelerate the transformation of agriculture towards a more productive and environmentally sustainable sector in many ways:
  - **Reform or reorient support:** some forms of support have the potential to distort production and trade or can worsen environmental outcomes, although the effects on the environment are not as clear cut as for production and trade. Reforming or reorienting agricultural policy to address those support measures that are harmful to the environment will help move towards more sustainable and productive agriculture and food systems.
  - **Targeted subsidies and tax incentives**: if well-designed and implemented, such policies can encourage farmers to adopt practices that promote soil health, biodiversity conservation, and resource efficiency. Governments may also use taxes to discourage unsustainable practices by applying the polluter pays principle.
  - **Investment in R&D**: funding research initiatives focused on sustainable agriculture can lead to the development of innovative technologies and practices although the impact of R&D can take up to 20 years (OECD, 2011[55]). Governments can support research institutions and collaborate with the private sector to drive progress in sustainable farming methods.
  - **Promotion of sustainable certification programmes**: governments can develop or support sustainable certification programmes rewarding farmers for implementing environmentally and socially responsible practices. These programmes can help differentiate sustainable products in the marketplace and promote consumer awareness.
  - **Extension services**: a traditional source of technical assistance to farmers, extension services help disseminate knowledge and awareness about environmental sustainability. Extension agents can offer guidance on soil management, water conservation, pest control, and other aspects of sustainable agriculture.
  - **Public investments**: building rural infrastructure, such as irrigation systems, roads, and market facilities, as well as digital infrastructure and services, can improve access to inputs, markets, and agricultural services while reducing food loss and waste.
  - **Regulations:** can encourage the adoption of sustainable practices and technologies to achieve specific environmental goals (Martini, 2023[56]). They include environmental regulations, land

use regulation, water resource management, and food safety standards. Regulations are part of an overall policy package to guide the innovation into the direction of both environmental sustainability and productivity growth.

Policy coherence and alignment across different levels of government (local, national, and international) helps promote sustainable productivity growth. By fostering collaboration and co-ordination among stakeholders, integrated policy approaches can address the interconnected challenges of sustainable productivity growth. This alignment also helps to harmonise regulatory frameworks, reduce inefficiencies, and create an enabling environment for innovation and investment.

Government actions to support innovation for sustainable productivity growth

The countries covered in this report are taking action to promote innovation for SPG. These actions take many different forms and methods. Each country has their own circumstances, and issues that are pressing in one country may be low priorities elsewhere. Despite this, there are some common threads. Investments in new crop varieties and genetics are used in many countries to promote climate change adaptation. Another common thread observed is investments in public infrastructure, particularly for irrigation. The examples of what countries identified as important efforts to promote SPG presented below are taken from their submissions for this OECD report and organised according to the government actions identified in Figure 1.13. The individual country chapters provide more in-depth coverage of the many government actions being taken.

Governance

Governance is the combination of institutions, strategies and frameworks that guide policy-making and defines the relationship between government and citizens. Good governance promotes sustainable productivity growth by **facilitating stakeholder's engagement** and **strengthening the AKIS system** by integrating research, education, and extension services.

Strategies

Many governments have developed a strategy or framework to guide policy development related to innovation for SPG. These set out objectives and timelines and outline the needs and perspectives that will shape government policy. While some of these strategies are explicitly about innovation for SPG, others target specific challenges faced by the country that are strongly relevant for SPG. When a country does not have a formal strategy or framework, there is usually a set of underlying principles behind their approaches to innovation for SPG. Some examples of countries' strategies are described below.

The **Japanese** Strategy for Sustainable Food Systems (the MIDORI Strategy) presents the case of an **explicit SPG strategy**. It is connected to policy action via the Act to Promote Low Environmental Impact Business Activities for the Establishment of Environmentally Harmonized Food Systems (the MIDORI Act), which helps to implement the SPG strategy by supporting producers and business operators who work towards reducing their environmental burden.

Czechia adapted its existing system to frame policies that promote SPG and several related components act together. This includes the Czech Republic 2030 strategic framework, which incorporates the 17 UN sustainable development goals. The New Research, Development and Innovation (R&D&I) Concept of the Ministry of Agriculture for the years 2023-32 creates a basic framework for the direction of departmental research. The Earth II Programme 2024-32 is one of the main tools of this concept, with an emphasis on transfer and usability of the results in practice. These strategic elements are supported with implementation policies that include the Concept of the Advisory System for the years 2017–2025 and the Concept of Protection against the Consequences of Drought for the territory of the Czech Republic 2023-27.

SPG can also be part of a larger environmental and social strategy. The European Green Deal (EGD) aims to make Europe climate neutral, protect its diverse natural habitats, and transform the European economy. The associated Farm to Fork and Biodiversity Strategies define the prominent role of the CAP in the transition to more sustainable food systems. Notably, **European Union** Member States are encouraged to include in their CAP strategic plans non-binding national targets – referred to as "national values" – on outcomes that include the overall use and risk of chemical pesticides, expansion of organic farming, sales of antimicrobials, or combating deterioration of soil fertility. **Colombia's** Integral Rural Reform includes sustainable productivity as a key component. To enhance land productivity, the government provides the productive factors necessary for agricultural production, such as irrigation equipment, and extension services, but also for rural goods and services such as electricity, drinking water, housing, education, health, roads, and digital connectivity.

SPG strategies can focus on development of rural areas. The Strategy for Sustainable Development of Rural Areas, Agriculture and Fisheries 2030 outlines **Poland**'s ambitions to achieve multifunctional economic development in rural areas, ensure the country's food security, increase the value added of agriculture, and promote a sustained increase in the income of rural inhabitants. The Strategy also seeks to minimise economic, social and territorial disparities, and to improve environmental conditions. In **Mexico**, the Sectoral Programme for Agriculture and Rural Development 2019-2024 stipulates that sustainable productivity growth is mainly approached by improving agricultural productivity for food self-sufficiency and promoting the sustainable use of soil and water.

Strategies may explicitly focus on foresight. The Strategic Plan for Science reflects **Canada's** vision for the future of R&D to help the agro-food sector to adjust to the new reality and tackle new challenges. It holds that change begins with a paradigm shift toward sustainable agriculture, which takes into consideration the environmental, social, and economic context in which all their scientific activities are conducted.

SPG and climate change mitigation and adaptation are parallel and overlapping issues. The National Statement on Climate Change and Agriculture in **Australia** emphasises the importance of sustainably to increase agricultural productivity and profitability. This will be achieved by targeting investment in R&D, and by increasing training, education and capacity building to support uptake and adoption of innovations and technologies. **Australia** is also exploring pathways for emissions reduction in the sector through the development of an Agriculture and Land Sectoral Plan one of six decarbonisation plans being developed, to guide the country's transition to a net zero economy by 2050. **Belgium's** Wallonia 2030 Air, Climate and Energy Plan seeks to improve farms' energy efficiency, use and storage of manure, and the use of pesticides. Many R&D activities in **New Zealand** focus on reducing emissions while maintaining efficiency, improving productivity, and sequestering soil carbon. For example, SFF Futures, a public co-investment programme finances projects that deliver economic, environmental and social benefits. In **Türkiye,** the Strategic Plan of the Ministry of Agriculture and Forestry (2024-2028) includes targets and indicators for adaptation to climate change and reducing greenhouse gas emissions, increasing the capacity to combat drought, using renewable energy, and controlling the effects of floods within the scope of the aim of *Increasing the Capacity* and *Resilience to Adapt to Climate Change*.

SPG strategies can also encompass the broader food system. In **Belgium**, the Flemish Food Strategy aims to build a better food system in terms of health, environment and climate, economic and social resilience, and innovation. Under this strategy, structural funding is provided for research, innovation and investment that aim to develop a sustainable food system, e.g. through agro-ecological methods or precision farming. The **Swedish** national food strategy (*Livsmedelsstrategin*) aims to develop a competitive food supply chain that will increase overall food production while respecting national environmental objectives, that will generate growth and employment, and that will contribute to sustainable development throughout the country.

Institutional structures

Institutions include agencies, coordinating groups, independent assessment bodies, as well as horizontal and vertical co-ordination in governments that ensure that strategies are effectively translated into actions and provide stability and continuity in the efforts to enhance SPG. Some examples of relevant institutional structures are described below.

The Agricultural Knowledge and Innovation System (AKIS) is a key contributor to SPG in many countries. In the **European Union**, the AKIS encompasses a complex network of actors at regional, national, and European levels, and which includes farmers, research, education, advisory and extension services, the private sector, and others who generate, disseminate, and apply knowledge and innovation in agriculture and related fields. The new CAP 2023-27 does more to integrate agricultural advisory services with other AKIS actors, to improve knowledge flows within the system, particularly between researchers and farmers, and to promote interactive innovation and digitalisation in agriculture. National AKIS co-ordination bodies act as contact points for AKIS-related matters between Member States and the European Commission. These bodies oversee daily AKIS activities, support the implementation of AKIS strategies, monitor and evaluate them, and suggest modifications to the Strategic Plan when necessary.

While private sector innovation is increasingly important, there is a strong role for national research organisations. The National Agricultural Research Organisations (NARO) in **Japan** is the largest knowledge generator in the field of agricultural science in the country. NARO has more than 1 700 researchers among its 3 200 staff, 21 research centres and departments, including five regional agricultural research centres. The **French** National Research Institute for Agriculture, Food and Environment (INRAE) follows the roadmap 'INRAE 2030' that has identified five scientific priorities and three policy priorities to address the challenges related to agriculture, food and environment through science, innovation and expertise. The National Research Centre for Agricultural Technologies (Agritech) in **Italy** promotes technologies for a sustainable agriculture with a focus on resilience, low impact, circularity, support to disadvantaged areas, and traceability. The Crop Research Institute in **Czechia** develops cultivation technologies to support biodiversity, methods to protect plants from pests, and breeding new varieties to ensure high-quality and safe commodities and food.

Multinational institutions can boost research capacity. The European Research Area (ERA) is a unified market for research and innovation across the **European Union** that helps align national efforts and encourages joint programming towards more sustainable food systems. The Research and Innovation Framework Programme "Horizon Europe" (HE) supports research and innovation in areas such as sustainable land use and the development of a resilient and inclusive agricultural sector. It incorporates partnerships and networks to address societal challenges with initiatives such as the EU Mission "A Soil Deal for Europe", which seeks to restore soil health by 2030. **Mexico** is part of several international groups and forums, where technical discussions on strategies for the conservation of pastureland soils in the country are organised. Moreover, a regular forum between indigenous peoples of Mexico and First Nations of **Canada** allows to exchange experiences on the sustainable development, including agricultural activities, within their territories.

Facilitating stakeholder engagement

Several countries emphasise stakeholder involvement to facilitate SPG. For instance, in **Austria**, the VISION 28+, a stakeholder-driven strategy process, is developing a joint vision for Austria's agriculture and rural areas by providing strategic guidelines and proposing concrete measures to achieve specific targets. The National Rural Area Programme (NPLG) in the **Netherlands** uses a consensus model for transformative agriculture. It combines national measures with area-specific measures, including those that focus on knowledge and innovation. **Canada**'s Agricultural Climate Solutions Living Labs Program brings together scientists, farmers, industry and other stakeholders together in the research and co-development of practices and technologies designed to increase carbon and reduce emissions.

Strengthening the AKIS

Knowledge hubs bring together stakeholders and encourage co-operation. For example, national knowledge hubs for "animal production", "climate and environment", "business management and entrepreneurship" and "digitalisation" in **Sweden** facilitate collaboration between AKIS actors and allows for a better integration of advisors within AKIS. In the **United States**, ten regional Climate Hubs are led and hosted by the US Department of Agriculture (USDA), with contributions from many agencies. The Climate Hubs link USDA research and programme agencies in their regional delivery of timely and authoritative tools and information to agricultural producers and professionals. The USDA also hosts an **International Climate Hub** to share research, tools, collaborative efforts, and best practices on a global scale. In **Malta** AgriHub serves as a place where researchers, innovators, and farmers work together to develop innovative agricultural practices. The European Innovation Partnership for Agricultural Productivity and Sustainability (EIP-AGRI) in the **European Union** encourages groups to come together to solve common problems (Box 1.8).

Box 1.8. AKIS: The European Union's flagship policy tool to foster agricultural innovation

The European Union applies a unique approach to promote sustainable agricultural productivity by enhancing collaboration within the Agricultural Knowledge and Innovation System (AKIS) in Europe and bridging the gap between research and practical farming (EU SCAR, 2012[57]). The European Innovation Partnership for Agricultural Productivity and Sustainability (EIP-AGRI), established in 2012, is based on an interactive innovation model. EIP Operational Groups (OGs) were conceived to address practical problems and to explore new opportunities leading to innovative solutions. They bring together partners with diverse expertise – practical, scientific, technical, and organisational – and include farmers, researchers, advisors, businesses, and environmental groups to foster innovation in agriculture, forestry, and rural areas.

The Common Agricultural Policy (CAP) supports OG projects through national CAP Strategic Plans under the CAP 2023-27, and previously through Rural Development Programmes under the CAP 2014-22. Member States can support OG projects in two stages through their CAP Strategic Plans: the preparation phase (i.e. setting up the OG) and the implementation phase (which includes disseminating results through at least the EU CAP Network). The Managing Authority of each Member State launches funding calls with or without a thematic focus based on their national, regional, or thematic priorities. OGs are initiated by one of the project members. Under CAP 2023-27, an OG can also involve partners from different regions within the same country (cross-border) or from two or more EU Member States (transnational).

National implementation of EIP-AGRI varies significantly. After a slow start, the number of OG projects has been increasing. By May 2024, approximately 3 500 OGs were active or had completed their projects. Spain, Italy, the Netherlands, and Germany host the largest number of these groups, accounting for over half of all OGs. The most common thematic areas for OG projects are farming practices, agricultural production systems, plant production and horticulture, and the competitiveness and diversification of farming/forestry. Notably, about 60% of OGs were focussed on climate-environment themes before the European Green Deal was launched.

Awards were granted in May 2024 in recognition of OGs that had developed the most innovative practices, solutions, products, and processes. The winning projects include:

- "Colorado Beetle Catcher: Sustainable Machine Pest Control" (**Netherlands**), in the category "Sustainable Management of Natural Resources" for addressing the increasing occurrence of the Colorado potato beetle on Dutch farms due to hotter summers.

- "Parsutt – Parma Ham High Sustainability Standard" (**Italy**), in the category "Animal Welfare and Husbandry" for creating a sustainability protocol for heavy pig farming based on animal welfare and biosecurity.
- "SUBALMA – Improving the Productivity and Sustainability of Underground Drip Irrigation Systems Using Oil Mill Waste as Fertilizer Through the Use of Nanobubbles" (**Spain**), in the category "Climate Change Mitigation and Adaptation" for establishing circular economy strategies that reuse oil mill by-products as fertilisers through techniques ensuring maximum water-use efficiency.
- "Precision Farming in Brandenburg" (**Germany**), in the "Digitalisation" category for developing a fully digitised, site-specific soil acidity management process and decision support system for variable-rate liming.

Source: EC (2012[58]); EU CAP Network (2024[59]), (2024[60]), (2024[61]).

Better data can boost research efforts as the following examples show. The **Estonian** Agricultural Big Data project aims to link available datasets collected by the public and private sectors and to create digital decision-making tools which enable the agricultural producer to adopt climate and environmentally friendly technologies. **The United States'** International Agricultural Productivity data series provides globally comparable data that can be used to support policy decisions related to sustainable productivity growth (USDA, 2023[16]). It provides national and regional indices of total agricultural outputs, inputs, and total factor productivity (TFP). Promoting Application of Information Technology to Collection of Information about and Forecasting of State Agricultural Product Markets in **Viet Nam** provides timely information to support regulation and trade, and to enhance the competitiveness, value-added, and sustainable development of Vietnamese agricultural products.

Monitoring and evaluation

Monitoring and evaluation is central to achieving sustainable productivity growth in practice. Sustainability is not a particular practice, but an outcome that must be achieved. That requires measurement to assure that policies effectively achieve sustainability objectives, and that progress is happening at the desired pace. Monitoring and evaluation provide important feedback to farmers and policymakers, helping them to take advantage of information to adapt and adjust where needed. Some examples of relevant systems are described below.

Kazakhstan's Concept for the Development of Agriculture for 2021-2030 put in place an environmental monitoring system, particularly to **monitor GHG emissions** from livestock. Several **Estonian** agricultural enterprises are piloting a carbon footprint measuring tool. It will enable carbon footprint audits of agricultural enterprises, which in turn will guide improvements. It will also address the lack of measurable data on farm-level carbon emissions, which has been an impediment in carrying out meaningful improvements. In response to press surrounding high rates of contamination of vegetables by pathogens and pesticide residues, **Viet Nam** issued a decision to develop "safe, concentrated vegetable production areas." Within these zones, the government undertakes testing of soil and water quality, monitors pathogens and pesticide residues, and prohibits livestock farming to prevent contamination. The **United States** is investing in GHG Measurement, Monitoring, Reporting and Verification (MMRV) to establish a comprehensive strategy to improve data, models, and tools needed for quantifying the impact of conservation practices on GHG emissions and carbon sequestration.

Digital monitoring tools improve SPG performance. The SatGrass programme in **Austria** uses satellite and weather data to assess yield and forage quality of plant populations on grassland. To better monitor the use of fertilisers and pesticides, **Switzerland** launched the data platform digiFlux, on which all farmers will be required to report their chemical products use as from 2026. Switzerland also deployed a new public

platform to increase transparency on trends in agricultural and food market volumes and prices. Since 2023, **Spanish** authorities, in collaboration with public research institutions, are focusing on evaluating the most sustainable agricultural practices in terms of farm profitability, biodiversity and climate change mitigation.

Policies

Governments can implement policies to incentivise sustainable agriculture practices and accelerate the transformation of agriculture towards a more productive and environmentally sustainable sector in many ways. Supporting farmers' actions and investments is a main policy tool, but far from the only approach taken by governments. Public investments deliver needed services and infrastructure for farmers to improve their operations.

Targeted subsidies and tax incentives

In many countries tax incentives are used to encourage on-farm investments in innovation. Taxes can also be used to have the polluter pay so that production decisions consider the true cost of resources. However, taxing to constrain production intensity or the use of inputs to reduce the environmental impacts of agriculture in OECD countries is limited, whereas providing tax exemptions such as for fuel is more common (OECD, 2020[62]).

Policies can encourage farmers to adopt practices that promote soil health, biodiversity conservation, and resource efficiency. While innovation for SPG needs public research and extension to reach its full potential, ultimately SPG takes place on the farm through actions taken by farmers. Governments have many policies in place intended to encourage farmers to adopt innovations. This includes financing investments, sharing the costs of new practices, encouraging the setup of young farmers, and the use of regulatory incentives. As shown above, different forms of producer support are linked to either mandatory performance requirements or voluntary constraints encouraging action beyond statutory requirements. While mandatory requirements refer to applicable regulations, 5% of support to producers is made conditional on specific practices to improve the environmental performance of the farm. Some examples of subsidies and tax incentives are described below.

In addition to policies directly targeting SPG, major agricultural support policies can also be used to support SPG through mandatory constraints linked to performance requirements or voluntary constraints encouraging action beyond statutory requirements. About one quarter of support in the PSE is linked to either mandatory or voluntary environmental constraints (see Figure 1.9). However these constraints have often been unsuccessful in achieving their objectives (Deboe, 2020[63]).

Co-financing is a common tool to accelerate investments in new technologies. **Slovenia** helps with investments in low-emmission stables, low-emission manure storage capacities and the efficient use of nitrogen fertilisers. An investment programme in **Germany** supports agricultural farms that want to invest in modern technology in order to implement more climate, nature and environmental protection in the area of fertilisation and plant protection. The Basin-Based Support Model in **Türkiye** plans and supports the production of appropriate agricultural products based on basin characteristics and serves as the framework for several types of support payments and irrigation development. An essential part of government support in **Kazakhstan** is to encourage farmers to adopt modern water-saving technologies by conditioning support on the type of irrigation method adopted. In **Belgium,** the Flemish Agricultural Investment Fund support investments that promote increased productivity and innovation, sustainable processing and marketing of agricultural products, and in farms that have a sustainable business strategy. **Portugal** has implemented measures to increase water efficiency at the farm level via both investment and farming practices and supports farm-level investments in machinery. **Romania** is equipping farms with machinery and equipment to reduce the use of pesticides and improve manure management and supports farm-level investment in technologies related to precision agriculture. Environmental measures in **Sweden** incentivise farmers to

adopt advanced technologies, including support for precision farming, to reduce emissions of carbon dioxide and other climate gases, and to produce biogas from manure. In **Brazil** precision farming technology is promoted through the National Policy for Incentives on Precision Agriculture and Livestock (Law No. 14 475). To support this approach, most rural credit lines finance precision farming equipment. The Targeted Agriculture Modernisation Schemes (TAMS 3) in **Ireland** provide grants to farmers to build or improve farm buildings and equipment. A recent report suggests that these investments have increased the use of low emissions slurry spreading techniques from 5% to 75% of dairy farms between 2018 and 2022.

Several governments provide incentives for farmers to act on SPG. The Stimulus Programme for Agriculture supporting climate change mitigation and adaptation in **Austria** is complemented by support for voluntary biodiversity reserves and area-specific conservation measures. **European Union** countries can provide incentives as part of the CAP or via state aid. In **India,** the National Mission for Sustainable Agriculture (NMSA) promotes environmentally-friendly practices and site-specific approaches via a gradual transition to green technology, energy efficient equipment, conservation of natural resources, and integrated agriculture. In **Chile**, the Sustainable Soil Management System (SIGESS) uses incentives and training to promote sustainable soil management practices by farmers and improve the chemical, physical and biological properties of soils. Subsidies for Soil Conservation and Sustainable Agriculture in **Israel** provides direct payments to farmers to convert from conventional tillage to soil conservation and sustainable agriculture practices that promote soil health, minimum soil disturbance, biological diversity, and improved microclimate. The ecological plan ***France*** *Nation Verte*, includes 25 actions to support the building of 50 000 km of **new hedgerows** by 2030. Programmes that are targeted and tailored to enviornmental challenges can accelerate progress, and spending in this area is growing in importance (Box 1.9).

Box 1.9. Countries are increasingly investing in programmes to foster sustainability

In the **European Union**, the new CAP offers farmers more opportunities to boost farm sustainable modernisation and productivity than ever before. Over time, CAP support has increasingly incorporated environmental and climate goals, with increasing mandatory and voluntary constraints tied to payments. CAP has also focused more on promoting sustainable practices, resource efficiency, biodiversity conservation, and climate actions, with a growing portion of payments linked to environmental requirements through the enhanced conditionality, agri-environmental measures and new eco-schemes. Fostering knowledge exchange and collaboration within the agricultural sector has gained importance under the CAP 2023-27. Non-agricultural instruments at the EU-level, such as the Recovery and Resilience Facility (with associated National Recovery and Resilience Plans), the Digital Europe Programme (DIGITAL), and the European Social Fund+ (ESF+), contribute to sustainable productivity growth in European agriculture (see chapter on the European Union for more information).

In the **United States**, the Inflation Reduction Act directed additional resources towards several USDA programmes that benefit environmental conservation. This allowed a substantial expansion in the Environmental Quality Incentives Program, Regional Conservation Partnership Program, Conservation Stewardship Program, Agricultural Conservation Easement Program, and the Conservation Technical Assistance Program. Many of these programmes were oversubscribed, with more farmers wanting to participate than prior funding would allow. This spending will be distributed over ten years and is designed to support adoption of specific practices with climate benefits. The conservation funding is in addition to otherwise available program funds, and participation is voluntary, incentive-based and targeted to support climate-smart mitigation activities and other conservation activities that facilitate them (see the US chapter for more information on these programmes).

Helping new farmers get established also supports innovation by bringing fresh ideas to the sector (Campi et al., 2024[33]). The Establishment of Young Farmers programme in **Lithuania** supports greater diversity of agriculture systems in addition to facilitating sustainable business development in rural areas. In **Latvia**, programmes targeting social sustainability include Young Farms and Business Development, which provides start-up support to young farmers. **France** launched a guidance pact for the generational renewal of agriculture, after one year of public consultation process with the farming community, education and research players, local representatives, associations and young people in agricultural education. It identifies around 20 measures to reconcile agriculture and society, foster the emergence of a new generation of farmers at the forefront of the food transition, redesign production systems at farm level as well as supply chains and local areas.

Partnerships for Climate-Smart Commodities provides grants in the **United States** to fund pilot projects that support marketing of climate-smart commodities. These projects pilot innovative and cost-effective methods for quantification, monitoring, reporting and verification of greenhouse gas benefits; and develop markets and promote the resulting climate-smart commodities. The Agriculture Innovation Fund in **Italy** aims to support the development of innovation projects in agriculture, fisheries and aquaculture sector by financing digital and precision technologies for water saving and to reduce the use of chemical products.

Several governments help the sector to align with environmental limits to encourage SPG. Luxembourg is working to decrease cattle herds in order to reduce greenhouse gas and ammonia emissions via the measures Aid to Reduce the Stocking of Cattle and Helping to Maintain a Herd and a Low Livestock Stock. **The Netherlands** has a similar programme called National Termination Scheme for Livestock Farming Locations (*Landelijke beëindigingsregeling veehouderijlocaties met piekbelasting*, Lbv-plus). Flanders (**Belgium**) provides payments to pig farmers to reduce or entirely close their operations.

Governments can also provide incentives in other parts of food chains. In **Canada,** the AgriScience programme supports activities related to pre-commercialisation and pre-adoption of innovation. Funding covers areas such as health claims and human clinical trials, variety development, pest and disease surveillance, and indigenous knowledge. The AgriInnovate programme supports the phases of technology demonstration, technology commercialisation and technology adoption, providing financial aid to businesses on an interest-free repayable basis. Key areas include advanced manufacturing, automation, robotics, and digitisation. As part of a larger policy to fight food waste, **France** provides a fiscal incentive by offering a 60% tax deduction on food donations. **Spain** provides participative loans (*Agroinnpulso*) for agro-food SMEs to finance innovative technology-based projects. The Bionova tool in **Norway** helps to reduce emissions by supporting innovation and value creation within the bioeconomy related to agriculture, forestry and aquaculture. In the **United Kingdom**, the Farming Innovation Investor Partnership provides later-stage investment in agri-tech businesses that are developing and implementing new technologies. The scheme combines grant funding with equity funding from private investors for businesses that have the potential to grow and generate revenue through farm-focused innovations which work towards resolving the challenges of productivity, sustainability, and net-zero emissions.

Better integrating farmers in the food chain supports SPG by encouraging value creation. Primary producers in **Portugal** are helped to integrate the agro-food chain through quality schemes, adding value to agricultural products, promoting local markets, by shortening supply chains, and through producer groups. Support at the farm-level is directed towards helping farmers participate in collective organisations. The Food Fund Act in **Iceland** supports development and innovation in producing food and food products from side products in agriculture and fisheries. The fund emphasises innovative and sustainable projects for food production. Agri-Business Corridors in **the Philippines** are designed to attract more investment in agriculture and to introduce innovative technologies to farmers. Several innovation pilot sites were created in different regions, including the rehabilitation of post-harvest facilities (such as ice plant or cold storage facilities), the development of high-yielding seed laboratories, and the development of technology business incubation hubs.

Some countries provide low levels of support with the aim to avoid resource misallocation. For example, low support in **Australia, New Zealand** and elsewhere is intended in part to motivate innovation, resource efficiency, to facilitate competitiveness and to improve productivity and sustainability.

Investment in R&D

Funding research initiatives focused on sustainable agriculture can lead to the development of innovative technologies and practices. Governments can support research institutions and collaborate with the private sector to drive progress in sustainable farming methods. In many countries tax incentives are used to encourage investments into research and development (OECD, 2020[62]). Available data suggest that the share of public expenditures on knowledge generation within general services for the sector has increased over the past two decades. However, these expenditures have grown more slowly than the size of the sector. Some examples of policies supporting investment in R&D are described below.

Public R&D can tackle priority issues. Germany aims to reduce the use and risk of pesticides and to promote the development of environmentally friendly alternatives. It also focuses on research on sustainable agriculture and agroecology, i.e. adapting agriculture to natural and climatic conditions and cycles, and to regional and local needs. **New Zealand** places an increasing focus on technological solutions to increase productivity and reduce emissions. For example, NZ Sheep of the Future focusses on new farm system approaches for a range of sheep breeds, using genetics to help future-proof the industry, breeding sheep with optimum meat and wool production, as well as a greater tolerance for hot weather and with lower methane emissions. Public-sector research in **India** focuses on developing new crop varieties and management practices to improve yields and tackle pests and diseases under various agro-climatic conditions. The Agricultural Research Master Plan in **Türkiye** sets out priorities for planning of R&D to support sustainable productivity growth. Its project selection criteria to cope with climate change in the field of soil and water resources consider both climate adaptation-mitigation and agricultural drought mitigation strategies.

Many R&D programmes revolve around improved genetics. The **China** Climate-Smart Staple Crop Production project has been helping to select new crop varieties with high yields and enhanced climate stress resistance, to optimise cropping structures, and to improve agricultural infrastructure. R&D in **the Philippines** has developed rice varieties adapted to environmental stresses. In **Ireland**, public research has enabled selection of animals with low-methane traits, delivering up to 30% mitigation with no impact on production. The Greenbreed project has led to the publication of the world's first national genomic evaluations for methane emissions in Irish beef cattle. The Plant Breeding Programme 2020–2030 in **Estonia** helps to develop new varieties for food, feed and industrial purposes that have higher productivity, quality and resilience. In **Costa Rica**, the National Seed Policy for 2017-30 includes the development of seed varieties that are adapted to local conditions, and having higher yields and better quality, via modern plant breeding techniques. In **Poland**, research is aimed at preserving the genetic diversity of plants, including innovative studies in plant breeding. This research has led to the development of more productive crop varieties that are more resistant to biotic and abiotic stresses. The first national gene bank in **Malta** will serve as a national repository for plant genetic diversity, conserving the genetic diversity of local plant varieties and animal breeds, heirloom varieties, crop wild relatives, and other wild plants. In **Brazil**, a major focus of its Integrated Landscape Approach has been R&D in developing high-yielding crops and livestock. In **Japan**, an ongoing project is developing crop varieties that require less nitrogen input, following the recent success of Biological Nitrification Inhibition (BNI)-enabled wheat that can produce the same or higher yield with 30-50% less fertiliser.

R&D helps develop improved production systems. The National Program on Sustainable Agricultural Systems is the leading research programme covering SPG at the US Department of Agriculture's principal in-house research agency, the Agricultural Research Service. The goal of this programme is "diversified agricultural systems that sustain and improve productivity, profitability, ecosystem health, and human well-

being." The programme is built around three components: building agroecosystems for intensive, resilient production via the interaction of genetics with environment and management; increasing the efficiency of agroecosystems; and achieving agroecosystem potential. The National Growth Fund in **the Netherlands** funds *Regeneratieve Landbouw* (Re-Ge-NL), with a focus on the transition towards a regenerative agricultural system.

Promotion of sustainable certification programmes

Governments can develop or support sustainable certification programmes rewarding farmers for implementing environmentally and socially responsible practices. These programmes can help differentiate sustainable products in the marketplace and promote consumer awareness.

Many countries, especially in Europe, view organic farming as a driver of SPG. For example, the 2030 Organic Farming Strategy in **Germany** reflects the objective that by 2030 30% of agricultural land will be organically farmed. This aims to align agricultural diversity with the goals of environmental protection and resource conservation via the extension of organic farming so as to improve biodiversity, water conservation, soil fertility, resource efficiency, and more. A major strategic approach to SPG in **Croatia** is its focus on organic agriculture and related value chains, formalised in the country's National Action Plan for the Development of Organic Agriculture for the period 2023-2030. **New Zealand** enacted the Organic Products and Production Act to help develop new standards for organic products, and to set requirements for businesses in the organic sector from production through to sale.

Extension services

A traditional source of technical assistance to farmers, extension services help disseminate knowledge and awareness about environmental sustainability. Extension agents can offer guidance on soil management, water conservation, pest control, and other aspects of sustainable agriculture. Available data suggest that public expenditures for knowledge transfer represents just under 9% of the GSSE, a share that has remained largely unchanged from the early 2000s. However, relative to the sectors value of production, such investments have almost halved over the same period. Some examples of policies supporting related activities are described below.

Model farms are a popular tool to demonstrate new technologies for SPG. The 2035 Arable Farming Strategy in **Germany** funds model, demonstration, research and development projects supporting plant breeding, plant protection, biodiversity, climate adaptation, crop diversity, crop rotation, and nutrient management. The Smart Farm Expansion Plan in **Korea** is designed to strengthen the overall competitiveness of the smart farming industry by establishing basic infrastructure and creating innovative models. Policy targets include young farmers and upstream and downstream industries. Two hundred and twenty water-saving agricultural demonstration areas were established in dry farming areas in north and northwest **China** to demonstrate and promote technologies for water-resource efficiency. A network of pilot farms in **Luxembourg** demonstrates innovative techniques and decision support tools for pesticides and presents recommendations in a digital user interface. **Mexico** has an agricultural bioeconomy training programme for small-scale farmers with three objectives: waste and pollution reduction, circular use of products and materials, and regeneration and conservation of natural resources. This programme aims to offer consumers food products produced in an environmentally sustainable way, but also products that have social and economic benefits to poor farmers.

Agriculture education can start early. **Czechia** supports practical teaching at secondary and higher vocational schools of agricultural orientation to make agriculture more attractive to young students by implementing the Lifelong Learning Strategy and creating professional content of educational programs. AgriFutures, an **Australian** R&D corporation, is working with education providers and industry on a National Food and Fibre Education Strategy. This strategy is aimed at fostering an interest in food and fibre industries amongst school students from an early age.'

Public investments

Public investments such as for irrigation systems, roads, market facilities, and digital infrastructure and services can improve access to inputs, markets, and agricultural services while reducing food loss and waste. These investments can enable on-farm actions and investments that would not otherwise be possible. Available data suggest that public expenditures for agriculture-related infrastructure represents nearly half of the GSSE, a share that has increased slightly over the past two decades. Much of these are related to off-farm irrigation investments notably in a number of Asian countries. Some examples of relevant infrastructure investments are described below.

Many countries have taken advantage of the digital revolution in connectivity, data collection, sensing, and use of information and automation to improve productivity. The **France** 2030 Plan includes the agroecology and digital programme that prioritises research that will accelerate the agroecological transition with digital tools. This programme encompasses research on digital technology, the characterisation of genetic resources, the development of new digital and robotic equipment, and on connected infrastructure and decision support tools. The Act on Fostering and Supporting Smart Farming in **Korea** outlines the policy direction for infrastructure development, distribution, expansion, and support for smart agriculture. This Act provides a legal foundation to expand smart farms and will help to enhance the technical capabilities of farmers, industrial workers, and experts. It will also promote the introduction of new equipment and services in the agriculture sector. The Digital Public Agriculture Infrastructure, Digital Agriculture Mission and the electronic National Agricultural Market (e-NAM Scheme) in **India** aim to promote the diffusion and adoption of agri-tech solutions. It includes AI-based precision agriculture, IoT-based real-time data collection systems, and drone-based agriculture to improve yields and profitability.

Digital tools for farmers are used to foster SPG. An updated version of the National Color-Coded Agricultural Guide (NCCAG) Map, in **the Philippines** displays the suitability of crops (such as water availability and climate data) and identifies eight major hazards based on projected climate scenarios for 2050. In **Spain,** DigiMAPA helps the agro-food sector to connect with agrotech companies. This initiative and others like grants for smart agriculture investments and calls to encourage agri-food data spaces (both funded by recovery and resilience European funds) have been implemented to strengthen the AKIS in the country. A smartphone-operated paddy field water management system in **Japan** as well as agriculture management applications linked to location information will allow even unskilled farmers to digitise and automate work records. The Smart Farming Action Plan in **Austria** targets digital transformation related to infrastructure, training, and promotion of digital solutions. The AgNav digital platform in **Ireland** is a support tool which enables the estimation of farm-level emissions, enabling farmers and their advisors to create and model the environmental impact of a farm sustainability plan.

Regulations

Governments use regulations to require farmers to do more for environmental sustainability. For example, in the **European Union**, the Nitrates Directive sets out maximum amounts of organic fertilizer that may be applied per hectare (normally 170 kg/ha) to help prevent nutrient runoff. In the **United Kingdom**, the Control of Agricultural Pollution Regulations seeks to reduce the impact of pesticides, fertilisers, and manure on water quality, ecosystems, and soils. Regulations are typically in place to ensure, among other things, that pesticides are used responsibly (e.g. the Federal Insecticide, Fungicide, and Rodenticide Act in the **United States**), that soil additives are safe (e.g. Sewage Sludge Ordinance in **Austria**), that fertilisers are used correctly (**Danish** Act on Agriculture Use of Fertilizers and Plant Cover) and that manure is stored in a way that ensures proper use (such as the Ontario Nutrient Management Act in **Canada**).

Governments also can leverage support programmes to motivate improved compliance with regulations. Often called “cross-compliance regulations” these provisions require recipients of support to take or avoid certain actions as part of eligibility criteria. In the PSE, these are labelled as having input

constraints that are mandatory when the requirement is to comply with a law in effect and voluntary when eligibility requires actions beyond legal minimums. In the **United States**, eligibility of most main support programmes requires compliance with mandatory conservation provisions. The CAP in the **European Union** contains mandatory requirements as part of "enhanced conditionality" under the form of Statutory Management Requirements (SMR) – which are applicable to all farmers – and Good Agricultural and Environmental Condition (GAECs) standards, which apply to all farmers receiving CAP support.

This section provides examples of government actions that are designed to contribute to SPG. They demonstrate the complexity of the task facing countries, and some of their priorities and approaches. Many countries have reported different types of strategic frameworks to guide the direction of their agro-food sector towards SPG. The scope of these strategies and the balance between productivity and other goals, and what aspect of sustainability of most concern differs in many cases. Whether SPG objectives are being achieved is something that can be observed only in retrospect, which requires time and monitoring to determine.

Countries appear to agree on the importance of innovation for SPG. Examples show the strengthening of the AKIS and investments in education and extension services. Attention is also being paid to digitalisation and data, and enabling technologies that help to strike a balance between productivity and sustainability. However, innovation needs the right incentives to encourage SPG. This is why several examples support specific research areas that contribute to the environmental sustainability of agriculture, as well as government support for the adoption of sustainable technologies and practices by producers.

Regulations provide important incentives that if well-designed can steer the innovation process towards more sustainable outcomes. Only a few countries have reported regulations that seek to improve the environmental sustainability of agriculture. Low reporting of regulations for SPG doesn't mean that regulations are absent, but that they may be considered as less relevant.

All countries in this report have taken actions towards achieving SPG according to what it means to them. An overall assessment of the results of these efforts remains elusive. Every country would benefit from an agreed comparable measurement of performance in achieving SPG that would allow governments to monitor their progress, obtain evidence of the degree of success, and adjust policies accordingly. Being able to measure outcomes serves as a compass to ensure that countries are on the path to SPG. Moving towards a common view of SPG will help coordinate international efforts.

Summary and conclusions

Preliminary evidence suggests that the overall level of support in the countries included in this report has declined slightly between 2022 and 2023 but remains significantly above levels observed in the pre-pandemic era. Whether this higher level of support is a structural change that will persist or simply a response to the currently still unsettled nature of markets and trade remains to be seen. With the war in Ukraine continuing, evolving conflicts in the middle east affecting trade on the Suez Canal, drought affecting the Panama Canal, and the possibility of climate-change affecting weather trends and variability, it is safe to say that policy makers are currently acting in a world much different than even five years ago.

While levels of support relative to gross farm receipts have declined in most countries over the past two decades, the evidence suggests that the way support is being delivered to producers has not fundamentally changed in recent years. For example, the share of MPS and other most distorting forms of support in the overall positive producer support has been relatively stable, declining only 5 percentage points over the last 20 years to 65% in 2021-23. OECD work has shown that these measures can have the potential to harm the environment.

One important change is that the centre of gravity of agricultural support has moved from OECD countries towards the emerging economies, in particular China and India. The level of support in China began to

increase in the mid-2000s, as that country made increasing use of border measures to protect domestic production. India's overall PSE is negative, but the support package in that country contains elements of positive and negative support to producers that have a cumulative market impact that is likely greater than the aggregate PSE number suggests.

Governments have demonstrated their interest in agricultural policy reform, and accelerating the pace of reforms could bring benefits. For example, the OECD has estimated that reorienting budgetary support towards targeted investments in productivity and abatement technologies could reduce global agricultural greenhouse gas emissions (Valin, Henderson and Lankoski, 2023[4]). To this end, OECD members acknowledged the need to examine harmful and beneficial support measures and committed to "intensify efforts as appropriate to reform or reorient agricultural policy, and in particular to address those support measures that are harmful to the environment, to move towards more sustainable agriculture and food systems" in 2022 (OECD, 2022[10]).

At COP28 in 2023, 160 countries endorsed a Declaration which included a stated intention to "revisit or orient policies and public support related to agriculture and food systems to promote activities which increase incomes, reduce greenhouse gas emissions, and bolster resilience, productivity, livelihoods, nutrition, water efficiency and human, animal and ecosystem health while reducing food loss and waste, and ecosystem loss and degradation" (COP28, 2023[64]). Target 18 of the Kunming-Montreal Global Biodiversity Framework also commits to a reduction or reform of incentives that harm biodiversity and scaling up positive incentives for the conservation and sustainable use of biodiversity (CBD, 2022[65]).

Regardless of the challenges faced in recent years, farmers, ranchers and other agricultural producers have demonstrated impressive resilience. The value of production of agricultural commodities has been steadily trending upward as producers adopt innovations to increase production while also reducing their environmental impact. This fact alone accounts for the decline in the %PSE, the share of support as a share of gross farm receipts, which has halved from 18% in 2000-02 to 9% in 2021-23. As a consequence, the average farmer has become much less dependent on producer support. This statistic of course masks important variations across countries, and the following chapter will investigate individual country experiences in more detail.

Governments want sustainable productivity growth that contributes to environmental, social, and economic sustainability objectives to meet the food and nutrition needs of current and future generations. The evidence shows that governments are taking action by developing strategies and frameworks, investing in R&D institutions and the AKIS, and by providing incentives to producers to develop and adopt new methods. But more should be done to accelerate progress. Spending on the agricultural knowledge and information system (AKIS) is declining as a share of general services support in emerging economies. In all countries AKIS spending is a small portion of total support provided to the sector, USD 25 billion out of USD 842 billion in 2021-23. More broadly, general support to the sector, public investments that underpin its health and performance, made up only 16% of the TSE, a share that has been declining over time. At the same time, Total Factor Productivity, an important indicator of innovation performance, has slowed significantly in the last decade. In OECD countries, agricultural TFP grew by 1.4% annually between 1991-2000, 1.6% between 2001-10, and 0.85% in 2011-21.

Governments can also be more ambitious about using support to achieve environmental objectives. While 20% of support is subject to some kind of mandatory constraints much of this has to do with complying with existing regulations and only about 5% is designed to explicitly encourage voluntary environmental action. This share is low because most support still is in the form of MPS; if only payments based on A/An/R/I are considered, nearly half of support has some condition attached to it that encourages farmers to follow regulations, to take action to protect the environment, to improve the welfare of animals, or other public objective. Reorienting more support from those forms considered potentially most distorting to other forms would also increase the opportunity for governments to use support effectively to encourage sustainable productivity growth.

References

Ali, G. (ed.) (2021), "Greenhouse gas emissions intensity of food production systems and its determinants", *PLOS ONE*, Vol. 16/4, p. e0250995, https://doi.org/10.1371/journal.pone.0250995. [9]

Bayr, U. et al. (2023), "Guidelines for the development of an OECD farmland habitat biodiversity indicator", *OECD Food, Agriculture and Fisheries Papers*, No. 201, OECD Publishing, Paris, https://doi.org/10.1787/09d45d55-en. [66]

Bureau, J. and J. Antón (2022), "Agricultural Total Factor Productivity and the environment: A guide to emerging best practices in measurement", *OECD Food, Agriculture and Fisheries Papers*, No. 177, OECD Publishing, Paris, https://doi.org/10.1787/6fe2f9e0-en. [13]

Campi, M. et al. (2024), "The evolving profile of new entrants in agriculture and the role of digital technologies", *OECD Food, Agriculture and Fisheries Papers*, No. 209, OECD Publishing, Paris, https://doi.org/10.1787/d15ea067-en. [33]

CBD, C. (2022), *Kunming-Montreal Global Biodiversity Framework*, https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf. [65]

COP28 (2023), *COP28 UAE Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate*, https://www.cop28.com/en/cop28-uae-declaration-on-climate-and-health. [64]

DeBoe, G. (2020), "Impacts of agricultural policies on productivity and sustainability performance in agriculture: A literature review", *OECD Food, Agriculture and Fisheries Papers*, No. 141, OECD, Paris. [6]

Deboe, G. (2020), *Economic and environmental sustainability performance of environmental policies in agriculture*, OECD, Paris, https://doi.org/10.1787/3d459f91-en. [63]

Diakosavvas, D. and C. Frezal (2019), "Bio-economy and the sustainability of the agriculture and food system: Opportunities and policy challenges", *OECD Food, Agriculture and Fisheries Papers*, No. 136, OECD Publishing, Paris, https://doi.org/10.1787/d0ad045d-en. [53]

EASAC (2022), *Regenerative agriculture in Europe: A critical analysis of contributions to European Union Farm to Fork and Biodiversity Strategies*, https://www.interacademies.org/sites/default/files/2022-04/EASAC%20Report%20RegenerativeAgriculture_April_2022_WEB.pdf (accessed on May 2024). [47]

EC (2012), *Communication from the Commission to the European Parliament and the Council on the European Innovation Partnership 'Agricultural Productivity and Sustainability'*, https://ec.europa.eu/eip/agriculture/sites/default/files/communication_on_eip_-_en.pdf. [58]

EU CAP Network (2024), *EIP-AGRI Innovation Awards 2024 for Operational Groups*, https://eu-cap-network.ec.europa.eu/campaign/eip-agri-innovation-awards-2024_en (accessed on 31 May 2024). [61]

EU CAP Network (2024), *EIP-AGRI Project Database*, https://eu-cap-network.ec.europa.eu/projects/search_en (accessed on 28 May 2024). [59]

EU CAP Network (2024), *Operational Groups*, https://eu-cap-network.ec.europa.eu/operational-groups_en (accessed on 31 May 2024). [60]

EU SCAR (2012), *Agricultural knowledge and innovation systems in transition – a reflection paper*, Union European, https://scar-europe.org/images/AKIS/Documents/AKIS_reflection_paper.pdf. [57]

Eyinade, G., A. Mushunje and S. Yusuf (2021), "The willingness to consume organic food: A review", *Food and Agricultural Immunology*, Vol. 32/1, pp. 78-104, https://doi.org/10.1080/09540105.2021.1874885. [39]

FAO (2020), *Agroecology Knowledge Hub*, https://www.fao.org/agroecology/overview/en/. [43]

Fuglie, K. and R. Echeverria (2024), "The economic impact of CGIAR-related crop technologies on agricultural productivity in developing countries, 1961–2020", *World Development*, Vol. 176, p. 106523, https://doi.org/10.1016/j.worlddev.2023.106523. [24]

Fuglie, K., J. Jelliffe and S. Morgan (2021), *Slowing Productivity Reduces Growth in Global Agricultural Output*, Economic Research Service, USDA, https://www.ers.usda.gov/amber-waves/2021/december/slowing-productivity-reduces-growth-in-global-agricultural-output/. [21]

Fuglie, K., S. Morgan and J. Jelliffe (2024), *World Agricultural Production, Resource Use, and Productivity, 1961-2020*, USDA, Economic Research Service, https://www.ers.usda.gov/webdocs/publications/108650/eib-268.pdf?v=6316.9. [15]

Fuglie, K. and A. Toole (2014), "The Evolving Institutional Structure of Public and Private Agricultural Research", *American Journal of Agricultural Economics*, Vol. 96/3, pp. 862-883, https://doi.org/10.1093/ajae/aat107. [22]

Gaudaré, U. et al. (2023), "Soil organic carbon stocks potentially at risk of decline with organic farming expansion", *Nature Climate Change*, Vol. 13/7, pp. 719-725, https://doi.org/10.1038/s41558-023-01721-5. [42]

Henderson, B. and J. Lankoski (2023), "Integrated approaches for agricultural sustainability and productivity assessments", *OECD Food, Agriculture and Fisheries Papers*, No. 204, OECD Publishing, Paris, https://doi.org/10.1787/60cfa586-en. [20]

Henderson, B. and J. Lankoski (2019), "Evaluating the environmental impact of agricultural policies", *OECD Food, Agriculture and Fisheries Papers*, No. 130, OECD Publishing, Paris, https://doi.org/10.1787/add0f27c-en. [5]

Landert et al. (2020), "Assessing agro-ecological practices using a combination of three sustainability assessment tools", *Journal of Sustainable and Organic Agricultural Systems*, Vol. 70/2, pp. 129-144, https://doi.org/10.3220/LBF1612794225000. [45]

Lankoski, J. and A. Thiem (2020), "Linkages between agricultural policies, productivity and environmental sustainability", *Ecological Economics*, Vol. 178, p. 106809, https://doi.org/10.1016/j.ecolecon.2020.106809. [19]

Martini, R. (2023), "Towards a taxonomy of agri-environmental regulations: A literature review", *OECD Food, Agriculture and Fisheries Papers*, No. 194, OECD Publishing, Paris, https://doi.org/10.1787/1066cdef-en. [56]

Martini, R. (2011), "Long Term Trends in Agricultural Policy Impacts", *OECD Food, Agriculture and Fisheries Papers*, No. 45, OECD Publishing, Paris, https://doi.org/10.1787/5kgdp5zw179q-en. [3]

Mazzocchi, F. (2020), "A deeper meaning of sustainability: Insights from indigenous knowledge", *The Anthropocene Review*, Vol. 7/1, pp. 77-93, https://doi.org/10.1177/2053019619898888. [30]

Newton, P. et al. (2020), "What Is Regenerative Agriculture? A Review of Scholar and Practitioner Definitions Based on Processes and Outcomes", *Frontiers in Sustainable Food Systems*, Vol. 4, https://doi.org/10.3389/fsufs.2020.577723. [46]

OECD (2024), *Agri-environmental Indicators Database*, OECD, https://www.oecd.org/agriculture/topics/agriculture-and-the-environment. [17]

OECD (2024), *OECD Economic Outlook, Volume 2024 Issue 1*, OECD Publishing, Paris, https://doi.org/10.1787/69a0c310-en. [1]

OECD (2023), *Measuring the Environmental Performance of Agriculture Across OECD Countries*, OECD Publishing, Paris, https://doi.org/10.1787/4edcd747-en. [18]

OECD (2023), *Policies for the Future of Farming and Food in the European Union*, OECD Agriculture and Food Policy Reviews, OECD Publishing, Paris, https://doi.org/10.1787/32810cf6-en. [36]

OECD (2023), *Policies for the Future of Farming and Food in the Netherlands*, OECD Agriculture and Food Policy Reviews, OECD Publishing, Paris, https://doi.org/10.1787/bb16dea4-en. [50]

OECD (2022), *Declaration on Transformative Solutions for Sustainable Agriculture and Food Systems*, OECD/LEGAL/0483, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0483. [10]

OECD (2022), *Insights into the Measurement of Agricultural Total Factor Productivity and the Environment*, OECD, Paris, https://www.oecd.org/agriculture/topics/network-agricultural-productivity-and-environment/. [14]

OECD (2020), *Agricultural Policy Monitoring and Evaluation 2020*, OECD Publishing, Paris, https://doi.org/10.1787/928181a8-en. [8]

OECD (2020), *OECD Agro-Food Productivity-Sustainability-Resilience Policy Framework: Revised Framework*, https://one.oecd.org/document/TAD/CA/APM/WP(2019)25/FINAL/en/pdf. [11]

OECD (2020), *Taxation in Agriculture*, OECD Publishing, Paris, https://doi.org/10.1787/073bdf99-en. [62]

OECD (2019), *Innovation, Productivity and Sustainability in Food and Agriculture: Main Findings from Country Reviews and Policy Lessons*, OECD Food and Agricultural Reviews, OECD Publishing, Paris, https://doi.org/10.1787/c9c4ec1d-en. [26]

OECD (2016), *Declaration on Better Policies to Achieve a Productive, Sustainable and Resilient Global Food System*, OECD/LEGAL/0423, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0423#dates. [12]

OECD (2016), *OECD'S Producer Support Estimate and Related Indicators of Agricultural Support - Concepts, Calculations, Interpretation and Use (The PSE Manual)*, https://www.oecd.org/content/dam/oecd/en/topics/policy-issues/agricultural-policy-monitoring/producer-support-estimates-manual.pdf. [7]

OECD (2016), "What does organic farming mean for green growth?", in *Farm Management Practices to Foster Green Growth*, OECD Publishing, Paris, https://doi.org/10.1787/9789264238657-5-en. [40]

OECD (2013), *Agricultural Innovation Systems: A Framework for Analysing the Role of the Government*, OECD Publishing, Paris, https://doi.org/10.1787/9789264200593-en. [54]

OECD (2012), *Improving Agricultural Knowledge and Innovation Systems: OECD Conference Proceedings*, OECD Publishing, Paris, https://doi.org/10.1787/9789264167445-en. [27]

OECD (2011), *Fostering Productivity and Competitiveness in Agriculture*, OECD Publishing, Paris, https://doi.org/10.1787/9789264166820-en. [55]

OECD (2001), *Market Effects of Crop Support Measures*, OECD Publishing, Paris, https://doi.org/10.1787/9789264195011-en. [2]

OECD/FAO (2012), "Achieving Sustainable Agricultural Productivity Growth", in *OECD-FAO Agricultural Outlook 2012*, OECD Publishing, Paris, https://doi.org/10.1787/agr_outlook-2012-5-en. [31]

Pannell, D. et al. (2006), "Understanding and promoting adoption of conservation practices by rural landholders", *Australian Journal of Experimental Agriculture*, Vol. 46, pp. 1407-1424, https://doi.org/10.1071/EA05037. [34]

Pardey, P. et al. (2016), "Agricultural R&D is on the move", *Nature*, Vol. 537/7620, pp. 301-303, https://doi.org/10.1038/537301a. [23]

Philp, J. and D. Winickoff (2019), "Innovation ecosystems in the bioeconomy"*, OECD Science, Technology and Industry Policy Papers*, No. 76, OECD Publishing, Paris, https://doi.org/10.1787/e2e3d8a1-en. [52]

Philp, J. and D. Winickoff (2018), "Realising the circular bioeconomy"*, OECD Science, Technology and Industry Policy Papers*, No. 60, OECD Publishing, Paris, https://doi.org/10.1787/31bb2345-en. [49]

Popa, M. et al. (2019), "Organic foods contribution to nutritional quality and value", *Trends in Food Science & Technology*, Vol. 84, pp. 15-18, https://doi.org/10.1016/j.tifs.2018.01.003. [38]

Pray, C. and K. Fuglie (2015), "Agricultural Research by the Private Sector", *Annual Review of Resource Economics*, Vol. 7/1, pp. 399-424, https://doi.org/10.1146/annurev-resource-100814-125115. [25]

Rousset, S. et al. (2015), "Voluntary environmental and organic standards in agriculture: Policy implications"*, OECD Food, Agriculture and Fisheries Papers*, No. 86, OECD Publishing, Paris, https://doi.org/10.1787/5jrw8fg0rr8x-en. [37]

Seufert, V. and N. Ramankutty (2017), "Many shades of gray—The context-dependent performance of organic agriculture", *Science Advances*, Vol. 3/3, https://doi.org/10.1126/sciadv.1602638. [41]

Steensland, A. and M. Zeigler (2020), "Productivity in Agriculture for a Sustainable Future", in *The Innovation Revolution in Agriculture*, Springer International Publishing, Cham, https://doi.org/10.1007/978-3-030-50991-0_2. [35]

Stuiver, M., C. Leeuwis and J. Van der Ploeg (2004), "The power of experience: Farmers' knowledge and sustainable innovations in agriculture", *Seeds of transition: essays on novelty production, niches and regimes in agriculture*. [28]

Šūmane, S. et al. (2018), "Local and farmers' knowledge matters! How integrating informal and formal knowledge enhances sustainable and resilient agriculture", *Journal of Rural Studies*, Vol. 59, pp. 232-241, https://doi.org/10.1016/j.jrurstud.2017.01.020. [29]

The Climate Reality Project (2019), *Regenerative Agriculture and Municipal Climate Action Plans*, https://www.climaterealityproject.org/blog/regenerative-agriculture-and-municipal-climate-action-plans (accessed on May 2024). [48]

USDA (2023), *Productivity and Resource Use in Global Agriculture: An Update and Revision of the ERS International Agricultural TFP Data Product*, US Department of Agriculture, https://www.ers.usda.gov/data-products/international-agricultural-productivity/. [16]

Valin, H., B. Henderson and J. Lankoski (2023), "Reorienting budgetary support to agriculture for climate change mitigation: A modelling analysis", *OECD Food, Agriculture and Fisheries Papers*, No. 206, OECD Publishing, Paris, https://doi.org/10.1787/28248b95-en. [4]

Wezel, A. et al. (2009), "Agroecology as a science, a movement and a practice. A review", *Agronomy for Sustainable Development*, Vol. 29/4, pp. 503-515, https://doi.org/10.1051/agro/2009004. [44]

Wezel, A. et al. (2013), "Agroecological practices for sustainable agriculture. A review", *Agronomy for Sustainable Development*, Vol. 34/1, pp. 1-20, https://doi.org/10.1007/s13593-013-0180-7. [32]

WUR (2018), *Circular agriculture: a new perspective for Dutch agriculture*, https://www.wur.nl/en/show/circular-agriculture-a-new-perspective-for-dutch-agriculture-1.htm. [51]

Annex 1.A. Definition of OECD indicators of agricultural support

Nominal indicators used in this report

Producer Support Estimate (PSE): The annual monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm gate level, arising from policy measures that support agriculture, regardless of their nature, objectives or impacts on farm production or income. It includes market price support, budgetary payments and budget revenue foregone, i.e. gross transfers from consumers and taxpayers to agricultural producers arising from policy measures based on: current output, input use, area planted/animal numbers/receipts/incomes (current, non-current), and non-commodity criteria. PSE categories are defined in Box 1 A.1.

Market Price Support (MPS): The annual monetary value of gross transfers from consumers and taxpayers to agricultural producers arising from policy measures that create a gap between domestic market prices and border prices of a specific agricultural commodity, measured at the farm gate level. MPS is available by commodity, and sums of negative and positive components are reported separately where relevant along with the total MPS.

Producer Single Commodity Transfers (producer SCT): The annual monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm gate level, arising from policies linked to the production of a single commodity such that the producer must produce the designated commodity in order to receive the payment. This includes broader policies where transfers are specified on a per-commodity basis. Producer SCT is also available by commodity.

Group Commodity Transfers (GCT): The annual monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm gate level, arising from policies whose payments are made on the basis that one or more of a designated list of commodities is produced, i.e. a producer may produce from a set of allowable commodities and receive a transfer that does not vary with respect to this decision.

All Commodity Transfers (ACT): The annual monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm gate level, arising from policies that place no restrictions on the commodity produced but require the recipient to produce some commodity of their choice.

Other Transfers to Producers (OTP): The annual monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm gate level, arising from policies that do not require any commodity production at all.

Consumer Single Commodity Transfers (consumer SCT): The annual monetary value of gross transfers from (to) consumers of agricultural commodities, measured at the farm gate level, arising from policies linked to the production of a single commodity. Consumer SCT is also available by commodity.

Consumer Support Estimate (CSE): The annual monetary value of gross transfers from (to) consumers of agricultural commodities, measured at the farm gate level, arising from policy measures that support agriculture, regardless of their nature, objectives or impacts on consumption of farm products. If negative, the CSE measures the burden (implicit tax) on consumers through market price support (higher prices), that more than offsets consumer subsidies that lower prices to consumers.

General Services Support Estimate (GSSE): The annual monetary value of gross transfers arising from policy measures that create enabling conditions for the primary agricultural sector through development of private or public services, institutions and infrastructure, regardless of their objectives and impacts on farm production and income, or consumption of farm products. The GSSE includes policies where primary agriculture is the main beneficiary, but does not include any payments to individual producers. GSSE transfers do not directly alter producer receipts or costs or consumption expenditures. GSSE categories are defined below.

Total Support Estimate (TSE): The annual monetary value of all gross transfers from taxpayers and consumers arising from policy measures that support agriculture, net of the associated budgetary receipts, regardless of their objectives and impacts on farm production and income, or consumption of farm products.

Total Budgetary Support Estimate (TBSE): The annual monetary value of all gross budgetary transfers from taxpayers arising from policy measures that support agriculture, regardless of their objectives and impacts on farm production and income, or consumption of farm products.

Gross Farm Receipts (GFR): The annual monetary value of production, to which budgetary transfers to individual producers are added (i.e. VP + PSE – MPS).

Commodity Gross Receipts: The annual monetary value of production for an individual commodity, to which budgetary transfers to producers of that commodity are added (i.e. VP + producer SCT – MPS).

Ratio indicators and percentage indicators

Percentage PSE (%PSE): PSE transfers as a share of gross farm receipts (including support in the denominator).

Percentage SCT (%SCT): Single Commodity Transfers as a share of gross receipts for the specific commodity (including support in the denominator).

Share of SCT in total PSE (%): Share of Single Commodity Transfers in the total PSE. This indicator is also calculated by commodity.

Producer Nominal Protection Coefficient (producer NPC): The ratio between the average price received by producers (at farm gate), including payments per tonne of current output, and the border price (measured at farm gate). The Producer NPC is also available by commodity.

Producer Nominal Assistance Coefficient (producer NAC): The ratio between the value of gross farm receipts including support and gross farm receipts (at farm gate) valued at border prices (measured at farm gate).

Percentage CSE (%CSE): CSE transfers as a share of consumption expenditure on agricultural commodities (at farm gate prices), net of taxpayer transfers to consumers. The %CSE measures the implicit tax (or subsidy, if CSE is positive) placed on consumers by agricultural price policies.

Consumer Nominal Protection Coefficient (consumer NPC): The ratio between the average price paid by consumers (at farm gate) and the border price (measured at farm gate). The Consumer NPC is also available by commodity.

Consumer Nominal Assistance Coefficient (consumer NAC): The ratio between the value of consumption expenditure on agricultural commodities (at farm gate) and that valued at border prices.

Percentage TSE (%TSE): TSE transfers as a percentage of GDP.

Percentage TBSE (%TBSE): TBSE transfers as a percentage of GDP.

Percentage GSSE (%GSSE): Share of expenditures on general services in the Total Support Estimate (TSE).

Share of potentially most distorting transfers in aggregated gross producer transfers (%): represents the sum of positive MPS, the absolute value of negative MPS, payments based on output and payments based on unconstrained use of variable inputs, relative to the sum of positive MPS, the absolute value of negative MPS, and all budgetary payments to producers.

Annex Box 1.A.1. Definitions of categories in the PSE classification

Definitions of categories

Category A1, Market price support (MPS): Transfers from consumers and taxpayers to agricultural producers from policy measures that create a gap between domestic market prices and border prices of a specific agricultural commodity, measured at the farm gate level.

Category A2, Payments based on output: Transfers from taxpayers to agricultural producers from policy measures based on current output of a specific agricultural commodity.

Category B, Payments based on input use: Transfers from taxpayers to agricultural producers arising from policy measures based on on-farm use of inputs:

- ***Variable input use*** that reduces the on-farm cost of a specific variable input or a mix of variable inputs.
- ***Fixed capital formation*** that reduces the on-farm investment cost of farm buildings, equipment, plantations, irrigation, drainage, and soil improvements.
- ***On-farm services*** that reduce the cost of technical, accounting, commercial, sanitary and phytosanitary assistance and training provided to individual farmers.

Category C, Payments based on current A/An/R/I, production required: Transfers from taxpayers to agricultural producers arising from policy measures based on current area, animal numbers, revenue, or income, and requiring production.

Category D, Payments based on non-current A/An/R/I, production required: Transfers from taxpayers to agricultural producers arising from policy measures based on non-current (i.e. historical or fixed) area, animal numbers, revenue, or income, with current production of any commodity required.

Category E, Payments based on non-current A/An/R/I, production not required: Transfers from taxpayers to agricultural producers arising from policy measures based on non-current (i.e. historical or fixed) area, animal numbers, revenue, or income, with current production of any commodity not required but optional.

Category F, Payments based on non-commodity criteria: Transfers from taxpayers to agricultural producers arising from policy measures based on:

- ***Long-term resource retirement:*** Transfers for the long-term retirement of factors of production from commodity production. The payments in this subcategory are distinguished from those requiring short-term resource retirement, which are based on commodity production criteria.
- ***A specific non-commodity output:*** Transfers for the use of farm resources to produce specific non-commodity outputs of goods and services, which are not required by regulations.
- ***Other non-commodity criteria:*** Transfers provided equally to all farmers, such as a flat rate or lump sum payment.

Category G, Miscellaneous payments: Transfers from taxpayers to farmers for which there is a lack of information to allocate them among the appropriate categories.

Note: A (area), An (animal numbers), R (receipts) or I (income).

Definitions of labels

With or without current commodity production limits and/or limit to payments: Defines whether or not there is a specific limitation on current commodity production (output) associated with a policy providing transfers to agriculture and whether or not there are limits to payments in the form of limits to area or animal numbers eligible for those payments. Applied in categories A–F.

With variable or fixed payment rates: Any payments is defined as subject to a variable rate where the formula determining the level of payment is triggered by a change in price, yield, net revenue or income or a change in production cost. Applied in categories A–E.

With or without input constraints: defines whether or not there are specific requirements concerning farming practices related to the programme in terms of the reduction, replacement, or withdrawal in the use of inputs or a restriction of farming practices allowed. Applied in categories A–F. The payments with input constrains are further broken down to:

- Payments conditional on compliance with basic requirements that are mandatory (with mandatory);
- Payments requiring specific practices going beyond basic requirements and voluntary (with voluntary).
  - Specific practices related to environmental issues.
  - Specific practices related to animal welfare.
  - Other specific practices.

With or without commodity exceptions: defines whether or not there are prohibitions upon the production of certain commodities as a condition of eligibility for payments based on non-current A/An/R/I of commodity(ies). Applied in Category E.

Based on area, animal numbers, receipts or income: defines the specific attribute (i.e. area, animal numbers, receipts or income) on which the payment is based. Applied in categories C–E.

Based on a single commodity, a group of commodities or all commodities: defines whether the payment is granted for production of a single commodity, a group of commodities or all commodities. Applied in categories A–D.

Drivers of the change in PSE

Decomposition of PSE

***Per cent change in PSE*:** Per cent change in the nominal value of the PSE expressed in national currency. The per cent change is calculated using the two most recent years in the series.

***Contribution of MPS to per cent change in PSE*:** Per cent change in nominal PSE if all variables other than MPS are held constant.

***Contribution of price gap to per cent change in the PSE*:** Per cent change in nominal PSE if all variables other than gap between domestic market prices and border prices are held constant.

***Contribution of quantity produced to per cent change in the PSE*:** Per cent change in nominal PSE if all variables other than quantity produced are held constant.

***Contribution of budgetary payments (BP) to per cent change in PSE*:** Per cent change in nominal PSE if all variables other than BP are held constant.

***Contribution of BP elements to per cent change in PSE*:** Per cent change in nominal PSE if all variables other than a given BP element are held constant. BP elements include Payments based on output, Payments based on input use, Payments based on current A/An/R/I, production required, Payments based on non-current A/An/R/I, production required, Payments based on non-current A/An/R/I, production not required, Payments based on non-commodity criteria and Miscellaneous payments.

Change in Producer Price

***Per cent change in Producer Price*:** Per cent change in Producer Price (at farm gate) expressed in national currency. The per cent change is calculated using the two most recent years in the series.

Decomposition of the change in the Border Price

***Per cent change in Border Price*:** Per cent change in Border Price (at farm gate) expressed in national currency. The per cent change is calculated using the two most recent years in the series.

***Contribution of Exchange Rate to per cent change in Border Price*:** Per cent change in the Border Price (at farm gate) expressed in national currency if all variables other than Exchange Rate between national currency and USD are held constant.

***Contribution of Border Price expressed in USD to per cent change in Border Price*:** Per cent change in the Border Price (at farm gate) expressed in national currency if all variables other than Border Price (at farm gate) expressed in USD are held constant.

Note: The change in Producer Support Estimate (PSE) is not decomposed when PSE is negative for the current and/or previous year. The producer price change and the border price change are not calculated when both negative and positive market price support (MPS) occur at the commodity level for the previous year. Note that negative MPS estimates for livestock products may arise in cases of aligned product prices if there is positive MPS for feed commodities.

Definition of GSSE categories

Agricultural knowledge and innovation system

- ***Agricultural knowledge generation***: Budgetary expenditure financing research and development (R&D) activities related to agriculture, and associated data dissemination, irrespective of the institution (private or public, ministry, university, research centre or producer groups) where they take place, the nature of research (scientific, institutional, etc.), or its purpose.
- ***Agricultural knowledge transfer***: Budgetary expenditure financing agricultural vocational schools and agricultural programmes in high-level education, training and advice to farmers that is generic (e.g. accounting rules, pesticide application), not specific to individual situations, and data collection and information dissemination networks related to agricultural production and marketing.

Inspection and control

- ***Agricultural product safety and inspection***: Budgetary expenditure financing activities related to agricultural product safety and inspection. This includes only expenditures on inspection of

domestically produced commodities at first level of processing and border inspection for exported commodities.

- ***Pest and disease inspection and control:*** Budgetary expenditure financing pest and disease control of agricultural inputs and outputs (control at primary agriculture level) and public funding of veterinary services (for the farming sector) and phytosanitary services.
- ***Input control:*** Budgetary expenditure financing the institutions providing control activities and certification of industrial inputs used in agriculture (e.g. machinery, industrial fertilisers, pesticides, etc.) and biological inputs (e.g. seed certification and control).

Development and maintenance of infrastructure

- ***Hydrological infrastructure:*** Budgetary expenditure financing public investments into hydrological infrastructure (irrigation and drainage networks).
- ***Storage, marketing and other physical infrastructure***: Budgetary expenditure financing investments to off-farm storage and other market infrastructure facilities related to handling and marketing primary agricultural products (silos, harbour facilities – docks, elevators; wholesale markets, futures markets), as well as other physical infrastructure related to agriculture, when agriculture is the main beneficiary.
- ***Institutional infrastructure***: Budgetary expenditure financing investments to build and maintain institutional infrastructure related to the farming sector (e.g. land cadastres; machinery user groups, seed and species registries; development of rural finance networks; support to farm organisations, etc.).
- ***Farm restructuring***: Budgetary payments related to reform of farm structures financing entry, exit or diversification (outside agriculture) strategies.

Marketing and promotion

- ***Collective schemes for processing and marketing***: Budgetary expenditure financing investment in collective, mainly primary, processing, marketing schemes and marketing facilities, designed to improve marketing environment for agriculture.
- ***Promotion of agricultural products***: Budgetary expenditure financing assistance to collective promotion of agro-food products (e.g. promotion campaigns, participation on international fairs).
- ***Cost of public stockholding***: Budgetary expenditure covering the costs of storage, depreciation and disposal of public storage of agricultural products.
- ***Miscellaneous***: Budgetary expenditure financing other general services that cannot be disaggregated and allocated to the above categories, often due to a lack of information.

More detailed information on the indicators, their use and limitations is available in *OECD's Producer Support Estimate and Related Indicators of Agricultural Support: Concepts, Calculation, Interpretation and Use* (the PSE Manual) available on the OECD public website (https://www.oecd.org/en/topics/policy-issues/agricultural-policy-monitoring.html).

Annex 1.B. Estimates of support to agriculture: Regional aggregates

Annex Table 1.B.1. OECD: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**594 108**	**673 504**	**1 484 549**	**1 420 226**	**1 524 115**	**1 509 306**
of which: share of MPS commodities (%)	71.27	71.03	75.36	74.64	77.39	74.03
Total value of consumption (at farm gate)	**554 043**	**664 884**	**1 326 604**	**1 233 562**	**1 365 904**	**1 380 346**
Producer Support Estimate (PSE)	**229 163**	**220 177**	**223 661**	**243 073**	**203 709**	**224 201**
Support based on commodity output	186 224	142 442	82 735	89 584	67 365	91 256
Market Price Support1	173 628	127 489	78 779	84 289	63 795	88 254
Positive Market Price Support	177 964	128 120	79 058	84 394	63 848	88 933
Negative Market Price Support	-4 336	-631	-279	-105	-53	-679
Payments based on output	12 596	14 953	3 955	5 295	3 570	3 002
Payments based on input use	19 571	19 523	32 985	30 210	33 362	35 384
Based on variable input use	9 146	8 012	12 211	11 158	13 053	12 423
with input constraints	1 199	577	2 138	1 314	2 550	2 551
Based on fixed capital formation	6 882	5 079	11 267	9 596	10 422	13 784
with input constraints	1 638	629	2 896	2 206	2 207	4 275
Based on on-farm services	3 543	6 431	9 507	9 457	9 887	9 177
with input constraints	439	967	2 043	1 907	2 038	2 182
Payments based on current A/An/R/I, production required	19 377	41 382	54 710	59 935	51 746	52 449
Based on Receipts / Income	2 052	3 173	6 573	6 533	5 883	7 303
Based on Area planted / Animal numbers	17 325	38 209	48 137	53 401	45 864	45 147
With input constraints	4 093	16 898	40 726	46 539	39 009	36 628
Payments based on non-current A/An/R/I, production required	533	71	3 150	4 829	2 426	2 197
Payments based on non-current A/An/R/I, production not required	2 080	13 721	43 587	52 365	43 060	35 336
With variable payment rates	181	4 318	3 255	6 619	2 504	641
with commodity exceptions	0	4 079	3 018	6 366	2 270	418
With fixed payment rates	1 899	9 403	40 332	45 746	40 556	34 694
with commodity exceptions	1 561	6 081	2 643	2 883	2 437	2 607
Payments based on non-commodity criteria	1 078	3 206	5 926	5 575	5 305	6 898
Based on long-term resource retirement	1 076	2 900	4 056	3 926	3 703	4 540
Based on a specific non-commodity output	2	237	1 666	1 510	1 388	2 101
Based on other non-commodity criteria	0	69	204	140	214	257
Miscellaneous payments	300	-166	568	576	445	682
Percentage PSE (%)	**35.28**	**28.74**	**13.73**	**15.39**	**12.24**	**13.63**
Producer NPC (coeff.)	**1.46**	**1.26**	**1.06**	**1.07**	**1.05**	**1.07**
Producer NAC (coeff.)	**1.55**	**1.40**	**1.16**	**1.18**	**1.14**	**1.16**
General Services Support Estimate (GSSE)	**25 594**	**36 782**	**49 242**	**50 050**	**48 420**	**49 256**
Agricultural knowledge and innovation system	4 872	8 018	15 928	16 208	14 984	16 591
Inspection and control	1 076	1 931	4 865	4 755	4 905	4 937
Development and maintenance of infrastructure	10 223	16 400	18 753	18 728	19 034	18 498
Marketing and promotion	2 156	5 779	7 005	7 600	6 838	6 578
Cost of public stockholding	5 872	2 282	561	533	585	564
Miscellaneous	1 395	2 371	2 130	2 227	2 074	2 089
Percentage GSSE (% of TSE)	**9.32**	**13.11**	**14.24**	**13.92**	**14.52**	**14.32**
Consumer Support Estimate (CSE)	**-154 246**	**-117 697**	**-24 251**	**-37 340**	**1 194**	**-36 607**
Transfers to producers from consumers	-163 208	-122 282	-75 918	-79 857	-61 869	-86 027
Other transfers from consumers	-22 413	-19 530	-22 085	-24 810	-18 706	-22 739
Transfers to consumers from taxpayers	19 956	23 580	72 832	66 530	81 441	70 526
Excess feed cost	11 420	534	920	797	328	1 633
Percentage CSE (%)	**-28.88**	**-18.35**	**-1.93**	**-3.20**	**0.09**	**-2.79**
Consumer NPC (coeff.)	**1.50**	**1.27**	**1.08**	**1.09**	**1.06**	**1.09**
Consumer NAC (coeff.)	**1.41**	**1.22**	**1.02**	**1.03**	**1.00**	**1.03**
Total Support Estimate (TSE)	**274 713**	**280 540**	**345 735**	**359 653**	**333 570**	**343 983**
Transfers from consumers	185 622	141 811	98 003	104 667	80 575	108 766
Transfers from taxpayers	111 505	158 258	269 817	279 796	271 701	257 956
Budget revenues	-22 413	-19 530	-22 085	-24 810	-18 706	-22 739
Percentage TSE (% of GDP)	**1.94**	**1.01**	**0.57**	**0.61**	**0.55**	**0.54**
Total Budgetary Support Estimate (TBSE)	**101 085**	**153 051**	**266 956**	**275 364**	**269 774**	**255 729**
Percentage TBSE (% of GDP)	**0.71**	**0.55**	**0.44**	**0.47**	**0.45**	**0.40**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
The OECD total for 1986-88 includes all 38 OECD member countries except Chile, Colombia, Costa Rica, Israel, Latvia, Lithuania and Slovenia, for which data are not available. The OECD total for 2000-02 includes all 38 OECD member countries except Latvia and Lithuania. TSE as a share of GDP for 1986-88 for the OECD is an estimate based on available data.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities: see notes to individual country tables.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring* (database), https://data-explorer.oecd.org/.

Annex Table 1.B.2. Emerging Economies: Estimates of support to agriculture

Million USD

	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**521 904**	**3 060 010**	**2 947 247**	**3 117 103**	**3 115 680**
of which: share of MPS commodities (%)	75.03	82.86	83.01	83.73	81.82
Total value of consumption (at farm gate)	**520 728**	**3 045 639**	**2 927 897**	**3 121 692**	**3 087 327**
Producer Support Estimate (PSE)	**20 558**	**207 835**	**213 621**	**184 301**	**225 583**
Support based on commodity output	1 291	66 670	70 920	40 263	88 827
Market Price Support1	876	62 900	66 935	36 575	85 190
Positive Market Price Support	24 147	254 207	268 026	259 369	235 226
Negative Market Price Support	-23 271	-191 307	-201 091	-222 794	-150 037
Payments based on output	416	3 770	3 984	3 687	3 638
Payments based on input use	17 323	80 974	80 532	84 574	77 815
Based on variable input use	11 479	58 987	56 494	63 463	57 003
with input constraints	0	1 969	950	2 073	2 884
Based on fixed capital formation	4 466	19 673	21 042	19 124	18 854
with input constraints	1	1 392	1 102	1 483	1 592
Based on on-farm services	1 379	2 314	2 996	1 987	1 958
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	813	34 965	35 203	34 713	34 978
Based on Receipts / Income	813	2 000	1 613	1 538	2 848
Based on Area planted / Animal numbers	0	32 965	33 590	33 175	32 130
With input constraints	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	370	22 930	24 430	22 408	21 951
With variable payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
With fixed payment rates	370	22 930	24 430	22 408	21 951
with commodity exceptions	0	0	0	0	0
Payments based on non-commodity criteria	458	1 159	1 189	1 162	1 127
Based on long-term resource retirement	458	1 159	1 189	1 162	1 127
Based on a specific non-commodity output	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0
Miscellaneous payments	302	1 138	1 347	1 180	885
Percentage PSE (%)	**3.80**	**6.48**	**6.90**	**5.65**	**6.93**
Producer NPC (coeff.)	**1.00**	**1.03**	**1.04**	**1.02**	**1.03**
Producer NAC (coeff.)	**1.04**	**1.07**	**1.07**	**1.06**	**1.07**
General Services Support Estimate (GSSE)	**18 949**	**56 978**	**57 181**	**56 642**	**57 112**
Agricultural knowledge and innovation system	2 978	8 743	8 671	8 667	8 890
Inspection and control	784	3 650	3 550	3 666	3 734
Development and maintenance of infrastructure	6 955	31 624	31 908	31 150	31 813
Marketing and promotion	28	761	649	836	798
Cost of public stockholding	8 102	12 016	12 234	12 085	11 731
Miscellaneous	103	184	169	238	146
Percentage GSSE (% of TSE)	**42.83**	**19.05**	**18.74**	**20.29**	**18.23**
Consumer Support Estimate (CSE)	**-935**	**-113 083**	**-139 862**	**-86 278**	**-113 111**
Transfers to producers from consumers	-3 885	-118 269	-141 768	-100 646	-112 394
Other transfers from consumers	-2 830	-51 422	-63 413	-40 261	-50 591
Transfers to consumers from taxpayers	4 735	34 337	34 265	38 180	30 565
Excess feed cost	1 044	22 270	31 054	16 448	19 309
Percentage CSE (%)	**-0.18**	**-3.76**	**-4.83**	**-2.80**	**-3.70**
Consumer NPC (coeff.)	**1.01**	**1.06**	**1.08**	**1.05**	**1.06**
Consumer NAC (coeff.)	**1.00**	**1.04**	**1.05**	**1.03**	**1.04**
Total Support Estimate (TSE)	**44 242**	**299 150**	**305 068**	**279 123**	**313 260**
Transfers from consumers	6 714	169 691	205 181	140 906	162 985
Transfers from taxpayers	40 358	180 881	163 300	178 477	200 866
Budget revenues	-2 830	-51 422	-63 413	-40 261	-50 591
Percentage TSE (% of GDP)	**1.28**	**1.04**	**1.10**	**0.96**	**1.07**
Total Budgetary Support Estimate (TBSE)	**43 367**	**236 250**	**238 132**	**242 548**	**228 070**
Percentage TBSE (% of GDP)	**1.26**	**0.82**	**0.86**	**0.84**	**0.78**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
The Emerging Economies include Argentina, Brazil, China, India, Indonesia, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities: see notes to individual country tables.

Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring* (database), https://data-explorer.oecd.org/.

Annex Table 1.B.3. All countries: Estimates of support to agriculture

Million USD

	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**1 195 409**	**4 576 484**	**4 400 193**	**4 672 525**	**4 656 733**
of which: share of MPS commodities (%)	72.77	80.37	80.23	81.62	79.25
Total value of consumption (at farm gate)	**1 185 611**	**4 437 810**	**4 226 512**	**4 554 131**	**4 532 787**
Producer Support Estimate (PSE)	**240 735**	**436 927**	**462 354**	**392 995**	**455 433**
Support based on commodity output	143 733	150 033	160 978	108 080	181 041
Market Price Support1	128 364	142 299	151 690	100 814	174 393
Positive Market Price Support	152 266	333 882	352 886	323 661	325 098
Negative Market Price Support	-23 902	-191 583	-201 196	-222 847	-150 706
Payments based on output	15 369	7 734	9 288	7 266	6 649
Payments based on input use	36 846	114 624	111 432	118 539	113 901
Based on variable input use	19 491	71 495	67 952	76 799	69 733
with input constraints	577	4 107	2 265	4 623	5 434
Based on fixed capital formation	9 545	31 235	30 943	29 804	32 959
with input constraints	630	4 288	3 309	3 690	5 867
Based on on-farm services	7 810	11 893	12 536	11 936	11 208
with input constraints	967	2 049	1 907	2 039	2 202
Payments based on current A/An/R/I, production required	42 194	91 576	96 898	88 244	89 585
Based on Receipts / Income	3 986	8 978	8 341	7 895	10 697
Based on Area planted / Animal numbers	38 209	82 598	88 557	80 349	78 889
With input constraints	16 898	41 929	47 768	40 051	37 966
Payments based on non-current A/An/R/I, production required	71	3 150	4 829	2 426	2 197
Payments based on non-current A/An/R/I, production not required	14 091	68 688	79 470	67 571	59 023
With variable payment rates	4 318	3 255	6 619	2 504	641
with commodity exceptions	4 079	3 018	6 366	2 270	418
With fixed payment rates	9 773	65 433	72 851	65 067	58 381
with commodity exceptions	6 081	2 643	2 883	2 437	2 607
Payments based on non-commodity criteria	3 664	7 135	6 807	6 500	8 097
Based on long-term resource retirement	3 358	5 216	5 115	4 865	5 667
Based on a specific non-commodity output	237	1 710	1 548	1 418	2 165
Based on other non-commodity criteria	69	208	143	217	265
Miscellaneous payments	136	1 722	1 941	1 636	1 589
Percentage PSE (%)	**18.41**	**8.97**	**9.81**	**7.92**	**9.22**
Producer NPC (coeff.)	**1.14**	**1.04**	**1.05**	**1.03**	**1.04**
Producer NAC (coeff.)	**1.23**	**1.10**	**1.11**	**1.09**	**1.10**
General Services Support Estimate (GSSE)	**55 732**	**106 178**	**107 272**	**105 014**	**106 249**
Agricultural knowledge and innovation system	10 996	24 761	24 983	23 726	25 573
Inspection and control	2 715	8 525	8 315	8 583	8 676
Development and maintenance of infrastructure	23 355	50 459	50 734	50 263	50 380
Marketing and promotion	5 807	7 543	8 077	7 461	7 091
Cost of public stockholding	10 384	12 577	12 767	12 671	12 295
Miscellaneous	2 475	2 314	2 396	2 312	2 234
Percentage GSSE (% of TSE)	**17.16**	**16.33**	**16.00**	**17.00**	**16.03**
Consumer Support Estimate (CSE)	**-118 632**	**-137 948**	**-177 663**	**-85 544**	**-150 636**
Transfers to producers from consumers	-126 166	-194 822	-222 092	-162 971	-199 403
Other transfers from consumers	-22 359	-73 532	-88 241	-58 991	-73 363
Transfers to consumers from taxpayers	28 315	107 198	100 819	119 642	101 133
Excess feed cost	1 578	23 208	31 851	16 776	20 996
Percentage CSE (%)	**-10.25**	**-3.19**	**-4.31**	**-1.93**	**-3.40**
Consumer NPC (coeff.)	**1.14**	**1.06**	**1.08**	**1.05**	**1.06**
Consumer NAC (coeff.)	**1.11**	**1.03**	**1.05**	**1.02**	**1.04**
Total Support Estimate (TSE)	**324 782**	**650 303**	**670 444**	**617 651**	**662 815**
Transfers from consumers	148 525	268 354	310 333	221 963	272 766
Transfers from taxpayers	198 616	455 481	448 352	454 680	463 412
Budget revenues	-22 359	-73 532	-88 241	-58 991	-73 363
Percentage TSE (% of GDP)	**1.03**	**0.72**	**0.77**	**0.69**	**0.71**
Total Budgetary Support Estimate (TBSE)	**196 418**	**508 005**	**518 754**	**516 837**	**488 422**
Percentage TBSE (% of GDP)	**0.63**	**0.56**	**0.60**	**0.58**	**0.52**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
The All countries total includes all OECD countries, non-OECD EU Member States, and the Emerging Economies: Argentina, Brazil, China, India, Indonesia, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam. The All countries total for 2000-02 includes data for all countries except Latvia and Lithuania, for which data are not available.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities: see notes to individual country tables.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring* (database), https://data-explorer.oecd.org/.

Notes

[1] This report does not contain a country chapter on the Russian Federation. However, aggregate data for the 11 emerging economies and for all 54 countries covered in this report continue to include those for Russia.

[2] See https://www.economicsobservatory.com/update-how-is-the-war-ukraine-affecting-global-food-prices.

[3] See https://farmdocdaily.illinois.edu/2024/01/ripple-effects-of-shipping-lane-disruptions-on-u-s-agriculture.html.

[4] See https://www.ifpri.org/blog/global-fertilizer-trade-2021-2023-what-happened-after-war-related-price-spikes.

[5] See https://www.robert-schuman.eu/en/european-issues/738-the-various-causes-of-the-agricultural-crisis-in-europe.

[6] Tables with the breakdown of the Total Support Estimates for the three regional aggregates used in this report, including OECD, Emerging Economies, and All Countries, can be found in Annex 1.B.

[7] Includes 15 countries.

[8] Cost of public stockholding are expenditures to cover the cost of storage or disposal of agricultural commodities, as well as their depreciation.

[9] See https://www.usda.gov/oce/sustainability/spg-coalition.

[10] At present, OECD monitoring of biodiversity is limited to the farmland bird index, which, due to differing agrobiodiversity conditions and cultural norms, is reported by only 23 of the 54 countries covered by this report. The use of a habitat-based indicator, currently under development in the OECD Joint Working Party on Agriculture and the Environment, is appealing because habitats describe the environment within which diverse taxa live and the resources available for their survival. Also, there are practical advantages to tracking biodiversity by monitoring habitats, such as the ability to draw on remote sensing and aerial imagery to examine changes over time at a landscape level appropriate to any given country (Bayr et al., 2023[66]).

2. Developments in agricultural policies and support by country

This chapter contains a review of the main policy developments that have taken place over the course of 2023 and early 2024. It also reports on the latest data on agricultural policy support by country, including the level and composition of support and its changes over time.

Activities, reforms and responses to events in 2023-24

Policies in agriculture evolve in response to dynamic conditions and priorities, including events that affect farmers' abilities to produce and earn a livelihood. Public expectations of the sector and its role in society evolve over time, as do the preferences of consumers with respect to the quality and provenance of the food they eat. The need to achieve sustainable productivity growth (SPG) has become an important driver of policies, and the connection between trade openness and food security is by turn reinforced and doubted as multiple crises test the global trading system. This section reviews the main policy developments that have taken place over the course of 2023 and early 2024 in response to conditions both short and long term.

Policy frameworks

The year 2023 was the first full year of implementation of the new Common Agricultural Policy (CAP) of the **European Union**. This new CAP introduces Strategic Plans for each country and aligns the CAP more closely with broader initiatives such as the Green Deal. Many EU countries fine-tuned their strategic plans in 2023 and 2024 by adopting several amendments following the approval by the European Commission. EU Member States started to implement the full range of new types of direct payments, including eco-schemes, which are a new policy tool aimed at encouraging more sustainable farming models.

This was also the first year of the "Sustainable **Canadian** Agricultural Policy Framework" (Sustainable CAP). This new framework aims to better integrate environmental and climate risks while maintaining its core focus on managing market and production risks. Incentives are provided for crop diversification, adoption of beneficial practices, and the need for larger farms to have environmental risk assessments.

In the People's Republic of China (hereafter "**China**"), the "No. 1 Document" was released in February 2024 with a specific focus on "green agriculture". Among the priorities identified were protecting and restoring rural ecosystems, more rational use of chemical fertilisers, pesticides and antibiotics, remediation of heavy metal pollution, and the prevention and control of major animal-borne diseases.

National budgets made special provisions for agriculture in many cases. For example, the Italian budget provides support for youth and female entrepreneurship in agriculture and extends a special income tax exemption for landowners and farmers. The French Finance Bill for 2024 increases funding for the Agriculture and Food Sovereignty Ministry by 27%, with priorities to support farmers, ecological planning, manage sanitary risks, and train innovative young farmers.

Compensatory programmes addressing increased costs or market disruption

Canada launched two programmes to compensate for the effects of trade agreements on supply managed sectors (dairy, eggs, poultry). The Dairy Innovation and Investment Fund provides financial support to Canadian dairy processors to improve solids non-fat processing capacity. The Supply Management Processing Investment Funds received additional funding in response to the Canada-US-Mexico Agreement (CUSMA) to support investments for processing facilities that improve productivity or efficiency through the purchase of new automated equipment and technology.

In early 2024, **Indonesia** changed the system of fertiliser subsidies in response to current high level of international prices that made the allocated budget insufficient. The budget will be increased by 56% and the price gap subsidy will be transformed into a direct payment to buy fertilisers.

Several compensation measures were implemented in **Croatia** to respond to market disruptions, increased costs, natural disasters, and African Swine Fever. To compensate agriculture and forestry for increased input costs and declining competitiveness, **Sweden** further augmented the tax reduction applied to diesel used in professional agriculture, forestry and aquaculture activities, effectively eliminating diesel taxes for

certain farmers. Additional support measures using EU funds have been implemented in the **Slovak Republic, Bulgaria, Hungary, Poland and Romania** to compensate producers impacted by low-priced grain imports from Ukraine. Exceptional aid was directed to fruit, vegetables, hops growers and dairy farmers affected by high energy, feed and fertiliser prices in **Czechia**. Poland introduced state aid programmes, including subsidies for mineral fertilisers, in response to the severe economic disturbances on the agricultural market, including those caused by Russia's war of aggression in Ukraine.

In May 2023, the EC approved an exceptional support package within the scope of the "Pact for the Stabilization and Reduction of Food Prices" in **Portugal**. This support compensates for the increase in cost of production factors, along with new support for diesel energy costs. Portugal also offered support to mitigate effects of droughts for the cattle, sheep, pigs, beekeeping and winter cereals sectors. Similarly, **Spain** granted support to respond to crisis situations to drought and the worsening of conditions in the primary sector resulting from the war in Ukraine. Direct aid was provided to livestock and other agricultural sectors and beekeepers from the national budget and the budget for agricultural insurance subsidies was increased. Existing financial measures including credit and guarantee support were also expanded.

After a series of severe weather events, including Cyclone Hale, the Auckland Anniversary weekend floods (both in January 2023), and Cyclone Gabrielle (February 2023), **New Zealand** provided support for cleanup and recovery. This included farmers' and growers' grants, a mobilisation fund for urgent response and support projects, and the North Island Weather Event Regional Recovery Funding.

The 1st Agricultural Disaster Insurance Development Basic Plan (23-27) was announced in **Korea**. The plan aims to increase participation, scope and coverage for farmers and to build a tight safety net by operating in complement to other agricultural disaster recovery measures.

Temporary financial support measures were provided to agricultural producers in **Lithuania** in 2023 due to impacts of the COVID-19 pandemic, the war in Ukraine, and sector-specific challenges. Loan guarantees were provided for investments and working capital to mitigate negative economic impacts of the war in Ukraine. Financial support was also provided to some agricultural producers for crop damages from spring frosts for the horticulture sector and damages from summer hailstorms.

Emergency assistance programmes were provided in the **United States** in 2023 in response to natural disasters, disaster-driven cost increases, and market disruptions. This includes retroactive payments for consequences of COVID-19 and crop and forage losses experienced in 2022.

Improving environmental sustainability

In the **European Union,** the new CAP introduced the so-called enhanced conditionality which integrates elements of cross-compliance and greening from the previous CAP. However, a review of the CAP Regulations in early 2024 includes additional flexibility and exemptions to Member States in adopting conditionality standards. Among the approved changes, there is the full exemption of small farms from compliance controls. These changes of the CAP were accompanied by the delay or withdrawal of several legislative proposals related to the Farm to Fork and Biodiversity Strategies, including the new Regulation on the Sustainable Use of Plant Protection Products.

To better align with environmental carrying capacity, Flanders (**Belgium**) is providing payments to pig farmers to reduce or entirely close their operations. The policy was approved by the European Commission in March 2023 and will be in place until June 2025.

Within the framework of the CAP in the **European Union**, the new performance, monitoring and evaluation framework (PMEF) with corresponding evaluation elements and evaluation topics has been introduced. This includes a new indicator system (output, impact, result, and context indicators) with corresponding evaluation elements and evaluation topics. As an example, **Austria** is implementing "Environmentally friendly and biodiversity-promoting management" and "Organic farming" measures. These measures will

create new biodiversity areas in which requirements for crop diversification must be met and further training in the field of biodiversity must be completed. It also calls for the preservation of operational grasslands.

In response to press reports on high rates of contamination of vegetables by pathogens and pesticide residues, **Viet Nam** issued a decision to develop "safe, concentrated vegetable production areas." Within these zones, the government undertakes testing of soil and water quality, monitors pathogens and pesticide residues, and prohibits livestock farming to prevent contamination.

Portugal encouraged more efficient water management in agriculture by allowing the conversion of permanent crops outside areas benefiting from hydro-agricultural development, with the condition that the new crop is less demanding of water and has an efficient, proven irrigation system installed.

To reduce dependence on imported raw materials for chemical fertiliser**, Japan** introduced measures to expand the use of domestic resources for organic fertilisers. The main measure was support payments to livestock farmers and compost manufacturers to partially cover the cost of building facilities for the manufacture of compost.

The "Hedgerow pact" that is part of the ecological plan ***France*** *Nation Verte* includes 25 actions to create 50 000 km of new hedgerows by 2030. The plan includes a method for local authorities to develop locally adapted and valuable hedgerows, an observatory to monitor the project, and regulations to secure rules around hedgerows.

Through the Nature Repair Market Act, a range of landholders (including the agricultural sector) in **Australia** may partner with parties wishing to support long-term improvements in biodiversity. Projects could include the formal protection and conservation of sites of high environmental value, and restoration of areas that may have been degraded because of past activities. This makes it easier for business, philanthropists, and others to invest in repairing nature.

Climate Action Plans were published for 2023 and 2024 in **Ireland** setting out the policy framework and actions toward climate mitigation and adaptation, including for Agriculture and LULUCF. Agriculture must achieve a 25% reduction in emissions, compared to the 2018 baseline, by 2030 under carbon budget ceilings.

The "Biodiversity Strategy of the Ministry of Agriculture, Forestry and Fisheries" of **Japan** was revised in March 2023 in response to the Kunming-Montreal Global Biodiversity Framework. The new strategy sets out the vision for 2030 and directions for tackling biodiversity-related issues such as reducing the burden of agriculture, forestry and fisheries on the global environment and facilitating collaboration for biodiversity conservation within the whole food supply chain.

In November 2023, **Romania's** long-term strategy for reducing GHG emissions, which aims to make Romania carbon neutral by 2050, was approved. The strategy includes agriculture, waste and land use, land-use change and forestry (LULUCF), and assesses in detail the prospects, options, costs and benefits of the measures to be implemented to ensure sustainable development in the medium and long term, while significantly reducing GHG emissions and improving GHG absorption at the sectoral level.

Actions to reinforce social sustainability

Various adjustments were made to fine-tune labour policies to labour needs in **Canada**. The proportion of the workforce employed through the Temporary Foreign Worker (TFW) Program will be decreased and agri-food occupations are one of six categories prioritised for economic immigration. The Agri-Food Pilot programme that addresses long-term labour shortages in the agricultural sector was extended, with expanded eligibility criteria and pathways to permanent residency.

The Act on Revitalisation of Economic and Social Services in Rural Areas Based on Rural Community was enacted in **Korea** to address the issue of service shortages in rural areas and support the revitalisation and sustainable development of rural communities. Under this law, administrative and financial support

are provided for communities voluntarily established by rural residents to offer services within rural areas. The establishment and expansion of these communities are also supported through education, training, and counselling.

Viet Nam has taken steps to encourage the development of agricultural co-operatives to support sustainable development. A goal was set to have at least 300 operating agricultural co-operatives by 2030.

Land consolidation and restructuring of land markets is expected to bring benefits in several countries. Progress was made on land reform in **Ukraine** with the opening of land markets to legal entities, such as companies, banks and territorial communities. These can now purchase up to 10 000 ha of land, the latest step in the progressive opening of land markets under a 2020 law. The Land Consolidation Project in the **Slovak Republic** aims to accelerate the settlement of property rights, helping land markets to function, improving the efficiency of agricultural policy implementation, and lowering investment costs associated with environmental measures at the farm level. Consolidation of agricultural land to reduce the number of land plots per owner or user while increasing the area of individual plots is on the agenda in **Croatia** as a part of the National Recovery and Resilience Plan 2021-2026. The planned improvement in the structure of farmland is expected to increase the quality of life in rural areas, increase agricultural productivity, and encourage investment in agricultural infrastructure.

In the **European Union,** the new CAP 2023-27 obliges EU countries to dedicate at least 10% of their financial allocation for direct payments to the Complementary Redistributive Income Support for Sustainability (CRISS), an extra payment for the first hectares. The aim is to promote more balanced distribution of income support to small- and medium-sized farms. The new CAP also introduced the concept of social conditionality (i.e. rules related to labour under which farmer payments are linked to compliance with certain labour laws).

Funding and advisory services were made available to Māori agribusinesses in **New Zealand** to help them realise the potential value of their land and primary sector assets, to develop and implement local solutions to improve freshwater quality, and to identify needs and encourage equitable access to government cyclone recovery funding and support. Both the New Zealand-United Kingdom FTA and the New Zealand-European Union FTA include Māori trade and co-operation chapters to increase trade opportunities for Māori primary producers, and to allow for differentiated arrangements for Māori businesses without breaching the free trade agreements.

The New Agrarian Emancipation Act in **the Philippines** writes off credit debt for more than half a million farmers. The act writes off loans, including principal, interests, and penalties incurred by farmers who have outstanding loan balances to the Land Bank of the Philippines and to private landowners. Under previous laws, these debtors were required to pay for land in the form of an annual amortisation for a maximum period of 30 years. In addition, the government approved a compensation to landowners under the Voluntary Land Transfer and the Direct Payment Scheme.

Improving the Agriculture Knowledge and Innovation System (AKIS)

National knowledge hubs for animal production, business management and entrepreneurship, and digitalisation were established in **Sweden** under a national fund to bridge the knowledge gap between research and practice by compiling and disseminating knowledge, strengthening collaboration between AKIS actors, and improving integration of advisors within AKIS. A similar knowledge hub was already in place for climate and environment.

Lithuania is developing an on-line tool to estimate farm-level CO_2 emissions and absorption, which is intended to be used for emission certification and trading. An on-line regulatory system for fertiliser accounting at the farm-level is also being developed and will be used for sustainability criteria reporting.

The measure Investment Support for Valorisation of Bioresources was initiated in **Estonia**. It is part of Estonia's push to emphasise circular bioeconomy and to become a leader and recognised local development centre on this topic. To this same end, the National Circular Bioeconomy Roadmap was adopted.

The National Institute of Innovation and Transfer in Agricultural Technology (INTA) of **Costa Rica** introduced a new variety of red bean named Urán, developed in collaboration with the University of Costa Rica. The Urán variety is more resistant to drought and high temperatures, shows higher average yields than another widely cultivated bean variety, and is resistant to a common disease affecting the crop.

The AgNav digital platform is a support tool in **Ireland** developed in 2023 and deployed in 2024 which enables the estimation of farm-level emissions, enabling farmers and their advisors to create and model the environmental impact of a farm sustainability plan. AgNav provides a mechanism to support the quantification of progress towards Climate Action Plan targets for the agriculture sector.

Reinforcing biosecurity, animal health and animal welfare

Australia increased biosecurity funding with an additional investment over four years and a permanent increase from 2027. To respond to community expectation in relation to sheep welfare, an independent panel was established to advise on phasing out live sheep export by sea from Australia. The panel provided advice to government to develop an orderly phase-out plan which considers the needs of affected individuals, businesses and local communities, and identifies opportunities for future growth in the Australian sheep industry.

Transformation of livestock systems in **Germany** is promoted through several actions: support is provided for more animal-friendly farming systems, e.g. investments in the design and equipment of stables or of individual keeping areas and related to the costs going beyond mandatory animal welfare standards. In addition, a new mandatory state label provides information on different husbandry systems. The minimum age for calves to be transported within Germany has been raised to 28 days.

Support to organic production

Italy approved the National Action Plan for Organic Farming to promote the development of the organic sector over the 2024-26 period and to reach the target of 25% of the UAA under organic farming by 2027. The plan aims to enhance national organic production by promoting consumption, organic districts, organic canteens, research, and innovation. In addition, it promotes the knowledge of organic production through targeted campaigns and training activities dedicated to sector operators.

The BIO 2023 fund in **France** increases funding for *Agence BIO*. Additional support was announced to support organic farms facing difficult economic situations to avoid these farms reconverting to conventional production. Local authorities are also engaged to help ensure that targets will be met and to reinforce the organic food agency. **Germany** increased support for organic agriculture, including support for research projects targeting enhanced biodiversity and for advisory services for away-from-home catering companies. To encourage consumption of organic products and make consumers aware of the benefits of organic production **Spain** launched a campaign called *Aquí somos Eco-Lógicos* (here we are Eco-Logic). Spain has increased by 40% its support to organic production over the amount in the previous CAP, which now receives the largest funding allocation under AECMs (Agri-Environment-Climate Measures) in their CAP strategic plan. **Ireland** increased the grant rate to 60% under the Organic Processing Investment Grant Scheme. The scheme provides funding to processors who wish to invest in developing facilities for the processing, preparation, grading, packing and storage of organic products. **Austria**'s Sixth Organic Action Programme is the central instrument for achieving a 30% organic land share by 2027, with a possible further expansion towards 35% by 2030 as stipulated in the Organic Action Programme 23+. In **Latvia**, support was redirected within the existing envelope to address the challenges created by changes

in the market. This in line with the National Organic Action programme adopted for the period 2023-2030 setting the overall target to reach 25% organic land share.

The Organic Products and Production Act became law in **New Zealand**. The Act aims to help with developing new standards for organic products and sets requirements for businesses in the organic sector from production through to sale.

The first national action plan in **Malta** for organic food covers the years 2023 to 2030. The plan addresses the needs of the agricultural sector to move towards organic production and achieve Malta's target of having 5% of its utilisable agricultural area under organic certification by 2030. The action plan creates a more favourable ecosystem for the producer, strengthens institutions, and creates robust and short supply chains and markets in the organic sector.

Measures for the food system

Domestic production and food security

Kazakhstan implemented trade measures to stabilise domestic markets of certain commodities. This included an export duty on sunflower seeds to curb price increases in the country and an import ban on wheat to support domestic farmers and to stabilise the price of locally-produced wheat, which is facing competition from cheaper Russian grain. Kazakhstan also used preferential financing to establish dairy farms through regional agricultural co-operatives.

The new "Farm Opportunities Programme" in **Germany** supports the domestic production of protein crops and helps farmers to switch away from animal husbandry to production and processing of innovative protein food and other climate-friendly food.

India increased the minimum support price from the previous marketing season for several summer planted (*kharif*) crops, including rice, maize, groundnut, soybean, pigeon pea, black gram, and cotton. In October 2023, the minimum support prices for winter planted (*rabi*) crops was also increased, including for wheat, barley, gram, lentil, and rapeseed. In June 2023, the Fair and Remunerative Price for sugarcane was increased by 3.3%.

A review of the CAP Regulations – the so-called "simplification package" in the **European Union**, will rationalise conditionality requirements to avoid overlapping of existing standards. The approved changes, which will be in force until the end of the current CAP 2023-27, aim to reduce the burden on farmers and provide more flexibility for Member States regarding some conditionality standards. This change affects good agricultural and environmental condition (GAEC) standards 1, 5, 6, 7, 8 and 9. In addition, small farms (up to 10 hectares) will be exempt from conditionality controls and from the application of administrative penalties for non-compliance with conditionality requirements.

A new Food Security Law in **China** includes chapters on the protection of agricultural land from urbanisation, grain production, grain reserves, grain marketing and processing, and access to food in emergency situations. The law's general provisions stipulate that the national food security strategy is based on self-reliance, guaranteed domestic production, moderate imports, and technological support.

Food chain

The **Indonesian** Quarantine Agency (IQA/*Barantin*) was established, integrating the former Agriculture Quarantine Agency (*Barantan*) under the Ministry of Agriculture and related units responsible for quarantine under the Ministry of Marine and Fisheries and the Ministry of Environment and Forestry. The new single agency is expected to improve efficiency and co-ordination, improve the quality of the quarantine services, and involve civil society in quarantine management.

The 3rd Comprehensive Seed Industry Development Plan (2023-2027) was announced in **Korea** to foster the seed industry as a high-value-added sector. This plan envisions and supports the development of a promising seed industry through technological innovation. This plan also includes training data experts for digital breeding, supporting programmes to enhance the link between corporate breeding and data, and opening government research facilities to facilitate the collection and analysis of genetic information for seeds by private companies.

Costa Rica launched the National System of Individual Identification and Traceability of Cattle aiming to improve animal health, food safety and access to export markets. The new system requires each animal to be registered and identified through visual and electronic means (ear tags and electronic transponders). An associated digital platform (Trazar-Agro) has been developed.

The Guidance on Sustainable Management for Food Industry was published in **Japan**. It is the first guidance with the overall goal of facilitating sustainable development within the food industry by illustrating how to tackle environmental, social, and governance (ESG) issues surrounding food companies. **Argentina** also approved its Bioeconomy Action Plan in the Agricultural Sector to guide policy efforts that promote the bioeconomy as a sustainable productive model.

A state aid scheme in **Romania** called INVESTALIM aims to support the development of food processing. **Germany** increased funding for its Protein Strategy, and **Austria** provided a package to support food processing companies to invest in resilience measures such as blackout prevention.

Consumer needs

The Czech Federation of Food Banks, in co-operation with the Ministry of Labour and Social Affairs of the **Czech Republic**, launched the Food Aid Distribution project. Within the existing network of 15 food banks, a new common network of 150 distribution centres was developed. These operate either as mobile distribution points (the so-called mobile distribution points) or at static locations in larger cities where food aid is regularly distributed to those in need.

Indonesia launched an in-kind rice distribution programme to low-income households in 2023, partially reversing the change towards cash transfers that took place in the last decade. This rice transfer programme is additional to a cash transfer programme already in place. **India** extended for five years the *Pradhan Mantri Garib Kalyan Anna Yojana* programme offering free food grains to the poorest segments of the population. The programme covers more than 800 million beneficiaries.

The Agri-Food Price Observatory was made available online in **Portugal**. The Observatory will monitor the costs and price of a food basket at the various stages of production and up to the point of sale, and is aimed at reinforcing information and transparency throughout the entire agri-food chain. The Observatory provides monthly information on a basket of 26 food products (e.g. eggs, fruit, olive oil, or dairy products), from production to consumption.

A Food Stamp Programme *Walang Gutom 2027* aims to reduce hunger and malnutrition among food-insecure households in **the Philippines** by providing monetary assistance via Electronic Benefit Transfer (EBT) cards. One of its objectives is to reduce the high rate of child stunting, wasting, and micronutrient deficiency. The programme allows beneficiaries to buy selected food items from accredited or registered retailers or supermarkets or government-run KADIWA centres. Beneficiaries are required to attend training or to present certificates demonstrating their efforts to find employment. The objective is to feed one million beneficiaries over three years (300 000 beneficiaries in the first year, 300 000 in the second year, and 400 000 in the third year).

The National School Lunch Program and School Breakfast Program in the **United States** was amended to allow more schools operating in high poverty areas to offer free or reduced priced meals to all students. This expansion allows an estimated 3 000 more school districts in high-need areas the option to serve breakfast and lunch to all students at no cost.

Trade measures, agreements, and negotiations

A Free Trade Agreement was signed between **Viet Nam** and **Israel** (the VIFTA) on 25 July 2023 after more than seven years of negotiations. The agreement is the first between a Southeast Asian country and Israel. It will enter into force in 2024 and is predicted to drive an increase in bilateral trade turnover of nearly 150%.

Several trade agreements responding to the Russian war of aggression against **Ukraine** were extended, including the abolition of import duties and tariff quotas by the **United Kingdom**, **Canada**, and the **European Union**. **Slovakia**, **Poland** and **Hungary**, however, banned some imports, provoking Ukraine to file requests under the dispute resolution mechanism of the WTO.

In December 2023, **Argentina** abolished the role of the Ministry of Finance to design and implement export taxes and adjust their rates by decree. New prohibitions or restrictions on exports or imports for economic reasons or foundations can now only be carried out by law. Export taxes and restrictions applied to agricultural exports and imports are common in Argentina and a main policy tool.

Between October and December 2023, only pre-authorised economic operators in **Romania** were allowed to import wheat, maize, rapeseed, sunflower seed, sugar, and flour from **Ukraine**. The certificate of authorisation is delivered by the national sanitary and phytosanitary agency, following an approval delivered by a committee composed of the Ministry of Agriculture and Rural Development, Customs authority, Ministry of Economy, and the national sanitary and phytosanitary agency.

India introduced various export restrictions on rice. On 20 July 2023, it banned the export of non-basmati white rice (the notification includes provisions to allow non-basmati white rice exports of consignments requested by foreign governments for their food security needs). On 25 August 2023, India imposed a 20% export duty on parboiled non-basmati rice. On 27 August 2023, India also introduced Minimum Export Prices for basmati rice exports. On 8 December 2023, the government extended until 31 March 2024 a ban on the export of de-oiled rice bran, a major ingredient in the preparation of cattle and poultry feed (initially introduced in July 2023).

In 2023, **China** signed Free Trade Agreements (FTAs) with Ecuador (May 2023), Nicaragua (August 2023), and Serbia (October 2023). Under these agreements, China will provide enhanced market access for various agri-food products, such as bananas, cut flowers, cocoa, coffee, meat, sugar, peanuts.

The Philippines signed a bilateral Free Trade Agreement with **Korea**. The agreement improves market access for the Philippines for agricultural products such as bananas, processed pineapples and other tropical fruit, industrial products and selected services sectors. It includes provisions for capacity building and technical co-operation (including on smart farming) between both countries.

A Comprehensive Economic Partnership Agreement on Trade and Investment between C**osta Rica** and the United Arab Emirates was concluded in January 2024 following the launch of negotiations in March 2023.

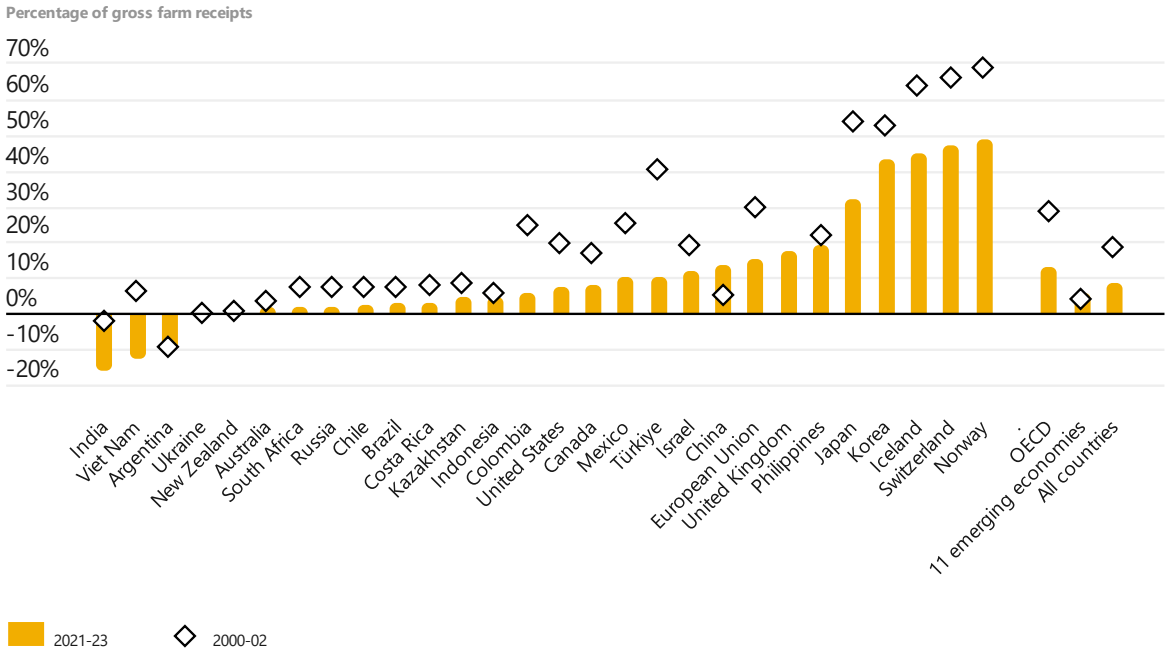
Support levels and trends by country

This section presents the results of the latest support estimates. Chapter 1 provided an overview of support for OECD and EE countries as a group. This chapter focusses on how individual countries delivered policy support. The results reveal that countries take different approaches to supporting their producers. While most OECD countries offer only positive policy support, many of the 54 countries in the report use a mix of positive and negative support. In three countries, **India**, **Viet Nam** and **Argentina**, net support is negative. The composition of support is also quite varied, with some countries reliant on market price support (MPS) while others hardly using it at all.

Support across countries varied between 49% and -15% of gross farm receipts on average over 2021-23

Producer support as a share of gross farm receipts (%PSE) averaged 14% in OECD countries and 6.5% in emerging economies between 2021 and 2023. The highest levels of support as a share of gross farm receipts are all found in the OECD area (Figure 2.1). **Norway**, **Iceland**, **Switzerland**, **Korea**, and **Japan** all offer support greater than 30% of gross farm receipts (GFR). **Mexico**, **Türkiye**, **Israel**, **China**, the **European Union**, the **United Kingdom** and **the Philippines** offer support between 10% and 20% of GFR. **India**, **Viet Nam** and **Argentina** have net negative support due to implicit taxation of producers via policies that keep commodity prices low relative to world prices. In most countries, the level of support has decreased as a share of GFR over the last 20 years. Only **China** has significantly increased support as a share of GFR, from 5% in 2000-02 to 14% in 2021-23.

Figure 2.1. Producer Support Estimate (PSE) by country, 2000-02 and 2021-23



Note: Countries are ranked according to the 2021-23 levels. The European Union refers to EU15 for 2000-02, and EU27 for 2021-23. The OECD total does not include the non-OECD EU Member States. Latvia and Lithuania are included only for 2021-23. The 11 emerging economies include Argentina, Brazil, China, India, Indonesia, Kazakhstan, the Philippines, Russia, South Africa, Ukraine and Viet Nam. The All countries total includes all OECD countries, non-OECD EU Member States, and the emerging economies.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

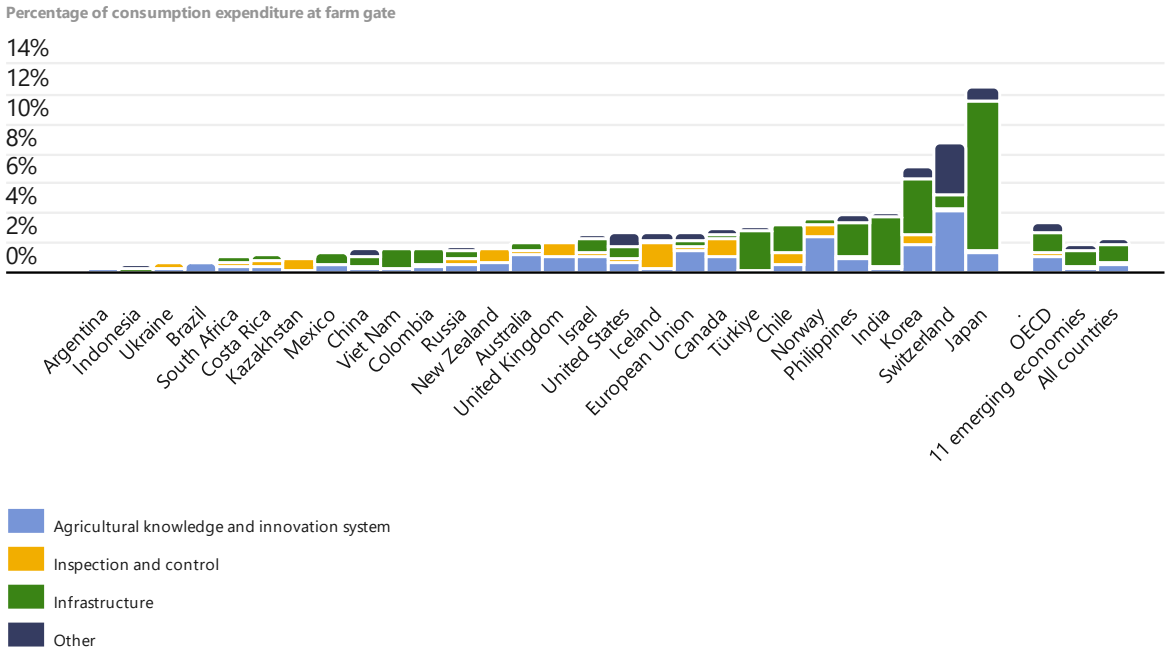
Price movements had a substantial effect on the PSE in 2023. MPS for eggs returned to historical averages after having spiked in 2022 because of shortages caused by bird flu. Changes in **India** drove movements in negative MPS estimated in 2023. **India** introduced export bans, duties or permits on several commodities to stabilise prices following the outbreak of war in Ukraine. This has the effect of making its MPS sensitive to world price changes. The effect was particularly pronounced for the MPS of Indian wheat, for which implicit taxation increased by close to USD 10 billion. Indian wheat single commodity transfers rose from -48% to -74% of wheat receipts in 2022 before declining to an estimated -25% of receipts in 2023, a change of USD 12 billion.

Countries with highest rates of producer support also tend to provide most general services

Japan, **Switzerland** and **Korea** delivered the most support in the form of general services in 2021-23, each delivering more than 7% of the value of production. **Norway**, with the highest %PSE delivers the sixth highest amount of GSSE as a share of value of production, 3.8%. **India** provided the fourth highest, at 4%, demonstrating its mixed approach of supporting both producers and consumers in different ways. Thirteen countries in this report provide GSSE less than 2% of the value of production. Underinvestment in GSSE can put sustainable productivity growth at risk when farmers do not have the knowledge and infrastructure to maximise the value of their operations. These countries will be more reliant on private sector initiatives.

Infrastructure is the largest component of the GSSE overall, and this is especially true for **Japan**, which invests heavily in irrigation infrastructure related to paddy rice production. Irrigation is also an important component in **Korea**, **Philippines**, **Türkiye**, **Chile** and **Viet Nam**. **Switzerland** provides AIS, an important driver of innovation, amounting to 4.2% of the value of production, almost double the amount provided by **Norway**, the second-highest supporter of AIS. **Korea** and the **European Union** also have AIS as an important component of their AIS support. Inspection and control is a large share of general support spending in Iceland, **Canada**, **New Zealand**, **Chile** and the **United Kingdom**.

Figure 2.2. Composition of General Services Support Estimate (GSSE) by country, 2021-23



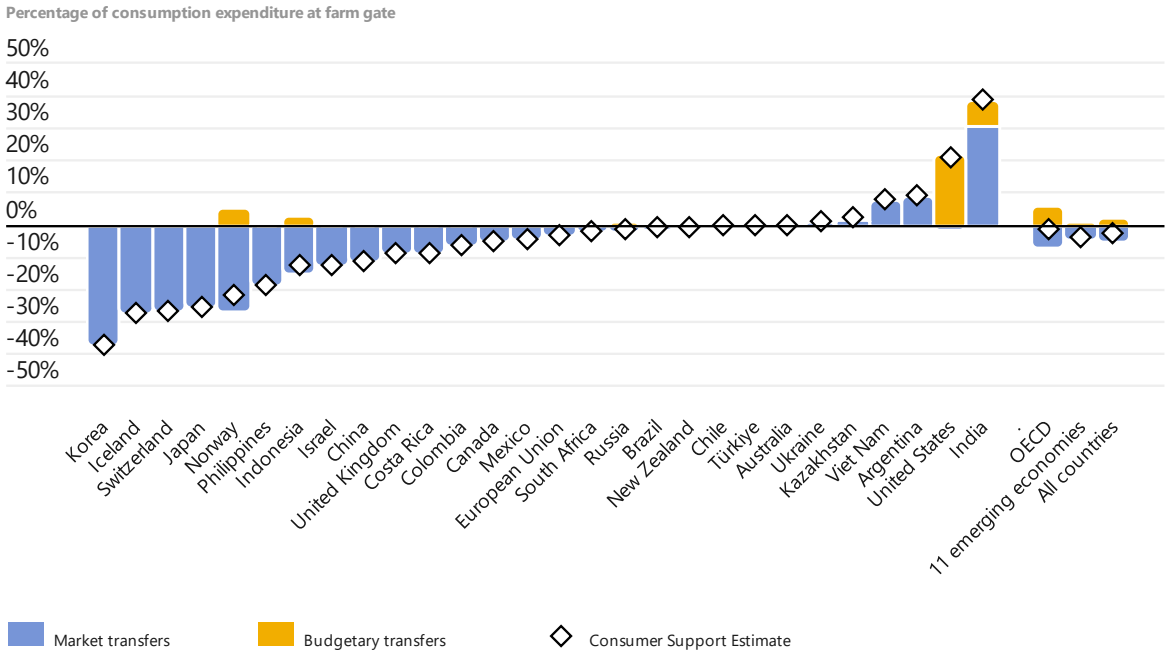
Note: "Other" includes the marketing and promotion, cost of public stockholding, and miscellaneous categories of the GSSE. Countries are ranked according to the share of total GSSE in agricultural value of production. The European Union refers to EU27. The OECD total does not include the non-OECD EU Member States. The 11 emerging economies include Argentina, Brazil, China, India, Indonesia, Kazakhstan, the Philippines, Russia, South Africa, Ukraine and Viet Nam. The All countries total includes all OECD countries, non-OECD EU Member States, and the emerging economies.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

Consumer support largely follows market prices support in most countries, with some exceptions

In most countries, consumer support as a share of the value of production (%CSE) reflects the level of market price support. MPS is a transfer from consumers to producers (or vice versa), so the amount a producer receives from MPS is equal to what it costs the consumer. MPS accounts for most of the %CSE, but some countries also have important budgetary policies that support consumers. The **United States** provided the most budgetary support to consumers via assistance to low-income households, equal to 22% of the value of production in 2021-23 (Figure 2.3). **India** also provided substantial support to consumers, 8% of the value of production via the public distribution of food grains. **Norway** and **Indonesia** are the only other countries where budgetary support to consumers was greater than 1% of the value of production. Eleven countries provided no budgetary support to consumers at all.

India, the **United States** and **Argentina** provide the most support to consumers, India via a mix of budgetary support and MPS, the **United States** via budgetary support and **Argentina** via MPS alone. **Korea**, **Iceland**, **Japan**, **Switzerland**, and **Norway**, all have %CSE of -20% or greater of gross expenditures reflecting high levels of market price support to producers. Consumer support includes both support to final consumers of agricultural products as well as industry consumers who transform agricultural commodities into processed products.

Figure 2.3. Composition of the Consumer Support Estimate (CSE) by country, 2021-23



Note: Countries are ranked according to percentage CSE levels. A negative percentage CSE is an implicit tax on consumption. The European Union refers to the EU27. The OECD total does not include the non-OECD EU Member States. The 11 emerging economies include Argentina, Brazil, China, India, Indonesia, Kazakhstan, the Philippines, Russia, South Africa, Ukraine and Viet Nam. The All countries total includes all OECD countries, non-OECD EU Member States, and the emerging economies.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

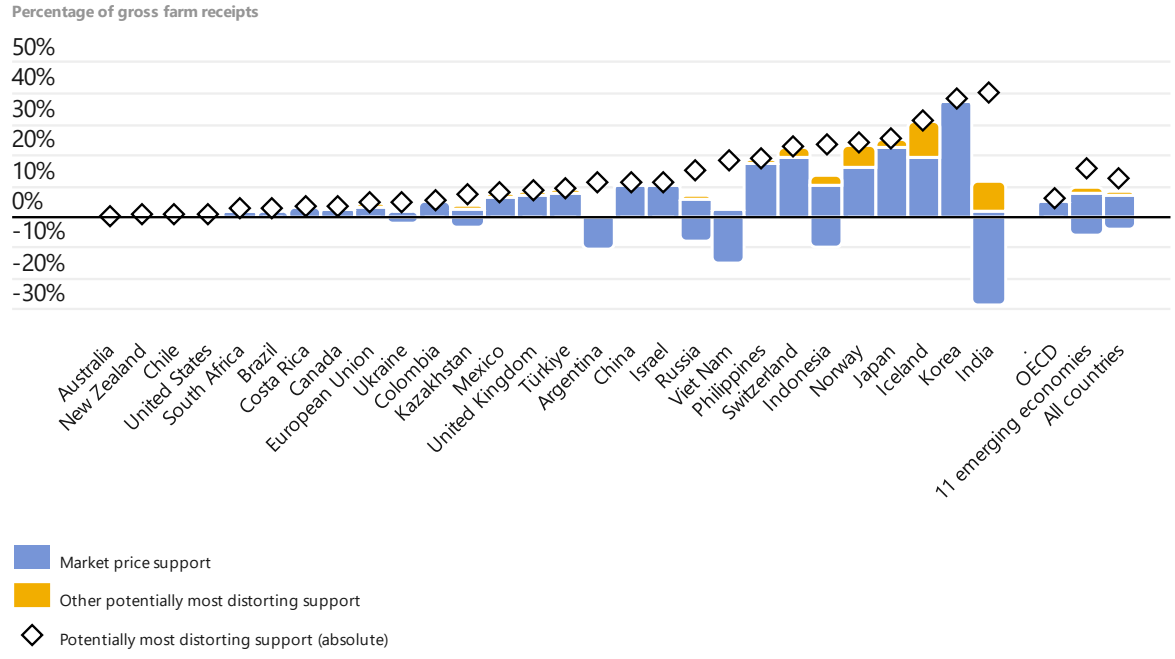
Most countries continue to use the potentially most distorting forms of support

Based on past and ongoing OECD work, the types of support considered to have the potential to be the most distorting are market price support, payments based on output, and payments based on the unconstrained use of variable inputs. These forms of support are also known for being both inefficient and poorly targeted to those households most in need.

As a share of gross farm receipts (GFR), **India** is the largest user with such policies generating transfers equivalent to almost 40% of GFR, with a significant part of this in the form of negative MPS. **Korea**, **Iceland**, **Japan**, **Norway**, **Indonesia** and **Switzerland** all offer potentially most distorting forms of support in amounts greater than 20% of GFR (Figure 2.4). At the other end of the scale, this support amounts to only 0.24% of GFR in **Australia**, and for **New Zealand**, **Chile** and the **United States** this support is less than 1% of GFR.

While the countries that provide the highest %PSE still provide most support in potentially most distorting forms, the share of this support in the total has declined in **Norway** and **Switzerland**, who now provide about half of support in less distorting forms. The **European Union** and the **United States** make relatively little use of most distorting support when compared to their overall %PSE.

Figure 2.4. Potentially most distorting transfers to producers by country, 2021-23



Note: Countries are ranked according to the share of potentially most distorting support in gross farm receipts. This share includes the absolute value of negative MPS, as well as any positive potentially most distorting support. "Other potentially most distorting support" refers to the support based on output payments and on the unconstrained use of variable inputs. The European Union refers to EU27. The OECD total does not include the non-OECD EU Member States. The 11 emerging economies include Argentina, Brazil, China, India, Indonesia, Kazakhstan, the Philippines, Russia, South Africa, Ukraine and Viet Nam. The All countries total includes all OECD countries, non-OECD EU Member States, and the emerging economies.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

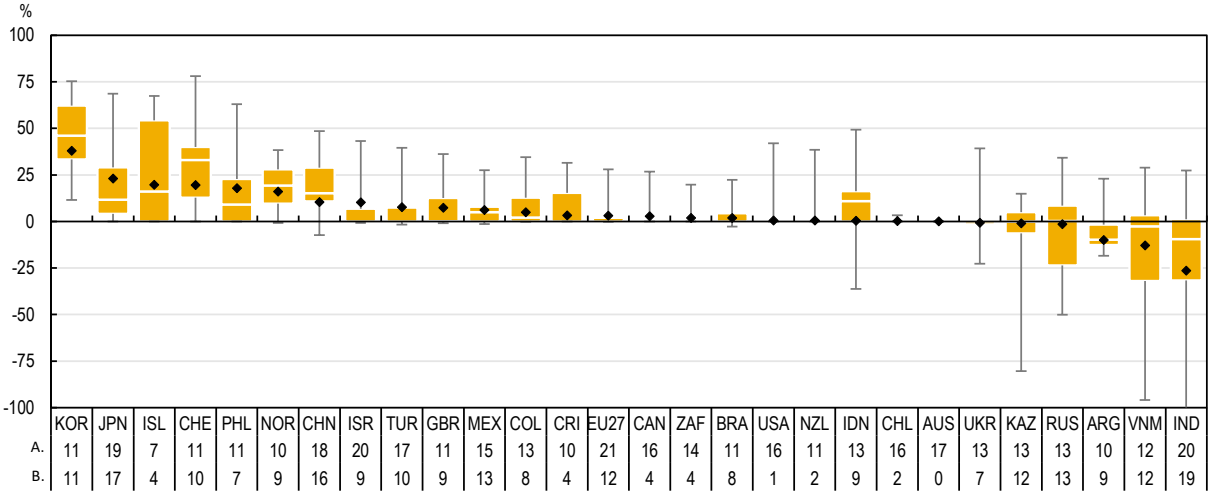
Market price support tends to be concentrated in a small set of commodities

Levels of support can differ between commodities in a given country. Few countries provide MPS support to all their major commodities. Countries can have a low rate of average MPS that masks the fact that some commodities are highly supported while others are relatively unsupported or implicitly taxed. For example, in **Indonesia**, MPS represented 0.2% of gross farm receipts in 2021-23. However, MPS represented 49% of the gross farm receipts specifically related to the production of sugar, and -39% of those related to the production of palm oil. Gross farm receipts for a specific commodity are referred to as "commodity gross receipts", which includes the value of production of that specific commodity plus any transfers arising from policies specifically targeting that commodity.

In **Korea**, **Japan**, **Iceland** and **Switzerland**, MPS on the most supported product is between 68% to 80% of commodity gross receipts, but all countries save **Korea** have at least one MPS commodity for which market price support is estimated to be zero. MPS is calculated for 16 commodities in the **United States**, but only one of these (sugar, at 42%) has a non-zero MPS. In **India** and **Viet Nam**, MPS on the most implicitly taxed product ranges between -91% and -138% of commodity gross receipts, but these countries also provide positive MPS support for at least one commodity amounting to around 25% of receipts (Figure 2.5) (see Box 1.2 for more information on how MPS is calculated).

Figure 2.5. Relative magnitude of product-specific market price support by country, 2021-23

Percentage of commodity gross receipts



Note: A. Number of commodities for which market price support is estimated (MPS commodities). B. Number of MPS commodities with non-zero MPS values.
The ends of the whiskers represent the minimum and maximum values across commodities, while the boxes indicate ranges between the first and the third quartiles with the horizontal line inside indicating the median. Diamonds represent the market price support share in gross farm receipts for total agriculture. The minimum value for India is -113%
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

Less distorting forms of support are offered in many different ways

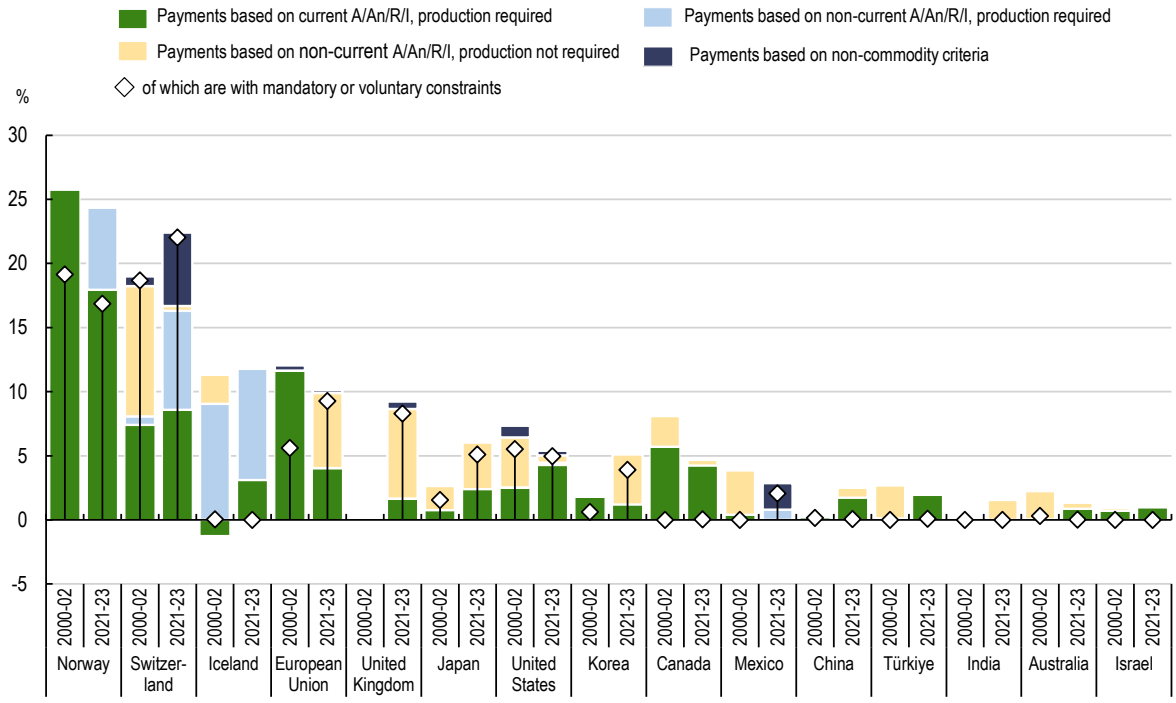
Some forms of support are considered potentially less distorting of production and trade. These include payments based on area, animal numbers, receipts or income (A/An/R/I) and payments based on non-commodity criteria. These are considered less distorting because they are not directly connected to the

price or production quantity of a specific commodity, though sometimes they require production as a condition for eligibility.

The amount of support considered potentially less distorting, expressed as a percentage of gross farm receipts, increased in **Switzerland**, **Iceland**, **Japan**, **Korea**, **China**, **India** and **Israel** (Figure 2.6). In **Switzerland**, this reflects the growing importance of payments based on non-commodity criteria, which represented 6% of GFR in 2021-23, the highest of all the countries included in this report. **Norway** provides support equal to nearly 25% of GFR in less distorting forms, the majority of which requires some form of production. The **European Union** provides the most support where production is not required, at 6% of GFR. Among the emerging economies, **China** and **India** have begun offering this form of support, where they had previously provided only minimal amounts. **China's** support of this type was 2.5% and **India's** was 1.5% of GFR in 2021-23.

Figure 2.6. Use and composition of support that is less coupled to production, selected countries, 2000-02 and 2021-23

Percentage of gross farm receipts



Note: Figure presents countries having share of payments based on area, animal numbers, farm receipts or farm income (A/An/R/I) and on non-commodity criteria above 1% for 2021-23 period. Countries are ranked according to the total share of payments for 2021-23. The European Union refers to EU15 for 2000-02, and EU27 for 2021-23. No data available for the United Kingdom for 2000-02.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

Summary and conclusions

In most countries, the level of support has decreased as a share of GFR over the last 20 years. This largely reflects increases in the value of production, as overall support is near historic highs in nominal terms. Only **China** has significantly increased support as a share of GFR, from 5% in 2000-02 to 14% in 2021-23.

Support varied between 49% (**Norway**) and -15% (**India**) of gross farm receipts on average over 2021-23, demonstrating the broad scope of policy objectives pursued by countries in this report.

Japan, **Switzerland** and **Korea** deliver the most support in the form of general services in 2021-23, each delivering more than 7% of the value of production. Infrastructure is the largest component of the GSSE overall, and **Japan**, **Korea**, **Philippines**, **Türkiye**, **Chile** and **Viet Nam** are the most concentrated on this form of general support. **Switzerland** provides the most support to agriculture knowledge and information systems, 4.2% of the value of production. Support to AKIS is generally increasing in OECD countries and decreasing in emerging economies as a percentage of the value of production, a fact which is troubling for the prospects for sustainable productivity growth in emerging economies.

The amount of support to consumers generally follows the pattern of MPS, as this is a transfer between consumers and producers. However, some countries provide budgetary support to consumers. This is generally focussed on low-income households. The **United States**, **India**, **Norway**, **Indonesia** and **Brazil** spend the most on this.

The forms of support that are potentially most distorting of production or trade are the largest share of the total, a situation that has been true for many years. **India** is the largest user; almost 40% of gross farm receipts. On the other hand, some countries make little use of this form of support. In **Australia**, **New Zealand**, **Chile** and the **United States** this support is less than 1% of GFR. The share of this support in the total has declined substantially in countries like **Norway** and **Switzerland**, who have historically made the most use of this support as a percentage of GFR. The share of support overall masks considerable variation in support by commodity within countries. In fact, a country may support one commodity while taxing another, making the overall total more difficult to interpret.

Most support considered potentially least distorting is based on current or historical area, animal numbers, receipts or incomes. The use of payments based on non-commodity criteria remains relatively rare. This type of support can be used to deliver environmental and social goods to the public. Of the countries in this report, **Switzerland** and **Mexico** offer the most support based on non-commodity criteria, as a percentage of GFR.

Country chapters

This part contains chapters on agricultural policy developments and support to agriculture in each of the countries covered in this report. Each country chapter includes a brief summary of policy developments and support to agriculture, with a special focus on innovation for sustainable productivity growth; a brief outline of historical policy trends; a presentation of the main policy developments in 2023-24; and information on the context in which agricultural policies are implemented.

3. Argentina

Main findings

Support to agriculture

Argentina's overall support to the agricultural sector has been negative since the beginning of the 2000s due to export taxes that depress domestic prices received by producers. However, some budgetary payments are provided to producers based on input use, mainly in the form of credit at preferential rates. Occasionally, direct payments are provided as disaster assistance in response to extreme weather events, most frequently for drought.

Support to producers (Producer Support Estimate, PSE) averaged -13.7% of gross farm receipts in 2021-23, compared to -5.1% two decades earlier (2020-22). Fluctuations in support are driven by changes in market price support due to changing export tax rates and macroeconomic conditions such as the steep depreciation of the Argentine peso since 2018 and periods of high inflation. The ratio of producer to border price (National Protection Coefficient, NPC) reached 0.9 in 2021-23, making producers' prices on average 10% below world market prices.

During 2021-23, Single Commodity Transfers (SCT) were most negative for milk, poultry meat and soybean. Price support and SCTs were positive only for pig meat and eggs. Mirroring the negative PSE, consumers enjoyed a positive Consumer Support Estimate (CSE) of 9.3% of expenditure at farm-gate prices in 2021-23.

Support to general services (General Service Support Estimate, GSSE) decreased from 0.7% in 2000-02 to 0.4% in 2021-23 relative to the value of agricultural production, well below that of most emerging economies covered in this report. Expenditure on the agricultural innovation system and extension services represents the largest component of GSSE but has been decreasing relative to other GSSE components.

Total budgetary support to farmers and the sector overall was 0.1% of Gross Domestic Product (GDP) in 2021-23, well below the absolute value of negative market price support, making the Total Support Estimate (TSE) negative throughout the period: -0.8% of GDP in 2000-02 and -1.6% in 2021-23.

Key recent policy changes

Argentina abolished the executive power to adjust export taxes, now requiring any adjustments to be decided through the legislative process. Existing export taxes continue to apply.

In 2023 measures were implemented to support agricultural production systems affected by one of the worst droughts in the last century, including feedlot production for beef supply, avian and sheep wool producers, and dairy producers. Compensatory payments aim to mitigate the adverse impacts of low yields and production costs that are exacerbated by macroeconomic instability.

The government enacted a new law promoting organic production in the regional economies and implemented initiatives to raise awareness and provide information about certified organic operators. In

addition, reference quality labels were awarded to over 500 food industry products, enhancing the distinction and value of Argentine foods in the domestic and international markets.

Argentina approved the Bioeconomy Action Plan and formed the Argentine Federal Bioeconomy Network to promote sustainable and comprehensive use of biological resources. The initiative Bioenergy Municipalities Programme was created to promote the use of residual dry biomass.

Assessment and recommendations

- Sustainable productivity growth is a critical concern for Argentina given its significant reliance on agricultural production and exports. Over the years, the country has capitalised on its abundant natural resources and embraced technological advancements to enhance productivity. However, Argentina is vulnerable to a wide variety of climate change impacts (including floods and droughts) and faces several environmental challenges (including low nutrient balances, high energy use and GHG emissions, and water deficit regions), and slowing productivity growth.
- Argentina has adopted policy measures to foster sustainable productivity growth under the Bioeconomy strategy. Public research and development (R&D) efforts have contributed significantly to technological progress and productivity growth, while other initiatives have supported environmentally and socially impactful projects, or improved resilience to climate risks. For example, the updated soil carbon mapping and inventories of agricultural greenhouse gas (GHG) emissions generate relevant information, and some programmes facilitate knowledge exchange and collective advancement in sustainable production practices.
- Further investment should be made to provide technical assistance, training, and capacity building for farmers to become more resilient and improve their sustainability performance. The government should encourage farmers to adopt climate-smart practices, crop diversification, and sustainable land-management techniques through targeted support programmes and financial incentives. The recognition of carbon markets as one of the mechanisms to contribute to compliance with environmental commitments in 2023 is of interest for agriculture.
- The December 2023 shift of responsibility for export taxes to the legislature creates a more predictable framework to foster long term investment and reduce food insecurity. More actions are needed to implement a balanced and transparent approach to export taxes that considers the economic viability and competitiveness of agriculture as part of an economy-wide tax-system review relying on alternative sources of fiscal revenue rather than on export taxes.
- More generally, agricultural policy could be better anchored in a broad and long-term policy framework, moving towards more neutral, stable, predictable and targeted policies. Avoiding delays in policy implementation will help farmers to plan their economic activities more efficiently.
- More investment in irrigation infrastructure and improved water-management systems is needed to address persistent drought and cover water-deficit regions. Promoting drought-tolerant crops and sustainable farming practices can also enhance resilience in the face of changing climate patterns.
- Financial assistance programmes should be extended to facilitate access to credit with preferential interest rates for small and medium-sized producers. Investing in training programmes, knowledge-sharing platforms, and the development of regional agro-industrial value chains can boost the competitiveness and resilience of these producers.
- To deliver research, extension, and other public goods for agricultural innovation, Argentina should develop systematic monitoring of efforts and results in R&D and innovation and define and implement strategic priorities. Innovation policy should emphasise public goods such as those related to sustainability and improving value chains.

Development of support to agriculture

Figure 3.1. Argentina: Development of support to agriculture

Figure 3.1A. Argentina: Producer Support Estimate and its composition

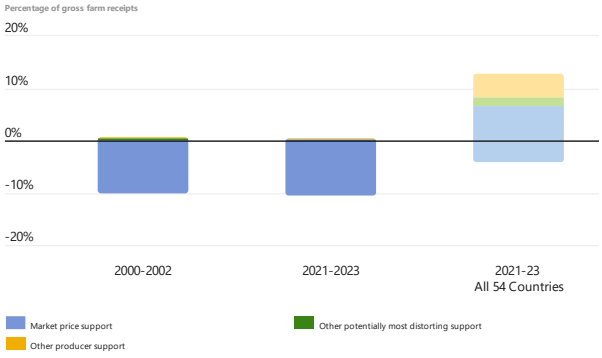


Figure 3.1B. Argentina: Ratio of producer to border price

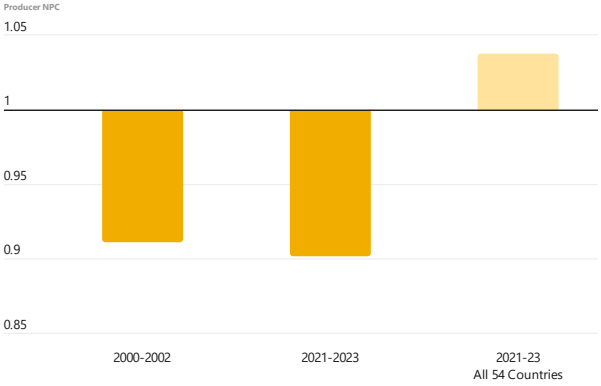


Figure 3.1C. Argentina: General Services Support Estimate and its composition

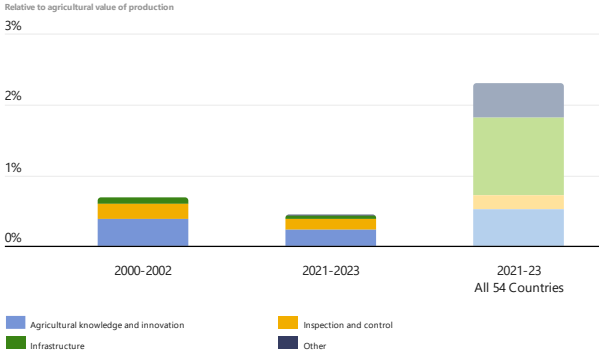
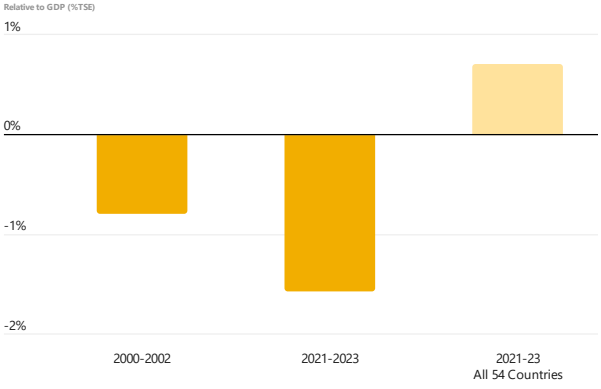
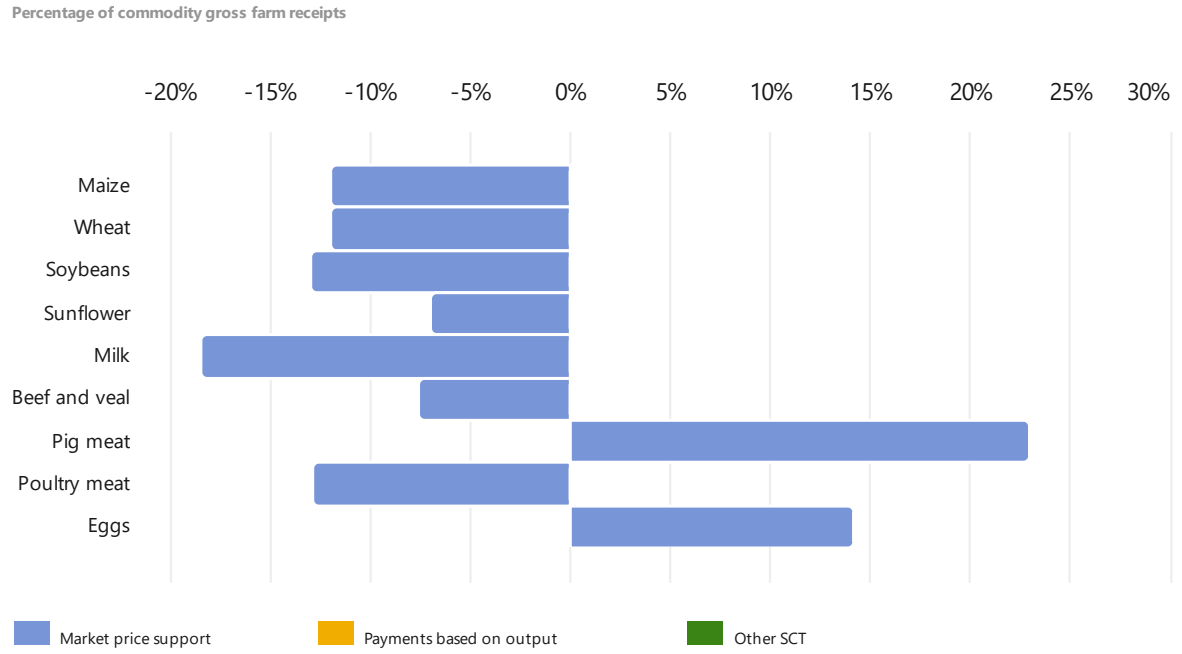


Figure 3.1D. Argentina: Total Support Estimate



Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 3.2. Argentina: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Table 3.1. Argentina: Estimates of support to agriculture

Million USD

.	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**16 296**	**84 733**	**55 065**	**73 484**	**125 648**
of which: share of MPS commodities (%)	82.55	83.93	86.48	84.75	80.57
Total value of consumption (at farm gate)	**7 417**	**58 353**	**37 860**	**50 809**	**86 391**
Producer Support Estimate (PSE)	**-837**	**-11 738**	**-15 181**	**-13 715**	**-6 317**
Support based on commodity output	-871	-11 882	-15 296	-13 872	-6 479
Market price support[1]	-934	-11 933	-15 320	-13 936	-6 542
Positive market price support	47	386	424	426	308
Negative market price support	-981	-12 319	-15 743	-14 362	-6 850
Payments based on output	62	50	24	64	63
Payments based on input use	34	142	111	155	160
Based on variable input use	2	15	11	11	24
with input constraints	0	0	0	0	0
Based on fixed capital formation	23	100	79	116	104
with input constraints	0	0	0	0	0
Based on on-farm services	8	27	21	28	33
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	0	2	3	2	2
Based on Receipts / Income	0	0	0	0	0
Based on Area planted / Animal numbers	0	2	3	2	2
with input constraints	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	0	0	0	0	0
With variable payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
With fixed payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
Payments based on non-commodity criteria	0	0	0	0	0
Based on long-term resource retirement	0	0	0	0	0
Based on a specific non-commodity output	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0
Miscellaneous payments	0	0	0	0	0
Percentage PSE (%)	**-9.15**	**-9.79**	**-27.50**	**-18.61**	**-5.02**
Producer NPC (coeff.)	**0.91**	**0.90**	**0.77**	**0.83**	**0.95**
Producer NAC (coeff.)	**0.92**	**0.91**	**0.78**	**0.84**	**0.95**
General Services Support Estimate (GSSE)	**116**	**394**	**266**	**406**	**511**
Agricultural knowledge and innovation system	66	202	120	179	306
Inspection and control	33	131	113	151	129
Development and maintenance of infrastructure	17	40	31	33	54
Marketing and promotion	0	22	1	42	21
Cost of public stockholding	0	0	0	0	0
Miscellaneous	0	0	0	0	0
Percentage GSSE (% of TSE)	.	.	.	.	.
Consumer Support Estimate (CSE)	**216**	**8 511**	**11 638**	**11 494**	**2 400**
Transfers to producers from consumers	254	9 261	12 677	12 077	3 028
Other transfers from consumers	-6	144	14	421	-2
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	-32	-894	-1 053	-1 003	-626
Percentage CSE (%)	**6.34**	**9.27**	**30.74**	**22.62**	**2.78**
Consumer NPC (coeff.)	**0.93**	**0.91**	**0.75**	**0.80**	**0.97**
Consumer NAC (coeff.)	**0.94**	**0.92**	**0.76**	**0.82**	**0.97**
Total Support Estimate (TSE)	**-722**	**-11 344**	**-14 916**	**-13 309**	**-5 806**
Transfers from consumers	-248	-9 405	-12 691	-12 497	-3 026
Transfers from taxpayers	-467	-2 083	-2 239	-1 232	-2 778
Budget revenues	-6	144	14	421	-2
Percentage TSE (% of GDP)	**0.78**	**-1.57**	**-3.06**	**-2.10**	**0.94**
Total Budgetary Support Estimate (TBSE)	**212**	**589**	**404**	**627**	**736**
Percentage TBSE (% of GDP)	**0.10**	**0.11**	**0.08**	**0.10**	**0.12**
GDP deflator (2000-02 = 100)	**100**	**20 741**	**9 551**	**16 187**	**36 483**
Exchange rate (national currency per USD)	**1.70**	**173.95**	**95.08**	**130.66**	**296.11**

.. Not available

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for Argentina are: wheat, maize, soybean, sunflower, fruit and vegetables, milk, beef and veal, pig meat, poultry and eggs.

Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

Unlike most countries covered by this report, Argentina maintains export restrictions that result in domestic prices to be lower than on international markets. Export taxes are by far the most important market intervention and a major source government of revenues. The responsibility of the Ministry of Finance to design and implement these export taxes and adjust their rates by decree was removed by the new administration in December 2023. This means that since early 2024, new trade restrictions are only possible through the legislative process. Existing export taxes on soybeans, soybean products (meal and oil), maize, wheat, other cereals, sunflower grain and oil, maize and wheat flour, several milk products, and beef continue to apply.

Argentina provides a relatively small amount of input subsidies, mostly via preferential credits that finance investment and working capital in the production of a range of commodities. For example, the fund FONDAGRO, established in 2017, finances investment in the sector at preferential interest rates for specific groups with a limited scope. The Ministry of Productive Development provides credit financing for capital investments by micro, small, and medium-sized enterprises in the poultry and pig sectors. Direct payments are provided occasionally as disaster assistance in response to extreme weather events, most frequently for drought.

The Special Tobacco Fund (FET) was created in 1972 to provide additional revenue and support to tobacco producers in certain northern provinces. The fund is financed by a 7% tax on tobacco retail prices and managed by the Ministry of Agriculture, Livestock, and Fisheries. The federal government transfers 80% of collected funds to tobacco-producing provinces based on their share of production. After signing the WTO agreement in 1994, Argentina committed to reducing this support, and FET payments to tobacco producers have declined. The remaining funds are used for technical assistance, investing in local infrastructure, and providing social and health assistance.

Public expenditures in agriculture are mainly for general services to the sector such as the agricultural knowledge and innovation system and inspection control services. INTA is the federal agency responsible for research and promoting technological innovation in agriculture, livestock, and agri-food. The institute conducts scientific and technological research, provides technical assistance and training to farmers and other stakeholders in the agricultural sector, and develops and disseminates knowledge and technologies related to agricultural production, agro-industrial processes, and rural development. INTA also collaborates with national and international organisations, universities, and private companies to promote innovation and competitiveness in the agricultural sector (OECD, 2019[1]; Echeverria, 2021[2]).

SENASA is responsible for ensuring the safety and quality of agricultural and livestock products. It develops and enforces regulations and standards for the production, processing, and transport of agricultural products and it provides certification, inspection, and laboratory services to ensure compliance with these standards. SENASA also works to prevent and control the spread of animal and plant diseases and monitors and controls the use of pesticides and other agricultural chemicals to protect human health and the environment.

The Provincial Agricultural Services Programme (PROSAP) invests mainly in large-scale agricultural infrastructure and provides support services for competitiveness with projects aimed at improving agri-food chains. Rural infrastructure is of vital importance for agricultural production in Argentina given that many rural areas are isolated and low-populated. Therefore, rural roads, for example, are mainly used for the transportation of agricultural production to the ports.

Agri-environmental regulations and policies in Argentina are mostly legislated and implemented at the provincial level. For example, Santa Fe started a Good Agricultural Practices Programme in 2021, and

Entre Ríos enacted a Law on Soil Conservation in 2018, which requires mandatory soil conservation for areas with soil degradation. In Buenos Aires, the *Buenas Prácticas Agrícolas - Suelos Bonaerenses* Programme, which started in 2020, provides training and supports extensive producers of crops to carry out crop rotation, practices reducing water and wind erosion, and plans to reduce pesticide use. Córdoba has a Law on Good Agricultural Practices that sets standards for sustainable agricultural production and compliance with the programme gives farmers access to lump-sum payments.

Since January 2020, the Argentina Against Hunger social programme has provided financial support for children, pregnant women and disabled people. Support is provided through an electronic food card that can be used in any grocery store. The food card is given to parents of children under the age of six who receive the Universal Allowance per Child (AUH), pregnant women who receive the Universal Pregnancy Allowance (AUE), and people with disabilities who receive the AUH. In 2023, the programme reached over 4.1 million beneficiaries (ANSES, 2024[3]).

The agricultural sector contributes 28% of GHG emissions in Argentina (Ministerio de Ambiente y Desarrollo Sostenible, 2021[4]). Argentina's second NDC for the 2015 Paris Agreement on Climate Change was submitted in December 2020 and updated in October 2021. Argentina is committed to an economy-wide net emission limit of 349 $MtCO_2eq$ by 2030 – equivalent to a decrease of 19% compared to the peak reached in 2007. In November 2022, Argentina submitted a long-term strategy (LTS) to the UNFCCC that includes a target to reach GHG neutrality by 2050.

Some of the tools that Argentina employs to reach this goal are expansion of renewable energies (at least 30% of the total energy matrix will have to be from renewable sources by 2030), lower subsidies for fossil fuels, expanded protected areas, and improved efficiency in agriculture, industry, transport and construction among others. In addition to its active commitment and participation in the primary multilateral competent fora on climate change, i.e. the UNFCCC, Argentina participates in other initiatives, such as the Global Bioenergy Partnership and the Global Research Alliance on Agricultural Greenhouse Gases (GRA) and the Global Methane Pledge initiative, among others. The National Institute of Agricultural Technology (INTA) plays an important role in research and innovation to reduce GHG emissions from agriculture and has a portfolio of research projects related to climate change mitigation and adaptation.

Innovation for sustainable productivity growth

Argentina is a competitive producer and exporter of agricultural products. The country has profited from the richness of its natural resources, but it has also adopted technologies, which have allowed it to increase productivity (Bisang, Anlló and Campi, 2008[5]). Agricultural productivity in Argentina grew at an average annual rate of 1.49% between 1961 to 2020, accounting for 75% of agricultural output growth (Morgan, Fuglie and Saini, 2023[6]). Between 1961 and 1990, the TFP grew at an annual rate of 2.32%, leading to positive output growth even as input use was shrinking. During this period, new technologies, particularly, new plant varieties, allowed more production without increasing resource use (Fuglie and Echeverria, 2024[7]). Between 1991 and 2020, TFP grew at an annual rate of 0.54%, well below the average productivity observed during the 1990s but following a trend experienced by many other countries during this period. In contrast, Argentina faces several environmental challenges, including low nutrient balances (especially, average nitrogen balance), high shares of agriculture in energy use and GHG emissions, which are well above the OECD average. In addition, Argentine agriculture is vulnerable to a wide variety of climate change impacts, including floods and droughts (World Bank, 2022[8]).

Technological change has contributed to increased input use, for example, direct sowing allowed the more intensive use of agricultural land bringing into production previously marginal pasture and uncultivated areas (Bisang, Anlló and Campi, 2008[5]; Morgan, Fuglie and Saini, 2023[6]). Argentina was also an early adopter of technologies such as genetically modified crop varieties that tolerate herbicides or have insect resistance, together with direct or no-till sowing.

Argentina has adopted the *Bioeconomy* as the main strategy for productive intensification that promotes biologically based value chains, enhancing the potential of available resources. Based on the generation of new scientific and technological knowledge and its application, the approach focuses on accelerating the use of methods and processes that ensure the traceability, quality, and sustainability of products and the creation of certifications and labels that allow food to position itself with added value for an increasingly demanding market.

Argentina's agricultural production aims to achieve sustainable intensification, which is understood as a process of gradual improvement of the ecological efficiency of agricultural systems through innovation to promote greater productivity and profitability, with less environmental impact, to the maintenance and/or improvement of natural resources, reducing dependence on external inputs and favouring equity and social inclusion (Gutiérrez et al., 2020[9]).

Public research, development, and diffusion

An important factor contributing to sustainable productivity growth is the innovation system. Argentina has developed and maintained one of the most prominent public agricultural research systems in Latin America and the Caribbean (Echeverria, 2021[2]). There is evidence of a positive impact of public agricultural research expenditure on agricultural TFP growth in Argentina. At the same time, the private sector has made significant contributions to technological change and innovation in agriculture (Bisang, Anlló and Campi, 2013[10]). Through public-private co-ordination, comprehensive agricultural development policies, programmes and actions direct efforts to make progress towards sustainability, while contributing to the four dimensions of food security (availability, access, utilisation and stability), which implies increasing productivity.

Innovative approaches for adding value and sustainability

Argentina promotes the use of **food certifications covering different topics** and establishing diverse requirements such as quality standards and reduction of environmental impacts in production processes; safety and health of workers; health and nutritional issues of food; efficient use of energy or replacement with cleaner energy sources; environmental footprints (carbon and water); land use; and relations with the community and respect for human rights.

Argentina's Government, in collaboration with the Ministry of Economy and the Inter-American Development Bank (IDB), has formulated a **Sustainable Financing Framework**, which aims to facilitate the issuance of bonds or loans to finance programmes and projects with positive environmental and social impacts. Through this initiative, Argentina aims to direct resources towards investments that align with environmental objectives and promote competitiveness within a trajectory of sustainable development.

Fostering an enabling environment for sustainable productivity growth

Argentina has advanced in improving available information, advice and other tools for policy makers and producers to innovate for sustainable productivity growth. Actions to foster an enabling environment include:

- **Updated map on the organic carbon reserve**: the soil organic carbon (SOC) is crucial for sustainable agriculture as it serves as a primary indicator of soil quality and productivity potential. INTA used data collected from 5 400 soil samples processed between 2015 and 2022 for INTA updating a map of the SOC reserve in Argentine soils. Digital soil mapping techniques were used along with climatic, topographic, soil, and vegetation data to create a predictive model.
- **Inventories of agricultural GHG emissions**: updated every two years, this is crucial for assessing compliance with Argentina's Nationally Determined Contribution under the Paris Agreement. The Ministry of Agriculture, Livestock, and Fisheries is involved in calculating emissions for Agriculture,

Livestock, Forestry, and Other Land Uses. Efforts aim to enhance the accuracy of the sector's emission estimates, with ongoing projects that include a comparative analysis of emission methodologies, development of local emission factors for Argentina's sheep farming, assessment of nitrous oxide emission research, and a proposal comparing estimated enteric fermentation emissions with field measurements by Argentine researchers.

- The **National Management Plan for Forests with Integrated Livestock** aims to promote sustainable use of native forests through forest-livestock management and is led by a National Technical Committee, which has set national guidelines as minimum requirements, adaptable by provincial jurisdictions. To ensure no compromise on ecosystem goods and services, plans must adhere to minimum criteria for Sustainable Management of Native Forests, maintaining exclusive areas for biodiversity conservation, genetic preservation, and wildlife protection while ensuring the forest's vertical structure's functionality. Livestock planning should align with system capabilities, incorporating efficient watering point designs, and all plan activities require periodic monitoring.
- The **Cambio Rural Programme** enables producers to access technical and organisational guidance, training, and exchange experiences with other producers to collectively advance in the transformation process of their production systems.

Fostering resilience for sustainable productivity growth

Argentina has been developing several tools to facing a shock and to foster subsequent recovery in front of the increasing extreme weather events, including:

- The **National Agricultural Emergency Law 26.509** establishes a framework for preventing and mitigating agricultural emergencies.
- The programme **Comprehensive Risk Management Programme in the Rural Agro-industrial System** (GIRSAR) aims to strengthen the resilience of the agro-food system, reducing the vulnerability and exposure of producers to climate and market risks, especially among the most vulnerable actors. This risk management strategy focuses on climate and market risks and includes mitigation and emergency response actions.
- The **Interinstitutional Protocol for Information Management** was created in response to the threat of meteorological and agricultural droughts in Argentina.
- Projects within INTA that focus on designing a national **monitoring system to mitigate land degradation**.

Recent policy developments

Domestic policy developments in 2023-24

Argentina's domestic policy has been marked by drought conditions, which have persisted since 2019 and resulted in poor agricultural yields and production in several agricultural areas. In the agricultural season 2022-23, many crops suffered losses of more than 50%, although better results are expected for the season 2023-24. Simultaneously, the country showed macroeconomic instability with high inflation, exchange rate volatility, devaluation, and difficulties keeping the necessary foreign currency level, which can increase part the costs of agricultural inputs, reduce export competitiveness and farmers' income, and increasing uncertainty, all affecting the development of agriculture. Several policy developments are driven by this context.

Production and marketing practices

In March 2023 Argentina adopted a measure to encourage feedlot production to ensure the supply of beef for domestic consumption, optimise its production systems and improve the profitability of the sector. This is in response to lower pasture capacity caused by drought conditions. In this framework, 95 beneficiaries were approved for a total amount of ARS 187 million (USD 633 000).

Similarly, to respond to an increase in the production costs (especially in soybean) of poultry production, the Productive Strengthening Programme for the Avian Sector was implemented in 2023 as an assistance tool to compensate avian producers for this increase. The programme granted 78 poultry producers a total of ARS 1.9 billion (USD 6.5 million). To be eligible for the funding a series of administrative requisites were established, including that producers must have sold chickens during the month of December 2022, when the increase in soybean price took place.[1]

The Economic Compensation Programme for Small and Medium Sheep Wool Producers in the Patagonian Region (LANAR) was created in 2023 to address low international prices of wool and the drought that affected the Patagonian region that year. It has a total investment of ARS 1.5 billion (USD 5 million) from the Export Increase Fund to finance programmes that stimulate the production and development of small and medium producers and regional economies.

Two programmes for the assistance of dairy producers (*Impulso Tambero* 1 and 2) in the context of low prices and drought were implemented in 2023, to financially compensate small and medium-sized dairy producers with the aim of increasing milk supply, optimising production systems and improving profitability. The assistance was provided during four consecutive months and consists of ARS 15 per litre for those producing less than 1 500 daily litres and ARS 10 for those producing between 1 501 and 5 000 daily litres.

Following the 2021 strategic plan for the organic sector by 2030, several actions took place in 2023, including a new law promoting organic production in the regional economies, events and contests to promote organic products, and a platform providing information about certified organic operators.

During 2023, 510 new products were awarded Reference Quality Labels for the food industry that promotes distinction and gives value to Argentine foods.[2] To date, more than 3 500 products are marketed with this type of label.

Over the course of 2023, in the context of PROCAL that help differentiate products, facilitate access to new markets and contribute to improving competitiveness, three projects reached 350 beneficiary SMEs:

- 50 SMEs implemented quality protocols of the Argentine Foods, A Natural Choice label.
- 250 producers received support in developing technical and legal requirements to register 10 potential geographical indications or designations of origin.
- 50 other companies applied the Guide for Sustainable Agri-Food SMEs.

Training, responses to queries and information material were provided in 2023 to actors in the food sector to help them comply with the Law for the Promotion of Healthy Eating.[3] The law made it mandatory to place one or more warning labels for each critical nutrient, as appropriate, as well as cautionary legends, for example, for sweeteners and caffeine. Technical assistance to the sector will continue in 2024 in terms of possibilities for reformulation or substitutes and in terms of food education.

Animal and plant health and safety

In February 2023, Argentina issued a sanitary emergency upon confirmation of the first case of the avian influenza virus in a wild bird. Also, the Ministry of Economy decided to provide economic assistance to affected commercial producers to improve the effectiveness of the disease containment measures.[4]

A SENASA resolution of 2023 provided an inventory of biopreparations protocols to formalise and provide guarantees for products already in use and whose production is beginning to increase in scale. Another resolution approved the possibility of registering bio-inputs in the National Registries of Plant Therapeutics, and of Fertilisers, Amendments, Substrates, Conditioners, Protectors and Raw Materials, for those interested in preparing, importing, exporting, having, fractioning, distributing or selling bio-inputs.

In 2023, the Beekeeping Strategic Roundtable was created within the SENASA Presidency Unit to establish priorities and articulate actions to be developed based on the sector's needs. Protecting bees and other pollinators is seen as essential to ensuring their significant contribution to solving problems related to the productivity of food production systems.

Bioeconomy and biotechnology

The Bioeconomy Action Plan in the agricultural sector was approved in 2023. The plan aims to guide public efforts to promote the development of the bioeconomy as a sustainable and complementary production model, based on the comprehensive use of biological resources and technologies for economic, social and territorial development. With a four-year horizon, the plan proposes long-term and medium-term results and the development of several activities and instruments, such as awareness raising, dissemination, diffusion of information and training; articulation mechanisms, agreements and protocols with different types of institutions; funding for bio-entrepreneurship; regulations and procedures; and international and regional relations and agreements.

The Argentine Federal Bioeconomy Network was formed in 2023 to diffuse bioeconomy-related public and private initiatives. It also provides for a space for discussion and exchange for stakeholders of the bioeconomy in Argentina, and to collaborate in the medium and long-term objectives of the Bioeconomy Action Plan.

In July 2023, the Bioenergy Municipalities Programme (*Programa Municipios Bioenergéticos*) was created to promote the use of a large part of the residual dry biomass that comes from residues or byproducts of agro-food activities, allowing production cycles to be closed. The beneficiaries of the programme can be municipalities, micro, small and medium enterprises, local co-operatives and public entities that dedicate their activities to the development of bioenergy. The programme will work on making surveys, analyses and evaluations of the local bioenergy sector, creating awareness, training and capacity building, and providing accompaniment to local projects.

In 2023, in the framework of the BIODESARROLLAR programme,[5] a call for project financing was launched and received 130 project applications, of which 23 projects started receiving funding. Also, in 2023, Argentina created the National Registry of Bioproducers, the National Registry for Bioproducts, and the National Registry of Biomaterials. Additionally, Argentina awarded 21 labels for biomaterials, 8 certificates of interest, and 8 labels and 7 certifications for bioinputs.

Eight genetic modifications for plants were approved for commercialisation between January 2023 and March 2024 in Argentina: four herbicide- and insect-tolerant soybeans, three varieties of corn tolerant to herbicides and insects, and a cotton variety tolerant to herbicides and insects.[6] Between the end of 2023 and the beginning of 2024, the commercialisation was authorised of the first six genetically modified yeasts with improved capacity to produce bioethanol from grain fermentation, and a vaccine that confers protection against Mycoplasma hyopneumoniae and porcine circovirus.

Risk management and rural infrastructure

Several ongoing projects under the GIRSAR advanced in 2023. In addition, 12 new projects were initiated across various provinces, including a sanitary strengthening project and an irrigation system in Neuquén, irrigation improvements in San Juan, a forest fire prevention project and irrigation system in Mendoza, modernisation efforts of the irrigation systems in Río Negro, fire control and prevention in Córdoba, rural

roads in Entre Ríos. Evaluations are underway for an Agro-Environmental Management project in Misiones and a climate risk management project in Rio Negro, with estimated costs of USD 8.4 million and USD 7.9 million, respectively.

Rural development, family farms and indigenous agriculture

Several activities were developed during 2023, including the creation of alliances, training activities, approval of projects in different provinces, and administrative closure in some cases, within the framework provided by multiple projects, aiming to improve rural development. The project *En nuestras manos* aims to reduce gender gaps in rural areas and assist agricultural producers in the context of the COVID-19 crisis, the Programme for the Promotion of Resilient and Sustainable Agri-food Systems for Family Farming (PROSAF) supports sustainable, inclusive production and marketing systems for peasants and family farmers, the project of Socio-Economic Inclusion in Rural Areas (PISEAR) promotes the socio-economic inclusion of rural families in poverty, through improvements in their living and production conditions.

The Goat Chain Development Programme (PRODECCA) aims to improve the income of goat-producing families in Indigenous Peasant Family Agriculture. It has reached over 2 500 beneficiary families in 2023 and developed activities in collaboration with the INTA.

The Support Programme for Small Wine Producers in Argentina (PROVIAR II) started in 2023 to support the social, economic, and environmental sustainability of Argentine viticulture. Several projects have been approved within this programme with financial support of USD 8 million for small producers in several provinces.

Trade policy developments in 2023-24

In December 2023, the new administration abolished the faculties of the Ministry of Finance to design and implement export taxes and adjust their rates by decree. New prohibitions or restrictions on exports or imports for economic reasons can only be carried out through the legislative process.

In November 2023, the Export Increase Programme was extended for the last time. This programme was launched in September 2022 to promote soybean sales and strengthen international currency reserves. Exporters of soybeans, flour, oil, and biodiesel made with soybean oil, agreed to enter foreign currency into the country at a preferential exchange rate, higher than the official one, which implies that they receive a higher price in ARS.[7]

In July 2023, Argentina increased the equilibrium volumes of exports (VEE) for the maize campaign of 2022-23 from 20 to 26 tonnes for exports.[8] Since January 2021, maize and wheat exporters have been required to comply with administrative export permits that are granted by the Ministry of Agriculture depending on the quantity available and the price in the domestic market. In December 2021, the Ministry of Agriculture, Livestock, and Fisheries established a framework regulating exports based on VEE and limiting export permits. The ministry publishes the VEE for maize and wheat based on the government's projection of production, domestic consumption and stocks. Exporters can request export declarations (DJVE) for up to 90% of the VEE. Once this limit is reached, additional export permits will only be granted within 30 days of the expected exporting date. In December 2023, the new administration dismantled these restrictions.

In 2023, the Ministry of Agriculture, Livestock and Fisheries, approved the procedure for submitting applications for commercial authorisation of a genetically modified organism (GMO) for agro-food use, within the framework of the Memorandum of Understanding between the Ministry of Science, Technology and Innovations of the Federative Republic of Brazil and the Ministry of Economy of the Argentine Republic for co-operation in biosafety regulations of modern biotechnology products signed in 2022.

Policy context

Key economic and agricultural statistics

Argentina is an upper middle-income country with a dynamic agricultural sector that has been making a growing contribution to the GDP, from 4.7% of the GDP in 2000 to 6.6% in 2022. In contrast, agriculture's share of employment decreased from 11.9% in 2000 to 7.2% in 2022. The country is one of the world's largest agricultural exporters, and agro-food represented 41.5% of total exports in 2000, and 57.2% in 2022. In contrast, agro-food imports represented only 5.4% of total imports in 2000 and 6.1% in 2022. Argentina has abundant agricultural land representing 4% of the total agricultural area of all countries covered in this report, with a large share of this area composed of pastureland.

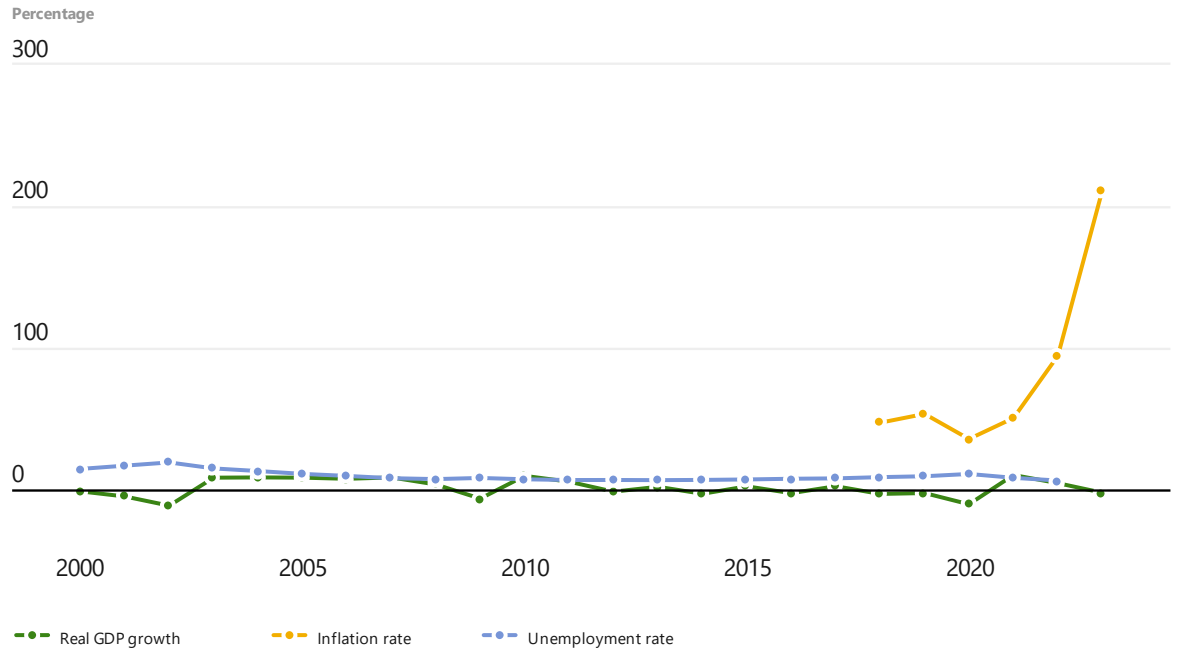
Table 3.2. Argentina: Contextual indicators

	Argentina		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	428	1 225	1.1%	0.9%
Population (million)	37	46	0.9%	0.9%
Land area (thousand km^2)	2 737	2 737	3.4%	3.3%
Agricultural area (AA) (thousand ha)	128 510	117 958	4.3%	4.0%
			All countries[1]	
Population density (inhabitants/km^2)	13	16	52	64
GDP per capita (USD in PPPs)	11 543	26 505	9 363	25 965
Trade as % of GDP	9.1	13.4	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	4.7	6.6	2.9	3.8
Agriculture share in employment (%)	11.9	7.2	-	-
Agro-food exports (% of total exports)	41.5	57.2	6.4	8.0
Agro-food imports (% of total imports)	5.4	6.1	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	57	68	-	-
Livestock in total agricultural production (%)	43	32	-	-
Share of arable land in AA (%)	22	36	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organisation (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

The Argentine economy began to stall when the peso came under pressure in April 2018. The value of the peso vis-à-vis the USD was reduced by 40% in 2018, and by 70% in the period 2018-2021, and the economy plunged into recession and inducing annual inflation rates above 40%. Inflation has been escalating, with an annual rate of 94.8% in 2022 and the year 2023 ending with an annual inflation rate of 211.4%. Due to exchange rate controls, there exist exchange market rates that have been increasingly diverging from the official rate. Adversely affected by COVID-19, GDP declined by 9.9% in 2020, increased by 10.7% in 2021 and decreased by almost 5% in 2022 and 1.8% in 2023.

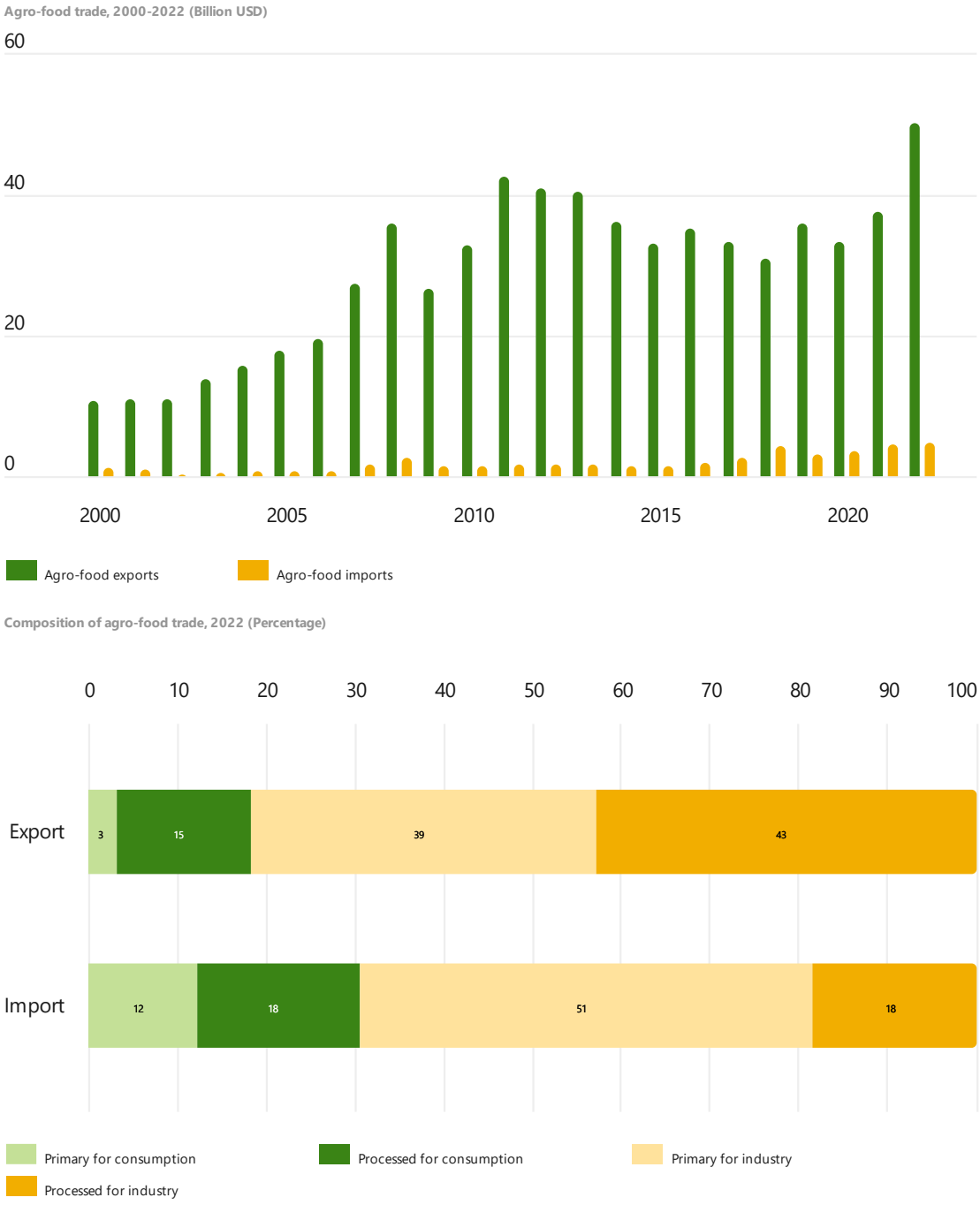
Figure 3.3. Argentina: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

Argentina runs a significant agro-food trade surplus having exceeded USD 30 billion for most of the past decade and USD 45 billion in 2022. Most of agro-food exports (82%) are primary or processed products used as inputs in downstream industries abroad, whereas the much smaller bundle of agro-food imports is mostly composed of primary products for use by industry (51%).

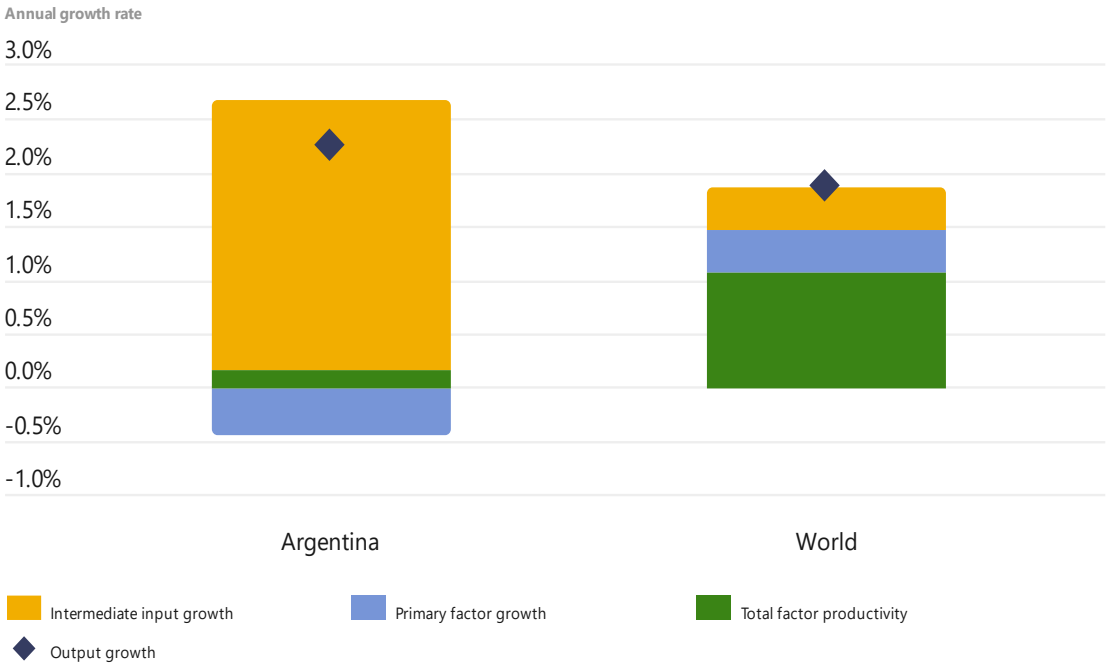
Figure 3.4. Argentina: Agro-food trade



Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Argentine agricultural production has grown at an annual rate of 2.3% between 2012 and 2021, above the world average of 1.9%. Within this total growth, 2.5% was due to an increased use of intermediate inputs, while only a small portion of production growth (0.2%) was due to Total Factor Productivity (TFP) growth, that is, innovations and technical improvements in the way resources are used in production. With this, the TFP growth was well below the world average of 1.1%.

Figure 3.5. Argentina: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Agricultural nutrient balances in Argentina, particularly its average nitrogen balance, are comparatively low, albeit increasing. The shares of agriculture in energy use and in GHG emissions are, at 7% and 32.3% respectively in 2022, well above the OECD average, with the high emissions reflecting the large number of ruminants. Notably, the emissions share is well above the sector's contribution to the economy. With 73.9% of total water abstractions, agriculture also is a major water user.

Table 3.3. Argentina: Productivity and environmental indicators

	Argentina		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	1.7%	0.2%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	-1.4	7.2	32.1	28.2
Phosphorus balance, kg/ha	1.7	2.5	3.3	2.3
Agriculture share of total energy use (%)	5.8	7.0	1.7	2.0
Agriculture share of GHG emissions (%)	40.9	32.3	8.7	10.1
Share of irrigated land in AA (%)	1.5	0.9	-	-
Share of agriculture in water abstractions (%)	70.7	73.9	47.0	49.5
Water stress indicator	..	..	8.7	..

Note: * or closest available year.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

Argentina has a history of macroeconomic instability and policy volatility, switching from open markets to import substitution in a way that has led to overall poor long-term economic performance (OECD, 2019[1]). The main exception has been the agricultural sector which, despite policy impediments, has innovated and grown. Driven by higher international agricultural prices, Argentine agriculture – in particular, in the extended Pampas region – has experienced a major structural transformation. This has been reflected in changing land use, the emergence of soybean as a major commodity, and diversified and growing export markets, especially toward Asia. However, outside of the Pampas, other crops like tobacco, cotton and fruits and vegetables have been less successful.

Argentina liberalised trade in the late 1970s and explored ways to increase trade with its neighbours and other economies from the second half of the 1980s. In the 1990s, the Argentine economy became more integrated in international trade, including the liberalisation of the agri-food sector, through the creation of MERCOSUR in 1991 and the 1994 WTO Agreement. However, after the financial crisis in 2001, Argentina reverted to increasing tariffs, establishing price controls for food products, and re-introducing export taxes on agricultural products such as soybeans to raise revenue and reduce basic food prices. Further export restrictions in the form of quotas for wheat, maize, milk, and beef were imposed in 2008. Between 2007 and 2011, a consumer price subsidy was implemented. The National Office of Agricultural Commercial Control (ONCCA) agency provided payments to processors purchasing wheat, maize, soybeans, and sunflower products from the local market.

In December 2015, the government began to gradually re-open markets again: it reduced export taxes on soybeans and soybean oil, eliminated export taxes on all other agricultural products, removed all export quotas, and free-floated the exchange rate of the Argentine peso to other currencies. But following the 2018-19 depreciation of the local currency and the subsequent economic recession, export taxes were re-established not only for agri-food products but for all goods by the government that had reduced or eliminated them. By early 2020, agricultural-specific export taxes were re-instated for most products in early 2020. Simultaneously, the exchange-rate controls introduced in the beginning of 2020 resulted in a widening gap between the official exchange rate and other market exchange rates, which has been widening until the end of 2023.

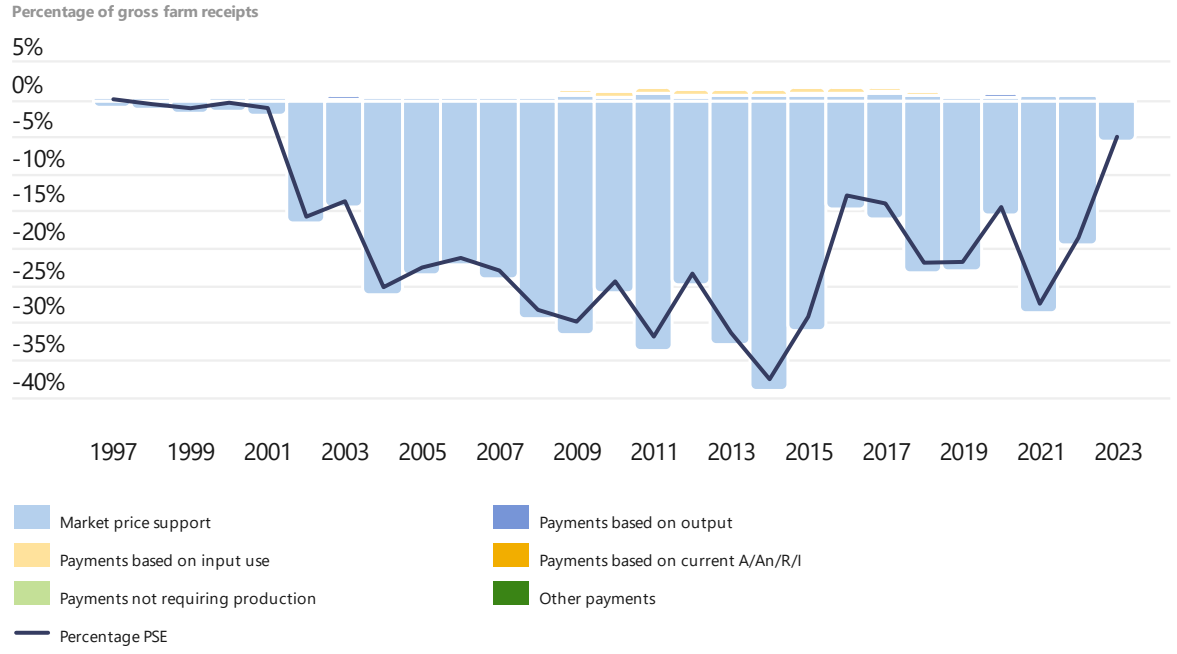
Table 3.4. Argentina: Agricultural policy trends

Period	Framework	Changes in agricultural policies
Prior to 1990	Alternate free trade and import substitution policies	Price interventions on main agricultural products, mandatory public stockholding, export taxes on agricultural trade, tariffs on imports of agricultural inputs such as fertiliser, low levels of investment in private agricultural R&D and infrastructure in general. Several attempts to liberalise trade. Creation of agricultural R&D and extension services institute INTA (1956); private institutions such as AACREA (1960) and AAPRESID (1989) created to provide services to farmers.
1991-2001	Shifts to open the economy	Dismantling stockholding and price-setting public institutions, reduction of import and export tariffs, free trade agreements (Mercosur and WTO). Price stabilisation, reduction of barriers to trade, privatisation and deregulation of markets Dissolution of National Commercial Boards (1991). Creation of animal and plant health and food safety SENASA (1996). Creation of the seed regulatory institution INASE (1991).
2002-2015	Return to a closed economy	Implementation of export taxes, import restrictions, value chains subject to regulations as export quotas and price controls at the retail level. The National Office of Agricultural Commercial Control (ONCCA) dismantled (2011).
2016-2017	Gradual shifts to open the economy	Elimination of export taxes for all agricultural commodities, except reduced taxes on soybean exports. Elimination and reforms to the Register of Export Operations ROEs (2015). Federal Agricultural Council (CFA) reformed (2017).

Period	Framework	Changes in agricultural policies
2018-Present	Reintroduction of export taxes	Export taxes established for all exports including agriculture in response to the economic crisis of 2018. Reintroduction of specific taxes on agricultural products and exchange rate controls since 2019. Since December 2023, changes to export taxes are expected to be done by Law and cannot be done by decree. However, export taxes in place until then continue and have not been modified.

Prior to the economic crisis of 2001, producer support fluctuated around zero. With the reintroduction of export taxes and other trade restrictions after the 2001-02 financial crisis, the PSE turned negative due to substantial negative market price support and absence of any significant budgetary support to farmers. Negative producer support peaked in 2014, reaching -37.7% of gross farm receipts. Lower export taxes in 2015 reduced negative support. Budgetary support to farmers remained limited and mainly in the form of subsidies for tobacco. Around 60% of total expenditures on agriculture in the last ten years financed general services to the sector. From 2007 to 2010, Argentina provided subsidies to food processors (primary consumers), to compensate for high prices of agricultural products.

Figure 3.6. Argentina: Development of the PSE and its composition, 1997 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

References

ANSES (2024), *Informe de Estadísticas de la Seguridad Social. III Trimestre 2023*, ANSES, https://www.anses.gob.ar/sites/default/files/archivo/2024-02/Informe%20de%20Estad%C3%ADsticas%20III%20Trimestre%202023.pdf. [3]

Bisang, R., G. Anlló and M. Campi (2013), *Claves para repensar el agro argentino*, Buenos Aires: Eudeba. [10]

Bisang, R., G. Anlló and M. Campi (2008), "Una revolución (no tan) silenciosa. Claves para repensar el agro en Argentina", *Desarrollo Economico*, Vol. 48/190-191. [5]

Echeverria, R. (2021), *A Note on Agricultural Productivity in Latin America and the Caribbean: A Call to Increase Investment in Innovation*, https://globalagriculturalproductivity.org/a-note-on-agricultural-productivity-in-latin-america-and-the-caribbean-a-call-to-increase-investment-in-innovation/. [2]

Fuglie, K. and R. Echeverria (2024), "The economic impact of CGIAR-related crop technologies on agricultural productivity in developing countries, 1961–2020", *World Development*, Vol. 176, p. 106523, https://doi.org/10.1016/j.worlddev.2023.106523. [7]

Gutiérrez, N. et al. (2020), *Políticas públicas e institucionalidad para la intensificación sostenible en los países del Cono Sur*, IICA, PROCISUR, https://repositorio.inta.gob.ar/handle/20.500.12123/9034. [9]

Ministerio de Ambiente y Desarrollo Sostenible (2021), *Inventario Nacional de Gases de Efecto Invernadero*, https://inventariogei.ambiente.gob.ar/files/Booklet_INGEI-2022_entero.pdf (accessed on March 2023). [4]

Morgan, S., K. Fuglie and E. Saini (2023), *Crecimiento de la PTF en la Agricultura en Argentina: Inversiones en Investigación e Innovación*, https://globalagriculturalproductivity.org/wp-content/uploads/2023/11/2023-GAP-Report-Argentina-ES.docx. [6]

OECD (2019), *Agricultural Policies in Argentina*, OECD Food and Agricultural Reviews, OECD Publishing, Paris, https://doi.org/10.1787/9789264311695-en. [1]

World Bank (2022), *Informe sobre clima y desarrollo del país Argentina*, Grupo Banco Mundial, https://openknowledge.worldbank.org/server/api/core/bitstreams/2d91534e-e769-590b-b32c-c6b9cc2363d5/content. [8]

Notes

[1] See https://www.magyp.gob.ar/aviar/_pdf/Res-Mecon-100-2023.pdf

[2] See https://alimentosargentinos.magyp.gob.ar/HomeAlimentos/sello/beneficios.php

[3] Law 27 642, popularly known also as the "front nutritional labelling law", was sanctioned in November 2021 in Argentina, and regulated in 2022 (Decree 151/2022).

[4] See http://servicios.infoleg.gob.ar/infolegInternet/anexos/380000-384999/383889/norma.htm

[5] The programme BIODESARROLLAR launched in 2022 by the Ministry of Economy's Secretariat of Agriculture, Livestock and Fisheries aims to promote the development, innovation, adoption, and production of bioproducts by micro, small, and medium-sized enterprises, co-operatives, and public research entities.

[6] See https://www.argentina.gob.ar/agricultura/alimentos-y-bioeconomia/ogm-vegetal-eventos-con-autorizacion-comercial

[7] Exchange-rate controls in place since 2019 have resulted in a widening gap between the official exchange rate and other targeted market exchange rates. Agricultural exports are settled at the official exchange rate, which is lower than others, reducing the price received by exporting farmers in the local currency (ARS).

[8] See https://www.boletinoficial.gob.ar/detalleAviso/primera/290888/20230725

4. Australia

Main findings

Support to agriculture

Australia's support to agricultural producers (Producer Support Estimate, PSE) is among the lowest in the OECD, estimated at 2.3% of gross farm receipts in 2021-23, slightly lower than the 3.7% observed 20 years before. Policy settings are characterised by a strong emphasis on market openness, building resilience, and investments in general services, including research and development (R&D), hydrological infrastructure, and biosecurity.

Market Price Support (MPS) to producers ended in 2000 and domestic prices for Australia's main agricultural outputs have been at parity with world prices since then. Most producer support in 2021-23 was in the form of disaster relief payments, and income-smoothing programmes that address cashflow fluctuations. Payments on variable input use are also used, mainly concessional loans for on-farm investments, including in response to adverse events.

The General Services Support Estimate (GSSE) averaged 2.1% of the value of agricultural production during 2021-23, higher than the 1.9% of the early 2000s but below the OECD average of 3.3%. More than half of this went to support for R&D, innovation, and extension services (corresponding to 1.3% of agricultural production value, compared with 1.1% in the OECD on average). Public expenditure to develop and upgrade infrastructure (mostly hydrological) and strengthen biosecurity represented most of the remaining general services expenditure.

Overall support to agriculture (Total Support Estimate, TSE) represented 0.2% of Gross Domestic Product (GDP) in 2021-23, essentially unchanged since 2000-02.

Key recent policy changes

Biosecurity funding will increase in 2023-24. In addition, the biosecurity budget, which was previously decided on an annual basis, will become permanent from 2027/28.

The Nature Repair Act came into effect in December 2023, allowing for a range of landholders (including the agricultural sector) to voluntarily run projects that lead to improvements in biodiversity. Projects could include the protection and conservation of sites of high environmental value, and restoration of formerly degraded areas. Successful projects will be awarded a certificate which could be traded to other parties who wish to support long-term conservation and improvement of nature and associated ecosystem services.

Starting from 2023-24, the Australian Department of Agriculture, Fisheries and Forestry particularly through the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) will receive additional funding to enhance its capability to support productivity and profitability. Regional data sources will be improved with respect to climate-related risks, biosecurity incursions, and natural disasters. These data will be used to inform on the adoption of low emission technologies and practices by farmers and to

conduct economic impact assessments of domestic and international emission policies on Australian farmers.

Assessment and recommendations

- A significant amount of funding is directed to innovation seeking sustainable productivity growth, but productivity growth has slowed down from 2.18% average annual growth rates in 1977-2000 to 0.6% in 2000-2021 due to climate change, lower mechanisation potential, changes in natural conditions and volatile prices in the last two decades. Increasing sustainable productivity growth will require structural adjustments from low to high productivity farms, increased R&D funding and more incentives for climate change mitigation and adaptation.
- My Climate View, an online platform by the Climate Services for Agriculture, is a good way to encourage long-term adaptation to climate change. Investments in this platform could be leveraged to support the development of new approaches such as index-based insurance for drought. Concessional loans, income-support schemes and ex post drought relief measures should be systematically assessed and monitored to ensure they do not inhibit climate change adaptation, structural adjustment and long-term transformative change.
- Extension services and agricultural education receive less funding than other parts of the AKIS. Scaling up knowledge-transfer services in partnership with the private sector as in the Cooperative Research Centres (CRCs) can facilitate uptake of innovations, support sustainable productivity growth, and strengthen on-farm capacity to manage risks.
- While Australia's rural research and development corporations (RDCs) are well positioned to support adaptation in traditional crop and livestock production systems, research efforts should also be directed towards long-term resilience and transformative change. Carbon and biodiversity markets should be explored to provide farmers with new and diversified sources of income, if carefully designed with robust performance and integrity standards.
- Sustainable management of water resources is essential for Australian farmers to adapt to higher temperatures, lower winter rainfall, and increased frequency of drought and extreme weather events. Investments in water infrastructure should be assessed regarding their effects on water consumption and return flows to groundwater and surface water as well as other socio-economic impacts. Irrigation infrastructure subsidies should be weighed against alternatives such as direct purchases of water entitlements, as has been done in the Murray Darling Basin.
- The Australian Carbon Credit Unit (ACCU) scheme supports projects to reduce or avoid GHG emissions or store carbon, but has yet to demonstrate significant reductions of agricultural emissions. In 2023, ACCUs with an abatement equivalent of 17.2 $MtCO_2eq$ were issued, which is well below the estimated potential from land-based offsets. Increasing its scale and effectiveness in agriculture and building confidence in the transparency and integrity of ACCUs is essential to its success in reducing agricultural GHG emissions.
- Funding to accelerate the development and commercialisation of technological solutions to reduce emissions rightly focuses on methane emissions from enteric fermentation of livestock, which represent 70% of Australia's agricultural emissions. However, the extent to which technologies such as feed supplements can drive reductions remains uncertain. To support the red meat industry's target of carbon neutrality by 2030, other tools like emissions taxes, standards, and regulations will be needed to create sufficient incentives for farmers to adopt low-emission technologies.

Development of support to agriculture

Figure 4.1. Australia: Development of support to agriculture

Figure 4.1A. Australia: Producer Support Estimate and its composition

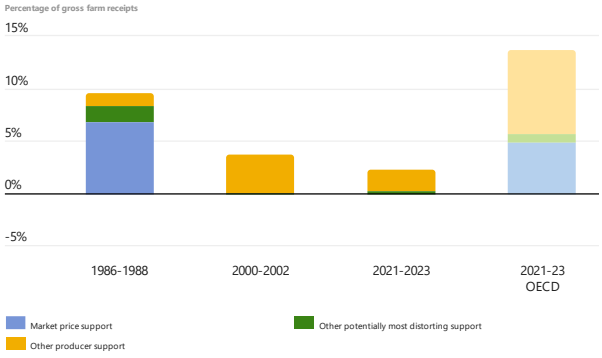


Figure 4.1B. Australia: Ratio of producer to border price

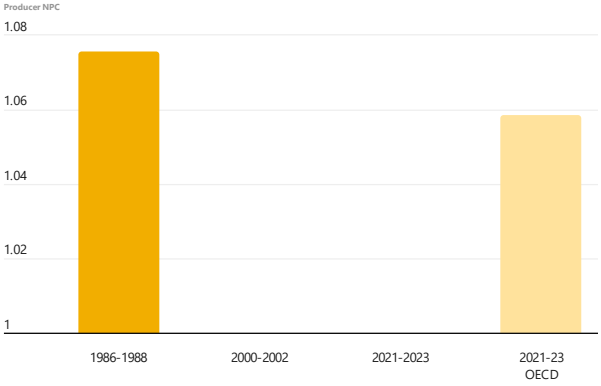


Figure 4.1C. Australia: General Services Support Estimate and its composition

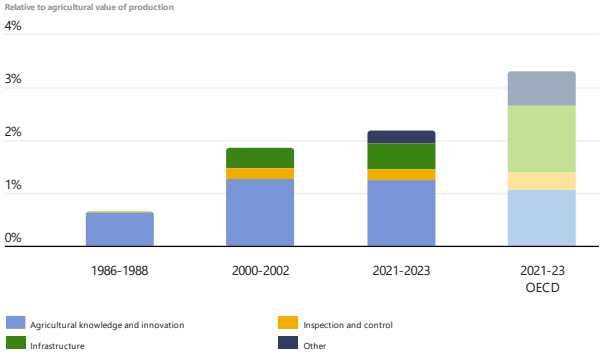
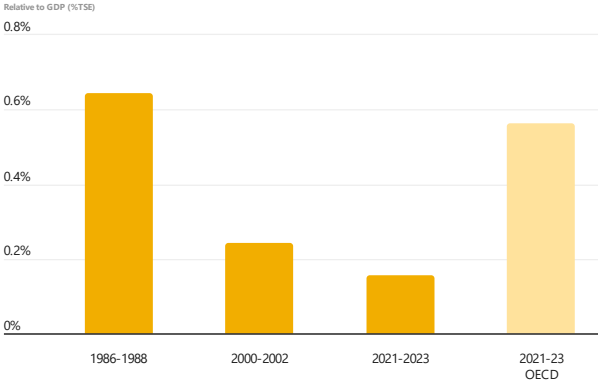
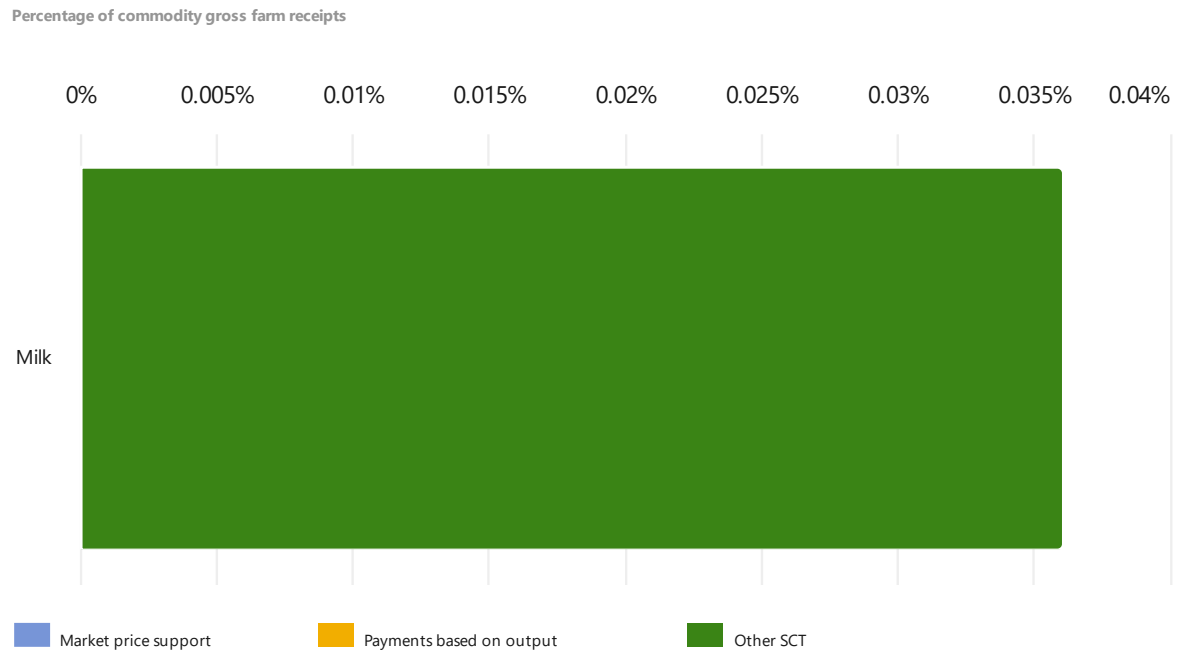


Figure 4.1D. Australia: Total Support Estimate



Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 4.2. Australia: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Table 4.1. Australia: Estimates of support to agriculture

Million USD

.	1986-88	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**14 358**	**19 605**	**61 512**	**65 923**	**65 402**	**53 209**
of which: share of MPS commodities (%)	82.36	74.30	73.03	74.05	75.20	69.85
Total value of consumption (at farm gate)	**5 072**	**7 514**	**21 749**	**21 827**	**21 946**	**21 472**
Producer Support Estimate (PSE)	**1 411**	**761**	**1 448**	**1 234**	**1 599**	**1 510**
Support based on commodity output	1 000	0	0	0	0	0
Market price support[1]	1 000	0	0	0	0	0
Positive market price support	1 002	0	0	0	0	0
Negative market price support	-2	0	0	0	0	0
Payments based on output	0	0	0	0	0	0
Payments based on input use	230	309	584	576	612	564
Based on variable input use	217	14	165	144	190	161
with input constraints	0	4	13	14	13	13
Based on fixed capital formation	4	145	246	279	235	225
with input constraints	0	0	0	0	0	0
Based on on-farm services	9	149	173	153	187	178
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	0	11	534	307	662	634
Based on Receipts / Income	0	11	534	307	662	634
Based on Area planted / Animal numbers	0	0	0	0	0	0
with input constraints	0	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	181	442	301	321	297	285
With variable payment rates	181	343	298	318	294	282
with commodity exceptions	0	110	67	71	66	63
With fixed payment rates	0	99	3	4	3	3
with commodity exceptions	0	0	0	0	0	0
Payments based on non-commodity criteria	0	0	29	30	28	27
Based on long-term resource retirement	0	0	0	0	0	0
Based on a specific non-commodity output	0	0	10	11	10	9
Based on other non-commodity criteria	0	0	19	20	19	18
Miscellaneous payments	0	0	0	0	0	0
Percentage PSE (%)	**9.65**	**3.74**	**2.32**	**1.84**	**2.39**	**2.76**
Producer NPC (coeff.)	**1.08**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**
Producer NAC (coeff.)	**1.11**	**1.04**	**1.02**	**1.02**	**1.02**	**1.03**
General Services Support Estimate (GSSE)	**98**	**370**	**1 353**	**1 605**	**1 253**	**1 200**
Agricultural knowledge and innovation system	95	252	783	813	784	752
Inspection and control	3	39	117	130	113	108
Development and maintenance of infrastructure	0	75	306	274	329	314
Marketing and promotion	0	4	142	382	22	21
Cost of public stockholding	0	0	0	0	0	0
Miscellaneous	0	0	5	6	5	5
Percentage GSSE (% of TSE)	**6.48**	**36.45**	**48.03**	**56.54**	**43.92**	**44.29**
Consumer Support Estimate (CSE)	**-513**	**-116**	**0**	**0**	**0**	**0**
Transfers to producers from consumers	-513	0	0	0	0	0
Other transfers from consumers	0	0	0	0	0	0
Transfers to consumers from taxpayers	0	-116	0	0	0	0
Excess feed cost	0	0	0	0	0	0
Percentage CSE (%)	**-10.12**	**-1.52**	**0.00**	**0.00**	**0.00**	**0.00**
Consumer NPC (coeff.)	**1.11**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**
Consumer NAC (coeff.)	**1.11**	**1.02**	**1.00**	**1.00**	**1.00**	**1.00**
Total Support Estimate (TSE)	**1 509**	**1 015**	**2 801**	**2 840**	**2 852**	**2 710**
Transfers from consumers	513	0	0	0	0	0
Transfers from taxpayers	996	1 015	2 801	2 840	2 852	2 710
Budget revenues	0	0	0	0	0	0
Percentage TSE (% of GDP)	**0.65**	**0.25**	**0.16**	**0.16**	**0.16**	**0.16**
Total Budgetary Support Estimate (TBSE)	**509**	**1 015**	**2 801**	**2 840**	**2 852**	**2 710**
Percentage TBSE (% of GDP)	**0.22**	**0.25**	**0.16**	**0.16**	**0.16**	**0.16**
GDP deflator (1986-88 = 100)	**100**	**149**	**279**	**262**	**282**	**292**
Exchange rate (national currency per USD)	**1.40**	**1.83**	**1.43**	**1.33**	**1.44**	**1.51**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for Australia are: wheat, barley, oats, sorghum, rice, soybean, rapeseed, sunflower, sugar, cotton, milk, beef and veal, sheep meat, wool, pig meat, poultry and eggs.

Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

Support to agriculture comprises a mix of direct budgetary outlays, concessional loans and tax concessions. Direct support is provided to upgrade on-farm infrastructure that aims to improve the efficiency of natural resource use. Several programmes also support the development and uptake of farming practices to enhance sustainability, including through innovation take-up and pilot testing of certification schemes.[1] Price support is low and domestic prices are aligned with world prices.

Concessional loan schemes target investments in new farm businesses, farm succession arrangements, drought resilience and preparedness. The Regional Investment Corporation (RIC) has administered the Australian Government's concessional farm business loans since 2018, providing concessional interest rates.

Income stabilisation tools such as the Farm Management Deposits Scheme and income tax averaging arrangements are designed to **strengthen financial risk management** by helping primary producers to deal more effectively with fluctuations in cash flows. For producers experiencing hardship, regardless of the cause, the Farm Household Allowance provides basic income support. This is supplemented with natural disaster assistance provided as concessional loans through the Disaster Recovery Funding Arrangements that came into force in 2018.[2] Primary producers experiencing financial hardship can also access free, confidential financial counselling under the Rural Financial Counselling Services Program.

The new Australian Government Drought Plan 2024-29 is expected to be published in 2024, and will replace the Drought Response, Resilience and Preparedness Plan published in 2019. The new plan sets out the government's programmes and activities before, during and after drought, and the principles that will guide its actions as conditions dry.

The Future Drought Fund (FDF) is an AUD 5 billion (USD 3.3 billion) commitment by the government to build drought resilience in domestic agriculture, landscapes, and communities. The FDF invests in a broad portfolio and is managed with the aim of generating at least a 2% return above the inflation rate per annum. AUD 100 million (USD 66 million) of the returns are made available each year to support farmers to become more resilient to the effects of future drought (Australian Government, 2022[1]).

Research and development (R&D) programmes are a major component of Australian support to agriculture. Rural research and development corporations (RDCs) are a primary vehicle to support rural innovation. RDCs are a partnership between the government and industry created to share funding and strategic direction-setting for primary industry R&D, investment in R&D and subsequent adoption of R&D outputs. A compulsory levy system collects contributions from primary producers to finance RDCs, and the government provides matched funding for R&D expenditure, up to legislated caps.

A smaller portion of public expenditure goes to the development and maintenance of infrastructure and inspection services, including pest and disease control activities. The Emergency Animal Disease Response Agreement (EADRA) is a cost-sharing agreement between Australia's governments and industry groups which aims to reduce the risk and minimise the impact in case of a disease outbreak. While industry and governments cost-share actions to address pest and disease outbreaks, trade-related costs of biosecurity and food safety inspection services are covered by industry.

Australia's Nationally Determined Contribution (NDC) commits to achieving net zero emissions by 2050 and reducing GHG emissions to 43% below 2005 levels by 2030. While agriculture is included in economy-wide emissions reduction targets, no specific emissions reduction targets have been defined for the agricultural sector. Investments in climate-smart and sustainable agriculture projects have increased in recent years, providing support for technological solutions to reduce methane emissions from livestock, improve soil health, build resilience to climate change, and protect natural capital and biodiversity.

The Australian Carbon Credit Unit (ACCU) Scheme, formerly known as the Emissions Reduction Fund, was established in 2011 under the Carbon Credits (Carbon Farming Initiative) Act. The ACCU scheme provides incentives for businesses to undertake voluntary emissions reductions and carbon sequestration projects that meet strict integrity requirements, including in relation to additionality. Agricultural landowners and farmers can earn income by generating ACCUs for every tonne of emissions reduced or carbon stored through a project and selling these to the government or third parties. As of March 2023, the scheme had committed AUD 2.7 billion (USD 1.8 billion) through 15 auctions for a total of 217.3 $MtCO_2eq$ of abatement, including 14.8 $MtCO_2eq$ of agricultural emissions.

Improving market transparency is also part of the government's assistance to the food sector. One example is the mandatory dairy code of conduct under the authority of the Australian Competition and Consumer Commission (ACCC), which came into force in January 2020 (Australian Government, 2019[2]).

Australia has 18 comprehensive regional or bilateral free trade agreements in force.[3] Policies support access to export markets, including helping small exporters overcome market access barriers and costs associated with exports registration. Tariff rates on imports of agricultural and food products are, on average, 3.2% lower than on non-agricultural goods (WTO, 2022[3]). A number of SPS measures are in place to manage pest and disease risks that could harm the sector and affect plant, animal and human health as well as the environment more broadly.

Innovation for sustainable productivity growth

Strategic planning

In July 2023 the National Statement on Climate Change and Agriculture, a joint initiative of Commonwealth, state and territory governments was established. It emphasises the importance of sustainably increasing agricultural productivity and profitability. This will be achieved by targeting investment in research and development, and increasing the focus on training, education and capacity building to support uptake and adoption of innovations and technologies.

The capacities of ABARES have been expanded by an average of AUD 9.6 million (USD 6.4 million) per year for the next four years to better deliver the government's policy priorities of tackling climate change while boosting the economic resilience and productivity of agriculture.

Research and innovation

Australia manages approximately AUD 800 million (USD 530 million) annually through its RDCs, of which the majority is collected through farm levies and the remaining part from the government. RDCs undertake diverse research, development and extension (RD&E) activities that improve efficiency, productivity, competitiveness, and innovation along the supply chain.

Agricultural Innovation Australia (AIA), founded by the 15 RDCs in 2020, is a not-for-profit public company, established to facilitate joint investment and collaboration in significant, cross-sectoral agricultural opportunities and challenges. AIA's remit is to identify, develop and attract investment in initiatives that drive sustainability, productivity and profitability.

Since 1990, the government has implemented grants to establish Cooperative Research Centres (CRCs) and provide funding for medium to long-term, industry-led research collaborations. The CRC programme links researchers with industry and government and focuses on research applications. Some of the current active CRCs have an agriculture focus, including:

- The *Future Food Systems CRC*, which partners leading Australian universities with industry and government bodies to deliver impactful research in the future food systems domain. Its mission is

to develop smart, sustainable, resilient food systems that capitalise on value added and shore up food security.

- The *Food Agility CRC* aims to broker, design and deliver innovation programmes for the agri-food industry, ensuring maximum impact for investment. They specialise in using data and digital technology to increase profits and improve sustainability.
- The CRC for High Performance Soils aims to give farmers the knowledge and tools they need to make decisions on extremely complex soil management issues.
- The CRC for Zero Net Emissions from Agriculture aims to further develop and scale up technologies to reduce methane emissions from grazing cattle and sheep, and to improve crop quality and production.

To support the development of technologies to deliver low-emission feed supplements to grazing animals and other solutions to reduce methane emissions from grazing livestock, AUD 29 million (USD 19 million) has been committed under the Methane Emissions Reduction in Livestock (MERiL) programme. For example, part of the budget is spent on research into the abatement potential and productivity benefits of low-emitting livestock supplements and forages.

A R&D corporation, AgriFutures, is working with education providers and industry on a National Food and Fibre Education Strategy. This strategy is aimed at fostering an interest in food and fibre industries amongst school students from an early age.'

Several research projects aim at improving soil carbon estimation technologies and models. This will help farmers eventually to increase productivity, store more carbon in the ground and reduce greenhouse gas emissions.

Programme implementation

To support farmers to adopt more sustainable agriculture practices and build resilience to climate change, more than AUD 60 million (USD 40 million) annually is being invested through the Climate-Smart Agriculture Programme between 2024-28. It aims at driving agricultural growth, competitiveness and sustainability by adopting sustainable natural resource management (NRM) practices that improve soil health and protect natural capital.

Several programmes foster innovation to tackle the negative impacts of droughts through innovation hubs, information sharing and knowledge management. The Drought Resilience Innovation Grants Programme, established in 2020, supports projects at different stages to test and drive the development and adoption of new and innovative technologies and practices to improve preparedness and drought resilience of Australian farmers and agriculture-dependent communities.

Recent policy developments

Domestic policy developments in 2023-24

Biosecurity funding has increased and is being sustained from 2023-24 onwards. The budget increases by a total of AUD 1.03 billion (USD 0.68 billion) and is divided over the next four years. From 2027/28, there will be a permanent annual budget of AUD 267 million (USD 177 million). This is the **first permanent budget on biosecurity in Australia's history**, as before the budget was determined on an annual basis. The funding maintains operational and technical functions and biosecurity policies.

AUD 56 million (USD 37 million) in new soil measures were announced in the 2023-24 Budget to support the National Soil Action Plan 2023 to 2028: AUD 20 million (USD 13 million) for bilateral partnership agreements with the states and territories to deliver locally appropriate soil-related activities that provide

clear progress against the four priority actions of the National Soil Action Plan 2023 to 2028; AUD 36 million (USD 24 million) under the Natural Heritage Trust Climate Smart Agriculture Program to **implement a national soil monitoring programme**, continue development of the Australian National Soil Information System, and continue support for the Regional Soil Coordinators and Soil Extension Community of Practice.

The Australian Animal Welfare Strategy, which expired in 2014, was renewed in 2023 with an annual budget of AUD 1.25 million (USD 0.83 million) over four years. The aim is to help to achieve stakeholder co-ordination, to address community and international expectations and to maintain animal welfare practices in line with the scientific evidence.

Policies to mitigate emissions from agriculture

The 2023-2024 MYEFO provided a further AUD 2.5 million (USD 1.7 million) p.a. over two years from 2023–24 to develop the Agriculture and Land Sectoral Plan to address key issues for agriculture as part of the economy-wide transition to net zero emissions. This will help governments, industry and communities to plan for the future and mitigate emissions from the land use sector.

A new legislation from June 2023 grants **tax concessions for income received from carbon farming**. Eligible primary producers will be able to ascribe the proceeds of the sale of Australian Carbon Credit Units (ACCUs) as primary production income and could thereby benefit from favourable tax conditions.

Policies to facilitate climate change adaptation in agriculture

The Nature Repair Act will allow parties that are interested in supporting improvements in native biodiversity to partner with landholders and invest in projects designed to achieve specific outcomes. The act is designed to allow multiple projects to occur on the same project site/area, so that project operators and landholders can deliver a range of benefits including adaptation to climate change, generation of carbon credits, and improvements in local biodiversity. Successful projects will be awarded a certificate which could be traded to other parties who wish to support long term conservation and improvement of nature and associated ecosystem services.

Starting from 2023-24, ABARES will receive AUD 38.3 million (USD 25.7 million) for four years, followed by AUD 7.6 million (USD 5 million) per year from 2027-28 onwards to **enhance its capabilities in supporting productivity and profitability**. As part of this budget, AUD 16.1 million (USD 10.7 million) will be allocated towards improving regional data sources to better respond to climate-related risks, biosecurity incursions, and natural disasters. AUD 9.4 million (USD 6.2 million) is foreseen to gather information on the adoption of low emission technologies and practices by farmers. The remaining AUD 12.8 million (USD 8.5 million) has been earmarked for impact assessments of both domestic and international emission policies on Australian farmers.

Trade policy developments in 2023-24

Australia's trade policy seeks further market opening through multilateral, bilateral and regional trade agreements (DFAT, 2023[4]). Recent developments were mainly related to progress in trade agreements, export promotion and strengthening biosecurity**.**

Under the title "securing the future of agricultural trade" AUD 34.8 million (USD 23 million) is annually invested over three years from 2023 onwards to help agriculture navigate through a changing trade landscape. The programme seeks to avoid trade disruptions of agricultural goods. A major part of the funding is used to ensure that the regulatory frameworks of trading partners are met. A smaller portion of the budget (AUD 2.9 million - USD 1.9 million) is invested per year to secure an ongoing export of live cattle to Indonesia and Malaysia which had been suspended in 2023 due to animal diseases in Australia.

Starting in 2023, the Fresh and Secure Trade Alliance (FASTA) programme provides AUD 16.3 million (USD 10.8 million) annually to support Australia's horticultural exports through investments in biosecurity and pest management. The programme unites state governments and several universities and will span over eight years.

To respond to community expectation in relation to sheep welfare the government has established an independent panel to advise on phasing out live sheep export by sea from Australia. The panel provides advice to government to develop an orderly phase-out plan that considers the needs of affected individuals, businesses and local communities and which identifies opportunities for future growth in the domestic sheep industry. The initiative will be supported with AUD 2.8 million (USD 1.9 million) per year over a two-year period.

In December 2023 Australia and the United Arab Emirates started negotiations on a Comprehensive Economic Partnership Agreement (CEPA). This would be Australia's first bilateral trade agreement with a country from the Middle East. The Department of Foreign Affairs has initiated a consultation process with interested stakeholders about existing tariff and non-tariff barriers that should be addressed by the agreement.

A 10-year National Agricultural Traceability Strategy 2023 to 2033 published in 2023 and its first five-year implementation plan aim to enhance current traceability systems by making them further connected, aligned and interoperable along domestic agricultural supply chains. This will ensure they remain fit for purpose, efficient and dynamic, and accelerate exports and strengthen responses to biosecurity and food safety. This national approach will also support emerging ESG reporting requirements and protect cultural intellectual property. The national strategy has a particular focus on agricultural commodities and products (including First Nations Australians' products), live production animals and biosecurity emergency response, while being highly relevant to broader product movements.

Policy context

Key economic and agricultural statistics

Australia is the world's 19th largest economy in purchasing power parity (PPP) terms and the sixth largest country by land area, accounting for 12% of all agricultural land in the 54 countries included in this report, but only 0.5% of the total population of these countries. The country's GDP per capita is more than twice the average of the countries covered in this report (Table 4.2). Agriculture represents a small share of the economy, accounting for just 3.8% of GDP and 2.2% of total employment in 2021. Australia is an important producer of agricultural commodities. In 2021, the country ranked as the world's second-largest producer of sheep meat and wool, the seventh-largest producer of beef, and is also among the world's top-ten producers of wheat, barley, oats, rapeseed and sugar cane.

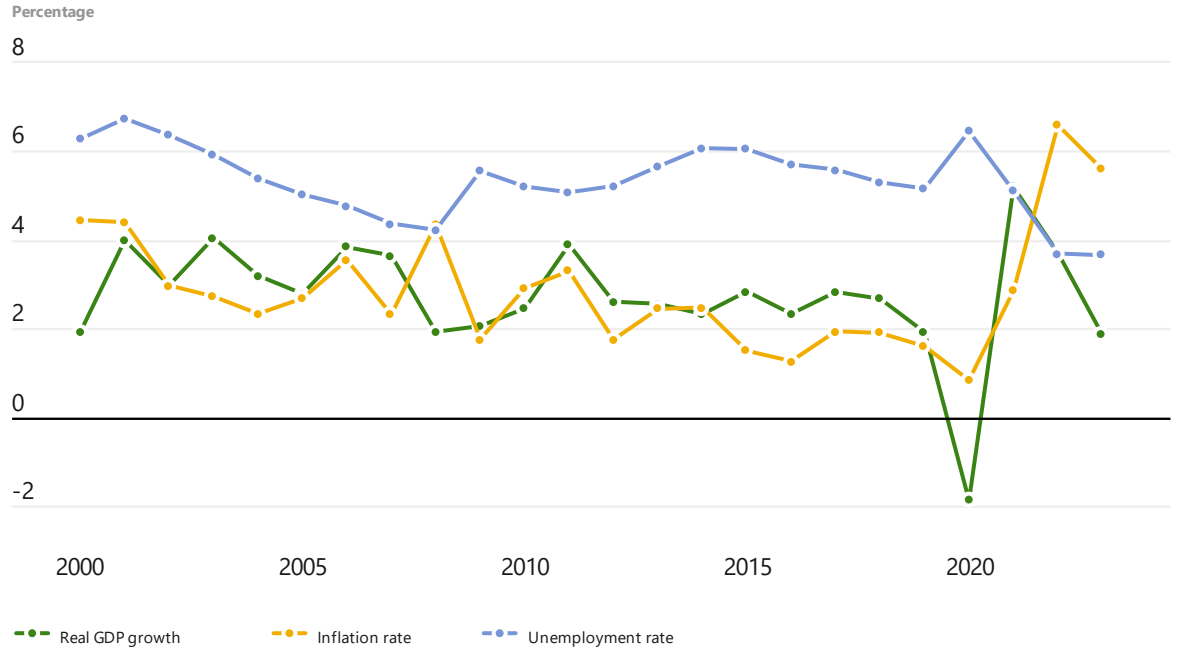
After 28 years of uninterrupted GDP growth, economic growth became negative in 2020 as the COVID-19 pandemic hit. After a sharp contraction, real GDP growth rebounded quickly and has been strong at 1.9% in 2023, while the unemployment rate has fallen from 6.5% in 2020 to 3.7% in 2023 (Figure 4.3). Inflation decreased to 5.6% in 2023, after it reached its highest level in more than three decades in 2022 with 6.6%.

Table 4.2. Australia: Contextual indicators

	Australia		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	539	1 805	1.3%	1.3%
Population (million)	19	26	0.4%	0.5%
Land area (thousand km²)	7 682	7 692	9.4%	9.3%
Agricultural area (AA) (thousand ha)	455 469	363 519	15.2%	12.5%
			All countries[1]	
Population density (inhabitants/km²)	2	3	52	64
GDP per capita (USD in PPPs)	28 333	69 419	9 363	25 965
Trade as % of GDP	16.5	20.2	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	3.8	2.5	2.9	3.8
Agriculture share in employment (%)	4.8	2.2	-	-
Agro-food exports (% of total exports)	23.1	12.4	6.4	8.0
Agro-food imports (% of total imports)	4.3	5.9	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	55	62	-	-
Livestock in total agricultural production (%)	45	38	-	-
Share of arable land in AA (%)	5	9	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

Figure 4.3. Australia: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

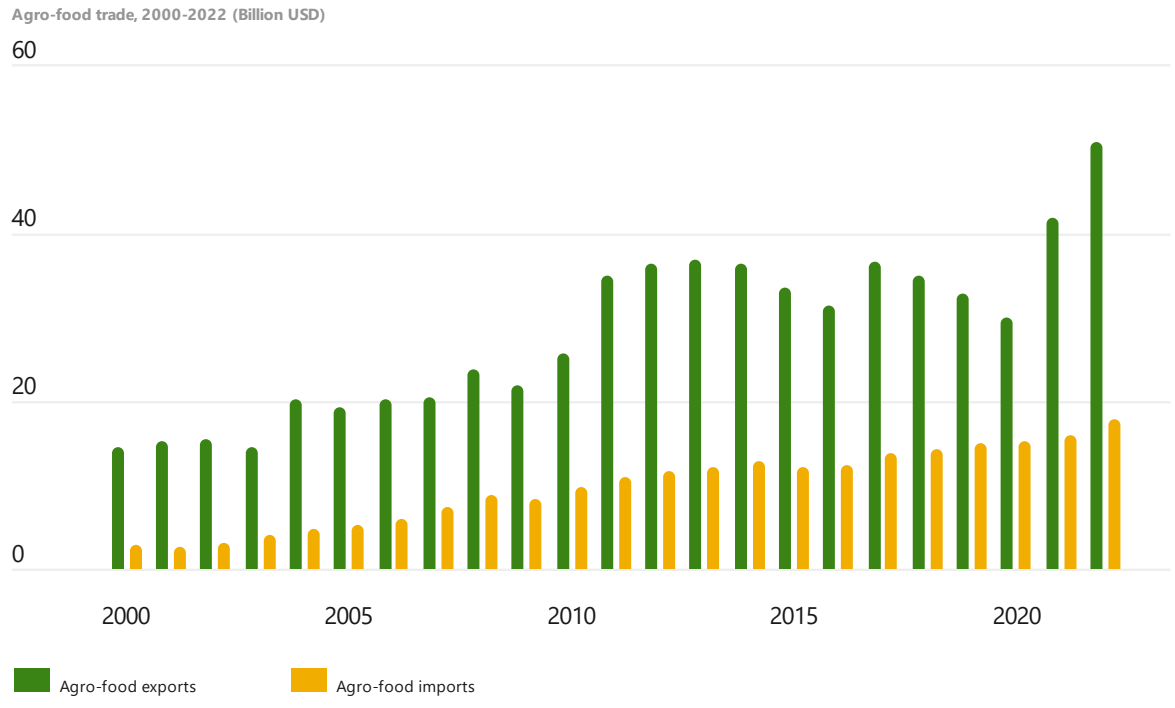
Australia is a net exporter of agricultural products. Around 70% of the value of agricultural production is exported, and the country is a major exporter of wheat, barley, cattle, beef, sheep meat, dairy, wool, rapeseed, fruit and nuts and pulses. Primary goods for final consumption and further processing make up 41% of the country's agro-food exports. Approximately three-quarters of Australia's agro-food imports go to domestic final consumption and the remaining share (26%) is destined for the processing industry (Figure 4.4).

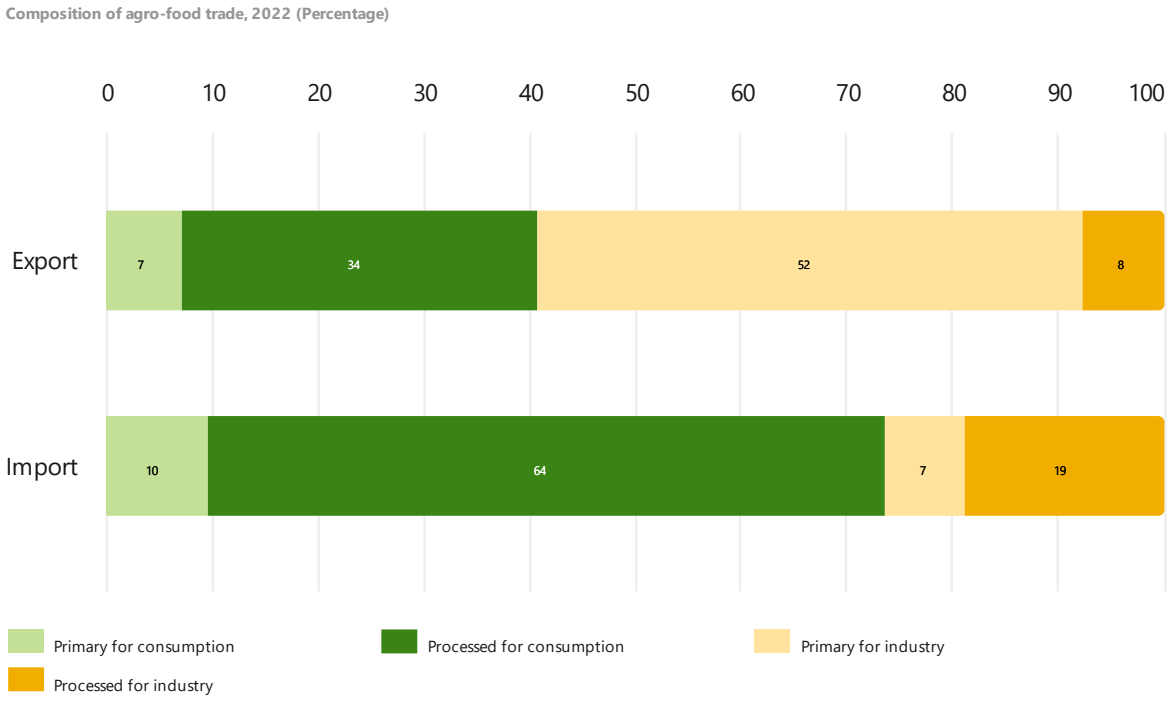
Over the 2012-21 period, agricultural output declined by 0.4% per year, compared to a 1.9% per year increase globally (Figure 4.5). This was partly due to a decline in total factor productivity (TFP), which fell by -0.7% per year (compared with the global average of 1.1% growth). Primary factor growth also declined at -0.02% per year, driven by a decline in the agricultural land area. These declines were partly offset by an intensification of intermediate input use, which grew at 0.3% per year.

Agriculture accounted for 14.9% of Australia's GHG emissions in 2021-22 and can play an important role in helping the country to achieve its economy-wide target of net-zero emissions by 2050 (Table 4.3). Agriculture's contribution to GHG emissions has declined over the past two decades but remains above the OECD level. The share of agriculture in total energy use has increased slightly since 2000 and was above the OECD average in 2022, despite the small share of the sector in the economy.

Compared to the OECD area, agriculture accounts for a relatively high share of total water abstractions. While aggregate national indicators suggest that water stress is less of a problem than in many OECD countries, water availability and competition for natural resources with other sectors remains a significant constraint that is likely to be exacerbated by climate change. Estimates also indicate a relatively low nitrogen surplus balance and point to a low phosphorous balance.

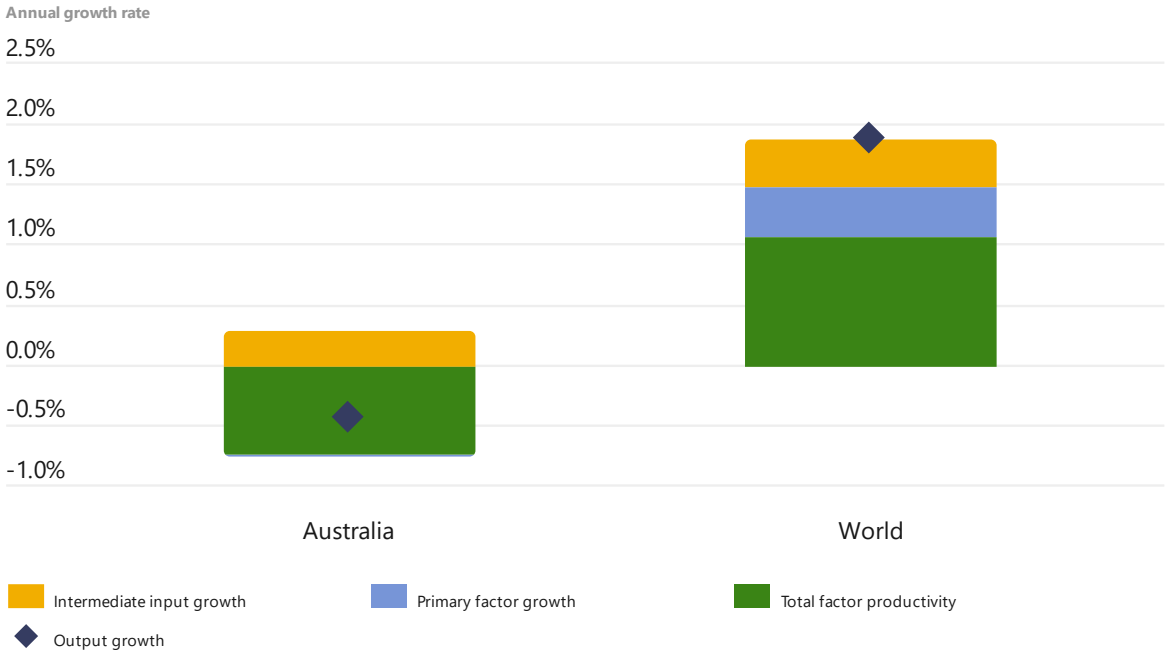
Figure 4.4. Australia: Agro-food trade





Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Figure 4.5. Australia: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Table 4.3. Australia: Productivity and environmental indicators

	Australia		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	1.3%	-0.7%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	20.6	17.8	32.1	28.2
Phosphorus balance, kg/ha	1.3	0.9	3.3	2.3
Agriculture share of total energy use (%)	2.3	3.4	1.7	2.0
Agriculture share of GHG emissions (%)	17.7	14.9	8.7	10.1
Share of irrigated land in AA (%)	0.5	0.5	-	-
Share of agriculture in water abstractions (%)[1]	67.7	67.0	47.0	49.5
Water stress indicator	4.5	3.3	8.7	..

Note: * or closest available year.
1. Data are not comparable between time periods, 2020 data from (Australian Bureau of Meteorology, 2021).
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

Before the 1980s, Australian agriculture was supported by a range of measures designed to maintain and stabilise farm income, and to provide farmers with support to offset the perceived disadvantages of remoteness. In 1980, Australia had 65 statutory marketing boards that used border protection through tariffs and import controls to divide domestic and international markets, and set higher prices in domestic markets (Table 4.4). Price stabilisation schemes assisted export industries such as wheat, manufactured dairy products, sugar, and dried vine fruit. Other policy measures included fertiliser subsidies, income tax incentives, rural credit, subsidies for agricultural research and extension, and public investment in land and water development and rural infrastructure.

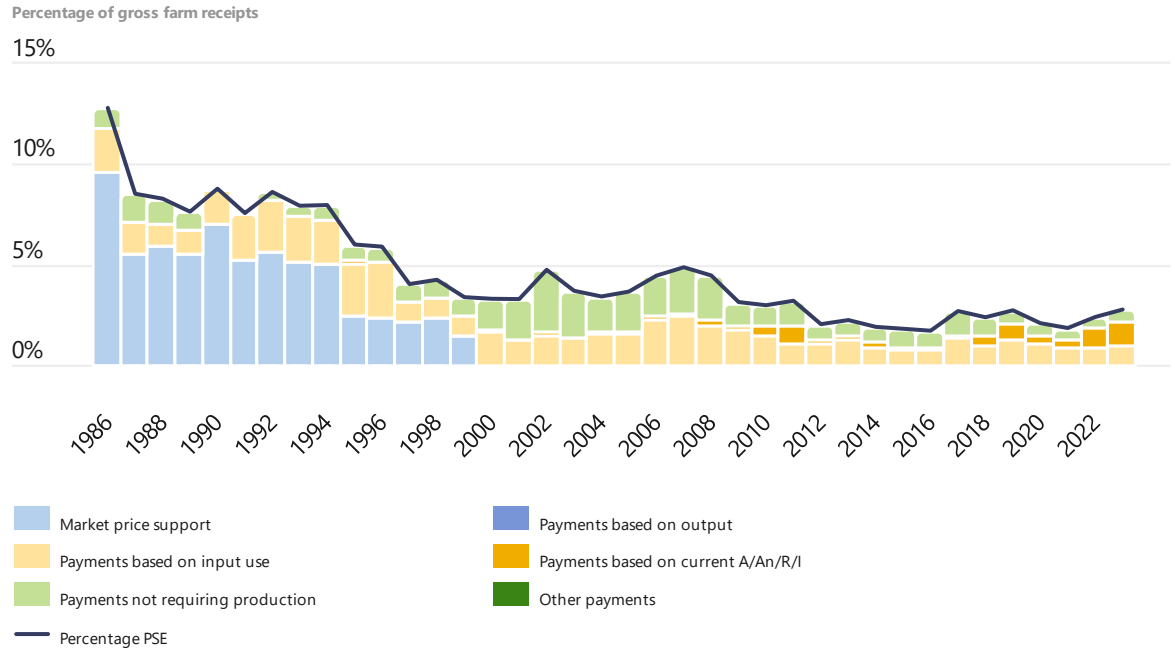
Australia's agricultural policy evolved significantly starting in the mid-1980s. Competition policy reforms in the 1980s and 1990s led to dismantling marketing boards and the removal of policies that distort agricultural production and trade. The National Drought Policy introduced in 1992 formalised the transfer of drought risk management to farmers and repurposed government support towards resilience-strengthening activities. Open trade and anti-dumping legislation ensured competitive markets across the whole economy, reducing the need for sector-specific measures. Price stabilisation policies were relaxed, with price and output controls removed and centralised marketing schemes gradually dismantled (Gray, Oss-Emer and Sheng, 2014[5]). Tariffs were reduced. Floating exchange rates and trade liberalisation reduced price volatility in agricultural commodities.

In Australia, total support to the sector is composed of general services and budgetary payments to producers. Market price support was progressively phased out during the 1990s, and support to producers (PSE) is now among the lowest in the OECD. Producer support is mostly delivered through payments based on inputs and payments not requiring production.

Table 4.4. Australia: Agricultural policy trends

Period	Broader framework	Changes in agricultural policies
Prior to 1980s	Closed economy (interventionist agricultural policy)	High tariffs Production quotas Price controls Tariff protection and import controls carried out by 65 statutory commodity marketing boards
1980-Present	Reforms and trade liberalisation	Floating exchange rates Removal of agricultural price and output controls Gradual dismantling of Statutory marketing authorities Reduction of agricultural tariffs on both outputs and inputs Sanitary and phytosanitary (SPS) measures strengthened

Figure 4.6. Australia: Development of the PSE and its composition, 1986 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

References

Australian Government (2022), *Drought Policy*, Department of Agriculture, Water and the Environment, https://www.awe.gov.au/agriculture-land/farm-food-drought/drought/drought-policy. [1]

Australian Government (2019), *Competition and Consumer (Industry Codes—Dairy) Regulations 2019*, https://www.legislation.gov.au/Details/F2019L01610. [2]

DFAT (2023), *Australia's free trade agreements (FTAs)*, Australian Government Department of Foreign Affairs and Trade, https://www.dfat.gov.au/trade/agreements/trade-agreements (accessed on 20 March 2023). [4]

Gray, E., M. Oss-Emer and Y. Sheng (2014), *Australian agricultural productivity growth: Past reforms and future opportunities*, ABARES research report 14.2. [5]

WTO (2022), *Tariff profiles: Australia*, World Trade Organization, https://www.wto.org/english/res_e/statis_e/daily_update_e/tariff_profiles/AU_E.pdf. [3]

Notes

[1] Examples include the Smart Farms programme and Smart Farming Partnerships under the second phase of the National Landcare Program 2019-23 (https://www.awe.gov.au/agriculture-land/farm-food-drought/natural-resources/landcare/national-landcare-program/australian-government-investment-in-landcare) and the Agriculture Biodiversity Stewardship Package (https://www.agriculture.gov.au/about/reporting/budget/sustaining-future-australian-farming).

[2] Depending on the scale of the disaster, a range of assistance can be made available to primary producers impacted by natural disasters. For example, in the 2019-20 Black Summer Bushfires and 2022 NSW and Queensland floods, primary producers were eligible for AUD 75 000 (USD 56 300) clean up grants, concessional loans along with continued access to the Farm Household Allowance.

[3] These are agreements with New Zealand (ANZCERTA 1983), Singapore (SAFTA 2003), Thailand (TAFTA 2005), the United States (AUSFTA 2005), Chile (ACI-FTA 2009), the ASEAN-Australia-New Zealand Free Trade Area (AANZFTA 2010), Malaysia (MAFTA 2013), Korea (KAFTA 2014), Japan (JAEPA 2015), the People's Republic of China (ChAFTA 2015), the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP 2018), Hong Kong, China (A-HKFTA 2020), Peru (PAFTA 2020), Indonesia-Australia Comprehensive Economic Partnership Agreement (IA-CEPA 2020), the Pacific Agreement on Closer Economic Relations (PACER Plus 2020), the Regional Comprehensive Economic Partnership Agreement (RCEP 2022), the Australia-India Economic Co-operation and Trade Agreement (ECTA 2022) and the United Kingdom (A-UKFTA 2023).

5. Brazil

Main findings

Support to agriculture

Brazilian agriculture has low levels of support and protection. The Producer Support Estimate (PSE) fell from 7.6% of gross farm receipts in 2000-02 to 3.3% in 2021-23. PSE has been relatively low over the past decade, not surpassing 5% and below the average of the 54 countries covered in this report (9%). Domestic prices align with international markets almost fully, with a ratio of producer to border price (Nominal Protection Coefficient, NPC) of 1.02. Average Market Price Support (MPS) is relatively small, but still accounted for more than 60% of PSE. The highest rates of positive Single Commodity Transfer (SCT) are seen for cotton, maize, and wheat.

Budgetary support to producers is provided through input payments, in particular credit at preferential rates and crop insurance. Concessional credit is available for farm marketing, working capital, and fixed capital investment. Since the late-2000s, all support based on input use, mainly credit and insurance, is conditional on environmental criteria and specific farming practices.

Expenditures to general services (General Service Support Estimate, GSSE) amounted to 0.8% of the country's agricultural value of production in 2021-23, down from 3.5% in 2000-02. More than 90% of that support goes to agricultural research and development (R&D), technology transfer, and extension services, with the rest used for inspection and control and infrastructure. Expenditures on R&D and extension services are equivalent to 0.7% relative to the agricultural value of production, which is above the average of the 54 countries covered in this report (0.5%). The Total Support Estimate (TSE) declined from 0.7% of Gross Domestic Product (GDP) in 2000-02 to 0.5% in 2021-23.

Key recent policy changes

The Harvest Plan of 2023/24 increased the total credit allocation for the 2023/24 harvest by 27% to BRL 364.2 billion (USD 73.6 billion) from the previous Harvest Plan. Credit destined to smallholders, traditional agriculture, and family agriculture was also increased by more than 35% from the previous plan. BRL 1.1 billion (USD 215 million) was allocated to rural insurance subsidies (PSR). This subsidy covers approximately 7.3 million ha equivalent to 3.1% of total agricultural land.

The government allocated BRL 1 billion (USD 200 million) to the Minimum Price Policy (PGPM/CONAB) for the 2023/24 harvest, covering 27 products including main grains for the domestic market. The government allocated BRL 1 billion (USD 200 million) in 2023 to this programme, which includes both government purchases of these products and deficiency payments.

Rural credit was made conditional on the adoption of sustainable agricultural practices, with focus on the recovery and conversion of degraded pastures; after the publication, in 2023, of the National Program for Conversion of Degraded Pastures into Sustainable Agricultural and Forestry Production Systems (PNCPD), which aims to convert 40 million ha of degraded land into arable land over ten years. A new system to reward producers committed to sustainability was created in April 2023, producers registered

under the Rural Environmental Registry (CAR) and analysed by the environmental authority, benefit from an additional reduction of interest rates of 0.5 percentage points. These producers also benefit from a further reduction of 0.5 percentage points by adopting selected sustainable agricultural production practices. In 2021, the Rural Product Certificate (CPR Verde) was created, a bond of mandatory registration authorised by the Central Bank. The bond is a promise of future delivery of agricultural products subject to sustainable and conservation practices, which works as a bond for environmental services.

Assessment and recommendations

- Brazil's main strategic approach to promoting sustainable productivity growth relies on fostering the adoption of technologies adapted to Brazilian landscapes and biomes. The agricultural R&D and innovation system led by EMBRAPA develops plant and animal genetics, as well as production systems that have helped the country to produce more sustainably. More needs to be done to promote sustainability practices for all types and sizes of farms, including continued efforts to limit potentially illegal land clearing for agriculture. The enforcement of the Forest Code needs to be strengthened to build on recent progress to fully halt illegal deforestation.
- Credit at preferential interest rates is a key part of agricultural support in Brazil. This system could be improved by reducing the share of concessional loans for working capital to commercial farms and by simplified regulations and procedures could make it easier for small and medium size farms to access credit.
- Credit programmes that provide incentives for sustainable agriculture could be expanded to reach more farmers to accelerate the transition to an environmentally sustainable sector. These programmes should have robust measurement and verification mechanisms. A larger share of supported credit should be for technological packages that focus on innovation, modernisation, climate-change mitigation and adaptation, and on productivity. Furthermore, subsidised agricultural insurance schemes should be evaluated to determine their efficacy and impacts, while ensuring that they do not crowd out private insurance initiatives.
- Agricultural credit and insurance programmes provided under environmental criteria and zoning rules (ZARC), should continue being assessed with respect to outcomes such as targets related to deforestation and GHG emissions. Moreover, the impact of environmental conditionality set by the Environmental Rural Registry (CAR), the ZARC, and the Forest Code, should remain the basis for improving policy design, along with specific programmes such as the RenovAgro (former ABC+) and initiatives against deforestation.
- GSSE support is mostly invested in R&D, technology transfers, and extension services. But these public outlays represent less than 1% of the value of agricultural production. It is important to increase Brazil's research and extension capacity to match sector growth, notably through EMBRAPA by focusing on sustainable productivity growth. Additionally, technology transfer and adoption are lower for small-scale farms, policies need to increase the diffusion and creation of innovation networks for medium- and small-scale farmers in all regions of the country and for all production systems, from cereals and agro-industrial product to fruits and vegetables, to livestock and agroforestry, etc.
- The Brazilian Agricultural Policy for Climate Adaptation and Low Carbon Emission (ABC+Plan), has the national sectorial strategy to adapt the sector to climate change. However, the implementation of tailored adaptation practices needs to be monitored and evaluated to ensure progress in the sustainable transformation of production systems.

Development of support to agriculture

Figure 5.1. Brazil: Development of support to agriculture

Figure 5.1A. Brazil: Producer Support Estimate and its composition

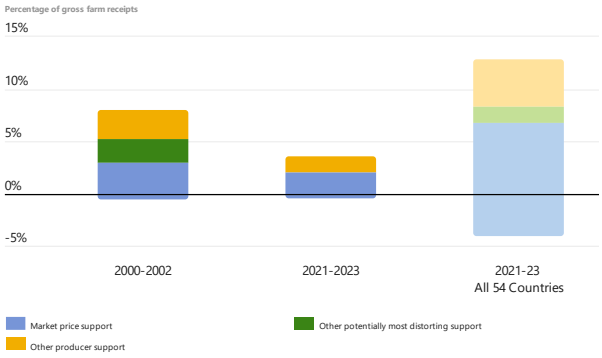


Figure 5.1B. Brazil: Ratio of producer to border price

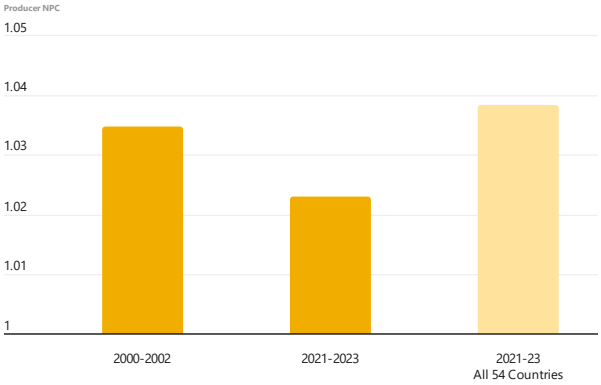


Figure 5.1C. Brazil: General Services Support Estimate and its composition

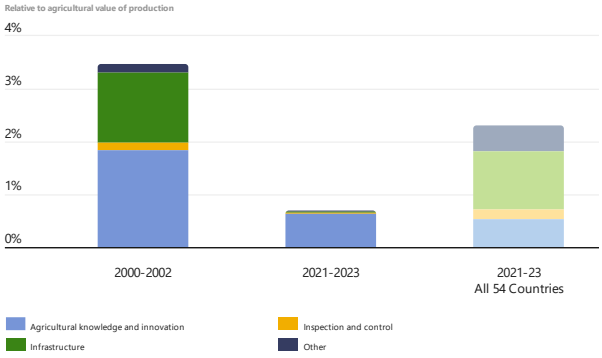
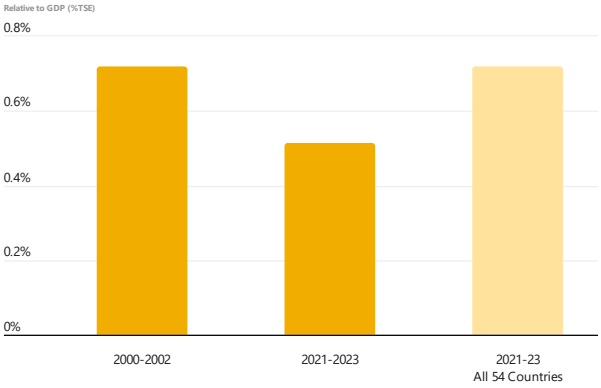
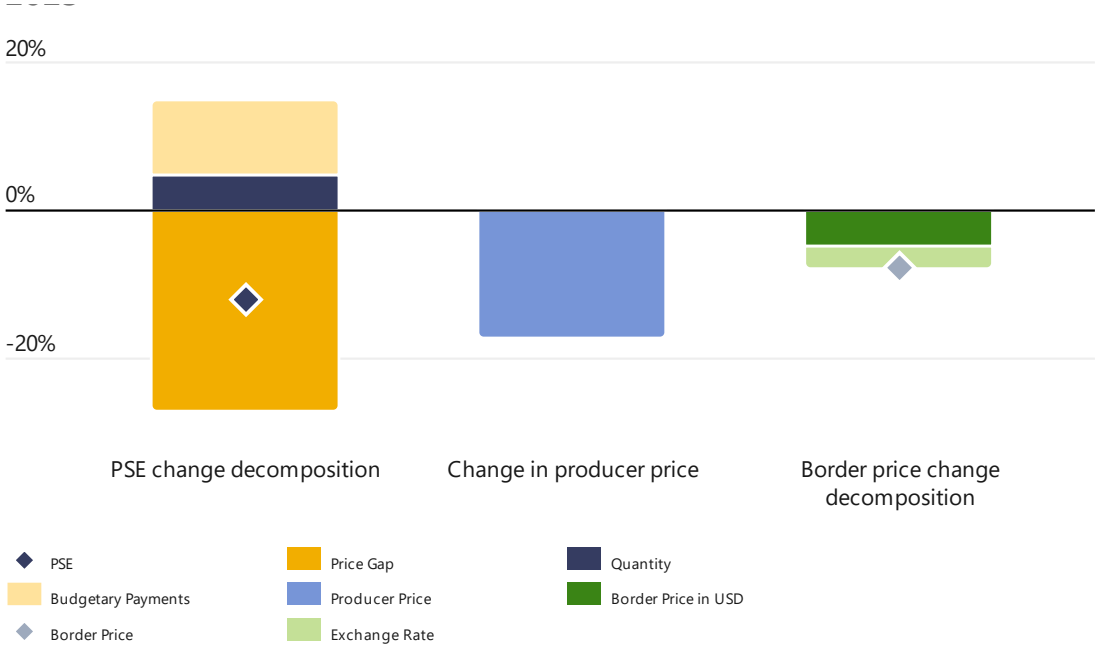


Figure 5.1D. Brazil: Total Support Estimate



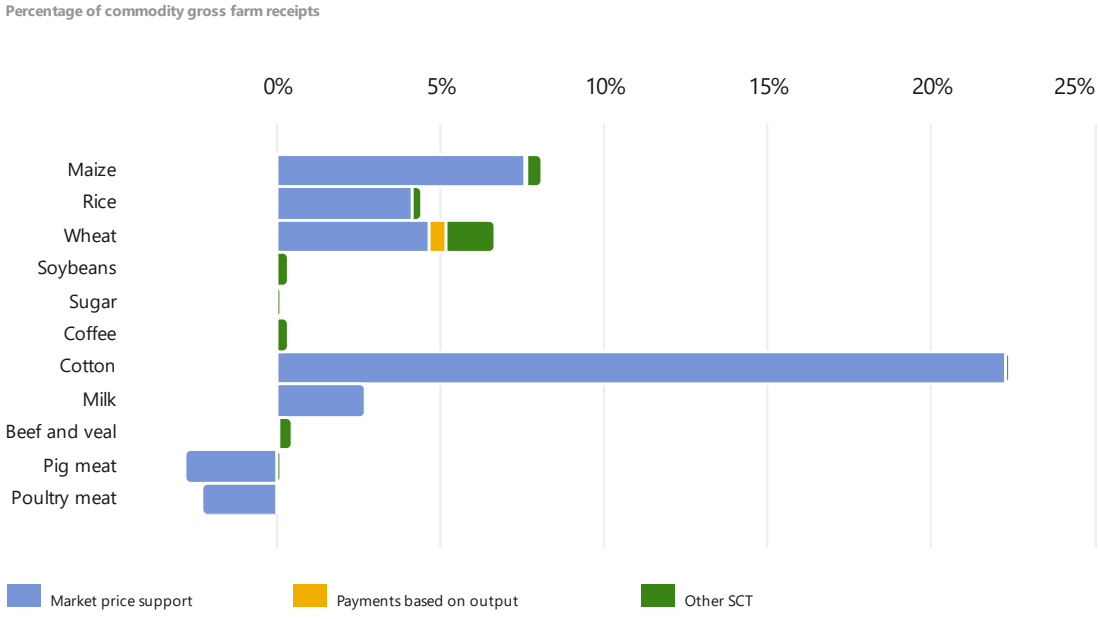
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 5.2. Brazil: Drivers of the change in PSE, 2022 to 2023



Note: % change of nominal Producer Support Estimate expressed in national currency.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 5.3. Brazil: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Table 5.1. Brazil: Estimates of support to agriculture

Million USD

	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**35 538**	**220 589**	**209 079**	**219 130**	**233 559**
of which: share of MPS commodities (%)	77.53	89.25	90.42	89.50	87.84
Total value of consumption (at farm gate)	**34 563**	**134 353**	**121 197**	**135 816**	**146 047**
Producer Support Estimate (PSE)	**2 869**	**7 431**	**6 830**	**8 096**	**7 365**
Support based on commodity output	1 013	4 001	4 713	4 472	2 818
Market price support[1]	973	3 982	4 712	4 468	2 765
Positive market price support	1 179	4 706	6 884	4 468	2 765
Negative market price support	-206	-724	-2 172	0	0
Payments based on output	40	19	1	4	53
Payments based on input use	1 856	3 377	2 071	3 577	4 483
Based on variable input use	825	1 969	950	2 073	2 884
with input constraints	0	1 969	950	2 073	2 884
Based on fixed capital formation	955	1 388	1 102	1 483	1 579
with input constraints	0	1 388	1 102	1 483	1 579
Based on on-farm services	76	21	20	21	21
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	0	52	46	48	64
Based on Receipts / Income	0	52	46	48	64
Based on Area planted / Animal numbers	0	0	0	0	0
with input constraints	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	0	0	0	0	0
With variable payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
With fixed payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
Payments based on non-commodity criteria	0	0	0	0	0
Based on long-term resource retirement	0	0	0	0	0
Based on a specific non-commodity output	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0
Miscellaneous payments	0	0	0	0	0
Percentage PSE (%)	**7.56**	**3.32**	**3.23**	**3.63**	**3.09**
Producer NPC (coeff.)	**1.03**	**1.02**	**1.04**	**1.02**	**1.01**
Producer NAC (coeff.)	**1.08**	**1.03**	**1.03**	**1.04**	**1.03**
General Services Support Estimate (GSSE)	**1 242**	**1 556**	**1 416**	**1 509**	**1 742**
Agricultural knowledge and innovation system	663	1 457	1 318	1 406	1 646
Inspection and control	51	18	17	18	18
Development and maintenance of infrastructure	471	46	44	46	48
Marketing and promotion	5	3	3	4	3
Cost of public stockholding	53	32	34	36	26
Miscellaneous	0	0	0	0	0
Percentage GSSE (% of TSE)	**29.78**	**15.85**	**15.70**	**14.49**	**17.48**
Consumer Support Estimate (CSE)	**-1 176**	**-1 216**	**-1 825**	**-1 841**	**18**
Transfers to producers from consumers	-1 175	-3 025	-5 468	-2 510	-1 098
Other transfers from consumers	-277	-94	-60	-140	-82
Transfers to consumers from taxpayers	31	814	775	809	860
Excess feed cost	245	1 088	2 928	0	337
Percentage CSE (%)	**-3.34**	**0.93**	**-1.52**	**-1.36**	**0.01**
Consumer NPC (coeff.)	**1.04**	**1.02**	**1.05**	**1.02**	**1.01**
Consumer NAC (coeff.)	**1.03**	**1.01**	**1.02**	**1.01**	**1.00**
Total Support Estimate (TSE)	**4 142**	**9 801**	**9 021**	**10 415**	**9 967**
Transfers from consumers	1 452	3 119	5 528	2 650	1 179
Transfers from taxpayers	2 967	6 776	3 553	7 904	8 869
Budget revenues	-277	-94	-60	-140	-82
Percentage TSE (% of GDP)	**0.72**	**0.52**	**0.55**	**0.54**	**0.47**
Total Budgetary Support Estimate (TBSE)	**3 169**	**5 819**	**4 309**	**5 946**	**7 202**
Percentage TBSE (% of GDP)	**0.55**	**0.31**	**0.26**	**0.31**	**0.34**
GDP deflator (2000-02 = 100)	**100**	**467**	**437**	**473**	**491**
Exchange rate (national currency per USD)	**2.37**	**5.18**	**5.39**	**5.16**	**5.00**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for Brazil are: wheat, maize, rice, soybean, sugar, milk, beef and veal, pig meat, poultry, cotton, coffee.

Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

The annual Agricultural and Livestock Plan (better known as the Harvest Plan), administered by the Ministry of Agriculture and Livestock (MAPA), defines the key parameters of the agricultural policy (MAPA, 2023[1]). The plan defines the allocation of resources through credit lines and their respective interest rates. In addition, family farming is managed by the Ministry of Rural Development and Family Farming (MDA). Brazilian agricultural policy has been stable over the past decade, with a focus on:

- rural credit (since the 1960s)
- risk management programmes including subsidised insurance programmes (since 2005)
- limited use of minimum and reference prices and marketing interventions (e.g. government purchases of food)
- agricultural land zoning with environmental compliance
- promotion of biofuels.

Brazil's innovation system is a key part of its agricultural policy. Services related to innovation and R&D are provided by the Brazilian Agricultural Research Corporation (EMBRAPA), created in 1973. Extension services are provided by National Agency for Technical Assistance and Rural Extension (ANATER) that has agencies in each state.

Price support is low overall, but minimum guaranteed prices are used in some regions of the country. These cover a broad range of crops and a few livestock products such as milk and honey. Minimum prices are set by the National Monetary Council (CMN) based on domestic and international prices and the evolution of production costs in different parts of the country. These are implemented through premiums to commercial buyers who pay minimum fixed prices to producers and public and private options contracts backed by a private risk premium option, among other methods. In addition, producers receive concessional marketing loans at reduced interest rates, which let them time sales for when market prices are higher. The National Food Supply Company (CONAB) operates these programmes on behalf of MAPA. Several programmes offer deficiency payments calculated as the difference between the market price and the minimum (reference) price (e.g. the Rural Equity Prize programme called PEPRO, and the Product Reward Prize programme known as PEP).

Credit at preferential interest rates is jointly administered between the Central Bank, the Treasury, the Secretariat of Economic Policy (Ministry of Finance) and the MAPA. Most rural credit is allocated under the National Rural Credit System (SNCR) and provided at preferential interest rates with differentiated conditions for family farmers (PRONAF), small and medium size farmers (PRONAMP) and commercial farms. The main sources of preferential rural credit are "compulsory resources" or lending quotas for commercial banks equivalent to around 25% of deposits and 59% of Rural Saving deposits, Constitutional Funds, and loans from the National Bank for Economic and Social Development (BNDES).

Short term credit is provided for commercialisation and working capital and long-term credit for investments on fixed capital formation. Long-term credit is provided through the Programme RenovAgro (former ABC+) used on investments on adaptation and mitigation, Moderfrota used for machinery and equipment, the PRONAF and PRONAMP with their investment component, and Inovagro, Moderagro, Proirriga, etc. Additional sources of rural credit are the Coffee Fund (FUNCAFÉ) and the Agribusiness Credit Notes (LCAs).

Created by Law 8929/1994, in 2023 Brazil created the Rural Product Certificate (CPR Verde), a bond of mandatory registration authorised by the Central Bank. The bond is a promise of future delivery of agricultural products subject to sustainable and conservation practices, which works as a market alternative for environmental services. The CPR is one of the most important instruments for rural financing

in Brazil, and by the end of 2023 BRL 298 billion (USD 60 billion) of CPRs were delivered in the stock market (MAPA, 2024[2]).

The rural insurance premium programme (PSR) provides subsidised insurance to a diverse range of producers including commercial producers who establish contracts with insurance companies listed by the government. The general agriculture insurance programme (PROAGRO) offers farmers partial compensation for investment losses on working capital loans. Small-scale family farms can benefit from the PROAGRO-Mais, the family farming insurance (SEAF), as well as, in the north-east of the country, the crop guarantee programme (*Garantía Safra,* GS). Both the rural credit and insurance programmes must comply with environmental criteria defined by the Environmental Rural Registry (CAR). Credit for working capital is conditional on zones of climatic risks (Agricultural Risk Zoning, ZARC), which links agricultural support to farming practices and activities adapted for the environmental sustainability of each geographical zone. Compliance with zoning is also required to access both PRS and PROAGRO programmes. Rural environmental registration of geo-referenced information on rural property, including property perimeters, location of Permanent Preservation Areas, Legal Reserves, Restricted Use Areas, and areas of agricultural production is compulsory across the country since 2012.

Innovation for sustainable productivity growth

Strategic planning

Brazil's main strategic approach to promoting sustainable productivity growth is by fostering adoption of modern technologies adapted to Brazilian landscapes and biomes, mostly developed within the country itself. Sustainable productivity growth is seen as resulting from sustainable intensification defined as producing more with the same area of land, while reducing negative environmental impacts and increasing contributions to natural capital and environmental services.[1] The strategy is structured around three concepts (MAPA, 2023[1]):

- Integrated Landscape Approach (ILA), focusing on increasing the resilience of agricultural production systems
- Synergy between GHG mitigation and adaptation
- Adoption and maintenance of Sustainable Production Systems, Practices, Products and Processes (SPS_{ABC}).

Research and innovation

In terms of ILA, a major strategy of innovation for sustainable productivity has been R&D to develop high-yielding crops or livestock, conducted by EMBRAPA and disseminated by public and private entities. Several laws were promulgated since the 1980s that led to institutional frameworks for R&D investments and the generation of new technologies such as genetically engineered crops together with strategies to develop markets. Research on traditional plant breeding has also contributed significantly to the expansion and sustainability of agriculture in Brazil over the years. Through different breeding methods, high-performance varieties were produced that improved productivity, yields, resistance to pathogens, tolerance to abiotic stresses and better adaptation to the climatic conditions of each region of the country.

Moreover, genetic engineering methods have been used to develop agronomic traits that are not easily obtained using conventional methods, such as resistance to herbicides and insect pests. The use of transgenic approaches in major crops contributed significantly to integrated pest management. In addition to transgenic technologies, genome editing has become more prominent, developing new traits of agronomic interest through gene knockdown. Research carried out by EMBRAPA also led to improved farm management practices for major crops like soybeans, such as planting windows for each region based on climatic conditions and irrigation management. These production methods allowed for two harvests per

agricultural year in certain regions, as well as balanced fertilisation and livestock-forest integration (MAPA, 2024[2]).

Programme implementation

The ABC+Plan fosters sustainable agricultural production systems through an integrated landscape management approach. It also aims to increase productivity and farm income while favouring climate change adaptation and mitigation. The ABC+Plan, which follows the ABC plan (2010-20), involves rural credit, developing and disseminating new technologies among producers (MAPA, 2024[2]). This includes the promotion of several technologies developed by EMBRAPA that decrease total GHG emissions in the Brazilian soybean production system, such as no-tillage system, biological nitrogen fixation, crop-livestock-forest integration, biological inputs, in partial or total, substitution to chemical inputs, and integrated pests, diseases, and weeds management.

Well known examples of the Brazilian agriculture R&D have been the developments of tropical wheat, soybeans, and maize production systems. Sustainable productivity growth is also manifest in the implementation of the Sustainable Production Systems, Practices, Products and Processes (SPSABC), which is supported by the ABC+Plan. These production systems have been adopted across the country, and form part of the adaptation and low carbon emissions measures of the RenovAgro Programme of rural credit.

Precision farming technology is promoted through the National Policy for Incentives on Precision Agriculture and Livestock (Law No. 14 475). The law aims to increase efficiency in the application of inputs, to reduce waste, reduce production costs and increase productivity, as well as ensure environmental, social, and economic sustainability. To support this approach, most rural credit lines finance precision farming equipment. Public investment on infrastructure, particularly digitalisation is a limiting factor as not all rural areas have broadband connectivity.

The National Bio-inputs Programme (NBP) reduces environmentally harmful inputs by promoting bio-inputs and reduced use of pesticides. The NBP, implemented by the Decree (10 375) within the scope of the Ministry of Agriculture, is structured around five action areas:

- products for controlling pests and diseases in plants
- soil fertility, plant nutrition and tolerance to adverse environmental conditions products
- plant and animal genetics, including reproduction
- veterinary products; animal feed; aquaculture products
- post-harvest and processing products of animal and plant origin.

The adoption of bio-inputs and their incorporation into production systems has increased considerably each year, reducing the use of agrochemicals. A widely used practice in the country is integrated pest management (IPM), a group of different technologies used for pest control under agro-ecosystem sustainability. One of the pillars of IPM is integrating control methods such as plant resistance, chemical control (seeking to apply the product to the target and reduce selection pressure) and biological control, conserving the pests' natural enemies. IPM aims to reduce economic losses from pest attacks, monitor pests and carry out controls only when populations reach the action levels recommended by research.

In 2023, Brazil adopted the Amazon Agricultural Development Plan (2023) that aims to converge public agricultural policies and territorial planning, through regularisation of land ownership, environmental adaptation, re-organisation of agricultural value chains, reduction of deforestation in the Amazon biome and by providing conditional credit to environmental conservation practices. The Permanent Inter-Ministerial Commission for the Prevention and Control of Deforestation was also reinstituted in 2023 and renewed the Action Plan for the Prevention and Control of Deforestation in the Legal Amazon (PPCDAm)

and the Action Plan for the Prevention and Control of Deforestation and Queimadas no Cerrado (PPCerrado) (MAPA, 2024[2]).

The two plans propose a set of activities to be implemented to reduce the loss of native vegetation and achieve zero deforestation by 2030. The National Programme for Conversion of Degraded Pastures into Sustainable Agricultural and Forestry Production Systems has the goal to convert 40 million ha of degraded land into arable land over 10 years by developing a production traceability process on sustainability practices. The Rural Product Certificate (CPR Verde), which is a bond to monetise environmental preservation and emissions reduction, offers payments for environmental services.

Recent policy developments

Domestic policy developments in 2023-24

The Ministry of Agriculture has developed its annual 2023/24 Harvest Plan that defines the financial resources and guidelines for Brazil's main policy instruments such as rural credit, agricultural insurance, commercialisation support, zoning programme, minimum and reference prices and biofuels. Budgets were allocated as follows.

- The total credit allocation for commercial agriculture for the 2023/24 harvest was increased by 27% to BRL 364.2 billion (USD 73.6 billion). Working capital and commercialisation credit represent 75% of the total credit, the remaining 25% is directed to investment. Of this credit for commercial agriculture, medium-size producers receive 17% or BRL 61.14 billion (USD 12.22 billion) through the PRONAMP programme. Preferential interest rates were established at between 7% and 12.5% depending on the type of credit provided to farmers.
- Credit destined to smallholders, traditional agriculture, and family agriculture was set at BRL 77.7 billion (USD 15.6 billion), an increase of more than 35% from the previous period. This credit is implemented by PRONAF. Preferential interest rates vary from 0.5% to 6% depending on the type of credit given to farmers.
- Expenditures on rural insurance subsidies (PSR) is BRL 1.1 billion (USD 215 million). This subsidy covers approximately 7.3 million ha (3.1% of total agricultural land), benefiting more than 78 000 producers, and resulting in a total insurance coverage of BRL 43.9 billion (USD 8.5 billion).
- The Minimum Price Policy (PGPM/CONAB) for the 2023/24 harvest identifies 27 products including main grains for the domestic market. The government allocated BRL 1 billion (USD 200 million) in 2023 to this programme, which includes both government purchases of these products and deficiency payments.

The Harvest Plan of 2023/24 emphasises rural credit to consolidate and expand the adoption of sustainable agricultural practices, with greater focus on the recovery and conversion of degraded pastures under the financing branch of the ABC+ programme (renamed to RenovAgro) by reducing interest rates even further. This measure is expected to increase the availability of arable land, productivity and decrease the pressures to expand agriculture into new areas (MAPA, 2023[1]).

A new system to reward producers committed to sustainability was created in April 2023. Under this programme, producers already registered under the Rural Environmental Registry (CAR) and validated by the environmental agency benefit from an additional reduction of interest rates of 0.5 percentage points. These producers also benefit from a further reduction of 0.5 percentage points (making a total of 1 percentage point less). To qualify for the reduction, the producer must meet one of the following criteria: hold a certification in good agricultural practices recognised by MAPA, possess certification from MAPA's Integrated Production Programme, be certified for organic production, or have undertaken investments under the RenovAgro programme within the past five years. As a result of this and other existing

programmes, by the end of 2023, 43% of total rural credit loans of the Harvest Plan were financing production systems with sustainable practices.

A new rule document for the Agricultural Risk Zoning (ZARC) was published in October 2023, establishing a new method for classifying soil, based on water availability. The new method for soil classification increases the accuracy of water risk estimates. The water availability is now classified in six soil categories within each production zone. Soybeans and sesame are the first crops to apply the new method.

The country created in December 2023 the National Programme for Conversion of Degraded Pastures into Sustainable Agricultural and Forestry Production Systems (PNCPD) that aims at converting 40 million ha of degraded pastures into arable land by developing a production traceability process on sustainability practices.

Trade policy developments in 2023-24

In 2023, some agricultural tariffs were reduced to curb food price inflation. Import tariffs for non-Mercosur imports, which had been at 8% for maize and soybeans, 6% for soymeal and 10% for soy oil, were temporarily reduced to zero until December 2024.

Policy context

Key economic and agricultural statistics

Brazil is the largest country in Latin America in terms of area and population and is one of the 10 biggest economies of the world. The country has abundant land and water resources and is a major agricultural producer and exporter. The share of agriculture in Brazil's GDP increased from 5.5% in 2000 to 6.8% in 2022, while its share in employment decreased from 15.4% to 8.7% during the same period (Table 5.2). These shares remain higher than in most other countries covered in this report. Agro-food exports have grown in importance for Brazil, representing 41.8% of its total exports in 2022. Arable land accounts for 24% of Brazilian agricultural land. Brazil is among the world's leaders in the production of soybeans, poultry, beef, cotton, corn, and orange juice. Around two-thirds of the total value of agricultural production are crop products, and one-third livestock products. The main product in Brazilian exports is soybeans in grain, meal, and oil.

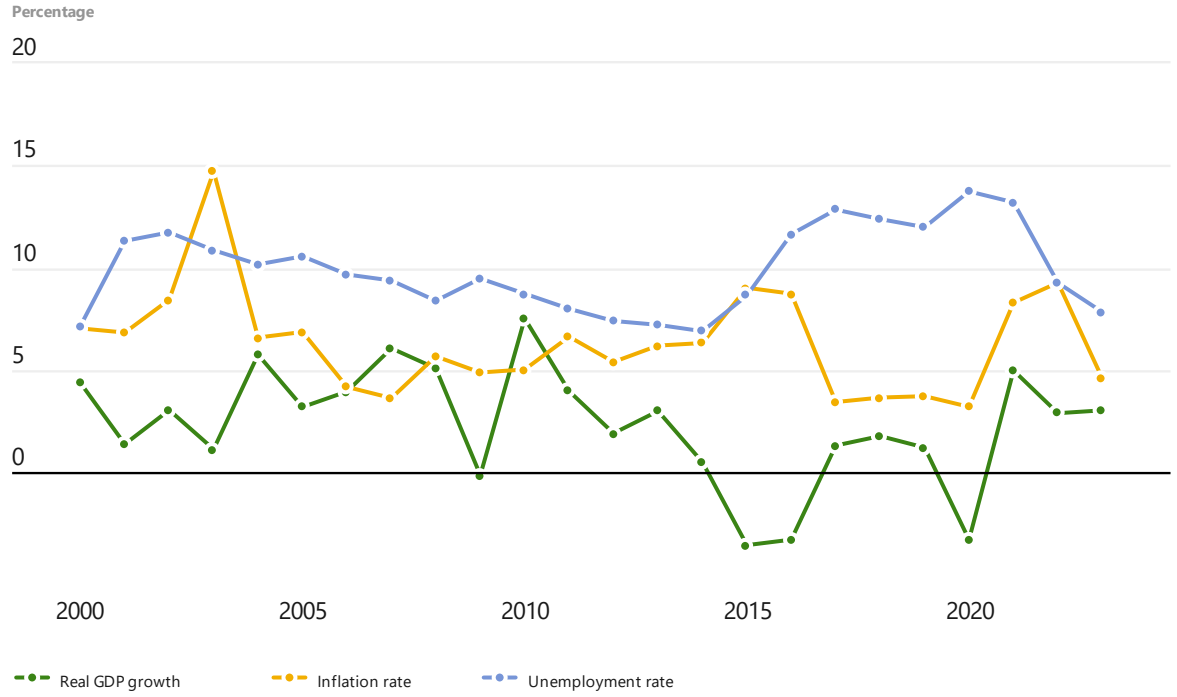
Table 5.2. Brazil: Contextual indicators

	Brazil		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	1 582	3 837	3.9%	2.8%
Population (million)	176	215	4.1%	4.1%
Land area (thousand km²)	8 358	8 358	10.2%	10.1%
Agricultural area (AA) (thousand ha)	228 324	239 370	7.6%	8.2%
			All countries[1]	
Population density (inhabitants/km²)	21	26	52	64
GDP per capita (USD in PPPs)	8 995	17 822	9 363	25 965
Trade as % of GDP	8.8	16.3	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	5.5	6.8	2.9	3.8
Agriculture share in employment (%)	15.4	8.7	-	-
Agro-food exports (% of total exports)	23.4	41.8	6.4	8.0
Agro-food imports (% of total imports)	7.2	4.8	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	67	68	-	-
Livestock in total agricultural production (%)	33	32	-	-
Share of arable land in AA (%)	20	24	32	34

Notes: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

After a drop related to COVID-19, Brazilian GDP grew moderately at 2.9% in 2022 and 3.04% in 2023 (Figure 5.4). At the same time, unemployment decreased to 7.84% in 2023 from 9.272% in 2022, reaching levels not seen since 2015. Inflation decreased to reach 4.59% in 2023, from a 9.3% in 2022, mainly explained by changes in food and energy prices.

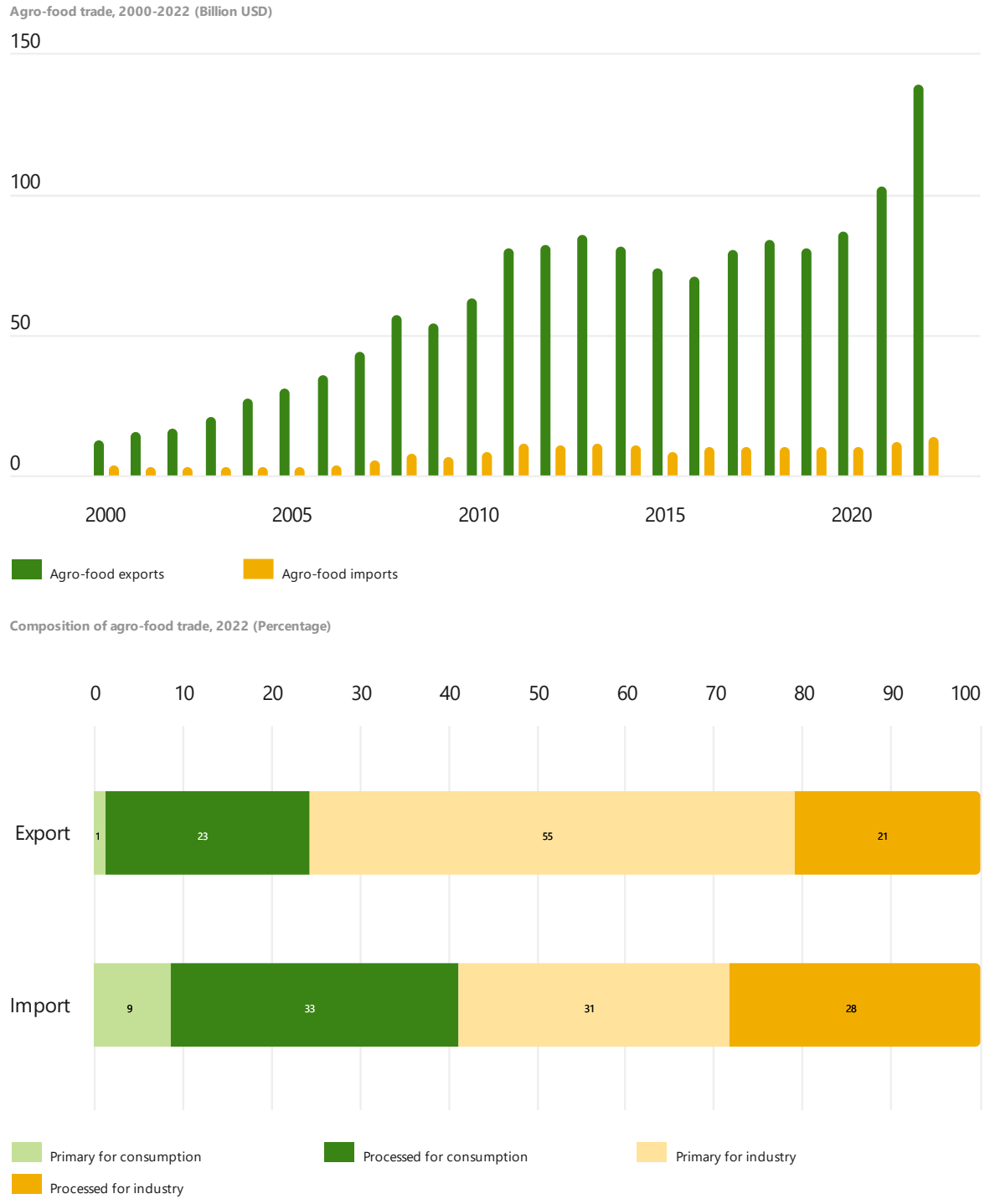
Figure 5.4. Brazil: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

Agro-food exports in Brazil have exceeded USD 80 billion per year since 2011, generating an annual agro-food trade surplus of more than USD 125.88 billion in 2022 (Figure 5.5). Around 56% of Brazilian agro-food exports are primary products for industry and 21% of processed food for industry for 2022.

Figure 5.5. Brazil: Agro-food trade



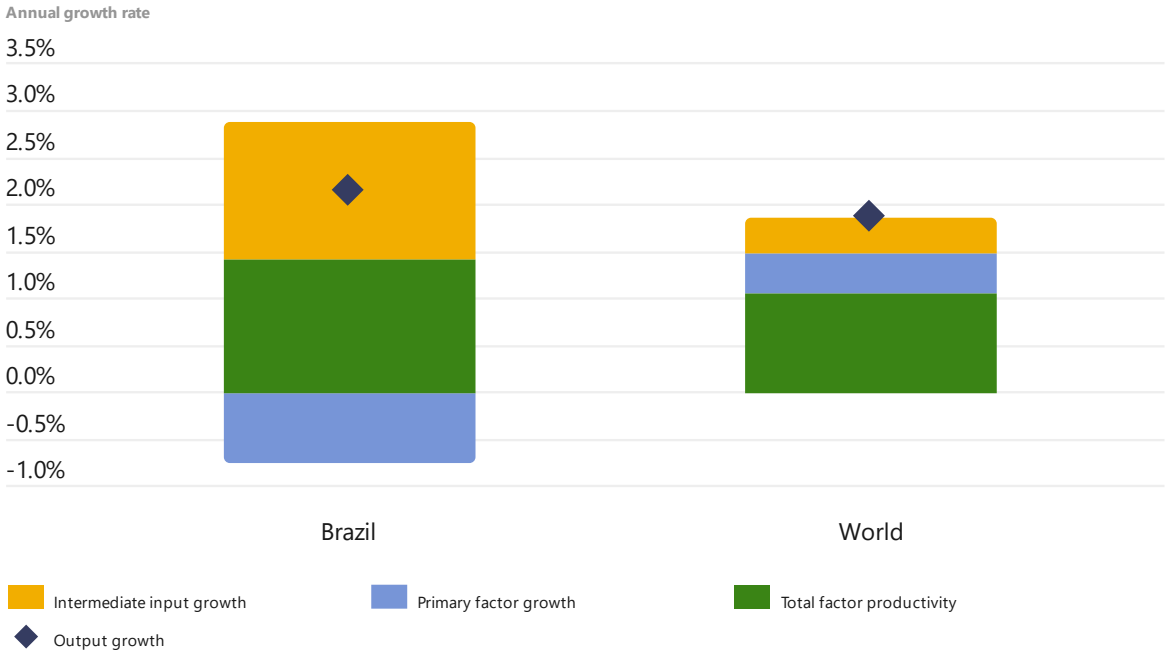
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Between 2012 and 2021, Brazilian agricultural production increased at an annual rate of 2.6%, slightly above the world average (1.89%). Increases in production were driven by intermediate input growth (1.49%) and Total Factor Productivity (TFP) growth of 1.42% per year, again well above the global average,

while increased use of intermediary inputs was offset by the declining use of primary factors in agricultural production (Figure 5.6).

Agriculture accounted for 43% of GHG emissions in 2021, which is below the level observed in 2000, but still high compared to the OECD average (Table 5.3). The use of energy by the agricultural sector has increased up to 5.6% of total use in 2021, also above the OECD average. The larger share of the agricultural sector in the Brazilian economy and the importance of pasture-based livestock contribute to these outcomes. Even though the agriculture's share of water abstractions remained high at 61.6%, water stress is low (0.8). Nutrient surpluses in Brazil have increased since 2000, and phosphorous balance is higher than the OECD average.

Figure 5.6. Brazil: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Table 5.3. Brazil: Productivity and environmental indicators

	Brazil		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	2.8%	1.4%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	21.0	28.1	32.1	28.2
Phosphorus balance, kg/ha	11.8	19.7	3.3	2.3
Agriculture share of total energy use (%)	4.8	5.4	1.7	2.0
Agriculture share of GHG emissions (%)	45.3	43.3	8.7	10.1
Share of irrigated land in AA (%)	1.4	2.3	-	-
Share of agriculture in water abstractions (%)	58.3	61.6	47.0	49.5
Water stress indicator	0.5	0.8	8.7	..

Notes: * or closest available year.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

Before the 1990s, Brazil had a history of government intervention in the agricultural sector. Price interventions were first introduced in the 1940s amid food security concerns, and starting in the 1950s, Brazil adopted an import-substitution industrialisation strategy with wide-ranging controls over supply and prices in the agro-food sector. Prices were both supported for producers and subsidised to consumers.

The National Agency for Food Supplies (SUNAB) regulated distribution of basic foodstuffs and set prices and profit margins for all levels of the food chain, including low prices for consumers. SUNAB also controlled agro-food imports and exports. At the producer level, a general price support system existed for rice, maize, soybeans, beans, cassava, and cotton. Another government agency, the Company for Production Financing (CFP), carried out direct purchases of these commodities at minimum guaranteed prices. Marketing boards were created for wheat, sugar, and coffee. They set overall production volumes, administered marketing quotas, and controlled prices and trade (OECD, 2005[3]; Anderson and Valdes, 2007[4]).

These policies continued until the late 1980s, when the government undertook a general restructuring of the economy. Trade was liberalised, state owned enterprises privatised, domestic markets deregulated, and a customs union established with other South American countries (Mercosur). Agricultural policies were no exception to this move towards openness and less state intervention. State enterprises related to agriculture were dismantled or their functions reduced. Agricultural import tariffs were substantially reduced. Export licensing for primary agricultural products was removed. Brazilian producers faced fewer controls and obtained freer access to world commodity and input markets (OECD, 2015[5]).

Since the mid-2000s, policy has emphasised support to smallholders and setting minimum prices for staples produced in the poorest regions of the country. Purchases of staple foods to be distributed to poor populations has been enhanced, and mandatory sugar cane ethanol fuel-blending continue to be imposed. The National Programme for the Production and Use of Biodiesel was established in 2005 and the blending of biodiesel with mineral diesel became mandatory in 2008. The blend percentage varies between 6% and 15%. Biodiesel is sold through public auctions, where preference is given to manufacturers that support family farming. In addition to prioritising the acquisition of raw materials from family farms, technical assistance by the government is targeted to these farms. Since 2023, the country has emphasised environmental sustainability measures for the sector, such as adaptation and mitigation to climate change, as well as reducing deforestation rates (Table 5.4).

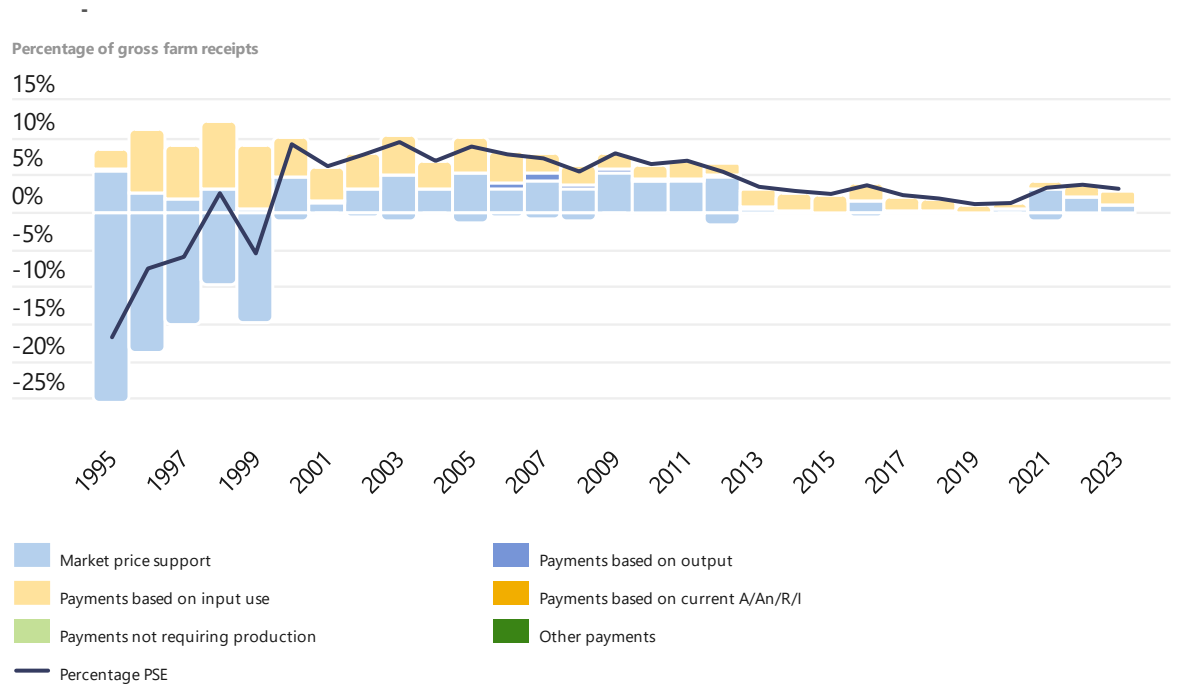
Table 5.4. Brazil: Agricultural policy trends

Period	Broader framework	Changes in agricultural policies
Prior to 1990s	Import substitution Industrialisation model Closed economy	Fixed exchange rates High agricultural tariffs Production and marketing control of agricultural products (CFP state company) Minimum agricultural prices for producers (CFP state company) Subsidised prices of agricultural products for consumers (SUNAB state company) Creation of the Brazilian Agricultural Research Corporation (EMBRAPA) Consumption of sugar cane ethanol stimulated through obligatory blending of ethanol with gasoline
1990-2005	Reforms to trade liberalisation	Floating exchange rates Removal of agricultural price and output controls Reduction of agricultural tariffs of both outputs and inputs Dismantling of marketing boards for wheat, sugar and coffee Dismantling of SUNAB and CFP WTO agreement and Mercosur signed Minimum prices of basic products kept but reduced Subsidised credits (working capital and marketing loans) enhanced as the financial crisis hit farmers Liberalisation of the wheat, coffee and sugar sectors Creation of the Ministry of Rural Development and Family Farming (MDA) Consumption of sugar cane ethanol was also stimulated by the growth of the flex fuel vehicle fleet. Flex Fuel cars have represented more than 85% of new vehicle sales in Brazil since the late 2000s. Law 8 929/1994, creates the Rural Product Certificate (CPR), a bond of mandatory registration authorised by the Central Bank.
2005-2015	Continuing reforms and emphasis on sustainability	Subsidised agricultural credit and insurance subsidies as main agricultural policy, supported by the Law of agribusiness bonds 11076/2004. Minimum prices of basic products set for smallholders through government purchases of staple foods Sugar cane ethanol ratio policy continues to apply Government purchases of staples kept in order to provide food to poor populations Institutionalisation of the National Programme for the Production and Use of Biodiesel. Current regulations of blending ranged between 6% and 15%. Law No. 12 114, 2009 - Creates the National Fund on Climate Change. Law No. 12 187, 2009 - Institutes the National Policy on Climate Change – PNMC. The law establishes the guidelines for the different national sectors, including agriculture, to contribute to the commitments to reduce GHG emissions and adapt to climate change. Decree No. 7 390, 2010 (Art. 3, item IV) established the Sectoral Plan for Mitigation and Adaptation to Climate Change for the Consolidation of a Low-Carbon Economy (ABC Plan), a strategy to consolidate mitigation and adaptation actions. Law 12 651, 2012 (Forest Code) establishes standards for protecting native vegetation in permanent preservation areas, legal reserves, restricted use, forest exploitation, and related matters. Since 2010. Sustainability emphasis on measures for adaptation and mitigation to climate change in agriculture.
2015-2022	Institutional changes and continuous emphasis on sustainability	Incorporation of the structure of the Ministry of Rural Development and Family Farming (MDA) into the into the Ministry of Agriculture and Livestock (MAPA) in 2019, then reinstated as an independent Ministry in 2023. Decree No. 10 606/2021 - Establishes the Integrated Information System of the Sectoral Plan for Consolidation of a Low-Carbon Economy in Agriculture and the Technical Committee for Monitoring the Sectoral Plan for Consolidation of a Low-Carbon Economy in Agriculture. Decree No. 10 828/2021 regulated the issuance of Rural Product Certificate (CPR). The bond was adjusted to be a market alternative for immediate and large-scale adoption of Payment for Environmental Services (PSA).

Period	Broader framework	Changes in agricultural policies
2023-present	Continuing institutional changes and more emphasis on sustainability	Relatively low support, with subsidised credit continuing as key agricultural policy tool. New competences of the 2023 MDA include family farming, agrarian reform, incorporation of several state enterprises such as CONAB (national supply), CEASA-Minas (wholesale Minas), CEAGESP (warehouse company), ANATER (extension services) and INCRA (agrarian reform). In 2023, MAPA created under its structure the Department of Reforestation and Recovery of Degraded Areas. In 2023, Decree 11 815 established the National Program for the Conversion of Degraded Pastures into Sustainable Agricultural and Forestry Production Systems. Continuous emphasis on the sustainability of rural credit and on strengthening climate change adaptation and mitigation measures.

Brazil provides a relatively low aggregate level of support and protection to agriculture, reflecting its position as a competitive exporter and price maker for a range of commodities. Brazil's support to agricultural producers included market price support and input subsidies in the 2000s, up to 10% of gross farm receipts. Market price support has gradually disappeared and is dominated by subsidised credit and insurance subsidies. In recent years, total support in Brazil is mostly in the form of budgetary support, in particular for producers' inputs and for the provision of general services. (Figure 5.7).

Figure 5.7. Brazil: Development of the PSE and its composition, 1995 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

References

Anderson, K. and A. Valdes (2007), *Distortions to Agricultural Incentives in Latin America*, World Bank Group, Washington, DC, http://documents.worldbank.org/curated/en/518211468170062688/Distortions-to-agricultural-incentives-in-Latin-America. [4]

MAPA (2024), *Ministry of Agriculture: Brazil's contribution to the Monitoring and Evaluation of the OECD, 2024*. [2]

MAPA (2023), *Ministry of Agriculture Plano Safra 2023-2024*. [1]

OECD (2015), *Innovation, Agricultural Productivity and Sustainability in Brazil*, OECD Food and Agricultural Reviews, OECD Publishing, Paris, https://doi.org/10.1787/9789264237056-en. [5]

OECD (2005), *OECD Review of Agricultural Policies: Brazil 2005*, OECD Review of Agricultural Policies, OECD Publishing, Paris, https://doi.org/10.1787/9789264012554-en. [3]

Note

[1] This definition was adopted by Brazil from the Convention on Biological Diversity (target 10) https://www.cbd.int/gbf/targets/10.

6. Canada

Main findings

Support to agriculture

Canada has a differentiated approach to support, providing Market Price Support (MPS) to "supply-managed" commodities (dairy, poultry, and eggs) and budgetary support focussed on business risk management to other commodities. Support has been stable over the last decade and averaged 8.5% of gross farm receipts in 2021-23, below the OECD average (13.7%).

The supply-management system consists of import controls (notably tariff rate quotas), production quotas and pricing mechanisms, which generally result in lifting domestic prices above international levels. Milk received particularly high single commodity transfers in 2021-23, amounting to 27% of gross-farm-receipts. Average MPS was lower in 2022 and 2023 than previous years due to higher border prices for eggs and poultry meat relative to domestic farm prices because of avian flu in the United States.

Risk-management tools constitute the main part of budgetary support to producers. These include income stabilisation, subsidised savings and crop insurance programmes. The latter primarily focus on grain commodities although also target other products such as fruits and vegetables, with recent policy developments extending support to beef producers. Overall, risk management policies have played a prominent role in recent years due to adverse weather conditions.

Canada also uses payments based on unconstrained use of variable inputs, notably fuel. Together with MPS, these potentially most-distorting support measures represented 39% of aggregated gross producer transfers in 2021-23, or 3.3% of gross farm receipts.

Support to general services (General Service Support Estimate, GSSE) amounted to 2.9% of agricultural production value in 2021-23, below the OECD average (3.4%) and down from 6.1% in 2000-02. Expenditures on inspection and control systems, and agricultural knowledge and innovation each accounted for about 45% and 34% of GSSE respectively, in recent years. The Total Support Estimate (TSE) represented 0.4% of Gross Domestic Product (GDP) in 2021-23.

Key recent policy changes

The Sustainable Canadian Agriculture Partnership (Sustainable CAP) 2023-28 started to apply in April 2023. This new policy framework introduced several changes to reflect current priorities, including an enhanced focus on helping the sector implement sustainable practices and technologies, as well as supporting underrepresented groups.

The business risk management programmes also underwent changes in the new policy framework, with the aim of integrating environmental and climate risks, while maintaining their core focus on addressing market and production risks. The updated AgriInsurance programme in particular introduces an optional whole-farm catastrophic insurance and medium risk insurance, designed to protect the entire farm operation by encouraging crop diversification and assisting with disaster recovery by fully subsidising premiums for catastrophic risks and covering half for medium risks.

Launched in April 2023, the Resilient Agricultural Landscape Programme is a new cost-shared initiative with activities designed and delivered locally by provinces and territories. Farmers receive support, based on an ecological goods and services payment approach, to help them adopt beneficial management practices. These practices vary by region and are primarily aimed at conserving and enhancing the resiliency of agricultural landscapes.

The government further expanded existing programmes and introduced new ones to support the three supply-managed sectors (dairy, poultry and egg) to mitigate expected impacts of newly enforced trade agreements. Launched in September 2023, the Dairy Innovation and Investment Fund assists dairy processors by modernising and increasing processing capacity for surplus solids non-fat. The Supply Management Processing Investment Funds received additional funding to enhance efficiency in dairy, poultry, and egg processing facilities through investments in new automated equipment and technology.

Assessment and recommendations

- The Canadian agricultural sector has benefitted from abundant natural resources and has innovated and embraced technological advancements that have enhanced productivity with limited pressures on resource use, although there are regional hotspots. With climate change currently challenging Canada's agriculture to both adapt and contribute to mitigation, and export markets demanding higher environmental performance, innovation will remain crucial to sustainable productivity growth (SPG).
- Canada’s strategic planning, incentives for research, development and innovation, and support programmes to farmers have increasingly embraced a paradigm shift towards sustainable agriculture. The measurable targets and performance indicators that were established under the Sustainable CAP will be key to assess the uptake and impact of the measures. A shift towards results-based rather than practice-based support could also enhance the effectiveness of policy tools. These approaches require greater investment in data collection, evaluation and reporting to ensure that support is effectively delivering on the SPG objectives.
- While increasing the funding to mitigation measures and explicitly committing to emissions reductions in the new agricultural policy framework, agriculture remains largely exempt from Canada’s carbon pricing scheme. Including agricultural emissions in the scheme would encourage greater adoption of practices that reduce emissions and improve soil carbon storage.
- At the same time, farmers must adapt to a changing climate and the growing frequency of weather-related adverse events. In addition to research, development and innovation efforts, short-term risk management, and medium-term support for resilient practices, more attention and resources could be directed toward improving the long-term adaptive capacity of farmers and transforming production systems, alongside monitoring policy implementation progress.
- While below the OECD average, producer support remains dominated by potentially most distorting transfers to producers. The dairy, poultry and egg sectors remain protected from international competition through market price support, which distorts production and trade and inflates domestic prices. To stimulate market responsiveness and encourage innovation, supply management in these sectors should be reformed by increasing production quotas and gradually reducing price support, leading to greater efficiency and diversification into higher value products.
- Canada’s approach to risk management continues to evolve, integrating environmental and climate risks with reducing reliance on ad-hoc responses to adverse events. These are positive steps towards increased agricultural resilience. Nonetheless, the existing system could potentially prevent long-term resilience and lead to maladaptation. A holistic assessment of the policy toolkit addressing the linkages and trade-offs between risk-management and environmental outcomes would enable a focus on the most cost-effective programmes, stimulate the development of market-

based tools where the opportunity-costs of public support are higher, and encourage more forms of farm-level risk management by farmers.

- Support to general services continues to receive a significant share of total budgetary support (one-third), contributing to strengthening the sector's competitiveness and sustainability. Still, more efforts to reverse the declining trend of GSSE spending relative to the size of the sector, particularly in innovation and knowledge transfer, represent an opportunity to prepare for future challenges.

Development of support to agriculture

Figure 6.1. Canada: Development of support to agriculture

Figure 6.1A. Canada: Producer Support Estimate and its composition

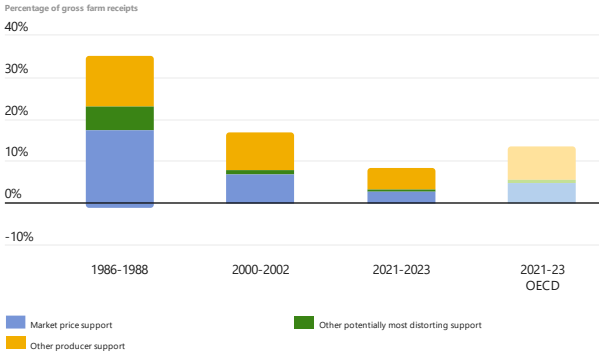


Figure 6.1B. Canada: Ratio of producer to border price

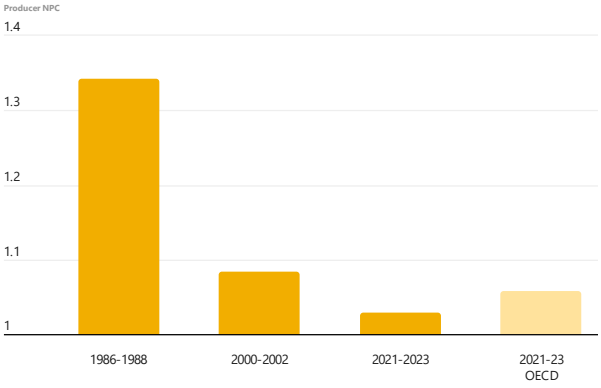


Figure 6.1C. Canada: General Services Support Estimate and its composition

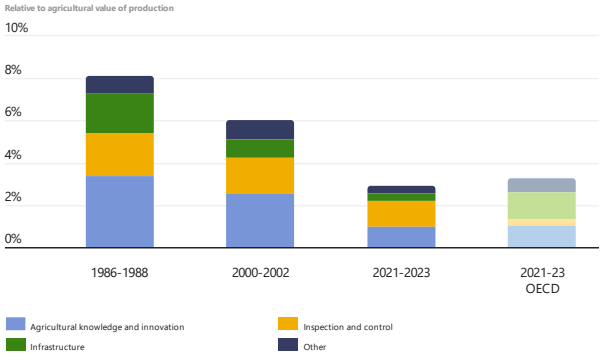
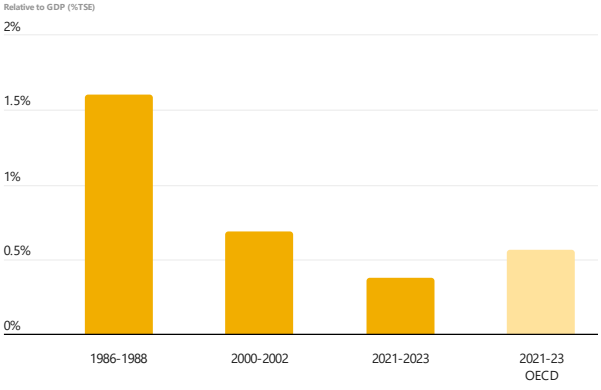
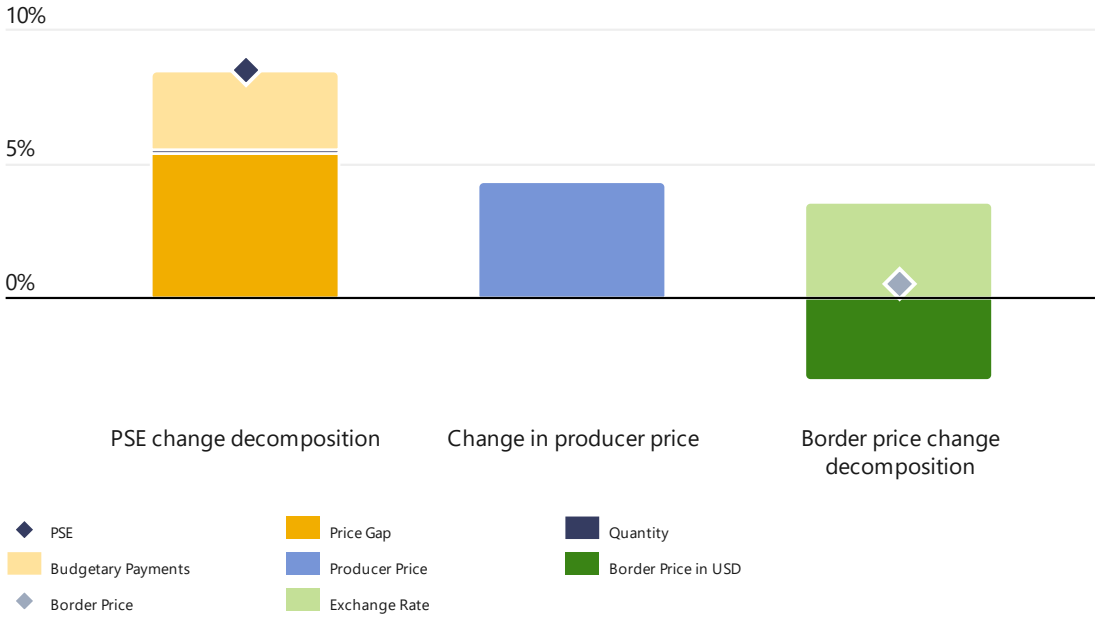


Figure 6.1D. Canada: Total Support Estimate



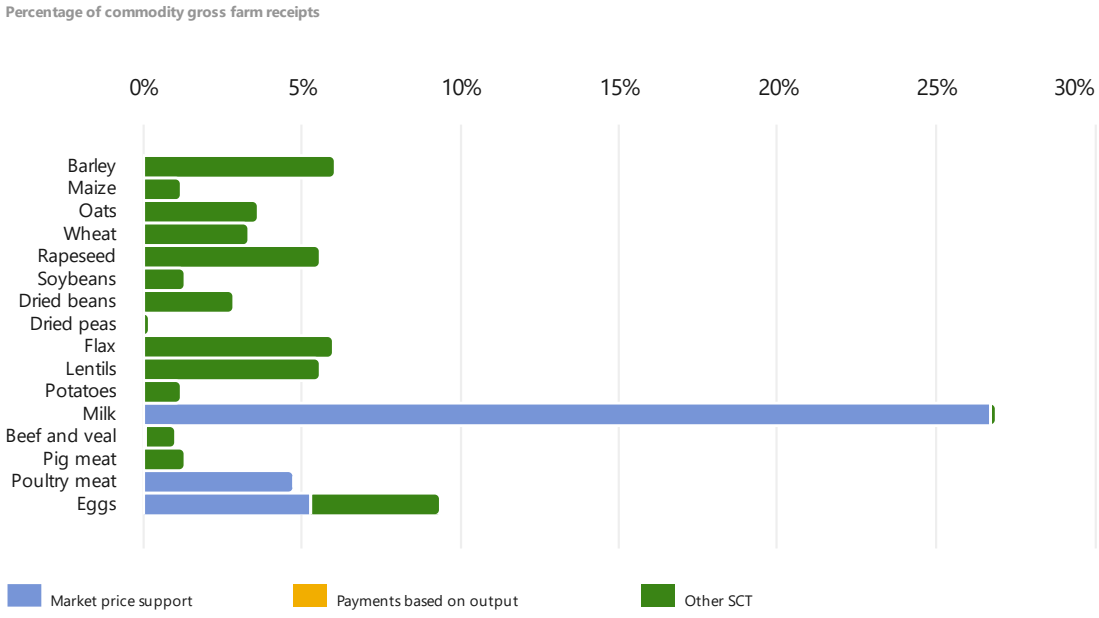
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Figure 6.2. Canada: Drivers of the change in PSE, 2022 to 2023



Note: % change of nominal Producer Support Estimate expressed in national currency.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Figure 6.3. Canada: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Table 6.1. Canada: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**14 083**	**20 696**	**66 053**	**61 526**	**67 464**	**69 170**
of which: share of MPS commodities (%)	85.57	81.97	82.73	81.86	83.52	82.81
Total value of consumption (at farm gate)	**11 833**	**15 014**	**43 698**	**44 917**	**44 221**	**41 956**
Producer Support Estimate (PSE)	**5 855**	**3 897**	**5 995**	**7 492**	**5 126**	**5 367**
Support based on commodity output	3 214	1 629	1 961	2 728	1 466	1 690
Market price support[1]	2 851	1 608	1 961	2 727	1 466	1 690
Positive market price support	2 997	1 608	1 961	2 727	1 466	1 690
Negative market price support	-146	0	0	0	0	0
Payments based on output	364	20	0	0	0	0
Payments based on input use	1 091	368	695	607	804	673
Based on variable input use	622	242	394	397	417	368
with input constraints	0	0	17	0	24	27
Based on fixed capital formation	448	108	248	202	270	270
with input constraints	0	0	37	6	46	59
Based on on-farm services	20	18	53	7	117	35
with input constraints	0	0	17	0	24	27
Payments based on current A/An/R/I, production required	1 336	1 307	2 986	3 743	2 484	2 731
Based on Receipts / Income	467	586	621	556	607	700
Based on Area planted / Animal numbers	869	721	2 365	3 186	1 877	2 032
With input constraints	0	0	24	17	16	40
Payments based on non-current A/An/R/I, production required	0	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	0	553	314	367	353	222
With variable payment rates	0	0	0	0	0	0
with commodity exceptions	0	0	0	0	0	0
With fixed payment rates	0	553	314	367	353	222
with commodity exceptions	0	0	0	0	0	0
Payments based on non-commodity criteria	8	0	0	0	0	0
Based on long-term resource retirement	8	0	0	0	0	0
Based on a specific non-commodity output	0	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0	0
Miscellaneous payments	206	41	39	48	19	51
Percentage PSE (%)	**34.44**	**16.95**	**8.51**	**11.30**	**7.21**	**7.37**
Producer NPC (coeff.)	**1.34**	**1.09**	**1.03**	**1.05**	**1.02**	**1.02**
Producer NAC (coeff.)	**1.53**	**1.20**	**1.09**	**1.13**	**1.08**	**1.08**
General Services Support Estimate (GSSE)	**1 153**	**1 260**	**1 941**	**1 942**	**2 098**	**1 782**
Agricultural knowledge and innovation system	483	536	672	675	693	648
Inspection and control	283	348	827	832	961	688
Development and maintenance of infrastructure	268	182	231	221	214	257
Marketing and promotion	85	179	140	152	153	114
Cost of public stockholding	0	0	0	0	0	0
Miscellaneous	34	15	71	61	77	75
Percentage GSSE (% of TSE)	**16.30**	**24.44**	**24.26**	**20.33**	**28.77**	**24.71**
Consumer Support Estimate (CSE)	**-2 533**	**-1 719**	**-2 185**	**-3 037**	**-1 610**	**-1 908**
Transfers to producers from consumers	-2 766	-1 602	-1 960	-2 727	-1 466	-1 685
Other transfers from consumers	-31	-117	-309	-430	-213	-283
Transfers to consumers from taxpayers	31	0	83	120	69	61
Excess feed cost	234	0	0	0	0	0
Percentage CSE (%)	**-21.54**	**-11.44**	**-4.98**	**-6.78**	**-3.65**	**-4.55**
Consumer NPC (coeff.)	**1.31**	**1.13**	**1.05**	**1.08**	**1.04**	**1.05**
Consumer NAC (coeff.)	**1.27**	**1.13**	**1.05**	**1.07**	**1.04**	**1.05**
Total Support Estimate (TSE)	**7 039**	**5 157**	**8 019**	**9 554**	**7 294**	**7 210**
Transfers from consumers	2 798	1 720	2 268	3 158	1 679	1 969
Transfers from taxpayers	4 273	3 555	6 060	6 827	5 827	5 525
Budget revenues	-31	-117	-309	-430	-213	-283
Percentage TSE (% of GDP)	**1.61**	**0.69**	**0.38**	**0.48**	**0.34**	**0.34**
Total Budgetary Support Estimate (TBSE)	**4 188**	**3 549**	**6 058**	**6 827**	**5 827**	**5 520**
Percentage TBSE (% of GDP)	**0.96**	**0.47**	**0.29**	**0.34**	**0.27**	**0.26**
GDP deflator (1986-88 = 100)	**100**	**138**	**223**	**212**	**227**	**230**
Exchange rate (national currency per USD)	**1.32**	**1.53**	**1.30**	**1.25**	**1.30**	**1.35**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for Canada are: wheat, maize, barley, oats, soybean, rapeseed, flax, potatoes, lentils, dried beans, dried peas, milk, beef and veal, pig meat, poultry and eggs.

Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

Agriculture policy is a shared jurisdiction between federal, provincial and territorial (FPT) governments who collaborate via an agreed agricultural policy framework which reflects national priorities while providing flexibility for provinces and territories to design and deliver programmes that respond to their regional priorities. FPT governments may develop and fund their own agricultural programmes outside of this framework. Agricultural policy is characterised by the separate treatment of supply-managed commodities (dairy, poultry and eggs). These are produced mainly for domestic consumption and are protected by border measures. Other commodities (e.g. field crops, red meat, horticulture) have less market interventions and are generally export-oriented.

The national supply management system provides market price support through customs tariffs (import control) and production quotas tradable within provinces (production control), combined with domestic price-setting according to production costs and consumer price index (pricing mechanism). Supply managed commodities are governed by their own FPT agreements – the *national marketing plans* – and are administered by provincial agricultural marketing boards operating in co-ordination with the national agencies.

Other programmes to support Canada's agriculture and agro-food sector are mainly provided through multilateral policy frameworks, with the most recent being the Sustainable Canadian Agricultural Partnership (Sustainable CAP). This five-year agreement between FPT governments, effective from April 2023 through March 2028, finances business risk management programmes along with strategic initiatives that are either federal programmes or cost-shared activities by FPT governments.

The business risk management (BRM) programmes support producers in managing risks that threaten the viability of their farm or are beyond their capacity to control. The basic design of these programmes under the Sustainable CAP 2023-28 is similar to that of past frameworks and attempts to balance ex ante and ex post measures and limit ad hoc forms of assistance. FPT governments jointly provide approximately CAD 1.8 billion (USD 1.3 billion) per year to finance programmes under the Farm Income Protection Act:

- AgriStability, a whole-farm income stabilisation programme to support producers in years of large margin declines. Farmers receive a payment if their production margin – difference between revenue and costs – in the current year falls below their historical reference margin by more than 30%.
- AgriInvest, a savings tool to help producers manage small income declines. Each year, producers can deposit up to 100% of their Allowable Net Sales (ANS) and receive a matching government contribution on 1% of their ANS, with a maximum government contribution of CAD 10 000 (USD 7 400). Funds in these accounts may be used for any purpose.
- AgriInsurance, a federal-provincial-producer cost-shared insurance programme which subsidises 60% of the cost of insurance premiums. This insurance covers major crop and horticulture products, with the possibility for individual provinces to develop insurance coverage for livestock.
- AgriRecovery, a disaster relief framework to help producers recover from natural disasters, supplementing the assistance provided by the other BRM programmes.

The Advance Payments Program (APP) is a loan guarantee programme that aims to help producers cope with market volatility. The federal government guarantees cash advances of up to CAD 1 million (USD 740 000) to producers based on the anticipated value of their farm products. For each programme year, the government pays the interests on the first portion of each advance, with preferential interest rates applying to amounts above the interest-free limit. Initially set at CAD 100 000

(USD 77 000) per producer per year, this limit has significantly increased in the last two years (see section "Recent policy developments"). Producers are required to repay their advances as they sell their products, with most agricultural products having up to 18 months for repayment, and advances on cattle and bison having up to 24 months. Unlike Federal, Provincial and Territorial BRM programmes which are based on the Farm Income Protection Act, the APP is fully federally funded outside the Sustainable CAP budget and has the Agricultural Marketing Programs Act as its legislative base.

The federal-only funded strategic initiatives under the Sustainable CAP 2023-28 provides CAD 1 billion (USD 740 million) for programmes, primarily applying a cost-sharing approach reimbursing expenses on a 50-50 to 75-25 basis between the grant and the applicant. Some also offer technical assistance and extension services. These programmes focus on three pillars:

- Growing trade and expanding markets through:
  - AgriMarketing, a CAD 130 million (USD 96 million) programme which supports industry-led market development activities that help the sector to increase and diversify exports as well as seize domestic market opportunities.
  - AgriCompetitiveness, a CAD 26 million (USD 19 million) programme which supports activities that helps the sector adapt to changing commercial and regulatory environments, share best practices, and provide mentorship opportunities, facilitating knowledge transfer and sector leadership.
- Fostering innovative and sustainable growth of the sector through:
  - AgriScience, a CAD 325 million (USD 241 million) programme which supports innovation by providing funding to pre-commercial science activities and cutting-edge research to benefit the agriculture and agro-food sector.
  - AgriInnovate, a CAD 95 million (USD 70 million) programme which supports projects that accelerate the demonstration, commercialisation or adoption of innovative products, technologies, processes or services that increase the sector's competitiveness and sustainability. It provides contributions to businesses on an interest-free repayable basis.
- Supporting diversity and a dynamic and evolving sector through:
  - AgriAssurance, a CAD 64 million (USD 47 million) programme shares costs with industry of developing and adopting systems, standards and tools to address market and regulatory requirements related to food safety, plant and animal health surveillance, animal welfare, environmental sustainability, traceability, market attributes and quality standards. It also aims to foster public trust by helping industry make verifiable claims about the health, safety and quality of Canadian agricultural products.
  - AgriDiversity, a CAD 5 million (USD 4 million) programme which aims to increase the capacity of youth, women, Indigenous Peoples, persons with disabilities and other underrepresented and marginalised groups to overcome barriers and actively participate in the agricultural sector (see section "Recent policy developments"). It supports skills, leadership, and entrepreneurial development; and facilitates knowledge sharing and best management practices.

The FPT cost-shared strategic initiatives are funded 60% by the federal government and 40% by the provincial/territorial governments, and provide CAD 2.5 billion (USD 1.9 billion) under the Sustainable CAP 2023-28 for activities that focus on the following five priority areas:

- *Climate change and environment* to help the sector develop and adopt clean technologies that address agri-environmental issues; adopt priority beneficial management practices; develop and implement targeted climate change and environmental strategies; and carry out risk assessments.

- *Science, research and innovation* to support basic and applied research aligned with the provincial and territorial needs of the sector, knowledge and technology transfer activities, and other research activities related to climate change adaptation and GHG emissions reduction.
- *Market development and trade* to help the sector prepare for, and respond to, new and emerging market opportunities domestically and abroad as well as to recognise the quality and sustainability of the sector and improve the visibility and competitiveness of Canadian products domestically and in international markets.
- *Building sector capacity, growth and competitiveness* to help producers and processors enhance production efficiency and profitability through the acquisition of tools and skills and the adoption of improved products, practices and processes that add value and credibility, as well as to support industry-led initiatives that address labour shortages, including support for labour attraction and retention, and labour-saving technologies such as automation.
- *Resiliency and public trust* to develop and implement strategies that allow to effectively plan, prevent and mitigate production risks and potential supply chain disruptions, as well as to support the development, implementation and continuous improvement of pan-Canadian food safety, biosecurity and traceability systems at the farm and post-farm levels.

Most farm-level environmental programmes are designed and administered by provincial and territorial governments. More recently, a new FPT cost-shared strategic initiative worth CAD 250 million (USD 192 million), **the *Resilient Agricultural Landscape Program*, seeks to support ecological goods and services provided by the agricultural sector, through per-acre payments to farmers and land agreements**. Provinces and territories design and deliver the programme based on their local conditions and regional needs, alongside other initiatives aimed at fostering farming practices that leverage the natural abilities of farmland to address climate change. The programme supports the on-farm adoption of beneficial management practices, which vary by region and may include grassland and habitat management, cropland management, agri-food processing, demonstration tools, manure and confined livestock management, energy use and efficiency, pest management, product storage, and water use and efficiency (see section “Recent policy developments”).

Additionally, climate policies have come to complement agricultural policies in fostering the sector’s contribution to achieving the country’s ambitious climate goals. In its 2021 updated Nationally Determined Contribution (NDC) to the Paris Agreement, Canada committed to reducing national net GHG emissions 40-45% below 2005 levels by 2030, to achieving net-zero emissions by 2050 and to **reaching a national fertiliser emissions reduction target of 30% below 2020 levels by 2030** (Government of Canada, 2021[1]). Canada also signed the Global Methane Pledge and **explicitly committed to reducing its economy-wide methane emissions by 2030**. However, agricultural emissions remain largely excluded from Canada’s emissions reduction tool of pricing carbon pollution.

Building on the Pan-Canadian Framework (PCF) on Clean Growth and Climate Change established in 2016, the government of **Canada created in 2020 its *A Healthy Environment and a Healthy Economy plan*** (Environment and Climate Change Canada, 2020[2]), **which contains agriculture-specific actions** including:

- The Agricultural Clean Technology (ACT) initiative supports farmers and agro-food businesses in developing and adopting clean technologies via two funding streams. The Research and Innovation Stream (2021 to 2028) helps develop and disseminate clean technologies in three areas (green energy and energy efficiency, precision agriculture and bioeconomy). Non-repayable contributions of up to 50% of the costs of research, development and demonstration projects are provided, as are repayable contributions where activities involve commercialisation and scale-up. The Adoption Stream (2021 to 2026) helps farmers purchase and install commercially available clean technologies and processes, primarily those reducing GHG emissions and generating other environmental co-benefits.

- The Agricultural Climate Solutions (ACS) initiative helps develop and implement farming practices to tackle climate change, a multi-stream programme under the Natural Climate Solution Fund. The *Living Labs Stream*, supports research that aims to co-develop, test and monitor beneficial management practices on farms that sequester carbon and mitigate GHG emissions, through regional collaboration hubs that bring together farmers, scientists, and other sector partners. The On-Farm Climate Action Fund (2021-2024) helps farmers adopt climate-friendly practices, including nitrogen management, cover cropping and rotational grazing, providing a combination of training, technical support and financial incentives.

While the focus of these measures is on green growth and climate change mitigation and adaptation, there are cross-cutting approaches with sustainable productivity growth that are developed in the following section.

Innovation for sustainable productivity growth

Agricultural output in Canada grew by 2.3% annually between 1961 and 2006. While input use grew by only 0.7% per year over the same period, the remainder of the output growth (1.6% per year) was due to average total factor productivity growth (TFP), which measures the combined effects of new technologies, efficiency improvements and economies of scale. (OECD, 2015[3]). After being steady for a long time, the TFP growth in primary agriculture has slowed down in the last decade (USDA-ERS, 2024[4]).

The Canadian agri-food sector benefits from an abundance of natural resources and faces limited environmental constraints. Agri-environmental indicators reveal that agricultural output growth over the past decade has been achieved without a clear relationship with the level of pressure exerted on natural resources. Nevertheless, while the adoption of more sustainable practices has helped improve the environmental performance of agriculture, climate change currently ranks among the top challenges facing Canada's agricultural sector. On one hand, the primary agriculture sector contributes around 10% of Canada's greenhouse gas (GHG) emissions, despite accounting for only about 1.3% of GDP. On the other hand, agricultural productivity could face further impacts from the effects of climate change, along with potential increased consumer demands for emission reductions.

Strategic planning

Canadian policy aligns economic viability with environmental and social considerations. Government **policies foster investment in research and development to optimise resource use, adoption of environmentally friendly agricultural practices, responsiveness to changing consumer preferences, and collaborative efforts among stakeholders to boost innovation and knowledge exchange**.

Released in 2022, the Strategic Plan for Science outlines the vision for the future of research and development (R&D) to align the sector with the new reality and address emerging challenges. This approach entails a paradigm shift towards sustainable agriculture and has the potential to enable needed cross-sectoral collaboration, although implementation is still underway, and results unclear yet. The strategy is based on four main missions:

- Mitigating and adapting to climate change
- Increasing the resilience of agro-ecosystems
- Advancing the circular economy by developing value added opportunities
- Accelerating the digital transformation of agriculture and agri-food.

Research and innovation

The **government has helped transform the agricultural sector through investments in R&D. The private sector has also contributed by investing in R&D**, particularly in the areas of new crop varieties and livestock genetics. Public funds support 20 R&D centres and 30 affiliated sites which operate to address key agricultural challenges. Each R&D centre specialises in specific research areas tailored to the needs of the sector. For instance, to boost agricultural productivity and sustainability in cold and humid climates, research at these centres will focus on the development of field crop systems integrating perennial forage species.

The federal strategic initiatives AgriScience and AgriInnovate foster sustainable productivity growth of the Canadian agro-food sector (see section "Main policy instruments"). Focused on the development portion of the innovation path (i.e. pre-commercialisation and pre-adoption of innovation), **AgriScience helps the industry move its activities from upstream (discovery science) to downstream (near market).** Funding covers areas such as variety development, pest and disease management and mitigation, sustainability and indigenous knowledge. **AgriInnovate supports the phases of technology demonstration, technology commercialisation and technology adoption**. The programme invests in emerging technologies and processes that strengthen the Canadian agricultural and agri-food innovation ecosystem, fostering competitiveness and sustainability. Key areas include advanced manufacturing, automation, robotics, and digitisation.

Support for science and innovation within the sector is increasingly coming from other federal ministries. Innovation, Science, and Economic Development (ISED) Canada, for instance, has funded the establishment of several networks and clusters aimed at driving innovation and value-added in the sector. Notable initiatives include the Canadian Agri-Food Automation and Intelligence Network (CAAIN), which focuses on precision agriculture, automation, and technological advancements. Similarly, the Canadian Food Innovators Network (CFIN) fosters collaboration and innovation within Canada's food and food-tech sector. Moreover, Protein Industries Canada (PIC), part of ISED's Global Innovation Clusters, is dedicated to enhancing Canada's plant-based and co-products sector. Lastly, the National NSERC-SSHRC Sustainable Agriculture Research Initiative is committed to supporting research aimed at initiating or accelerating the development of solutions necessary for a sustainable, resilient, and profitable agricultural sector in a net-zero economy. With a broader range of stakeholders investing in science and innovation and an enabling environment that encourages more public and private R&D efforts, Canada aims at improving productivity, reducing emissions, and maintaining the sector's role as an economic driver.

These programmes are **complemented by FPT cost-shared strategic initiatives focused on the *Science, research and innovation* priority area, which are implemented at provincial level**. Among the most recent initiatives, it is worth mentioning the following ones:

- Manitoba's Research and Innovation Program helps develop science-based solutions and tools to address challenges, climate threats, and opportunities. It aims at accelerating innovation through funding for research and capacity building projects, including developing new technologies, new practices, new products and new knowledge.
- Ontario's Agri-Food Research Initiative supports research and innovation activities that drive growth, sustainability, and market opportunities, including through the Growth Ontario Accelerator Hub.
- Saskatchewan's crop-related research funding, including the Agriculture Development Fund (ADF) and Strategic Research Programs (SRP) focuses on enhancing sustainability, competitiveness, and innovation. It covers areas such as news crops and cultivars, optimised livestock feeding systems, innovative sustainable farming practices, adaptive capacity of soils, and use of biotechnology.

For FPT cost-shared programming under the Sustainable Canadian Agricultural Partnership, short and medium-term performance measures and targets for research, development and innovation were established.

Programme implementation

As described above, the various **FPT cost-shared initiatives focused on *Climate change and environment* priority area encourage famers to adopt clean technologies and beneficial management practices to transition to sustainable agricultural production**. The new flagship Resilient Agricultural Landscape Program aims to reconcile environmental and economic performance of farms by rewarding environmental goods and services provided by the agricultural sector.

Other programmes seek to improve productivity and sustainability in strategic commodities by providing financial incentives to primary producers. An example is the Poultry and Egg On-Farm Investment Program, which helps supply-managed poultry and egg producers adapt to market changes resulting from the implementation of recent international trade agreements, namely the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and the Canada-United States-Mexico Agreement (CUSMA). The programme subsidises on-farm investments that:

- increase efficiency or productivity (through more effective housing facilities or computerised control systems for instance)
- improve on-farm food safety and biosecurity (such as cleaning and disinfection equipment and water treatment systems)
- improve environmental sustainability (through solar panels or energy-efficient heating and ventilation systems for example)
- respond to consumer preferences (improving animal welfare, adopting alternative housing systems, transitioning to organic production, among others).

At provincial level, Ontario's Agri-Tech Innovation Initiative provides financial aid to farm and food processing businesses adopting innovative technology. Nova Scotia invests in the Season Extension Enhancement Program, to help fruit and vegetable growers who invest in innovative and labour-saving technologies to extend their growing season, adapt to a changing climate and open up new market opportunities. This initiative supports acquiring on-farm infrastructure for adopting season extension technologies, enhancing storage capacity and developing irrigation capacity for field operations. The province also invests in the Local Food Advancer Program, assisting local producers and agri-businesses in acquiring equipment and technology to boost production, either by expanding their current operation or by creating new value-added products.

Recent policy developments

Domestic policy developments in 2023-24

Federal funded strategic activities – main changes under the new Sustainable CAP

Under the Sustainable CAP, strategic government initiatives funded by the federal government have been adjusted according to current priorities, with higher contribution rates from the government:

- *AgriMarketing* expands its scope with priority given to projects demonstrating the following priorities:
  - Market Diversification, with emphasis on emerging markets in the Indo-Pacific Region

  - Inclusive Trade, expanding eligible recipients to associations representing stakeholders from underrepresented or marginalised groups such as indigenous-led and women-owned groups
  - Marketing Canada's Green Products, promoting environmental certification and assurance systems
  - Digital and Virtual Engagement, preferring digital campaigns, virtual B2B meetings and e-commerce to lower costs and reduce carbon footprint.
- *AgriCompetitiveness* entails an increase in the government's contribution rate to 70% from the previous 50%.
- *AgriScience* tackles challenges and opportunities across the three following priority areas: climate change and the environment, economic growth and development, and sector resilience alongside societal challenges. Certain parameters have also been adjusted, notably the requirement for beneficiary clusters to include a mandatory minimum investment of 30% in R&D primarily focusing on the climate change and the environment priority area.
- *AgriDiversity* extends eligibility to encompass visible minorities and racialised persons, 2SLGBTQI+ communities, and official language minority communities. The government cost share percentage increased to 70% from 50%.
- Carbon credits to offset greenhouse gas emissions from travel activities are now accepted as eligible expenses under *AgriMarketing, AgriCometitiveness, AgriAssurance and AgriDiversity*.

Cost-shared strategic initiatives under the Sustainable CAP

During 2023, several new programmes were launched in the different provinces of the country under the umbrella of the FPT cost-shared initiatives of the Sustainable CAP. Activities focus on the different priority areas listed above.

Launched in April 2023, the Resilient Agricultural Landscape Program (RALP) has been implemented at provincial and territorial level. The government of Alberta provides funding of up to CAD 150 000 (USD 110 000) to farmers who undertake projects in pasture management, cropland conversion, tree establishment and wetland preservation, with the requirement to sustain these initiatives for a minimum of three years.

The government of Ontario offers funding to support projects to reduce GHG emissions and sequester carbon, focusing on natural grassland establishment, perennial biomass and warm season pastures, reduced tillage, tree and shrub planting, water retention features and wetlands.

Business risk management programmes – main modifications and new programmes

The Sustainable CAP introduced changes to existing BRM programmes and launched new ones. These changes aim to better integrate environmental and climate risks while maintaining their core focus on managing market and production risks.

Under the AgriInsurance programme, provinces now may implement Whole Farm Cost Shares as an alternative cost-sharing approach, with the federal and provincial governments fully subsidising premiums for catastrophic risks and covering half of the premiums for medium risks.[1] Whole Farm Cost Shares aims to incentivise producers to diversify their crops by offering lower premiums based on higher farm diversity, while also maintaining coverage for disaster recovery. Provinces have also committed to introduce a cost-neutral AgriInsurance pilot programme with incentives aimed at encouraging producers to adopt specific Beneficial Management Practices (BMPs), which mitigate production risks, lower premiums, and provide environmental benefits.

AgriRecovery initiatives provided support for disaster recovery for bee colony losses due to severe cold in 2021-22; for producers affected by flooding in British Columbia in 2021; for livestock producers affected

by drought and wildfires in 2021 and 2023; for grape growers impacted by extreme cold in Ontario in 2022 and to help producers in Prince Edward Island, Nova Scotia, and Newfoundland and Labrador to recover from damages caused by Hurricane Fiona in 2022.

Addressing rising costs and policy responses to Russia's war of aggression against Ukraine

In order to address higher input and borrowing costs, the Government of Canada temporarily increased the interest-free limit for advances under the Advance Payments Program from CAD 100 000 (USD 74 000 to CAD 350 000 (USD 260 000) for the 2023 programme year and CAD 250 000 (USD 185 million) for the 2024 programme year. This change is expected to provide a total interest savings of CAD 171.6 million (USD 127 million) over the two programme years to approximately 12 000 producers.

In the 2023 budget, the government allocated CAD 34 million (USD 25 million) in support over a three-year period for eastern Canadian farmers affected by sudden increases in fertiliser market prices in early 2022. This funding, provided through the *On-Farm-Climate Action fund* targets eastern Canadian producers who heavily rely on Russian fertiliser imports and aims to facilitate the adoption of new or additional nitrogen management practices to optimise fertiliser utilisation (Government of Canada, 2023[5]).

Supporting the supply managed sectors

Launched in September 2023, the *Dairy Innovation and Investment Fund* provides financial support to Canadian dairy processors to help them manage the surplus of solids non-fat by modernising, replacing and increasing solids non-fat processing capacity. This CAD 333 million (USD 246 million) programme over 10 years aims to compensate for the impacts of the Canada-United States-Mexico Agreement (CUSMA).

An additional CAD 125 million (USD 92 million) was assigned to the Supply Management Processing Investment Funds to mitigate the impacts of the CUSMA. This fund complements the initial budget of CAD 292 million (USD 216 million) aimed at mitigating the impacts of the Canada-European Union Comprehensive Economic and Trade Agreement (CETA) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). They support investments in dairy, poultry, and egg processing facilities that improve productivity and/or efficiency through the purchase of new automated equipment and technology.

Strengthening pest and disease management

The federal government allocated CAD 57.5 million (USD 42.5 million) over five years in new funding for the Canadian Food Inspection Agency to establish a foot-and-mouth disease (FMD) vaccine bank and develop FMD response plans, aiming at controlling large-scale FMD outbreaks. It also extended the *African Swine Fever Industry Preparedness Program* until March 2025.

The government of Ontario committed in April 2023 to invest CAD 15 million (USD 11 million) to address veterinary shortages in rural and northern areas, establishing the Collaborative Doctor of Veterinary Medicine Program to train more veterinarians. It also launched the CAD 5 million (USD 3.7 million) Veterinary Incentive Program offering up to CAD 50 000 (USD 37 000) in grants over five years to encourage newly licensed veterinarians to practice in underserviced communities.

Adjusting labour policy

The government of Canada announced in March 2024 changes to temporary measures the Workforce Solutions Road Map had first introduced in April 2022 based on labour market conditions. These latest measures under the Temporary Foreign Worker (TFW) Program included the reduction, from 30% to 20%, of the cap on temporary foreign workers that employers in certain sectors – including the agri-food sector

– are allowed to hire as part of their total workforce through this programme, and the adjustment of the Labour Market Impact Assessment (LMIA) validity period. Additionally, the Recognized Employer Pilot (REP) under the TFW Program was launched in August 2023 with the aim to streamline LMIA processes for eligible employers, both in primary agriculture and in food processing. In 2023, there were over 70 000 TFWs in agricultural industries like cattle and ranch farming, fruit and tree nut farming, and greenhouse, nursery and floriculture production. There were also over 45 000 TFWs in food and manufacturing industries like dairy product manufacturing and seafood product preparation and packaging.

The immigration Levels Plan for 2024-26 aims to welcome 1.45 million new immigrants to Canada and prioritise economic immigration. Category-based rounds of invitations to candidates based on identified economic goals were introduced in 2023, agri-food occupations were chosen as one of six categories for 2023 and 2024. Furthermore, extensions to programmes like the Agri-Food Pilot until May 2025 aim to address long-term labour shortages in the agricultural sector – especially for specific occupations, such as meat processing, greenhouse crop production, and livestock raising, with expanded eligibility criteria and pathways to permanent residency.

Fostering food security

British Columbia (BC) announced CAD 200 million (USD 148 million) for food security in March 2023, aiming to enhance access to affordable, local food and strengthen the province's food supply chain. Key policy elements include initiatives such as the Indigenous Food Sovereignty Program, allocating CAD 30 million (USD 22 million) to support Indigenous communities in building local food systems and revitalising traditional practices. The initiative funds infrastructure such as greenhouses, irrigation systems, community gardens and food storage, as well as climate change adaptation projects. Other programmes focus on developing emergency strategies for agricultural resilience, aim at boosting the BC food processing sector through facility upgrades, equipment investment, and capacity expansion, or provide funding to the BC livestock and poultry industry to invest in planning, preparedness, prevention, and mitigation of animal diseases.

Policies to facilitate climate change mitigation and adaptation in agriculture

In November 2023, the Agricultural Methane Reduction Challenge (AMRC) was launched. Up to CAD 12 million (USD 9 million) will be awarded to innovators advancing low-cost and scalable practices, processes and technologies designed to reduce methane emissions from the cattle sector, specifically cow-calf operation, feedlot, and dairy. Potential innovation areas are feed additives, grazing management practices and feed efficiency among others.

At the provincial level, British Columbia introduced the Perennial Crop Renewal Program, offering CAD 15 million (USD 11 million) in funding to perennial crop producers in the region. This initiative aims to support the removal of unproductive, diseased, or unmarketable cultivars, enabling producers to transition to growing systems better aligned with environmental conditions and market demands. In June 2023 the province launched the Agricultural Water Infrastructure Program, a three-year programme that provides incentives for investments in water infrastructure, with a total budget of CAD 20 million (USD 15 million).

Trade policy developments in 2023-24

After conducting public consultations in 2023, Canada has initiated Free Trade Agreement negotiations with Ecuador. A Notice of Intent (NOI) was tabled in Parliament in December 2023, and the first round of negotiations started on 30 April 2024. An FTA with Ecuador would reinforce existing strong bilateral relations while also providing means to further diversify trade and increasing commercial opportunities for the agriculture and agri-food sector.

Policy context

Key economic and agricultural statistics

Canada is a large, wealthy country with a small population relative to its land area and has relatively abundant land and water available to the agricultural sector. Primary agriculture accounts for 2% of GDP and 1.6% of employment but contributes to a larger share of economic output in some of the country's regions (Table 6.2). Crop production, concentrated in the western prairies – where the typical farm is twice as large as the national average – is highly productive and largely oriented to export. Most milk production is located in eastern Canada, which has relatively smaller farms and a larger variety of crops. Red meat industries are present across Canada, with beef cattle production being especially prominent in western Canada, and hog production concentrated in Quebec, Ontario and Manitoba.

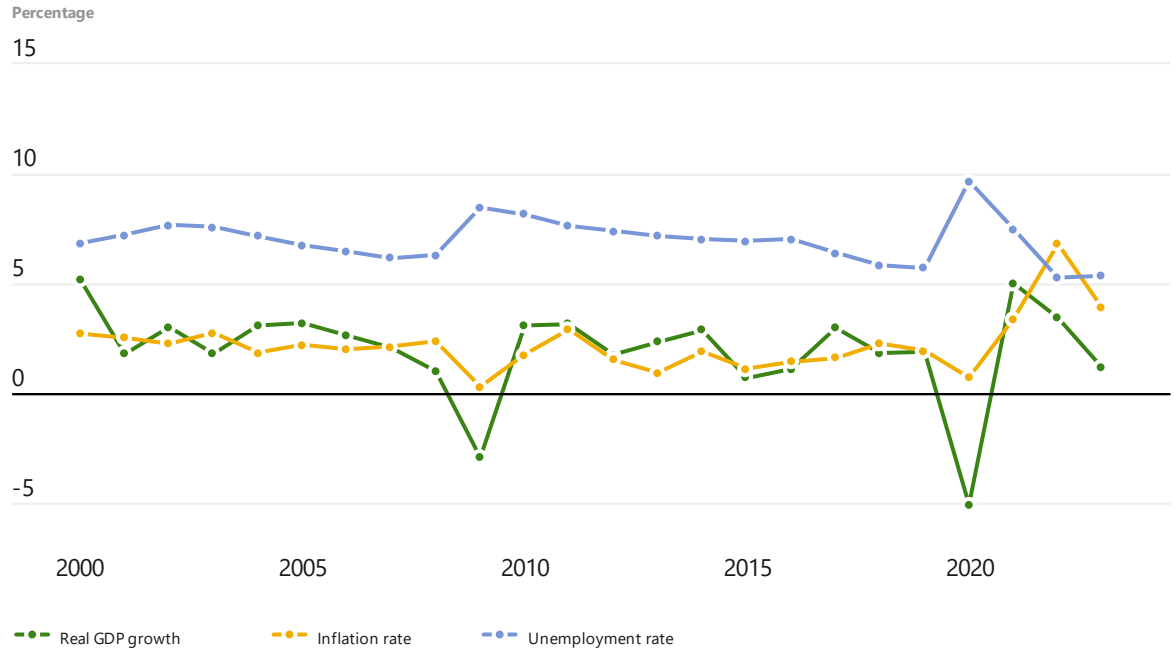
Table 6.2. Canada: Contextual indicators

	Canada		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	901	2 271	2.2%	1.7%
Population (million)	31	39	0.7%	0.7%
Land area (thousand km^2)	8 966	8 789	11.0%	10.7%
Agricultural area (AA) (thousand ha)	61 287	56 991	2.1%	2.0%
			All countries[1]	
Population density (inhabitants/km^2)	3	4	52	64
GDP per capita (USD in PPPs)	29 362	58 348	9 363	25 965
Trade as % of GDP	33.2	26.3	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	2.3	2.0	2.9	3.8
Agriculture share in employment (%)	3.3	1.6	-	-
Agro-food exports (% of total exports)	6.0	11.6	6.4	8.0
Agro-food imports (% of total imports)	5.0	8.5	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	43	61	-	-
Livestock in total agricultural production (%)	57	39	-	-
Share of arable land in AA (%)	67	67	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

For most of the past two decades, with the exception of 2009 related to the financial crisis, Canada enjoyed a stable macroeconomic environment characterised by relatively low inflation rates, fluctuating around its 2% target, and positive economic growth. However, the economy has been heavily affected by the COVID-19 pandemic and related restrictions, which caused a recession in 2020. After a significant recovery in 2021, Canada's GDP growth declined, falling below pre-pandemic growth rates with 1.2% in 2023. Besides, the unemployment rate, which had declined from its 2020 peak in 2021, stabilised at 5.4% in 2023. Inflation, which had been rising since 2021, fell to 3.9% in 2023 (Figure 6.4).

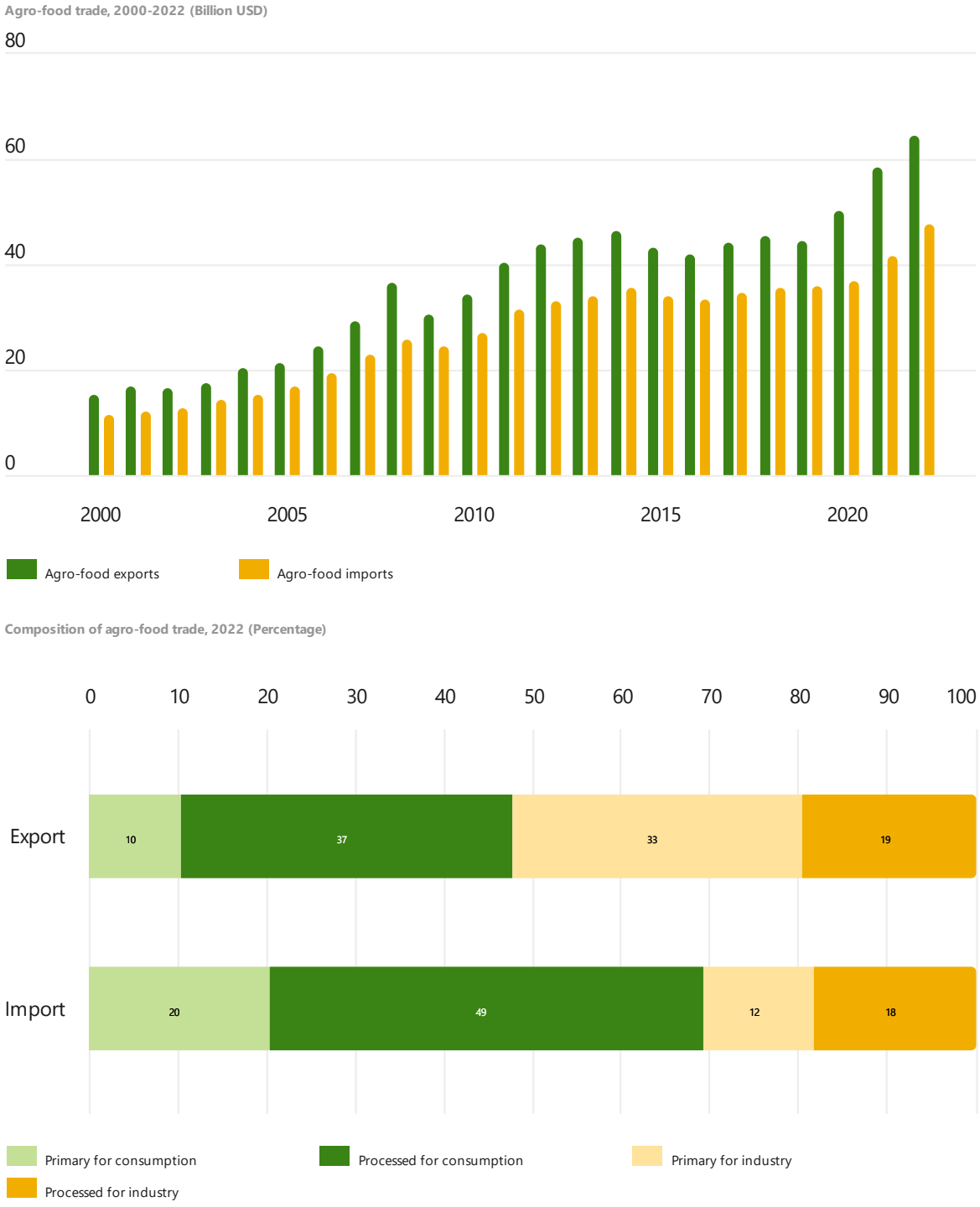
Figure 6.4. Canada: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

Canada's economy is well integrated in international markets – as measured by the ratio of trade to GDP at 26% in 2022 (Table 6.2). Agro-food products represent 11.6% of total Canadian exports and 8.5% of imports. Canada is a large net exporter of agro-food products, with nearly USD 17 billion of trade surplus, and access to export markets is highly important for the sector. More than half of Canada's agro-food exports are destined for the United States. Most of Canada's agro-food exports are either processed products intended for direct consumption (37%), or primary products for processing (33%). Canadian households' final consumption absorbs 69% of agriculture and food imports, of which two-thirds are processed goods (Figure 6.5).

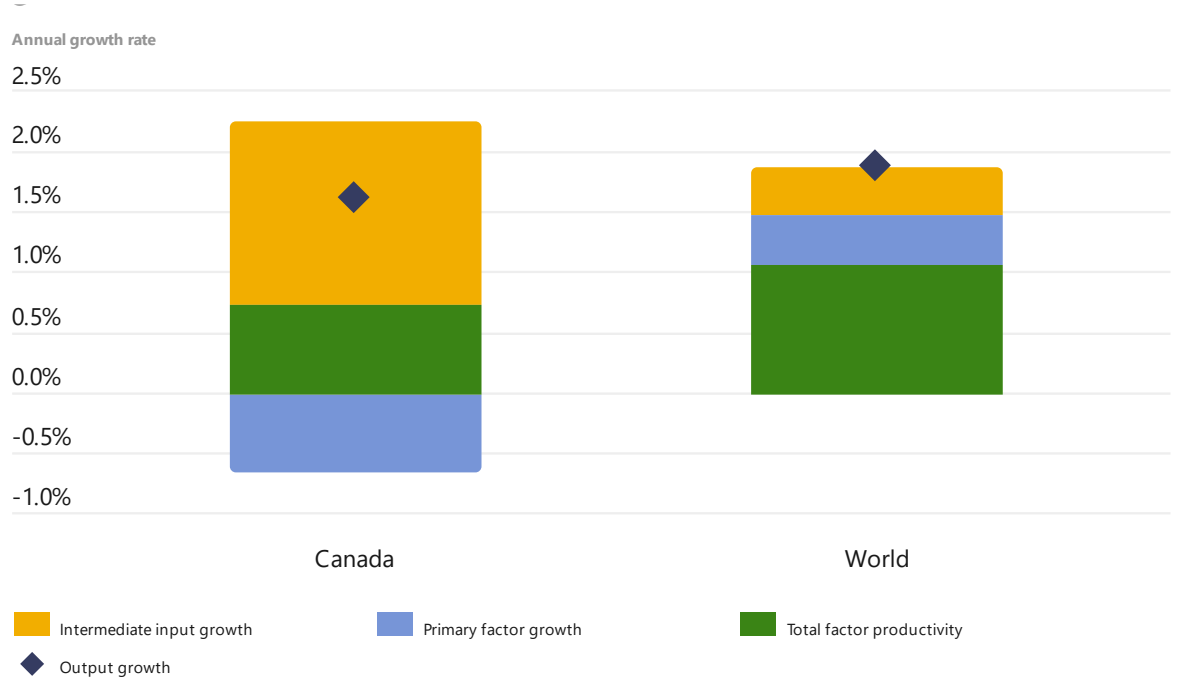
Figure 6.5. Canada: Agro-food trade



Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

At 1.6%, Canada's agricultural output growth over the decade 2012-21 was slightly below the global average of 1.9%. It was driven by the further intensification in the use of intermediate inputs (+1.5%), combined with the growth in Canada's agricultural productivity (+0.75%), as measured by total factor productivity (TFP), which were sufficient to more than offset the impact of reduced primary factor input use (-0.65%), including labour, land, livestock and machinery, on agricultural output (Figure 6.6).

Figure 6.6. Canada: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

The agricultural output growth over the past decade has been achieved without a clear relationship being established with the level of pressure exerted on natural resources, as shown by various environmental indicators (Table 6.3). Average nutrient surplus intensities have been increasing by 28% since 2000 for nitrogen and decreasing by 20% for phosphorous. While agriculture's share of total energy use (3.6%) has been rising since 2000 and is well above the OECD average (2.0%), its share of GHG emissions (8.1%), although increasing, remains below the OECD average (10.1%). The pressure on water resources is also very low, ten to twenty times lower than the OECD average.

Table 6.3. Canada: Productivity and environmental indicators

	Canada		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	2.4%	0.7%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	23.8	30.5	32.1	28.2
Phosphorus balance, kg/ha	1.5	1.2	3.3	2.3
Agriculture share of total energy use (%)	2.3	3.6	1.7	2.0
Agriculture share of GHG emissions (%)	7.1	8.1	8.7	10.1
Share of irrigated land in AA (%)	1.2	1.1	-	-
Share of agriculture in water abstractions (%)	9.7	8.6	47.0	49.5
Water stress indicator	..	0.9	8.7	..

Note: * or closest available year.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

Prior to the mid-1980s, Canada **heavily supported the agricultural sector** through measures such as import tariffs, export and production subsidies, and price and production controls. The dominant features of agricultural policy were supply management measures in the dairy and poultry sectors, collective marketing in grains and oilseeds (notably by the Canadian Wheat Board, or CWB), and income stabilisation programmes (Barichello, 1995[6]). Support varied between eastern and western provinces, partly due to Canada's decentralised political system, and the independence of provincial governments in policies such as marketing legislation (Anderson, 2009[7]).

In the mid-1980s, Canada began agricultural policy reform, particularly in the grain sector. In 1990, the Western Grains Stabilization Program, which was intended to stabilise net margins for major grains and oilseeds from western Canada, was terminated (Anderson, 2009[7]). This was replaced by the National Tripartite Stabilization Program (NTSP), which established federal-provincial cost-sharing of programmes (Antón, Kimura and Martini, 2011[8]). The Farm Income Protection Act of 1991 changed Canada's approach to supporting producers by moving from commodity-specific policies towards programmes supporting farm incomes. The Act established two safety-net programmes: (1) the Gross Revenue Insurance Plan (GRIP, 1991-1996/2002) to protect against reductions in revenues and yields; and (2) the Net Income Stabilization Account (NISA, 1991-2009) to subsidise savings accounts for individual producers (Anderson, 2009[7]; Klein and Storey, 1998[9]). Furthermore, compliance with the General Agreement on Tariffs and Trade (GATT) and free trade agreements of the early 1990s (NAFTA) accelerated the reform process, eliminating most commodity-based policies (e.g. NTSP) except those targeting supply-managed commodities (Antón, Kimura and Martini, 2011[8]). In 1995, transport subsidies to grains (the Western Grain Transport Assistance and the Feed Freight Assistance) were abolished (Anderson, 2009[7]), ending the period of high market price support[2] to these commodities (Figure 6.7).

The Agricultural Income Disaster Assistance (AIDA) programme introduced in 1998 was the first to comply with criteria for **income insurance and safety-net programmes** under the World Trade Organization Agreement on Agriculture. AIDA was established to serve as a core income stabilisation policy, reducing the need for ad hoc programmes. The "disaster" component was integrated into subsequent programmes: the Canadian Farm Income Program (CFIP, 2001-03); the Canadian Agricultural Income Stabilization (CAIS, 2004-08); and AgriStability (Anderson, 2009[7]; Statistics Canada, 2021[10]; Antón, Kimura and Martini, 2011[8]).

Since 2003, agricultural policy objectives and approaches are set out in longer-term **agricultural policy frameworks** developed through co-operation by federal, provincial and territorial governments. The first framework covered five areas: (1) business risk management, (2) food safety and quality, (3) environment, (4) science and innovation, and (5) renewal (skills and training) (Agriculture and Agri-Food Canada, 2005[11]). Initially, the federal government delivered programmes directly. This evolved with the Growing Forward framework (2008-13) which transferred programme implementation to the provinces and territories, allowing for more flexibility and better adaptability to local needs (OECD, 2015[3]). During this time, the AgriStability and AgriInvest programmes replaced CAIS and NISA, respectively, continuing to provide farmers with income stabilisation products and subsidised saving accounts. The Growing Forward 2 framework (2013-18) strengthened the role of these programmes and incorporated additional initiatives, such as AgriInsurance (previously referred to as the Crop Insurance) and the AgriRecovery disaster framework (Anderson, 2009[7]; Statistics Canada, 2021[10]; Antón, Kimura and Martini, 2011[8]). Risk-management programmes have continued to evolve under the Canadian Agricultural Partnership (2018-23) and the Sustainable Canadian Agriculture Partnership (2023-28) (see previous sections).

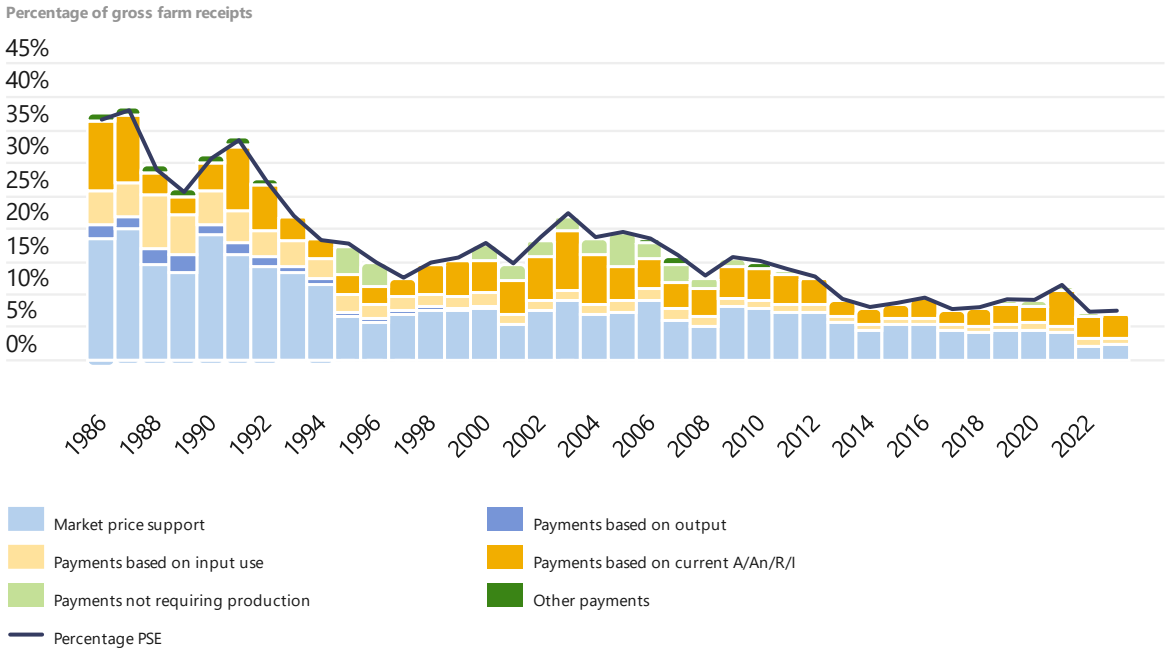
Table 6.4. Canada: Agricultural policy trends

Period	Broader framework	Changes in agricultural policies
Prior to 1985	Import barriers for competing imported products and support for traded products Domestic market control	Agricultural tariffs for competing imported products Import quotas/tariff-rate quotas Export subsidies for agricultural products Transportation subsidies for agricultural products Supply management for dairy and poultry products Grains policy featured by a one-desk selling marketing board and significant transportation subsidy Price controls for agricultural products using marketing boards such as the collective marketing of wheat and barley (CWB)
1985-2000	Gradual reforms and trade liberalisation Increasing emphasis on income and revenue support	Reduction of agricultural tariffs and quotas Diminishing reliance on marketing boards, supply management, price controls GATT, free trade agreements Dismantling of Western Grains Stabilization Program Termination of Western Grains Transportation Assistance and Feed Freight Assistance Gradual dismantling of payments coupled to production Introduction of “whole farm” income stabilisation programmes Introduction of insurance subsidies
2000-2020	Income stabilisation emphasis implemented through federal, provincial and territorial (FPT) co-operation	Continued supply management of the dairy, poultry and eggs sectors: price-setting mechanisms, production quotas and tariffs Privatisation of the CWB Agricultural policy frameworks developed through the cooperation of FPT governments Subsidies for farm income stabilisation Subsidies for farm savings Insurance subsidies Disaster relief framework
2020-present	Climate ambition and emphasis on sustainability	Fertiliser emissions reduction target of 30% below 2020 levels by 2030 Support to agricultural clean technologies and climate solutions Sustainable Canadian Agriculture Partnership (2023-2028)

Support to agricultural producers in Canada decreased over the last three decades, with government support declining from over 34% of farmers’ revenues in the mid-1980s to around 7-9% in recent years (Figure 6.7). This resulted from the discontinuation of market price support to grains and oilseeds in the mid-1990s, and the reduction or phase-out of several programmes offering payments based on output (e.g. support to dairy farmers under the Agriculture Stabilization Act) and input use (e.g. Federal Fuel Tax

Rebates) between the late 1980s and the early 2000s. Market price support for supply-managed commodities, particularly in the dairy sector, accounted for the largest share of transfers to producers up to 2020. Payments based on current production, including multiple risk-management programmes (e.g. AgriInsurance), were the second largest contributor. Over the past three years, this trend has been reversed. In 2021, the share of payments based on current production was particularly high due to a larger budget devoted to cope with the impacts of adverse weather conditions. In 2022 and 2023, the share of market price support was lower than usual due to high reference prices for certain supply-managed commodities, particularly egg prices – and to some extent poultry meat prices – in the United States, as a result of avian flu. Other categories of payments play a relatively minor role in Canadian farm revenues.

Figure 6.7. Canada: Development of the PSE and its composition, 1986 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

References

Agriculture and Agri-Food Canada (2005), *Agricultural Policy Framework: Federal–Provincial–Territorial Programs*, http://publications.gc.ca/pub?id=9.687269&sl=1. [11]

Anderson, K. (2009), *Distortions to Agricultural Incentives: A Global Perspective, 1955-2007*, World Bank and Palgrave Macmillan, Washington, DC, https://openknowledge.worldbank.org/handle/10986/9436. [7]

Antón, J., S. Kimura and R. Martini (2011), "Risk Management in Agriculture in Canada", *OECD Food, Agriculture and Fisheries Papers*, No. 40, OECD Publishing, Paris, https://doi.org/10.1787/5kgj0d6189wg-en. [8]

Barichello, R. (1995), "Overview Of Canadian Agricultural Policy Systems", *Proceedings of the 1st Agricultural and Food Policy Systems Information Workshop, 1995: Understanding Canada\United States Grain Disputes*, https://doi.org/10.22004/ag.econ.16747. [6]

Doan, D., B. Paddock and J. Dyer (2003), *Grain Transportation Policy and Transformation in Western Canadian Agriculture*, Agriculture and Agri-food Canada, Wye, https://ageconsearch.umn.edu/record/15748/files/cp03do01.pdf. [12]

Environment and Climate Change Canada (2020), *A Healthy Environment And A Healthy Economy: Canada's strengthened climate plan to create jobs and support people, communities and the planet*, https://www.canada.ca/content/dam/eccc/documents/pdf/climate-change/climate-plan/healthy_environment_healthy_economy_plan.pdf. [2]

Government of Canada (2023), *Budget 2023 and Canada's Agriculture and Agri-Food Sector*, https://agriculture.canada.ca/en/agri-info/budget-2023-and-canadas-agriculture-and-agri-food-sector (accessed on 2024 March). [5]

Government of Canada (2021), *Canada's 2021 Nationally Determined Contribution under the Paris Agreement*, https://unfccc.int/sites/default/files/NDC/2022-06/Canada%27s%20Enhanced%20NDC%20Submission1_FINAL%20EN.pdf (accessed on 16 March 2023). [1]

Klein, K. and G. Storey (1998), "Structural Developments In The Canadian Grains And Oilseeds Sector", *Proceedings of the 4th Agricultural and Food Policy Systems Information Workshop 1998: Economic Harmonization in the CanadianU.S.Mexican Grain-Livestock Subsector*, https://doi.org/10.22004/ag.econ.16758. [9]

OECD (2015), *Innovation, Agricultural Productivity and Sustainability in Canada*, OECD Food and Agricultural Reviews, OECD Publishing, Paris, https://doi.org/10.1787/9789264238541-en. [3]

Statistics Canada (2021), *Data quality, concepts and methodology: Explanatory notes on direct program payments to agriculture producers*, https://www.statcan.gc.ca/eng/statistical-programs/document/5229_D1_V4 (accessed on 15 January 2021). [10]

USDA-ERS (2024), *International Agricultural Productivity database*. [4]

Notes

[1] Catastrophic risks correspond to 1-in-15-year farm loss events while medium risks correspond to 1-in-5-year farm loss events.

[2] Market price support to grains and oilseeds, which existed until the mid-1990s, resulted from the assistance provided to grain transportation which lower shipping costs for producers and consequently raised farm-gate grain prices. In 1989-90, the transportation subsidies covered about 70% of total freight costs with producers paying the remaining 30% (Doan, Paddock and Dyer, 2003[12]).

7. Chile

Main findings

Support to agriculture

Chilean support (Producer Support Estimate - PSE) amounted to 2.8% of gross farm incomes in 2021-23, down from 7.3% in 2000-02 and well below the OECD average. Tariff reforms in the 1990s, led to the near elimination of Market Price Support (MPS) such that domestic producer prices are aligned with world prices. Single Commodity Transfers (SCT) are small and limited to sugar and beef, for which they amount to 3.4% and 1.7% of respective gross farm receipts.

Budgetary support to producers represented 47% of total support in 2021-23 and was mostly targeted to small-scale farmers. This support includes payments for on-farm fixed capital formation, on-farm services and variable input use.

Support for general services (General Service Support Estimate, GSSE) represented an average 3.3% of the agricultural value of production in 2021-23, equalling the OECD average. This support focusses on off-farm irrigation infrastructure, inspection and control, land reform through acquisition and redistribution, and agricultural knowledge and innovation systems.

Total agricultural support represented 0.3% of Gross Domestic Product (GDP) in 2021-23, half of the OECD average (0.6%) and lower than in 2000-02 (0.6%).

Key recent policy changes

In 2023, the National Sovereignty Strategy for Food Security was developed within the framework of the National Commission on Food Security and Sovereignty (CNSSA). The Strategy aims at strengthening the national food system by achieving food security and protect the right to food.

The Ministry of Agriculture developed a Traditional Seed Programme to protect and add value to traditional varieties, which includes research, promotion and strengthening of conservation and sustainable use, capacity building, and regulation. Its implementation will be overseen by different services of the Ministry and coordinated by ODEPA.

A new update of the irrigation law 18.450 was signed to promote private investment in irrigation and drainage works for an additional seven years. The objective of this law is to enhance water security and improve the efficiency of agricultural water use. A support programme for irrigation projects was also launched, targeting small-scale farming women from indigenous groups. Moreover, modifications were approved to the Law 21.623, which amends the broader Law 21.075 that regulates the collection, reuse and disposal of grey water, to promote its use in agriculture, with special focus on promoting new water sources for small agriculture in scarcity areas, a key group to guarantee the country's food security.

The Promotion and Strengthening of Sustainable Production of Traditional Crops programme was launched. This programme, which reinforces the Sow for Chile (*Siembra por Chile*) initiative, provides

subsidies to small-scale farmers subject to compliance with good agricultural practices with the view to increase the planting and production of specific crops.

The first Chilean Climate Mitigation Plan for Agriculture defines how the sector will contribute to national and international climate goals. The plan establishes measures to keep emissions within the sectoral carbon budget assigned by Chile's Long Term Climate Strategy. The Adaptation Plan for the Forestry and Agricultural sector, which began development in 2020 with the support of the Green Climate Fund, went to public consultation in February 2024.

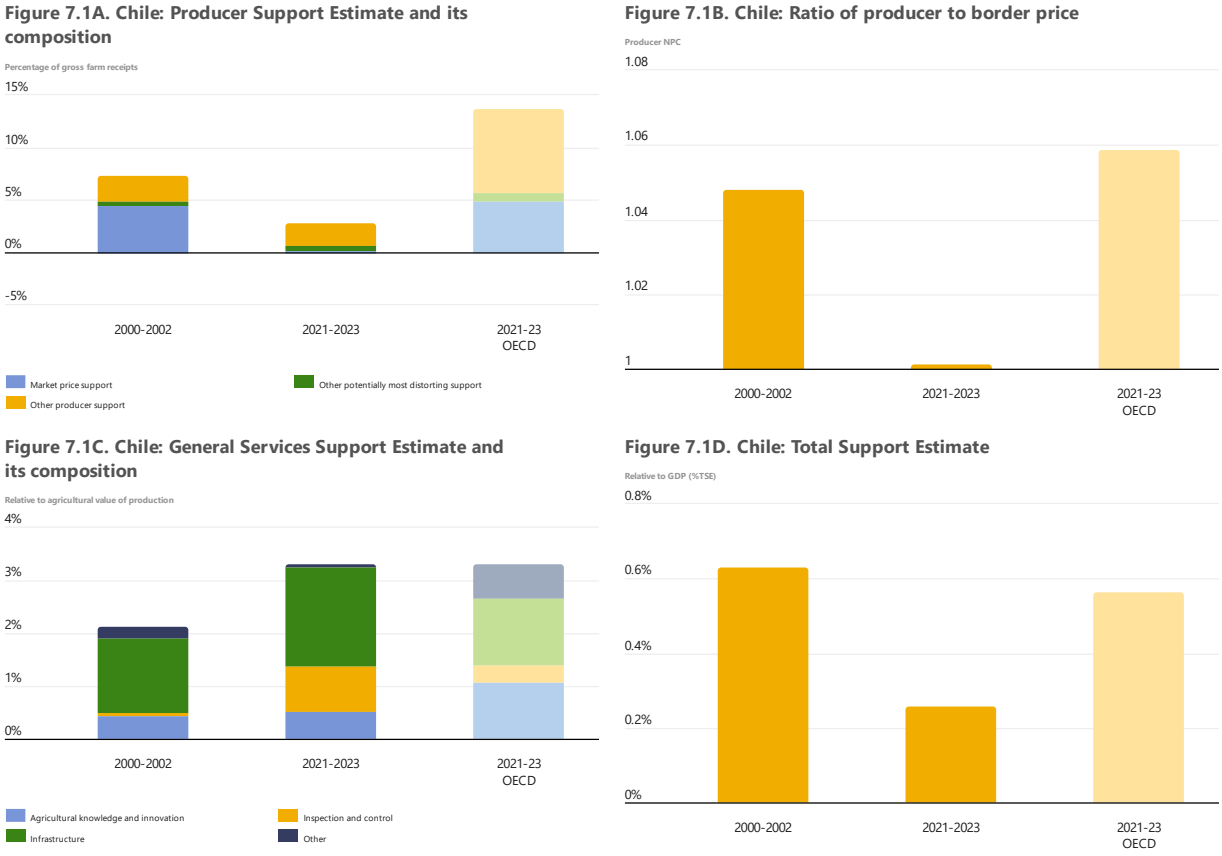
In 2023, Chile signed three collaboration agreements with the People's Republic of China (hereafter "China"), covering the following topics: organic certification of agricultural products from both countries; electronic certification of agricultural products; and stone fruit expansion protocol for peach and apricot.

Assessment and recommendations

- The Chilean innovation strategy for sustainable agriculture is led by the Agricultural Research Institute, INIA and the Foundation for Agrarian Innovation (FIA). Better co-ordination between these institutions would better serve farmers' needs, particularly with respect to adaptation to climate change, water management, and environmental protection. Furthermore, the reach of the strategies needs to cover a larger number of farmers in the national territory.
- Subsidies to farmers are well tailored and targeted to small-scale farmers and vulnerable populations, such as indigenous and women farmers. Their effectiveness for improving productivity, competitiveness, and the recovery of degraded soils should be assessed to ensure their continued effectiveness. Furthermore, these subsidies should be conditioned to not only good agricultural practices but also practices that protect the environment, with a view to progressively shifting towards outcome-based policies.
- Chile should consider scaling up public investments that help the sector become more sustainable, productive, and resilient. Additional and targeted investments in extension services, innovations favouring sustainable productivity growth, and climate-smart agriculture should be considered. Investments in irrigation systems must account for the changing climate and use principles of sound water management to ensure its sustainability.
- Better co-ordination across ministries and agencies that support the agricultural sector or rural populations would ensure an efficient use of public resources. Improved co-ordination, communication, and accountability are also needed between regional and national governments to avoid duplicating efforts.
- Chile's National Adaptation Plan for agriculture includes measures to foster resilience in the agricultural sector. However, the country should take specific actions to facilitate the necessary transformation to more climate-resilient farming structures and production methods, in addition to shorter-term absorption of climate-related shocks.

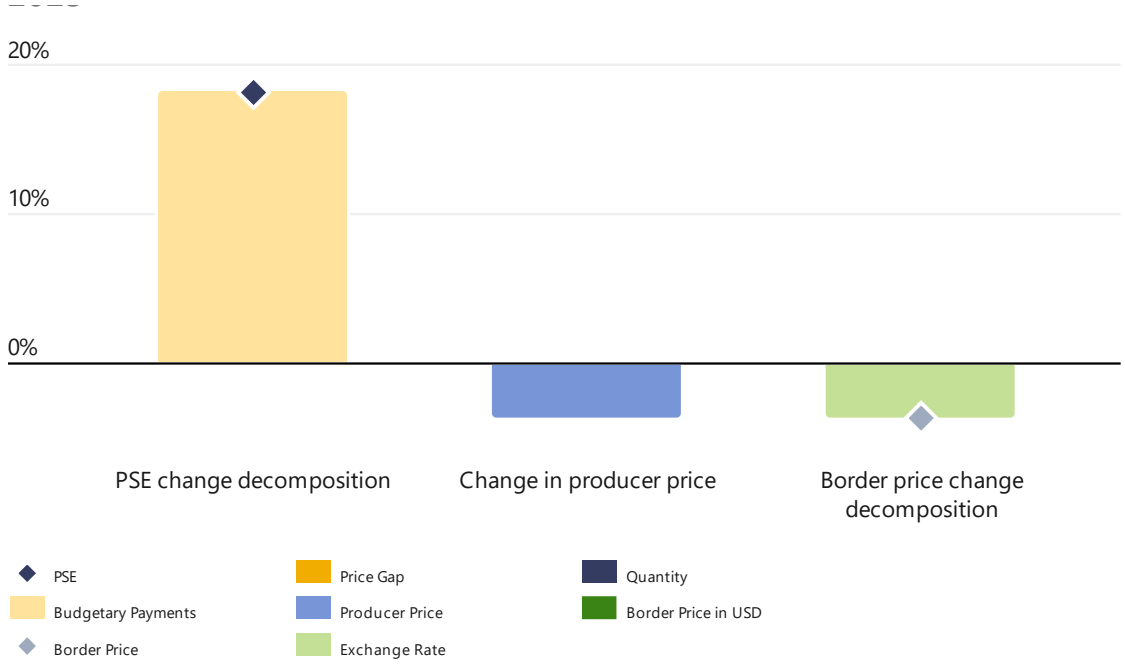
Development of support to agriculture

Figure 7.1. Chile: Development of support to agriculture



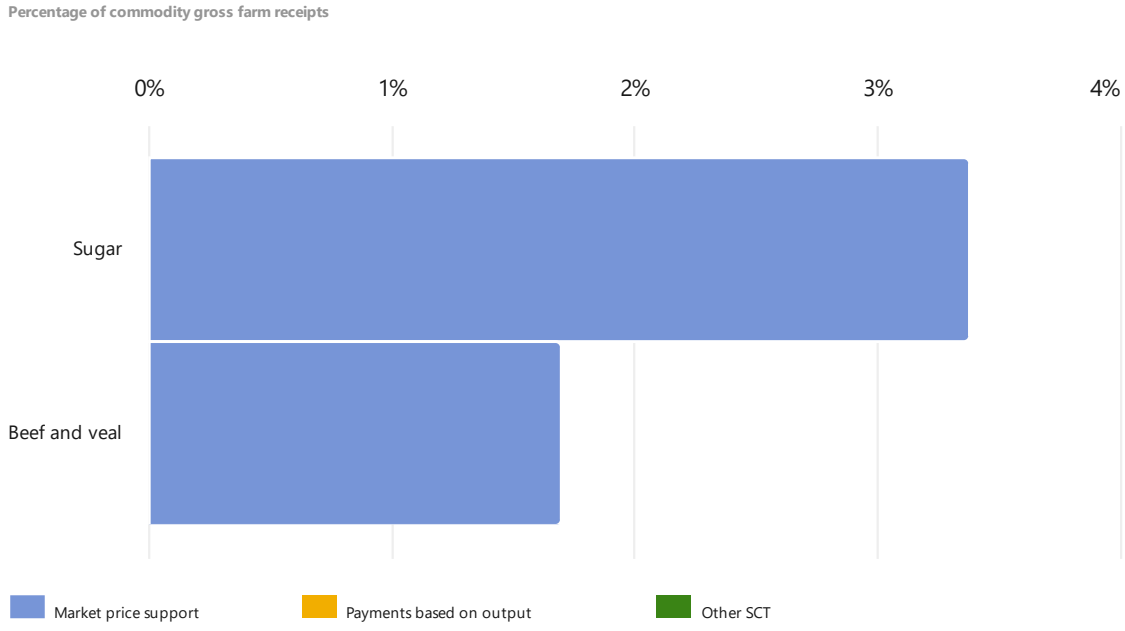
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Figure 7.2. Chile: Drivers of the change in PSE, 2022 to 2023



Note: % change of nominal Producer Support Estimate expressed in national currency.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Figure 7.3. Chile: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Table 7.1. Chile: Estimates of support to agriculture

Million USD

	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**4 806**	**13 099**	**13 988**	**12 331**	**12 979**
of which: share of MPS commodities (%)	72.86	83.54	78.28	83.11	89.22
Total value of consumption (at farm gate)	**4 118**	**11 573**	**12 117**	**11 169**	**11 433**
Producer Support Estimate (PSE)	**369**	**387**	**382**	**349**	**429**
Support based on commodity output	227	19	49	4	3
Market price support[1]	227	19	49	4	3
Positive market price support	228	19	49	4	3
Negative market price support	-1	0	0	0	0
Payments based on output	0	0	0	0	0
Payments based on input use	140	307	306	290	325
Based on variable input use	21	66	60	63	77
with input constraints	0	0	0	0	0
Based on fixed capital formation	85	165	167	153	175
with input constraints	66	78	79	77	80
Based on on-farm services	35	75	79	74	73
with input constraints	7	34	37	34	31
Payments based on current A/An/R/I, production required	1	62	27	56	101
Based on Receipts / Income	0	0	0	0	0
Based on Area planted / Animal numbers	1	62	27	56	101
with input constraints	1	62	27	56	101
Payments based on non-current A/An/R/I, production required	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	0	0	0	0	0
With variable payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
With fixed payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
Payments based on non-commodity criteria	0	0	0	0	0
Based on long-term resource retirement	0	0	0	0	0
Based on a specific non-commodity output	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0
Miscellaneous payments	0	0	0	0	0
Percentage PSE (%)	**7.31**	**2.88**	**2.67**	**2.76**	**3.20**
Producer NPC (coeff.)	**1.05**	**1.00**	**1.00**	**1.00**	**1.00**
Producer NAC (coeff.)	**1.08**	**1.03**	**1.03**	**1.03**	**1.03**
General Services Support Estimate (GSSE)	**103**	**436**	**449**	**412**	**447**
Agricultural knowledge and innovation system	22	69	72	63	74
Inspection and control	3	112	109	101	124
Development and maintenance of infrastructure	67	246	258	239	239
Marketing and promotion	10	9	10	9	9
Cost of public stockholding	0	0	0	0	0
Miscellaneous	1	0	0	0	0
Percentage GSSE (% of TSE)	**22.00**	**52.96**	**54.03**	**54.12**	**50.99**
Consumer Support Estimate (CSE)	**-317**	**-61**	**-137**	**-24**	**-22**
Transfers to producers from consumers	-226	-19	-49	-4	-3
Other transfers from consumers	-92	-42	-88	-20	-19
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	1	0	0	0	0
Percentage CSE (%)	**-7.51**	**0.50**	**-1.13**	**0.21**	**0.19**
Consumer NPC (coeff.)	**1.08**	**1.01**	**1.01**	**1.00**	**1.00**
Consumer NAC (coeff.)	**1.08**	**1.01**	**1.01**	**1.00**	**1.00**
Total Support Estimate (TSE)	**472**	**823**	**831**	**762**	**876**
Transfers from consumers	318	61	137	24	22
Transfers from taxpayers	245	804	782	758	873
Budget revenues	-92	-42	-88	-20	-19
Percentage TSE (% of GDP)	**0.63**	**0.26**	**0.26**	**0.25**	**0.26**
Total Budgetary Support Estimate (TBSE)	**244**	**804**	**782**	**758**	**873**
Percentage TBSE (% of GDP)	**0.33**	**0.25**	**0.25**	**0.25**	**0.26**
GDP deflator (2000-02 = 100)	**100**	**279**	**262**	**279**	**297**
Exchange rate (national currency per USD)	**621.08**	**824.41**	**759.82**	**873.25**	**840.16**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for Chile are: wheat, maize, apples, grapes, sugar, tomatoes, milk, beef and veal, pig meat, poultry, eggs, blueberries, cherries and peaches.

Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

The Ministry of Agriculture (MINAGRI) is in charge of designing and implementing agricultural policies. The main agricultural policy objectives for the country are developing small-scale agriculture, improving sustainable productivity and competitiveness and conserving natural resources. As price support is not used, agricultural policies are based on budgetary transfers. About half of budgetary expenditures are direct payments to small-scale farmers, which are provided for purchasing inputs, capital formation, credit at preferential interest rates, improving degraded soils and on-farm irrigation investments. The other half of the budget is spent on general services to the agricultural sector focusing on expanding and improving irrigation systems, access to land (land acquisition and redistribution), agricultural research and development, sanitary and phytosanitary services and inspection services (MINAGRI, 2024[1]).

The main programmes administered by the Institute of Agricultural Development (INDAP), the agency in charge of designing and implementing agricultural policies for small-scale farmers are:

- Support for the development of poor areas, including subsidies for variable inputs such as seeds and fertilisers; subsidies for fixed capital assets such as equipment and machinery; and subsidies for on-farm services such as technical assistance.
- Territorial development programme for indigenous communities that provides subsidies for fixed capital formation in poor marginalised areas.
- Incentives for the development of agricultural investment, including subsidies for variable inputs as well as for fixed capital formation on the farm.
- Support for the development of productive and entrepreneurial capacities, that provides on-farm services such as technical assistance.
- INDAP also provides credit to smallholders at preferential interest rates and has a crop insurance programme, which covers up to 50% of the premium.

The country also has a soil recovery programme in place to recover degraded soils to make them appropriate for agricultural practices, the programme also has soil conservation practices. Around 70% of funds for this programme are administered by INDAP and addressed to smallholders, with the remainder administered by SAG (the animal and plant health agency) and given to medium and large-scale farmers.

Subsidies for irrigation are managed by the national irrigation commission (CNR). This has both on-farm and off-farm components. On-farm support, 40% of spending, provides subsidies to farmers to improve or newly install irrigation systems. The remaining 60% is used for community, regional or national investments. General services to the sector are dominated by investments on infrastructure mainly for irrigation and related to land and water rights for indigenous communities. After infrastructure, inspection services, R&D and agricultural schools are important.

In its Nationally Determined Contribution (NDC) Chile committed to carbon neutrality by 2050 and takes a carbon budgeting approach, although no specific target has been defined for agriculture. The Long-Term Climate Strategy (LTCS) contains nine objectives and 63 goals linked to the agricultural and forestry sector. These goals are related to capacity building, agricultural R&D, agricultural extension services, reduction of greenhouse-gas (GHG) emissions, increasing carbon sequestration, and strengthening climate change governance (MINAGRI, 2024[1]).

Innovation for sustainable productivity growth

The Foundation for Agrarian Innovation (FIA) promotes innovation within the agricultural sector and forestry. Key roles of FIA are the promotion, articulation, capacity development and technological

dissemination of initiatives that contribute to the sustainable development and competitiveness. The strategic guidelines of FIA are: 1) sustainable management of water resources; 2) climate change adaptation and mitigation; and 3) sustainable food systems.

In 2023, FIA promoted sustainable development through initiatives that included sustainable agri-food co-operatives through the AgroCoopInnova Programme, empowering young farmers via the Innovative Rural Youth Programme and supporting the advancement of rural women through the creation of the Innovative Rural Women Programme. Additionally, FIA also carries out research project financing with emphasis on sustainability, as well as technological innovation tours for farmers, and consultancy services.

In 2023, FIA implemented its Innovation Adoption Programme, which was initially designed and piloted in 2022. This programme helps farmers use knowledge and expertise generated from agricultural innovation projects supported by FIA. Targeting small-scale producers in the national forestry and agricultural sector, producer associations, co-operative companies, or groups sharing the same territory and sector, the programme helps bridge technological gaps by promoting sustainable and good agricultural practices as well as by promoting new technologies.

A new programme called “Sustainable Soil Management System” (SIGESS) will replace the current “Incentive System for the Agri-Environmental Sustainability of Agricultural Soils” (SIRSD-S). This new programme targets more efficient and sustainable use of natural resources, adaptation to new climate patterns, and making a positive contribution to the environment and society. The programme uses incentives and training to promote sustainable soil management practices by farmers and improve the chemical, physical and biological properties of soils.

The Transition to Sustainable Agriculture Programme (TAS) is a specialised technical advisory and training group of INDAP to help farmers create associations and co-operatives. Additionally, the programme provides subsidies for users to adopt good agricultural practices.

Lastly, the Agricultural Research Institute, INIA ascribe to the MINAGRI, focuses its work on six strategic axes: genetic resources, climate change, water resources, sustainable agriculture, healthy foods and technology transfer. At INIA they generate and transfer strategic knowledge and technologies on a global scale and with a territorial focus, to generate innovation and improve the competitiveness of the country’s agri-food sector. In practical terms, they develop varieties, produce seeds, and provide technical recommendations to increase the productivity, profitability, and sustainability of national agriculture (MINAGRI, 2024[1]).

Recent policy developments

Domestic policy developments in 2023-24

Key priorities of agricultural policies for 2023 were 1) food security and sovereignty; 2) sustainability; 3) water and climate emergency; 4) competitiveness based on R&D and technology transfer; 5) strengthening of family farming (small-scale farmers); 6) rural development and well-being; 7) forestry development; and 8) international co-operation and foreign trade (MINAGRI, 2024[1]).

In 2023, the National Sovereignty Strategy for Food Security was developed within the framework of the National Commission on Food Security and Sovereignty (CNSSA). The strategy aims at strengthening the national food system by achieving food security and protect the right to food. Its purpose is to guide the government towards food security, based on the principles of food sovereignty. Food sovereignty is understood as the protection of the right to food, through the strengthening of the five priorities that make up the base of the national food system:

- productive, natural resources and biodiversity

- agrifood and fisheries marketing channels
- human and socio-cultural heritage
- healthy diets
- sanitary and phytosanitary conditions and Food Safety.

In addition to these priorities, the strategy includes 10 transversal aspects, each of them with several lines of action. The transversal aspects to be addressed in the implementation of the strategy are: gender approach; sustainability; climate change; associativity and co-operativism; education and training; territory; fair socio-ecological transition; youths; research, development and innovation; and decent work. The implementation plan was defined in July 2023, specifying measures that ministries and public services will use to guide their management and actions.

In 2023, the Ministry of Agriculture developed a Traditional Seed Programme to protect and add value to varieties, which includes actions in the areas of research, promotion and strengthening of conservation and sustainable use, capacity building, and regulation. Its implementation will be overseen by different services of the ministry and co-ordinated by ODEPA.

In 2023 a new update of the irrigation law 18.450 was signed to promote private investment in irrigation and drainage works for an additional seven years. The objective of this law is to enhance water security and improve the efficiency of agricultural water use. It aims to serve as a tool for climate adaptation, addressing the country's productive and food-related challenges, while also fostering fair and sustainable rural development. In general terms, this new law has three axes:

- **Fair development** allocating public resources to reduce the productivity and water efficiency gaps among small and medium-sized farmers, indigenous communities, and poor territories, while continuing to provide support to water users.
- **Sustainable development** establishing new environmental and water efficiency conditions for irrigation projects and encouraging investments in water reuse projects, nature-based solutions, use of rainwater, sustainable production systems, among others.
- **Emergencies and innovation** incorporating special mechanisms to swiftly address irrigation disasters and encouraging innovation and new related technologies.

During 2023, a support programme for irrigation projects was launched, targeting small-scale farming women from indigenous groups. This support is within the framework of Law No. 18450. The aim is to provide subsidies to women to build their own irrigation systems to address water crises and the effects of climate change. Lastly, modifications were approved to the Law 21.326, which amends the broader Law 21.075 that regulates the collection, reuse and disposal of grey water, to promote its use in agriculture, with special focus on promoting new water sources for small agriculture in scarcity areas, a key group to guarantee the country's food security. With this law, the Ministry of Agriculture will be able to establish guidelines and standards for projects in the forestry and agriculture sector.

To reinforce the Sow for Chile (*Siembra por Chile*) initiative, a new programme was created in 2023 called Promotion and Strengthening of Sustainable Production of Traditional Crops, which aims to increase the cultivated area of cereals, legumes, and potatoes under sustainable production conditions to increase their availability on the domestic market. The programme provides different subsidies to small-scale farmers subject to compliance with good agricultural practices (MINAGRI, 2024[1]).

Policies to facilitate climate change mitigation and adaptation in agriculture

In order to reduce agricultural greenhouse gas (GHG) emissions, during 2023, ODEPA started to design and co-ordinate the first Chilean Climate Mitigation Plan for Agriculture and to define how the sector will contribute to national and international climate goals. The plan establishes measures to keep emissions within the sectoral carbon budget assigned by Chile's Long Term Climate Strategy. The plan contains

mitigation actions in livestock, manure management, agricultural burning and the rice sector, along with other complementary measures to promote carbon capture in soils, and reducing food loss and waste, among others.

The Adaptation Plan for the Forestry and Agricultural sector, which began development in 2020 with the support of the Green Climate Fund, went to public consultation in February 2024. The Preliminary Project considers 12 measures and 63 actions, including some linked to heat waves, such as extending and optimising information systems and agroclimatic risk management, incorporating adaptative actions to reduce the risk of forest fires, developing monitoring systems of changes in productivity potentials, among others (MINAGRI, 2024[1]).

Trade policy developments in 2023-24

In 2023, Chile signed three collaboration agreements with China, covering the following topics: organic certification of agricultural products from both countries; electronic certification of agricultural products; and stone fruit expansion protocol for peach and apricot. This last protocol is currently being implemented, registering successful shipments of this type of fruit to the Asian country. In addition, the Advanced Framework Agreement was signed between Chile and the European Union, and negotiations with the countries of the European Free Trade Association (EFTA) were completed. In 2023, Chile also signed agreements with Mexico for the entry of Chilean citrus under a systems approach protocol, and with Brazil for the entry of Chilean pomegranates (MINAGRI, 2024[1]).

Policy context

Key economic and agricultural statistics

Agriculture's weight in the economy accounted for 3.9% of GDP and 6.1% of total employment in 2022. The sector has a dual structure, in which small-scale farms co-exist alongside a large-scale commercial farm sector. Chile is an open trade country, which has helped it to become an important producer and exporter of agricultural and food products such as fruits, vegetables, pig meat and wine. Chile is a net exporter of agro-food products with a surplus of around USD 2.6 billion (excluding fish and forestry) in 2022. Agro-food products accounted for 14.2% of Chile's total exports, and for 10.7% of its imports (Table 7.2).

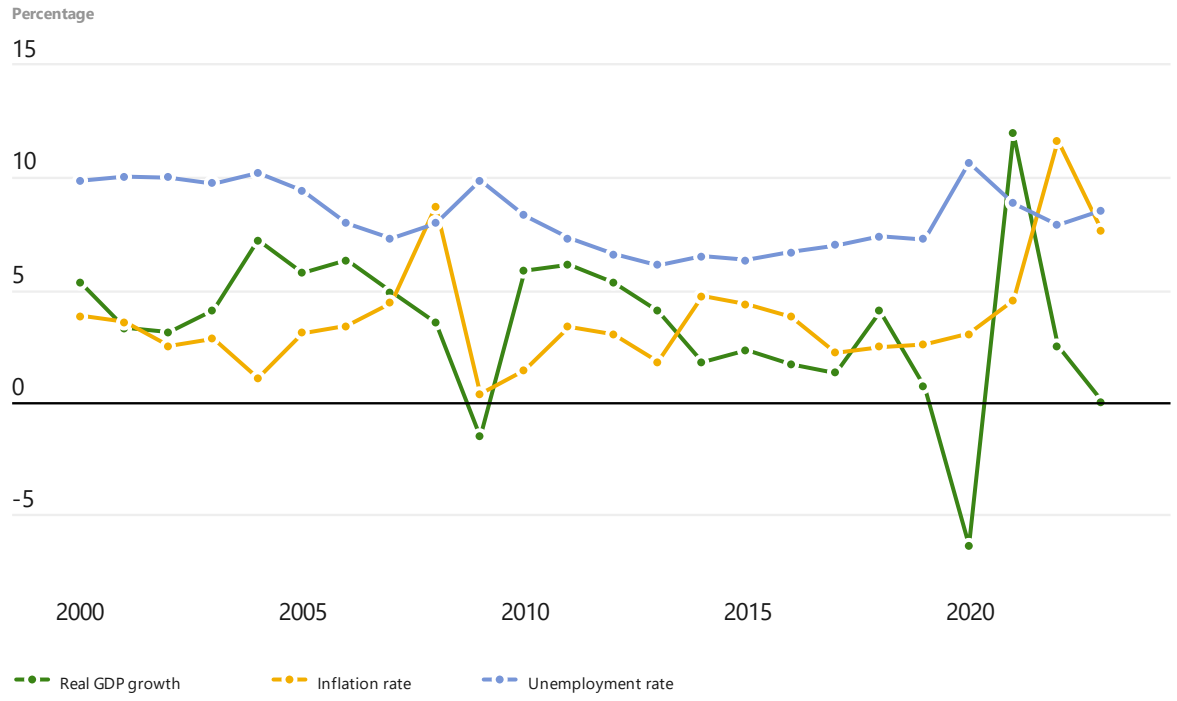
Table 7.2. Chile: Contextual indicators

	Chile		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	145	592	0.4%	0.4%
Population (million)	15	20	0.4%	0.4%
Land area (thousand km²)	744	744	0.9%	0.9%
Agricultural area (AA) (thousand ha)	15 110	10 596	0.5%	0.4%
			All countries[1]	
Population density (inhabitants/km²)	21	27	52	64
GDP per capita (USD in PPPs)	9 440	29 866	9 363	25 965
Trade as % of GDP	22.3	33.6	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	5.7	3.9	2.9	3.8
Agriculture share in employment (%)	14.1	6.1	-	-
Agro-food exports (% of total exports)	17.0	14.2	6.4	8.0
Agro-food imports (% of total imports)	7.7	10.7	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	68	59	-	-
Livestock in total agricultural production (%)	32	41	-	-
Share of arable land in AA (%)	12	12	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

After a strong recovery in 2021 following the contraction due to the COVID-19 pandemic, Chile's economy encountered an important drawback as GDP did not grow in 2023; and the country's unemployment rate increased from 7.8% in 2022 to 8.5% in 2023. However, inflation decreased from 11.6% in 2022 to 7.5% in 2023 (Figure 7.4).

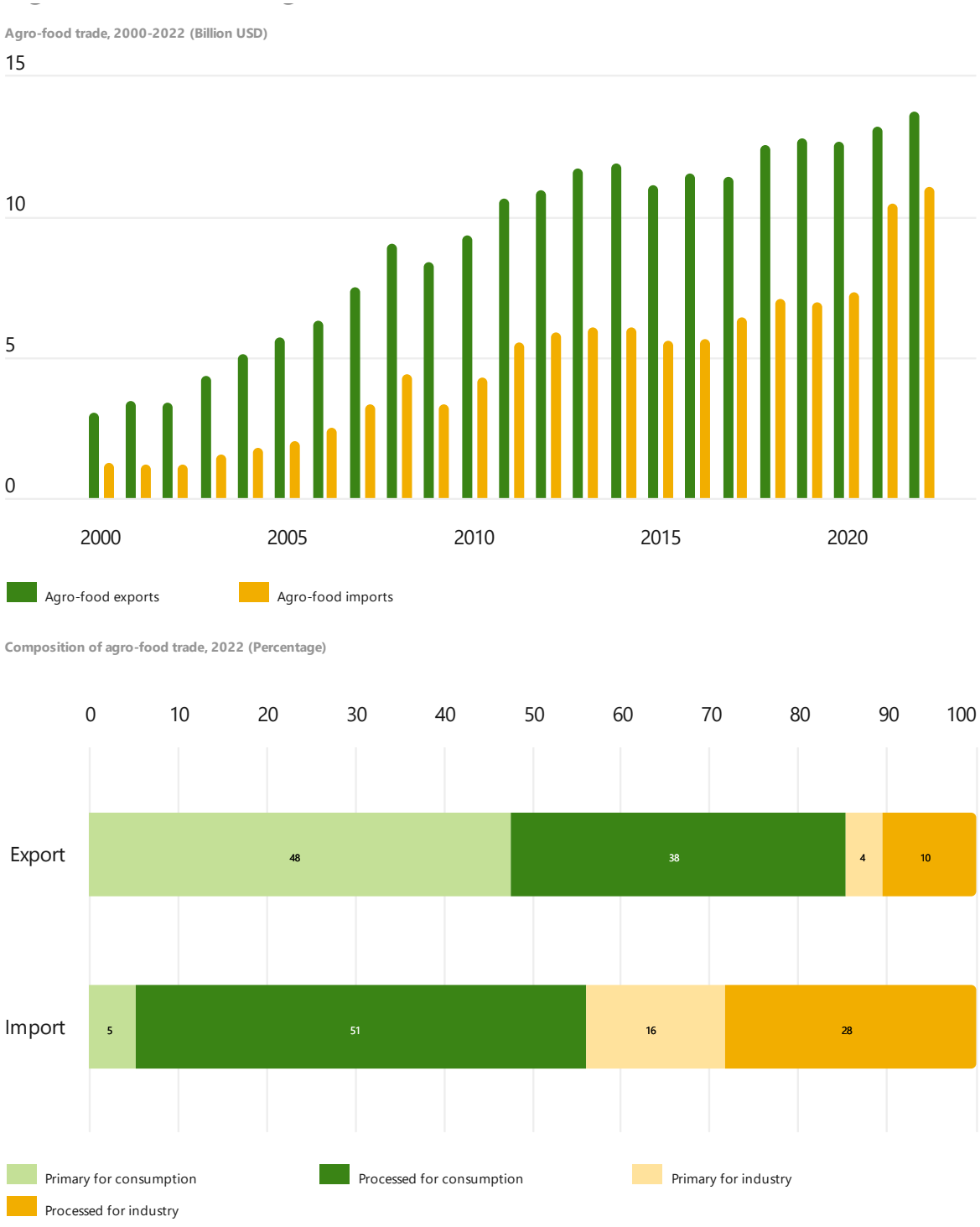
Figure 7.4. Chile: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

Chile's agricultural and agro-food sector has been successful in adding value to the production of primary commodities, by producing more differentiated products such as temperate fruits, and processed products such as wine. In 2022, 86% of agro-food exports were products for final consumption, both primary and processed, and only 14% were products for further industrial processing. Agro-food imports were mostly processed products for consumption with a 56% (Figure 7.5).

Figure 7.5. Chile: Agro-food trade

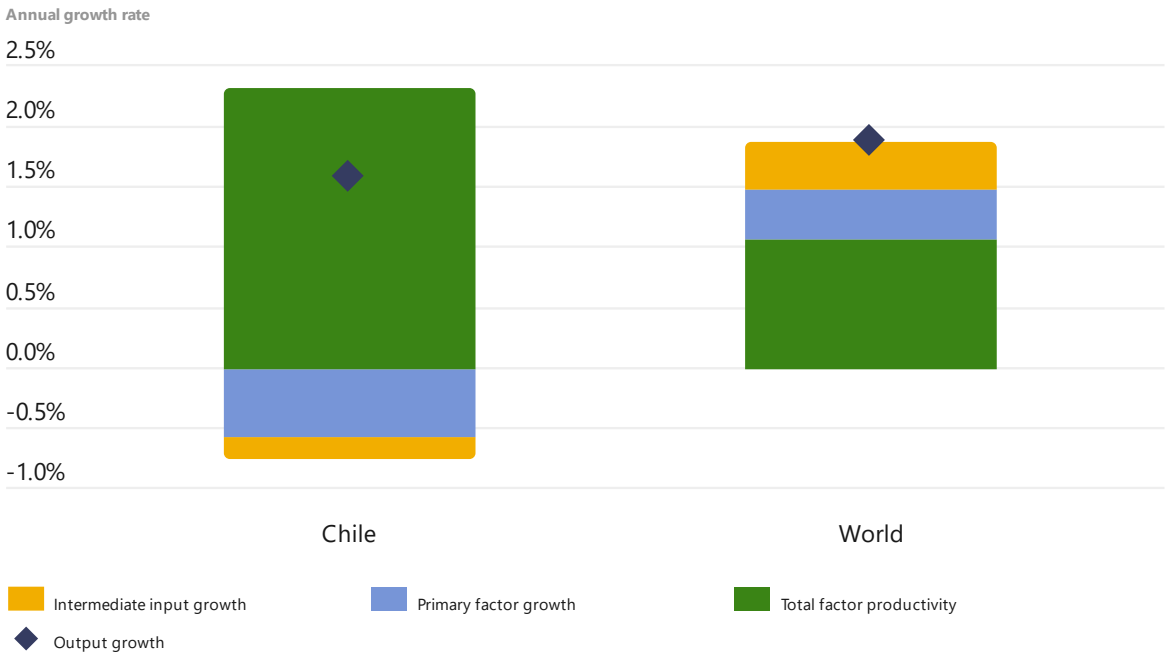


Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Total Factor Productivity (TFP) has been the dominant driver for Chile's growing agricultural production. While output growth averaged 1.6% over the period 2012-21, slightly below the global average (1.9%),

Chilean TFP growth averaged 2.3%, more than double the world average (1%). Agriculture accounts for around 11% of Chile's GHG emissions, similar to the OECD average. Around 6% of the total agricultural land is irrigated (Figure 7.6; Table 7.3).

Figure 7.6. Chile: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Table 7.3. Chile: Productivity and environmental indicators

	Chile		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	4.0%	2.3%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	..	..	32.1	28.2
Phosphorus balance, kg/ha	..	..	3.3	2.3
Agriculture share of total energy use (%)	..	1.3	1.7	2.0
Agriculture share of GHG emissions (%)	19.3	10.6	8.7	10.1
Share of irrigated land in AA (%)	..	5.5	-	-
Share of agriculture in water abstractions (%)	..	..	47.0	49.5
Water stress indicator	..	..	8.7	..

Note: * or closest available year.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

Prior to 1973, agricultural policies in Chile followed an import substitution industrialisation model, with measures such as price and production controls for staples (e.g. wheat), import tariffs, and export restrictions. Longstanding institutions were created in this period, including the Institute for Agricultural Development (INDAP - the smallholders' agency), the Agriculture and Livestock Service (SAG - animal and plant health institute), INIA (agricultural innovation agency), and others. This period also saw land reforms that provided land to small-scale farmers and landless people (Anderson, K. and Valdes, A., 2007[2]).

Economic and agricultural policies shifted in 1973 with the military coup. Chile was the first country in the developing world to adopt market oriented open-economy reforms and structural macroeconomic reforms. These reduced the role of government in the economy and liberalised trade (OECD, 2008[3]).

From 1973-83, general reforms such as macroeconomic stabilisation were advancing more rapidly than agricultural sector-specific reforms. However, marketing boards and price control agencies for agricultural products were dismantled, import tariffs were reduced and export restrictions were lifted. From the mid-1980s, the government took measures to improve competitiveness and stimulate production and exports, with general services to the sector playing a central role. Several agricultural institutions related to innovation and irrigation were created, but smallholder development, the environment and resource use received little attention (Anderson, K. and Valdes, A., 2007[2]).

Since the restoration of democracy in 1990, agricultural policy focuses on three objectives: (1) increasing competitiveness, (2) achieving more balanced agricultural development by better integrating poorer, less-competitive, farmers into commercial supply chains, and (3) preserving the environment through sustainable use of resources. Tariffs were further reduced and numerous Regional Trade Agreements (RTAs) were signed, granting trade preferences to partners for agricultural products (OECD, 2008[3]). In 2022 the new government emphasised policies to address inequality issues in the sector, as well as on sustainability and water management (Table 7.4).

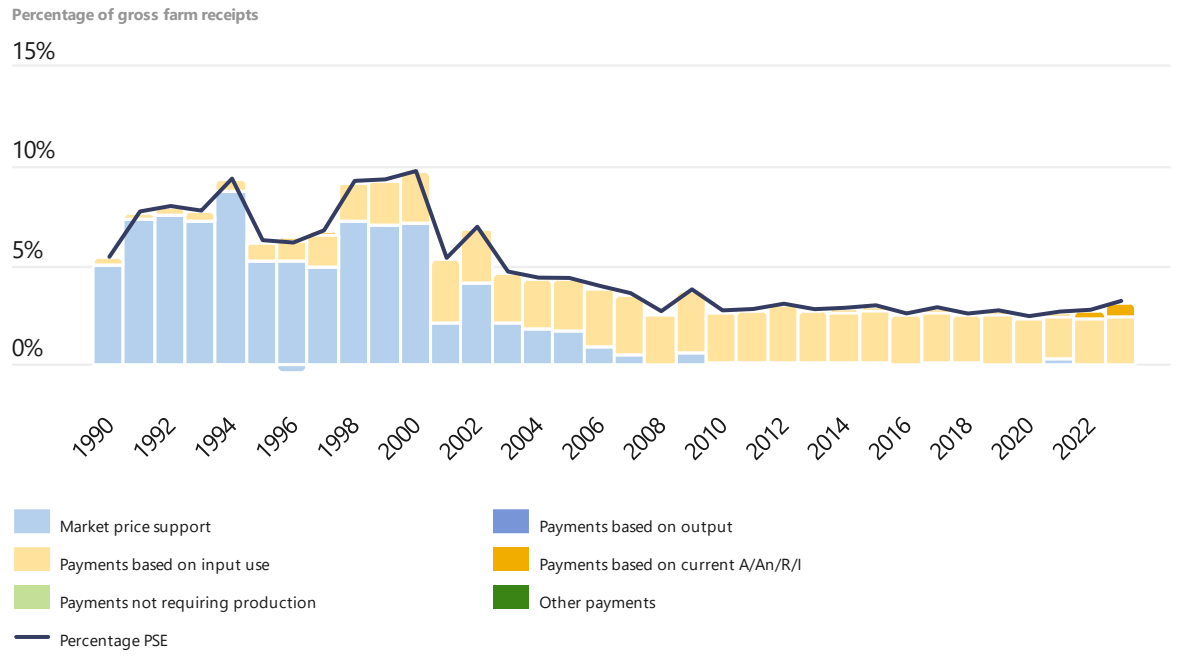
Table 7.4. Chile: Agricultural policy trends

Period	Broader framework	Changes in agricultural policies
Prior to 1973	Import substitution industrialisation model Closed economy	High import tariffs Price controls (e.g. minimum prices of main agricultural products such as wheat, fixed consumer prices, fixed marketing margins) Export quotas, licenses and export bans on main staple foods Subsidies to some producers (e.g. milk) Interventions in input markets Investments in agricultural infrastructure (e.g. slaughterhouses, storage and processing facilities, roads) Establishment of key agricultural institutions (e.g. INDAP, SAG, INIA, COTRISA) Land reform
1973-1990	Reforms for trade liberalisation	Removal of agricultural price controls Dismantling of marketing boards and price control agencies, except for wheat, milk and oilseeds Rapid tariff reduction on most imports Introduction of a uniform, non-discriminatory tariff system Elimination of export restrictions Establishment of price stabilisation mechanisms (price band systems) for imported products (wheat, sugar and oilseeds) Creation of further agricultural institutions (e.g. FIA, CNR)

Period	Broader framework	Changes in agricultural policies
1990-2022	Return to democracy continues with open markets model	Most Favoured Nation tariff reduction up to 1% by 2020 for all agricultural products Many free trade agreements signed Dismantling of the price band systems for sugar and oilseed Increase in budgetary allocation to support smallholders and for investments in general services
2022- present	More emphasis on inequality issues addressing small-scale agriculture, women, indigenous people and youth. Greater emphasis on sustainability and water management.	While the country continued with open markets, more emphasis on small-scale agriculture has taken place, by providing greater resources to INDAP. Law modifications on water management. Law modifications on soil programmes Development of National Strategy of Sovereignty for Food Security Agriculture sustainability programmes.

After the almost total elimination of the market price support (MPS), producer support declined from close to 10% of gross farm receipts at the end of the 1990s to below 4% throughout the 2010s, and averaged 2.26 for the period 2021-23. Support payments related to agricultural input use have partly replaced MPS, and these are targeted to small-scale agriculture. More funding is also provided for the provision of general services, which today account for half of Chile's total support estimate to agriculture.

Figure 7.7. Chile: Development of the PSE and its composition, 1990 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

References

Anderson, K. and Valdes, A. (2007), *Distortions to Agricultural Incentives in Latin America*, World Bank, Washington DC, http://documents.worldbank.org/curated/en/518211468170062688/Distortions-to-agricultural-incentives-in-Latin-America. [2]

MINAGRI (2024), *OECD Annual Country Report. Government Report*. [1]

OECD (2008), *OECD Review of Agricultural Policies: Chile 2008*, OECD Review of Agricultural Policies, OECD Publishing, Paris, https://doi.org/10.1787/9789264042247-en. [3]

8. China

Main findings

Support to agriculture

The share of support to agricultural producers in the People's Republic of China (hereafter "China") averaged 14% of gross farm receipts in 2021-23. This is almost three times higher than in 2000-02 but remains on par with average support (14.2%) between 2016 and 2019, when market interventions were reformed for soybeans, rapeseed, cotton, and maize.

Market Price Support (MPS) remains the main form of support, generated through both domestic price support policies and various border measures on imports. Overall, more than two-thirds of support to producers is in the form of potentially most-distorting transfers, a consistent pattern since 2000-02.

Payments based on area planted have consistently increased since 2014 due to the reforms discontinuing intervention prices for several key commodities. Area payments to maize and soybeans particularly increased since 2020 to boost production in these sectors and meet higher demand for feed. Area payments in the Agricultural Production Development programme continued to increase in 2023 to offset rising inputs and production costs, while area payments for disaster relief increased following severed flooding and crop damage across many regions of the country. These contributed to the overall increase in budgetary support.

Producers of imported commodities (such as pig meat, milk, wheat, rice, cotton, soybeans, and sugar) benefited from transfers equal to between 10.3% and 50.4% of commodity receipts in 2021-23. Prices received by farmers were 14% higher than world prices on average in 2021-23. Higher domestic producer prices than reference prices on average in 2021-23 indicate an implicit tax on consumers, with a percentage consumer support estimate of -11.8%.

General services support amounted to 10.2% of total support to agriculture in 2021-23. These covered three main categories of services: public stockholding; development and maintenance of infrastructure; and the agricultural knowledge and innovation system. The General Services Support Estimate (GSSE) represented 1.6% of the value of agricultural production.

The Total Support Estimate (TSE) for agriculture as a share of Gross Domestic Product (GDP) remained stable and relatively high at 1.7% in 2021-23.

Key recent policy changes

China adopted a new Food Security Law at the end of December 2023, which came into force in June 2024. The Food Security Law includes chapters on the protection of agricultural land from urbanisation, grain production, grain reserves, grain marketing and processing, and access to food in emergency situations. The law's General Provisions stipulate that the national food security strategy is based on self-reliance, guaranteed domestic production, moderate imports, and technological support.

The 2024 No. 1 Document, released in February 2024, includes a specific focus on “green agriculture” that promotes the integrated protection and restoration of rural ecosystems. The No. 1 Document calls for: a reduction complemented by efficiency improvements in the use of chemical fertilisers and pesticides; the promotion of circular farming models; an analysis and remediation of heavy metal pollution sources in cultivated land; a reduction of antibiotic use in animal husbandry and the prevention and control of major animal-borne diseases and key zoonotic diseases.

Minimum purchase prices were increased for wheat in September 2023 and for early indica rice in February 2024. As of April 2023, the target price policy for Xinjiang cotton is extended for the period 2023-25 and caps the volume of Xinjiang cotton entitled to the subsidy at 5.1 million tonnes annually, down from 5.4 million tonnes in previous years.

Payments for disaster relief increased significantly in 2023 in response to severe flooding and crop damage across several regions. In June 2023, the Ministry of Finance (MOF) allocated CNY 200 million (USD 27.8 million) following prolonged rain in Henan province, a major wheat producing region. In August 2023, the MOF also allocated CNY 732 million (USD 102 million) in disaster relief funds to support the recovery of agricultural production in nine provinces, following crop damage and flooding caused by Typhoon Doksuri. In August 2023, the MOF allocated CNY 2.4 billion (USD 333 million) for northern provinces following heavy rains and flooding that affected soybeans and maize producers.

China signed in 2023 several Free Trade Agreements (FTAs): with Ecuador (May 2023), Nicaragua (August 2023), and Serbia (October 2023). Under these agreements, China will provide enhanced market access for various agro-food products, such as bananas, cut flowers, cocoa, coffee, meat, sugar, peanuts.

Assessment and recommendations

- The sustained growth in agricultural output in China over the last decade has been increasing pressures on natural resources such as land and water. Nutrient surplus intensities for nitrogen and phosphorus remain at high levels. China has been introducing sustainable agricultural policies, approaches and innovations, aiming to improve productivity and ensure food and nutrition security, while balancing the need to restore soil health and reduce pollution associated with agricultural production. However, these do not include measurable targets for sustainable productivity growth and the situation remains challenging.
- More balanced agricultural support policies would help enhance innovation and long-term sustainable productivity growth. Reforms introduced until 2019 (i.e. replacing intervention prices for key crops with direct payments based on planted area and reducing minimum support prices for wheat and rice) have been a step towards rebalancing this policy portfolio, encouraging sectoral diversification, and starting to address the burden of public stockholding costs, which remain the largest expenditure in general services support. Such reforms could be gradually extended to include wheat and rice. If direct payments to farmers are maintained over a longer-term, the link between these payments and production decisions should be loosened, for instance by providing payments on a historical area basis, and ‘greened’ by making them conditional on environmentally friendly production practices.
- Overall, long-term climate change adaptation efforts, such as collaborative planning and multi-disciplinary research, could be better integrated with efforts to help farmers accommodate climate risks in the short term, and those backing incremental changes in the medium term. China could consider additional efforts to measure adaptation outcomes, such as assessing adjustments in production practices done in demonstration areas.
- China’s Nationally Determined Contribution (NDC) recognises agriculture’s importance to its economy-wide emissions-reduction target (peak CO_2 emissions by 2030) and its objective to achieve carbon neutrality by 2060, but no targets have been set for agriculture. Nevertheless,

several sector-specific policy efforts aim to mitigate greenhouse-gas (GHG) emissions, and the monitoring of their impacts on GHG emissions should be improved against programme-specific targets. The National Agriculture Green Development Plan 2021-25 can play a role by providing the tools to monitor GHG mitigation practices at farm level and along the value chain.

- To establish a solid framework for agri-environmental policies, China should define environmental targets adapted to local ecological conditions and strengthen monitoring mechanisms for the enforcement of environmental regulations. To this end, regular soil testing under the Soil Environmental Information Platform and Monitoring System (part of the 2019 Soil Pollution Prevention and Control Law) needs to be implemented and can set the stage for similar efforts relating to water use in agriculture.
- As water resource scarcity is projected to remain a major constraint to productivity growth in Chinese agriculture, further efforts are necessary to improve water management. More specifically, in implementing the 2021 regulation on groundwater conservation and protection, a comprehensive review of water governance could better define responsibilities, remove conflicts, and ensure effective policy implementation.
- Public expenditures on general services increased but these have not kept pace with sectoral growth. Restructuring public expenditure towards general services can be achieved by scaling down input subsidies such as those to purchase farm machinery, and by ensuring that support through direct payments has only a transitory role in supporting farmers' adjustment to a new market environment. Enhanced public investment in R&D can support more efficient use of variable inputs and reduce environmental harm. Further investments in sanitary inspection and control services will be necessary to implement the Food Safety Standards updated in 2023.
- Reforms to land-transfer rules have contributed to the emergence over the last two decades of large family farms, co-operative farms, and farms managed by agro-business companies. To continue improving agricultural productivity, increased investments in education and training, and enhanced access to financial services should complement these reforms.

Development of support to agriculture

Figure 8.1. China: Development of support to agriculture

Figure 8.1A. China: Producer Support Estimate and its composition

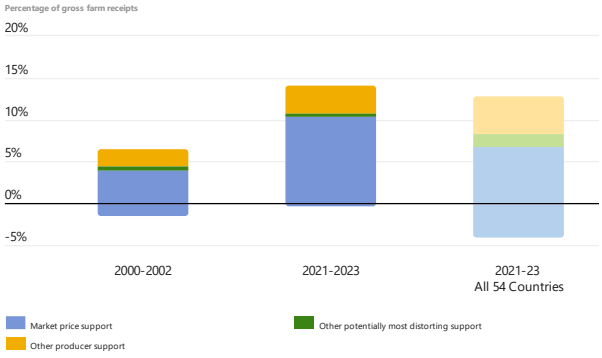


Figure 8.1B. China: Ratio of producer to border price

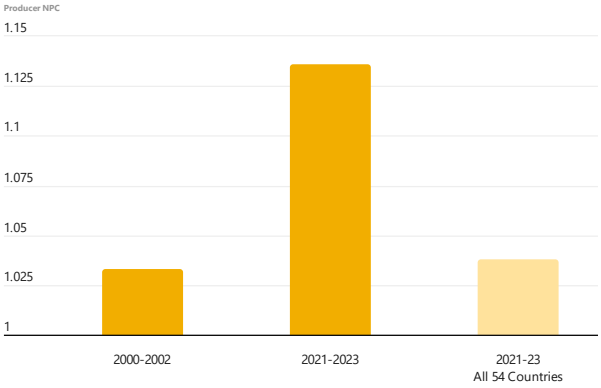


Figure 8.1C. China: General Services Support Estimate and its composition

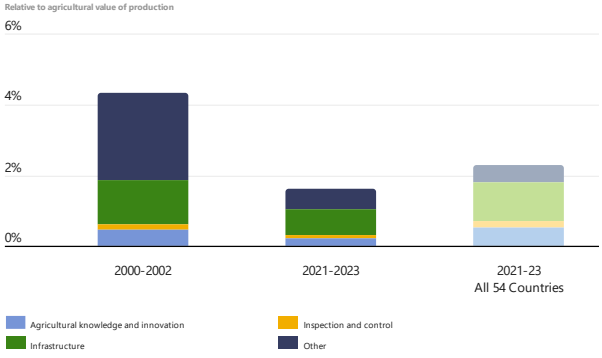
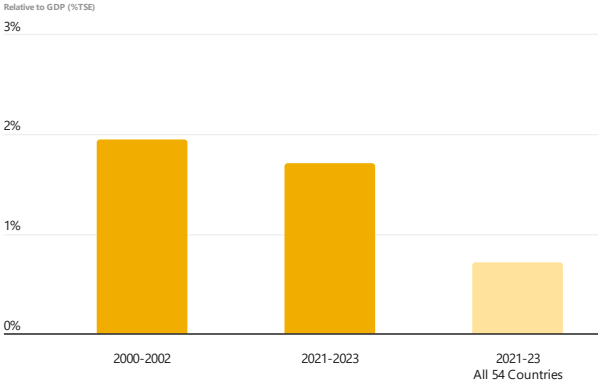
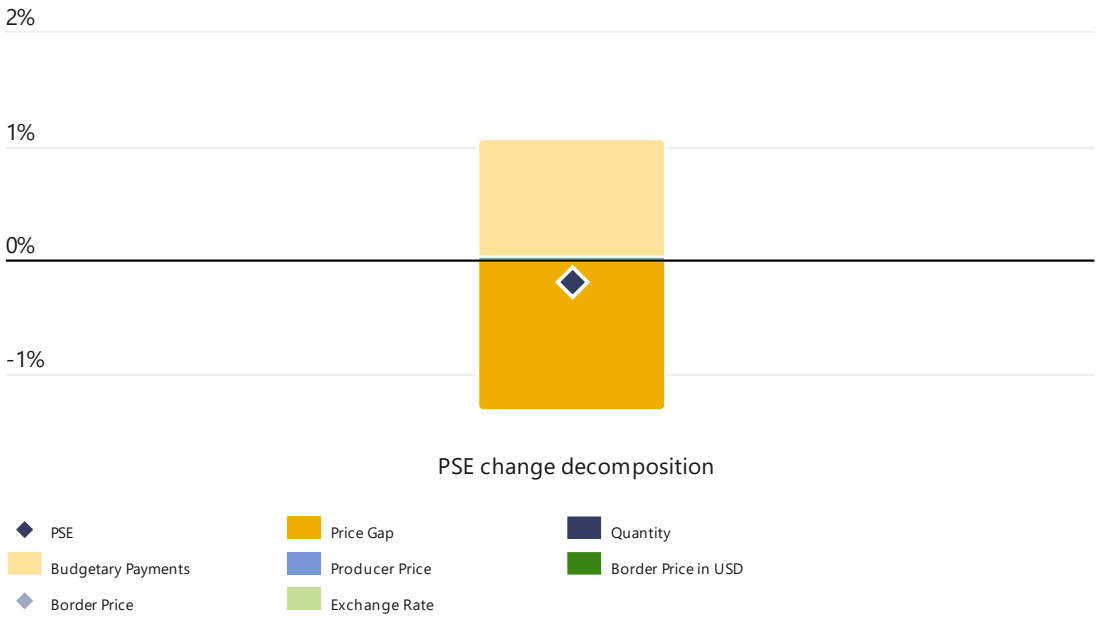


Figure 8.1D. China: Total Support Estimate



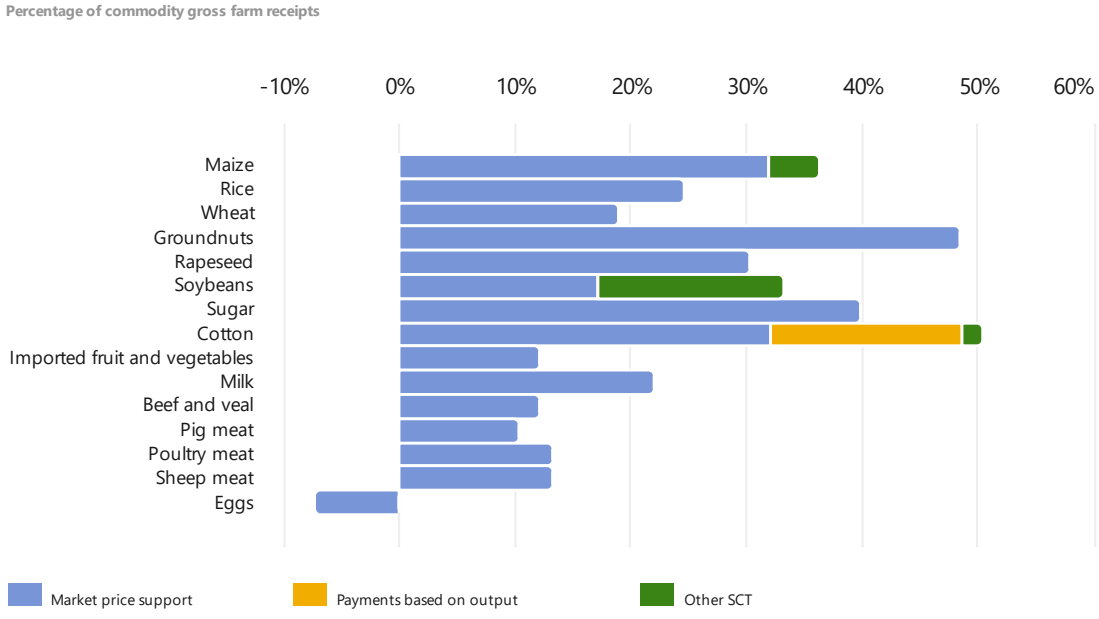
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Figure 8.2. China: Drivers of the change in PSE, 2022 to 2023



Note: % change of nominal Producer Support Estimate expressed in national currency. The producer price change and the border price change are not calculated when both negative and positive market price support (MPS) occur at the commodity level for the previous year. Note that negative MPS estimates for livestock products may arise in cases of aligned product prices if there is positive MPS for feed commodities.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Figure 8.3. China: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Table 8.1. China: Estimates of support to agriculture

Million USD

	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**270 118**	**1 911 713**	**1 832 931**	**1 972 378**	**1 929 829**
of which: share of MPS commodities (%)	75.76	81.91	83.53	82.50	79.70
Total value of consumption (at farm gate)	**281 331**	**2 123 101**	**2 043 278**	**2 201 860**	**2 124 164**
Producer Support Estimate (PSE)	**14 354**	**277 531**	**291 133**	**277 914**	**263 544**
Support based on commodity output	7 329	208 581	221 005	209 177	195 560
Market price support[1]	7 329	205 247	217 592	205 831	192 317
Positive market price support	11 162	208 978	224 099	210 436	192 399
Negative market price support	-3 833	-3 731	-6 507	-4 604	-82
Payments based on output	0	3 334	3 413	3 346	3 243
Payments based on input use	5 684	18 170	18 609	18 232	17 669
Based on variable input use	1 414	4 410	4 524	4 422	4 286
with input constraints	0	0	0	0	0
Based on fixed capital formation	3 026	12 077	12 363	12 121	11 747
with input constraints	0	0	0	0	0
Based on on-farm services	1 244	1 683	1 722	1 689	1 637
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	533	34 523	34 875	34 190	34 503
Based on Receipts / Income	533	1 793	1 370	1 342	2 667
Based on Area planted / Animal numbers	0	32 730	33 505	32 849	31 836
with input constraints	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	370	15 098	15 456	15 153	14 686
With variable payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
With fixed payment rates	370	15 098	15 456	15 153	14 686
with commodity exceptions	0	0	0	0	0
Payments based on non-commodity criteria	438	1 159	1 189	1 162	1 127
Based on long-term resource retirement	438	1 159	1 189	1 162	1 127
Based on a specific non-commodity output	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0
Miscellaneous payments	0	0	0	0	0
Percentage PSE (%)	**5.18**	**13.96**	**15.27**	**13.59**	**13.17**
Producer NPC (coeff.)	**1.03**	**1.14**	**1.16**	**1.14**	**1.11**
Producer NAC (coeff.)	**1.05**	**1.16**	**1.18**	**1.16**	**1.15**
General Services Support Estimate (GSSE)	**11 861**	**31 595**	**32 335**	**31 713**	**30 736**
Agricultural knowledge and innovation system	1 347	4 461	4 538	4 492	4 353
Inspection and control	349	2 053	2 102	2 061	1 997
Development and maintenance of infrastructure	3 424	14 110	14 445	14 161	13 725
Marketing and promotion	0	419	429	421	408
Cost of public stockholding	6 741	10 551	10 822	10 579	10 253
Miscellaneous	0	0	0	0	0
Percentage GSSE (% of TSE)	**45.03**	**10.23**	**10.00**	**10.24**	**10.44**
Consumer Support Estimate (CSE)	**-8 512**	**-250 637**	**-284 139**	**-249 145**	**-218 625**
Transfers to producers from consumers	-8 688	-227 422	-255 179	-232 923	-194 162
Other transfers from consumers	-1 119	-47 501	-59 128	-37 861	-45 514
Transfers to consumers from taxpayers	128	0	0	0	0
Excess feed cost	1 167	24 286	30 167	21 639	21 051
Percentage CSE (%)	**-3.03**	**-11.75**	**-13.91**	**-11.32**	**-10.29**
Consumer NPC (coeff.)	**1.04**	**1.15**	**1.18**	**1.14**	**1.13**
Consumer NAC (coeff.)	**1.03**	**1.13**	**1.16**	**1.13**	**1.11**
Total Support Estimate (TSE)	**26 343**	**309 125**	**323 469**	**309 628**	**294 280**
Transfers from consumers	9 807	274 922	314 307	270 784	239 676
Transfers from taxpayers	17 655	81 704	68 290	76 705	100 117
Budget revenues	-1 119	-47 501	-59 128	-37 861	-45 514
Percentage TSE (% of GDP)	**1.97**	**1.72**	**1.82**	**1.72**	**1.64**
Total Budgetary Support Estimate (TBSE)	**19 014**	**103 879**	**105 877**	**103 797**	**101 962**
Percentage TBSE (% of GDP)	**1.42**	**0.58**	**0.59**	**0.58**	**0.57**
GDP deflator (2000-02 = 100)	**100**	**377**	**362**	**385**	**384**
Exchange rate (national currency per USD)	**8.28**	**6.76**	**6.45**	**6.73**	**7.08**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for China are: wheat, maize, rice, rapeseed, soybean, sugar, milk, beef and veal, sheep meat, pig meat, poultry, eggs, cotton, apples, groundnuts, peanuts, exported fruit and vegetables, and imported fruit and vegetables.

Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

The **No. 1 Central Document** is the most important policy document in China, issued jointly by the Central Committee of the Communist Party of China (CCCPC) and the State Council. This document determines the most important policy issues and focus of the year. Issues related to agriculture, farmers and rural areas have consistently been selected as the topic of this document since 2004.

Market price support is the main form of support to Chinese farmers. It is provided through both domestic price policies, such as the minimum purchase prices for wheat and rice, and trade policies including tariffs, tariff rate quotas (TRQs) and state trading. **Budgetary transfers** to producers of specific commodities include compensatory and direct payments. Compensation payments cover the difference between pre-determined target prices and actual market prices for cotton producers and are a combination of output payments and area payments. Direct payments based on area planted are provided for soybeans and maize producers. **General services** to the sector focus on developing agricultural infrastructure (including irrigation and drainage facilities) (41% of total spending on general services in 2021-23) and public stockholding of grains (35% in 2021-23). Support to agricultural knowledge and innovation is also significant (15% in 2021-23).

The **minimum purchase prices** for wheat and rice are set every year by the National Development and Reform Commission (NDRC) in consultation with the Ministry of Agriculture and Rural Affairs (MARA) and other government institutions. Their application is limited to major wheat and rice producing provinces. The minimum purchase prices for wheat and rice are announced before sowing seasons, and only apply for several months after the harvest. The state-owned China Grain Reserves Corporation (Sinograin) and other state-owned companies are mandated to make intervention purchases in case market prices fall below specified thresholds. Only grain of national grade 3 or higher can be purchased by state-owned companies at minimum prices.[1] However, in exceptional situations where there are large volumes of grain below grade 3, such as in cases of extreme weather events, provincial authorities can also purchase these to be held as temporary reserves. Government procurement can begin only when the market price has fallen below the minimum price for three consecutive days and must be suspended when the market price rises above the minimum for three consecutive days. Ceilings on the volumes of grains procured at minimum purchase prices during a marketing year have been set at 37 million tonnes for wheat (since 2019) and at 50 million tonnes for rice (since 2020).

The **Agricultural Production Development programme** combines a subsidy paid per hectare with direct payments for grain producers, subsidies for agricultural inputs, and subsidies for improved seed varieties.[2] Subsidies are also available for purchases of agricultural machinery, land consolidation, irrigation, agricultural insurance, returning farmland to forests and excluding degraded grassland from grazing.

Innovation for sustainable productivity growth

The sustained growth in agricultural output in China over the last decade has been increasing pressures on natural resources such as land and water. Primary agriculture is responsible for 6.7% of China's gross GHG emissions, slightly lower than the OECD average. Most agricultural emissions originate in livestock farming (43%), followed by emissions from agricultural soils (34%) and rice planting (22%). While nutrient surplus intensities for nitrogen and phosphorus have been declining over the past two decades, these remain at high levels (see Policy context section below).

Strategic planning

China aims to sustain high productivity and improve food and nutrition security while balancing the need to restore soil health and reduce pollution associated to agricultural production. The focus is increasingly on technological solutions to increase productivity while addressing environmental challenges.

The 14th Five-Year National Agriculture Green Development Plan 2021-25[3] includes the following climate change mitigation policy objectives: 1) reduce usage and increase application efficiency of fertilisers and pesticides; 2) build a green and low-carbon agri-food supply chain to improve production quality, efficiency, and competitiveness; 3) carry out research and apply agricultural green production technologies such as soil improvements and waste recycling; and 4) improve compensation mechanisms for ecological protection using a price mechanism for "green agri-food products" (State Council, 2021[1]).

The National Agricultural Sustainable Development Plan 2015-30 sets goals and approaches to protect natural resources and encourage sustainable farming practices. It targets improved production quality and efficiency by setting priorities for different zones according to their capacity for agricultural production, resource endowments, and ecological characteristics.

China ratified the Paris Agreement on Climate Change on 3 September 2016 and submitted its first Nationally Determined Contribution (NDC) in 2016 and updated it in 2021. While there are no specific targets for the agricultural sector, the role of agriculture, land-use change, and forestry is recognised in the NDC. The commitments covered by the updated NDC are to: 1) have CO_2 emissions peak by 2030 and carbon neutrality by 2060; 2) to lower the carbon intensity of GDP to 65% below 2005 levels by 2030; 3) to increase the share of non-fossil fuels to around 25% of primary energy consumption; 4) to increase forest stock volume by 6 billion m^3 from the 2005 level; and 5) to bring total installed capacity of wind and solar power to over 1.2 billion kW by 2030 (State Council, 2021[2]).

The 2016 NDC called for achieving zero growth in fertiliser and pesticide use by 2020, which MARA reported as achieved in 2018. The NDC also sets broad objectives for controlling methane emissions from rice fields and nitrous oxide emissions from farmland, as well as promoting efficient use of straw and agricultural waste (UNFCC, 2021[3]; Climate Action Tracker, 2021[4]).

The National Strategy on Climate Change Adaptation 2035 builds upon the 2014-20 adaptation strategy in four areas: (1) greater emphasis on early-warning systems and risk management; (2) sectoral adaptation tasks for agriculture and food security; (3) greater integration of national and regional adaptation strategies; and (4) strengthening financial support, science and technological support, and international co-operation on climate adaptation (State Council, 2022[5]). The national adaptation strategy considers geographic characteristics and spatial planning to ensure implementation is tailored to a variety of contexts.

Programme implementation

The Soil Pollution Prevention and Control Law establishes systems for agricultural land classification and management according to pollution levels and risks. The Ministry of Ecology and Environment (MEE) together with MARA and the Ministry of Natural Resources (MONR) are establishing a soil environmental monitoring system with a responsibility for local governments to conduct regular soil examinations.

Several forestry programmes, which target afforestation and improved forest management, support NDC objectives of increasing the forest stock volume and GHG emission reductions in Land Use, Land-use Change and Forestry (LULUCF). The Grain for Green programme, implemented since 2000, uses direct payments to incentivise farmers to re-establish forest and shrub vegetation on sloped cultivated land at risk of erosion.

The 2021 regulation on groundwater use sets out specific rules for the use, conservation, and protection of groundwater with the objective to enhance groundwater supervision and management. The regulation

designates areas where the exploitation of groundwater is prohibited and entitles provincial-level authorities to address over-exploitation and pollution.

Research and innovation

An important approach is the use of demonstration zones to support the diffusion and adoption of technologies and improved agricultural practices. As part of the National Agricultural Sustainable Development Plan 2015-30, 220 dry-farming and water-saving agricultural demonstration areas were established in north and northwest China to promote technologies such as:

- water storage and soil moisture conservation
- rainwater harvesting and supplementary irrigation
- ridge tillage and furrow irrigation
- soil-moisture based on on-demand irrigation
- water-saving irrigation
- water and fertiliser integration
- drought and climate stress resistance
- water-resource efficiency.

In 2018, MARA compiled the Guidelines on Green Development Technologies for Agriculture 2018-30. These guidelines focus on the implementation of rural revitalisation strategies and sustainable development strategies. They support accelerating technological innovation for the green development of agriculture as well as improving the supply of green agricultural inputs and technologies. They also propose building a green-oriented agricultural technology system by 2030 and increasing agricultural productivity and resource use while steadily increasing yields.

Innovation in agricultural technology has been one of the major sources of agricultural productivity growth in China. Some of the most impactful agricultural innovations include high-yield crop varieties (both conventional and hybrid), Bt cotton, as well as innovative animal breeding and feeding management for livestock. The fourteenth Five-Year Plan 2021-25 encourages R&D in agricultural sectors and increased application and development of Internet of Things technologies for precision farming (e.g. monitoring crop fields using sensors, automating irrigation systems).

Trial programmes in northeast China show that investment in conservation agriculture[4] has contributed to reduced wind and water erosion in soils, enhanced soil fertility, preserved soil moisture, and increased drought resistance. China has an objective to have 90 million ha of land farmed under a conservation agriculture system by 2025 (about 70% of arable land). Investments in research and innovation supported the development of tailored conservation agriculture practices for various climatic and soil conditions or cropping systems, including the black soil region in northeast China, the Loess Plateau and the oasis agricultural region in northwest China, the Huang-Huai-Hai double-cropping region, and the plain region along the Great Wall in northern China.

The China Climate-Smart Staple Crop Production project has been helping select new crop varieties with high yield and strong stress resistance. The project has also supported producers by optimising cropping structures and improving agricultural infrastructure. Demonstration areas covered by the project include applied new technologies, including fertigation technology,[5] drone direct seeding for rice, self-propelled sprayers, electrostatic sprayers, rice-shrimp mixed farming, and green manure planting.

Recent policy developments

Domestic policy developments in 2023-24

Developments in the legal, institutional and strategic framework

A new Food Security Law adopted a new Food Security Law at the end of December 2023, which came into force on 1 June 2024. The Food Security Law includes chapters on grain production, grain reserves, grain marketing and processing, food access in emergency situations, and the protection of agricultural land from urbanisation. The law stipulates that the national food security strategy is based on self-reliance, guaranteed domestic production, moderate imports, and technological support.

The December 2023 annual Central Rural Work Conference (CRWC) formulated the overarching policy guidelines for agriculture and rural development in 2024. The 2023 CRWC reiterated that ensuring food security remains the top priority of China's agricultural and rural development policies. The conference set the goal of producing more than 650 million tonnes of grain in 2024[6] by increasing yields as well as farmland quality through subsidies for high-standard farmland,[7] with emphasis on the farmland in north-eastern black soil areas and plain areas. In terms of ensuring access to grains for consumption, the CRWC proposed to explore the establishment of an inter-provincial compensation mechanism between grain producing and consuming provinces, supervised by central and provincial authorities.

In February 2024, the Central Committee of the Communist Party of China and the State Council jointly released the annual No. 1 Central Document, outlining the priorities for rural revitalisation in 2024. The document emphasises the importance of "solidifying the agricultural foundation and promoting comprehensive rural revitalisation to advance China's unique modernisation".

To ensure food security, the 2024 No. 1 Document reaffirms the annual grain production target of 650 million tonnes, already included in previous years' No. 1 Documents. The Document instructs local authorities to pursue an integrated approach to farmland protection that simultaneously accounts for grain quantity, quality, and farmland ecology. It also stresses the need to promote healthy diets. To achieve this, the following areas of action are highlighted:

- Prioritisation of northeast China, the northern China plains, and other farming regions with adequate water resources, for the construction of high-standard farmland. This includes improving irrigation conditions, modernising agricultural facilities, and supporting recovery and reconstruction of disaster-hit areas.
- Stricter farmland protection against illegal land use and improper transformation of degrade farmland. The role of agricultural technology innovation support for accelerating the revitalisation of the seed industry and for promoting the mechanisation of agriculture is stressed.
- Establishment of a comprehensive monitoring and early warning mechanism for the entire agro-food supply chain.
- Improving the layout of grain storage facilities.
- Reducing food loss and waste across the agricultural value chain by establishing a regulatory system that combines government supervision, industry self-discipline, and social supervision.

Regarding rural revitalisation, the No.1 Document highlights the Thousand Villages Demonstration, Ten Thousand Villages Rectification project. Spanning two decades, the project has selected villages as examples to showcase certain agricultural practices. Promoting the integration of primary, secondary, and tertiary industries in rural areas is seen as a way to revitalise the rural economy, create jobs, and improve rural incomes. Upgrading of agricultural product processing and high-quality rural logistics distribution is also recommended to support the rural digital economy.

Domestic price support policies and stockholding policies

In September 2023, the NDRC increased the 2024 minimum purchase price for wheat procurement from CNY 2 340 (USD 330) in 2023 to CNY 2 360 (USD 332) per tonne. However, the minimum purchase price was not triggered in 2023, as farmgate wheat prices remained above it. In February 2024, the NDRC increased the minimum purchase price for early indica rice from CNY 2 520 (USD 350) to CNY 2 450 (USD 353); the minimum purchase price for mid-to-late indica rice remains unchanged since 2022.

Auctions to feed mills from stocks of rice produced before 2017 resumed from early August to September 2023 after nearly a year of suspension. The nine rounds of auctions offered 2 million tonnes of rice per week with a floor price of CNY 1 700 (USD 239). Of the 16.5 million tonnes of old stock paddy rice offered in the auctions, 14.8 million tonnes were acquired.

Payments to producers

In April 2023, China published the Announcement No. 369 on Implementation Measures for Improving the Target Price Policy for Cotton. This maintains a target price for Xinjiang cotton at CNY 18 600 (USD 2 650) per tonne for the period 2023-25 and caps the volume of Xinjiang cotton entitled to the subsidy at 5.1 million tonnes annually, down from 5.4 million tonnes in previous years. The announcement also includes a provision allowing the State Council to make adjustments to the policy in the case of significant changes in the cotton market. Subsidy funds from the central government will continue to be distributed primarily based on production quantity with 5% based on quality and an additional nominal amount allocated for a pilot insurance fee. In turn, the announcement does not mention subsidies for other cotton-producing provinces. the announcement specifies that cotton produced on land not reviewed and certified for cotton planting is ineligible for cotton subsidies.[8]

In April 2023, MARA allocated CNY 10 billion (USD 14.5 billion) to grain farmers. The funds were in support of spring ploughing and production.

In June 2023, the Ministry of Finance (MOF) allocated CNY 200 million (USD 27.8 million) in disaster relief funds to facilitate mechanical harvesting and drying of wheat. This followed prolonged rain in Henan province, a major wheat producing region.

In August 2023, the MOF also allocated CNY 732 million (USD 102 million) in disaster relief funds to support the recovery of agricultural production in nine provinces, following crop damage and flooding caused by Typhoon Doksuri. The funds supported agricultural flood control and disaster relief efforts. They also supported post-disaster agricultural production, and subsidised the procurement of seeds, fertilisers, and pesticides, as well as provided operational services to help farmers resume agricultural activities and repair affected facilities.

In addition, in August 2023, the MOF approved a one-time grant fund of CNY 2.4 billion (USD 333 million) for the purchase of fertilisers and pesticides by maize and soybeans producers in the north of the country. This support followed heavy rains and flooding that affected these crops in 2023.

Developments in the regulatory framework

In April 2023, MARA issued a three-year action plan to reduce soymeal use in animal feed. This initiative aims to decrease dependence on soybean imports. The new strategy proposes reducing the percentage of soymeal in animal feed to below 13% by 2025.[9]

In December 2023, MARA approved 37 genetically engineered (GE) maize seed varieties and 14 GE soybean varieties for commercial production. MARA issued that same month 26 GE maize and soybean

seed production and operation licenses beginning January 2024. In January 2023, MARA also approved the import and use of six new varieties of genetically modified maize and two of soybeans.

The National Health Commission (NHC) updated the Administrative Measures for the Management of Food Safety Standards, which entered into force in December 2023. The Measures provide an overview of procedures and principles for the planning, development, and revisions of the food safety standards in China. The revision aims to be consistent with current food safety principles that are science-based and focused on risk control, to prioritise human health and to encourage co-ordination of national and local authorities for standards development and management. Some important elements of the updated Measures are:

- Integrating the management of regulations of national and local food safety standards into the revised Measures
- Encouraging stakeholders to propose new national food safety standards
- Listing conditions when local food safety standards will not be filed with the NHC
- Setting out transition periods and requirements for the implementation of the new or revised standards
- Requiring temporary quantity restrictions or testing methods for imported foods that do not yet correspond to China's national food safety standards.

Policies to facilitate climate change mitigation and adaptation in agriculture

In November 2023, China released the Methane Emissions Control Action Plan. The plan, jointly released by 11 agencies, provides "key tasks" for methane emissions control in eight sectors, including agriculture, through 2035.[10] The plan focuses on livestock and manure management, enteric fermentation in livestock, and rice field management. However, many aspects of the plan mirror existing departmental plans such as MARA's Implementation Plan for Carbon Reduction and Carbon Sequestration in Agriculture and Rural Areas and does not include specific targets for emissions reduction.

The February 2024 No. 1 Central Document includes a specific focus on "green agriculture" by promoting the integrated protection and restoration of rural ecosystems. The Document calls for:

- a reduction, complemented by efficiency improvements, in the use of chemical fertilisers and pesticides
- the promotion of circular farming models
- an analysis and remediation of heavy metal pollution sources in cultivated land
- a reduction of antibiotic use in animal husbandry and the prevention and control of major animal-borne diseases and key zoonotic diseases.

Trade policy developments in 2023-24

In October 2023, the Russian Federation (hereafter "Russia") and China signed a 12-year grain supply contract. Russia is to supply China with 70 million tonnes of grains, vegetables, and oilseeds. In December 2023, China and Russia also amended the bilateral Protocol on Phytosanitary Requirements and lifted restrictions on Russian shipments of maize, rice, soybeans, and rapeseed to China.[11]

On 5 August 2023, China removed the anti-dumping duties and countervailing duties on imports of barley originating in Australia, which it had imposed mid-2020. Mid-December 2023, the General Administration of Customs of China (GACC) announced trade-related suspensions would be lifted for three of Australia's largest meat export establishments. The suspensions had been implemented in mid-2020 and early-2022. Products from the three establishments are now permitted to be exported to China, pending final administrative processes required by each side. Eight Australian meat export establishments remain

suspended. Mid-April 2024, China also removed the anti-dumping and countervailing duties it had imposed in March 2021 on imports of Australian bottled wine (in containers of 2 litres or less).

In 2023 and early 2024, China announced that the ban on beef imports originating in several EU countries has been partially lifted (beef and beef products must be derived from cattle less than 30 months of age) so that steps can be taken to reopen the market. This includes Poland and Belgium in 2023 and Ireland, Spain and (partly) Germany in 2024. China has imposed a ban since 2000 on imports of EU beef products due to the emergence of several cases of Bovine Spongiform Encephalopathy in several EU countries that year.

In 2023, China signed several Free Trade Agreements (FTAs) with Ecuador (May 2023), Nicaragua (August 2023), and Serbia (October 2023). Under the FTA with Ecuador, China will provide market access for agricultural and fisheries products such as bananas, cut flowers, cocoa, coffee, and shrimp. Under the FTA with Nicaragua, China will provide market access for various agri-food and seafood products such as meat, seafood, sugar, peanuts, and rum. Under the China–Serbia FTA, more than 10 000 Serbian products will benefit from duty-free access, including a wide range of agricultural goods.

In January 2024, China implemented a new tariff adjustment plan for 2024, which eliminated applied tariffs on imports of sweetcorn seeds. This reduced the duty charged on imports from the 13% Most Favoured Nation rate.

Several trade restrictive measures were also implemented in 2023. On 24 August 2023, GACC issued Announcement No. 103 of 2023 (Announcement on Suspension of Import of Japanese Aquatic Products), suspending all imports of aquatic products (including edible aquatic animals) from Japan. GACC introduced the measures following Japan's announced plans to begin releasing more than 1 million tonnes of treated radioactive water from the Fukushima power plant into the Pacific Ocean.

In November 2023, the Ministry of Commerce (MOFCOM) announced that its overall fertiliser export quota for 2024 would remain unchanged, at 13.65 million tonnes. The quota includes 3.3 million tonnes for urea, 6.9 million tonnes for diammonium hydrogen phosphate, and 3.45 million tonnes for compound fertiliser.[12]

Policy context

Key economic and agricultural statistics

China has the world's second largest population and the second largest land area. It is an upper-middle income economy, with a GDP per capita – adjusted by PPP – close to 83% of the average of countries covered by this report (Table 8.2). However, while counting almost 18% of the world's population, it has only 7% of the world's potable water and 10% of the world's agricultural land. China is thus a resource scarce country, which results in severe competition between agriculture and other users of land and water resources.

Agriculture remains an important part of China's economy. It accounts for 22.6% of employment, but its 7.7% share of GDP indicates that labour productivity is significantly lower than in the rest of the economy. Even if rural incomes are growing at high rates, they remain at around one-third of those in urban areas.

Crop production represents 62% of total agricultural output and its composition has changed significantly over the last decades, driven by the shift towards higher value-added agricultural products such as fruit and vegetables. While the average farm size remains less than one-hectare, large-scale production has been developing rapidly, including among co-operative and corporate farms. North and northeast provinces have seen more rapid farm consolidation than other regions, as increased labour mobility and the transfer of land among farmers over the past three decades have led to adjustments in the farm structure. Livestock production originates mostly from larger-scale commercial units (OECD, 2018[6]).

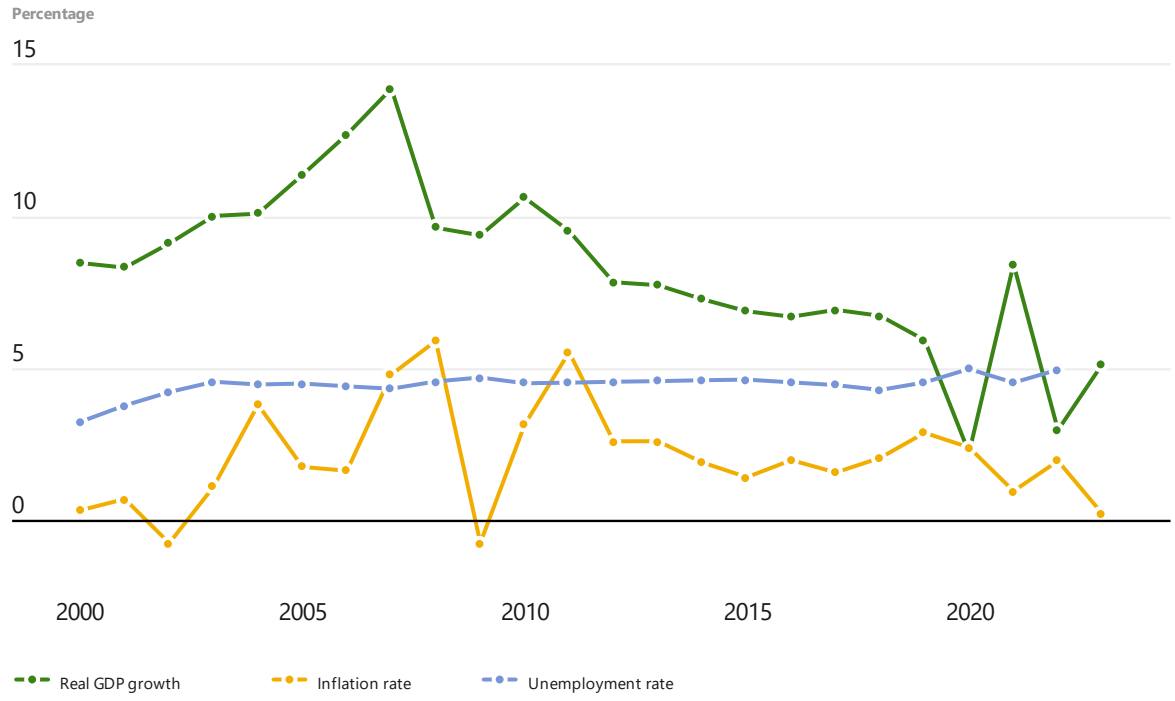
Table 8.2. China: Contextual indicators

	China		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	3 683	30 091	9.2%	22.0%
Population (million)	1 264	1 426	29.5%	27.1%
Land area (thousand km²)	9 425	9 425	11.5%	11.4%
Agricultural area (AA) (thousand ha)	523 731	521 486	17.5%	17.9%
			All countries[1]	
Population density (inhabitants/km²)	132	149	52	64
GDP per capita (USD in PPPs)	2 917	21 476	9 363	25 965
Trade as % of GDP	19.3	17.2	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	14.9	7.7	2.9	3.8
Agriculture share in employment (%)	50.0	22.6	-	-
Agro-food exports (% of total exports)	4.8	1.9	6.4	8.0
Agro-food imports (% of total imports)	4.7	8.5	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	65	62	-	-
Livestock in total agricultural production (%)	35	38	-	-
Share of arable land in AA (%)	23	21	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

Real GDP growth averaged 5.5% in 2021-23 (Figure 8.4). Economic activity in China picked up in 2023, with a real GDP growth of 5.2%, driven by increased demand for services, resilient manufacturing investment, and public infrastructure stimulus. China continues to experience one of the strongest economic growth rates among G20 economies. Unemployment only slightly increased since 2020, as the economy was supported by the COVID-19 fiscal support policies. Following an inflation rate close to 2% in 2022 against a background of increasing international commodities prices and increasing input costs, inflation dropped to 0.23% in 2023 reflecting weakening domestic demand.

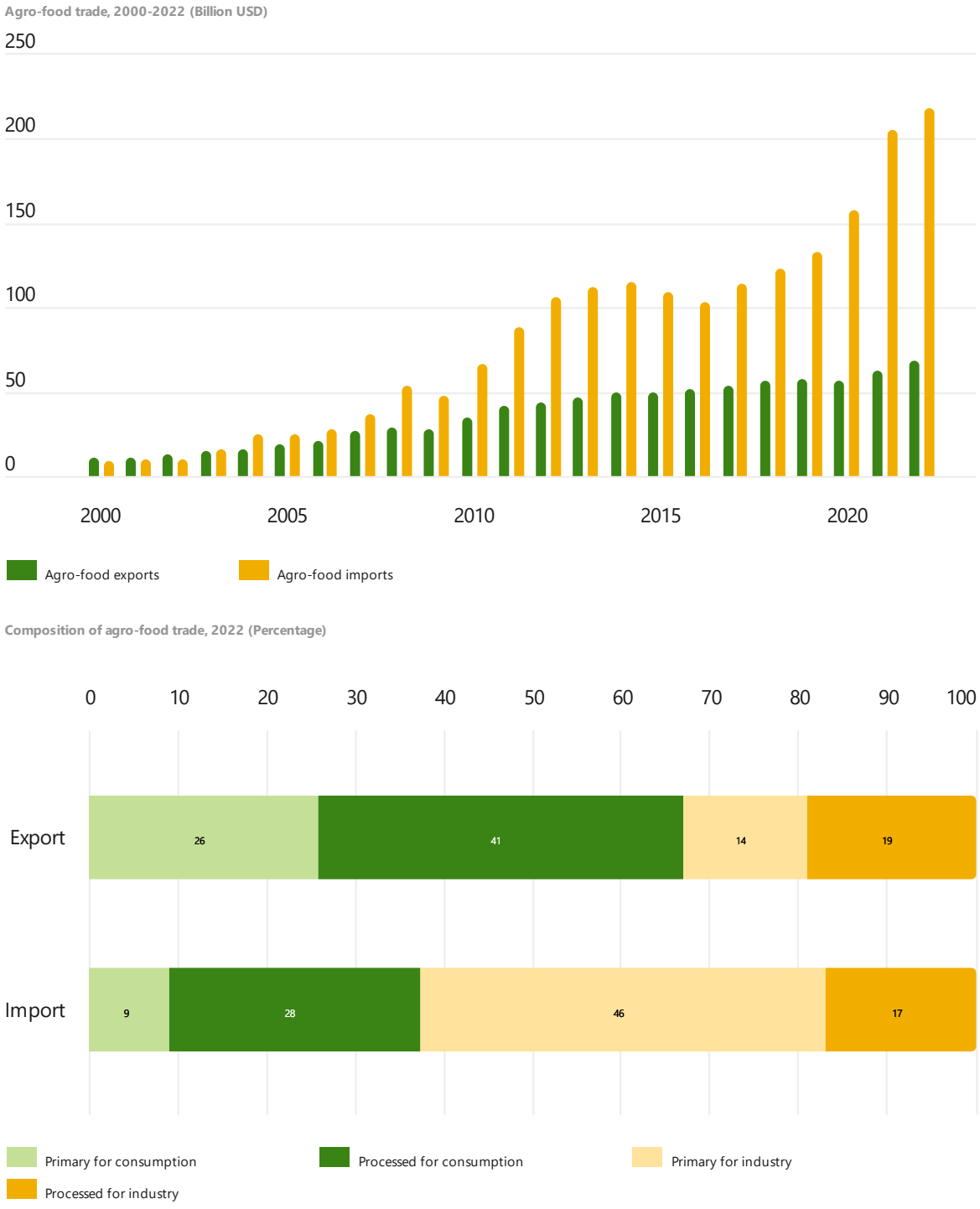
Figure 8.4. China: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

China has consistently and increasingly been a net agro-food importer since 2003, but agro-food exports have been growing over the last two decades. While agro-food exports stabilised since 2018, agro-food imports have been increasing at a higher rate during this period. The significant increase in agro-food imports since 2020 has been driven by higher imports of grains and oilseeds, particularly maize and soybeans, as well as higher pig meat imports. However, imports grew at a slower pace in 2022 amid slowing consumption and increasing domestic supplies of grains and livestock products. Primary products used as inputs in the domestic food industry dominate China's agro-food imports, representing 46% of the total in 2022. In turn, primary and processed products for final consumption are key export categories, accounting for 67% of total agro-food exports (Figure 8.5). Over the last two decades, China has developed into the largest importer of agricultural products in the world. With rising consumption and limited capacity to increase its domestic production due to arable land and water scarcity, China increasingly meets its demand through imports. In this context, its agricultural policy setting – including price and storage measures for some commodities – can have important impacts on world prices.

Figure 8.5. China: Agro-food trade



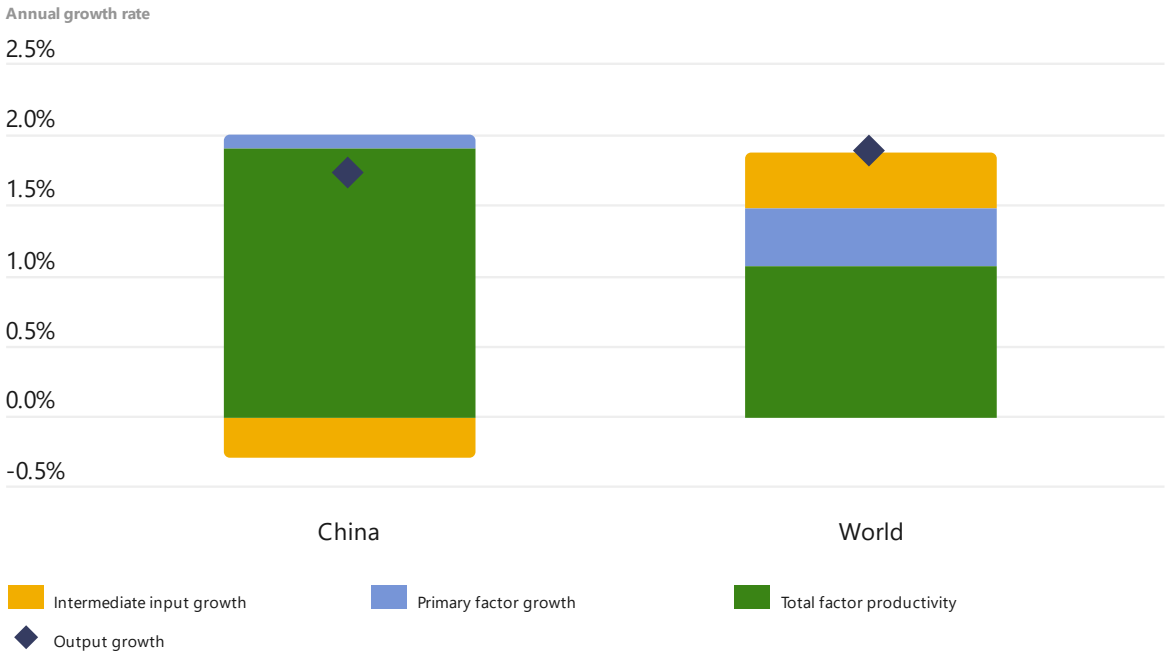
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Agricultural output growth in China averaged 1.7% in 2012-21, on par with the world average (Figure 8.6). This has been driven by growth in total factor productivity (TFP) of 1.9% per year, higher than the global average and largely attributed to farm consolidation and increased mechanisation of production. The

contribution of primary factor growth to agricultural output growth (0.1%) is lower than the world average (0.4%).

The sustained growth in agricultural output is exerting pressures on natural resources such as land and water. While nutrient surplus intensities for nitrogen and phosphorus have been declining over the past two decades, these remain at high levels, particularly for phosphorus relative to the OECD average (Table 8.3). Agriculture remains the main user of water, accounting for 63% of total water abstraction, well above the OECD average.

Figure 8.6. China: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Table 8.3. China: Productivity and environmental indicators

	China		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	4.4%	1.9%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	41.1	26.6	32.1	28.2
Phosphorus balance, kg/ha	9.8	9.8	3.3	2.3
Agriculture share of total energy use (%)	2.4	1.9	1.7	2.0
Agriculture share of GHG emissions (%)	9.8	6.7	8.7	10.1
Share of irrigated land in AA (%)	10.3	13.3	-	-
Share of agriculture in water abstractions (%)	68.8	63.0	47.0	49.5
Water stress indicator	19.3	19.9	8.7	..

Note: * or closest available year.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

The evolution of China's agricultural policy objectives reflects the changing role of agriculture at different stages of economic development. In the 1950s and 1960s, the agricultural sector was taxed to support the industrial sector's development. In the late 1970s, China initiated an important economic transformation process, implementing reforms towards a market-oriented economy including for the agricultural sector (OECD, 2005[7]; OECD, 2018[6]). More specifically, China implemented its first rural reform, the household responsibility system (HRS), during 1978-84. This dismantled the people's communes and contracted cultivated land to individual households, mostly based on the number of people or labourers in the household.[13]

Until the late 1990s, agricultural policies focused on increasing food production, particularly grains, through the provision of fertiliser and other input subsidies to farmers. At the same time, policy actions targeted deregulation and diversification of marketing channels. Central and local governments increased support for irrigation.

Liberalisation of international trade started in the early 1990s with the relaxation of trade restrictions, allowing private traders to play a role in agricultural commodity markets. In the context of China's WTO accession in 2001, the average import tariff for agricultural products fell from 42% in the early 1990s to 12% in the early 2000s.

In the 2000s, the growing income gap between urban and rural populations, and between developed and underdeveloped rural areas became an important policy issue. Increasing farmers' income was made a key policy objective together with food self-sufficiency in several of the No. 1 Central Documents during the 2000s.[14] Several new policies were introduced in this period to meet these objectives. These included minimum purchase prices for grains, and a system for temporary purchase and storage of production, as well as subsidies for agricultural materials, superior crop varieties, and agricultural insurance premiums.

Many of the No. 1 Central Documents also emphasised other policy goals, such as ensuring the quality of agricultural products and food safety, enhancing agricultural competitiveness, and protecting agricultural ecosystems. In the early 2000s, China introduced agri-environmental payments under programmes such as "Grain for Green" (officially called the Returning Farmland to Forests Programme), Grassland Ecological Protection, and other programmes helping to convert grazing land to grassland.

In 2014, land reforms clarified village collective landowner rights, individual household land contract rights, and land operation rights through the "three rights separation system". These reforms consolidated farm operations and spurred productivity growth. To control the conversion of farmland for non-agricultural use, a "red line" on arable land was set at no less than 124.3 million ha in the 2016 Adjusted Scenario of the Outline of the National Overall Planning on Land Use.

The government-led Temporary Purchase and Storage Policy for Cotton, Soybeans and Rapeseed at Pre-determined Prices was reformed in 2014-15, and in 2016 for maize. For cotton, this was replaced by deficiency payments covering the difference between pre-determined target prices and actual market prices. For soybeans and maize, it was replaced by direct payments based on area planted. In 2016 all subsidies on grain, seed and aggregate inputs were merged into a single general income support payment. While wheat and rice remained subject to the minimum price procurement programme, support prices were gradually reduced between 2015 and 2019. Since the COVID-19 pandemic, the minimum support price was increased again for indica rice and wheat.

A rural revitalisation strategy was introduced in 2017 to close the urban-rural development gap. This strategy relies on support to general services as a means to develop agri-food supply chains.

In March 2021, the Central Committee of the Communist Party of China (CCCPC) released the fourteenth Five-Year Plan 2021-25 for National Economic and Social Development. The plan outlines specific key priorities for agriculture modernisation:

- Enhancing food security, including by safeguarding a minimum arable land area of 120 million ha.
- Maintaining subsidies for grain producers and increasing minimum purchase prices for wheat and rice as appropriate.
- Implementing high-standard infrastructure and conservation projects, which could also advance the development of green agriculture.
- Investing in innovative farm technologies and smart agriculture systems, including with respect to seeds and animal breeding.
- Improving pest and disease control systems.

In November 2021, the State Council issued the fourteenth Five-Year Plan for Promoting Agricultural and Rural Modernization 2021-25 setting the mid-term food security objective of maintaining annual production of grains at a minimum of 650 million tonnes and of meat at 89 million tonnes. The plan also emphasises consolidating the achievements of poverty reduction in rural areas, supporting agricultural innovation and seed development, and conducting new surveys on agricultural production costs to adjust agricultural insurance programmes and subsidies.

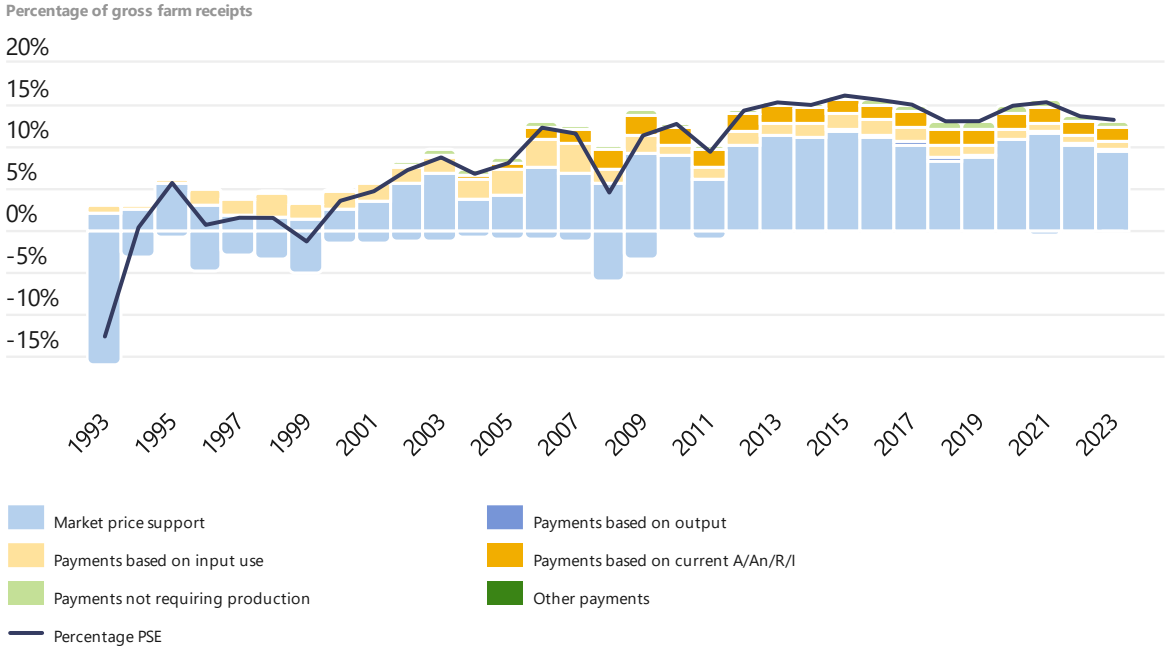
Table 8.4. China: Agricultural policy trends

Period	Broader framework	Changes in agricultural policies
Prior to 1978	Centrally planned economy	Centralised control of agricultural activities Collective and commune-farmer land systems Production, marketing and price controls, implicitly taxing agriculture Investments in irrigation systems and extension services State agricultural trading firms and high tariffs
1978-1999	Initial reforms to the centrally planned economy	Collective and commune land system dismantled, household responsibility system set up for land use Some regulatory reforms in agricultural marketing State Grain Authority ensuring food availability and affordability to the population Public stockholding, food price subsidies to urban consumers Fertiliser and input subsidies
2000-2009	Improving farmers' incomes and food self-sufficiency key policy objectives Further trade liberalisation	Increase in spending on agricultural research and development Technical assistance services Input subsidies, implicit credit subsidies Increasing allocations to the "Grain for Green" conservation programme Input and output markets increasingly allowing participation of private traders WTO accession in 2001, free trade agreements signed, reduction of tariffs Minimum purchase price system for grains Temporary purchase and storage policy established for selected commodities
2010-2014	Increasing support to agriculture	Increasing minimum purchase prices, and larger set of commodities covered by the temporary purchase and storage system Agricultural insurance premium subsidies
Since 2014	Policy efforts to adjust the price support system and respond to agricultural productivity and sustainability challenges	Continued reforms in land transfer rules National Agricultural Sustainable Development Plan 2015-2030 Agricultural support and protection subsidy payments per area since 2015 (currently "Agricultural Production Development" programme) 2017 National strategy on "rural revitalisation" Dismantling of price support systems for cotton, soybeans, rapeseed, maize; introduction of direct payments based on area Gradual decrease in support prices for wheat and rice during 2015-19; increases since the COVID-19 pandemic in support prices for indica rice and wheat Enhanced focus on food security through the No. 1 Central Document since 2022 Food Security Law entered into force in 2024

At the end of the 1990s, China's support to the agricultural sector mostly comprised of budgetary allocations, while market price support (MPS) was negative. Budgetary allocations went to input subsidies

and general services to the sector. However, since 2002, MPS increased and became the main instrument to support agricultural producers. After 2009, China continued to increase its minimum support prices, leading to significant price gaps between domestic and international markets. Support to farmers increased until 2015, when policy reforms for commodities such as rapeseed, soybeans, cotton and maize contributed to lowering MPS. Fluctuations in producer support levels since 2019, particularly market price support (MPS), are linked to the evolution of international versus domestic prices. The increase in producer support from 2018 to 2021 was largely driven by a significant increase in MPS for grains and oilseeds against a backdrop of domestic prices rising faster than border prices. Minimum purchase prices for wheat and rice have gradually increased since the COVID-19 pandemic. Constraints in the supply of groundnuts as well as maize and soybeans for animal feed led to large increases in domestic prices and imports for these commodities in 2020 and 2021. In addition, domestic prices for livestock commodities such as beef or poultry meat have been increasing due to more demand for these products in response to tighter supplies of pig meat in these years. As reference prices increased faster than domestic prices in 2021-22, particularly for wheat, maize, milk, pig meat and other meat products, producer support decreased once again. Between 2022 and 2023, China improved its production capacity for livestock products, particularly pig meat and dairy products, while grains output also continued to increase. These trends in production, combined with an overall weakening domestic demand, have been exerting downward pressure on domestic prices and driving a slowdown in imports for many commodities. Against this backdrop, producer support remained stable at 13.2% in 2023. MPS accounts for more than two-thirds of PSE, followed by budgetary support for payments based on current area and input subsidies (Figure 8.7).

Figure 8.7. China: Development of the PSE and its composition, 1993 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

References

Climate Action Tracker (2021), *"Countries: China"*, http://climateactiontracker.org/countries/china.html (accessed on 15 January 2019). [4]

OECD (2018), *Innovation, Agricultural Productivity and Sustainability in China*, OECD Food and Agricultural Reviews, OECD Publishing, Paris, https://doi.org/10.1787/9789264085299-en. [6]

OECD (2005), *OECD Review of Agricultural Policies: China 2005*, OECD Review of Agricultural Policies, OECD Publishing, Paris, https://doi.org/10.1787/9789264012615-en. [7]

State Council (2022), *National Climate Change Adaptation Strategy 2035*. [5]

State Council (2021), *Fourteenth Five-Year Plan for National Agricultural Green Development*, http://www.gov.cn/zhengce/zhengceku/2021-09/07/content_5635867.htm (accessed on 15 December 2021). [1]

State Council (2021), *Responding to Climate Change: China's Policies and Actions*, http://www.scio.gov.cn/zfbps/32832/Document/1715506/1715506.htm. [2]

UNFCC (2021), *China First NDC - Updated October 2021*, http://www4.unfccc.int/submissions/indc/Submission%20Pages/submissions.aspx. [3]

Notes

[1] This adjustment to the price floor guarantee was introduced in 2018. The quality grade standard is divided into five grades plus a "sub-standard" category.

[2] This programme was previously called the "agricultural support and protection subsidy".

[3] This is issued jointly by MARA, the NDRC, the Ministry of Science and Technology (MOST), MONR, MEE, and the State Forestry and Grassland Administration.

[4] Conservation agriculture is a cropping system that can help prevent soil degradation while regenerating degraded lands.

[5] Fertigation technology suggests sprinkling fertilisers into the precision irrigation system from reservoirs with water-soluble fertilisers. This is typically done with injectors and a pressure-controlled valve. Most fertigation systems are equipped with sensors to measure pH levels and electric conductivity.

[6] The National Bureau of Statistics data indicates that China's grain production has been above 650 million tonnes per year for the last nine years.

[7] High-standard farmland refers to a set of measures from land consolidation to irrigation infrastructure to improve farmland yields and lay the foundation for mechanised agriculture. China estimates 66.7 million ha are of high-standard and aims to turn all agricultural area into high-standard.

[8] In late June 2023, the Xinjiang Production and Construction Corps (XPCC) issued its own policy to phase out cotton farming on some lands in 2024 (the notice on the issuance of the "Xinjiang Production and Construction Corps Cotton Target Price Policy Implementation Plan for 2023-25" is available at: http://www.xjbt.gov.cn/c/2023-07-04/8288039.shtml).

[9] This would be 1.5 percentage points below the 2022 level.

[10] Including the Ministry of Ecology and Environment of China (MEE), the Ministry of Foreign Affairs (MOFA), the National Development and Reform Commission (NDRC), the Ministry of Science and Technology (MOST), the Ministry of Industry and Information Technology (MIIT), the Ministry of Finance (MOF), the Ministry of Natural Resources (MNR), the Ministry of Housing and Urban-Rural Development (MHURD), the Ministry of Agriculture and Rural Affairs (MARA), the Ministry of Emergency Management (MEM), and the National Energy Administration (NEA).

[11] Previously, exports were allowed only from the Primorsk, Transbaikal, and Khabarovsk territories, the Amur Region, and the Jewish Autonomous Region in Russia. In mid-December 2023, Russia started sending containers of soybeans and barley to China via the New Land Grain Corridor.

[12] In addition, in November 2023, the China Nitrogen Fertilizer Industry Association issued a statement urging its members to prioritise supplying domestic markets, including by withdrawing export applications and goods that have been shipped or collected at ports.

[13] Although ownership of land remained collective, control and income rights belonged to individuals under the HRS, with a land contract term of 15 years. When this ended in the late 1990s, the second term was extended to 30 years.

[14] Self-sufficiency was interpreted to mean that China should produce 95% of its own grain requirements. The Chinese self-sufficiency rate for grains is defined as the total production of wheat, coarse grains and rice divided by total domestic consumption of these crops (OECD, 2005[7]).

9. Colombia

Main findings

Support to agriculture

Colombia's producer support estimates (PSE) averaged 6% of gross farm receipts during 2021-23, well below the OECD average of 13.7%, and much lower than in 2000-02 (25%). Producer support experienced a sharp decrease over the past two decades due to trade liberalisation, the reduction on import tariffs of key agricultural products and the temporary suspension of the Andean Price Band System (SAFP) for some agricultural commodities.

Market Price Support (MPS) continues to be the dominant form of support, accounting for 81.5% of the PSE in 2021-23. MPS is driven by border measures for a range of agricultural products and represents the only form of Single Commodity Transfers (SCT). SCT are particularly high for rice, pig meat, eggs, sugar, and maize. Prices received by farmers were 5% higher than border prices during the period 2021-23.

Budgetary support to farmers accounted for the remaining 18.5% of PSE in 2021-23, mostly in the form of input subsidies. This includes measures such as preferential interest rates for credit, subsidised agricultural insurance premiums, and subsidies for the acquisition of inputs like fertiliser and seeds. Subsidies are also provided for on-farm services, such as technical assistance, and for on-farm fixed capital formation such as machinery and equipment.

Budgetary outlays to general services for the sector (General Service Support Estimate, GSSE) have increased from 1.4% to 1.7% of the value of agricultural production between 2000-02 and 2021-23 but remain below the OECD average of 3.3%. Support for general services focuses on infrastructure, agricultural research and knowledge transfer, and on-farm restructuring (e.g. land formalisation, rights, and access). Total support to the sector (Total Support Estimate, TSE) accounted for 0.6% of Gross Domestic Product (GDP) in 2021-23.

Key recent policy changes

In 2023, the Integral Rural Reform continued with land formalisation and regularisation. By the end of March 2024, 1 107 420 ha have been formalised or undergone restitution. In 2023, budgetary support was redirected to small-scale farmers, beneficiaries of land reform, to finance projects involving technology adoption, irrigation, agricultural extension, financing, and infrastructure, with the aim of facilitating access to productive land and financial instruments.

The Public Policy for Reindustrialisation was approved in 2023 with the objective of promoting a knowledge-based, productive, and sustainable economy by fostering the production of goods and services with higher added value, including in agriculture. To achieve this initiative, as well as the land reform, Colombia is redirecting and increasing budgetary allocations to providing more technical assistance to farmers, facilitating access to financing by providing credit at preferential rates, improving regulatory frameworks, and promoting innovation.

Colombia made several changes to its agricultural tariffs. While the suspension of import tariffs for 163 products that are part of the basic household basket expired in December 2023, import tariffs of wheat and peanut were maintained until end 2024. Import tariffs elimination on all agricultural inputs, including fertilisers, remained in force until May 2024, with the possibility to extend it to December 2024.

Assessment and recommendations

- Agricultural sustainable productivity growth has as a main framework the National Agricultural Innovation System (SNIA) and institutions such as AGROSAVIA, and even when their strategies and roles for sustainable productivity are relatively well designed, their implementation and reach remain very limited. The innovation system, knowledge transfer and technology adoption efforts need to better match farmers' needs, particularly the small-scale farmers. This can be done by investing in the public extension services to address not only sustainable production systems for different agricultural products but also market and entrepreneurial capacities.
- The environmental performance of the sector, including biodiversity, water use, and forest management should be considered more systematically in agricultural policy design. The country should consider the use of land-management instruments like zoning to identify which products are best suited for specific areas, depending on the soil, water, and agroclimatic conditions, this would support better the land reform process.
- Land reform is a first step towards sector development and this process should be accelerated and scaled up. This can be done in part by upgrading the multi-purpose cadastre system and accelerating the registration and allocation of land rights. Land rights contribute to long-term growth in the agricultural sector by stimulating private investment and help promote the development of rural areas.
- Land reform needs to be accompanied by broader provision of general services to foster productivity and competitiveness and ensuring the sector's sustainable development. This includes improved hydrological infrastructure for irrigation; transport infrastructure; digital infrastructure, research, development, and innovation capacity; animal and plant health protection and control services; promotion of the sustainable use of natural resources; and national and functional extension, training, and technical assistance systems that foster technology adoption and promote farmers' co-operatives.
- Carrying out an impact assessment of agricultural-support programmes, considering economic, environmental and social objectives would help guide further improvements. Some current programmes have broad scope and are implemented through a bundle of policy instruments with unclear impact.
- Colombia's efforts in climate-change adaptation concentrate on emergency relief, planning, and strategies. However, more can be done to make the sector more climate resilient. Defining specific actions for climate-change adaptation as part of existing policy frameworks and guidelines will help to foster long-term sector resilience.

Development of support to agriculture

Figure 9.1. Colombia: Development of support to agriculture

Figure 9.1A. Colombia: Producer Support Estimate and its composition

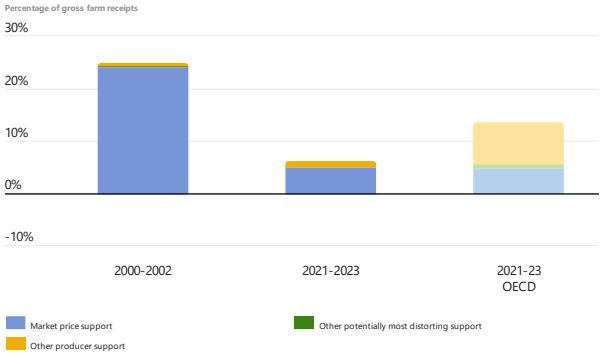


Figure 9.1B. Colombia: Ratio of producer to border price

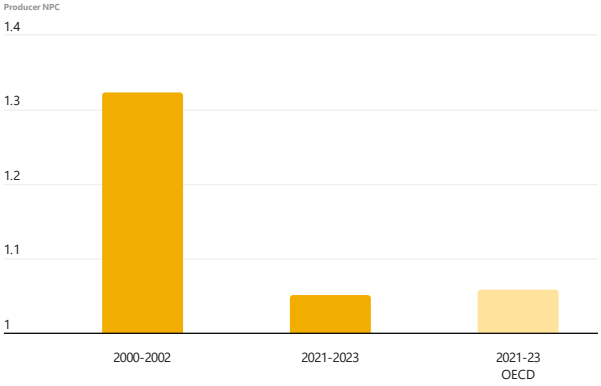


Figure 9.1C. Colombia: General Services Support Estimate and its composition

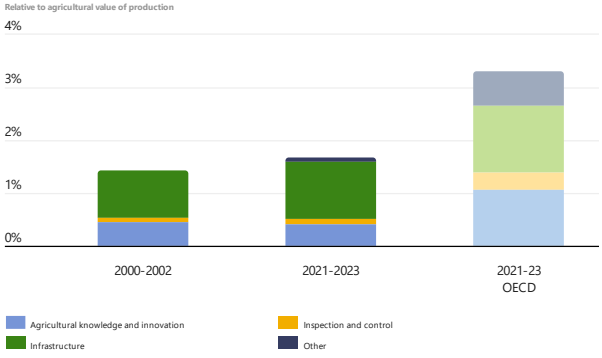
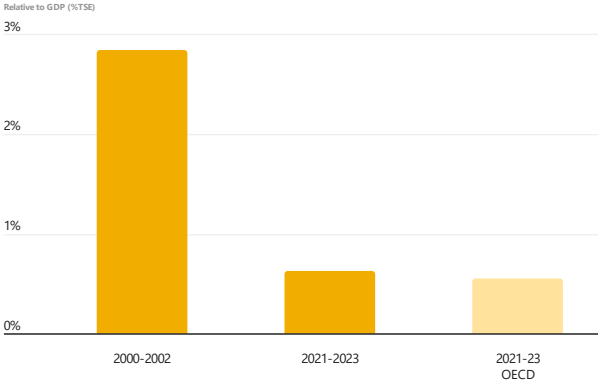
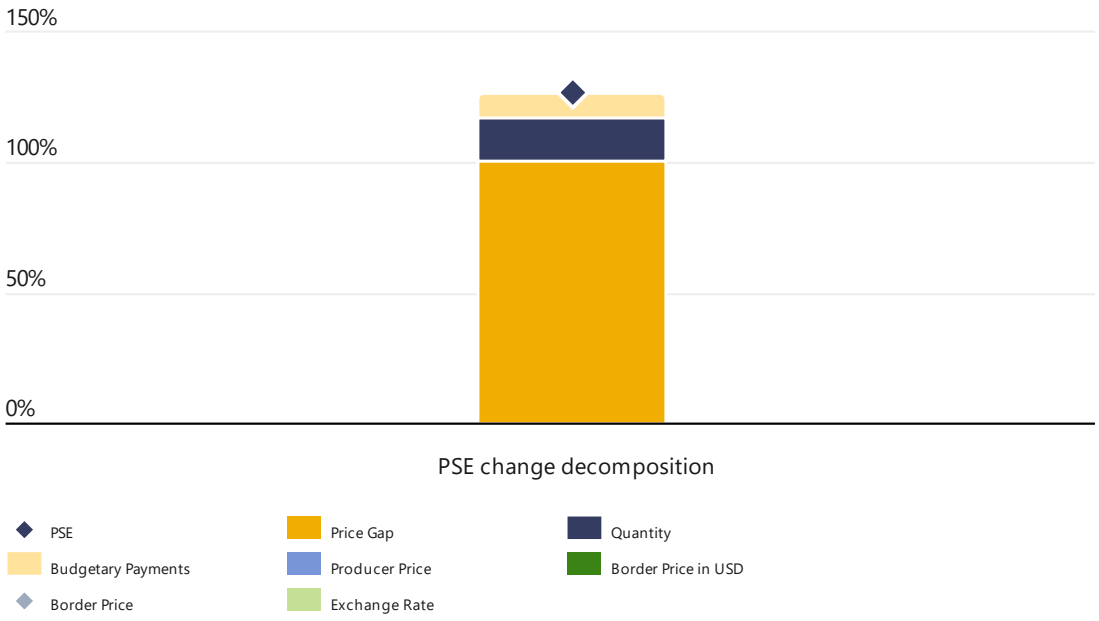


Figure 9.1D. Colombia: Total Support Estimate



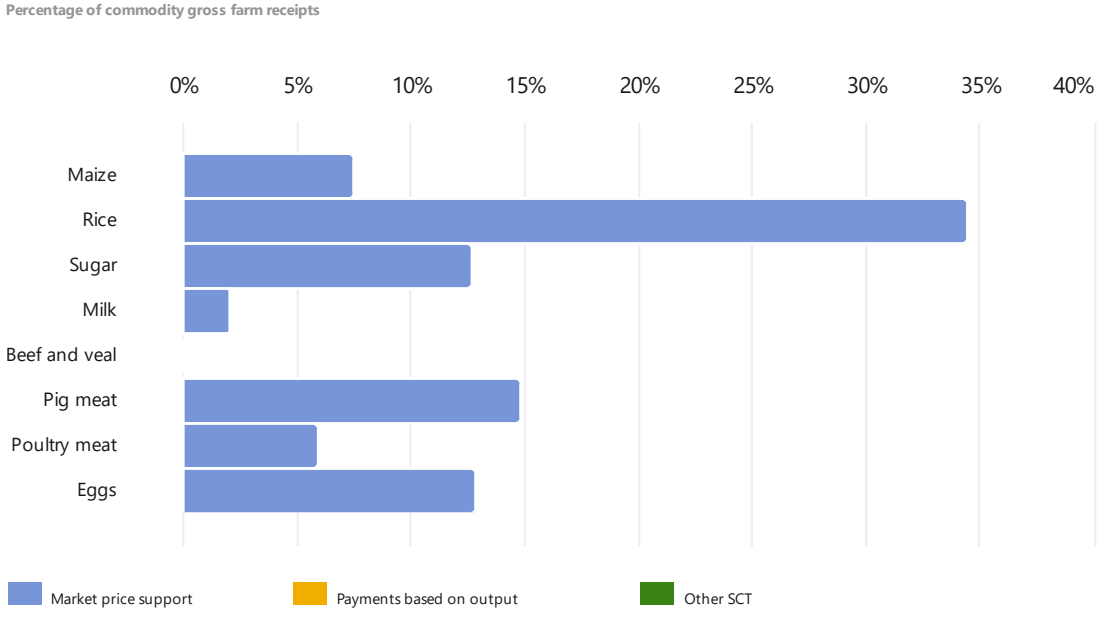
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Figure 9.2. Colombia: Drivers of the change in PSE, 2022 to 2023



Note: % change of nominal Producer Support Estimate expressed in national currency. The producer price change and the border price change are not calculated when both negative and positive market price support (MPS) occur at the commodity level for the previous year. Note that negative MPS estimates for livestock products may arise in cases of aligned product prices if there is positive MPS for feed commodities.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Figure 9.3. Colombia: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Table 9.1. Colombia: Estimates of support to agriculture

Million USD

	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**10 565**	**27 966**	**27 149**	**27 487**	**29 263**
of which: share of MPS commodities (%)	80.75	88.62	80.90	91.49	93.45
Total value of consumption (at farm gate)	**7 938**	**23 059**	**21 956**	**23 165**	**24 055**
Producer Support Estimate (PSE)	**2 630**	**1 692**	**1 013**	**1 257**	**2 805**
Support based on commodity output	2 544	1 335	671	948	2 385
Market price support[1]	2 544	1 335	671	948	2 385
Positive market price support	2 550	1 376	751	989	2 386
Negative market price support	-6	-41	-80	-41	-1
Payments based on output	0	0	0	0	0
Payments based on input use	86	357	342	309	419
Based on variable input use	53	228	199	193	293
with input constraints	36	196	163	166	257
Based on fixed capital formation	16	59	68	51	58
with input constraints	3	23	30	23	17
Based on on-farm services	17	69	75	65	68
with input constraints	5	44	45	44	44
Payments based on current A/An/R/I, production required	0	0	0	0	0
Based on Receipts / Income	0	0	0	0	0
Based on Area planted / Animal numbers	0	0	0	0	0
with input constraints	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	0	0	0	0	0
With variable payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
With fixed payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
Payments based on non-commodity criteria	0	0	0	0	0
Based on long-term resource retirement	0	0	0	0	0
Based on a specific non-commodity output	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0
Miscellaneous payments	0	1	0	0	1
Percentage PSE (%)	**24.96**	**6.09**	**3.68**	**4.52**	**9.45**
Producer NPC (coeff.)	**1.32**	**1.05**	**1.03**	**1.04**	**1.09**
Producer NAC (coeff.)	**1.33**	**1.06**	**1.04**	**1.05**	**1.10**
General Services Support Estimate (GSSE)	**154**	**474**	**515**	**270**	**637**
Agricultural knowledge and innovation system	49	117	274	24	53
Inspection and control	9	33	33	27	40
Development and maintenance of infrastructure	95	299	187	206	505
Marketing and promotion	0	24	21	13	39
Cost of public stockholding	0	0	0	0	0
Miscellaneous	1	0	0	0	1
Percentage GSSE (% of TSE)	**5.51**	**21.53**	**33.72**	**17.71**	**18.52**
Consumer Support Estimate (CSE)	**-2 318**	**-1 504**	**-904**	**-1 119**	**-2 490**
Transfers to producers from consumers	-2 087	-1 259	-678	-891	-2 207
Other transfers from consumers	-248	-254	-233	-237	-293
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	16	9	7	9	9
Percentage CSE (%)	**-29.49**	**-6.64**	**-4.12**	**-4.83**	**-10.35**
Consumer NPC (coeff.)	**1.42**	**1.07**	**1.04**	**1.05**	**1.12**
Consumer NAC (coeff.)	**1.42**	**1.07**	**1.04**	**1.05**	**1.12**
Total Support Estimate (TSE)	**2 784**	**2 166**	**1 528**	**1 527**	**3 443**
Transfers from consumers	2 335	1 513	911	1 128	2 499
Transfers from taxpayers	697	908	850	636	1 236
Budget revenues	-248	-254	-233	-237	-293
Percentage TSE (% of GDP)	**2.85**	**0.64**	**0.48**	**0.44**	**0.95**
Total Budgetary Support Estimate (TBSE)	**240**	**832**	**858**	**579**	**1 058**
Percentage TBSE (% of GDP)	**0.25**	**0.24**	**0.27**	**0.17**	**0.29**
GDP deflator (2000-02 = 100)	**100**	**303**	**271**	**309**	**330**
Exchange rate (national currency per USD)	**2 297.16**	**4 109.87**	**3 744.32**	**4 258.61**	**4 326.69**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for Colombia are: maize, rice, sugar, milk, beef and veal, pig meat, poultry, eggs, bananas, plantains, coffee, palm oil and flowers.

Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

Agricultural policy in Colombia is shaped by Agricultural and Rural components under the National Development Plan (PND). The PND 2022-2026, "Colombia World Power of Life," prioritises sustainable rural development by:

- formalising land tenure and land reform
- strengthening agricultural planification processes
- providing access to productive factors such as irrigation, extension, financing, technology, connectivity
- promoting associative models for small-scale producers and productive inclusion
- developing better supply chains and reducing intermediation
- establishing climate smart adaptation strategies in agricultural production.

Preferential interest rates for agricultural credit, for working capital, marketing and investment, are provided through the Financing Fund for the Agricultural Sector (FINAGRO), a second-tier bank. In addition, the National Agricultural Credit Commission (CNCA), which is the governing body of the National Agricultural Credit System (SNCA), annually defines the financing policy for the agricultural sector, highlighting the instruments of special lines of credit and microcredit (LEC/LEM), incentive for rural capitalisation (ICR), the agricultural guarantee plan (FAG) and the agricultural risk management plan, which is fully operated through the agricultural insurance incentive (ISA), for which the government subsidises up to 95% of the cost of insurance premiums for small-scale producers.

Input subsidies are aimed at farm improvements. Through programmes like the Integral Projects for Agricultural Development (Entrepreneurial Agriculture) subsidies are given mostly for investments related to drainage and on-farm irrigation infrastructure, other fixed capital formation, as well as for technical assistance. The Fund for Agricultural Promotion (*Fondo de Fomento Agropecuario*) provides co-financing for projects to strengthen technology transfer, research, and modernisation activities, and to improve productive, physical, and social infrastructure in rural areas. The Productive Alliances programme focuses on small-scale farmers and provides subsidies for various inputs. Farmers also benefit from subsidies for the services of animal and plant health control.

The Andean Price Band System (SAFP) establishes a floor price (lower band) and a ceiling price (higher band) for a list of products. When the international price is below the floor price, an additional import duty is imposed, and when the international price exceeds the ceiling price, a tariff reduction is granted. The SAFP applies to 13 commodities (rice, barley, yellow maize, white maize, soybeans, wheat, unrefined soybean oil, unrefined palm oil, unrefined sugar, refined sugar, milk, chicken cuts, and pig meat as well as to the first stage processed products derived from these commodities. However, over the years, the SAFP has been suspended for rice, milk and white maize and replaced by tariffs, which have been reduced or suppressed due to COVID-19; as well as the SAFP for wheat which has been temporarily suspended.

Price Stabilisation Funds (FEPs) also use price bands to stabilise farm income. This fund provides payments to producers when the selling price of a product falls below a minimum (floor price). When the sales price of a product is higher than an established maximum (ceiling price), producers contribute to the FEPs. FEPs are funded through producer own resources and function as price-setting mechanisms that raise domestic producer prices above international prices. The ceiling and floor prices are established by a council formed by stakeholders and government based on selected international prices for each product, while payments and charges to producers are based on a reference market price. FEPs are financed and administered by producer associations and apply to seven products, including cotton, cocoa, palm oil, sugar, beef, and milk.

Public investments in general services focus on farm restructuring, agricultural research and extension services, as well as inspection and control. Moreover, efforts under the framework of the Peace Agreement on the provision of rural public goods and services have increased the amount of land with formal tenure, improved irrigation-drainage, and provided technical assistance.

Innovation for sustainable productivity growth

Colombia's Integral Rural Reform includes sustainable productivity as one of its key components. To enhance land productivity, the government provides the productive factors necessary for agricultural production such as irrigation equipment, and extension services, but also rural goods and services such as electricity, drinking water, housing, education, health, roads, or digital connectivity. Moreover, key focus areas include:

- promoting associative models that facilitate collective efforts and knowledge sharing among producers
- food research programmes and initiatives that explore new high-nutrient products
- strengthening production and marketing schemes by directing efforts toward enhancing production systems and optimising marketing strategies (MADR, 2024[1]).

The National Agricultural Innovation System (SNIA) serves as a framework for co-ordinating and fostering research, development, and innovation activities for the sustainability of the agricultural sector. One of its primary focuses is the promotion of territorial agricultural innovation systems, designed to address the specific needs and characteristics of each region and to ensure that the solutions developed are sustainable, effective, and directly applicable to the distinct challenges faced by rural areas. Additional co-ordination efforts encourage collaboration among universities, research centres, the private sector, and farmers, to accelerate the innovation process, to efficiently implement technological processes and sustainable advancements, which directly benefit rural communities.

Departmental agricultural extension plans complement the SNIA. These plans set priorities for the public agricultural extension services based on the sustainability needs and characteristics of each territory. This targeted approach helps to align policies and actions with local conditions and the specific requirements of rural communities in different regions.

The Colombian Agricultural Research Corporation (AGROSAVIA) is the main institution related to agricultural innovation. It is a decentralised public entity that works on the generation of scientific knowledge and agricultural technological development through scientific research, adaptation of technologies, transfer and advice. Extension services are guided by the Public Services of Agricultural Extension (SPEA), and an important part of extension services in the country is provided by the Rural Development Agency monitor by the Ministry of Agriculture. Technical assistance is also provided through programmes implemented by different public agencies and private companies (MADR, 2024[1]).

Recent policy developments

Domestic policy developments in 2023-24

In 2023, the Integral Rural Reform continues to strengthen under the framework of the Agreement for the Termination of the Conflict. With the modifications in articles 51 and 52 of Law 2294 of 2023 and Decree 1406 of 2023, the reach of the agrarian reform goes beyond land issues and aims at improving the quality of life of rural people in general, and in particular marginalised populations, while guaranteeing territorial rights. This reform is based on land democratisation, anchored in access, formalisation, and regularisation of property rights. Its strategies include the development of productive projects involving

technology adoption, irrigation, agricultural extension, financing, and infrastructure; which aims to facilitate access to productive land and financial instruments. In 2023, additionally, intersectoral strategies with territorial impact were designed and implemented to enhance economic productivity, social convergence, and the execution of National Sectoral Plans for regional integration. The reform encompasses the entire rural population, including producer communities, black communities, Raizales, and indigenous peoples. It also emphasises gender mainstreaming, ensuring equal conditions and rights for the rural woman, and aims to promote total peace with a territorial focus (MADR, 2024[1]).

In general, the Integral Rural Reform focuses on two major aspects. The first one is the agrarian reform, which emphasises land formalisation and distribution, as well as the creation of a comprehensive cadastre. It also involves creating an agrarian and rural jurisdiction with a rural justice tribunal specifically focused on land matters. The land reform seeks restitution of 3 million ha of agricultural land, and the formalisation of 7 million ha. As of 31 December 2023, 451 459 ha were formalised, and 59 349 ha were under land restitution order. In total as of March 2024, 1 107 420 ha have been formalised or restituted. The second aspect is the sustainable productivity that aims to enhance land productivity and foster inclusivity, which was described in the previous section (MADR, 2024[1]).

A third aspect of the Integral Rural Reform is the territorial component of created in 2023. This component collaboratively identifies the needs these need of each region, allowing institutions to formulate guidelines and policies that align with the realities of each area. This approach promotes institutional efficiency and impact across the entire country.

The national system of agrarian reform and rural development, which is a co-ordination mechanism, has been reactivated to help implement policy interventions at the national and territorial levels. As of 2023, this system comprises eight subsystems, facilitating co-ordination among national government entities involved in rural development. This restructuring aims to enhance impact at the territorial level and effectively advance the overarching goals of the comprehensive rural reform.

The Public Policy for Reindustrialisation (CONPES 4129 of 2023) was approved in the context of the strategy to promote a knowledge-based, productive, and sustainable economy, which involves fostering the production of goods and services with higher added value. This policy aims to transform Colombia's productive sectors to address the challenges posed by climate change, rapid technological transformation, and a shifting geopolitical landscape. Notably, it places significant emphasis on agro-industrialisation. New guidelines, created in 2023, for enhancing value-added generation focus on:

- diversification by encouraging a broader range of products and services
- strengthening value chains by fostering stronger linkages among various stages of production and supply chain
- territorial integration by deepening connections within specific regions
- engaging in international trade and participating in global value chains.

To achieve these goals, as well as those of the land reform, Colombia is redirecting and increasing budgetary allocations to invest in human development by providing more technical assistance to farmers, facilitating access to financing by providing credit at preferential rates, improving regulatory frameworks, and promoting innovation. These efforts aim to contribute to a more robust and sustainable industrial landscape (MADR, 2024[1]).

Policies to facilitate climate change adaptation in agriculture

The Sectoral plan for anticipatory actions, preparedness, and response to El Niño phenomenon 2023-24 was established in 2023. The plan has the following components:

- Lessons learned from previous impacts caused by climate variability phenomena in the agricultural sector.

- Assessing the possible influence of climate variability on the agricultural sector, including livestock, fisheries, aquaculture, agriculture, and forestry. This assessment also considers impacts at the territorial and ethnic community levels.
- Identifying specific impacts on women and ethnic communities and addressing food security risks.

Trade policy developments in 2023-24

In 2023 and 2024, the Andean Price Band System remains suspended for some products, on which import tariffs are operating: rice (80%), milk powder (98%), white corn (40%), and whey (94%). In addition, import tariffs of wheat and peanut were reduced to zero for two years, until December 2024. Colombia's suspension of import tariffs for 163 products that are part of the basic household basket expired in December 2023. Import tariffs on all agricultural inputs, including fertilisers were reduced to zero in 2022, to mitigate domestic price increases. This measure remains in force until May 2024, with the possibility to extend it to December 2024.

Policy context

Key economic and agricultural statistics

Colombia is the only South American country that borders both the Atlantic and Pacific Oceans. The country has a surface of 1.1 million km2 and has abundant agricultural land and fresh water, is mega-biodiverse and rich in natural minerals and fossil fuels. Agriculture continues to be an important sector for the economy – accounting for 14.6% of employment and 8.3% of GDP in 2022. Colombia has a dualistic distribution of land ownership where traditional subsistence smallholders co-exist with large-scale commercial farms. The sector makes a significant contribution to the country's exports, with agro-food exports accounting for up to 20% of all exports in 2022 (Table 9.2).

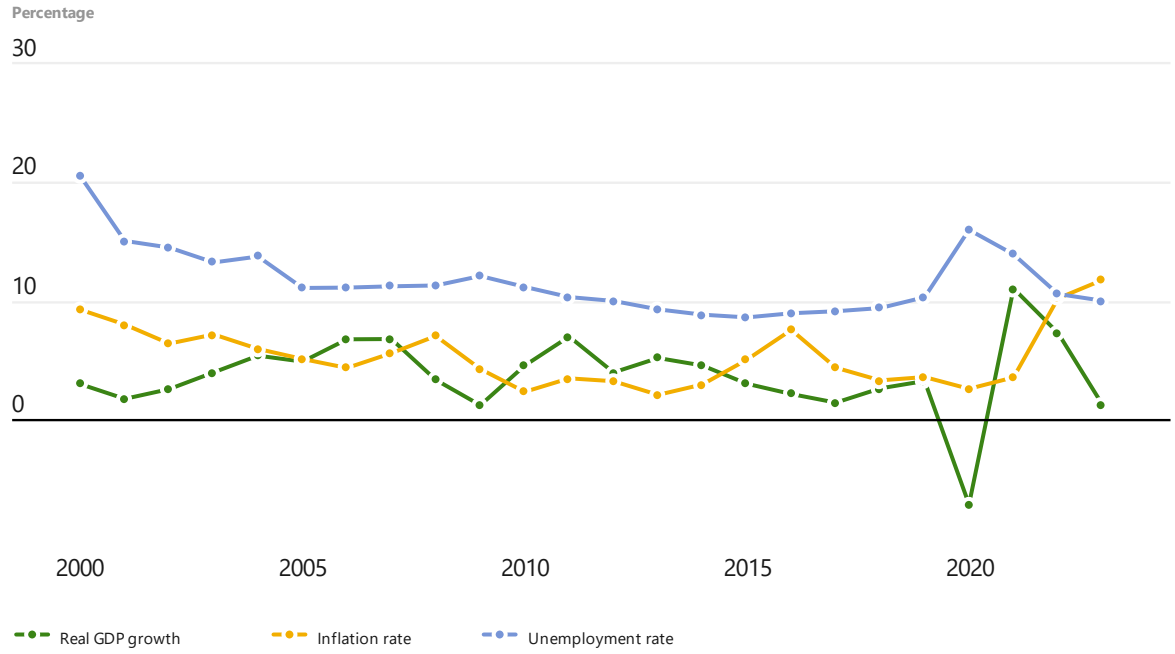
Table 9.2. Colombia: Contextual indicators

	Colombia		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	265	1 052	0.7%	0.8%
Population (million)	38	50	0.9%	1.0%
Land area (thousand km²)	1 110	1 110	1.4%	1.3%
Agricultural area (AA) (thousand ha)	44 859	42 718	1.5%	1.5%
			All countries[1]	
Population density (inhabitants/km²)	35	46	52	64
GDP per capita (USD in PPPs)	6 753	20 287	9 363	25 965
Trade as % of GDP	12.5	19.6	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	8.3	8.3	2.9	3.8
Agriculture share in employment (%)	20.2	14.6	-	-
Agro-food exports (% of total exports)	22.3	19.9	6.4	8.0
Agro-food imports (% of total imports)	12.8	13.6	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	59	65	-	-
Livestock in total agricultural production (%)	41	35	-	-
Share of arable land in AA (%)	..	5	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

In 2023 Colombia's real GDP growth was only 1.2%. Employment, which had suffered from the pandemic, experienced an important recovery with unemployment falling to 9.98% from the 15.98% rate observed in 2020. Inflation continued to rise to 11.74% in 2023, up from 3.5% in 2021 (Figure 9.4).

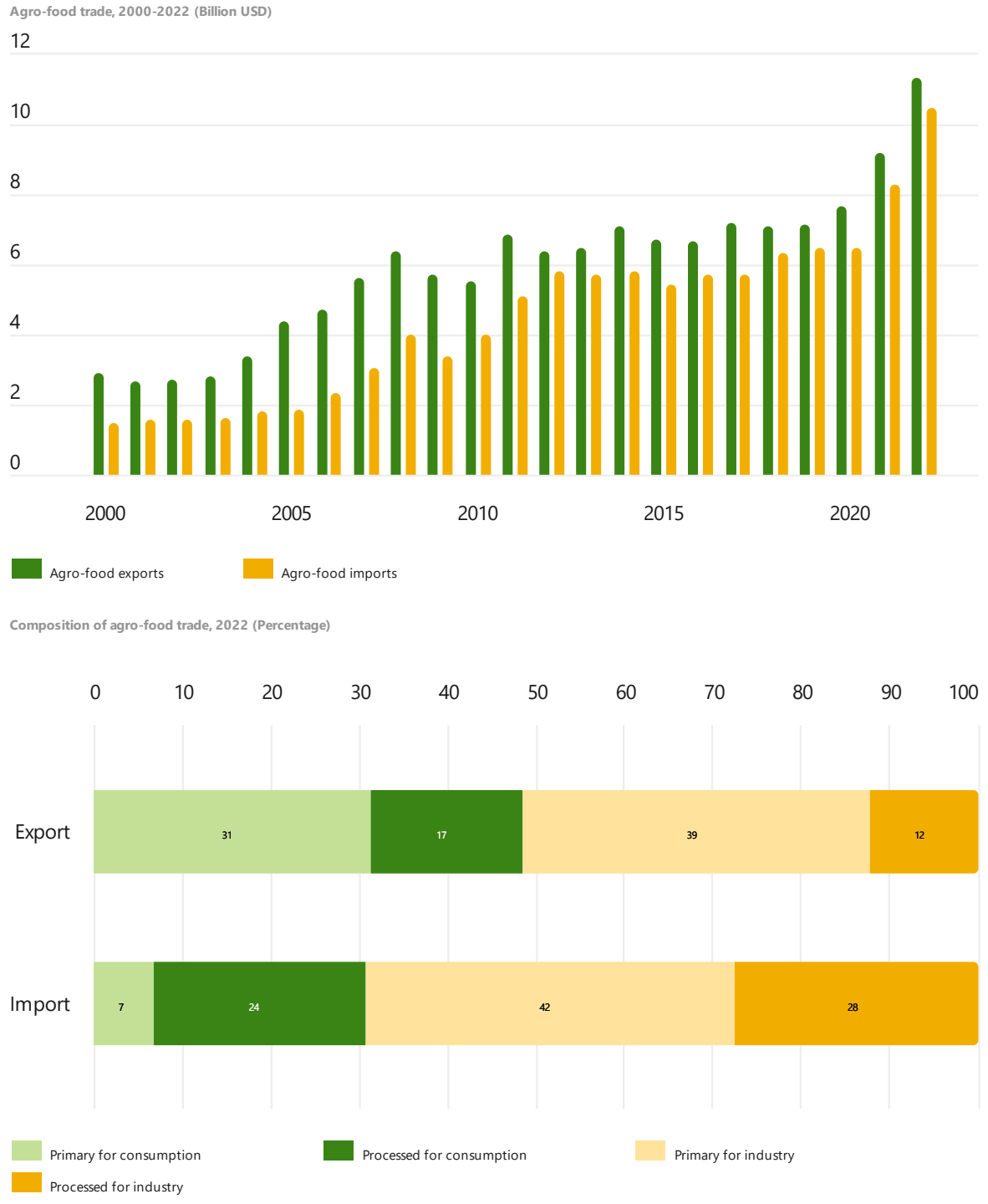
Figure 9.4. Colombia: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

Colombia continues to be a net exporter of agricultural and food products with a net surplus of USD 860 million in 2022. For 2022, agro-food exports are almost equally split between those destined for final consumption (48%) and those that are sold as intermediate inputs (52%) for use in manufacturing sectors in foreign markets. In contrast, the majority of agro-food imports (70%) are in the form of intermediates for further processing in the country (Figure 9.5).

Figure 9.5. Colombia: Agro-food trade

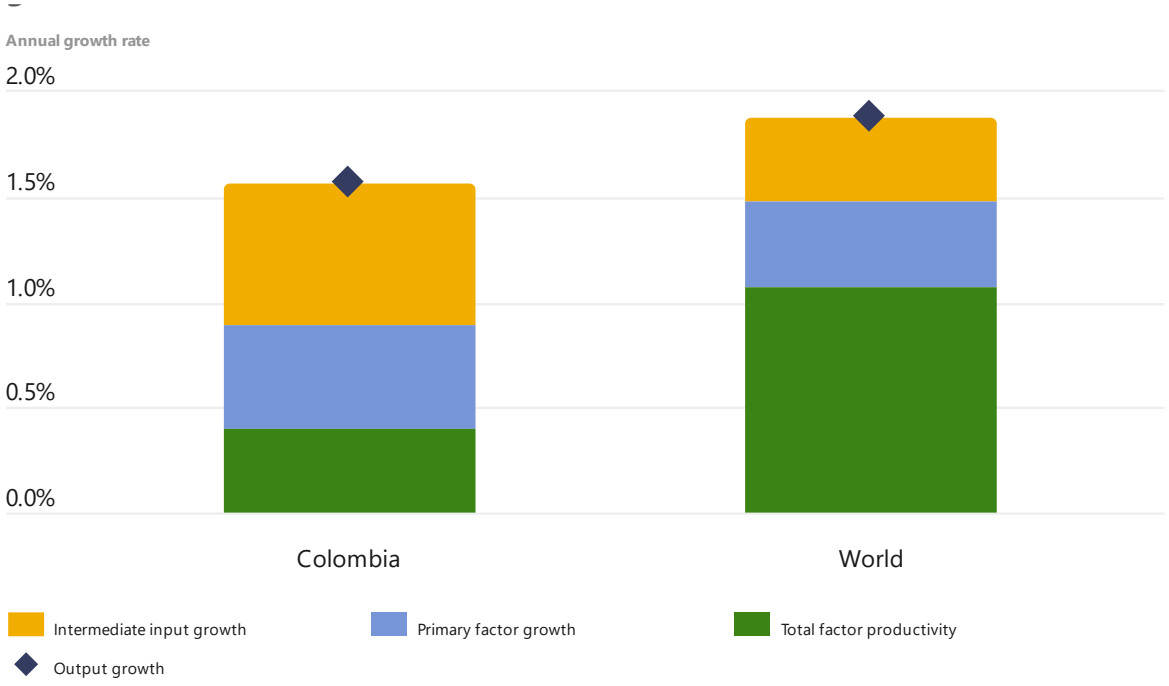


Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Colombia has witnessed an output growth of 1.57% for the period 2012-21. This growth is mostly due to intermediate input growth, which was 0.67% over the same period; primary production factors use growth (0.5%) and to a lesser extent rising due to Total Factor Productivity (TFP) with only 0.4% that contributed

to output growth. Agriculture is the main water user with a share of 59.4% total water use, above the OECD average. Furthermore, agriculture contributed with 31.4% of GHG emissions. In contrast, nitrogen balance (12.9) is much lower than the OECD average (28.2) (Figure 9.6 and Table 9.3).

Figure 9.6. Colombia: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Table 9.3. Colombia: Productivity and environmental indicators

	Colombia		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	0.9%	0.4%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	10.0	12.9	32.1	28.2
Phosphorus balance, kg/ha	5.8	8.4	3.3	2.3
Agriculture share of total energy use (%)[1]	5.9	1.5	1.7	2.0
Agriculture share of GHG emissions (%)	35.7	31.4	8.7	10.1
Share of irrigated land in AA (%)	..	6.0	-	-
Share of agriculture in water abstractions (%)	60.2	59.4	47.0	49.5
Water stress indicator	..	..	8.7	..

Note: * or closest available year.
1. Data are not directly comparable between time periods due to change in methodology in 2013.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

The agricultural sector has played an important role in Colombia's economic growth. Commercial agriculture began a phase of rapid expansion in the 1960s. Growth, especially in the 1960s and 1970s, was partly a response to policy incentives to mechanise and intensify the use of modern inputs, and partly a consequence of the sector's protection from imports. The coffee booms of the 1970s and the 1980s coincided with strong growth in agricultural and total GDP. Until the beginning of the 1990s, agriculture was the largest productive sector of Colombia. Over this period, import substitution policies were used, including tariffs, quantitative restrictions, state marketing enterprise, subsided credit and minimum prices (Anderson, K. and Valdes, A., 2007[2]).

At the beginning of the 1990s, Colombia experimented with more open trade. The government monopoly on agricultural marketing was eliminated and private banks were encouraged to lend to farmers and agricultural exporters. To diversify the markets for Colombian agro-food products, the government negotiated trade agreements with Mercosur, the United States, Central America, Chile, Canada, and the European Union (OECD, 2015[3]).

This economy-wide programme of trade liberalisation was combined with deregulated foreign exchange rates and labour markets. Quantitative trade restrictions were abolished, and import tariffs reduced and replaced by ad valorem tariffs. The role of IDEMA (*Instituto de Mercadeo Agropecuario*), the agricultural marketing institute that had a monopoly over grain imports, was reduced and its operation limited to poor areas with less access to markets. Minimum guaranteed prices were established for some staple commodities, with international prices used as a benchmark (Anderson, K. and Valdes, A., 2007[2]).

However, this liberalisation was too rapid for farmers to adjust, putting the sector in crisis. Then, towards the end of the 1990s, and under pressure from farmers, the government implemented policies to protect the sector and stabilise producer incomes in the face of price fluctuations in world markets. A price band system for six agricultural commodities, along with their substitutes and derivatives was introduced, covering 112 products in total. This eventually evolved into the Andean Price Band System (*Sistema Andino de Franjas de Precios* - SAFP) and incorporated more products. The construction of the price bands, which fixed the floor and ceiling prices, raised the protection of domestic goods against imports.

Moreover, the Price Stabilisation Funds (*Fondos de Estabilización de precios*, FEPs) originally created for cocoa and cotton, were expanded to also cover palm oil, sugar cane, beef, and milk. The FEPs make payments to producers when the selling price of a product falls below a minimum (floor) price. When the sales price of a product is higher than an established maximum (ceiling) price, producers contribute to the FEPs. While these funds currently do not represent government outlays, the government provided the initial capital for their set-up.

After 56 years of conflict between the government, paramilitary groups and guerrilla groups, a peace agreement was signed in 2016 by the government and the Revolutionary Armed Forces of Colombia (FARC). The peace negotiations resulted in an agreement with a common vision for rural development. It sets out a long-term plan for the sector focusing on the use of land and water resources, increased productivity and competitiveness, improved infrastructure and other public goods for the agricultural sector, and a redefined institutional architecture to design and implement policy (OECD, 2015[3]).

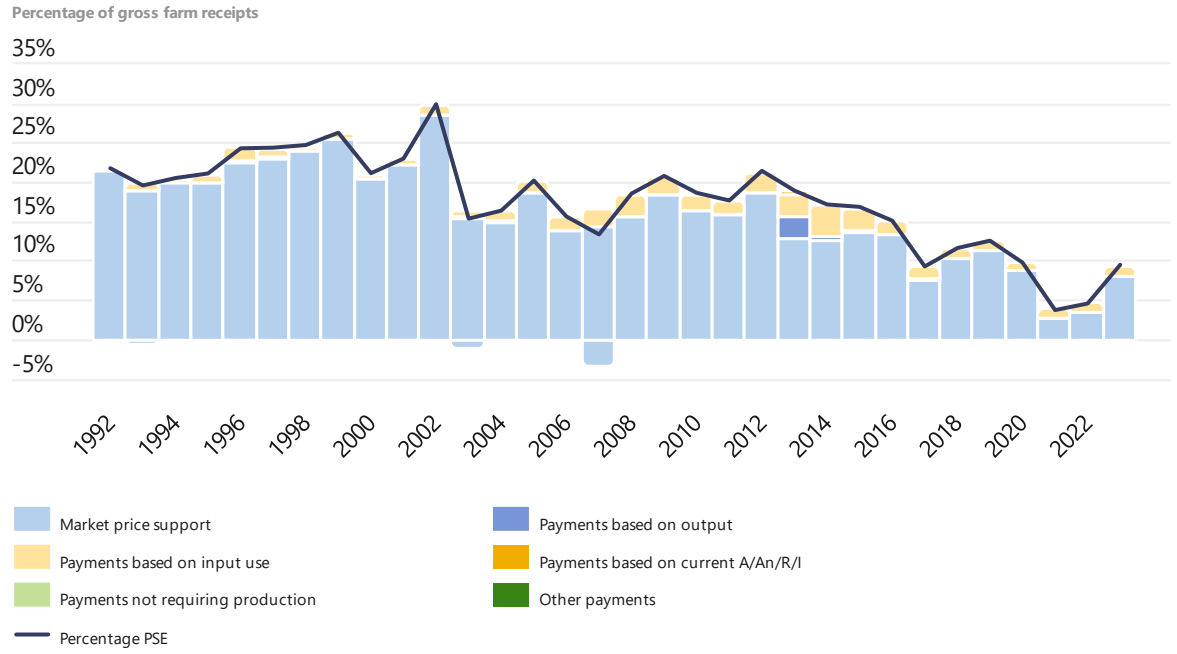
Since 2022, more emphasis has been put on land reform, sustainability productivity, rural and territorial development, as well as rural services such as digital coverage, rural roads, digital coverage, and housing.

Table 9.4. Colombia: Agricultural policy trends

Period	Broader framework	Changes in agricultural policies
Prior to 1990s	Import substitution policies	Tariffs on agricultural inputs and outputs Other border measures establish tariff rate quotas (TRQs) Minimum prices Export promotion and subsidies for traditional crops (coffee, sugar) State marketing agency (government purchases of agricultural products) Subsided agricultural credit Export taxes
1990-2013	Back and forth changes to trade liberalisation and measures to offset economic crisis Changes to trade liberalisation and some protection measures	Role of the state marketing company reduced and later increased for marketing cereals and oilseeds Reduction of tariffs for both agricultural outputs and inputs Export subsidies Several FTAs signed The price band system extends and becomes the Andean Price Band System covering in total 154 products and by-products Quantitative import restrictions created Direct payments introduced Expansion of price stabilisation funds to other crops
2013-2022	Peace negotiations and agreement	Focus on agricultural innovation and public goods Focus on productivity, competitiveness, and rural development Efforts to improve the land tenure system
2022-present	Agrarian reform Agricultural inequalities	Emphasis on land rights, land restitution, land access Emphasis on small-scale farmers Emphasis on sustainable productivity and territorial development

Colombia's support to agricultural producers relative to gross farm receipts changed little during 1992-2013 but trended downwards since 2014. Support is predominantly provided through market price support; however this support has sharply been reduced in 2021 and 2022 due to reduction of key import tariffs and the suspension of the Andean Price Band System for agricultural products as consequence of COVID-19 and the war, but PSE rebounded a bit in 2023. In terms of budget, since 2016 budgetary allocations have fallen considerably in both absolute and relative terms (Figure 9.7).

Figure 9.7. Colombia: Development of the PSE and its composition, 1992 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

References

Anderson, K. and Valdes, A. (2007), *Distortions to Agricultural Incentives in Latin America*, World Bank, Washington DC, http://documents.worldbank.org/curated/en/518211468170062688/Distortions-to-agricultural-incentives-in-Latin-America. [2]

MADR (2024), *Colombia's Descriptive Note on Public Policy Measures for Agriculture and Rural Development*. [1]

OECD (2015), *OECD Review of Agricultural Policies: Colombia 2015*, OECD Review of Agricultural Policies, OECD Publishing, Paris, https://doi.org/10.1787/9789264227644-en. [3]

10. Costa Rica

Main findings

Support to agriculture

Agricultural support for producers (Producer Support Estimate, PSE) in Costa Rica amounted to 3.7% of gross farm receipts in 2021-23, well below the OECD average and down from 8% in 2000-02. On average, 86% of producer support is in the form of market price support (MPS), potentially one of the most trade- and production-distorting forms of support. MPS is mainly generated through border measures (tariffs) and, until 2022, domestic reference prices. Products with market price support notably include rice, poultry meat, pig meat, and sugar. On average, border protection and price interventions raised producer prices by 3% relative to international prices in 2021-23.

Budgetary support to producers represented 0.5% of the 2021-23 gross farm receipts, mainly in the form of credit at preferential rates for the agricultural sector and subsidies for fixed capital formation directed mainly to small-scale farmers. This type of support is also provided for on-farm services, payments for environmental services and support to organic production.

General services spending (General Services Support Estimate, GSSE) was equivalent to 1.3% of the value of agricultural production in 2021-23, a small increase from 0.9% in 2000-02. Nevertheless, its share remains well below the OECD average. In 2021-23, GSSE expenditure was mainly allocated to the agricultural knowledge and innovation system (particularly extension services), inspection and control, and development and maintenance of irrigation and rural road infrastructure.

Total support to the sector (Total Support Estimate, TSE) relative to Gross Domestic Product (GDP) has declined over time, from 1.2% in 2000-02 to 0.4% in 2021-23, below the OECD average of 0.6%.

Key recent policy changes

The National System of Individual Identification and Traceability of Cattle was launched in January 2024. This system requires each animal to be registered and identified through ear tags and electronic transponders. Its purpose is to improve the health management of the bovine livestock herd and the safety of the food derived from it. The system will also help ensure that Costa Rica's beef and beef products meet the requirements of export markets.

The legal framework for the use of drone technology in agriculture was established in September 2023, and a programme to promote its use by providing small and medium-sized producer associations with drones and training on their use was subsequently started.

Two relevant trade developments took place in April 2024 when Costa Rica signed a Comprehensive Economic Partnership Agreement on Trade and Investment with the United Arab Emirates, and the Trade Association Agreement with Ecuador (signed in March 2023) passed the first step of legislative approval. Once these agreements enter into force, they will add to the network of regional trade agreements under which Costa Rica conducts most of its agro-food trade.

Assessment and recommendations

- Agricultural Total Factor Productivity (TFP) in Costa Rica has declined over the last decade. Performance in some agri-environmental indicators is also below average. The new Public Policy for the Agricultural Sector 2023-32 updates the country's approach to sustainable productivity growth. It presents an opportunity to address the current challenges, including through streamlining the sector's institutional governance and addressing infrastructure gaps. A first prioritisation of policy actions took place in 2023. Monitoring their implementation to review what worked well and where course corrections are needed will be key to ensure that the policy achieves its objectives.
- Innovation and knowledge transfer can help improve agricultural productivity and reduce the sector's environmental footprint. Recent efforts, such as the development of more resistant seed varieties and the improvement of INTA's laboratory facilities and technical capabilities to promote mitigation actions are welcome, but achieving an overall improvement in productivity and sustainability will require a sector-wide effort to enhance the agricultural innovation system.
- Following the 2022 reform that eliminated the minimum reference price for rice and lowered its import tariff, the government must ensure the implementation of other measures included in the Rice Path policy reform package to promote a transition to more sustainable and resilient rice production and protect the livelihoods of small-scale farmers, including technical assistance and actions to use water more efficiently and reduce the use of agrochemicals.
- Support to general services, including investments in the innovation system, continues to be below the OECD average. It is essential to strengthen public investment and create incentives for private investment in innovation and knowledge transfer. Promoting foreign investment in agricultural research, development and innovation − including through linkages with actors already established in the country − and incentivising collaboration amongst foreign and local companies, research institutions and farmers, could help fill the existing gaps.
- The contribution of agriculture to Costa Rica's GHG emissions is almost twice the OECD average. This and other agri-environmental challenges should be addressed with more urgency. The agricultural Nationally Appropriate Mitigation Actions (NAMAs) currently in place have achieved some emission reductions in the coffee and livestock sectors. At the same time, the implementation of new measures for other sectors is often contingent on the availability of international funding. The government should prepare a plan that considers alternatives to implement these actions in case external funds are not available or sufficient. Advancing in the implementation of NAMAs for other important agricultural activities could further mitigate GHG emissions and promote the adoption of good agricultural practices.

Development of support to agriculture

Figure 10.1. Costa Rica: Development of support to agriculture

Figure 10.1A. Costa Rica: Producer Support Estimate and its composition

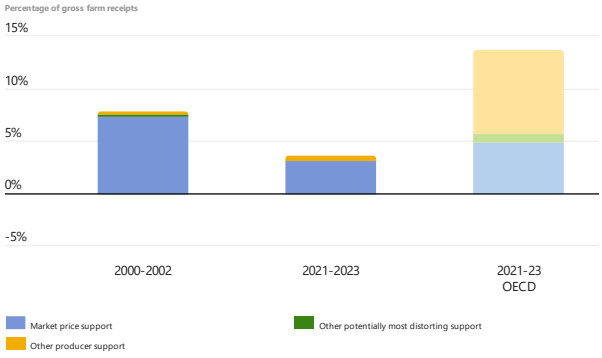


Figure 10.1B. Costa Rica: Ratio of producer to border price

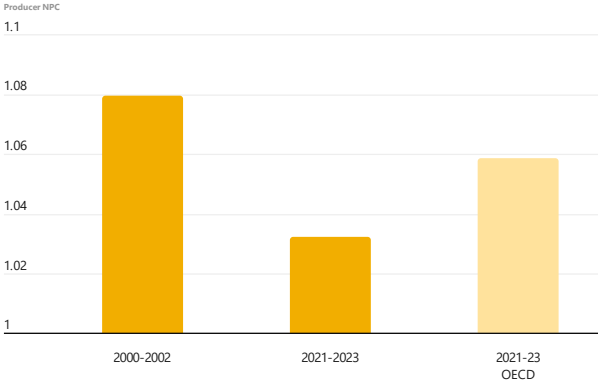


Figure 10.1C. Costa Rica: General Services Support Estimate and its composition

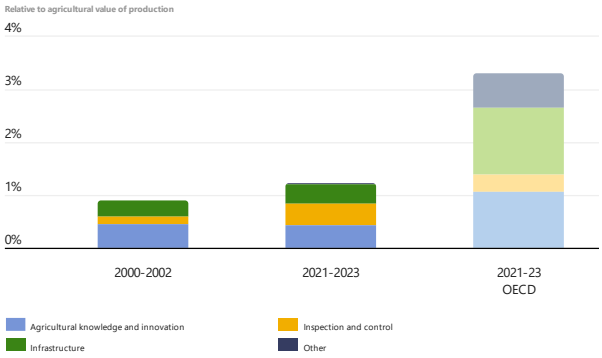
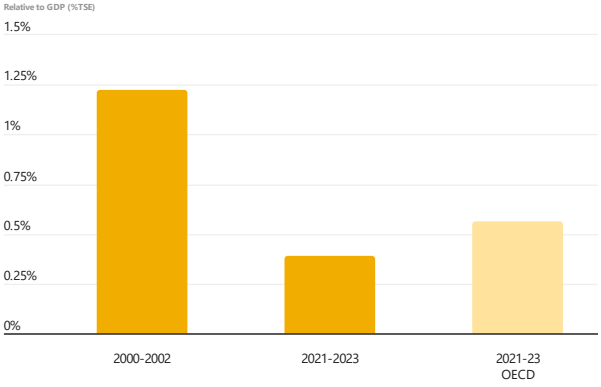
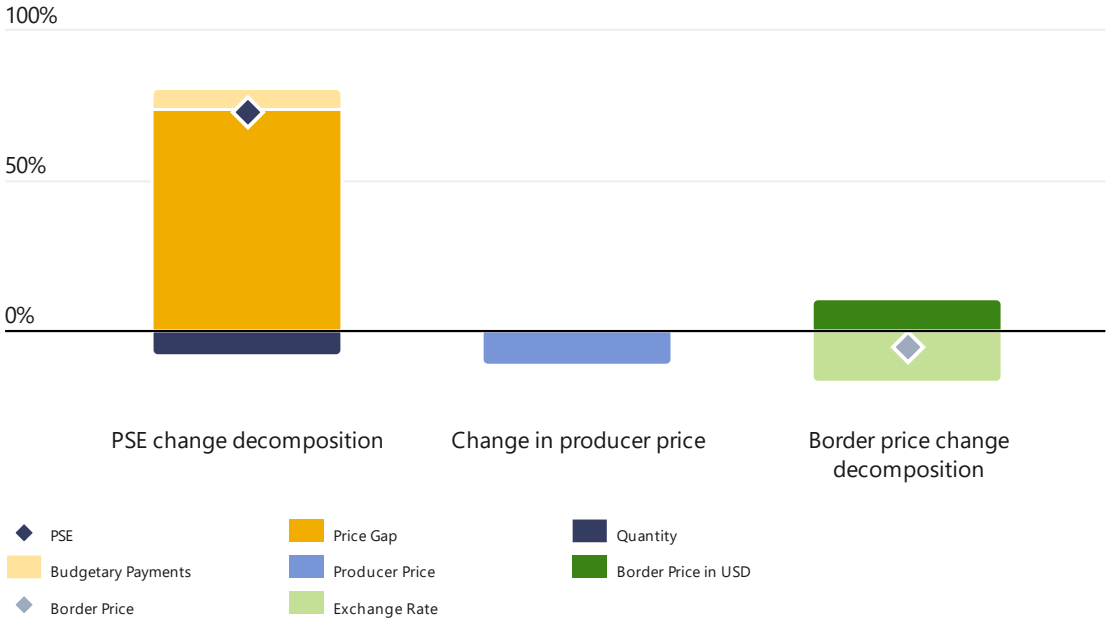


Figure 10.1D. Costa Rica: Total Support Estimate



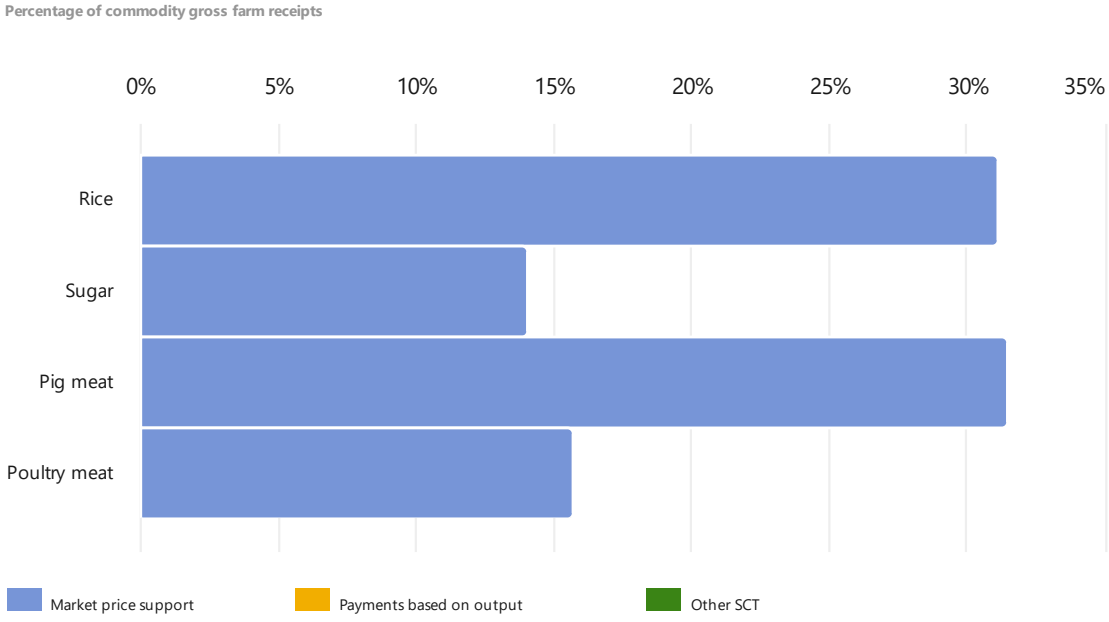
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 10.2. Costa Rica: Drivers of the change in PSE, 2022 to 2023



Note: % change of nominal Producer Support Estimate expressed in national currency.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 10.3. Costa Rica: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Table 10.1. Costa Rica: Estimates of support to agriculture

Million USD

.	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**2 209**	**5 907**	**5 402**	**5 585**	**6 733**
of which: share of MPS commodities (%)	79.20	81.70	83.85	84.72	76.52
Total value of consumption (at farm gate)	**1 114**	**2 625**	**2 340**	**2 505**	**3 030**
Producer Support Estimate (PSE)	**175**	**220**	**224**	**142**	**293**
Support based on commodity output	164	188	196	117	252
Market price support[1]	164	188	196	117	252
Positive market price support	164	188	196	117	252
Negative market price support	0	0	0	0	0
Payments based on output	0	0	0	0	0
Payments based on input use	10	30	27	24	39
Based on variable input use	4	13	10	9	20
with input constraints	1	13	10	9	20
Based on fixed capital formation	1	7	7	6	8
with input constraints	0	1	1	1	1
Based on on-farm services	5	10	10	9	11
with input constraints	3	0	0	0	0
Payments based on current A/An/R/I, production required	0	0	0	0	0
Based on Receipts / Income	0	0	0	0	0
Based on Area planted / Animal numbers	0	0	0	0	0
with input constraints	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	0	0	0	0	0
With variable payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
With fixed payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
Payments based on non-commodity criteria	1	2	2	1	2
Based on long-term resource retirement	0	2	2	1	2
Based on a specific non-commodity output	0	0	0	0	0
Based on other non-commodity criteria	1	0	0	0	0
Miscellaneous payments	0	0	0	0	0
Percentage PSE (%)	**7.90**	**3.66**	**4.13**	**2.54**	**4.32**
Producer NPC (coeff.)	**1.08**	**1.03**	**1.04**	**1.02**	**1.04**
Producer NAC (coeff.)	**1.09**	**1.04**	**1.04**	**1.03**	**1.05**
General Services Support Estimate (GSSE)	**20**	**74**	**74**	**66**	**82**
Agricultural knowledge and innovation system	10	27	27	25	28
Inspection and control	3	24	23	22	26
Development and maintenance of infrastructure	7	22	23	18	26
Marketing and promotion	0	1	1	1	1
Cost of public stockholding	0	0	0	0	0
Miscellaneous	0	0	0	0	0
Percentage GSSE (% of TSE)	**10.47**	**25.42**	**24.79**	**31.74**	**21.81**
Consumer Support Estimate (CSE)	**-189**	**-235**	**-248**	**-177**	**-280**
Transfers to producers from consumers	-156	-173	-183	-104	-232
Other transfers from consumers	-34	-62	-65	-74	-48
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	0	0	0	0	0
Percentage CSE (%)	**-16.93**	**-8.92**	**-10.62**	**-7.08**	**-9.24**
Consumer NPC (coeff.)	**1.20**	**1.10**	**1.12**	**1.08**	**1.10**
Consumer NAC (coeff.)	**1.20**	**1.10**	**1.12**	**1.08**	**1.10**
Total Support Estimate (TSE)	**195**	**294**	**298**	**208**	**374**
Transfers from consumers	189	235	248	177	280
Transfers from taxpayers	40	121	115	105	142
Budget revenues	-34	-62	-65	-74	-48
Percentage TSE (% of GDP)	**1.23**	**0.40**	**0.46**	**0.30**	**0.43**
Total Budgetary Support Estimate (TBSE)	**32**	**105**	**103**	**91**	**123**
Percentage TBSE (% of GDP)	**0.20**	**0.14**	**0.16**	**0.13**	**0.14**
GDP deflator (2000-02 = 100)	**100**	**377**	**362**	**385**	**384**
Exchange rate (national currency per USD)	**331.77**	**602.57**	**621.35**	**644.77**	**541.61**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for Costa Rica are: rice, sugar, milk, beef and veal, pig meat, poultry, bananas, coffee, palm oil and pineapple.

Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

General policy direction

The main guidance for agricultural policy in Costa Rica was updated in January 2023 through the adoption of the **Public Policy for the Agricultural Sector 2023-32**. The policy includes actions oriented to increase the sector's productivity, sustainability, resilience, and adaptation to climate change, to improve the international competitiveness of Costa Rican products, create employment and improve living conditions in rural areas (Ministerio de Agricultura y Ganadería, 2023[1]). It has four major action areas:

- Modernising and strengthening the public institutions governing the sector and improving their co-ordination, using technology to simplify procedures and improve regulations.
- Improving competitiveness through the availability of information for producers and decision-makers, better infrastructure and plant and animal health services, and improved access to financing and insurance.
- Improving productivity and sustainability through the promotion of good agricultural practices and technologies that optimise resource use, the development of economic incentives for producers who implement actions that contribute to the decarbonisation goals, the implementation of the National Adaptation Plan for agriculture, and the promotion of research and knowledge transfer.
- Improving value added and marketing channels through the promotion of value addition and production linkages, identifying new market niches, and developing physical and virtual marketing channels. This area includes a food and nutritional security component seeking to promote access and availability of balanced foods for the population, and actions for waste management and use.

The **National Seed Policy for 2017-30** is implemented by the National Seed Office with the participation of stakeholders from the seed production sector. Its strategic actions include developing seed varieties adapted to local conditions, ensuring the availability of quality seeds, promoting knowledge transfer through extension services, promoting the local production and export of seeds, and ensuring security in the supply of seeds.

Market and trade policies

Costa Rica uses border measures, including tariffs and sanitary and phytosanitary (SPS) measures, on imports of agricultural goods. The average applied most-favoured-nation (MFN) tariff on agricultural imports in 2023 was 11.5%, above the 4.6% faced by non-agricultural products. Certain sectors face significantly higher MFN average rates, such as dairy (45.6%), animal products (20.8%) and sugars (18.9%) (World Trade Organization, 2024[2]). Relevant reforms took place in 2022 with the elimination of the reference price and the reduction of import tariffs for rice.

Costa Rica has entered into 16 regional trade agreements (RTAs) with 52 trading partners[1] across the world. Two additional trade agreements have been concluded but are not yet in force. Most of Costa Rica's trade is conducted under these agreements, with RTA partners particularly important for agro-food trade. In 2020-22, 95% of agro-food exports and 90% of imports were with RTA partners, compared with 94% of exports and 86% of imports for all goods (WITS, 2024[3]).

An important programme to promote agricultural exports is **DESCUBRE**, operated through a public-private partnership led by the Ministries of Agriculture and Foreign Trade and the export promotion agency PROCOMER. DESCUBRE links farmers to export markets and value chains and promotes investments in rural and coastal areas. Its activities include providing seed capital and technical assistance to help small producers become providers of exporting companies in selected agro-food value chains.

Budgetary and financial instruments

Budgetary policy instruments predominantly focus on providing general services to agriculture, including extension services, research and development (R&D), and plant and animal health services, with a significant emphasis on environmental protection. Farmers receive a number of specific payments and subsidies, including implicit subsidies through credit at preferential interest rates, and some subsidies for fixed capital formation mostly directed to small-scale farmers.

The National Institute for Innovation and Transfer of Agricultural Technology (INTA) manages agricultural research, development and innovation. Together with the MAG's National Directorate of Agricultural Extension, INTA also operates technology transfer and extension services to farmers. The National Animal and Health Service (SENASA) and the National Phytosanitary Service (SFE) are in charge of animal and plant health services.

Agri-environmental policies

The **Payment for Environmental Services Programme** provides financial compensation to small and medium-sized agricultural or livestock producers who plant trees interspersed with crops or pastures. This programme seeks to maintain, recover, and develop forest ecosystems, increase carbon sequestration, improve the rural landscape and the environmental conditions of cattle farms, and generate additional economic resources through the sale of wood from the trees planted.

The **Recognition of Benefits for Good Agricultural and Livestock Practices** programme grants a monetary incentive to agricultural producers, covering 20% to 30% of investments with a positive environmental effect, such as hedgerows, fodder banks, biodigesters, or organic waste-treatment systems. The **Recognition of Organic Environmental Benefits** programme provides direct payments to producers that are certified organic or in transition, provided as a base amount per year for a maximum of three years. These programmes are managed by the Ministry of Agriculture.

Irrigation policies are managed by the National Groundwater, Irrigation and Drainage Service (SENARA), which builds and manages irrigation infrastructure. This agency carries out construction works for drainage and flood control in the regions with the highest levels of rainfall, manages groundwater resources, generates information on the availability, quantity, quality, and vulnerability of water in Costa Rica's aquifers, and provides training and assistance to producers for the proper use of water resources.

The **Ecological Blue Flag** (*Bandera Azul*) for the agricultural sector is a voluntary programme that recognises farmers who implement practices in areas such as water management, soil conservation, consumption of agricultural inputs, fossil fuels and electricity, and actions to improve climate adaptation and resilience.

Climate change mitigation and adaptation

Costa Rica has committed to a decarbonised economy with net-zero emissions in 2050 and established a goal for reducing greenhouse gas (GHG) emissions. The overall goal has two sub-targets: (1) maximum 9.11 $MtCO_2eq$ net emissions by 2030; and (2) maximum net emissions budget of 106.53 $MtCO_2eq$ in the period 2021-30.[2] While agriculture contributes almost 21% to overall GHG emissions, almost twice the OECD average, the country does not have an agriculture-specific target.

Nationally Appropriate Mitigation Actions (NAMAs) for agriculture have been developed in collaboration with public institutions, producer organisations, the private sector and academia, supported by international co-operation funds. Currently, two agricultural NAMAs are active for coffee and livestock. Costa Rica is developing additional NAMAs for other sectors such as sugarcane, bananas, and rice. However, their implementation is dependent on the availability of international co-operation funding.

Low-emission production of coffee under the NAMA has led to an aggregate reduction of 175 484 tCO_2eq between 2015 and 2022. The sector's baseline was updated in 2020 to 181 170 tCO_2eq. The average annual reduction in 2021-22 with respect to the baseline was of 28.6%. In the case of livestock, the cumulative mitigation[3] achieved between 2020 and 2023 was 246 000 tCO_2eq, with an average annual mitigation of 1.8% with respect to the sector's 2017 baseline (2.1 $MtCO_2eq$).

The **National Climate Change Adaptation Plan 2022-26** was presented in April 2022. Most actions for the agricultural sector are under its Axis 5, "Adapted and eco-competitive production systems". Some examples include: developing a strategy for rainwater-harvesting and irrigation technologies in productive agricultural systems; developing a programme for training and technology transfer in practices that strengthen resilience and promote ecosystem-based adaptation; and establishing a seed bank with crop varieties from different Costa Rican regions. Many of the actions are contingent on external funds.

Adaptation actions are implemented through the existing institutions and programmes, including those managed by the National Seed Office and the National Groundwater, Irrigation and Drainage Service (SENARA). Relevant investments and practices by farmers are incentivised through the Recognition of Benefits for Good Agricultural and Livestock Practices programme (see above). The NAMAs for the coffee and livestock sectors also include adaptation actions (OECD, 2022[4]).

Innovation for sustainable productivity growth

Costa Rica faces challenges related to the productivity and sustainability performance of its agriculture. The share of GHG emissions from the sector has decreased in the last decade but remains over twice the OECD average. The nitrogen and phosphorus balances are also above average. The sector experienced negative average productivity growth over 2012-21 (see the Policy context section below).

The approach to sustainable productivity growth is outlined in Axis 3 (Productivity and sustainability) of the 2023-32 Public Policy for the Agricultural Sector (Ministerio de Agricultura y Ganadería, 2023[1]). This axis focuses on five strategic lines: efficiency in the use of natural resources; availability and use of seeds and genetic material; sustainable production and risk management; harnessing technological development; and research and transference of agricultural technology. For the first five years, prioritised interventions cover seeds and genetic material, water management, climate adaptation and mitigation, good agricultural practices, organic production, animal health, and food safety. These interventions will target:

- availability and use of improved seed varieties and certified seeds
- developing an early warning system to ensure seed availability
- formulating a strategy for the conservation and sustainable use of plant genetic resources
- developing irrigation infrastructure in areas with low rainfall, and drainage and flood prevention infrastructure in areas with high rainfall
- updating the hydrogeological studies for managing underground water resources
- researching and disseminating climate change mitigation and adaptation technologies for producers
- increasing the number of producers that develop National Appropriate Mitigation Actions (NAMAs) or actions to comply with the National Adaptation Plan
- promoting production systems that use good agricultural practices and organic production
- improving the traceability system for the bovine livestock sector.

Recent policy developments

Domestic policy developments in 2023-24

Regulatory and sector management developments

The National System of Individual Identification and Traceability of Cattle was launched in January 2024. It aims to **improve the health management of the bovine livestock herd and the safety of the food derived** from it, also ensuring that products from Costa Rica meet the requirements of export markets. The system will be managed by the National Animal Health Service (SENASA). It requires each animal to be registered and identified through visual and electronic means (ear tags and electronic transponders). An associated digital platform (*Trazar-Agro*) has been developed with support from OIRSA, a regional organisation focussing on animal health and food safety.

The **legal framework for the use of drone technology** in agricultural activities was established in September 2023. This development is expected to facilitate the use of drones by institutions in the agricultural sector for research, technical assistance and technology transfer work, and by producers to perform aerial mapping, crop monitoring, input application and related tasks.

The Recognition of Organic Environmental Benefits programme was reformed in August 2023 to simplify its requirements. Producers are no longer required to sign an agreement with the Ministry of Agriculture before receiving the payment. This development is expected to expedite processes, reduce administrative costs, and **facilitate the development of organic agriculture**.

Procedures for the registration of imports of hemp and psychoactive cannabis[4] seed were approved in 2023 with support of the National Seed Office and the National Phytosanitary Service (SFE). This follows the 2022 establishment of the legal framework for the cultivation and commercialisation of cannabis for medicinal and therapeutic use and of hemp for food and industrial use. In August 2023, the Ministry of Agriculture issued a first authorisation for seed import, cultivation and related activities to a public university that will research the properties of hemp components.

The Ministry of Agriculture made **investments to strengthen the public agricultural extension service** in 2023. In particular, 129 new staff members were appointed at the 80 regional extension offices, and investments of CRC 610 million (USD 1.1 million) were made to renew the institutional vehicle fleet and the offices' computer equipment (Ministerio de Agricultura y Ganadería, 2023[5]).

Support to producers

A **programme to promote the use of drones in farming** was announced in January 2024. Seventeen organisations of small and medium-sized producers will receive drones, and 40 members of these organisations will receive training on their use between January and June 2024. The programme involves a public investment of CRC 557 million (USD 1 million) to be co-financed by the Rural Development Institute (INDER), which will purchase the drones, and the Ministry of Agriculture, which will provide technical assistance to beneficiaries (Ministerio de Agricultura y Ganadería, 2024[6]).

Some measures were applied to **assist producers affected by adverse climate and market situations**. For example, in March 2023 small bean producers from the South Pacific region who lost their harvest due to delayed rains linked to the El Niño phenomenon received certified seed from the Ministry of Agriculture. In addition, a special fund of CRC 5 billion (USD 9 million) through the Development Banking System (SBD) was opened in January 2024 to provide credit to coffee producers affected by climate variability, a historical decrease in national production, and lower international prices.

Policies to mitigate emissions from agriculture

In 2023 the National Institute of Innovation and Transfer in Agricultural Technology (INTA) **improved its laboratory facilities and technical capabilities** to promote the development of Nationally Appropriate Mitigation Actions (NAMAs). INTA is working on the development of metrics of greenhouse gases (GHG) at the farm level, taking samples to measure the soil organic carbon content with different uses of plant coverage, and determining the soil's organic carbon contribution on different crops and its effect on carbon removal from production systems.

In the framework of the **NAMA for the coffee sector**, 21 projects were financed with USD 300 000 of support of international co-operation funds to implement technologies for GHG reduction, increase the sector's resilience and sustainability, and scale up NAMA good practices in production. For its part, the **NAMA-livestock** has implemented measures and provided technical support to 2 700 farms until the end of 2023.

In September 2023, a **new NAMA for the sugarcane sector was submitted for recognition** to the United Nations Framework Convention on Climate Change (UNFCCC). The NAMA is in a pre-pilot phase with financial support from the Inter-American Development Bank.

Policies to facilitate climate change adaptation in agriculture

In March 2023, the INTA introduced a **new variety of red bean** named *Urán*, developed in collaboration with the University of Costa Rica. The *Urán* variety is more resistant to drought and high temperatures, shows higher average yields than other widely cultivated bean varieties, and is resistant to the bean golden mosaic virus, a common disease affecting the crop. The research project (which started in 2016) benefitted from financial support from the Korea-Latin America Food and Agriculture Cooperation Initiative (KoLFACI), among other partners (Universidad de Costa Rica, 2023[7]).

In 2023, the National Seed Office implemented a **project for the conservation and sustainable use of plant genetic resources** and for strengthening the National Seed System. As part of its activities, rice producers received native seeds that require less agricultural inputs and have a better adaptability to climate variations. In addition, a digital system was developed to gather information about seeds and plant genetic resources.

A hydrogeological study was carried out in 2023 to **monitor water status** in an important aquifer (Barranca-Jesús María). **Infrastructure projects for flood prevention** and control were also implemented, including the construction of flood control canals for the Limoncito river in the Caribbean region.

Trade policy developments in 2023-24

A **Comprehensive Economic Partnership Agreement on Trade and Investment** between Costa Rica and the United Arab Emirates was signed in April 2024 following the launch of negotiations in March 2023.

Also in April 2024, the **Trade Association Agreement between Costa Rica and Ecuador**, signed in March 2023, was approved in first reading by the Costa Rican Legislative Assembly. As the agreement was approved by the Ecuadorian Parliament in February 2024, final legislative approval in Costa Rica (following a second reading) will allow for its entry into force.

Costa Rica authorised an **import quota** of 3 455 tonnes of fresh potatoes for processing, subject to a tariff of 15% (compared to the normally applicable MFN rate of 46%) in response to a shortage of raw materials for food processors. To avoid affecting domestic producers, in-quota imports were authorised during specific time windows outside of local harvest periods throughout 2023.

Policy context

Key economic and agricultural statistics

Costa Rica is a small country with a population of 5.2 million. Its long democratic tradition and political stability have underpinned its economic progress and the development of its agricultural sector. Agriculture still plays a relatively important role in the economy, contributing 10% to employment. While the share of agriculture in GDP is slightly above the average of all countries covered in this report ("all countries"), it has more than halved since 2000, reflecting the diversification of the economy. Costa Rica's GDP per capita more than tripled between 2000 and 2022 and is close to the average across all countries (Table 10.2).

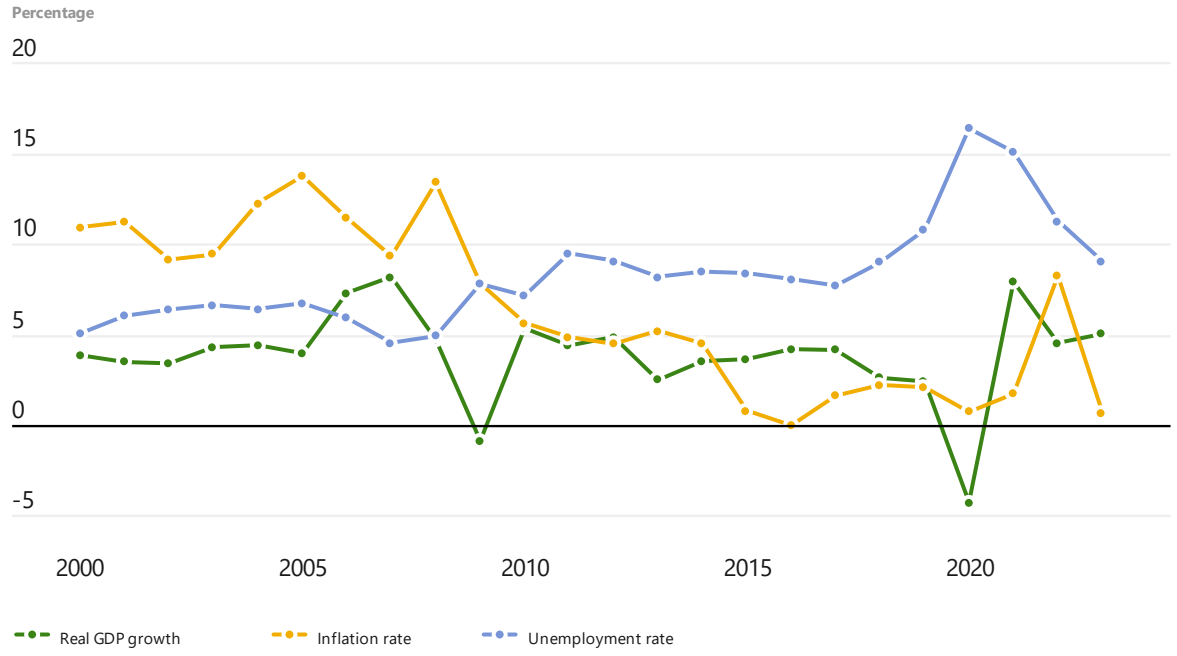
After a marked recovery in 2021 from the economic contraction associated with the COVID-19 pandemic, real GDP growth has returned to rates closer to the pre-pandemic period (around 5%). Unemployment has declined since peaking in 2020 and, at 9% in 2023, is now at pre-COVID-19 levels. While inflation had an important increase in 2022, reaching 8%, in 2023 it returned to the lower trend of previous years (Figure 10.4). Drivers of this rapid fall in inflation include a strong appreciation of the exchange rate to the US dollar, a reduction in imported commodity prices and modest domestic inflationary pressures (OECD, 2023[8]).

Table 10.2. Costa Rica: Contextual indicators

	Costa Rica		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	32	129	0.08%	0.09%
Population (million)	4	5	0.09%	0.10%
Land area (thousand km^2)	51	51	0.10%	0.10%
Agricultural area (AA) (thousand ha)	1 840	1 811	0.10%	0.10%
			All countries[1]	
Population density (inhabitants/km^2)	78	101	52	64
GDP per capita (USD in PPPs)	7 796	24 923	9 363	25 965
Trade as % of GDP	38.2	26.0	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	10.2	4.5	2.9	3.8
Agriculture share in employment (%)	16.2	10.1	-	-
Agro-food exports (% of total exports)	31.0	35.9	6.4	8.0
Agro-food imports (% of total imports)	7.6	12.4	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	76	74	-	-
Livestock in total agricultural production (%)	24	26	-	-
Share of arable land in AA (%)	11	13	32	34

Notes: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

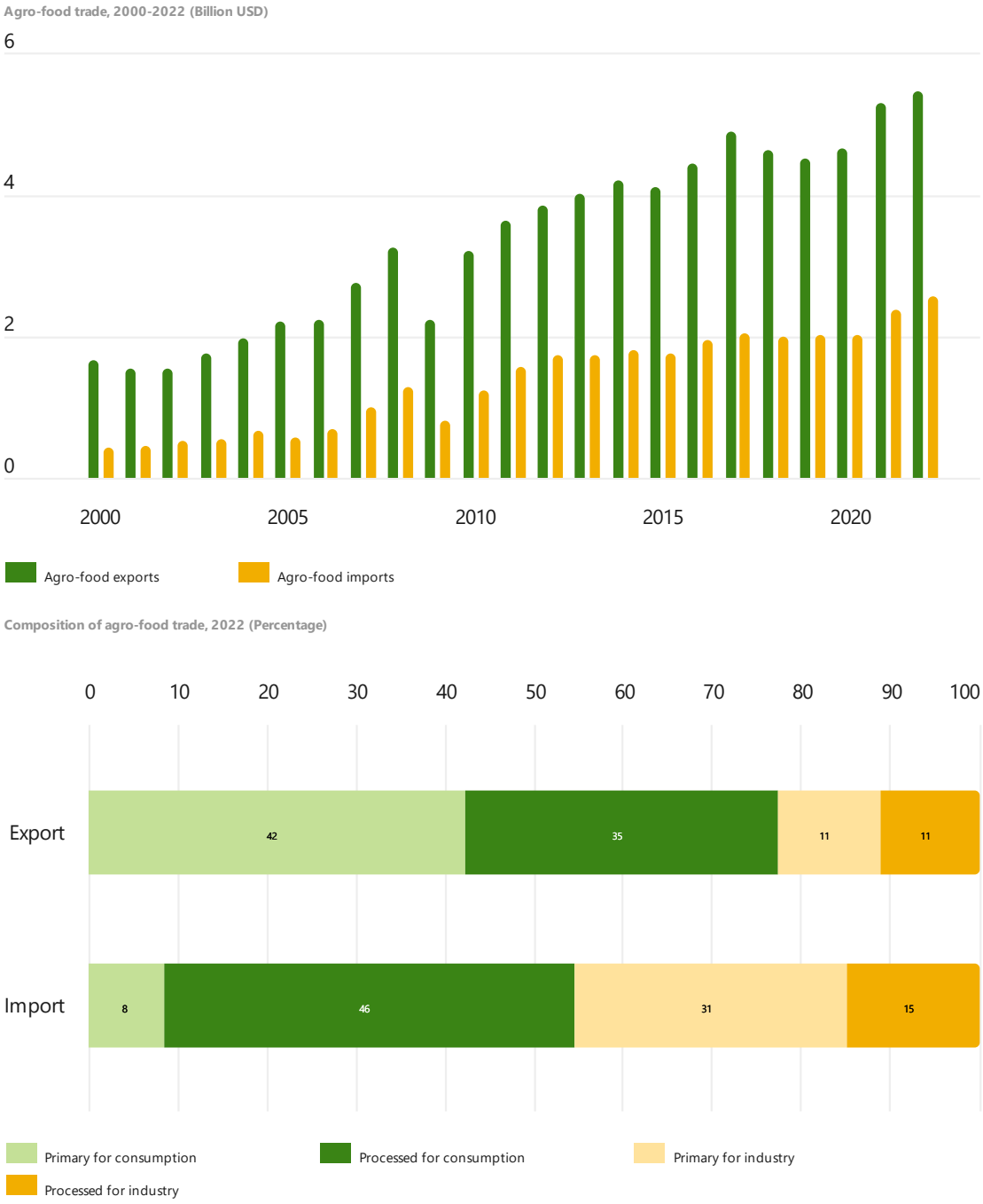
Figure 10.4. Costa Rica: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

Costa Rica is a net exporter of agro-food products, which accounted for 36% of the 2022 value of its goods exports. Forty-two per cent of Costa Rica's agricultural exports are primary crops for final consumption, such as bananas and pineapples, while 35% of exports are processed products for final consumption. Agro-food imports are almost equally distributed between products for final consumption and products for industry use (Figure 10.5).

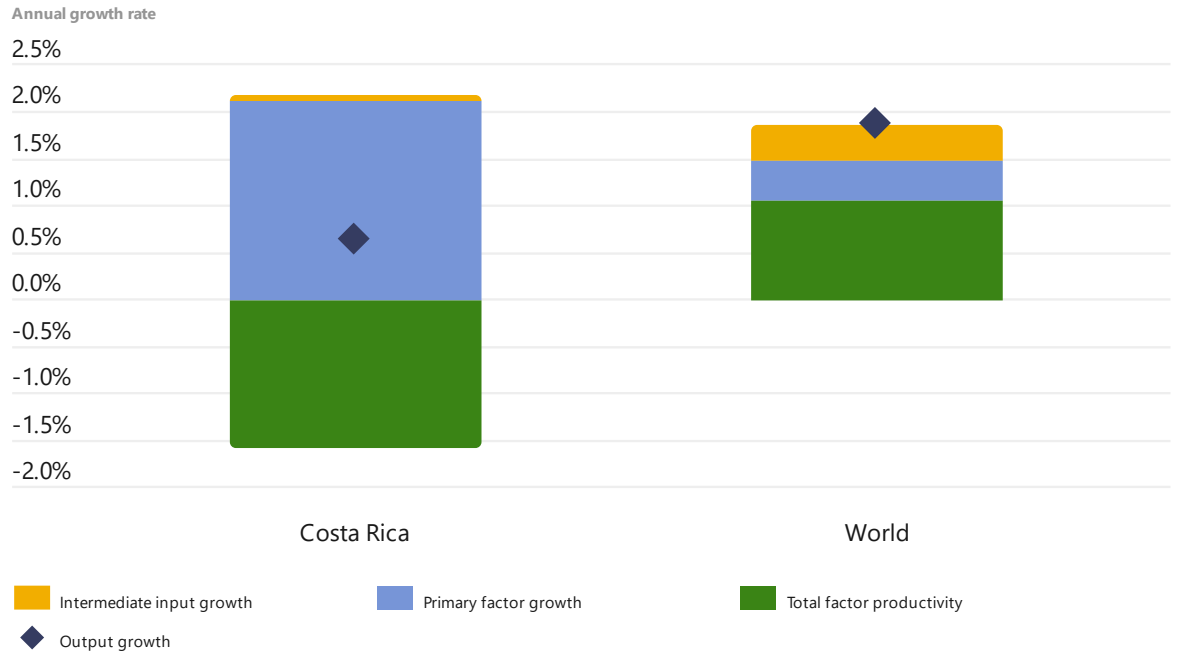
Figure 10.5. Costa Rica: Agro-food trade



Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Costa Rica's estimated Total Factor Productivity (TFP) decreased by 1.6% per year during 2012-21. The output growth of 0.6% p.a. between 2012 and 2022 resulted from the increasing use of primary factors (capital, labour and land) and, to a lesser extent, variable inputs (Figure 10.6). The factors contributing to this TFP decline include area expansion into less productive land, ongoing farm fragmentation, and limited financial and physical infrastructure.

Figure 10.6. Costa Rica: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

In the last two decades, there have been improvements in some of Costa Rica's agri-environmental indicators such as the sector's share in total energy use and its contribution to GHG emissions (Table 10.3). However, agricultural emissions still account for 20% of the country's total GHG emissions, over twice the OECD average. Moreover, the balances of nitrogen and phosphorus in agricultural land have increased since 2000 and are considerably above average. Agriculture is the main user of water resources, accounting for almost two-thirds of total freshwater abstractions.

Table 10.3. Costa Rica: Productivity and environmental indicators

	Costa Rica		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	1.1%	-1.6%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	36.0	48.0	32.1	28.2
Phosphorus balance, kg/ha	12.1	14.8	3.3	2.3
Agriculture share of total energy use (%)	6.6	2.0	1.7	2.0
Agriculture share of GHG emissions (%)	29.2	20.5	8.7	10.1
Share of irrigated land in AA (%)	5.6	8.9	-	-
Share of agriculture in water abstractions (%)	32.5	63.2	47.0	49.5
Water stress indicator	..	3.7	8.7	..

Notes: * or closest available year.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

Costa Rica's agricultural policy has developed in three phases (Table 10.4). Up to the 1980s, the country pursued import substitution, supported by government market interventions and capitalising on its natural comparative advantages through the export of traditional products such as coffee, bananas, sugar, and bovine meat.

Between the mid-1980s and the mid-2000s, Costa Rica followed an outward-oriented growth strategy, which influenced the development of agricultural support policies. Market intervention decreased significantly, combined with continued domestic reforms and trade liberalisation, marked by Costa Rica's accession to the General Agreement on Tariffs and Trade (GATT) in 1990 and, subsequently, to the World Trade Organization (WTO) in 1995. Price controls were eliminated (except in the case of rice), export taxes removed and import tariffs lowered. Costa Rica entered into free trade agreements that granted duty-free treatment for imports from many trading partners, although tariffs still apply to some agricultural products.

The food price crisis of 2007-08 fuelled food security concerns, leading to the establishment of programmes seeking to increase productivity of staple foods, particularly through extension services targeting small-scale farmers. The administered price for rice that had been maintained for decades was reformed in 2015 and converted to a minimum reference price, which was eliminated in 2022 as part of a policy reform package that also included tariff reductions on rice imports. Costa Rica's policies continue to emphasise export-oriented agriculture, which has resulted in some asymmetries between exporters and producers for the local market. At the same time, greater policy focus is now directed at promoting sustainable productivity with an emphasis on small-scale farmers.

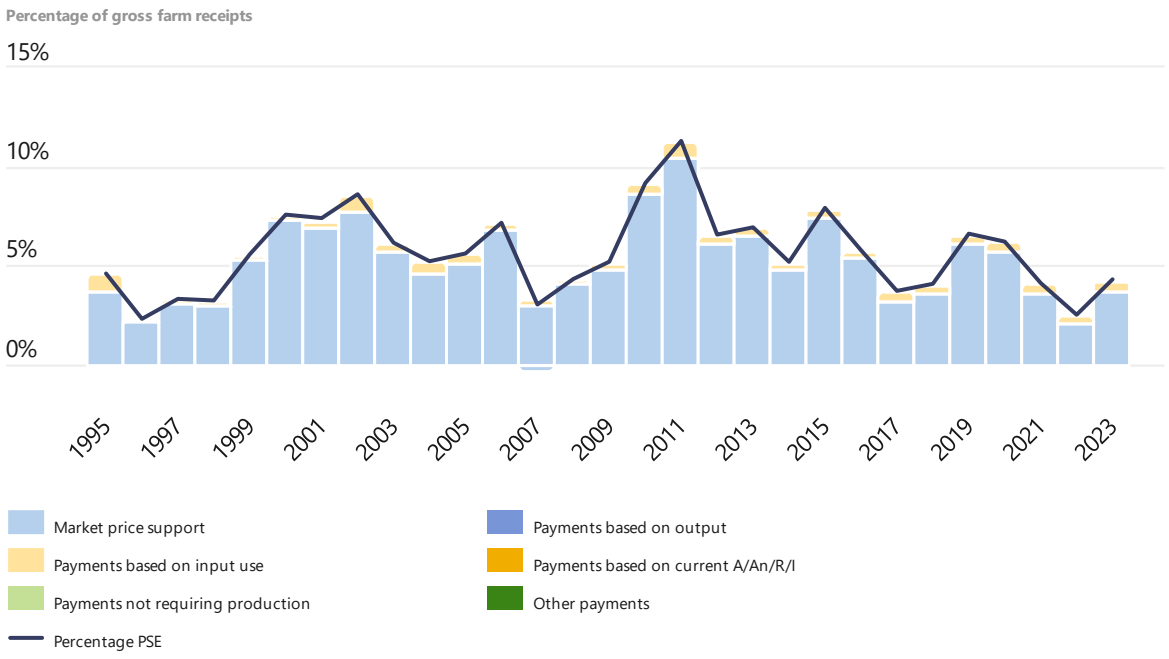
Table 10.4. Costa Rica: Agricultural policy trends

Period	Framework	Changes in agricultural policies
Prior to 1980s	Closed economy	Import substitution approach; price interventions on agricultural products, particular emphasis on guaranteed price for rice; high tariffs on agricultural imports Creation of the National Production Council (CNP) in the 1940s to promote agricultural and industrial production, control agricultural prices and own public infrastructure for the collection, storage, transport and distribution of grains
1980s-2007/08	Gradual shifts to open the economy	Dismantling price interventions (but minimum price for rice continued) Reduction of trade barriers (import and export tariffs) Reforms to CNP end most functions, keeping only the Institutional Supply Programme (PAI), which purchases food from small and medium farms for consumption in public institutions Strengthening agricultural exports via product diversification and development of destination markets; several FTAs signed; incentives (including in agriculture) to domestic and foreign companies to attract FDI, such as the Free Trade Zone Regime (FTZ) providing tax benefits and preferential port rates Creation of agricultural institutions for animal health (SENASA), plant health (SFE), agricultural innovation (INTA) Creation of the Rural Development Institute (IDA/INDER)
Since 2008	Open economy with a focus on sustainability and small-scale farmers	Emphasis on extension services for small-scale farms; promotion of good agricultural practices Small and limited payments to farmers for environmental services Import tariffs persist for some agricultural products Major rice policy reforms in 2022: elimination of the reference price and lower tariffs

Producer support has fluctuated between 2% and 11% of gross farm receipts since 1995. This volatility can be partly explained by fluctuations in export and import unit values or in the international reference prices for some MPS commodities. Around 90% of Costa Rica's PSE consists of market price support (MPS), which has traditionally concentrated on rice, poultry, pig meat and sugar. In contrast, budgetary support to producers is limited and has changed little over time (Figure 10.7). Around 75% of total budgetary allocations are in the form of general services to the sector. Agricultural research and

development (R&D), extension services, inspection and control, and rural infrastructure account for most of these expenditures. Costa Rica does not provide budgetary transfers to consumers.

Figure 10.7. Costa Rica: Development of the PSE and its composition, 1995 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

References

Ministerio de Agricultura y Ganadería (2024), *Drones de última tecnología beneficiarán a 3 mil productores de todo el país (press release)*, https://prensamag.blogspot.com/2024/01/drones-de-ultima-tecnologia.html (accessed on 12 March 2024). [6]

Ministerio de Agricultura y Ganadería (2023), *MAG invierte para fortalecer asistencia técnica a productores (press release)*, https://prensamag.blogspot.com/2023/11/mag-invierte-para-fortalecer-asistencia.html (accessed on 15 March 2024). [5]

Ministerio de Agricultura y Ganadería (2023), *Política pública para el sector agropecuario costarricense*, http://www.mag.go.cr/bibliotecavirtual/E14-11132.pdf. [1]

OECD (2023), *OECD Economic Outlook, Volume 2023 Issue 2*, OECD Publishing, Paris, https://doi.org/10.1787/7a5f73ce-en. [8]

OECD (2022), *Agricultural Policy Monitoring and Evaluation 2022: Reforming Agricultural Policies for Climate Change Mitigation*, OECD Publishing, Paris, https://doi.org/10.1787/7f4542bf-en. [4]

Universidad de Costa Rica (2023), *Nueva variedad de frijol rojo Urán ya está disponible para los agricultores*, https://www.ucr.ac.cr/noticias/2023/3/03/nueva-variedad-de-frijol-rojo-uran-ya-esta-disponible-para-los-agricultores.html (accessed on 11 March 2024). [7]

WITS (2024), *UN Comtrade by country period [database]*. [3]

World Trade Organization (2024), *World Tariff Profiles 2024: Costa Rica*, https://www.wto.org/english/res_e/statis_e/daily_update_e/tariff_profiles/CR_E.pdf. [2]

Notes

[1] Members of the trading blocs that have entered into RTAs with Costa Rica − the European Union, the European Free Trade Area (EFTA), and the Caribbean Community (CARICOM) − are considered individually. The number includes only the five CARICOM member states for which the trade agreement is in force.

[2] Costa Rica's contribution does not consider a comparative benchmark. Therefore, the target is not relative to a starting or reference year.

[3] In the case of the livestock sector, mitigation includes emission reduction and carbon sequestration by pastures and trees (such as hedgerows).

[4] The law defines “psychoactive cannabis” as any plant of the genus cannabis (and parts thereof) with a content of tetrahydrocannabinol (THC) equal to or greater than 1% in dry weight. Non-psychoactive cannabis or hemp refers to plants with THC content below that threshold.

11. European Union

Main findings

Support to agriculture

Producer support in the European Union (EU),[1] measured by the Producer Support Estimate (PSE), has stabilised since 2010, after falling in the 1990s and early 2000s. EU support to producers as a share of gross farm receipts stood at 16% in 2021-23, remaining above the OECD average.

While trade-protection measures remain in effect for several sectors – including import and export licensing, tariff rate quotas (TRQs), and special safeguards – their importance has declined substantially over the last two decades. In 2021-23, market price support (MPS) accounted for 19% of support to producers, down from 46% in 2000-02. Poultry and rice producers are the most important beneficiaries, followed by beef and veal products. Prices received by farmers in 2021-23 were on average only 4% higher than in world markets, compared to 22% in 2000-02.

On average, 45% of budgetary support in 2021-23 was based on non-current area or animal numbers not requiring production, while around 31% was based on current area or animal numbers requiring production, and 21% on input use. Around half of payments to producers were contingent on mandatory environmental constraints, while an additional 14% were linked to voluntary constraints that go beyond mandatory requirements, namely agri-environmental measures and eco-schemes.

Expenditures for general services to the sector (General Service Support Estimate, GSSE) in 2021-23 averaged 12.9% of total support, or 2.7% of the value of agricultural production – a decrease compared to 2000-02 and below the OECD average. Expenditures on agricultural knowledge and innovation systems more than doubled over the past two decades, and expenditures also rose for marketing and promotion and inspection and control.

Total support to the sector declined in relative terms over the past 20 years. In 2021-23, total support was estimated at 0.6% of the Gross Domestic Product (GDP), compared to 1.0% in 2000-02.

Key recent policy changes

The Common Agricultural Policy (CAP) 2023-27 started to apply in January 2023 with a new delivery model and more flexible implementation by Member States. EU Member States began to implement their CAP Strategic Plans (CSPs) in 2023. These contain targeted interventions designed to deliver tangible results for the ten specific objectives around which the new CAP is designed. The CAP 2023-27 will mobilise around EUR 307 billion (USD 332 billion) in public expenditures, of which almost two-thirds has been allocated to direct payments and sectoral interventions (Pillar 1), and the rest to rural development interventions (Pillar 2).

In 2023, EU Member States began implementing the new types of direct payments, including eco-schemes, which support farmers who voluntarily decide to adopt more sustainable farming methods. The new CAP also introduced so-called enhanced conditionality, with more stringent standards compared to previous CAP's "cross-compliance". However, the review of the CAP Regulations approved in early 2024

following widespread farmers' protests made some of these environmental conditions more flexible. Most of the rural development expenditures under Pillar 2 were continuations of CAP 2014-22 measures.

In response to high input prices and multiple market and geopolitical disturbances, EU Member States relaxed some CAP requirements and offered exceptional direct support. Countries also used national measures such as tax concessions, investment assistance and other financial measures to help farmers and agro-food businesses cope with financial disruptions.

A comprehensive trade agreement with New Zealand was signed in July 2023 and ratified by the European Union in November 2023 to enter into force on 1 May 2024, the first agreement in force to fully integrate a new approach to trade and sustainable development. It includes a dedicated chapter on sustainable food systems, the first of its kind in the world.

Assessment and recommendations

- Agricultural productivity growth in the European Union has not consistently been matched with improved environmental sustainability, especially for farmland biodiversity and water use. The European Union seeks to balance productivity growth with environmental, social and economic sustainability using both EU-level instruments and measures at the Member State level. Given the multiple measures in place, effective policy co-ordination across all policy areas and governance levels is key for achieving the Sustainable Productivity Growth objectives.
- The European Innovation Partnership for Agricultural Productivity and Sustainability (EIP-AGRI) fosters bottom-up multi-actor partnerships of farmers and others to co-create innovative solutions in agriculture. Gathering more evidence and learning from existing projects is essential to better understand how innovative solutions are spreading within and outside partnerships, as well as to identify the main drivers and barriers in achieving the expected outcomes. Such information will help maximise the effectiveness of these partnerships by informing future policy tools and driving innovation for agricultural sustainability.
- The agricultural knowledge and innovation system (AKIS) needs to further step-up efforts to integrate knowledge flows on environmentally-friendly practices and novel solutions, especially through advisory services. Incorporating AKIS strategies into CAP strategic plans is promising, provided it leads to concrete actions at national level. Other helpful actions would be to develop a comprehensive skills agenda for the EU agro-food sector, strengthen advisory services, especially in sustainable environmental practices, and upskill farmers through lifelong learning. Allocating a larger share of CAP funding to these initiatives, along with agricultural R&D, will put a greater focus on sustainability by helping solve environmental challenges on farms.
- The delay or withdrawal of several legislative proposals – such as the legislative Framework for the Sustainable Food Systems and the Regulation on the Sustainable Use of Plant Protection Products – show the difficulties of incorporating the European Green Deal targets into EU agricultural policy. These setbacks do not lessen magnitude of the problems faced by the European Union and the importance of finding a path towards effective solutions to pressing and longstanding environmental challenges.
- Some of the initial set of CAP 2023-27 environmental requirements were subsequently relaxed. While these changes may ease implementation, they may limit the effectiveness of this mechanism in promoting public goods or reducing environmental harm. Instead of increasing flexibilities, further consideration should be given to the potential benefits of reforming conditionality by focusing on the performance of a reduced number of practices that are enforceable and monitorable at a large scale.
- The European Union's trade facilitation measures put in place to ease agricultural exports from Ukraine, such as through the Solidarity Lanes, have successfully helped to alleviate the difficult

situation faced by Ukrainian producers and contributed to overall food security. While the temporary restrictions on the markets of certain EU Member States, introduced for selected products in response to increased imports from Ukraine, have challenged the operation of the common market, fostering co-ordination and dialogue among stakeholders presents a way forward for regional market stability.

- The EU agricultural policy agenda includes promising new approaches and priorities. How successful these will be largely depends on the design and implementation choices made by Member States. While better transparency and reporting on progress can encourage bolder action by Member States, more use of outcome-oriented approaches to policy design would do even more to increase effectiveness of policy tools.

Development of support to agriculture

Figure 11.1. European Union: Development of support to agriculture

Figure 11.1A. European Union: Producer Support Estimate and its composition

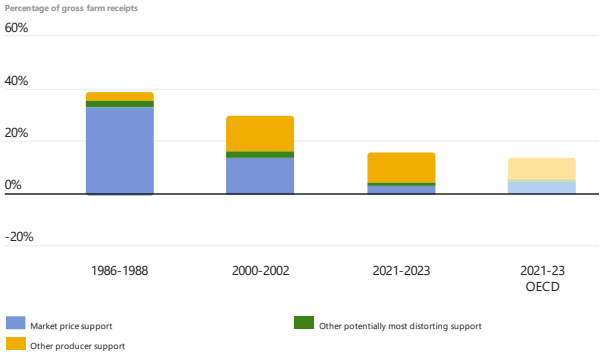


Figure 11.1B. European Union: Ratio of producer to border price

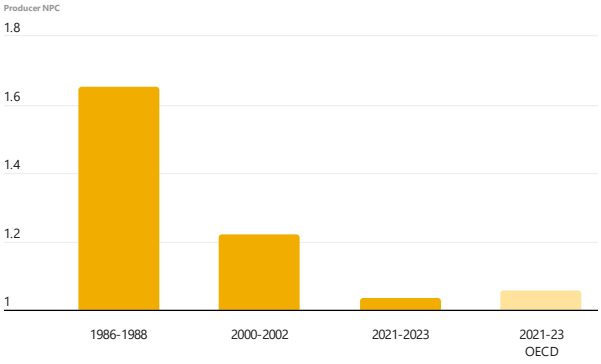


Figure 11.1C. European Union: General Services Support Estimate and its composition

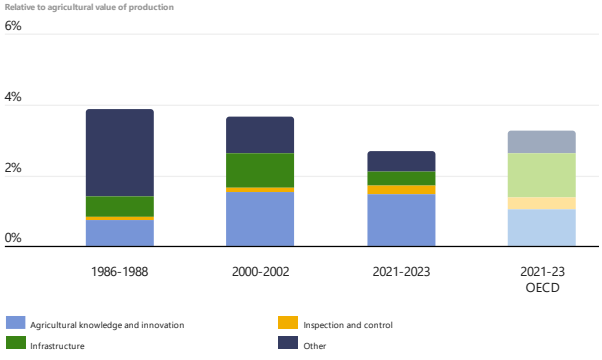
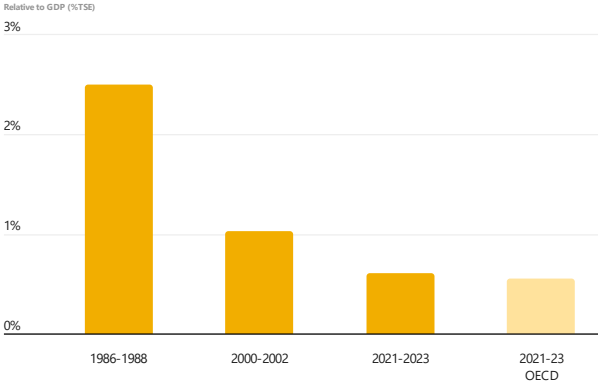
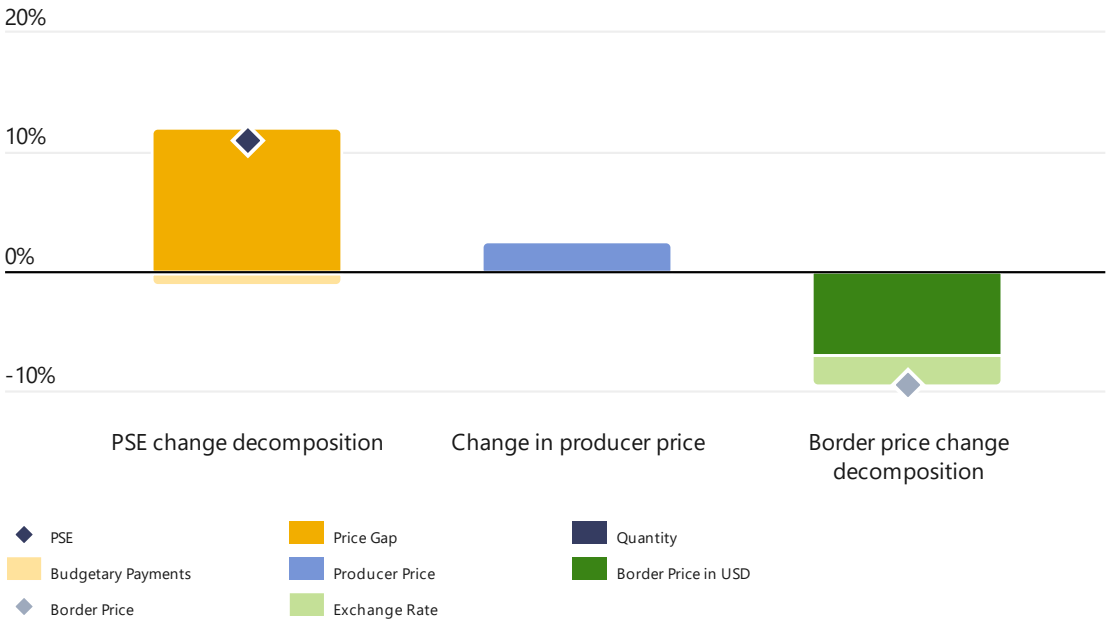


Figure 11.1D. European Union: Total Support Estimate



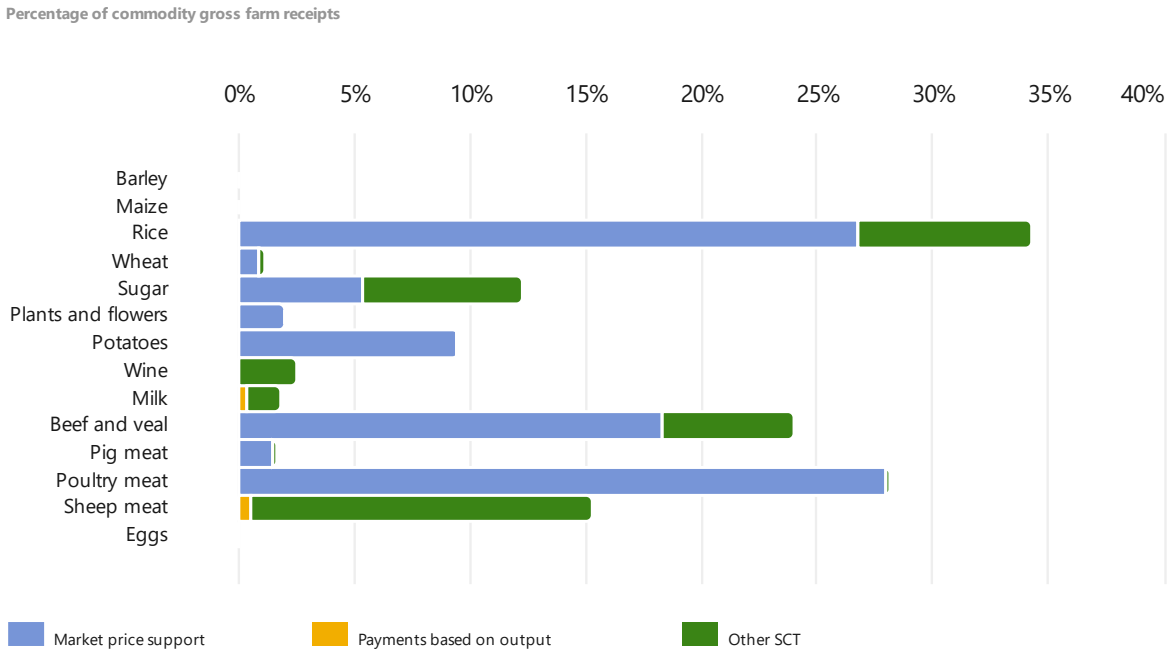
Note: European Economic Community (EEC) with 12 members for 1986-88, EU15 for 2000-02, EU28 for 2018-19, EU27 for 2021-23.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 11.2. European Union: Drivers of the change in PSE, 2022 to 2023



Note: EU27. % change of nominal Producer Support Estimate expressed in Euro.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 11.3. European Union: Commodity-specific transfers (SCT), 2021-23



Note: EU27. Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Table 11.1. European Union: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**233 558**	**225 093**	**506 566**	**483 603**	**513 859**	**522 235**
of which: share of MPS commodities (%)	74.95	73.34	74.25	73.24	75.63	73.87
Total value of consumption (at farm gate)	**212 900**	**226 789**	**495 621**	**457 245**	**517 389**	**512 229**
Producer Support Estimate (PSE)	**95 385**	**79 781**	**92 924**	**90 064**	**88 137**	**100 571**
Support based on commodity output	86 308	40 997	18 055	12 076	15 410	26 678
Market price support[1]	80 672	37 067	17 795	11 804	15 158	26 422
Positive market price support	81 784	37 067	17 811	11 804	15 158	26 470
Negative market price support	-1 112	0	-16	0	0	-48
Payments based on output	5 637	3 930	260	272	252	256
Payments based on input use	5 056	6 833	15 591	15 704	15 252	15 816
Based on variable input use	960	3 047	6 149	6 668	5 787	5 993
with input constraints	0	0	44	54	41	37
Based on fixed capital formation	2 986	2 259	6 872	6 175	6 612	7 829
with input constraints	0	94	119	117	116	125
Based on on-farm services	1 109	1 527	2 570	2 861	2 854	1 994
with input constraints	90	274	16	14	1	33
Payments based on current A/An/R/I, production required	3 587	31 196	23 453	21 765	21 426	27 167
Based on Receipts / Income	147	99	1 632	2 011	1 458	1 426
Based on Area planted / Animal numbers	3 440	31 097	21 821	19 754	19 968	25 740
With input constraints	940	13 953	18 912	18 125	16 941	21 668
Payments based on non-current A/An/R/I, production required	0	0	13	12	11	18
Payments based on non-current A/An/R/I, production not required	0	10	34 188	39 002	34 848	28 714
With variable payment rates	0	0	0	0	0	0
with commodity exceptions	0	0	0	0	0	0
With fixed payment rates	0	10	34 188	39 002	34 848	28 714
with commodity exceptions	0	0	0	0	0	0
Payments based on non-commodity criteria	478	1 078	1 325	1 219	998	1 757
Based on long-term resource retirement	476	846	397	440	324	428
Based on a specific non-commodity output	2	176	805	679	586	1 148
Based on other non-commodity criteria	0	57	123	99	88	181
Miscellaneous payments	-43	-334	300	286	192	421
Percentage PSE (%)	**38.43**	**29.77**	**15.96**	**16.03**	**15.02**	**16.86**
Producer NPC (coeff.)	**1.66**	**1.22**	**1.04**	**1.03**	**1.03**	**1.05**
Producer NAC (coeff.)	**1.62**	**1.42**	**1.19**	**1.19**	**1.18**	**1.20**
General Services Support Estimate (GSSE)	**9 144**	**8 355**	**13 866**	**14 375**	**12 931**	**14 293**
Agricultural knowledge and innovation system	1 814	3 492	7 554	7 803	7 008	7 850
Inspection and control	194	281	1 244	1 246	1 192	1 293
Development and maintenance of infrastructure	1 331	2 222	2 001	2 216	1 781	2 007
Marketing and promotion	1 210	996	3 017	3 066	2 894	3 090
Cost of public stockholding	4 571	1 294	28	22	35	25
Miscellaneous	24	69	24	22	20	28
Percentage GSSE (% of TSE)	**8.31**	**9.12**	**12.91**	**13.71**	**12.75**	**12.40**
Consumer Support Estimate (CSE)	**-69 408**	**-33 000**	**-17 144**	**-11 127**	**-14 811**	**-25 493**
Transfers to producers from consumers	-80 268	-36 084	-16 960	-10 995	-14 478	-25 407
Other transfers from consumers	-1 699	-717	-711	-578	-652	-904
Transfers to consumers from taxpayers	4 992	3 537	401	447	318	437
Excess feed cost	7 567	264	127	0	0	381
Percentage CSE (%)	**-33.38**	**-14.75**	**-3.48**	**-2.44**	**-2.86**	**-4.98**
Consumer NPC (coeff.)	**1.63**	**1.19**	**1.04**	**1.03**	**1.03**	**1.05**
Consumer NAC (coeff.)	**1.50**	**1.17**	**1.04**	**1.02**	**1.03**	**1.05**
Total Support Estimate (TSE)	**109 521**	**91 672**	**107 191**	**104 886**	**101 386**	**115 301**
Transfers from consumers	81 967	36 801	17 671	11 573	15 130	26 311
Transfers from taxpayers	29 253	55 589	90 231	93 891	86 908	89 894
Budget revenues	-1 699	-717	-711	-578	-652	-904
Percentage TSE (% of GDP)	**2.51**	**1.04**	**0.62**	**0.61**	**0.61**	**0.65**
Total Budgetary Support Estimate (TBSE)	**28 849**	**54 606**	**89 396**	**93 082**	**86 228**	**88 879**
Percentage TBSE (% of GDP)	**0.66**	**0.62**	**0.52**	**0.54**	**0.52**	**0.50**
GDP deflator (1986-88 = 100)	**100**	**152**	**212**	**207**	**218**	**..**
Exchange rate (national currency per USD)	**0.91**	**1.09**	**0.91**	**0.85**	**0.95**	**0.92**

.. Not available

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
European Economic Community (EEC) with 12 members for 1986-88; EU15 for 2000-02; and EU27 from 2021.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for the European Union are: wheat, maize, barley, oats, rice, rapeseed, sunflower, soybean, sugar, milk, beef and veal, sheep meat, pig meat, poultry, eggs, potatoes, tomatoes, plants and flowers, and wine.

Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

The Common Agricultural Policy (CAP) is the agricultural policy framework of the European Union. **The new CAP 2023-27 entered into force on 1 January 2023.** In addition to the CAP, Member States may implement measures funded from national or sub-national budgets that target specific sub-sectors or objectives. These measures must comply with the European Union's state aid rules and not distort competition within the common market (OECD, 2017[1]). The CAP 2023-27 is built around 10 specific objectives: to ensure a fair income for farmers; to increase competitiveness; to improve the position of farmers in the food chain; climate change action; environmental care; to preserve landscapes and biodiversity; to support generational renewal; vibrant rural areas; to protect food and health quality; and to foster agricultural knowledge and innovation.

The CAP is organised in two pillars: the European Agricultural Guarantee Fund (EAGF) finances Pillar 1, and the European Agricultural Fund for Rural Development (EAFRD) finances Pillar 2. Pillar 1 covers sectoral interventions, as well as direct payments to active farmers. Rural development policy is supported by Pillar 2. Pillar 1 is financed by the European Union[2] and Pillar 2 programmes are co-financed by the Member States.[3]

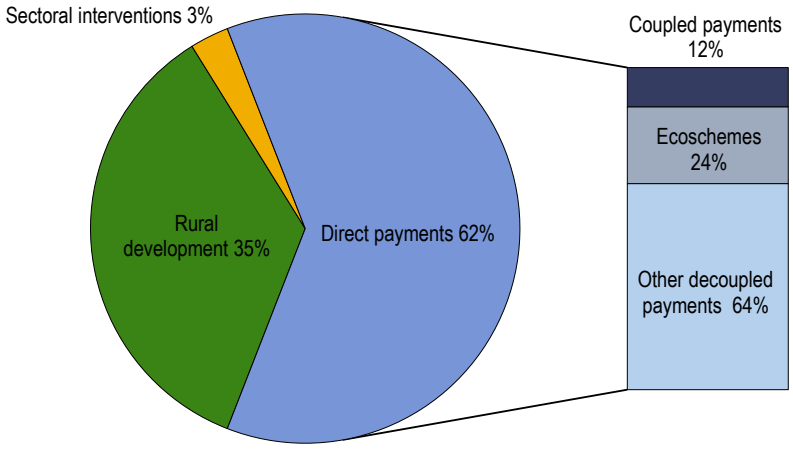
The new CAP entails a new delivery model in which Member States play a central role in designing and implementing their CAP Strategic Plans (CSP).[4] The new delivery model gives Member States more flexibility to design schemes that meet the needs of their farming sector. Member States were required to carry out a thorough assessment of their territory and agro-food sector, based on a strengths, weaknesses, opportunities and threats (SWOT) analysis, with the objective of designing more targeted and effective programmes (OECD, 2023[2]).

Each CSP contains targeted interventions designed to deliver tangible results in relation to the 10 EU-level objectives and contribute to the ambitions of the European Green Deal (EC, 2019[3]). This new programming approach applies to interventions under both pillars of the CAP and not only to rural development interventions as in the past. There is one CSP for each Member State (except for Wallonia and Flanders in Belgium, which each have their own plan), making a total of 28 plans. The "Country snapshots" section below provides an overview of all the 28 CSPs.

The European Union and the Member States aim to mobilise a total of EUR 307 billion (USD 332 billion) for approximately 2 500 interventions within the new CAP (EC, 2023[4]). Of this amount, almost two-thirds has been allocated to Pillar 1 (Figure 11.4). **Direct payments make up the bulk of CAP spending: these payments are largely decoupled from production** as they are based on farm area, and do not depend on current production decisions. They represent an important part of farm income (OECD, 2023[2]).

Greening payments in the previous CAP were replaced by more stringent environmental requirements under enhanced conditionality and by redirecting on average 24% of direct payments to eco-schemes (designed by each Member State), which are now a main tool to achieve environmental and climate goals. The proportion of rural development funds spent by EU Member States on the different types of interventions varies according to their national priorities as defined in their CSP (see the "Country snapshots" section). The CAP 2023-27 also introduced the concept of social conditionality, linking farmer payments to compliance with certain labour laws. Most Member States will apply such rules from 2025.

Figure 11.4. CAP 2023-27, share of planned expenditures by type of intervention



Note: Sectoral interventions includes market measures in certain sectors defined in the CAP Strategic Plans, such as fruit and vegetables, apiculture, wine, hops, olive oil and table olives and other sectors (Art. 42(f) Reg. 2021/2115); coupled payments include Coupled Income Support (CIS); other decoupled payments include Basic Income Support for Sustainability (BISS), Complementary Redistributive Income Support for Sustainability (CRISS), and Complementary Income Support for Young Farmers (CIS-YF).
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]).

Direct payments

Under the new CAP (EU Regulation 2021/2115), the Basic Income Support for Sustainability (BISS), replaced both the Basic Payment Scheme (BPS) and the Single Area Payment Scheme (SAPS).[5] BISS is an annual payment decoupled from production for all eligible hectares declared by active farmers. It is compulsory for all Member States and accounts for more than the half of the Pillar 1 envelope (Table 11.2). BISS is complemented by four additional components:

- Complementary Redistributive Income Support for Sustainability (CRISS): this is an extra payment for a small, fixed number of hectares for farmers receiving the BISS, with the aim of promoting more support to small and medium-sized farms. EU countries must allocate at least 10% of their direct payments to CRISS.
- Complementary Income Support for Young Farmers (CIS-YF): this is a voluntary scheme aimed at providing enhanced income support to young farmers.6 CIS-YF may be a lump-sum payment or an amount per hectare with the number of eligible hectares per farmer defined by the Member States. The upper age limit may be set between 35 and 40 years and Member States can specify the training and skills required of beneficiaries.
- Coupled Income Support (CIS) paid per animal or hectare subject to various conditions to mitigate the risk of market distortion.7 This mechanism may only be granted to certain sectors and EU Member States must not allocate more than 13% of their direct payment budget to CIS. This may however be increased by up to 2 percentage points to support the production of protein crops.
- Schemes for the climate, the environment and animal welfare (eco-schemes) are a new element of the CAP 2023-27 that supports farmers who adopt practices that minimise the negative impact of agriculture on the environment and climate. These are intended to help farmers evolve towards more sustainable farming methods.

Table 11.2. Direct payments budget under CAP Strategic Plans 2023-27

	Budget (EUR million)	Share in direct payments	Share in decoupled direct payments
Direct payments; of which:	187 943	100.0%	
Decoupled direct payments; of which:	164 912	87.7%	100.0%
Basic Income Support for Sustainability (BISS)	*96 697*	*51.5%*	*58.6%*
Complementary Redistributive Income Support for Sustainability (CRISS)	*20 094*	*10.7%*	*12.2%*
Complementary Income Support for Young Farmers (CIS-YF)	*3 407*	*1.8%*	*2.1%*
Eco-schemes	*44 713*	*23.8%*	*27.1%*
Coupled Income Support (CIS)	23 031	12.3%	

Note: The data represents the planned budget of the Member States for the entire duration of the CAP Strategic Plans. Direct payments from 2023-2027 outside of the CAP Strategic Plans such as POSEI are not included.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]).

Member States have the flexibility to apply reductions of up to 85% of BISS received by a single farm (degressivity)[8] for amounts exceeding EUR 60 000 (USD 65 000) and may also opt to set an upper limit (capping) for amounts exceeding EUR 100 000 (USD 108 000).

Member States that joined the European Union after 2000 may continue to implement Transitional National Aid (TNA). TNA is granted from national budgets and is mostly disbursed as decoupled payments, though limited commodity specificity is allowed. It may apply on a per hectare basis to arable land, hops and starch potatoes; on a volume basis to milk; and as a headage payment to livestock. Member States may review TNA budgets and supported commodities on an annual basis.

Member States can also choose to implement the Payment for Small Farmers (PSF), a simplified income support intervention replacing all other forms of income support payment. Farmers applying for the PSF cannot receive any other direct payment and the payment may not exceed EUR 1 250 (USD 1 424). Small farms with an agricultural area of less than 10 ha are exempt from conditionality controls.

The POSEI scheme (*Programmes d'Options Spécifiques à l'Eloignement et à l'Insularité*) supports farming in the European Union's outermost regions by using production-related payments. The scheme supports access to food, feed and inputs for local communities, as well as the development of local agricultural production. It represented 1.2% of the direct payments envelope in 2023.

Sectoral interventions

Under the new policy framework, market-related support to specific sectors is no longer governed by the Common Market Organisation (CMO) Regulation and is now part of the Member States' CAP Strategic Plans[9] (European Parliament, 2023[6]). These sectoral interventions are financed under Pillar 1 and, unlike in the previous CAP, now extend to all agricultural sectors. Such fundings aim at promoting greater collaboration and concentration among farmers, strengthening their bargaining power, and enhancing market efficiency and their position within the food supply chain.

The fruit and vegetables and wine sectors together represent 90% of the total financial allocations under the CSPs for sectoral support at EU level (Table 11.3). Support for the fruit and vegetables sector and "other" sectors is provided through operational programmes, which are funding programmes for members of producer organisations. Support for wine and apiculture interventions is provided through specific interventions defined in CSPs, as the beneficiaries are not producer organisations. Sectoral interventions for apiculture are co-financed by Member States, with a minimum co-financing rate of 50%.[10]

Table 11.3. Financial allocations to sectoral interventions in approved CSPs

Sector	Budget (EUR million)	Share
Fruit and vegetables	4 143	44.4%
Wine	4 147	44.5%
Apiculture	694	7.4%
Hops	11	0.1%
Olive	219	2.3%
Other sectors	110	1.2%
Total	9 323	100.0%

Note: Support for these sectors provided outside the CSPs is excluded. Sector support for apiculture includes national co-financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]).

Member States can provide co-financed support to the fruit and vegetables sector and to the olive oil and table olives sectors. This type of support funds a wide range of actions from production planning, quality measures, market withdrawal and harvest insurance to training, promotion and communication. Some of these measures apply at farm level while others are provided to producer organisations or the sector at large. Similarly, the wine sector is supported through promotional measures in both the European Union and third countries, restructuring and conversion of vineyards; compensation for green harvesting; setting up of mutual funds; investment in tangible and intangible capital; income insurance; development of new products, processes and technologies; and distillation of by-products.

Other market-related measures

Member States continue to implement and finance certain market-related measures outside of the CSP, under the amended CMO Regulation, including the POSEI and Smaller Aegean Islands (excluding direct payments), promotion of agricultural products, and school schemes. Pillar 1 funds the school schemes for the distribution of milk, fruit and vegetables, with a total budget of EUR 220.8 million (USD 238.7 million) per school year, of which up to EUR 130.6 million (USD 141.2 million) for fruit and vegetables and up to EUR 90.1 million (USD 97.4 million) for milk (European Parliament, 2023[6])

Within the framework of the CMO, the European Union may resort to measures aimed at stabilising agricultural markets, including public intervention and aid for private storage. An entry price system (minimum import price) is in place for some products, along with ad valorem duties, but no export subsidies. In the dairy sector, intervention prices are used for butter and skimmed milk powder (SMP), while import tariffs are applicable to all milk and dairy products. Intervention purchases may be made for butter and SMP, but these must be done via tender when amounts exceed 50 000 tonnes for butter and 109 000 tonnes for SMP. Intervention purchases are rarely used, but were opened for both products as a response to sector shocks during the COVID-19 pandemic. Nevertheless, the last public intervention purchases took place before then.

During times of low market prices, the EU can provide support to private sector operators by paying for the cost of storage of their products for a set period. Private storage may be activated as an optional scheme for butter, SMP, certain cheeses, olive oil, flax fibre, beef, pig meat, sheep meat and goat meat. This opportunity was opened for butter, SMP, cheese, beef and sheep meat in 2020-21 in response to the COVID-19 emergency and for pig meat in 2022 in response to the war in Ukraine (see Domestic policy responses to Russia's war of aggression against Ukraine).

In addition to internal market intervention, the European Union applies trade-related measures with non-EU partners such as import and export licences, import duties, tariff quotas, safeguards and export refunds. Market support measures for beef include not only floor prices but also tariffs and TRQ support, while pig

meat benefits from import protection only.[11] The market support regime for sheep meat involves tariffs and TRQs, with most country-specific TRQs granted at zero customs duty. TRQs also support the poultry and egg markets.

Exceptional measures are implemented when a crisis or the threat of a crisis arises requiring a targeted response to prevent a sudden decline in prices and/or mitigate its effects. They allow the European Commission to quickly act during periods of significant market imbalances, a loss of consumer confidence due to public, animal or plant health risks, or other specific problems (EC, n.d.[7]).

In term of budgetary discipline, the new Regulation (EU) 2021/2116 starting in 2023 establishes in the EAGF an agricultural reserve of at least EUR 450 million (USD 487 million) that can be directed towards measures such as emergency buying and private storage aid, as well as exceptional measures. Before 2023, the reserve for crises was part of the CMO Regulation and activating its use would result in corresponding cuts in direct payments to farmers (following the so-called "financial discipline"). Now, the amount for the agricultural reserve enters directly from the EU budget and is established at the beginning of each year (EC, 2024[8]).

Rural development

For the 2023-27 period, Rural development interventions will receive EUR 64 billion from the EU budget and EUR 43 billion from national funds (Table 11.4). Member States may allocate further national financing in some cases, and 16 Member States committed to an additional EUR 11 billion, mainly to actions for investment and practices related to environment, climate and animal welfare (EC, 2023[9]).

Member States have the option to implement eight different types of interventions. **Environment and climate measures represent the most important intervention type in financial terms (31%).** The related budget is mainly allocated to area-based measures addressing specific environment and climate objectives and organic farming, but this category also includes animal welfare and forestry related actions. A large share of the budget (29%) is allocated to investments, which together with co-operation (10.4%) are the main "non-area" based rural development instruments. Around 18% of the budget goes to limit land abandonment via payments to farms in areas affected by natural and other area specific constraints. This support is mainly granted through annual payment to compensate for income foregone and additional costs related to continuation of their agricultural activity.

Table 11.4. Rural Development, planned budget under CAP Strategic Plans 2023-27, by type of intervention

	Budget (EUR million)	Share in total public expenditure
Rural Development EU funding	64 134	59.9%
Rural Development national funding	43 003	40.1%
Total Rural Development	107 137	100.0%
Environment and Climate (ENVCLIM)	*33 212*	*31.0%*
Areas with Natural Constraints (ANC)	*18 716*	*17.5%*
Areas with Specific Disadvantages (ASD)	*830*	*0.8%*
Investment support (INVEST)	*31 379*	*29.3%*
Installation aid (INSTAL)	*5 175*	*4.8%*
Risk Management (RISK)	*4 592*	*4.3%*
Cooperation (COOP)	*11 160*	*10.4%*
Knowledge and Advice (KNOW)	*2 073*	*1.9%*

Note: The budget includes support through European Agricultural Fund (EAGF) and national co-financing. It does not include additional national financing and transfers between funds.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]).

The LEADER (*Liaison Entre Actions de Développement de l'Économie Rurale*) programme is based on a multi-sectoral approach and local partnerships to address specific regional and local problems. Other support for co-operative activities goes to the European Innovation Partnership for Agricultural Productivity and Sustainability (EIP-AGRI), which brings together CAP and Horizon funding for bottom-up multi-actor agricultural innovation projects. These projects tackle practical problems through a co-creation process involving farmers, researchers and other relevant actors. At least 5% of rural development funding from the EU budget must be spent on the LEADER approach.

CAP measures to promote environmental and climate benefits

The new "green architecture" of the CAP is based on a hierarchy of action and compensation based on distinguishing between minimum obligations and extra effort. Conditionality is at the base of this hierarchy, tying direct payments and some rural development measures to a series of rules[12] relating to the environment, food safety, animal and plant health, animal welfare and to maintaining agricultural land in Good Agricultural and Environmental Condition (GAEC) (OECD, 2023[2]).

The new CAP introduces "enhanced conditionality", which integrates elements of cross-compliance and greening from the previous CAP. Annex III of the Reg. EU 2021/2115 defines nine GAECs. A new requirement for protection of wetland and peatland was introduced (GAEC 2), while previous greening obligations on the maintenance of permanent grasslands and on the protection of environmentally sensitive permanent grasslands are now reflected in GAEC 1 and GAEC 9. The requirements of GAEC 7 on crop diversification and GAEC 8 on areas beneficial for biodiversity were also strengthened, although some of these were subsequently relaxed under the simplification package approved in early 2024 (see section below).

Eco-schemes are the big new building block of the CAP 2023-27 to encourage the adoption of specific farming practices with additional environmental benefits. Each Member State sets up eco-schemes for their farmers based on the framework given in the EU Regulation 2021/2115. These eco-schemes are voluntary for farmers. Payments are granted per hectare (in a few cases per livestock unit) in two forms: either as compensation for additional costs incurred or income foregone (and possible transaction costs), similar to the agri-environmental support schemes of Pillar 2, or as fixed top-up payments in addition to decoupled direct payments. Among the 163 eco-schemes, only 29 provide payments as top-ups, while the remaining 134 provide payments intended to compensate the additional costs and income loss incurred by farmers due to these commitments. Seventy-five eco-schemes aim at applying sustainable farming in arable land, 30 apply to all land types, while 22 are targeted to grassland and 18 to permanent crops. The remaining 18 eco-schemes focus on the sustainability of livestock production and on animal welfare.

As regards aid schemes for the fruit and vegetables sector under the new policy framework, Member States must allocate 15% of expenditure on operational programmes to the environment and climate change mitigation and adaptation, and 5% to strengthening research, development, and innovation (EC, 2023[9]).

The new CAP also mandates that each CAP Strategic Plan allocates at least 35% of the EAFRD funding under rural development towards environmental and climate-related objectives, including animal welfare. Eligible interventions for this ring-fenced funding include environmental, climate and other management commitments (Article 70 of Reg. (EU) 2021/2115), compensation payments for area-specific disadvantages relative to the EU Birds and Habitats Directives as well as the Water Framework Directive (Article 72). Other qualifying expenditures are investments targeting environment and climate objectives (Articles 73-74), and 50% of the allocation for areas with natural constraints (Article 71).

Innovation for sustainable productivity growth

Productivity and sustainability performance of EU agriculture

Over the last 60 years, EU agriculture has transitioned from a growth model based on intensification (use of more inputs) to one driven by technological advancements and efficiency gains. This has allowed continued growth in production and the European Union is now the largest agro-food exporter in the world. Since 2000, EU agriculture has had respectable Total Factor Productivity (TFP) performance, with annual growth rates of 1.1% during 1993-2002 and 1.3% during the 2012-21 period (Table 11.34). Most of the gains in TFP have been attributed to reductions in agricultural labour due to increased labour productivity (OECD, 2023[2]).

Structural changes in EU Member States are also reflected in their recent productivity performance. Since the 1960s, pre-2004 Member States (EU14) have maintained a high TFP growth driven by labour productivity improvements, though this growth has slowed in the last decade. In contrast, TFP growth has accelerated in the post-2004 Member States (EU13), as evidenced by a rapid increase in output and stable input use. Over this period, the quality and health of EU agricultural landscapes and farmland biodiversity has declined, although the state of biodiversity in agricultural areas differs widely between Member States and this is largely dependent on the degree of agricultural intensification of the predominant farming systems. Water use is also a growing concern and nutrient surplus continues to be problematic in many regions (OECD, 2023[2]).

While "sustainable productivity growth" is not a formal policy target for the EU's agricultural sector, the European Union aims to simultaneously foster environmental, social and economic sustainability. The European Green Deal set out a roadmap for transforming the EU economy, including food systems. To achieve the European Green Deal's objectives, as well as those expressed in the Farm to Fork Strategy and the EU Biodiversity Strategy for 2030, EU Member States have a range of policy tools and frameworks at their disposal. These tools help farmers adopt more sustainable practices and modernise their agricultural operations, as well as fostering the development of new innovative solutions. This section primarily focuses on the EU-level approaches and initiatives, while examples from individual EU Member States are presented in Chapter 1.

EIP-AGRI as the European Commission's flagship instrument to foster sustainable productivity in EU agriculture

The European Union fosters sustainable agricultural productivity through the co-creation of demand-driven innovations. **The European Innovation Partnership for Agricultural Productivity and Sustainability (EIP-AGRI) serves as the European Commission's flagship policy tool for promoting bottom-up multi-actor public-private agricultural innovation partnerships**. The EIP-AGRI Operational Groups (OGs, funded under the CAP and discussed in greater detail in Box 1.7 in Chapter 1) engage a wide range of stakeholders, including farmers, researchers, and agricultural advisors or other innovation brokers, to transform demand-driven grassroots ideas into innovative solutions, with about 60% of projects focusing on climate and environmental issues. After a slow start in the mid-2010s, the number of OG projects has been increasing in recent years and reached approximately 3 500 in May 2024. (EU CAP Network, 2024[10]). Additionally, also within the framework of EIP-AGRI, over 190 multi-actor projects were implemented under Horizon 2020 (Van Oost, 2021[11]).

Contributions of the CAP to sustainable productivity growth

Although the CAP does not explicitly target sustainable productivity growth, it still contributes to it. The current CAP (2023-27) outlines 10 specific objectives among which "Enhance market orientation and increase farm competitiveness" and "Improve farmers' position in the value chain" aim to contribute to

productivity growth. Meanwhile, “Contribute to climate change mitigation and adaptation”, “Foster sustainable development and efficient management of natural resources”, and “Protect biodiversity, enhance ecosystem services and preserve habitats and landscapes” focus on fostering environmental sustainability. In addition, a cross-cutting objective aims at “Fostering and sharing of knowledge, innovation and digitalisation” (OECD, 2023[2]). The EU CAP Network recently launched a Thematic Working Group to produce guidance on how to assess the CAP’s contribution to sustainable farm productivity.

The CAP serves as the primary policy framework supporting EU farmers and has traditionally provided investment support to stimulate farm modernisation and productivity. This support is manly provided through RDPs, with the overall objective of stimulating technical progress and labour productivity. These investments aim at upgrading buildings, improving energy efficiency, incorporating renewable energy sources, or developing efficient irrigation systems. Financial support can also be granted for farmers to invest in modern equipment and machinery, as well as innovative technologies, such as precision farming, IoT (Internet of Things) applications, and robotic systems. These measures can facilitate adoption of modern technologies by reducing financial barriers, thereby helping farmers operate more efficiently and sustainably. Direct payments in the CAP may also have mixed impacts on agricultural productivity.[13]

The evolution of CAP support shows an increasing integration of environmental and climate objectives, reflected in the increasing scope of both mandatory and voluntary input constraints that are attached to payments. The CAP support has increasingly aimed at encouraging sustainable practices,[14] as well as promoting resource efficiency, biodiversity conservation and climate actions.[15] A growing share of payments have been tied to agri-environmental requirements, and the newly introduced eco-schemes have been designed to further promote actions in areas such as carbon farming and nutrient management, or integrated plant protection aimed at increasing soil fertility, rational fertilisation, or improving crop quality, and ultimately expected to translate into agricultural income. The range of available interventions is broad, with support for climate-friendly animal husbandry and environmentally friendly crops, carbon farming, and agroecology being just a few examples implemented by selected EU Member States. Pillar 2 interventions also include a broad range of measures that contribute to sustainability objectives, including agri-environmental and climate interventions, as well as organic farming schemes, which offer monetary incentives to encourage practices that exceed basic regulatory standards under conditionality and eco-schemes requirements. Such interventions are combined with measures supporting on investments in the modernisation of farms, including for environmental purposes.

In their CSPs for the period 2023-27, EU Member States were required to outline their approaches to modernising their national Agriculture Knowledge and Innovation Systems (AKIS). Interventions planed under the “Cooperation” and “Knowledge and Advice” headings aim to foster collaboration among AKIS actors, and facilitate knowledge exchange, including through advice, training and demonstration farms. The European Commission (EC) aims at strengthening the role of agricultural advisors in promoting environment-friendly practices and new technologies among EU farmers. CAP instruments such as farm modernisation investment or young farmer support, incentivise farmers to upgrade their skills through minimum qualification requirements. Furthermore, knowledge transfer, research and innovation activities, are also supported through sectorial interventions under the EAGF (OECD, 2023[2]).

European Commission’s research, development and innovation initiatives

The European Commission (EC) established the European Research Area (ERA) to create a unified market for research, innovation, and technology across Europe. This initiative is essential to the EU’s research and innovation goals, as it promotes connectivity and leverages economies of scale among research entities. While EU Member States have their own research policies and funding, the EC aims to help align these national efforts and encourage joint programming. In the agricultural sector, the Standing Committee of Agricultural Research (SCAR) supports this alignment by facilitating interaction among ERA countries on research and innovation strategies. SCAR has contributed to the development of European

Framework Programmes for Research and Innovation, including Horizon Europe. The SCAR's strategic working group on Agricultural Knowledge and Innovation Systems (SWG SCAR-AKIS) is tasked with recommending improvements for knowledge and innovation systems related to agriculture and interconnected areas such as the environment, biodiversity, or food systems (OECD, 2023[2]).

Horizon Europe (HE), the EC's key research and innovation framework programme for 2021-27, is the EU's primary fund for fostering research and innovation, including for sustainable agriculture. Notably Cluster 6, titled "Food, Bioeconomy, Natural Resources, Agriculture, and Environment", has a budget of EUR 9 billion for 2021-27 to support research and innovation in the areas such as sustainable land use and cultivating a resilient inclusive agricultural sector. It incorporates partnerships, networks, and initiatives like thematic networks, which compile scientific evidence and best practices into accessible materials for end-users (OECD, 2023[2]). Under HE, and its predecessor Horizon 2020, several successful projects have emerged contributing to building solutions for more sustainable agricultural sector, including in areas such as precision farming, sustainable fertiliser production, agroecology, as well as animal, plant and soil health.

HE uses partnerships to promote cross-country collaboration in research and innovation, fostering synergies between EU and national research agendas, and channelling public and private investments to address global challenges and European policy goals. Twenty-three per cent of HE's Cluster 6 funds is allocated to partnerships, with additional commitments from the private sector and public partners. Among the eight partnerships, four are specifically relevant to sustainable farming and food systems. The Accelerating Farming Systems Transition: Agroecology Living Labs and Research Infrastructures partnership aims to promote sustainable farming practices through real-life experimentation and research infrastructure (EC, 2024[12]). The Animal Health and Welfare partnership focuses on developing new tools and knowledge to manage infectious animal diseases, combat antimicrobial resistance, and improve animal welfare. The Agriculture of Data partnership supports sustainable agricultural production by developing EU-wide datasets and using digital and environmental data. The Sustainable Food Systems for People, Planet, and Climate partnership seeks to promote healthy, safe, and sustainably produced diets, establishing a food system knowledge hub and a network of living labs (OECD, 2023[2]).

Horizon Europe recently adopted a more mission-driven approach to addressing complex societal challenges through interdisciplinary, cross-sectoral, and cross-institutional collaboration. Its new flagship initiatives, known as EU Missions, focus on delivering clear, relevant, and ambitious objectives with measurable and time-bound targets. These missions are planned as a portfolio of actions, including research projects, policy measures, and even legislative initiatives, which build on cooperation and synergies with other parts of Horizon Europe, including clusters and European Partnerships, as well as the other policy frameworks such as CAP with its Operational Group projects. "A Soil Deal for Europe" is the EU Mission benefiting the agricultural sector. With a budget of EUR 320 million for 2021-23, it targets the restoration of soil functions. This mission aligns with the European Green Deal and aims to increase the share of healthy soils beyond the current 30-40% by 2030. The mission aims to foster a common European framework for soil monitoring and knowledge dissemination, as well as support enhancing the impact of future innovations (OECD, 2023[2]).

Non-agricultural instruments of the EC contributing to sustainable productivity growth in EU agriculture

The Recovery and Resilience Facility (RRF) is a temporary instrument of the European Union, in force since 2021 until 2026, designed to help EU Member States to strengthen their economies recovering from the COVID-19 crisis, while promoting sustainable and resilient growth. The Facility brings up to EUR 648 billion (USD 700 billion) in loans and grants, with at least 37% dedicated to climate and 20% to digital initiatives. Member States submit National Recovery and Resilience Plans, which include reforms and investments to achieve specific milestones and targets. These plans include developing new research-intensive "green" technologies to address environmental issues, disseminating technological innovation

related to mechanisation and precision agriculture, creating innovation hubs, introducing up-to-date upskilling programmes for adults and adapting curricula for universities and vocational schools. They can also provide support for investment in machinery and infrastructure (e.g. smart irrigation networks), as well as upgrading existing information systems and their integration with other public systems and registers.

The Digital Europe Programme (DIGITAL) supports the EU digital targets for 2030. One notable project worth EUR 8 million (USD 9 million) involves deploying an agricultural data space, enabling the agricultural sector to share and access data, thereby enhancing its economic and environmental performance, also by supporting education and training in digital areas. DIGITAL supports European Digital Innovation Hubs, which help companies develop and adopt digital solutions. These hubs offer critical services such as financing advice, training and technical expertise, along with opportunity to experiment before investing. In the area of agriculture, they are also expected to build links with the EIP-AGRI projects (EC, 2021[13]).

High level initiatives of the European Commission for agricultural sustainable productivity

"Total factor productivity in agriculture" was incorporated as a context indicator (C.27) to monitor the CAP performance. Commission services such as DG AGRI, JRC, and ESTAT work with entities like the ERS USDA, OECD (including participation in the OECD Network on Agricultural Total Factor Productivity (TFP) and the Environment), FAOSTAT, and Eurostat to help establish the productivity (and sustainable productivity) measurement, so that the analytical results are both useful and understandable for policy makers, farmers, researchers and other stakeholders.

The European Commission also actively participates in the international initiatives to accelerate the transition towards more sustainable food systems. For example, it has joined USDA-led Coalition on Sustainable Productivity Growth for Food Security and Resource Conservation (SPG Coalition), which adopts a holistic approach to productivity growth by considering impacts and trade-offs among multiple objectives and optimising agricultural sustainability across social, economic, and environmental dimensions. The European Union also participates in other United Nation Food System Summit (UNFSS) coalitions, including Food Systems Transformation Through Agroecology, Healthy Diets from Sustainable Food Systems for Children and All (HDSFS), School Meals, Zero Hunger.

Recent policy developments

Domestic policy developments in 2023-24

Overall spending

The EU budget for agriculture and rural development in 2023 was EUR 52.5 billion (USD 56.8 billion), a decrease of EUR 2.6 billion (USD 2.8 billion) compared to 2022, largely due to the decrease of Pillar 2 budget. Most of the rural development expenditures were related to the continuation of 2014-22 measures, as the majority of the new 2023-27 measures had not yet been activated. Expenditure under Pillar 1 was EUR 40.5 billion (USD 43.8 billion) (76.3%), and EUR 11.9 billion (USD 12.9 billion) (22.8%) under Pillar 2. Pillar 1 also funds market support measures, representing 6.3% of the overall agriculture and rural development budget in 2023 (Table 11.5).

Table 11.5. EU expenditure on agriculture by source and use, 2023

		Budget (EUR million)	Share in CAP expenditures
Pillar 1	Decoupled direct payments	32 011	61.0%
	Coupled direct payments	4 729	9.0%
	Interventions in agricultural markets	3 292	6.3%
Pillar 2	Rural Development - EU funding	11 990	22.8%
Pillar 1 and 2	Other expenditures	475	0.9%
	Total	52 497	100.0%

Note: Estimated funding. Numbers may not add up to 100 due to rounding. Other expenditures include administrative expenditures, clearance of accounts, technical assistance and completion of previous programmes.
Source: OECD calculations based on European Commission, EUR-Lex budget 2024.

Agri-environmental sustainability

In 2023 and early 2024 there were important policy developments regarding some of the regulations that underpin the Farm-to-Fork and Biodiversity Strategies:

- Two legal proposals were adopted on 5 July 2023 on plant reproductive material and forest reproductive material (EC, 2023[14]), with the aim of aligning current legislation with the objectives of the European Green Deal and to provide farmers with high-quality seeds that guarantee stable and sustainable yields. As part of the same package, a proposal on New Genomic Techniques was also presented (EC, 2023[15]), to steer developments towards contribution to sustainability goals in a wide range of plant species, especially for the agri-food system and to create an enabling environment for research and innovation, especially for SMEs.
- On 27 March 2024 **the European Commission withdrew the proposal for a new Regulation on the Sustainable Use of Plant Protection Products**. The proposal, which included legally binding targets at EU level (with effort sharing between Member States) to reduce by 50% the use and the risk of chemical pesticides as well as the use of the most hazardous pesticides by 2030, was withdrawn since no agreement was foreseeable, in view of the rejection of the proposal by the European Parliament and the lack of progress of the discussions in the European Council (EC, 2024[16]). The Sustainable Use of Pesticides Directive (2009/128/EC) will remain in force.
- One of the Farm to Fork's flagship initiatives is a proposal for a legislative Framework for Sustainable Food Systems. The objective of this horizontal framework law is to establish new foundations for future food policies by introducing sustainability objectives and principles on the basis of an integrated food system approach. Although this legislative framework was expected to be adopted by the end of 2023, this was not the case, and the proposal was not mentioned in the European Commission work programme for 2024.

In April 2024 the European Parliament approved a review of the CAP Regulations – the so-called "simplification package" – that, following the approval of the European Council, will further modify some environmental rules. **The approved changes, which will be in force until the end of the current CAP 2023-27, aim to reduce the burden on farmers and provide more flexibility for Member States regarding some conditionality standards**, also with the objective of avoid overlapping with existing standards. Member States may adjust the reference ratio of permanent grassland to agricultural area (GAEC 1) and will be allowed to exempt certain crops, soil types and farming systems in the application of several standards (namely GAEC 5, 6, 7 and 9). While these exemptions must be limited in area and are permitted only to address specific problems, Member States may introduce derogations to the adoption of farming practices (e.g. tillage) against soil degradation (GAEC 5) and on the minimum soil cover in sensitive periods (GAEC 6). Member States may also be able to allow farmers to carry out crop

diversification instead of crop rotation (GAEC 7) and to establish an incentivisation scheme as part of the eco-schemes proposed to farmers instead of keeping land fallow or keeping unproductive features on 4% of their arable land (GAEC 8). Ploughing to restore permanent grassland in Natura 2000 sites could be allowed in case it is damaged due to predators (GAEC 9) and temporary derogations are also allowed if weather makes compliance with standards impossible. Small farms (up to 10 ha) will be exempt from conditionality controls and from the application of administrative penalties for non-compliance with conditionality requirements.

Rural Development

The implementation of the Rural Pact and an EU Rural Action Plan has proceeded in 2023, through several key events and publications.[16] Relevant publications are "The cost of non-rurality - preparing for a better urban-rural balance in EU funding" (Núñez Ferrer et al., 2023[17]), which highlights the importance of achieving a balanced urban-rural policy and the report by the High-Level Group on the Future of Cohesion Policy, entitled "Forging a sustainable future together" (EC, 2024[18]), which acknowledges that Cohesion is far too important to be left to Cohesion Policy alone" and that "Cohesion Policy exists amidst a broad spectrum of other EU policies [including] established policies such as the Common Agricultural Policy."

On 27 March 2024 the European Commission adopted its report on the implementation of the EU's rural vision. The document, entitled "The long-term vision for the EU's rural areas: key achievements and ways forward" (EC, 2024[19]), takes stock of the actions that have been carried out since the publication of the Commission Communication in June 2021. It provides an overview of new indicators and latest data on rural areas, offering first insights into the progress achieved so far and reflections on future directions, including on the proposals for EU policies for the post-2027 programming period.

Monitoring and evaluation of the CAP

The performance monitoring and evaluation framework (PMEF) of the CAP 2023-27 is regulated by the Reg. EU 2021/2115. In 2023 and early 2024, further guidance was provided by the European Commission to EU Member States on how to plan and report CAP output and results indicators and a report was released on 19 February 2024 on the evaluation criteria (EC, 2024[20]). Under the PMEF, the European Commission must carry out an interim evaluation of the CAP by 2026.

In order to support the implementation of the new CSPs, the European Commission launched the EU CAP Network, a forum through which Member States' organisations, administrations, researchers, entrepreneurs and practitioners can share knowledge and information (e.g. via peer-to-peer learning and good practices) about agriculture and rural policy (Box 11.1).

Box 11.1. The EU CAP Network

The EU CAP Network brings together stakeholders from the European Network for Rural Development and EIP-AGRI with the overall objective of driving and steering all aspects of the implementation of the CAP by:

- involving people interested in agriculture, forestry and rural areas across the European Union
- providing opportunities for European peer-to-peer networking and exchange
- sharing information, including good practices and funding opportunities
- improving skills
- encouraging the exchange of knowledge
- supporting the uptake of innovations in agriculture

- strengthening AKIS approaches.

The Network supports the design and implementation of CSPs, innovation and knowledge exchange, including EIP-AGRI, and evaluation and monitoring of the CAP. It has dedicated thematic work on CAP implementation, innovation and evaluation, as well as trending topics.

Recent publications from the Network of relevance to implementation of the CSPs cover topics such as the ante evaluations of CAP post 2020 (EC, 2023[21]), on the design and implementation of eco-schemes (EC, 2023[22]), and on how to enhance the biodiversity on farmland through high-diversity landscape features (EC, 2023[23]).

On 29 July 2023, the European Commission released a study that evaluated the contribution of the European Network for Rural Development (ENRD) and National Rural Networks (NRNs) in implementing EU Rural Development Policy (ADE S.A., CCRI and OIR, 2023[24]). The study analysed the effectiveness of these networks in supporting 118 Rural Development Programmes during the 2014-20 period.

Policies to mitigate emissions from agriculture

To meet the legally binding goals of a 55% net reduction in GHG emissions by 2030 (compared to 1990) and achieving climate neutrality in Europe by 2050, two legislative developments were enacted in April 2023. The Council adopted legislation focusing on climate targets until 2030, notably amending the EU Regulation 2018/842 on mandatory annual reductions in greenhouse gas emissions by the Member States in the period 2021-30. This results in **updated goals for EU Member States of reducing greenhouse gas emissions from sectors outside the EU Emissions Trading System (ETS), such as agriculture, waste and land use**.

The Council also adopted the revision of the EU Regulation (EU) 2018/841 relating to the inclusion of GHG emissions and their absorption due to LULUCF in the climate and energy policy framework until 2030, which establishes rules for accounting for emissions and removals from LULUCF activities, including agricultural practices such as managed cropland, grassland and wetland. To enhance the LULUCF sector's role in climate action, the proposed amendments shift the focus from balancing emissions and removals to increasing removals. The goal is to reverse the recent decline in the sector's carbon sink capacity, targeting removals of 310 $MtCO_2eq$ by 2030 (EP, 2023[25]).

In February 2024, the European Parliament and the Council reached a provisional agreement on the Carbon removals and carbon farming (CRCF) Regulation, which establishes **the first EU-wide voluntary framework to certify carbon absorption, farming, and storage in European products**. Defining quality criteria and outlining monitoring and reporting processes, the regulation aims to encourage investments in innovative carbon removal technologies and sustainable carbon farming solutions, as well as to combat greenwashing (EC, n.d.[26]). In April 2024, the Council approved revisions to the Industrial Emissions Directive (IED), **extending clean air and water compliance requirements to a larger number of pig and poultry farms**.

Climate change mitigation measures implemented in EU Member States during the 2023-24 period are embedded into their CAP strategic plans 2023-27, notably through rural development interventions and newly established eco-schemes. Several supported actions are a continuation of the measures of the CAP 2014-22, while a few are substantially new. To reduce GHG emissions and enhance carbon sequestration, EU Member States overall support farming practices such as liming, cultivation of catch crops, maintenance of grassland, organic production and agroecology, among others. Additional climate change mitigation policies were enacted outside the CAP, as described in the "Country snapshots" section below.

Domestic policy responses to Russia's war of aggression against Ukraine

The war in Ukraine and other disruptions kept prices of food and inputs high through 2023. Most interventions put in place in 2022 were extended in some way in 2023. At the EU level, new CAP flexibilities, exceptional measures and direct support to farmers were introduced, allowing each Member State to choose which measures to implement, based on their own specific circumstances.

The Commission adopted successive exceptional and temporary derogations of the application of conditionality measures aimed at enlarging the European Union's production capacity. Most Member States made use of the 2023 derogations granted by the European Commission related to the obligation to rotate crops and set aside non-production areas (GAEC 7 and GAEC 8 under CAP 2014-22). Similarly, most of them made use of the 2024 derogation permitting the fulfilment of GAEC 8 under CAP 2023-27 by ensuring at least 4% nitrogen-fixing plants or catch crops without using pesticides, where the mandatory set-aside of 4% of arable land thus no longer applied.

Following the 2022 decision allocating a fund of EUR 500 million (USD 526 million) to Member States to provide their farmers with temporary exceptional aid to counter threats of market disturbance resulting from the war in Ukraine (EC, 2022[27]), further exceptional measures financed from the agricultural reserve of the CAP were introduced to alleviate effects of the war on certain European farmers. The surge in cereals and oilseeds imports from Ukraine to neighbouring EU Member States, via EU-Ukraine Solidarity Lanes, adversely affected local farmers. In response, EUR 56 million to aid was offered in 2023 to affected farmers in *Bulgaria*, *Poland*, and *Romania*, with the possibility to double the allowance with national funds (EC, 2023[28]). A second exceptional measure was implemented in June 2023, providing EUR 100 million to support farmers producing specific cereals and oilseeds in *Bulgaria*, *Hungary*, *Poland*, *Romania*, and *Slovakia*, with the option for additional national assistance of up to 200% (EC, 2023[29]).

Agricultural product prices sharply declined in mid-2023 in a context of high input costs, food price inflation, and decreased consumer demand, leading to a third exceptional measure, implemented in July 2023, to address challenges in the animal, fruit and vegetable, wine, cereals, and oilseeds sectors. This emergency support aimed to assist farmers in the 22 Member States not covered by previous measures, with a total fund of EUR 330 million and an additional national support of up to 200%. Member States prioritised support for the hardest-hit sectors and could provide extra aid for wine distillation beyond national programme allocations (EC, 2023[30]). In its rationale and design, this exceptional measure also aimed to address the impacts of adverse weather events, such as the drought of spring 2023, particularly acute in the south-western Member States, and related losses incurred by farmers.

In parallel, in the context of the general increase of input costs required for wine production, such as costs for energy and bottles, a new exceptional measure was adopted in June 2023 to address potential market imbalances in the sector. This measure allows Member States to redirect financial resources for specific circumstances, including support for crisis distillation of wine (EC, 2023[31]). EUR 44 million was spent on this measure as of October 2023.

The Commission also amended the Temporary Crisis and Transition Framework (TCTF) in November 2023, allowing Member States to use state aid flexibilities to mitigate the economic impact of the war in Ukraine. The amendment includes a limited prolongation of the provisions enabling Member States to continue to grant limited amounts of aid, together with a proportionate increase in the aid ceilings – including for the agricultural sector – and aid to compensate for high energy prices, effective at that time until 30 June 2024. Other sections of the framework remain unchanged, with some being phased out by 31 December 2023 and others remaining in effect until the end of 2025.

Strategic dialogue on the future of EU agriculture

A Strategic Dialogue on the future of agriculture in the European Union was launched in January 2024. This Strategic Dialogue is a forum to shape a shared vision for the future of the EU's farming and food

system, aiming to address both challenges and opportunities, such as a fair standard of living for farmers and rural communities, supporting agriculture within the planet's boundaries, exploiting the potential of knowledge and technological innovation. The first meeting took place on 25 January 2024 and the second plenary meeting on 11-12 March 2024. The findings and recommendations of the final report on the Strategic Dialogue – expected by late summer 2024 – will be discussed in European Parliament and with the Member States, to help inform the development of future EU agricultural policy.

Trade policy developments in 2023-24

Trade Agreements

The **European Union–New Zealand Free Trade Agreement**, signed in July 2023, was ratified in November 2023 by the European Union to **enter into force on 1 May 2024**. This deal reflects the EU's new trade approach, integrating sustainable development with a dedicated chapter on sustainable food systems. Once in effect, European farmers stand to benefit from improved access to the New Zealand market, with tariffs eliminated on key EU exports such as pork, wine, chocolate, and confectionery. The agreement allows for the protection of geographical indications of EU wine and spirits and traditional products, and also protects sensitive agricultural sectors through tariff rate quotas, such as some dairy products, beef and mutton, ethanol and corn.

The European Union and the United Kingdom reached a principle political agreement known as the Windsor Framework for Northern Ireland in February 2023. Arrangements address customs, agri-food matters, medicinal products, VAT, and excise duties, while also considering perspectives and issues pertinent to Northern Ireland's local communities. Efforts are being made in the sanitary and phytosanitary domain to ensure that residents of Northern Ireland have access to the same food products as those in Great Britain, with streamlined transportation and reduced inspection requirements. Controls will be reduced once food labelling assurances are fully operational.

In 2023, the **European Union reinforced its trade ties with Asia** through various initiatives, including signing a digital partnership agreement with Singapore, strengthening strategic relations with India through a Trade and Technology Council, and engaging in the 10th EU-China High Level Economic and Trade Dialogue to discuss economic, financial, trade, and investment co-operation.

Trade policy responses to Russia's war of aggression in Ukraine

In response to Russia's full-scale invasion of Ukraine, the European Union implemented autonomous trade measures (ATMs) in June 2022, allowing duty-free access for all Ukrainian products to the European Union, including agricultural products previously subject to tariffs or tariff rate quotas. These measures were extended in June 2023. In early 2024, the Commission proposed to renew the suspension for another year with additional safeguards. While aimed at providing support to Ukraine, the proposal also seeks to reinforce the protection of sensitive agricultural products by strengthening the safeguards included in the 2023 regulation.[17] Unlike the 2023 regulation, this new proposal, to be adopted by the Council in May 2024 and enter into force in June 2024, aims at addressing the impact on individual Member States rather than the entire EU market. A new automatic safeguard will also be added for certain sensitive products, such as poultry, eggs, sugar, oats, maize, groats, and honey.

The Commission assessed the impact of certain agricultural exports from Ukraine on the EU market, with a focus on five Member States, namely Bulgaria, Hungary, Poland, and Slovakia – where import restrictions on a range of agricultural products were introduced or announced in April 2023 in response to increased imports from Ukraine (OECD, 2023[32]) – as well as Romania. Temporary co-ordination measures were introduced in May 2023 through a Co-ordination Platform involving these countries, the European Commission and Ukraine. The European Union imposed restrictions on Ukrainian grain imports to

neighbouring EU countries while allowing for the transit of agricultural products to other countries. These measures helped alleviate tensions, ensuring smooth export flows of Ukrainian products to third countries. The restrictions expired in September 2023, and Ukraine agreed to implement strategies to prevent grain supply surges and maintain market balance in neighbouring states (EC, 2023[33]).

Following the lifted restrictions on Ukrainian agricultural products, Poland, Hungary, and Slovakia imposed unilateral import bans that expanded the list of prohibited items, which led Ukraine to initiate a WTO dispute against the three countries. Meanwhile, Romania and Bulgaria agreed on a new mechanism that allows Ukraine to resume exports of four groups of crops that were banned since May 2023, and requires both Ukrainian and their own farmers to obtain specific licences. Between October and December 2023, only pre-authorised economic operators were allowed to import wheat, maize, rapeseed and sunflower from Ukraine into Romania. Since November 2023, Bulgaria requires licences for the import of these four commodities from Ukraine.

Country snapshots

Following this introduction, this section comprises 27 country snapshots, one for each EU Member State, which include an overview of the country's CSP 2023-27[18] with some information on its implementation in 2023 and early 2024, followed by a concise description of other national policy developments.

Overview of the CAP Strategic plans

The CAP 2023-27 offers more flexible implementation by Member States. Member States were allowed to modify the budget allocation between the direct payments and rural development by transferring the allocated amounts in either direction within predefined limits.[19] Eleven Member States (*Belgium-Flanders, Czechia, Denmark, France, Germany, Greece, Italy, Latvia, the Netherlands, Romania* and *Slovakia*) chose to transfer funds from direct payments to rural development, while six Member States (*Croatia*, *Luxembourg*, *Hungary*, *Malta*, *Poland* and *Portugal*) decided to transfer funds in the opposite direction.[20]

Member States must reserve at least 10% of their annual financial allocation to direct payments for the Complementary redistributive income support for sustainability (CRISS) to ensure redistribution of direct payments from larger to smaller or medium-sized holdings. Only *Denmark* and *Malta* did not include the CRISS by way of derogation. Member States may also address the need for redistribution of income support through other instruments and interventions (e.g. capping and degressivity, payment to small farmers). The majority of CSPs do not apply degressivity or capping (17 Member States), while four Member States apply both (*Belgium*, *Ireland, Slovakia,* and *Spain*). Four countries apply only capping (*Austria*, *Bulgaria*, *Latvia* and *Lithuania*) and two countries apply only degressivity (*Portugal* and *Slovenia*). Only five Member States (*Malta*, *Bulgaria*, *Czechia*, *Latvia*, and *Portugal*) apply the simplified payment for small farmers (PSF). All Member States except the *Netherlands* planned Coupled Income Support (CIS) to redistribute direct payments to specific sectors: an estimated 2.1 million farms are expected to benefit from this type of support, equivalent to 21% of EU farms (EC, 2023[34]).

Eco-schemes are a new tool to support environmental and climate goals. While participation in eco-schemes is voluntary for farmers, Member States were obliged to include one or more eco-schemes in their CSPs and they were also required to allocate a minimum of 25% of direct payment funding for these new measures, although this share can be lower if more than 30% of the EAFRD is allocated to certain interventions addressing environment and climate objectives (usually called "rebate") (EU CAP Network, 2023[35]). Ten Member States took advantage of the "rebate" possibility to allocate less than 25% of their direct payments to eco-schemes (*Austria*, *Cyprus*, *Denmark*, *Finland*, *Germany*, *Malta Hungary*, *Slovenia*, *Spain,* and *Sweden*).

While most Member States designed several eco-schemes, four countries (*France*, *Hungary*, *Ireland*, and the *Netherlands*) adopted only one multi-dimensional eco-scheme that includes a package of options, and two countries (the *Netherlands* and *Hungary*) put forward points-based eco-schemes, with a scoring or weighting of the different practices according to their expected positive environmental impact (EU CAP Network, 2023[35]). Although eco-schemes mostly include annual commitments, seven CSPs (*Belgium-Flanders, Denmark, Finland, Italy, Lithuania, Malta,* and *Slovenia*) include eco-schemes with multi-annual commitments.

All Member States have allocated funds for sectoral interventions, even though there is some variability regarding the financial allocation and the supported sectors. While interventions in the fruit and vegetables sector are mandatory for Member States with recognised producer organisations along with interventions in the apiculture and wine sectors, the CAP legislative framework allows them to extend sectoral interventions to "other" sectors within the limit of 3-5% of national direct payments allocation in view of attaining specific objectives (EC, 2023[9]). Six Member States (*Bulgaria*, *Czechia, France, Latvia*, *Italy,* and *Slovakia*) used the opportunity to plan support for "other" sectors.

Other key national policy developments

EU Member States have developed national policies and measures in various priority areas in 2023 and early 2024. In response to the ongoing crises, including the economic consequences of the war in Ukraine, rising input prices and multiple market disruptions, most EU countries have implemented emergency support measures. In addition to the exceptional measures planned at EU level, EU countries have also granted regulatory flexibilities, tax concessions, investment assistance and financial measures to help farmers and agri-food businesses cope with the financial consequences of the crisis. Consumer policies aimed at facilitating access to basic food were also strengthened.

Other emergency measures triggered by the effects of natural disasters were granted in the form of economic damage compensation for losses due to adverse climatic events, such as drought, forest fires, storms, floods, frost and freezing. Efforts have also been made to step up prevention of the risks associated with African swine fever on pig farms.

Various Member States enacted climate change mitigation policies outside the CAP. *Austria* and *Czechia* launched new funds for on-farm energy self-sufficiency investments and biomethane production, respectively. *France* regulated solar panel use on farms. *Sweden* initiated peat forest rewetting contracts. *Luxembourg* introduced measures for livestock reduction and rapid manure incorporation and implemented an authorisation system for herd expansion. *Germany* launched the Federal Action Plan on Nature-based Solutions for Climate and Biodiversity. *Slovenia* started to prepare its first Climate Report on the state of agriculture. *Romania* published its long-term strategy for reducing GHG emissions aiming at reaching carbon neutrality by 2050, with explicit incorporation of the agriculture and LULUCF sectors.

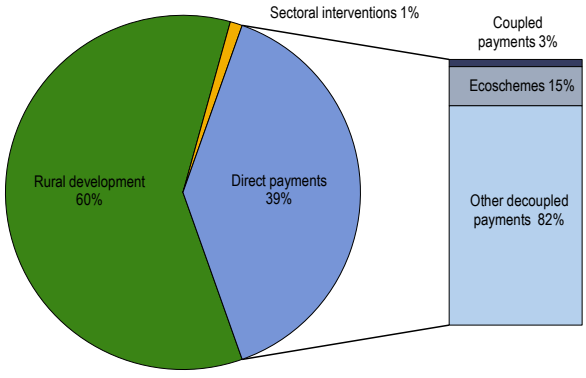
Austria

CAP Strategic Plan 2023-27

Main objectives: Ensure the sustainable competitiveness and resilience of farms; secure food security; strengthen natural resources and climate protection; improve vitality and quality of life in rural areas.

Implementation in 2023-24: Significant changes in the structure of area-based payments include a reduction of basic payment levels, a new redistribution premium through additional payments for the first 40 ha, increased per-animal payments for alpine farming. Together with the agri-environmental programme ÖPUL, four eco-schemes are implemented to promote green cover, extensive grazing and erosion reduction. Within ÖPUL, key whole-farm schemes to enhance biodiversity, crop diversification, grassland preservation and capacity building focus on environmentally friendly and biodiversity-promoting management and on organic farming. Biodiversity-relevant areas increased by 44% in 2023. A greater focus also has been given to strengthening the Agricultural Knowledge and Innovation System.

Table 11.6. Overview of Austria's CSP as initially approved

Main features	Budget distribution
Budget: EUR 8 650 million Transfer between pillars: No	
Pillar 1 Direct payments: • Capping: Yes • Degressivity: No • Simplified payment for small farmers: No Sectoral interventions: Apiculture, fruit and vegetables, wine	
Pillar 2 Share of EU financing (average): 49% EU funding for environmental and climate objectives: 58% Additional national financing: EUR 211 million	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- Limits for the simplified taxation of farms were increased, implying that this simplified taxation (and lower effective tax bills) will benefit a larger group of farms.
- A strategic process was launched (from November 2023 to May 2024) in order to develop a strategic view ("VISION 28+") on how Austrian agriculture should develop in future, and what actions are required to reach this vision.
- The Stimulus Programme for Agriculture (*Impulsprogramm Landwirtschaft*) is implemented from 2024. The programme increases nationally co-funded agri-environmental payments and payments for disadvantaged areas, and raises the support limits for the investment support.
- The new Veterinary Medicines Act (TAMG) implements two related EU regulations from 2019. Among others, this law adds further restrictions on the supply and use of antibiotics in animal husbandry and introduces limits and target values for the on-farm use of antibiotics. The use of antibiotics for yield improvements or under poor husbandry conditions is now banned.

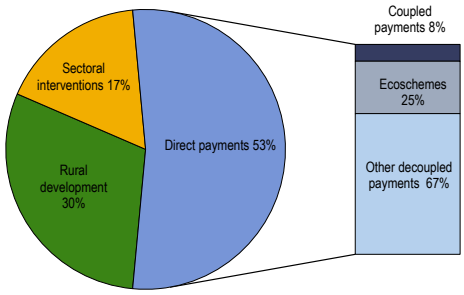
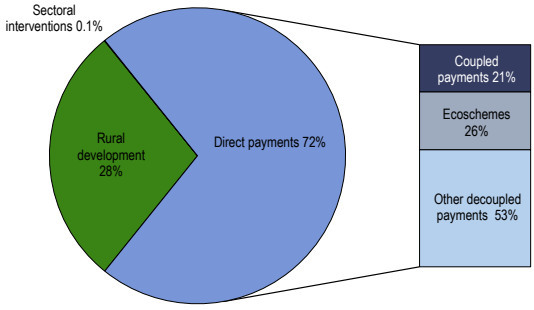
Belgium

CAP Strategic Plans 2023-27

Main objectives. ***Flanders***: Ensure income security; raise carbon sequestration, reduce GHG emissions and adapt to climate change; improve water and soil quality. ***Wallonia***: Build the economic resilience of farmers; ensure environmental and climate transition; support young farmers, innovation and digitalisation.

Implementation in 2023-24: Both regions amended conditionality and eco-schemes specifications. Coupled support for the livestock sector has been adjusted to more sustainable production, for instance by introducing a penalty for high stocking densities in ***Wallonia*** or by applying entry and subsidy conditions in ***Flanders***, such as local feed production or sustainable grassland management in beef production.

Table 11.7. Overview of Flanders' and Wallonia's CSPs as initially approved

Main features - Flanders	Budget distribution - Flanders
Budget: EUR 1 975 million Transfer between pillars: 10% in 2023, 11% in 2024 and 2025 and 12% in 2026 of initial budget from Direct payments to Rural Development ***Pillar 1*** Direct payments: • Capping: Yes • Degressivity: Yes • Simplified payment for small farmers: No Sectoral interventions: Apiculture, fruit and vegetables ***Pillar 2*** Share of EU financing (average): 57% EU funding for environmental and climate objectives: 54% Additional national financing: EUR 255 million	
Main features - Wallonia	**Budget distribution - Wallonia**
Budget: EUR 1 856 million Transfer between pillars: No ***Pillar 1*** Direct payments: • Capping: Yes • Degressivity: Yes • Simplified payment for small farmers: No Sectoral interventions: Apiculture, fruit and vegetables ***Pillar 2*** Share of EU financing (average): 37% EU funding for environmental and climate objectives: 56% Additional national financing: No	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- In response to Russia's war of aggression against Ukraine, ***Flanders*** granted EUR 1.8 million to apple growers, organic livestock and goat's milk and ***Wallonia*** EUR 2.1 million to apple growers.
- The ***Flemish*** Government has invested EUR 200 million in compensating pig farmers for the reduction or complete closure of their production capacity.

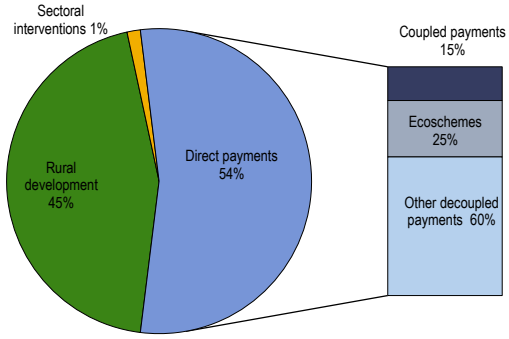
Bulgaria

CAP Strategic Plan 2023-27

Main objectives: Support viable farm income and enhance competitiveness; improve the living and working conditions in rural areas; respond to the needs of young and small farmers; support sustainable farming practices; promote investments that target the protection of natural resources and the climate.

Implementation in 2023-24: More than 60 000 farmers submitted applications for support. Following the 2023 campaign, adjustments to the CSP were proposed, notably changes of certain GAEC standards to respond to farmers' troubles in complying with them, as well as the increase in the budget and allowances for the eco-scheme that encourages green manure to reduce pesticides use. Other eco-schemes promoting organic farming, crop rotation, extensive grassland and ecological areas are being implemented.

Table 11.8. Overview of Bulgaria's CSP as initially approved

Main features	Budget distribution
Budget: EUR 7 726 million Transfer between pillars: No	
Pillar 1 Direct payments: • Capping: Yes • Degressivity: No • Simplified payment for small farmers: Yes Sectoral interventions: Apiculture, fruit and vegetables, milk and milk products, wine	
Pillar 2 Share of EU financing (average): 40% EU funding for environmental and climate objectives: 39% Additional national financing: No	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- BGN 63 million (EUR 32 million) was allocated for national measures to compensate producers for rising prices of energy, animal feed, plant protection products, fuels and fertilisers. An additional BGN 20 million (EUR 10 million) was earmarked to compensate farmers for losses from adverse climatic events, including before the insurance period. Moreover, BGN 16 million (EUR 8 million) was provided to cover irrigation water costs.
- Responding to ongoing crises, the Emergency support to cereals and oilseed sectors worth BGN 53 million (EUR 27 million) was approved for EU funding, allowing for national co-financing.
- In August 2023, the Advisory Council on Land Relations launched a new programme for sustainable water management.
- Since November 2023, import licenses are requested for sunflower, wheat, maize, and rapeseed originating from Ukraine.

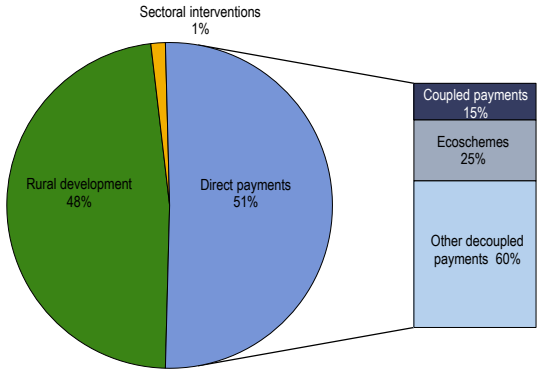
Croatia

CAP Strategic Plan 2023-27

Main objectives: Promote sustainable and economically viable farms and the processing sector; improve living and working conditions in rural areas; support the protection of natural resources, biodiversity, and the climate; focus on young and small farmers; foster of higher standards of animal welfare.

Implementation in 2023-24: Calls for Pillar 2 applications were launched for seven interventions that promote renewable energy use, agricultural production investments, infrastructure development, insurance uptake, participation in quality schemes, LEADER approach, and knowledge transfer. Sector-specific interventions included support for beekeeping and a call for wine sector investments. Amendments to the CSP were carried out, introducing a new eco-scheme focusing on application of organic fertilisers in permanent plantations and adjusting interventions to streamline project implementation and broaden their scope.

Table 11.9. Overview of Croatia's CSP as initially approved

Main features	Budget distribution
Budget: EUR 3 687 million Transfer between pillars: 2% of initial budget from Rural Development to Direct Payments	
Pillar 1 Direct payments: • Capping: No • Degressivity: No • Simplified payment for small farmers: No Sectoral interventions: Apiculture, fruit and vegetables, wine	
Pillar 2 Share of EU financing (average): 80% EU funding for environmental and climate objectives: 37% Additional national financing: EUR 36 million	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- Several measures have been implemented to stabilise agricultural production in response to ongoing disruptions in world and EU markets. These include programmes to compensate for increased production costs, mitigate the impact of natural disasters, provide support to the pig farming sector affected by African swine fever, and offer state support to extremely sensitive agricultural sectors in 2023.
- A legislative framework was established to initiate the consolidation of agricultural land, and public tenders were announced. EUR 40 million was allocated for the consolidation and arrangement of fragmented parcels of agricultural land until 2026, which will allow for a better disposal of farmers' land to increase agricultural productivity and investment in infrastructure. Consolidation involves reducing the number of land plots per owner or user while increasing the size of individual plots.
- With the expiry of moratorium maintaining restrictions on the sale of agricultural land to legal and natural persons from the European Union by 30 June 2023, legal entities and citizens of EU Member States can now purchase agricultural land under the same conditions as Croatian citizens.

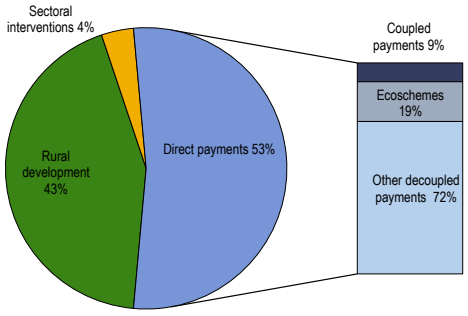
Cyprus

CAP Strategic Plan 2023-27

Main objectives: Renew the agricultural potential of Cyprus; attract younger generations to agriculture; maintain social cohesion and promote a sustainable rural development; protect the environment in which farmers operate.

Implementation in 2023-24: The Single Application for direct payments under the new CAP 2023-27 was characterised by broad participation, with more than 30 000 applications submitted. Amendments to the CSP, approved by the European Commission in December 2023, are mostly related to agri-environmental interventions, including on GAEC standards and eco-schemes, as well as payment rates for animal welfare and conservation of traditional breeds interventions.

Table 11.10. Overview of Cyprus's CSP as initially approved

Main features	Budget distribution
Budget: EUR 450 million Transfer between pillars: No	
Pillar 1 Direct payments: • Capping: No • Degressivity: No • Simplified payment for small farmers: No Sectoral interventions: Apiculture, fruit and vegetables, wine	
Pillar 2 Share of EU financing (average): 60% EU funding for environmental and climate objectives: 56% Additional national financing: No	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- A state aid for the prevention of damage and the restauration of the production capacity affected by wildfires was proclaimed in 2024. Its purpose is the construction of fencing to protect crops from wild animals and the payment of compensation in case of damage to crops.
- Cyprus announced the Financial Support Plan for Associations, Breeders' Associations/Breeding Organisations (Breeding Societies) regarding the creation and maintenance of pedigree records of animals (goats, sheep, cows, pigs, Cypriot horses and Cypriot donkeys), with a total budget of EUR 180 000.

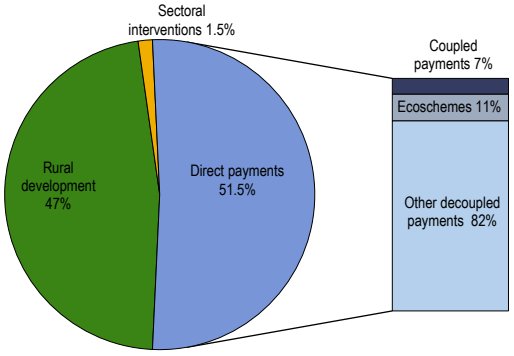
Czechia

CAP Strategic Plan 2023-27

Main objectives: Ensure the competitiveness and resilience of farms; improve the protection of natural resources and climate; improve the redistribution of funds to small and medium-sized farms; strengthen the position of organic farming.

Implementation in 2023-24: The redistributive payment targeting small and medium-sized farmers in the form of additional support for the first 150 ha, which accounts for 23% of the direct payments' envelope, was the subject of 24 286 applications in 2023, worth CZK 4.6 billion (EUR 0.189 billion). Three additional "non-project" rural development (RD) measures were introduced in 2023 to support growing catch crops, bolstering defence capacity in pig breeding through vaccination, and implementing agroforestry practices, while a new one, restricting the use of pesticides in protection zones of water sources on arable land, will start applying in 2024. Two additional "project" RD measures were also introduced to promote advisory services and support technologies decreasing GHG emissions.

Table 11.11. Overview of Czechia's CSP as initially approved

Main features	Budget distribution
Budget: EUR 7 955 million Transfer between pillars: 3% of initial budget from Direct payments to Rural Development	
Pillar 1 Direct payments: • Capping: No • Degressivity: No • Simplified Payment for small farmers: Yes - Sectoral interventions: Apiculture, fruit and vegetables, eggs, wine	
Pillar 2 - Share of EU financing (average): 37% - EU funding for environmental and climate objectives: 54% - Additional national financing: No	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- Exceptional aid was directed to sectors affected by high energy, feed and fertiliser prices. Fruit, vegetables, hops growers and dairy farmers received a national subsidy worth CZK 80 million (EUR 3.2 million) in 2023, complemented by EU funding worth CZK 163 million (EUR 6.5 million).
- The government proposed a consolidation package aimed at restoring public finances, impacting the agricultural sector significantly. Key measures include the introduction of two VAT rates, adjustments in property tax rates with provisions for agricultural land, and changes in various taxes such as those on alcohol and tobacco. Substantial savings, totalling CZK 10.4 billion (EUR 413 million) are planned in agricultural spending, affecting various subsidies and agricultural marketing.
- The recently launched National Quality Policy 2023-30 focuses in part on the quality and sustainability of national food production, supporting producers with subsidies for competitiveness and sustainability, through modernisation and innovation of production processes and products.

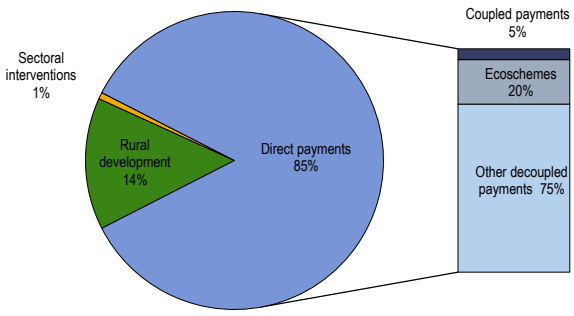
Denmark

CAP Strategic Plan 2023-27

Main objectives: Promote sustainable development of farming, food, and rural areas; ensure food security through a competitive agri-food sector; foster continued modernisation and digitalisation of agriculture.

Implementation in 2023-24: While basic income and coupled income support schemes were fully utilised, eco-schemes were much less so (between 17% and 88% of planned budgets in 2023). Uptake for young farmer aid was higher than planned, but results for water and climate project investments were mixed, with some areas surpassing planned budget (peatlands rewetting) and others falling short (wetlands). Not all Pillar 2 interventions have been opened to applications and many payments are still pending. In order to strengthen CAP implementation and address challenges identified during the first operational year, substantial changes were made to GAECs, the definition of young farmer, and eco-schemes.

Table 11.12. Overview of Denmark's CSP as initially approved

Main features	Budget distribution
Budget: EUR 4 848 million Transfer between pillars: 6% of initial budget from Direct payments to Rural Development	
Pillar 1 Direct payments: • Capping: No • Degressivity: No • Simplified payment for small farmers: No Sectoral interventions: Apiculture, fruit and vegetables	
Pillar 2 Share of EU financing (average): 88% EU funding for environmental and climate objectives: 66% Additional national financing: EUR 116 million	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- In response to challenging weather conditions, Denmark introduced various measures to support livestock producers, such as temporary permissions for mowing after-crop areas, dispensations to reduce forage proportions for ruminants, and waivers from supplemental feeding bans.
- Denmark opted not to make use of the EU derogations from certain CAP requirements aimed at promoting food security following Russia's full-scale invasion of Ukraine. It also chose not to add a national top-up to the EU crisis reserve funds allocated to the country. The DKK 47.3 million (EUR 6.3 million) fund was distributed evenly across farmers based on the eligible agricultural area.
- In 2023, the government released a series of strategic initiatives for the sector with regard to: addressing methane emissions from cattle digestion through research projects and public-private forums; tackling methane and nitrous oxide emissions from manure management with research projects and legal adjustments; introducing a national action plan for plant-based foods; promoting green proteins to reduce environmental impact and provide alternative income opportunities; outlining initiatives to double organic area, consumption and export of organic products by 2030.

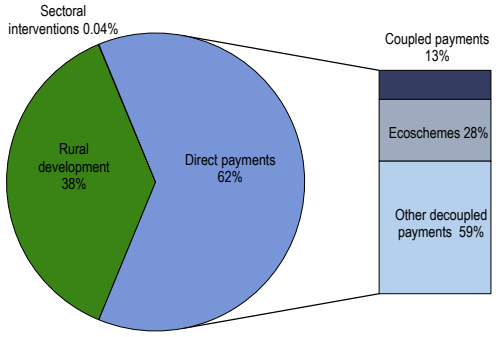
Estonia

CAP Strategic Plan 2023-27

Main objectives: Foster the development of a smart, competitive, resilient, and diversified agricultural sector; ensure long-term food security; respond to the economic, environmental, and social challenges of the sector.

Implementation in 2023-24: From 2023, instead of the previous 8 direct payments, there are now 14 interventions, including 5 new eco-schemes. Coupled support continued, but with a larger budget and complemented sectors. The uptake of some eco-schemes has been lower than expected, possibly due to flexibility in applying GAEC standards, allowing activities on farmland otherwise prohibited. Only the eco-scheme for organic farming exceeded its budget. The first CSP amendments, approved by the EC, were mostly related to technical corrections, GAEC standards, investment support, financial instruments, advisory support, and young farmer's support.

Table 11.13. Overview of Estonia's CSP as initially approved

Main features	Budget distribution
Budget: EUR 1 614 million Transfer between pillars: No	
Pillar 1 Direct payments: • Capping: No • Degressivity: No • Simplified payment for small farmers: No Sectoral interventions: Apiculture	
Pillar 2 Share of EU financing (average): 68% EU funding for environmental and climate objectives: 40% Additional national financing: EUR 6 million	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- Various emergency support measures were implemented to address crises in agriculture and food sector (in total EUR 13.5 million).
- The National Circular Bioeconomy Roadmap was adopted in 2023. To place greater emphasis on circular bioeconomy and support its development, investment measures for the valorisation of bioresources and for increasing the production and uptake of biomethane were developed.
- In 2023, the Rural Knowledge Centre (METK) was established. Its tasks cover research, monitoring, plant breeding, providing advisory and innovation services in the field of agriculture and rural economy and the co-ordination of knowledge transfer (AKIS).
- To achieve the objectives of sustainable agriculture, an integrated GHG and air pollutant assessment forecasting model for livestock and fertilisers, and a tool and guide for assessing the carbon footprint of agricultural holdings at enterprise and product level were developed.

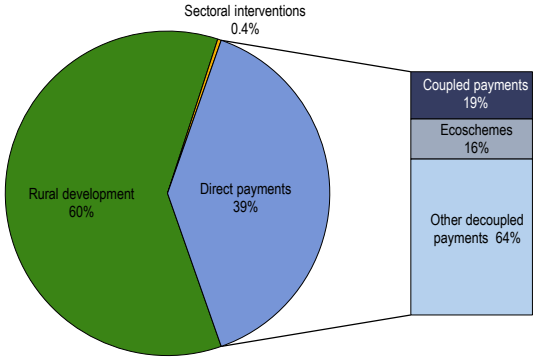
Finland

CAP Strategic Plan 2023-27

Main objectives: Ensure food security; promote farm competitiveness; increase environmental and climate ambition; foster vibrant rural areas; respond to the sector's economic, environmental, and social challenges.

Implementation in 2023-24: During 2023 three eco-schemes have been successfully implemented in Finland. These schemes include: (i) plant cover in winter season (1 825 000 ha), (ii) natural management fields (89 000 ha), and (iii) green fertiliser grassland (11 700 ha). As regards other parts of the CSP, payments for improving animal welfare cover approximately 860 000 LSU. Also, payments for farm advisory services have been successfully implemented and about 11 000 advisory actions were paid for farmers in 2023.

Table 11.14. Overview of Finland's CSP as initially approved

Main features	Budget distribution
Budget: EUR 6 657 million Transfer between pillars: No	
Pillar 1 Direct payments: • Capping: No • Degressivity: No • Simplified payment for small farmers: No Sectoral interventions: Apiculture, fruit and vegetables	
Pillar 2 Share of EU financing (average): 43% EU funding for environmental and climate objectives: 58% Additional national financing: EUR 1 765 million	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- Avian influenza was detected in wild birds and on 72 fur farms, but it did not spread to poultry farms. Following the outbreak of African swine fever in wild boar in Sweden, preventive measures were intensified, including the revision of national legislation and contingency planning to meet the requirements of the new EU legislation and the update of the 2015 report of the Wild Boar Task Force. The working group on Salmonella risk management in the pig sector completed its work and the preparation of the Animal Disease Fund will continue in 2024.
- At the beginning of 2023, a new one-off temporary cost support for agriculture and aquaculture was finalised and implemented due to the crisis-ridden cost situation in agriculture. However, the prices of fertiliser raw materials and energy fell significantly during 2023 from the historically elevated levels at the end of 2022, so the support was paid out less than expected (EUR 30 million).

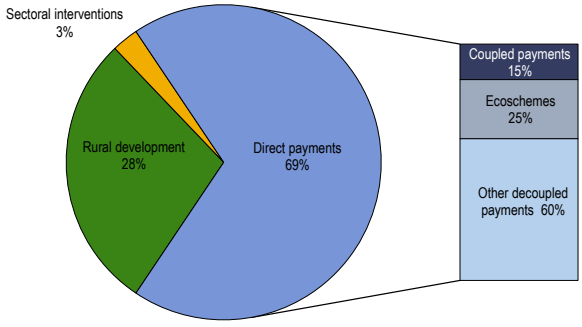
France

CAP Strategic Plan 2023-27

Main objectives: Ensure food security; enhance the sector's sustainable competitiveness and added value; increase the farms' resilience and limit the use of inputs; promote farm diversification, preservation of permanent grasslands, plant protein production, agroecology and organic farming.

Implementation in 2023-24: A key amendment to the CSP was the extension of the operational programmes (OPs) run by producer organisations to sectors other than fruit and vegetables. These OPs, financed by EUR 33 million, are now possible for the plant protein, horticulture, dried fodder, Label Rouge veal, rice, and rabbit sectors.

Table 11.15. Overview of France's CSP as initially approved

Main features	Budget distribution
Budget: EUR 49 742 million Transfer between pillars: 8% of initial budget from Direct payments to Rural Development	
Pillar 1 Direct payments: • Capping: No • Degressivity: No • Simplified payment for small farmers: No Sectoral interventions: Apiculture, fruit and vegetables, olive oil and tables olive, rice, live trees and other plants, bulbs, roots and the like, cut flowers and ornamental foliage, dried fodder, beef and veal, wine	
Pillar 2 Share of EU financing (average): 70% EU funding for environmental and climate objectives: 41% Additional national financing: EUR 1 778 million	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- The Finance Bill (PLF) for 2024 provides EUR 7.6 billion in commitment authorisations (AE) and EUR 7 billion in payment credits (CP), a historic increase of 27% in AE and 17% in CP. These additional resources, which further increase the 2023 budget, aim at accelerating the ecological transition towards a more resilient and sustainable sector, while remaining competitive.
- The 2023 Hedgerow pact, which is part of the ecological plan *France Nation Verte*, includes 25 actions to support the plantation of 50 000 km of new hedgerow by 2030 and will be allocated additional EUR 110 million in 2024. The plan includes a method for local authorities to develop locally adapted hedgerows, an observatory to monitor the project, and specific regulations.
- The 2023 harvest loss insurance and risk management reform, supported by the CSP, reduces the threshold for subsidised insurance to 20% of harvest losses. It implements responses based on risk layers: exceptional risks receive a guaranteed national solidarity indemnity, medium risks use subsidised (up to 70%) multi-risk climate insurance, and low risks are managed by farmers.

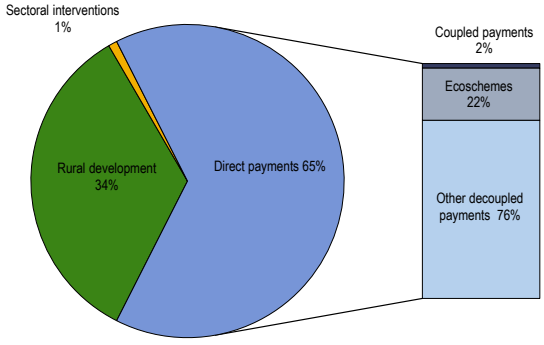
Germany

CAP Strategic Plan 2023-27

Main objectives: Ensure sustainable competitiveness and resilience of farms; improve the protection of biodiversity, natural resources and the climate; boost the quality of life in rural areas through investments, knowledge transfer and innovation; focus on a strategy that considers regional specific features.

Implementation in 2023-24: Challenges in the implementation of the CSP include the administrative burden and lower than expected utilisation of eco-schemes. For 2024, simplifications and premium increases were realised to make the eco-schemes more attractive to farmers. New eco-schemes and an increased budget are under discussion.

Table 11.16. Overview of Germany's CSP as initially approved

Main features	Budget distribution
Budget: EUR 34 169 million Transfer between pillars: 12% of initial budget from Direct payments to Rural Development	
Pillar 1 • Direct payments: • Capping: No • Degressivity: No Simplified payment for small farmers: No Sectoral interventions: Apiculture, fruit and vegetables, hops, wine	
Pillar 2 Share of EU financing (average): 68% EU funding for environmental and climate objectives: 59% Additional national financing: EUR 2 110 million	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- Germany increased its support for organic agriculture, including support for research projects targeting enhanced biodiversity and for advisory services for away-from-home catering companies on the labelling regarding the use of organic food and ingredients.
- The new Farm Opportunities Programme (*Chancenprogramm Höfe*) supports domestic protein production and farmers switching from animal husbandry to production or processing of innovative and climate friendly protein food. New funding was allocated to the Protein Plant Strategy.
- To promote the transformation of livestock systems, support for more animal-friendly farming systems, e.g. investments in design, equipment of stables or individual keeping areas and costs related to going beyond mandatory animal welfare standards, is complemented by new mandatory state labelling with information on husbandry systems, and tightened restrictions for animal transportation.
- New initiatives were launched to foster the digitalisation of agriculture, e.g. interoperative secure data exchange systems along the agricultural value chain, the promotion of Artificial Intelligence (AI) use and experimental fields for digitalisation and AI in agriculture.

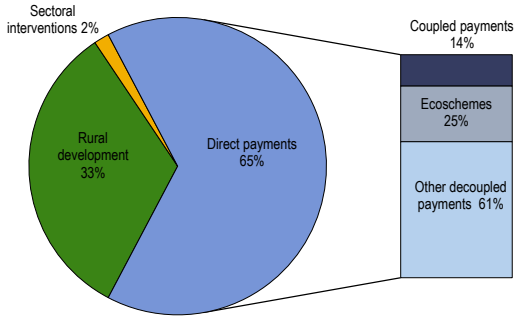
Greece

CAP Strategic Plan 2023-27

Main objectives: Develop a more resilient, green and digital agriculture; improve competitiveness by promoting innovation, young entrepreneurship and fair income for farmers; reduce the environmental footprint of agriculture; foster the sustainable development of rural areas.

Implementation in 2023-24: Direct payments have been implemented in 2023 for coupled payments, eco-schemes and other decoupled payments, as well as some sectoral (beekeeping) and rural development payments (natural or other area-specific constraints interventions). The CSP was amended on 28 February 2024 on conditionality rules, budget, milestone and target values, also with a new rural development intervention on "Voluntary insurance premium subsidy" (EU funding of EUR 200 million).

Table 11.17. Overview of Greece's CSP as initially approved

Main features	Budget distribution
Budget: EUR 13 293 million Transfer between pillars: 10% of initial budget from Direct payments to Rural Development	
Pillar 1 Direct payments: • Capping: No • Degressivity: No • Simplified payment for small farmers: No Sectoral interventions: Apiculture, fruit and vegetables, olive oil and tables olive, wine	
Pillar 2 Share of EU financing (average): 82% EU funding for environmental and climate objectives: 41% Additional national financing: No	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- Several crises marked the country and have triggered notable state aid interventions. The effects of Russia's war of aggression against Ukraine led to temporary support of EUR 152 million to the agricultural sector (livestock farmers, apple and chestnuts producers, among others). In addition, the exceptional damages generated by two storms in September 2023 required an exceptional disaster support of EUR 150 million, which is more than six times the average expenditure for disaster payments in the period 2020-22.
- To foster climate adaptation and resilience of the sector, land irrigation improvement projects were initiated or implemented during 2023, in the context of the National Climate Law, the River Basin Management Plans and the Flood Risk Management Plans, based on EU and national funds, including additional financing under the National Recovery and Resilience Plan.
- The budget under the new Small Loan Fund for Agricultural Entrepreneurship, established in 2022, was increased in 2023 from EUR 21.5 million to EUR 61.5 million to facilitate access to financing for agricultural holdings.

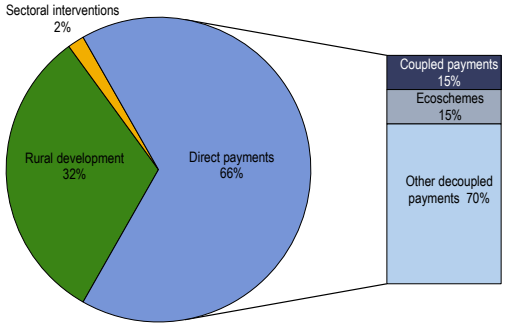
Hungary

CAP Strategic Plan 2023-27

Main objectives: Enhance the competitiveness and productivity of agriculture and food industry; make agricultural production a profitable and socially recognised activity; diversify the rural economy; increase life quality in rural areas; improve environmental conditions and contribute to natural resources renewal.

Implementation in 2023-24: A large number of applications were received for the new eco-scheme, corresponding to 4 million ha (75% of the total agricultural land). Although most Pillar 2 payments were still financed from the previous RDP, first calls under the CSP were published for forestry-related schemes and agri-food investments. Based on the results of the year 2023, over 400 CSP amendments were discussed with the European Commission, and a revised version was approved on 8 February 2024.

Table 11.18. Overview of Hungary 's CSPs as initially approved

Main features	Budget distribution
Budget: EUR 9 977 million Transfer between pillars: 23% of initial budget from Rural Development to Direct Payments	
Pillar 1 Direct payments: • Capping: No • Degressivity: No • Simplified payment for small farmers: No Sectoral interventions: Apiculture, fruit and vegetables, wine	
Pillar 2 Share of EU financing (average): 50% EU funding for environmental and climate objectives: 71% Additional national financing: EUR 4 530 million	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- Amendments to the 2007 Act on the Protection of Agricultural Land entered into effect on 1 July 2023 and 1 January 2024. These introduced more stringent legislation for the protection of irrigated arable land, increased levels of financial contributions for land use (for non-agricultural purposes), fines for land protection, and new land acquisition provisions to support installation of new farmers.
- Exceptional support measures were introduced to ensure farmers' financial liquidity in response to the consequences of the 2022 drought, Russia's war of aggression against Ukraine and the energy crisis. These included locked interest rates to reduce the cost of credit, a moratorium on loan repayment, and preferential credit schemes.
- Several consumer support measures were extended to alleviate the extra burden on family budgets caused by a significant increase in food prices due to inflation. A price cap, initially introduced in 2022, was extended to two additional basic foodstuffs, and retail outlets with higher revenues were requested to run mandatory promotions from June 2023. An online price monitoring system was also introduced in July 2023 to monitor prices applied by large retailers over 62 product categories (and 78 products in 2024).

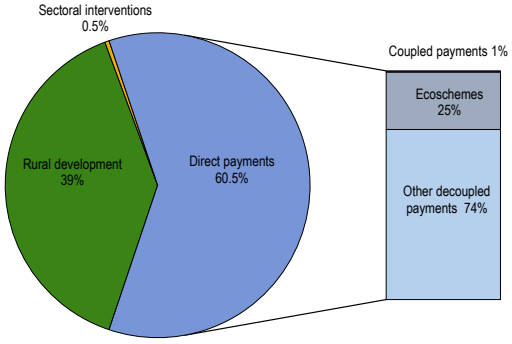
Ireland

CAP Strategic Plan 2023-27

Main objectives: Promote sustainable development of the farming and food sector, including by supporting viable farm incomes and enhanced competitiveness; strengthening the socio-economic conditions in rural areas; and contributing to achieving environmental and climate targets.

Implementation in 2023-24: Payments totalling EUR 1.2 billion were delivered under the new CAP in 2023. Approximately 122 000 applications were received for the single Irish eco-scheme (around 97% of BISS applicants). Applications to the Agri-Climate Rural Environment Scheme exceeded the 50 000 maximum participants; Organic Farming Scheme funding increased 54% on 2022 to EUR 57 million; and payments of EUR 19 million were made to 17 000 farmers under the new Sheep Improvement Scheme.

Table 11.19. Overview of Ireland's CSP as initially approved

Main features	Budget distribution
Budget: EUR 9 832 million Transfer between pillars: No	
Pillar 1 Direct payments: • Capping: Yes • Degressivity: Yes • Simplified payment for small farmers: No Sectoral interventions: Apiculture, fruit and vegetable	
Pillar 2 Share of EU financing (average): 40% EU funding for environmental and climate objectives: 67% Additional national financing: No	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- The most recent Climate Action Plans have been published for 2023 and 2024. These set out the policy framework and actions toward Agriculture reducing its emissions by 25% from the 2018 baseline by 2030, from 23 to 17.25 MtCO2eq (AR5).
- The 2023 Unharvested Crop Support Scheme supported farmers with unharvested cereal crops at a rate of EUR 1 000/ha up to 20 ha, with a minimum of 2 ha for eligibility, with a budget of EUR 7.15 million.
- A National Fertiliser Database on trade in fertiliser and lime came into effect in 2023, with over 90 000 farmers registered.
- Grant funding for agri-food research of EUR 24.2 million was awarded under the 2023 Thematic Research Call, of which EUR 8.2 million was allocated to projects focusing on climate and environmental sustainability and a further EUR 1.7 million awarded to sustainable animal and plant production projects. These projects can contribute to delivering on many of the commitments in Food Vision 2030, Ireland's stakeholder-led strategy for the agri-food sector.

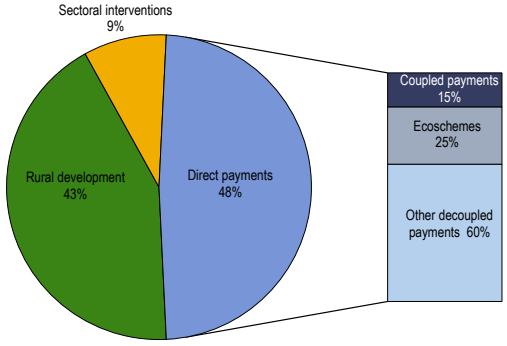
Italy

CAP Strategic Plan 2023-27

Main objectives: Enhance the competitiveness and sustainability of the country's diversified agriculture and supply chains; provide an adequate income for farmers; reduce the impact of agriculture on the environment.

Implementation in 2023-24: Several amendments to the CSP were approved in 2023, mainly with a view to adapting it to regional needs in the context of rural development, where the regions will continue to play a key role. Other changes regarded some derogations and simplification of eco-schemes and the simplification of conditionality requirements.

Table 11.20. Overview of Italy's CSP as initially approved

Main features	Budget distribution
Budget: EUR 36 327 million Transfer between pillars: 3% of initial budget from Direct payments to Rural Development	
Pillar 1 Direct payments: • Capping: No • Degressivity: No • Simplified payment for small farmers: No Sectoral interventions: Apiculture, fruit and vegetables, olive oil and tables olive, wine, potatoes	
Pillar 2 Share of EU financing (average): 45% EU funding for environmental and climate objectives: 39% Additional national financing: EUR 346 million	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- In December 2023, the European Council approved the revision of Italy's National Recovery and Resilience Plan. Financial resources for agriculture doubled in favour of Supply chain contracts (EUR 2 billion) and the Agrisolar Park (EUR 850 million).
- Italy approved the National Action Plan for Organic Farming on 20 December 2023 with the objective of reaching the target of 25% of the Utilised Agricultural Area under organic farming by 2027. The plan promotes consumption of organic products and supports the development of bio-districts, organic canteens, research and innovation, as well as training activities for operators.
- On 7 August 2023 Italy adopted the National Biodiversity Strategy 2030, which establishes the objectives of protecting and safeguarding biodiversity to be achieved by 2030 and includes specific targets, among others, on ecological focus areas in agricultural land and for organic farming.
- Italy extended until 2023 the exemption from IRPEF (the personal income tax) for landowners and for agricultural income related to land declared by farmers and professional agricultural entrepreneurs, which was already in place during the 2017-22 period.

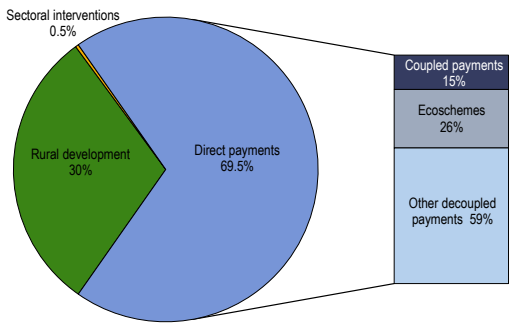
Latvia

CAP Strategic Plan 2023-27

Main objectives: Correspond to the EU general objectives to foster a smart, competitive, resilient and diversified agricultural sector ensuring long-term food security, to support and strengthen environmental protection, including biodiversity and climate action, and to strengthen the socio-economic fabric of rural areas. Include increasing the competitiveness of farms; promoting knowledge-based entrepreneurial capacity; contributing to the achievement of environmental and climate objectives.

Implementation in 2023-24: No significant changes were observed compared to 2022 in both the number of applicants and in the area applied for the basic payment. New Direct Payments interventions implemented in 2023 included the schemes for the climate, the environment and animal welfare. New Rural Development measures implemented in 2023 included non-productive investments, agri-environment and climate measures such as the Green Belts (buffer strips) and co-operation in short supply chains. The CSP was amended in 2023 but without affecting the objectives, indicators or financial perspective set out in the plan.

Table 11.21. Overview of Latvia's CSP as initially approved

Main features	Budget distribution
Budget: EUR 2 467 million Transfer between pillars: 5% of initial budget from Direct payments to Rural Development	
Pillar 1 Direct payments: • Capping: Yes • Degressivity: No • Simplified payment for small farmers: Yes Sectoral interventions: Apiculture, fruit and vegetables, cereals, beef and veal, milk and milk products, pig meat	
Pillar 2 Share of EU financing (average): 87% EU funding for environmental and climate objectives: 44% Additional national co-financing: EUR 152 million	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- In 2023, 37% of the national support to the farming sector, corresponding to EUR 3.3 million, was granted for livestock breeding and genetic improvement. Most of this support (EUR 2 million) went to the dairy sector.
- In December 2023 and January 2024, EUR 6.8 million of EU emergency support was granted to the fruit and berry sector to cover the economic losses incurred by farms due to frost and freeze damage in spring 2023, and to the dairy and beef cattle, sheep, goat, and horse sectors to partially cover the costs of purchasing fodder.

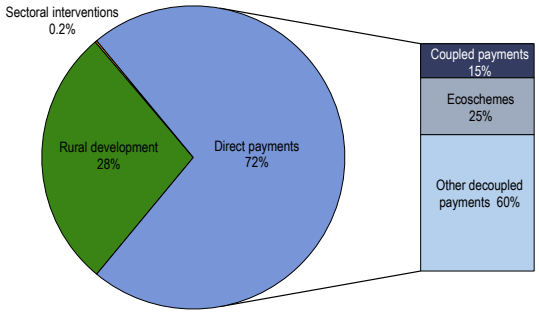
Lithuania

CAP Strategic Plan 2023-27

Main objectives: Ensure the sustainable development of the agriculture and food sectors by increasing added value and competitiveness of the sector; increase the viability of small and medium-sized farms; promote sustainable production methods, while also ensuring adaptation to climate change and nature conservation; enhance innovation of the agriculture sector and increase the attractiveness of rural areas.

Implementation in 2023-24: Several calls were launched in 2023, including for the following interventions: investments in bio-economy businesses (EUR 10 million), sustainable investments in agricultural holdings (EUR 10 million), investments in agricultural holdings (EUR 50 million), development of small and medium-sized farms (EUR 9 million), development of very small farms (EUR 3 million), establishment of young farmers (EUR 15 million).

Table 11.22. Overview of Lithuania's CSP as initially approved

Main features	Budget distribution
Budget: EUR 4 183 million Transfer between pillars: No	
Pillar 1 Direct payments: • Capping: Yes • Degressivity: No • Simplified payment for small farmers: No Sectoral interventions: Apiculture, fruit and vegetable, wine	
Pillar 2 Share of EU financing (average): 77% EU funding for environmental and climate objectives: 40% Additional national financing: No	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- Lithuania is developing FarmGHG, an online tool that will be used to calculate the farm-level CO_2 emissions and absorptions for certification and trading purposes. The system is currently being used to increase farmers' understanding of the links between their farming practices and emissions.
- To help farmers and companies to overcome financial difficulties related to increased energy and other essential resource costs, preferential loans totalling EUR 53 million were made available. A total of 658 farmers and companies utilised these loans under this temporary measure.
- Individual guarantees were provided in the first half of 2023 for loans intended for investment and working capital to mitigate adverse economic consequences of Russia's war of aggression against Ukraine and enhance access to financial services.

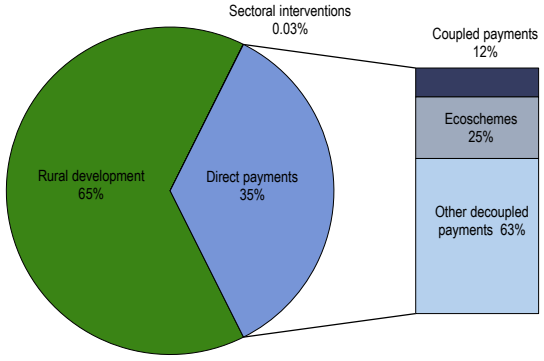
Luxembourg

CAP Strategic Plan 2023-27

Main objectives: Provide fairer income for agricultural producers; strengthen the competitiveness of agricultural and agri-food businesses; ensure generational renewal in farms; further develop organic farming; reduce pesticides, greenhouse gas and ammonia emissions and promote carbon sequestration.

Implementation in 2023-24: The redefinition of active farmer and its age limit potentially leading older farmers to retire is expected to ease access of young farmers to land. A higher-than-planned participation in eco-schemes led to a shortfall in EU budget that was covered by national funds. Flexible measures incentivising reduced pesticide use and cover cropping had more success than measures encouraging not to produce, such as non-productive areas and strips. Year 2023 showed a higher uptake of agri-environmental schemes, such as nitrogen fertilisation reduction, grazing and new measures to maintain or reduce livestock.

Table 11.23. Overview of Luxembourg's CSP as initially approved

Main features	Budget distribution
Budget: EUR 465 million Transfer between pillars: 1% of initial budget from Rural Development to Direct Payments	
Pillar 1 Direct payments: • Capping: No • Degressivity: No • Simplified payment for small farmers: Yes Sectoral interventions: Apiculture	
Pillar 2 Share of EU financing (average): 20% EU funding for environmental and climate objectives: 75% Additional national co-financing: No	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- The national focus on reducing GHG and ammonia emissions in the light of EU emissions reduction targets led to the introduction of new measures supporting the reduction of livestock numbers and encouraging rapid manure incorporation, while strengthening the environmental protection conditions of existing programmes. In addition, a new agricultural law has introduced an authorisation system for herd expansions.
- EUR 1.4 million was approved for emergency financial assistance to all agricultural sectors impacted by specific problems affecting the economic viability of agricultural producers, targeting those facing exceptionally high production costs and those impacted by high electricity prices.
- Approved in April 2023 and in force since January 2024, the sale to the general public of certain herbicides, insecticides, antislugs and fungicides have been banned. The new measures announced are part of the national action plan to reduce the use of plant protection products.

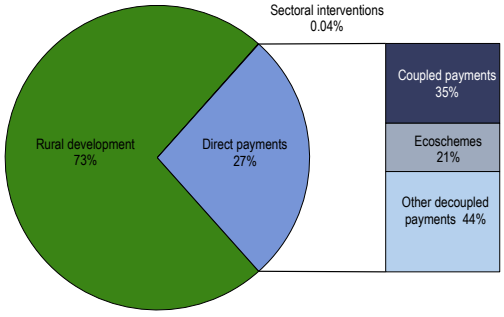
Malta

CAP Strategic Plan 2023-27

Main objectives: Pursue environmental and climate objectives; provide fair income for farmers and workers; improve rural conditions and infrastructure. introduce new technologies and extend digitalisation also in connection with farm resilience.

Implementation in 2023-24: In November 2023, Malta set up the national CAP Network to bring together, engage and increase the involvement of all relevant stakeholders in the CSP's implementation, as well as to ensure an efficient exchange of information, good practices, experiences, and ideas as well as enhancing communication flows between the various stakeholders.

Table 11.24. Overview of Malta's CSP as initially approved

Main features	Budget distribution
Budget: EUR 160 million Transfer between pillars: 21% of initial budget from Rural Development to Direct Payments *Pillar 1* Direct payments: • Capping: No • Degressivity: No • Payment for small farmers: Yes Sectoral interventions: Apiculture *Pillar 2* Share of EU financing (average): 65% EU funding for environmental and climate objectives: 48% Additional national financing: EUR 3 million	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- The first national Action Plan for Organic Food was published in September 2023 and covers the years 2023 to 2030. The plan addresses the needs of the agricultural sector to move towards organic production and achieve Malta's target of having 5% of its utilisable agricultural area under organic certification by 2030.
- Malta adopted a new regulatory framework for olive growers and olive processors for the cultivation and registration of olives and the production of olive oil. The new regulations separate the registration of olive groves and the monitoring of olive oil production from the certification, labelling, bottling and quality standards of olive oil, and compliance with the required marketing standards.

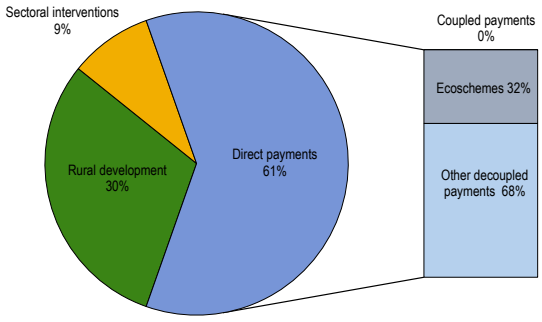
Netherlands

CAP Strategic Plan 2023-27

Main objectives: Support farmers that contribute to the transition to sustainable agriculture; ensure food security and fair farm income.

Implementation in 2023-24: About 80% of BISS participants have signed up to the single Dutch eco-scheme in 2023, corresponding to more than 35 500 farmers. Due to this high uptake, additional national funding (around EUR 50 million) was granted to this intervention. Amendments to the eco-scheme adopted in 2023 include the addition of precision spraying, precision fertilisation, and fertigation among the supported farming practices. Additional adjustments include the possibility for farmers to add the "grazing" and "protein crops" eco-activities in the eco-scheme application for 2024.

Table 11.25. Overview of the Netherlands' CSP as initially approved

Main features	Budget distribution
Budget: EUR 4 899 million Transfer between pillars: 21% of initial budget from Direct payments to Rural Development	
Pillar 1 Direct payments: • Capping: No • Degressivity: No • Simplified payment for small farmers: No Sectoral interventions: Apiculture, fruit and vegetables	
Pillar 2 Share of EU financing (average): 72% EU funding for environmental and climate objectives: 47% Additional national co-financing: EUR 434 million	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- On 2 May 2023 the European Commission authorised two Dutch aid schemes worth EUR 1.47 billion linked to the "National Cattle Cessation Scheme" (LBV and LBV plus). Such schemes support the permanent and irreversible cessation of specific cattle operations in order to reduce nitrogen deposits in "Natura 2000" areas. Farmers who take part in the EUR 500 million LBV scheme will be directly compensated for 100% of the losses incurred by the closure of their dairy cattle, pig and poultry breeding sites. The EUR 975 million LBV plus scheme will only be open to "peak-load emitting breeding sites" that emit a high level of nitrogen per year, fixed as a minimum level.
- The Netherlands has introduced a structural investment fund dedicated to sustainable agriculture. This revolving fund, amounting to EUR 130 million, will offer loans with favorable terms for investments in sustainable agriculture. These investments must be supported by a business plan that addresses multiple sustainability goals and should be co-financed through additional sources.

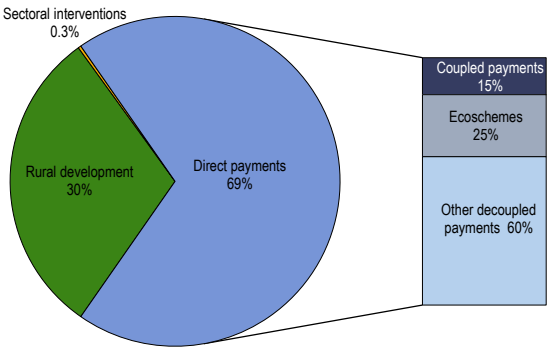
Poland

CAP Strategic Plan 2023-27

Main objectives: Support the sustainable development of farms and the processing sector; support the protection of water, soil, air, and biodiversity; improve the living and working conditions in rural areas; promote the production and use of sustainable energy.

Implementation in 2023-24: In 2023 calls for applications were launched for more than half of the 82 types of interventions under the CSP 2023-27. Amendments to the plan approved by the European Commission in 2023 include: the introduction of the payments for small farmers (PSF) in the amount of EUR 225/ha (USD 243/ha) (max. EUR 1 125/farm or USD 1 216/farm) and lowering the entry threshold (from 0.5 LU/ha to 0.3 LU/ha) within an additional payment for organic farms with sustainable plant-animal production (livestock density between 0,3 LU/ha and 1,5 LU/ha of UAA in the farm.

Table 11.26. Overview of Poland's CSP as initially approved

Main features	Budget distribution
Budget: EUR 24 978 million Transfer between pillars: 29% of initial budget from Rural Development to Direct Payments	
Pillar 1 Direct payments: • Capping: No • Degressivity: No • Simplified payment for small farmers: No Sectoral interventions: Apiculture, fruit and vegetables	
Pillar 2 Share of EU financing (average): 60% EU funding for environmental and climate objectives: 43% Additional national financing: No	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- In response the high prices of mineral fertilisers, Poland adopted a state aid totalling PLN 4.7 billion (equivalent to EUR 1 billion or USD 1.1 billion) to support agricultural producers who had purchased specific types of fertilisers in the period from 16 May 2022 to 15 May 2023. The amount of support for eligible farmers was calculated based on the size of the sown area.
- Subsidies were introduced to support agricultural producers at the risk of losing financial liquidity due to the impact of war in Ukraine on the Polish market. About PLN 2.8 billion (EUR 0.6 billion or USD 0.7 billion) was allocated to subsidise the interest on bank loans with rates above 2%, granted until mid-2024 for up to 60 months. Moreover, state aid of around PLN 5 billion (EUR 1.1 billion or USD 1.2 billion) was approved for several sectors, including wheat, maize, oilseeds, and pig meat.
- On 1 July 2023, the Act on the Agricultural Protection Fund took effect. This law enables agricultural producers to seek compensation for income losses resulting from purchaser bankruptcy.

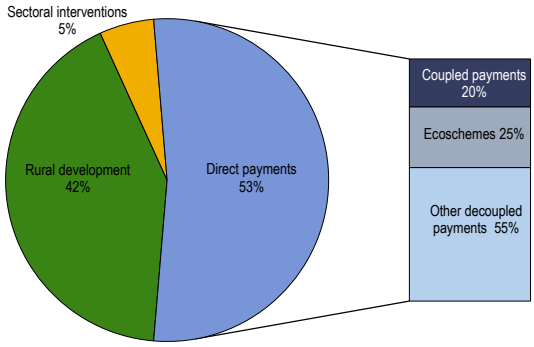
Portugal

CAP Strategic Plan 2023-27

Main objectives: Support innovative and sustainable agricultural and forestry production; ensure sustainable food security.

Implementation in 2023-24: The Ministry of Agriculture and Food made payments of EUR 1.4 billion in 2023. On 2 February 2024, the European Commission approved Portugal's first amendment to the plan, including on EAFRD budget, financial ceilings, and additional national financing. Additional funding will be available for eco-schemes on organic and integrated farming, due to their high uptake.

Table 11.27. Overview of Portugal's CSP as initially approved

Main features	Budget distribution
Budget: EUR 6 620 million Transfer between pillars: 16% of initial budget from Rural Development to Direct Payments	
Pillar 1 - Direct payments: Capping: No Degressivity: Yes Simplified payment for small farmers: Yes - Sectoral interventions: Apiculture, fruit and vegetable, wine	
Pillar 2 - Share of EU financing (average): 80% - EU funding for environmental and climate objectives: 47% - Additional national financing: No	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- In May 2023, the EC approved an exceptional EUR 180 million support package for agricultural production as part of the "Pact for the Stabilisation and Reduction of Food Prices". The programme includes EUR 140 million to compensate for the increase in costs of inputs, EUR 32 million to support tax fuel exemption and EUR 7 million for energy costs.
- The Agri-Food Price Observatory was launched in September 2023. This online tool monitors the costs and price of a food basket, at the various stages of production and up to the point of sale and is aimed at reinforcing information and transparency throughout the entire agri-food chain. The Observatory will provide monthly updated information on the prices of a basket of 26 food products (for example, eggs, fruit, olive oil or dairy products), from production to consumption.
- In January 2024, support to mitigate effects of droughts was approved. EUR 28.9 million will be provided for various sectors. The payments were distributed as follows: for the cattle sector – EUR 16.4 million; sheep sector – EUR 9.4 million; pig meat sector – EUR 0.3 million; beekeeping – EUR 1.3 million; winter cereals – EUR 1.5 million.

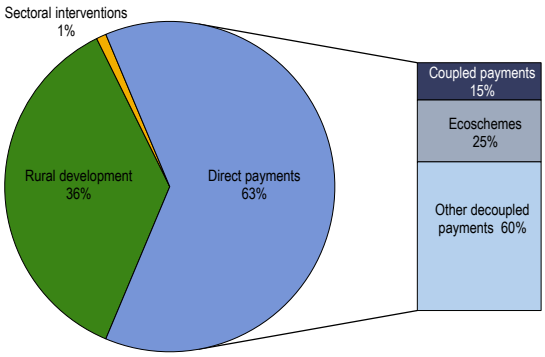
Romania

CAP Strategic Plan 2023-27

Main objectives: Promote a smart, resilient, and diversified agricultural sector; strengthen market orientation and increasing the competitiveness of the agri-food sector; ensure coherent socio-economic development of rural areas.

Implementation in 2023-24: 760 000 applications were received until June 2023, covering almost 10 million ha of agricultural area (out of about 3.5 million farmers and 13.5 million ha). The European Commission approved the CSP's amendments in December 2023. The new version includes improved conditions for accessing direct payments, a new definition of the active farmer and a new intervention that will support cattle through coupled support.

Table 11.28. Overview of Romania's CSP as initially approved

Main features	Budget distribution
Budget: EUR 15 611 million Transfer between pillars: 3% of initial budget from Direct payments to Rural Development	
Pillar 1 Direct payments: • Capping: No; • Degressivity: No; • Simplified payment for small farmers: No Sectoral interventions: Apiculture, fruit and vegetables, wine	
Pillar 2 Share of EU financing (average): 85% EU funding for environmental and climate objectives: 41% Additional national financing: No	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- In June 2023 a state aid scheme was approved for the INVESTALIM programme over the period 2023-26, with a budget of around EUR 600 million (EUR 148 million per year), which aims to support the development of food processing (including general services to processing and marketing as well as loans to processors).
- In November 2023 Romania approved a long-term strategy for reducing GHG emissions, which aims to make the country carbon neutral by 2050. The strategy includes scenarios, options, costs and benefits of the measures to be implemented in agriculture and in land use, land-use change and forestry sector (LULUCF), but it does not include a specific target for agriculture.
- From October to December 2023 only pre-authorised economic operators were allowed to import wheat, maize, rapeseed, sunflower seed, sugar and flour from Ukraine. The certificate of authorisation was delivered by the national sanitary and phytosanitary agency, following an approval delivered by a committee composed by the Ministry of Agriculture and Rural Development, Customs authority, Ministry of Economy, and the national sanitary and phytosanitary agency.

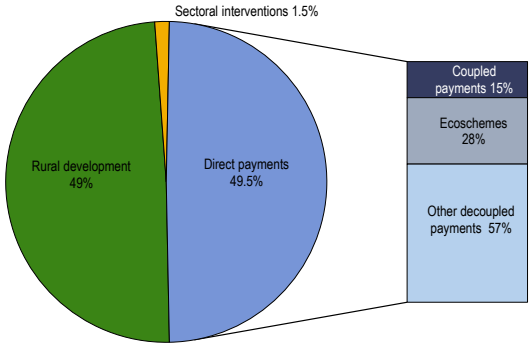
Slovak Republic

CAP Strategic Plan 2023-27

Main objectives: Ensure the sustainable competitiveness and resilience of farms; provide fairer income for agricultural producers; improve the quality of life in rural areas through investments, knowledge transfer and innovation; ensuring the sustainable management of natural resources, and climate action.

Implementation in 2023-24: The uptake rate of whole-farm eco-scheme was about 52.2% of all eligible farms (85.6% in terms of agricultural land), while the eco-scheme on animal welfare was applied to more than 250 000 animals. The Slovak Republic permitted an exception from compliance with the GAEC 7 on crop rotation rules in the frameworks of conditionality. The CSP's amendment approved by the European Commission in 2023 includes an updated definition of active farmer, now including income from forestry and income related to nature and landscape protection. Sector-specific interventions were implemented to increase participation of farmers in producer organizations for the dairy, pig meat, and potato sectors.

Table 11.29. Overview of Slovak Republic's CSP as initially approved

Main features	Budget distribution
Budget: EUR 4 097 million Transfer between pillars: 1% of initial budget from Direct payments to Rural Development	
Pillar 1 Direct payments: • Capping: Yes • Degressivity: Yes • Simplified payment for small farmers: No Sectoral interventions: Apiculture, fruit and vegetables, dairy, pig meat, sheep meat and goat meat, potatoes, wine	
Pillar 2 Share of EU financing (average): 63% EU funding for environmental and climate objectives: 47% Additional national financing: No	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- In response to the economic losses caused by increased imports of low-priced grains from Ukraine, the EU Agricultural Reserve has allocated EUR 5.24 million to compensate affected producers, as specified by Commission Implementing Regulation No. 2023/1343. Additionally, in line with this regulation, the Slovak Republic Government has opted to enhance this support by up to 200%.
- In the context of climate change mitigation, funds were allocated to foster education related to mitigation and adaptation (EUR 2 million). Other funds were directed to support investments in renewable energy sources in agricultural enterprises (EUR 8 million).
- The Slovak Republic's land consolidation project, aimed at accelerating the settlement of property rights, reached 12% of total cadastral territories in 2023.

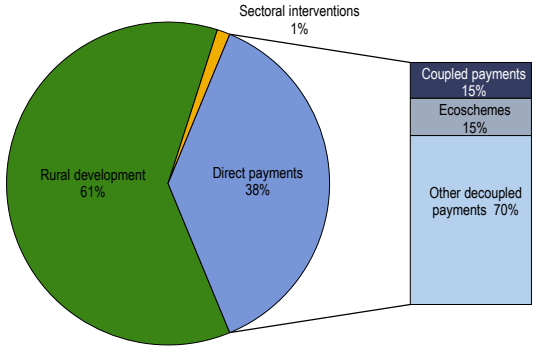
Slovenia

CAP Strategic Plan 2023-27

Main objectives: Ensure food security and sustainable food production; improve the competitiveness and resilience of farms; environment protection, sustainable management of natural resources and climate change mitigation and adaptation; create vibrant rural communities.

Implementation in 2023-24: Two amendments to the plan were approved by the European Commission. Key changes involved the measures on the establishment of young farmers, the payments for organic farming and Natura 2000 payments. In 2023 most of the activities aimed at establishing a management and control system for the CSP implementation, including setting the Managing authority and the Monitoring committee of the plan.

Table 11.30. Overview of Slovenia's CSP as initially approved

Main features	Budget distribution
Budget: EUR 1 769 million Transfer between pillars: No	
Pillar 1 Direct payments: • Capping: No • Degressivity: Yes • Simplified payment for small farmers: No Sectoral interventions: Apiculture, fruit and vegetables, wine	
Pillar 2 Share of EU financing (average): 48% EU funding for environmental and climate objectives: 59% Additional national financing: No	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- Several exceptional financial aids (totalling EUR 6.4 million) were granted to agricultural holdings affected by the consequences of the rising energy costs and input prices and inflation, while farmers negatively affected by the severe drought of 2022 received EUR 24.3 million of national aids.
- In 2023, Slovenia was hit by a catastrophic flood, one of the worst natural disasters in the country's history. Numerous legal acts were adopted to deal with the consequences of the floods, but most of aids will be granted in 2024. In 2023 only a small percentage of the planned expenditure was made, corresponding to EUR 3.7 million.
- The co-financing rate for all insurance premiums (field crops and permanent crops, animal diseases, etc.) increased to 60% in 2023, compared to 55% in 2021 and 2022.

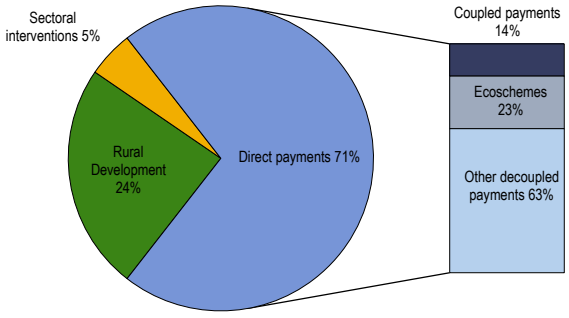
Spain

CAP Strategic Plan 2023-27

Main objectives: Provide a fair support to all farmers by taking into account regional specificities; promote an economic, social and environmentally sustainable development of farming, food and rural areas; ensure food security and health through a competitive agri-food sector; modernise and consolidate rural areas.

Implementation in 2023-24: Support requests submitted in 2023 covered over 22.2 million ha, or 90% of the utilised agricultural area, a similar share than in previous years. Three-quarters of the 622 604 farmers applying for aid have committed to implementing eco-schemes, representing 87% of the total area declared. Technical adjustments were made to the CSP to facilitate its regional implementation by the Autonomous Communities, including budget reallocations between measures and modifications to co-financing rates. These changes led to an increase of EUR 10.1 million in the Pillar 2 budget reserved for environmental and climate-related objectives.

Table 11.31. Overview of Spain's CSP as initially approved

Main features	Budget distribution
Budget: EUR 33 969 million Transfer between pillars: No	
Pillar 1 Direct payments: • Capping: Yes • Degressivity: Yes • Simplified payment for small farmers: No Sectoral interventions: Apiculture, fruit and vegetables, wine	
Pillar 2 Share of EU financing (average): 65% EU funding for environmental and climate objectives: 48% Additional national financing: EUR 498 million	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- Additional support was granted to respond to the crisis and reduce the economic impact of Russia's war of aggression against Ukraine on the agricultural sector, situation aggravated by drought conditions. Additional national aid was approved for the livestock sectors (EUR 355 million), beekeeping (EUR 5 million) and other agricultural sectors (EUR 277 million).
- In the context of these emergency measures, in 2023 the budget of the Ministry of Agriculture, Fisheries and Food for subsidising agriculture insurance reached EUR 358.2 million, the highest in the history of the Spanish agricultural insurance system.
- On water management, new agreements in 2023 will mobilise EUR 745 million of additional investments for irrigation modernisation and efficiency. The first session of the National Irrigation Board, in charge of promoting co-operation, consultation, analysis, and information exchange on matters related to irrigation, was held in December 2023. The second will be held in mid-2024.

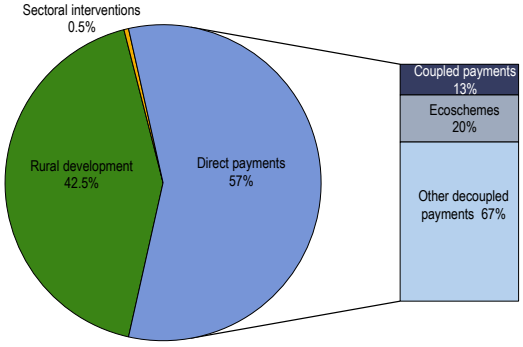
Sweden

CAP Strategic Plan 2023-27

Main objectives: Increase the productivity, viability, and competitiveness of the agricultural sector; seek increased ambition in environmental and climate standards; increase food production.

Implementation in 2023-24: Sweden did not make any major changes to the CSP since its implementation. Three eco-schemes were adopted: one on catch crops, intermediate crops and spring tillage aiming at increasing carbon storage and nutrient retention, one on precision farming and one on organic farming.

Table 11.32. Overview of Sweden's CSP as initially approved

Main features	Budget distribution
Budget: EUR 6 020 million Transfer between pillars: No	
Pillar 1 Direct payments: • Capping: No • Degressivity: No • Simplified payment for small farmers: No Sectoral interventions: Apiculture, fruit and vegetables	
Pillar 2 Share of EU financing (average): 40% EU funding for environmental and climate objectives: 62% Additional national financing: EUR 553 million	

Note: Data relate to the initially approved planned budget for the entire duration of the CAP 2023-27, published by DG-AGRI on 19 April 2023. Total budget and budget distribution include transfers between pillars and national co-financing, but do not include additional national financing.
Source: Overview of EU countries' CAP Strategic Plans interventions (EC, 2023[5]; EC, 2024[36]; EC, 2023[34]).

Other key policy developments in 2023-24

- With the aim of compensating agriculture and forestry for increased costs of various inputs and declining competitiveness, in 2023 a tax reduction was applied to diesel used in professional agriculture, forestry and aquaculture activities.
- A national knowledge hub (*kunskapsnav*) for animal production was established in 2023 to bridge the knowledge gap between research and practice, by compiling and disseminating knowledge, strengthening collaboration between AKIS (Agricultural Knowledge and Innovation Systems) actors, and improving integration of advisors within AKIS.
- In 2023 the national climate action plan (*regeringens klimathandlingsplan*) was adopted. The plan contains about 70 proposals, including for agriculture. For agriculture, the main focus is increased productivity. It is stated that national policies must not impede competitiveness or result in emission leakage. The government offers funding of further R&D for methods and try-outs. It is also planned to look over how to make investments in climate measures in agriculture more effective.
- Contracts between the government and landowners to rewet peat forest land (*återvätningsavtal*) were established and will be valid for 50 years. The rewetting of peatland is expected to halt the CO_2 emissions caused by the drainage. The initiative is based on voluntary participation by landowners.

Policy context

Key economic and agricultural statistics

The European Union is the largest economic region covered in this report, accounting for 18% of the economic activity of all countries covered herein. Although the contribution of agriculture to both GDP and employment has declined since 2000, the share of agriculture in the region's exports has increased over the same period (Table 11.33). More than 40% of the region's landmass is dedicated to agriculture, of which nearly 60% is dedicated to arable land use. Crops (including cereals, oilseeds, fresh fruit and vegetables, and plants and flowers) predominate in agricultural output, accounting for 59% of total production, although large differences exist across Member States. Livestock products – including dairy, beef and veal, pig meat, sheep meat, poultry and eggs – account for the remainder.

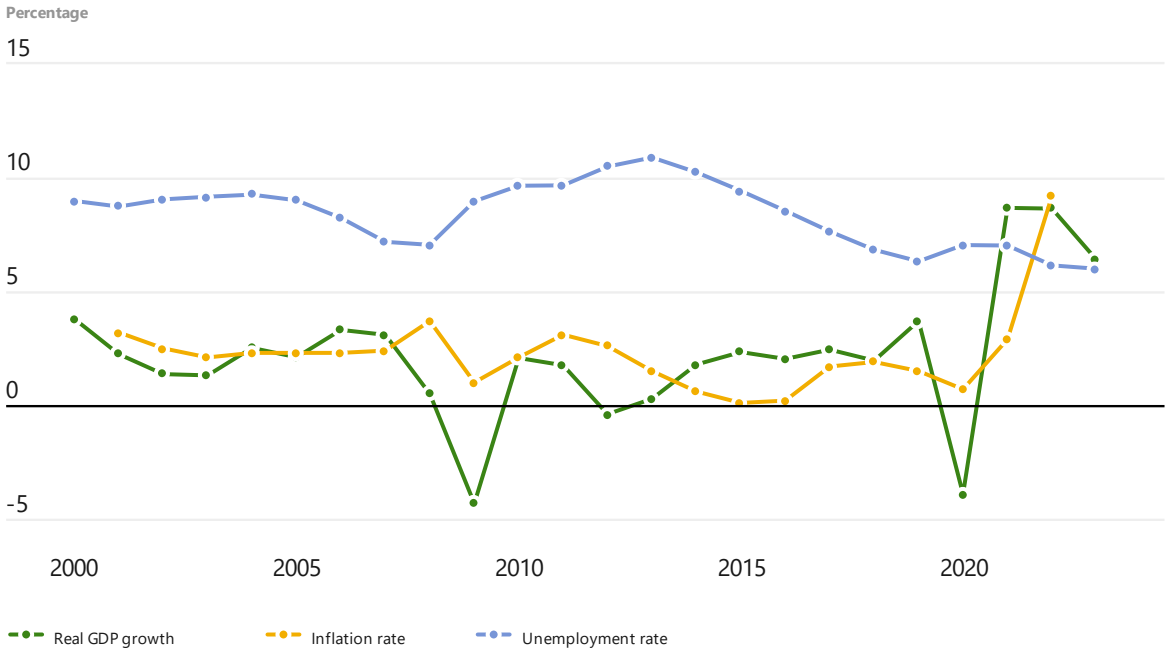
Table 11.33. European Union: Contextual indicators

	European Union		International comparison	
	2000* (EU15)	2022 (EU27)*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	9 933	24 455	24.8%	17.9%
Population (million)	378	447	8.8%	8.5%
Land area (thousand km^2)	3 124	3 997	3.8%	4.9%
Agricultural area (AA) (thousand ha)	140 380	162 908	4.1%	5.6%
			All countries[1]	
Population density (inhabitants/km^2)	114	106	52	64
GDP per capita (USD in PPPs)	26 302	54 483	9 363	25 965
Trade as % of GDP	10.9	18.0	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	2.2	1.7	2.9	3.8
Agriculture share in employment (%)	4.3	3.7	-	-
Agro-food exports (% of total exports)	7.1	8.7	6.4	8.0
Agro-food imports (% of total imports)	7.4	5.5	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	54	59	-	-
Livestock in total agricultural production (%)	46	41	-	-
Share of arable land in AA (%)	52	64	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

After the strong rebound in 2021, real GDP growth in the region has remained positive (Figure 11.5). The unemployment rate has declined steadily since 2013, falling from a high of 11% in 2013 to 6% in 2023. A sharp rise in inflation under the pressure of energy, food and other commodity prices hit the European Union economy in 2021-22. Geographical proximity to war and dependence on imports of fossil fuels make the European Union one of the most exposed economies in this respect.

Figure 11.5. European Union: Main economic indicators, 2000 to 2023



Note: EU28 for 2000-19 and EU27 (excluding the United Kingdom) from 2020.
Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

The European Union has been the world's largest agro-food exporter since 2013 and also remains one of the largest importers (Figure 11.6). The region is a net food exporter, with agro-food products accounting for 8.7% of all EU exports and 5.5% of all EU imports. The region's agro-food exports are overwhelmingly composed of processed goods for final consumption (60%), while imports are more evenly distributed among the four categories shown in Figure 11.6, with primary goods for industry accounting for the largest share of imports (30%).

The European Union's overall agri-food trade is broadly diversified across numerous trade partners, with a trend toward greater diversification since 2012. At the same time, for certain products – such as spirits, wine and pig meat on the export side, and oilseeds and maize on the import side – the European Union still relies heavily on key partners, which poses a risk of market instability if trade is disrupted (EC, 2023[37]).

There has been significant growth in the value of trade under the EU's trade agreements, which in 2022 surpassed EUR 2 trillion for the first time. Agri-food exports to preferential partners grew by 17.5% between 2021 and 2022, outpacing overall export growth and driven by cereals and dairy products The EU's network of 42 trade agreements with 74 partners, covering 44% of all EU trade, is seen as a key contributor to sustaining trade and investment in the face of geopolitical challenges such as Russia's war of aggression against Ukraine (EC, 2023[37]).

In February 2024, the Joint Research Centre (JRC) published a study entitled "Cumulative economic impact of upcoming trade agreements on EU agriculture - 2024 update", which quantifies the effects of trade agreements recently concluded or in negotiation on key EU agricultural commodities. Comparing conservative and ambitious trade liberalisation scenarios with a baseline for 2032, the study projects an EU agro-food export growth of 27% to 38%. Despite potential negative impacts on beef, wine, processed food, dairy, and sheep meat, the overall benefits of the agreements are expected to surpass these losses, highlighting the need for diversified export markets and import sources (JRC, 2024[38]).

Figure 11.6. European Union: Agro-food trade

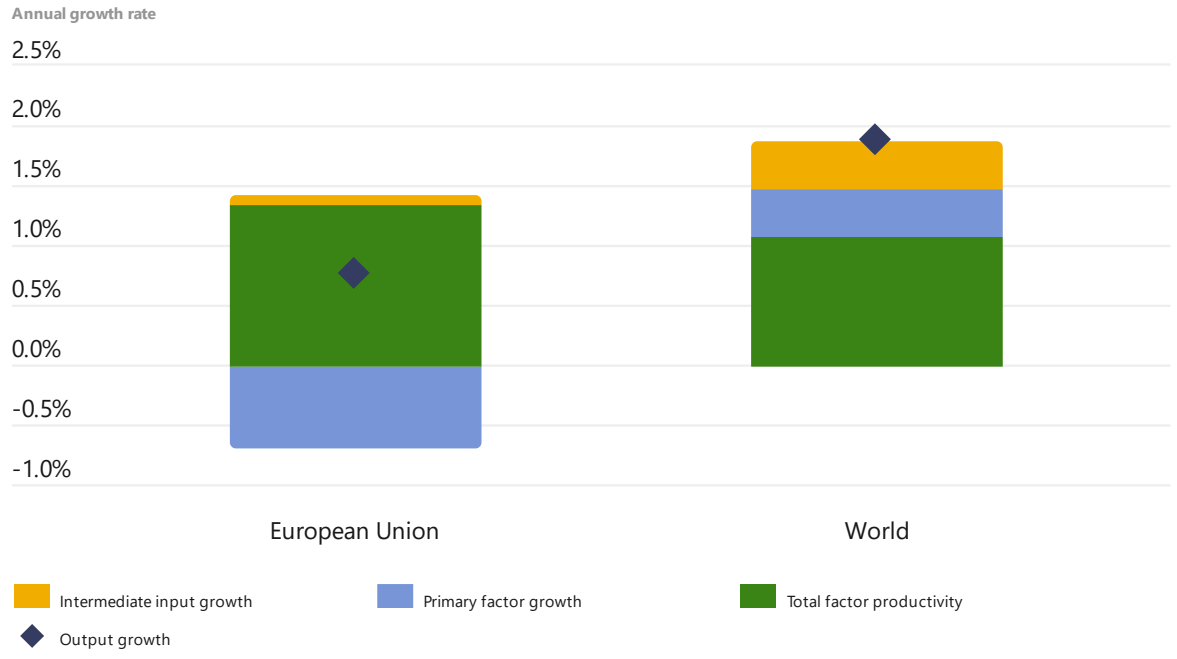
Note: Numbers may not add up to 100 due to rounding. Extra-EU trade: EU15 for 2000-2003; EU25 for 2004-06; EU27 for 2007-13, EU28 for 2014-19 and EU27 (excluding the United Kingdom) from 2020. The exclusion of the United Kingdom contributed to the rise of EU export since 2020.
Source: UN Comtrade Database.

At 0.76%, agricultural output growth in the European Union over the period 2012-21 was significantly below the world average of 1.89% (Figure 11.7). Total Factor Productivity (TFP) growth – which was above the

world average over the period at 1.35% on average – was sufficient to more than offset the impact of reduced primary factor input use, including labour, land, livestock and machinery, on agricultural output.

Moderate TFP growth has been achieved in the sector along with a reduction of certain environmental pressures, as illustrated through various environmental indicators (Table 11.34). From 2000 to 2022, the region's nitrogen balance fell by 36%, the phosphorous balance declined by nearly 80%, while the share of agriculture in water abstractions fell by 14 percentage points. At the same time, although the European Union has achieved reductions in these indicators, the region's nitrogen balance is more than 50% higher than the OECD average, with some Member States experiencing nitrogen surpluses more than three times above the EU average. While the region achieved improvements in most environmental indicators, agriculture's GHG emissions as a proportion of total European Union GHG emissions increased over the period, from 8.8% in 2000 to 10.9% in 2022.

Figure 11.7. European Union: Composition of agricultural output growth, 2012-21



Note: EU27. Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Table 11.34. European Union: Productivity and environmental indicators

	European Union		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	1.1%	1.3%	1.7%	1.1%
			OECD average	
Environmental indicators	2000 (EU15)*	2022 (EU27)*	2000*	2022*
Nitrogen balance, kg/ha	68.4	44.0	32.1	28.2
Phosphorus balance, kg/ha	7.3	1.5	3.3	2.3
Agriculture share of total energy use (%)	2.0	2.8	1.7	2.0
Agriculture share of GHG emissions (%)	8.8	10.9	8.7	10.1
Share of irrigated land in AA (%)	..	..	-	-
Share of agriculture in water abstractions (%)[1]	41.7	27.5	47.0	49.5
Water stress indicator	..	..	8.7	..

Note: * or closest available year. EU27 for TFP annual growth rate:1993-2002.
1. Due to the data availability, the EU15 aggregate does not include Austria, Germany, Ireland, Italy and the United Kingdom; while the EU27 aggregate does not include Austria, Finland, Hungary, Ireland, Italy and Portugal.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

The Common Agricultural Policy (CAP) has been the European Union's agricultural policy framework since its institution in 1962, although the mix of policy instruments has evolved substantially over time (Table 11.35). The Treaty of Rome that established in 1957 the European Economic Community defined common policies on agriculture and trade (OECD, 2011[39]; European Parliament, 2021[40]). Agriculture made up a much larger share of Europe's economy at the time, and the income gap between urban and rural households was increasing. Moreover, the region was a net food importer with concerns about securing adequate food supplies during the Cold War (Grant, 2020[41]). In this context, the Treaty of Rome laid down five main objectives for the CAP:

1. To increase agricultural productivity by promoting technical progress and ensuring the optimum use of the factors of production, in particular labour
2. To ensure a fair standard of living for farmers
3. To stabilise markets
4. To assure the availability of supplies
5. To ensure reasonable prices for consumers.

CAP measures targeting these objectives were financed from the European Agricultural Guidance and Guarantee Fund (EAGGF), split into separate Guidance and Guarantee sections. Different rules governed the two: the Guidance section financed operations related to structural policy and development of rural areas, while the Guarantee section funded expenditures on market and price policies (European Parliament, 2021[42]).

For more than three decades until the 1990s, support prices under the CAP were high compared to world market prices, with an unlimited buying guarantee. As a result, European farmers produced increasing surpluses and the cost of managing stocks and subsidising exports grew accordingly. In response, by the 1980s the European Union introduced quantitative production restrictions in the form of quotas on milk production.

The CAP's first major reform occurred in 1992, in conjunction with negotiations on the General Agreement on Tariffs and Trade (GATT) and following the result from the US-EU soya GATT panel. The

MacSharry Reform brought a major shift in the delivery of the CAP. Instead of supporting production (through market intervention and export subsidies), the regime shifted the bulk of support to supporting producer incomes directly through area and headage payments, aiming to close the gap between supply and demand and reduce overall expenditures (European Parliament, 2021[43]). This wide-ranging reform reduced cereal intervention prices, introduced compensatory payments per hectare for cereals or per head for livestock, and introduced a mandatory set-aside scheme to take land out of production. In conjunction with the reform of budgetary support measures through the MacSharry package, market price support (MPS) also declined thanks to EU commitments under the 1995 Uruguay Round Agreement on Agriculture. Namely, bound tariffs were gradually reduced, and variable import levies were replaced with ad valorem or specific tariffs and tariff rate quotas (OECD, 2011[39]).

Subsequent reforms built on the foundation of the MacSharry Reform, reducing distortive support to the agricultural sector or changing how support is delivered. The **Agenda 2000 reform focused on aligning EU and world prices, offsetting the reduction of price support with increased direct aid to producers** under the now called Pillar 1 (European Parliament, 2021[43]). In addition, **the Rural Development Regulation was introduced as Pillar 2 of the CAP**. Finally, this package instituted two types of environmental cross-compliance conditions: an optional measure linked to the direct payment in Pillar 1, and the so-called "Good Farming Practice" requirements for the agri-environmental schemes in Pillar 2.

The 2003 Fischler Reform[21] **further developed and consolidated these measures, decoupling most support from production** through the introduction of the single payment scheme (SPS) (European Parliament, 2021[43]). Furthermore, in this reform cross-compliance became obligatory and was extended to include not only environmental issues but also public, animal and plant health and animal welfare issues. Cross-compliance rules were enforced through a set of Statutory Management Requirements (SMR) and "Minimum Requirements for Good Agricultural and Environmental Condition" (GAEC). This package also introduced modulation, allowing Member States to transfer funds between the two pillars to reinforce rural development objectives. The reform also prioritised financial discipline, freezing the budget of Pillar 1 (covering the SPS and market measures) and imposing annual compulsory ceilings. This coincided with the splitting of the CAP budget into the European Agricultural Guarantee Fund (EAGF) to finance Pillar 1 and the European Agricultural Fund for Rural Development (EAFRD) to finance Pillar 2 from 2007. Additionally, this round of reform introduced the single common market organisation (CMO) in 2007, which codified the regulation mechanisms of the existing CMOs. Reform programmes for specific commodities (cotton, hops, olive oil, tobacco, sugar, fruits and vegetables, and wine) were introduced from 2003 to 2008, with the aim of reducing distortive payments, restoring market-based incentives and aligning them with the SPS (OECD, 2011[39]). Through the different rounds of CAP reform, as result of budgetary payments replacing MPS, but also as result of the additional Member States joining the European Union, the absolute budget figure for the CAP more than doubled from 1990 to 2010.

Measures taken under the 2009 Health Check sought to continue the direction of the 2003 reform. Namely, decoupling of aid continued and nearly all payments (with the exception of suckler cow, sheep and goat premia) were included into the decoupled direct payments scheme - SPS. It also further reduced market intervention for a number of products, abolished set-aside and introduced phase-out of milk quotas. Additional flexibility for direct payments was introduced as well (OECD, 2011[39]). The Health Check also resulted in changes to both SMR and GAEC of cross-compliance, with the addition of two water management standards.

The 2013 Reform set out a more global, integrated approach to agricultural support for the programming period 2014-20, undertaken through four lines of action (European Parliament, 2021[43]): (1) converting decoupled aid into a multifunctional support system with aid directed toward specific objectives; (2) consolidating the two CAP pillars, with mostly decoupled direct aid and market measures funded through Pillar 1, and rural development funded through Pillar 2, which continued to be co-financed by the

Member State; (3) consolidating CMO tools into safety nets in case of market disruption or price crisis, and ending other supply control measures, namely the sugar and milk quotas; (4) a more integrated, targeted and territorial approach to Pillar 2 through rural development plans, simplifying the range of available instruments to focus on certain core objectives.

During the negotiations of the new CAP post-2020, a political agreement between the European Parliament and the EU Member States in the Council was reached on transitional rules for the CAP for 2021-22 on 27 November 2020. These transitional rules were based on the principle of continuity of the 2014-20 CAP rules, while also including new elements to ensure a smooth transition.

In January 2023, the European Commission and the European Union Member countries began to implement the new CAP 2023-27. Although with a similar annual budget as the transitional period, the new CAP entails a new delivery model, in which Member States play a critical role in designing and implementing their CAP Strategic Plans (CSPs), which include both Pillar 1 and Pillar 2 measures.

While CAP budget has remained relatively stable in nominal terms since 2010, CAP expenditures as a share of the total EU budget declined sharply, from 65.5% in 1981 to 23.5% in 2022. The share of CAP expenditure on the total EU budget was 34.9% in 2020. The stronger decreases in 2021 and 2022 are linked to additional overall EU expenditure for the Next Generation EU funds (EC, 2024[44])

Table 11.35. European Union: Agricultural policy trends

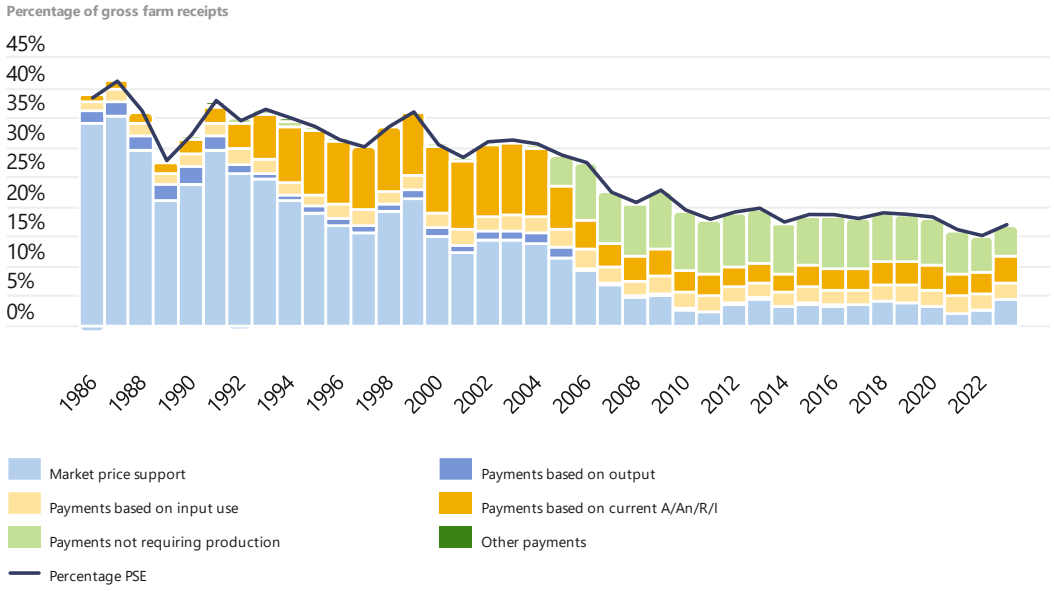
Years	Main Milestones	Key Policy Features
pre-1992	**Coupled support phase**: CAP financed by the European Agricultural Guidance and Guarantee Fund (EAGGF), European Economic Community with 12 members[1]	Support prices greater than world prices Unlimited buying guarantee Production quotas for certain products, including dairy and sugar
1992-1999	**MacSharry Reform**: CAP, EU Expansion 1995 (Austria, Finland, Sweden), Uruguay Round Agreement on Agriculture	Shift from product support through prices to producer support through income-supporting measures, with the reduction in intervention prices compensated by increased direct aid per hectare or livestock headage payments Establishment of set-aside payments to encourage land retirement Tariffication of border measures and gradual reductions in bound tariffs
2000-2002	**Agenda 2000 CAP Reform**: CAP divided into Pillar 1 and Pillar 2 (Rural Development)	Further reduction of EU market support prices in closer alignment with world prices, partly offset by direct aid to producers in the form of increased area or headage payments First introduction of environmental cross-compliance Introduction of Rural Development Regulation as a second pillar of the CAP
2003-2008	**Fischler Reform**: CAP Pillars 1 (financed by EAGF) and 2 (financed by the European Agricultural Fund for Rural Development EAFRD), EU Expansion 2004 (Malta, Cyprus, Estonia, Latvia, Lithuania, Poland, Czechia, the Slovak Republic, Slovenia, Hungary) and 2007 (Bulgaria and Romania)	Decoupling much of CAP support from volume of production, with fixed single farm payment (SPS) introduced based on historical references Cross-compliance for environmental and public health objectives compulsory for receiving full payments. Introduction of Statutory Management Requirements (SMR) and "Minimum Requirements for Good Agricultural and Environmental Condition" (GAEC) Single common market organisation (CMO) introduced Reform programmes initiated for cotton, hops, olive oil, tobacco, sugar, fruit and vegetable and wine regimes
2009-2013	**Health Check**: CAP Pillars 1 and 2	Further reduction of EU market intervention for certain products Phasing out of milk quotas initiated Abolition of set-aside Integration of nearly all payments into SPS New cross-compliance requirements introduced

Years	Main Milestones	Key Policy Features
2013-2020	**2013 Reform**: CAP Pillars 1 and 2, EU Expansion 2013 (Croatia) and Contraction 2020 (United Kingdom)	Decoupled aid converted to multifunctional support (including basic payment, greening payment, small farmer payment, etc.) Consolidation of two pillars of CAP, with direct payments and market measures under Pillar 1 Consolidation of CMO tools, abolition of supply control measures (including ending milk and sugar quota schemes) External and internal convergence, with payment envelopes gradually adjusted to move toward a uniform minimum per hectare payment
2021-2022	**Transitional rules**	Continuity of the 2014-2020 CAP rules, while also including new elements to ensure a smooth transition
2023-2027	**CAP 2023-27** Introduction of new delivery model and CAP Strategic Plans	The new delivery model requires Member States to programme both CAP Pillar 1 and Pillar 2 expenditures within the context of their CAP Strategic Plans. Enhanced conditionality and eco-schemes were introduced.

1. When the Maastricht Treaty establishing the EU was signed in 1992, Belgium, Denmark, France, Germany, Ireland, Italy, Greece, Luxembourg, the Netherlands, Portugal, Spain and the United Kingdom were part of the Union.
Source: European Parliament (2021[43]) and OECD (2011[39]).

Total support to the agricultural sector as percentage of agricultural gross value-added in the European Union largely comes from budgetary allocations. Market price support declined significantly from 1986 through the 2000s but has remained mostly unchanged since around 2010. The most substantial change to PSE composition began in the mid-2000s after the Fischler reform decoupled most payments to farmers from production (Figure 11.8).

Figure 11.8. European Union: Development of the PSE and its composition, 1986 to 2023



Notes: European Union refers to EEC12 for 1986-94, EU15 for 1995-2003, EU25 for 2004-06, EU27 for 2007-13, EU28 for 2014-19, EU27 and the United Kingdom for 2020, and EU27 from 2021. A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

References

ADE S.A., CCRI and OIR (2023), *Study on the ENRD and the NRNs' contribution to the implementation of EU Rural Development policy*, Publications Office of the European Union, https://doi.org/10.2762/14851. [24]

Antón, J. and J. Sauer (2021), "Dynamics of farm performance and policy impacts: Main findings", *OECD Food, Agriculture and Fisheries Papers*, No. 164, OECD Publishing, Paris, https://doi.org/10.1787/af1f4600-en. [47]

EC (2024), *CAP expenditure in the total EU expenditure*, https://agriculture.ec.europa.eu/data-and-analysis/financing/cap-expenditure_en (accessed on 15 May 2024). [44]

EC (2024), *Catalogue of CAP interventions*, https://agridata.ec.europa.eu/extensions/DashboardCapPlan/catalogue_interventions.html (accessed on 28 May 2024). [36]

EC (2024), *EU level CAP evaluation framework*, https://eu-cap-network.ec.europa.eu/publications/eu-level-cap-evaluation-framework_en. [20]

EC (2024), *European R&I partnership on agroecology living labs and research infrastructures*, https://research-and-innovation.ec.europa.eu/research-area/agriculture-forestry-and-rural-areas/ecological-approaches-and-organic-farming/partnership-agroecology_en (accessed on 15 May 2024). [12]

EC (2024), *Forging a sustainable future together: cohesion for a competitive and inclusive Europe*, Publications Office of the European Union, https://doi.org/10.2776/143512. [18]

EC (2024), *Sustainable use of pesticides*, https://food.ec.europa.eu/plants/pesticides/sustainable-use-pesticides_en (accessed on 13 May 2024). [16]

EC (2024), *The long-term vision for the EU's rural areas: key achievements and ways forward*, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2024:450:FIN. [19]

EC (2024), *The use of crisis measures adopted pursuant to Articles 219 to 222 of the CMO Regulation. COM/2024/12 final*, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52024DC0012. [8]

EC (2023), *Approved 28 CAP Strategic Plans (2023-2027). Summary overview for 27 Member States Facts and figures*, European Commission, Brussels, https://agriculture.ec.europa.eu/system/files/2023-06/approved-28-cap-strategic-plans-2023-27.pdf. [9]

EC (2023), *CAP Strategic Plans*, https://agriculture.ec.europa.eu/cap-my-country/cap-strategic-plans_en. [5]

EC (2023), *Commission Delegated Regulation (EU) 2023/1225 of 22 June 2023 on temporary exceptional measures derogating from certain provisions of Regulation (EU) No 1308/2013 of the European Parliament and of the Council to address the market disturbance in the wine*, https://eur-lex.europa.eu/eli/reg_del/2023/1225/oj. [31]

EC (2023), *Commission Implementing Decision (EU) 2023/739 of 4 April 2023 providing for an emergency support measure for the cereal and oilseed sectors in Bulgaria, Poland and Romania*, http://data.europa.eu/eli/reg_impl/2023/739/oj. [28]

EC (2023), *Commission Implementing Regulation (EU) 2023/1343 of 30 June 2023 providing for an emergency support measure for the cereal and oilseed sectors in Bulgaria, Hungary, Poland, Romania and Slovakia*, https://eur-lex.europa.eu/eli/reg_impl/2023/1343/oj. [29]

EC (2023), *Commission Implementing Regulation (EU) 2023/1465 of 14 July 2023 providing for emergency financial support for the agricultural sectors affected by specific problems impacting on the economic viability of agricultural producers*, https://eur-lex.europa.eu/eli/reg_impl/2023/1465/oj. [30]

EC (2023), *EU CAP Network Focus Group Enhancing the biodiversity on farmland through high-diversity landscape features*, https://eu-cap-network.ec.europa.eu/publications/report-eu-cap-network-focus-group-enhancing-biodiversity-farmland-through-high_en. [23]

EC (2023), *Following the expiry of the restrictive measures on Ukrainian exports of grain, Ukraine agrees to introduce measures to avoid a renewed surge in EU imports*, https://neighbourhood-enlargement.ec.europa.eu/news/following-expiry-restrictive-measures-ukrainian-exports-grain-ukraine-agrees-introduce-measures-2023-09-15_en (accessed on May 2024). [33]

EC (2023), *Future of EU rules on plant and forest reproductive material*, https://food.ec.europa.eu/plants/plant-reproductive-material/legislation/future-eu-rules-plant-and-forest-reproductive-material_en (accessed on 2024). [14]

EC (2023), *Mapping and Analysis of CAP Strategic Plans: Assessment of joint efforts for 2023-2027*, Publications Office of the European Union, https://data.europa.eu/doi/10.2762/71556. [34]

EC (2023), *Monitoring agri trade policy - Thematic analysis: Diversification of EU agri-food trade*, https://agriculture.ec.europa.eu/system/files/2023-10/monitoring-agri-food-trade-diversification-2012-22_en.pdf. [37]

EC (2023), *New techniques in biotechnology*, https://food.ec.europa.eu/plants/genetically-modified-organisms/new-techniques-biotechnology_en (accessed on 2024). [15]

EC (2023), *Summary of CAP Strategic Plans for 2023-2027: joint effort and collective ambition*, https://agriculture.ec.europa.eu/system/files/2023-11/com-2023-707-report_en.pdf. [4]

EC (2023), *Synthesis of ex ante evaluations of CAP post 2020*, https://eu-cap-network.ec.europa.eu/publications/synthesis-ex-ante-evaluations-cap-post-2020_en. [21]

EC (2023), *Thematic Group on the design and implementation of eco-schemes in the new CAP Strategic Plans. Background paper*, https://eu-cap-network.ec.europa.eu/events/1st-meeting-thematic-group-design-and-implementation-eco-schemes-new-cap-strategic-plans_en. [22]

EC (2022), *Commission Delegated Regulation (EU) 2022/467 of 23 March 2022 providing for exceptional adjustment aid to producers in the agricultural sectors*, http://data.europa.eu/eli/reg_del/2022/467/oj. [27]

EC (2021), *Digital Europe. European Digital Innovation Hubs. Work Programme 2021-2023*, https://ec.europa.eu/newsroom/dae/redirection/document/80907. [13]

EC (2021), *Long-term vision for rural areas: for stronger, connected, resilient, prosperous EU rural areas*, https://ec.europa.eu/commission/presscorner/detail/en/ip_21_3162 (accessed on 5 May 2023). [45]

EC (2019), *The European Green Deal*, https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en (accessed on 6 February 2022). [3]

EC (n.d.), *Beef: Information on the role of market measures, market monitoring, and the legal bases for the beef sector, European Commission, Brussels*, https://ec.europa.eu/info/food-farming-fisheries/animals-and-animal-products/animal-products/beef_en (accessed on 26 April 2022). [46]

EC (n.d.), *Certification of permanent carbon removals, carbon farming and carbon storage in products*, https://climate.ec.europa.eu/eu-action/certification-permanent-carbon-removals-carbon-farming-and-carbon-storage-products/certification-permanent-carbon-removals-carbon-farming-and-carbon-storage-products_en (accessed on 3 May 2024). [26]

EC (n.d.), *Market measures explained*, https://agriculture.ec.europa.eu/common-agricultural-policy/market-measures/market-measures-explained_en (accessed on September 2024). [7]

EP (2023), *Revision of the LULUCF Regulation - Strengthening the role of the land use, land-use*, https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/698843/EPRS_BRI(2021)698843_EN.pdf. [25]

EU CAP Network (2024), *EIP-AGRI Project Database*, https://eu-cap-network.ec.europa.eu/projects/search_en (accessed on 28 May 2024). [10]

EU CAP Network (2023), *Thematic Group on the Design and Implementation of Eco-schemes in the new CAP Strategic Plans. Background Paper*, https://eu-cap-network.ec.europa.eu/events/1st-meeting-thematic-group-design-and-implementation-eco-schemes-new-cap-strategic-plans_en. [35]

European Parliament (2023), *The Common organisation of the markets (CMO) regulation*, https://www.europarl.europa.eu/factsheets/en/sheet/293655/the-common-organisation-of-the-markets-cmo-regulation (accessed on 19 April 2024). [6]

European Parliament (2021), *Financing of the CAP*, European Parliament, https://www.europarl.europa.eu/factsheets/en/sheet/106/financing-of-the-cap. [42]

European Parliament (2021), *The Common Agricultural Policy - Instruments and Reforms*, https://www.europarl.europa.eu/factsheets/en/sheet/107/the-common-agricultural-policy-instruments-and-reforms. [43]

European Parliament (2021), *The Common Agricultural Policy (CAP) and the Treaty*, European Parliament, https://www.europarl.europa.eu/factsheets/en/sheet/103/the-common-agricultural-policy-cap-and-the-treaty. [40]

Grant, W. (2020), "The Common Agricultural Policy: An Overview", *EuropeNow* 37, https://www.europenowjournal.org/2020/11/09/the-common-agricultural-policy-an-overview/. [41]

JRC (2024), *Cumulative economic impact of future trade agreements on EU agriculture*, https://publications.jrc.ec.europa.eu/repository/handle/JRC135540. [38]

Núñez Ferrer, J. et al. (2023), *The cost of non-rurality - preparing for a better urban-rural balance in EU funding*, https://doi.org/10.2863/969318. [17]

OECD (2023), *Agricultural Policy Monitoring and Evaluation 2023: Adapting Agriculture to Climate Change*, OECD Publishing, Paris, https://doi.org/10.1787/b14de474-en. [32]

OECD (2023), *Policies for the Future of Farming and Food in the European Union*, OECD Agriculture and Food Policy Reviews, OECD Publishing, Paris, https://doi.org/10.1787/32810cf6-en. [2]

OECD (2017), *Evaluation of Agricultural Policy Reforms in the European Union: The Common Agricultural Policy 2014-20*, OECD Publishing, Paris, https://doi.org/10.1787/9789264278783-en. [1]

OECD (2011), *Evaluation of Agricultural Policy Reforms in the European Union*, OECD Publishing, Paris, https://doi.org/10.1787/9789264112124-en. [39]

Van Oost, I. (2021), *Common Agricultural Policy Post-2020: in the CAP networks and in Horizon Europe*, http://www.innoseta.eu/wp-content/uploads/2021/06/2.-DG-Agri-Inge-Van-Oost.pdf (accessed on 6 August 2022). [11]

Notes

[1] The OECD Producer Support Estimate database calculates support for the European Union as a whole, without reflecting possible cross-country variations between individual Member States.

[2] Sectoral support for apiculture is the only intervention co-financed by Member states under Pillar 1.

[3] Co-financing rates vary by measure and by Member State, within rules established at EU level.

[4] Rules on support for CSPs are established by EU Regulation 2021/2115, which also sets the rules on the Performance Monitoring and Evaluation Framework (PMEF), which applies for the CAP from 2023 until 2027.

[5] SAPS, a more simplified alternative to BPS, offered a uniform decoupled per hectare payment rate and was applied by all Member States that joined the European Union since 2004 except Slovenia, Malta, and Croatia, which decided to implement the BPS instead.

[6] CAP support to young farmers generally involves combining CIS-YF with Pillar 2 interventions. Overall EU countries must dedicate an amount corresponding to at least 3% of their direct payments budget to support young farmers.

[7] Coupled support aims to address difficulties in sectors, types of production or specific types of farming that are important for socio-economic or environmental reasons. Among the sectors that CAP strategic

plans can target, protein crops can be counted without any specific justification, as this could contribute to reducing the EU's dependency on imports in the sector and the use of nitrogen fertilisers.

[8] While under the CAP 2014-22 the reduction of the basic payments (BPS and SAPS) by at least 5% for the part of the amount exceeding EUR 150 000 (USD 158 000) was mandatory, with the new CAP this "degressivity" became voluntary and thresholds were modified.

[9] Through the *CMO/Amending Regulation (EU) 2021/2017*, provisions concerning aid schemes set out in Part II, Title I, Chapter II, Sections 2 to 6, of *Regulation (EU) No 1308/2013 on the common organisation of agricultural markets* have been deleted, as all types of intervention in the sectors concerned are now set out in Title III, Chapter III (Types of intervention in certain sectors) of *Regulation (EU) 2021/2115 on the CAP strategic plans*.

[10] Regulation (EU) 2021/2115 allows Member States to increase their co-financing rate from the minimum obligatory 50% up to 70% to further enhance their budget. Three Member States (*Bulgaria*, *Italy* and *Luxembourg*) have chosen to do so, while the others continue with the obligatory minimum co-financing rate of 50%.

[11] If the average market price in an EU country or in a region of an EU country drops below EUR 2 224 (USD 2 339) per tonne over a representative period, the European Commission may use public intervention to support beef prices (EC, n.d.[46]).

[12] Rules that farmers are expected to comply also include statutory management requirements (SMRs), which apply to all farmers whether or not they receive support under the CAP.

[13] For the discussion of impacts of decoupling on productivity please refer to Antón and Sauer (2021[47]) and OECD (2023[2]).

[14] The European Commission's communication in 2021 "Towards stronger, connected, resilient and prosperous rural areas" (EC, 2021[45]) set out a long-term vision for the EU's rural areas up to 2040. It identifies areas of action towards stronger, connected, resilient and prosperous rural areas and communities. A Rural Pact and an EU Rural Action Plan with tangible flagships and new tools were envisaged to help achieve the goals of this vision.

[15] For discussion of the challenges faced by the CAP reforms in achieving significant environmental impacts, refer to OECD (2023[2]).

[16] The European Commission's communication in 2021 "Towards stronger, connected, resilient and prosperous rural areas" (EC, 2021[45]) set out a long-term vision for the EU's rural areas up to 2040. It identifies areas of action towards stronger, connected, resilient and prosperous rural areas and communities. A Rural Pact and an EU Rural Action Plan with tangible flagships and new tools were envisaged to help achieve the goals of this vision.

[17] Regulation (EU) 2023/1077 of 31 May 2023.

[18] The data and information on the CSPs of EU Member States included in the country snapshots are based on two main sources: (i) "Overview of EU countries' CAP Strategic Plans interventions" (EC, 2023[5]), which includes the planned budget from the initially approved CAP Strategic Plans of the Member States, and (ii) the study "Mapping and analysis of CAP strategic plans - Assessment of joint efforts for

2023-2027" (EC, 2023[34]), which offers a first assessment of the strategic decisions made by Member States.

[19] Member States may choose to transfer up to 25% of the corresponding allocations between the two funds. This percentage may be increased by up to 15%-points for transfers from Direct Payments to Rural Development provided that the corresponding increase is used to finance EAFRD interventions linked to specific environmental and climate-related objectives and up to 2%-points provided that the corresponding increase is used for the installation of young farmers under EAFRD.

[20] Budgetary data reported in the figures of the country snapshots do not include these transfers between pillars.

[21] Also referred to as the June 2003 reform or the 2003 "Luxembourg" reform.

12. Iceland

Main findings

Support to agriculture

Relative agricultural support to producers in Iceland is among the highest in the OECD. The Producer Support Estimate (PSE) was more than three times the OECD average in 2021-23, at 46% of gross farm receipts. Market price support measures account for 43% of producer support, principally tariffs that maintain high domestic prices relative to world prices and cause a transfer from consumers to agricultural producers. Payments coupled with production factors complement market price support. Output payments for milk producers and largely decoupled payments to sheep meat producers represent most of the remaining support to farmers. About 70% of farm support is potentially most-distorting to production and trade.

Effective prices received by farmers have declined over time on average as the Producer Nominal Protection Coefficient (NPC) declined but remain very high at 56% above those in world markets in 2021-23. Market price support is especially high for poultry and egg products, where it accounts for 100% of Single Commodity Transfers (SCT). SCT represent 95% of total PSE.

Expenditures for general services (General Service Support Estimate, GSSE) represent 4% of total support to agriculture (Total Support Estimate, TSE), much lower than the 14% OECD average. These expenditures decreased from 7% of the value of agricultural production in 2000-02 to less than 3% in 2021-23; the value of production has increased 29% while expenditures decreased around 56%. Inspection and control represent 63% of GSSE and the rest is split between agricultural knowledge and innovation system, marketing and promotion, and public stockholding.

TSE as a share of Gross Domestic Product (GDP) declined from 1.7% in 2000-02 to 0.7% in 2020-23. This largely reflects the declining share of agriculture in the overall economy.

Key recent policy changes

A new comprehensive agricultural policy was passed by parliament in 2023. The agricultural policy is meant to guide development of the agricultural system until 2040. The main objectives of the agricultural policy are to strengthen and support Icelandic agriculture for the future with sustainable development as a guiding principle. The policy is based on three key pillars: land use; climate and environmental protection; and technology and innovation.

The agricultural policy is an integral part of a newly adopted food policy in Iceland aiming to the year 2040 horizon. The food policy takes all major aspects of food production in Iceland into consideration, including fisheries, agriculture, and aquaculture. The focus is on sustainability and the circular economy of food production, food security and food safety, R&D, consumers, and society.

In 2023 some adjustments were made to the agreement between the government and the Farmer's Association. This was to agree that agriculture in Iceland will be carbon neutral no later than 2040 and on

taking necessary steps to prepare implementation of climate accounting for agriculture. The agreement runs between 2016 and 2026 and such agreements are normally revised twice over that period.

A comprehensive analysis on the financial situation across farms in Iceland was undertaken in 2023 in response to high inflation and rising input costs for agriculture. This led to various one-time support measures aimed to accommodate particularly vulnerable farmers. The focus of these was to help younger farmers who generally have a higher debt ratio and were at risk of leaving the sector. Family farms facing short term vulnerabilities due to increased capital costs and a long-term lack of profitability were also targeted. In total, the increase in support measures was ISK 2 100 million (USD 15.2 million).

The new agricultural policy introduced in 2023 is designed to reduce greenhouse gas (GHG) emissions from agriculture and encourage carbon removal and storage in soils. The government has identified climate actions where the agricultural sector plays a significant role. GHG emissions from agriculture may be reduced by improving feed and resource use, optimising land use and preserving and increasing carbon in soils and vegetation. A framework to create certified carbon units in agriculture and land use sectors is to be developed.

Assessment and recommendations

- As regards environmentally sustainable productivity growth Iceland is performing relatively well. Output growth in agriculture (9%) has clearly outpaced the global average over the 2012-21 period, which has been driven by robust growth in total factor productivity (TFP) of over 10% per year which was also much higher than the global average TFP growth. At the same time agri-environmental performance indicators, such as nitrogen and phosphorus surpluses and share of agriculture sector of the total energy use are comparatively small. However, agriculture continues to represent a significant share (13%) in the country's total GHG emissions – well above the OECD average – mainly due to the importance of the ruminant livestock sector.
- Progress in agricultural policy reforms has been limited, and Iceland's support to farmers remains well above that of most OECD countries. Given that agricultural support policies remain dominated by market price support and output payments, Iceland's support to agriculture continues to be production- and trade-distorting, contributing to inflated agricultural and food prices, and risks adding to environmental pressures.
- Producer support should be decoupled from agricultural production and favour less production- and trade-distorting and less environmentally harmful forms of support. Re-instrumentation of producer support from production-coupled support measures towards decoupled support payments with environmental cross-compliance requirements and towards specific agri-environmental measures (including GHG-mitigation) would contribute to reaching agriculture's carbon-neutrality target by 2040. Reducing market price support and payments targeted at specific commodities would also contribute to climate-change adaptation, as farmers would not be locked into producing subsidised commodities under changing climatic conditions.
- Climate change has had positive impacts on crop and grass yields. However, warmer climatic conditions also bring new pests and insects that might reduce future yields. The agricultural sector is assumed to play a significant role in the national action plan for social adaptation to climate change, but a comprehensive climate-change adaptation policy and measures for agriculture have not yet been implemented. It will be important to move from adaptation strategies to policy implementation, supported by monitoring and measurement of progress. It will also be important that adaptation policy supports the shift from coping and incremental adaptation strategies towards transformative adaptation of production systems.
- Agriculture plays a central role in Iceland's climate-mitigation policy and efforts to reach carbon-neutrality, mainly due to the size of the livestock sector. Measures to reduce GHG emissions from agriculture will be important to reach the challenging goal of carbon-neutral agriculture by 2040.

However, current agricultural support measures – especially market price support and output payments for ruminant products such as milk and wool – counteract and reduce the effectiveness of GHG-mitigation measures in agriculture.

- Expenditures for general services (General Service Support Estimate, GSSE) represent only 4% of total support to agriculture (Total Support Estimate, TSE), much lower than the 14% OECD average. Shifting budget expenditure from producer support towards Iceland's agricultural innovation systems and other general services could increase innovations to enhance environmentally sustainable productivity growth and contribute to climate-change mitigation and adaptation.

Development of support to agriculture

Figure 12.1. Iceland: Development of support to agriculture

Figure 12.1A. Iceland: Producer Support Estimate and its composition

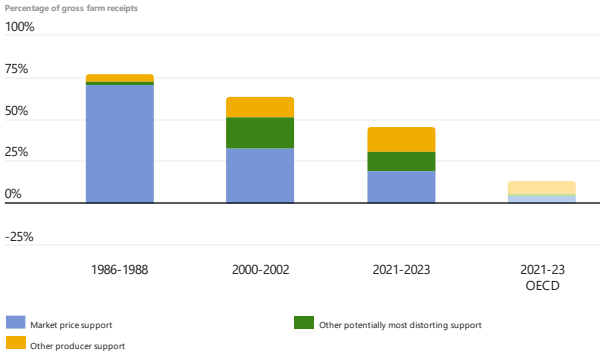


Figure 12.1B. Iceland: Ratio of producer to border price

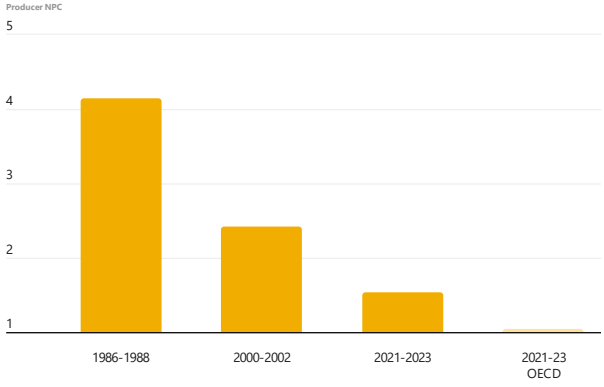


Figure 12.1C. Iceland: General Services Support Estimate and its composition

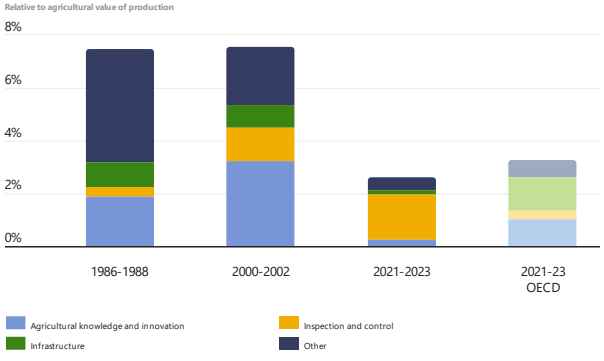
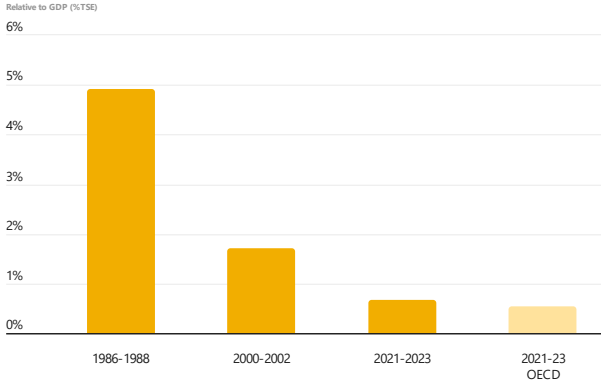
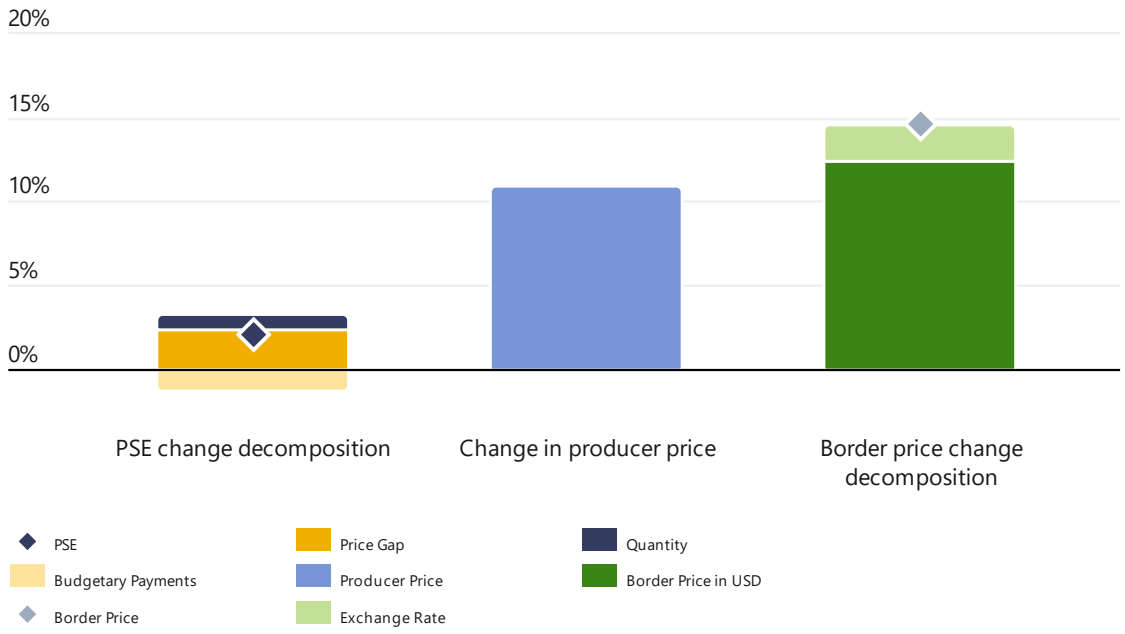


Figure 12.1D. Iceland: Total Support Estimate



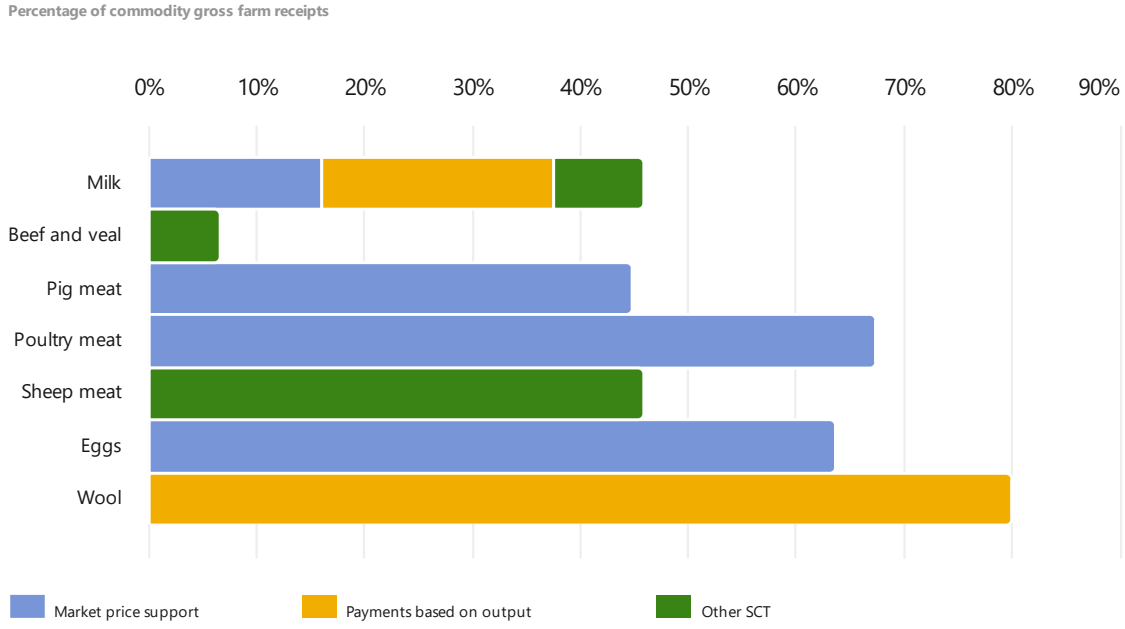
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Figure 12.2. Iceland: Drivers of the change in PSE, 2022 to 2023



Note: % change of nominal Producer Support Estimate expressed in national currency.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Figure 12.3. Iceland: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Table 12.1. Iceland: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**236**	**150**	**305**	**283**	**304**	**327**
of which: share of MPS commodities (%)	80.32	82.11	86.38	84.69	86.63	87.82
Total value of consumption (at farm gate)	**205**	**136**	**278**	**252**	**276**	**305**
Producer Support Estimate (PSE)	**193**	**139**	**188**	**194**	**185**	**185**
Support based on commodity output	180	113	125	134	116	125
Market price support[1]	179	72	81	91	74	79
Positive market price support	179	72	81	91	74	79
Negative market price support	0	0	0	0	0	0
Payments based on output	2	40	44	43	42	46
Payments based on input use	13	4	15	14	16	14
Based on variable input use	3	0	3	3	4	3
with input constraints	0	0	0	0	0	0
Based on fixed capital formation	6	2	7	7	8	7
with input constraints	0	0	0	0	0	0
Based on on-farm services	4	2	4	4	4	3
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	-1	-3	13	12	13	13
Based on Receipts / Income	-1	-3	0	0	0	0
Based on Area planted / Animal numbers	0	0	13	12	13	13
With input constraints	0	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	20	36	34	40	33
Payments based on non-current A/An/R/I, production not required	1	5	0	0	0	0
With variable payment rates	0	0	0	0	0	0
with commodity exceptions	0	0	0	0	0	0
With fixed payment rates	1	5	0	0	0	0
with commodity exceptions	1	5	0	0	0	0
Payments based on non-commodity criteria	0	0	0	0	0	0
Based on long-term resource retirement	0	0	0	0	0	0
Based on a specific non-commodity output	0	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0	0
Miscellaneous payments	0	0	0	0	0	0
Percentage PSE (%)	**77.19**	**63.98**	**45.57**	**50.36**	**44.53**	**42.62**
Producer NPC (coeff.)	**4.16**	**2.44**	**1.56**	**1.70**	**1.50**	**1.50**
Producer NAC (coeff.)	**4.38**	**2.78**	**1.84**	**2.01**	**1.80**	**1.74**
General Services Support Estimate (GSSE)	**18**	**11**	**8**	**8**	**8**	**9**
Agricultural knowledge and innovation system	5	5	1	1	1	1
Inspection and control	1	2	5	5	5	6
Development and maintenance of infrastructure	2	1	0	1	0	0
Marketing and promotion	1	1	1	1	1	1
Cost of public stockholding	9	2	1	1	1	1
Miscellaneous	0	0	0	0	0	0
Percentage GSSE (% of TSE)	**6.94**	**7.39**	**4.14**	**3.87**	**4.07**	**4.46**
Consumer Support Estimate (CSE)	**-112**	**-65**	**-77**	**-85**	**-71**	**-76**
Transfers to producers from consumers	-157	-66	-78	-85	-72	-76
Other transfers from consumers	-1	-2	0	0	0	0
Transfers to consumers from taxpayers	46	3	1	1	1	1
Excess feed cost	0	0	0	0	0	0
Percentage CSE (%)	**-70.44**	**-48.30**	**-27.70**	**-33.64**	**-25.76**	**-24.90**
Consumer NPC (coeff.)	**4.38**	**1.98**	**1.39**	**1.51**	**1.35**	**1.33**
Consumer NAC (coeff.)	**3.38**	**1.93**	**1.38**	**1.51**	**1.35**	**1.33**
Total Support Estimate (TSE)	**257**	**153**	**197**	**203**	**193**	**194**
Transfers from consumers	158	68	78	85	72	76
Transfers from taxpayers	100	87	119	118	122	118
Budget revenues	-1	-2	0	0	0	0
Percentage TSE (% of GDP)	**4.94**	**1.72**	**0.70**	**0.79**	**0.69**	**0.63**
Total Budgetary Support Estimate (TBSE)	**78**	**81**	**116**	**111**	**119**	**116**
Percentage TBSE (% of GDP)	**1.52**	**0.91**	**0.41**	**0.44**	**0.43**	**0.38**
GDP deflator (1986-88 = 100)	**100**	**264**	**715**	**660**	**719**	**766**
Exchange rate (national currency per USD)	**40.94**	**89.37**	**133.39**	**126.95**	**135.27**	**137.95**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for Iceland are: milk, beef and veal, sheep meat, wool, pig meat, poultry and eggs.

Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

Based on Iceland's key agricultural policy objective to maintain and strengthen a diverse agricultural sector to the extent that physical and marketing conditions allow, its policies centre around price support and direct payments. Price support is provided for all livestock products and some horticultural products. Direct payments are provided to cattle (mainly dairy) and sheep producers, and on a smaller scale, to certain greenhouse producers. The key policy goals are to: meet domestic demand where realistically possible; maintain sustainable production of high-quality, healthy products; improve efficiency and competitiveness; improve farmers' incomes; foster innovation and create job opportunities; and sustain livelihoods in rural areas.

As a foundation of the support system for agriculture, the government negotiates, in regular intervals, with the Farmers' Association concerning the general framework for support and production control in the cattle, sheep, and horticultural sectors. There is also an agreement on so-called horizontal support, such as advisory services, breeding, animal welfare, environmental protection, sustainable land management, organic farming, and land cultivation. The current agreements cover 2017-26, with extensive reviews in 2019 and again in 2023. The 2023 revisions focused on issues related to food security, environment, and climate change.

For dairy, direct payments depend on the size of a producer's quota and the current number of animals. Headage payments are provided for up to 180 dairy cows and 260 beef cows per farm, with full payment for each of the first 50 dairy cows and 200 beef cows, then at a declining rate for each additional cow. A national dairy production quota is divided among producers based on their annual quotas for the preceding year. Annual dairy quotas also determine entitlements for direct payments. Production in excess of quotas is permitted, provided all such production is for export. Wholesale prices are regulated for approximately half of all dairy products based on the volume of raw milk required. A government-chaired committee representing both the Farmers' Association and the labour union (acting on behalf of consumers) determines the guaranteed minimum prices for milk delivered within production quotas on an annual basis. Trade in support entitlements (basic payments to all active dairy and cattle farmers) between entitlement holders is allowed with quantity limitations and takes place in a market operated by the government. Dairy producers also benefit from support for breeding, land cultivation and development programmes.

For sheep, direct payments are connected to historical production. However, receiving a full payment requires keeping a minimum number of winter-fed sheep on the farm. Additional payments to sheep farmers relate to a quality-control scheme for lamb meat based on animal welfare, product quality, traceability and sustainability criteria. Premium payments are provided at the wholesale level for purchasers of wool, and to farmers to co-operate in increasing added value for sheep products.

Imports of meat, dairy products, and some vegetables that compete with domestic production are subject to tariffs, often compound duties with an ad valorem component of 30% and a specific duty that varies from ISK 5/kg (USD 0.04/kg) to ISK 1 462/kg (USD 2/kg). However, products originating in partner countries of the European Economic Area (EEA) or in one of the 41 countries with which Iceland has free trade agreements may carry lower tariffs.

Iceland is a member of the European Economic Area (EEA) and of the European Free Trade Association (EFTA). While the EEA Agreement does not apply to most trade in agricultural goods, it opens trade in several processed agricultural products and encourages bilateral agreements on primary commodities.

As a member of EFTA, Iceland is also party to several Free Trade Agreements (FTAs), including with countries in Southeast Europe, North Africa and the Middle East, Latin America, and Asia, as well as with

the South African Customs Union. In addition, Iceland has bilateral FTAs with the Faroe Islands, Greenland, and the People's Republic of China.

Innovation for sustainable productivity growth

In 2023, Iceland adopted a new food policy as a guideline in all decision making when it comes to food production until 2040. The main goal is to increase value creation in food production in Iceland and guarantee food security and food safety and thus improve economic welfare in harmony with the environment and nature. The food policy is based on six pillars, the first of which is sustainability of food production. All production based on living resources should meet all criteria for sustainability, guided by an ecosystem approach and the precautionary principle. Furthermore, all produce should be fully utilised, food production should be carbon neutral and carbon offsets are to be based on nature-based solutions. A five-year action plan is under development.

Iceland has adopted an action plan to encourage organic agriculture. It is considered an important factor in increasing sustainability and responding to growing demand for certified organic products both domestically and abroad. Promoting organic production is seen as part of strengthening Iceland's competitive position, in addition to maintaining biological diversity and being a part of the circular economy. The purpose of the plan is to stimulate demand for organic products, support adoption of organic production, and strengthen the organic value chain.

In 2023, Iceland adopted an action plan to lay the foundations for increased cereal production. Iceland is reliant on imported cereals for human consumption. Domestic production is mainly of feed crops, especially barley. Following COVID-19 and Russia's war of aggression against Ukraine and other market disruptions, cereal production and food security has received more attention and the government has earmarked around ISK 2 000 million (USD 14.5 million) to be spent in the next five years in extensive research, development, and other measures to increase cereal production. Emphasis will be given to developing and breeding varieties of barley, oats and wheat adapted to Icelandic climate and soil and to building competence and capacity in plant breeding in Iceland. In addition, investment support will be made available for building infrastructure in the sector. The action plan also foresees the provision of ISK 500 million (USD 3.6 million) annual support for increasing cereal production. Planned support measures include both production-coupled support measures (payment based on output, ISK per kg of output) and investment support measures (for example, for investments on grain drying, storage and transport equipment).

In the beginning of 2024, the *Land og Skógur* (Land and Forest) institute was established by merging the former *Landgræðsla ríkisins* (Soil Conservation Service) and *Skógrækt ríkisins* (Icelandic Forest Service). The new reinforced institute is a knowledge-based institute in the field of vegetation and soil resources, to play an important role in research, monitoring, and education to protect, restore and improve land-based resources and to promote their sustainable use.

The Food Fund Act (entered into force in May 2020) has the goal to support development and innovation in producing food and food products from side products in agriculture and fisheries. The fund mainly emphasises innovative and sustainable projects for food production in general, not limited to agriculture. It supports research projects aimed at creating new knowledge that promotes innovation, sustainability, value creation and competitiveness of Icelandic food. The research must be related to the use of Icelandic food, including primary raw materials or by-products created in the production process. The fund also supports individuals and legal entities for special purposes marketing efforts, as well as the development of their infrastructure related to market penetration abroad (for example, to create a marketing plan, design of websites, branding, and promotional material as well as for consulting in sales and marketing matters).

There is increased emphasis on strengthening environmental consultation and advisory services within the agricultural sector, to implement green accounting for farmers and to increase the number of participating farmers in programmes related to environmentally friendly agriculture.

The agricultural sector has set a goal of carbon neutrality by 2040. Iceland's 2020 Climate Action Plan contains several actions for agriculture. These include, for example, reduction of the use of mineral fertilisers; improved livestock feeding to reduce enteric fermentation; and increased domestic vegetable production. An ongoing programme based on the co-operation of several ministries and institutions in the field of environment, food and agriculture, aims to make agriculture more climate friendly through reduction of GHG emissions from agriculture, improvement of feed and resource use, optimisation of land use and preserving and increasing carbon in soils and vegetation.

The climate action plan further aims at improved treatment of livestock manure and improved efficiency in synthetic fertiliser use, utilisation of aquaculture waste and other nutritious by-products that can be used for land cultivation or land reclamation. Emphasis is given to improve farmers' access to practical information and consultation regarding how they can best reduce GHG emissions from their operations. Finally, reducing the emissions intensity of production, i.e. GHG emissions per kg of product, is considered of importance.

Recent policy developments

Domestic policy developments in 2023-24

New agricultural policy until 2040

In 2023, the Parliamentary Resolution in Agricultural Policy until 2040 was passed as a new comprehensive agricultural policy and after several years of co-operation and consultation with agricultural stakeholders. It sets guidelines for developing the agricultural system until 2040. The main objectives include strengthening and supporting Icelandic agriculture and strengthening its foundations for the future with sustainable development as a guiding principle. The policy is based on three key pillars including land use, climate and environmental protection, and technology and innovation.

The policy sets out a vision for the future that affects the framework of the value chain of agriculture in a broad context. **The agricultural vision** covers the environment, society and competitiveness and some of its major ambitions are:

- agriculture uses natural resources sustainably
- food security ensured
- greenhouse gas emissions are significantly reduced, and carbon neutrality and high adaptability to climate change are enhanced
- agriculture contributes to the conservation and promotion of biodiversity
- grazing and other land use should take into account the state and capacity of ecosystems and be managed in accordance with sustainability criteria
- cultivation, land use and improved land quality support diverse economic activities and residences throughout the country
- agricultural education meets the needs of industry and the market, and producers have the skills and capacity to meet the challenges and opportunities of the future in line with consumer demand
- production practices consider the health, welfare and housing of animals.

The focus of the new policy is on environmental and social matters and improving the competitiveness of Icelandic agriculture. For example, agricultural support policy should:

- Strengthen and expand agricultural production based on sustainable use for climate, environment and nature conservation and crop diversity.
- Help diversify agricultural production, with increased emphasis on tillage and other land use, forestry, ecosystem restoration, nature conservation and land conservation based on economic, social and environmental sustainability.
- Facilitate generational exchange and recruitment.
- Provide a stable and solid basis for domestic food production and national food security.

The policy will be implemented through regular five-year action plans until 2040. The first action plan is under development. For the vision to become a reality, it is suggested that emphasis be placed on ten core subjects: food security, adaptation and mitigation to climate change, biodiversity, land use and land preservation, circular economy, international market issues, consumers, innovation and technology, education and R&D and the agricultural support system.

The agriculture policy is an integral part of a newly adopted food policy in Iceland until the year 2040. The food policy takes all major aspects of food production in Iceland into consideration, including fisheries, agriculture, and aquaculture. The focus is for instance on sustainability and the circular economy of food production, food security and safety, R&D, consumers, and society.

Agricultural agreements between the government and the Farmers' Association

In 2023, the second revisions of the ten-year agreements between the government and the Farmers' Association took place. The result was only minor adjustments as the contracting parties agreed to begin focusing on developing the future of the agricultural support system. The main change was to delay the abolition of the support scheme for sheep farmers which had been expected by the end of 2026. Minor changes were made to the horticulture agreement as well as to the general framework agreement to encourage organic production.

In protocols to the 2023 revision agreement, contracting parties agreed for agriculture in Iceland to become carbon neutral no later than 2040, and for necessary steps to be taken to prepare implementation of climate accounting for agriculture.

Responses to high inflation and rising costs

In the autumn of 2023, the government established a working group across three ministries to assess a difficult situation that had arisen in agriculture due to high inflation, rapid increases in interest rates and input prices. Farms financed with inflation indexed loans and variable interest rates had become increasingly vulnerable and there were signs of farmers leaving the sector. Most Icelandic farms are closely linked to farmers' households, as the family home is a part of farm assets, so farmers' financial problems concerns both their business and livelihood.

A comprehensive analysis on the financial situation across all farms was undertaken, with consultation with farmers, financial institutions, and other stakeholders. To accommodate the most vulnerable farmers, several one-time support measures were implemented. The actions emphasised promoting recruitment and generational change in the sector by helping younger farmers, who have a generally higher debt ratio. It was seen as important for the future of the sector to prevent a significant proportion of young farmers from leaving the industry. Furthermore, by analysing farmers' balance sheets, those family farms most vulnerable in the short term due to increased capital costs and a long-term lack of profitability were targeted with increased support.

Support measures were increased by ISK 2 100 million (USD 15.2 million) or approximately 12%. Of the total support, ISK 600 million (USD 4.3 million) was allocated as addition to recruitment payments to newcomers since 2017, ISK 450 million (USD 3.3 million) was added to investment support in cattle, dairy

and sheep farming, ISK 450 million (USD 3.3 million) was allocated to farmers which rely mostly on income from sheep farming and ISK 100 million (USD 0.7 million) was allocated to cattle farmers and ISK 500 million (USD 3.6 million) to dairy farmers.

Policy context

Key economic and agricultural statistics

Iceland is a small, sparsely populated country with a GDP per capita above the OECD average. Agriculture contributes about 5% of GDP and 4% of employment. Conditions for agriculture in Iceland are limited by the country's geographical conditions. The growing season is short – around four months – yields are low, and production and transport costs are high. Approximately one-fifth of the total land area of Iceland is agricultural land, mostly suitable for fodder production and livestock raising. Only around 6% of agricultural land area is arable.

Livestock-rearing is the main farm activity, with milk and sheep meat being the most important products. Livestock production is mostly grassland-based, and most farm animals are native breeds. The main crops are hay, cereals for animal feed and vegetables – the latter are cultivated primarily in greenhouses heated with geothermal energy.

Table 12.2. Iceland: Contextual indicators

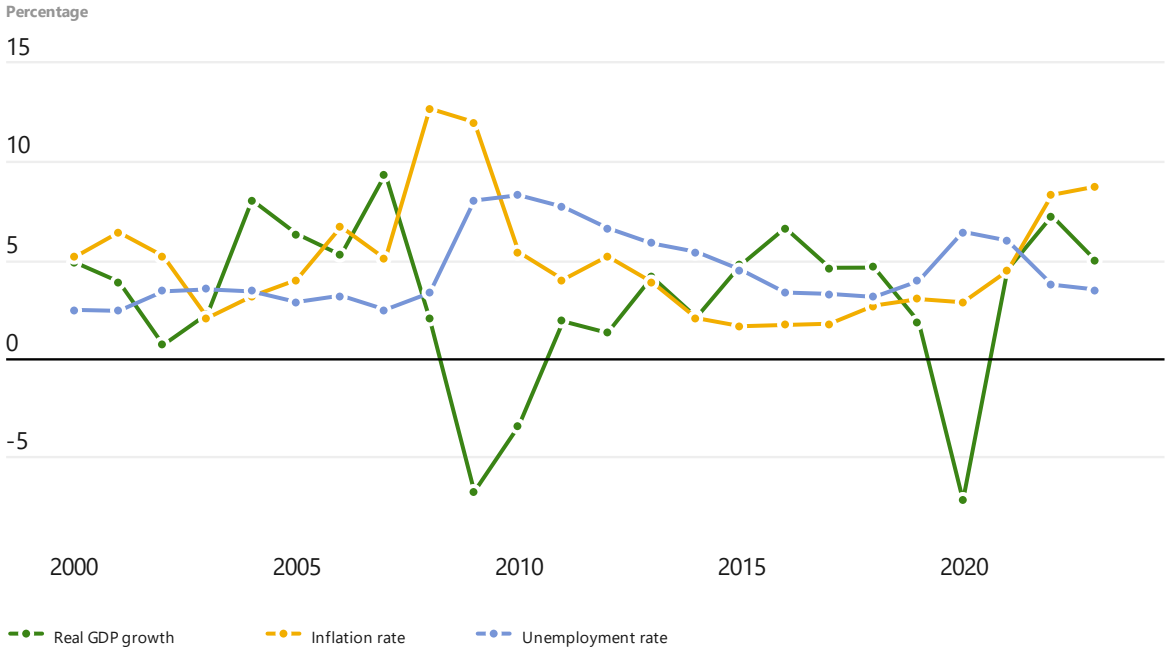
	Iceland		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	8	27	0.02%	0.02%
Population (million)	0.3	0.4	0.01%	0.01%
Land area (thousand km²)	100	101	0.10%	0.10%
Agricultural area (AA) (thousand ha)	1 889	1 872	0.10%	0.10%
			All countries[1]	
Population density (inhabitants/km²)	3	4	52	64
GDP per capita (USD in PPPs)	29 785	69 616	9 363	25 965
Trade as % of GDP	24.9	30.4	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	8.1	4.8	2.9	3.8
Agriculture share in employment (%)	8.3	4.1	-	-
Agro-food exports (% of total exports)	7.9	6.2	6.4	8.0
Agro-food imports (% of total imports)	7.3	8.9	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	13	12	-	-
Livestock in total agricultural production (%)	87	88	-	-
Share of arable land in AA (%)	7	6	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

In 2023 Iceland's economy grew by 4.9%, the unemployment rate was 3.5%, and consumer price inflation was about 9%. The economy is projected to grow by 2.0% in 2024 and 2.3% in 2025, the unemployment rate is expected to be around 4.5% and consumer price inflation about 8% in 2024 (OECD, 2023[1]).

Iceland's prosperity has been built on the sustainable management of its abundant natural resources, including the comprehensive fisheries management system based on individual transferable quotas, renewable energy (geothermal and hydro) and carbon sequestration opportunities (afforestation, revegetation).

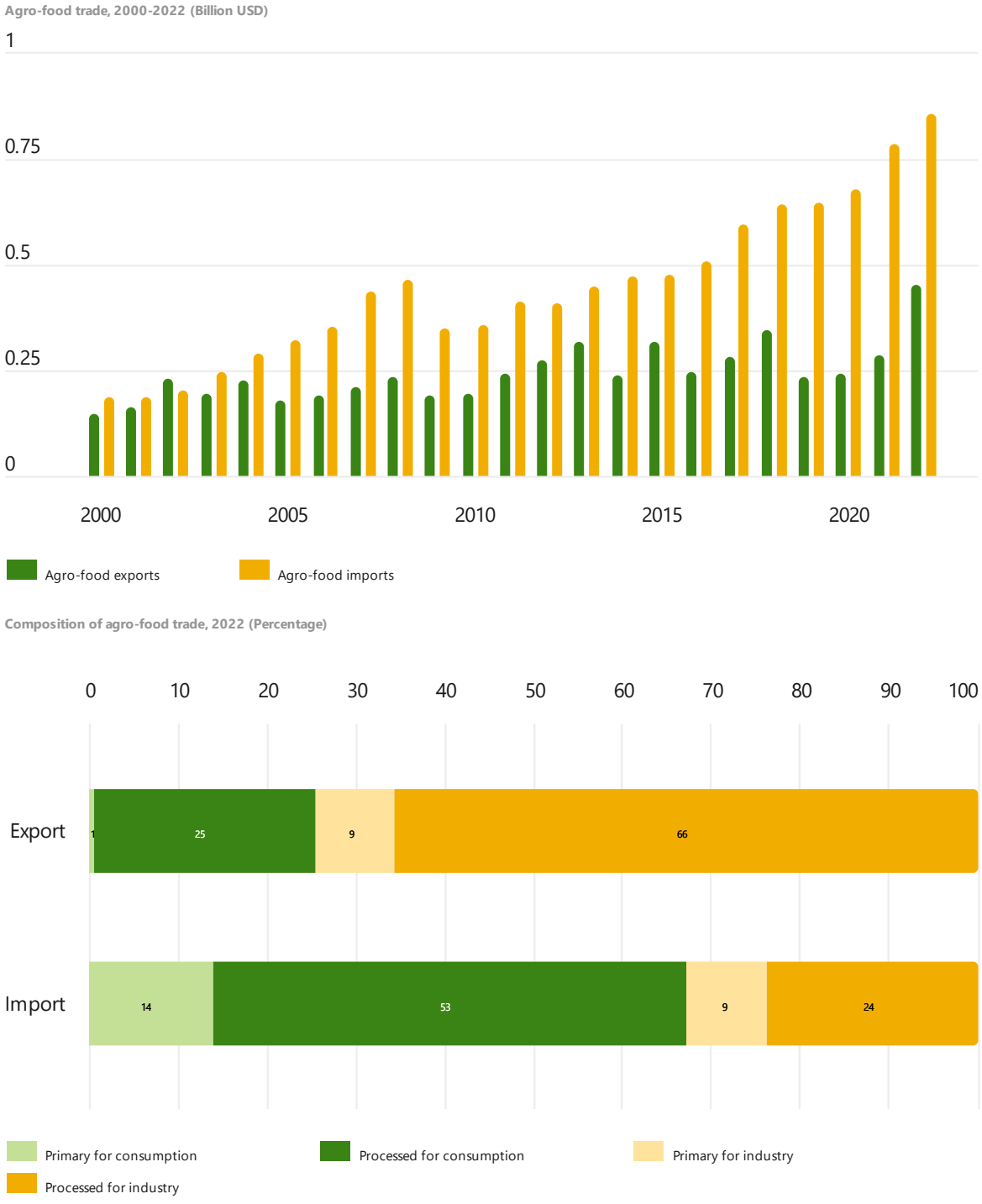
Figure 12.4. Iceland: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

The main agricultural exports are pure-bred horses for breeding, sheep meat products and fur skins. The range of Iceland's agricultural products is limited and meets approximately 50% of total domestic food requirements. Consequently, Iceland is a net importer of agricultural products (excluding fishery goods), mainly for final consumption. Imports are more diversified than exports and have increased steadily in recent years.

Figure 12.5. Iceland: Agro-food trade



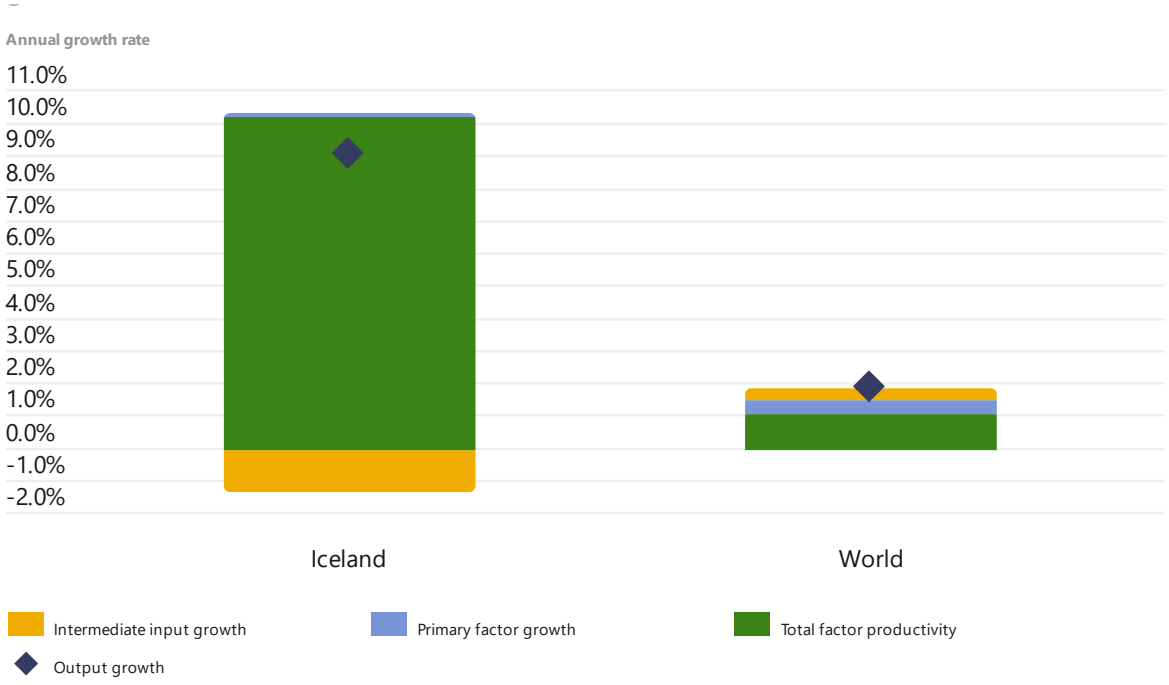
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Output growth in agriculture (9%) has clearly outpaced the global average over the 2012-21 period, which has been driven by commensurately robust growth in total factor productivity (TFP) of over 10% per year – which was also much higher than the global average TFP growth. This is mostly related to a significant

output growth in aquaculture and much less so in crop and livestock output. At the same time input growth has decreased.

A harsh climate, lack of suitable land, small average farm size, and the narrow genetic base for traditional livestock present significant constraints to the sector. Due to its relatively low livestock densities, Iceland's nutrient balances show a comparatively small surplus of both nitrogen and phosphorus. The share of agriculture sector of the total energy use has fallen over time. Agriculture continues to represent a significant share in the country's total GHG emissions – well above the OECD average – mainly due to the importance of the ruminant livestock sector. Emissions of CH_4 emissions from enteric fermentation and manure management, and N_2O emissions from manure management and fertilisers have historically accounted for over 99% of the total emissions from agriculture, with less than 1% arising from CO_2. With abundant water and a small population, total water abstraction in Iceland is less than 1% of total available freshwater resources. This is one of the lowest intensities of water resource use in the OECD, although the freshwater abstractions per capita are the highest in the OECD area (OECD, 2019[2]). The share of agriculture in total water abstractions has decreased over the past two decades.

Figure 12.6. Iceland: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Table 12.3. Iceland: Productivity and environmental indicators

	Iceland		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	-0.3%	10.3%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	8.0	6.2	32.1	28.2
Phosphorus balance, kg/ha	1.8	0.8	3.3	2.3
Agriculture share of total energy use (%)	1.9	1.4	1.7	2.0
Agriculture share of GHG emissions (%)	15.4	13.3	8.7	10.1
Share of irrigated land in AA (%)	..	..	-	-
Share of agriculture in water abstractions (%)	42.9	22.3	47.0	49.5
Water stress indicator	..	..	8.7	..

Note: * or closest available year.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

Iceland's agricultural policy has focused on food security, safety and quality; strengthening rural activity; environmental sustainability; and maintaining farm income.

Iceland supports agriculture heavily and reforms over time have been relatively limited. Support consists mainly of price support sustained with border measures and quotas. Dairy producers receive payments based on output. In 1996, support to sheep meat producers changed from price support to direct payments based on historic entitlements. A regional scheme for sheep farmers implemented in 2008 provides additional direct payments based on historic entitlements. Individual non-transferrable quotas for milk producers were introduced in 1980 and went through a number of reforms. In 1992, the current system of freely transferable quotas was introduced, and production-based payments were linked to the quota, paid directly to the farmer.

Since the mid-1990s, tariffs on agricultural products were reduced. However, tariffs on several agriculture product groups, particularly meat, dairy and flowers, remain high and complicated. Many compound duties with both ad valorem and specific duties apply. Export subsidies for agricultural products have not been provided since the early 1990s.

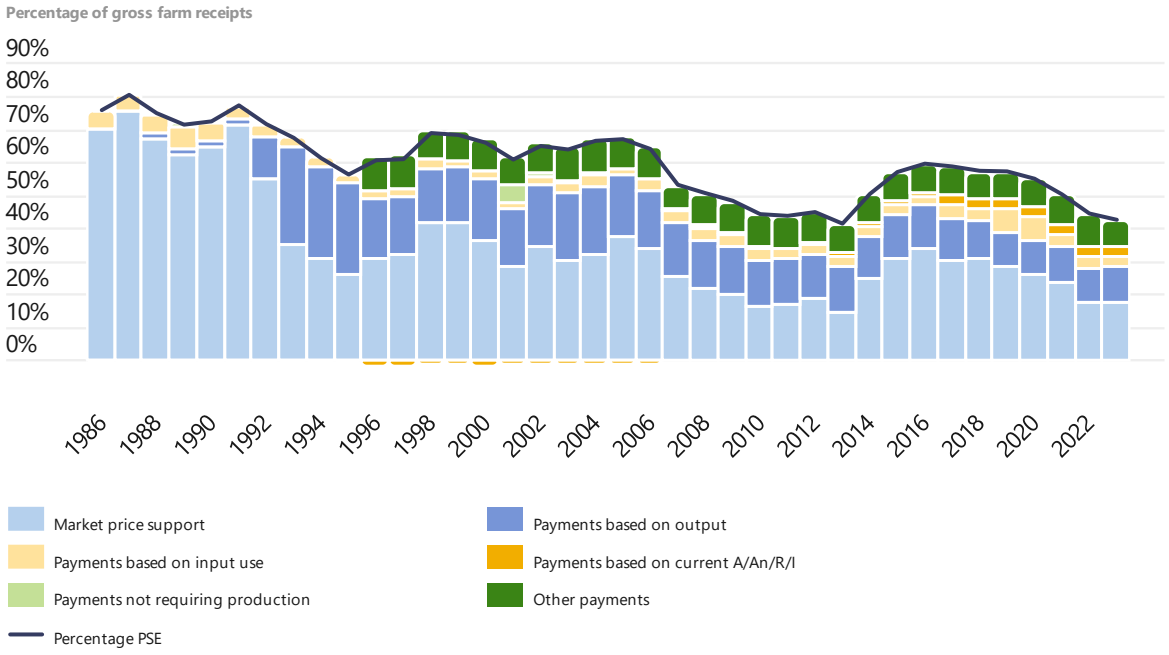
Table 12.4. Iceland: Agricultural policy trends

Period	Broader framework	Changes in agricultural policies
Prior to mid-1990s	Closed economy	Minimum prices Agricultural tariffs and non-tariff measures Consumer subsidies
Mid-1990s-2016	Gradual reforms to open market	EFTA, EEA Phase out of administered prices (except milk) Decoupled payments introduced to substitute price support measures Act Production, Pricing and Sale of Agricultural Products No. 99/1993 Act on Agriculture No. 70/1998
2017-2022	Continuation of gradual reforms	Revisions of agreements for sheep and cattle farmers Several FTAs signed EEA agreement enhanced Reduction of agricultural tariffs
2023	New comprehensive agricultural policy	

The policy mix remains dominated by production- and trade-distorting measures. Iceland continues to provide agricultural support through market price support maintained by border measures, and through direct payments based on entitlements directly or indirectly coupled with production.

Support to producers declined since the mid-1980s. An important reduction in market price support took place at the beginning of the 1990s, but market price support still accounts for 43% of total support to agriculture. Two-thirds of producer support is provided based on prices (Figure 12.7). TSE has declined over time, averaging 0.7% of the country's GDP in recent years, with PSE being the dominant component at 95%. The remaining TSE is financing for GSSE of which inspection and control represent 63% and the rest is split between agricultural knowledge and innovation system, marketing and promotion, and public stockholding.

Figure 12.7. Iceland: Development of the PSE and its composition, 1986 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

References

OECD (2023), *Economic Outlook Note - Iceland*, https://www.oecd.org/economy/iceland-economic-snapshot/. [1]

OECD (2019), "Water: Freshwater abstractions (Edition 2018)", *OECD Environment Statistics* (database), https://doi.org/10.1787/09a848f4-en (accessed on 7 April 2022). [2]

13. India

Main findings

Support to agriculture

Net support to producers in India has been negative throughout the last two decades but fluctuates markedly. Domestic producers have been implicitly taxed on average, as budgetary payments to farmers did not offset the price-depressing effect of complex domestic marketing regulations and trade policy measures. Virtually all gross producer transfers (whether positive or negative) come in potentially most production – and trade-distorting forms – a consistent pattern since the early 2000s.

Support to producers in 2021-23 includes budgetary transfers corresponding to 8.8% of gross farm receipts, positive Market Price Support (MPS) of +1.9% of gross farm receipts for commodities that are supported and negative MPS of as much as -26.1% for those that are taxed. Overall, this led to negative net support of -15.4% of gross farm receipts in 2021-23, against a backdrop of increasing prices at the border for many of the exported commodities covered, particularly rice, wheat, maize, and milk. Export restrictions apply since 2022-23 to various types of rice, wheat, sugar, onions, and related products (e.g. wheat flour). Commodities with positive Single Commodity Transfers (SCT) – ranging between 3.9% and 27.4% of commodity receipts in 2021-23 – include sugar, chickpeas, other pulses, and poultry meat.

Budgetary transfers to producers are dominated by subsidies for variable input use, mainly fertilisers, electricity, and irrigation water. However, budgetary allocations to the direct income transfer programme, PM-KISAN, have been increasing since its implementation in 2018 and represent 10.6% of budgetary spending in 2021-23.

Public expenditures financing general services to the sector (General Service Support Estimate, GSSE), mainly related to investments in off-farm irrigation systems, are around half the level of subsidies for variable input use. Expenditures for GSSE increased to 4% of the value of agricultural production in 2021-23, from 3.2% in 2000-02.

Policies that affect farm prices provide implicit support to consumers. Food subsidies provided through the Targeted Public Distribution System, whose allocations increased substantially during the COVID-19 pandemic, also reduce costs for consumers. The consumer support estimate is 38.7% of expenditure on average across all commodities in 2021-23.

Key recent policy changes

India introduced various export restrictions on rice throughout 2023. In July 2023, it banned the export of non-basmati white rice (allowing exports requested by foreign governments for food security needs). In August 2023, India imposed a 20% export duty on parboiled non-basmati rice and introduced minimum export prices for basmati rice exports. In addition, India banned the export of onions at the end of 2023 before reintroducing in 2024 a 40% export tax and a minimum export price.

Fertiliser subsidies were reduced in financial year 2023/24 from INR 2.55 trillion (USD 31 billion) to INR 1.9 trillion (USD 23 billion). The 25.5% reduction was triggered by lower fertiliser prices during the 2023/24 marketing year. The allocation foreseen for financial year 2024/25 is also lower, at INR 1.64 trillion (USD 20 billion).

As regards support to consumers, end November 2023, India extended for five years the *Pradhan Mantri Garib Kalyan Anna Yojana* programme providing free food grains to the poorest segments of the population. The programme starting on 1 January 2024 would cover more than 800 million beneficiaries and is expected to cost INR 11.8 trillion (USD 142 billion).

As regards support to producers, in June 2023, India increased the minimum support price (MSP) for several summer planted crops, including rice, maize, groundnuts, soybeans, pigeon peas, black gram, and cotton. In October 2023, India also increased the MSPs for winter planted crops, including wheat, barley, gram, lentils, and rapeseed. In June 2023, India increased the Fair and Remunerative Price for sugarcane by 3.3%.

Assessment and recommendations

- India's agriculture faces productivity and sustainability challenges. The low productivity of farmers, and particularly the prevalence of marginal and small-scale farmers with limited access to finance and technology, represent a substantial challenge. This is exacerbated by fragmented and complex supply chains involving numerous intermediaries, restrictive domestic marketing policies and border measures that have been on average reducing prices below those on international markets over most of the period reviewed. At the same time, the sustained growth in agricultural output and fertiliser use have put mounting pressures on natural resources, particularly land and water.
- Investments in agricultural research continue to be a major driver of sustainable productivity growth, including through new crop varieties and management practices. These are a good response to increased environmental pressures and rising threats from climate change. However, measurable targets for agriculture sustainable productivity growth are missing.
- Agricultural support could be better aligned with climate change mitigation and adaptation efforts. Scaling back variable input subsidies (fertiliser, irrigation water and electricity) can lower greenhouse gas (GHG) emissions and increase flexibility to adjust production systems in response to a changing climate. Resulting savings could be reoriented to train farmers in more efficient and sustainable input use and ensure extension systems can reinforce digital skills and resilience.
- New investments in irrigation should be better co-ordinated with water management objectives to help reduce water consumption in dry or groundwater depleting regions. Overall, long-term transitional efforts could focus on enhanced collaborative planning and multi-disciplinary research that accounts for India's regional diversity.
- Increased investments in the agricultural knowledge system and knowledge transfer through Farmer Producer Organisations could drive sustainable productivity growth. Promoting new technologies and production practices is important for improved and sustainable agricultural productivity.
- Enhancing the electronic National Agricultural Market (e-NAM) set up in 2016 should remain a priority to foster efficient markets and competitive agro-food supply chains across states. In addition, the 2017 model Agricultural Produce and Livestock Marketing (Promotion and Facilitation) Act should be implemented in a more harmonised and consistent way across states and synchronised with reforms to the MSP system through coherent plans. Complementing these programmes with investments in transport infrastructure, marketing, training, and other general services to agriculture will help farmers reap the benefits in productivity and income. Budgetary

allocations for rural infrastructure and digitalisation in agriculture in recent Union Budgets are positive steps in this direction.

- The large share of employment in agriculture compared to its GDP contribution reflects the persistent labour-productivity gap relative to other sectors and translates into low farm incomes. In the short-to-medium term, direct cash transfers (such as through PM-KISAN) can support the poorest farmers' livelihoods and adjustment to new market conditions. In the longer term, policies focused on education and financial services are needed to facilitate significant structural adjustments, including the transition of farm labour to other activities and consolidation towards farm operations sufficiently large to exploit economies of scale.
- India is an important agro-food exporter. The Agricultural Export Policy (AEP) framework adopted in 2018 helped reduce uncertainty and transaction costs throughout supply chains by easing export restrictions on organic and processed agricultural products. However, recent export restrictions on products such as rice, wheat, sugar, onions, and related products directly affect India's reliability as a supplier and exacerbate the persistent challenge of low farm incomes. An extension of the AEP to all agri-food products should be considered to create a stable and predictable market.
- Recent reductions in tariffs and relaxation of quantitative restrictions on selected pulses, albeit temporary, are additional positive steps towards improving food security and diversifying diets. Together with domestic marketing reforms, easing export and import restrictions would make the market more predictable and increase incentives for producers and traders to invest in supply chains. More generally, agricultural policy could be better anchored in a broad and long-term policy framework, moving towards more neutral, stable, predictable, and targeted policies.
- India made significant progress eliminating inefficiencies in the food-distribution system in the period before the COVID-19 pandemic, and these efforts could continue. The experimental replacement of physical grain distribution with direct cash transfers could be gradually expanded, including by drawing on recommendations made by the High-Level Commission on Restructuring the Food Corporation of India, which suggested focusing initially on cities with populations over 1 million, followed by grain surplus states.

Development of support to agriculture

Figure 13.1. India: Development of support to agriculture

Figure 13.1A. India: Producer Support Estimate and its composition

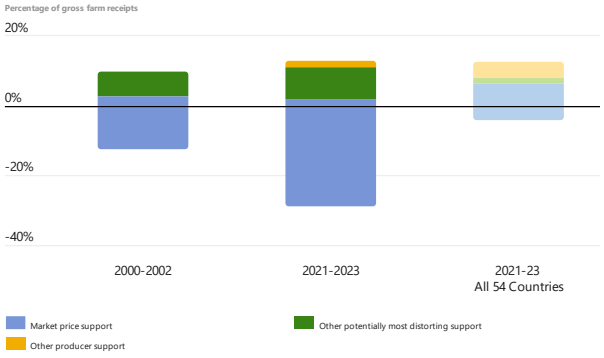


Figure 13.1B. India: Ratio of producer to border price

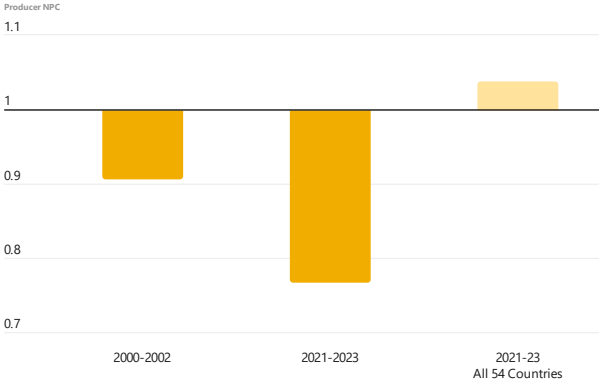


Figure 13.1C. India: General Services Support Estimate and its composition

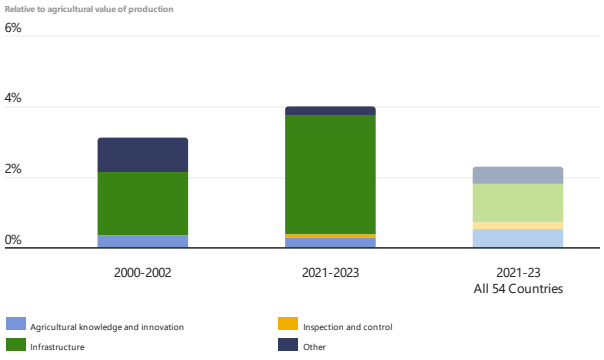
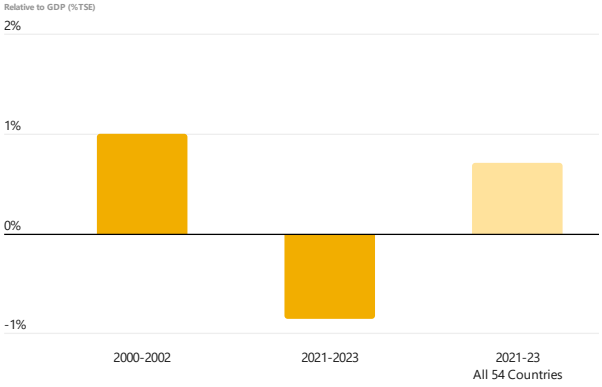
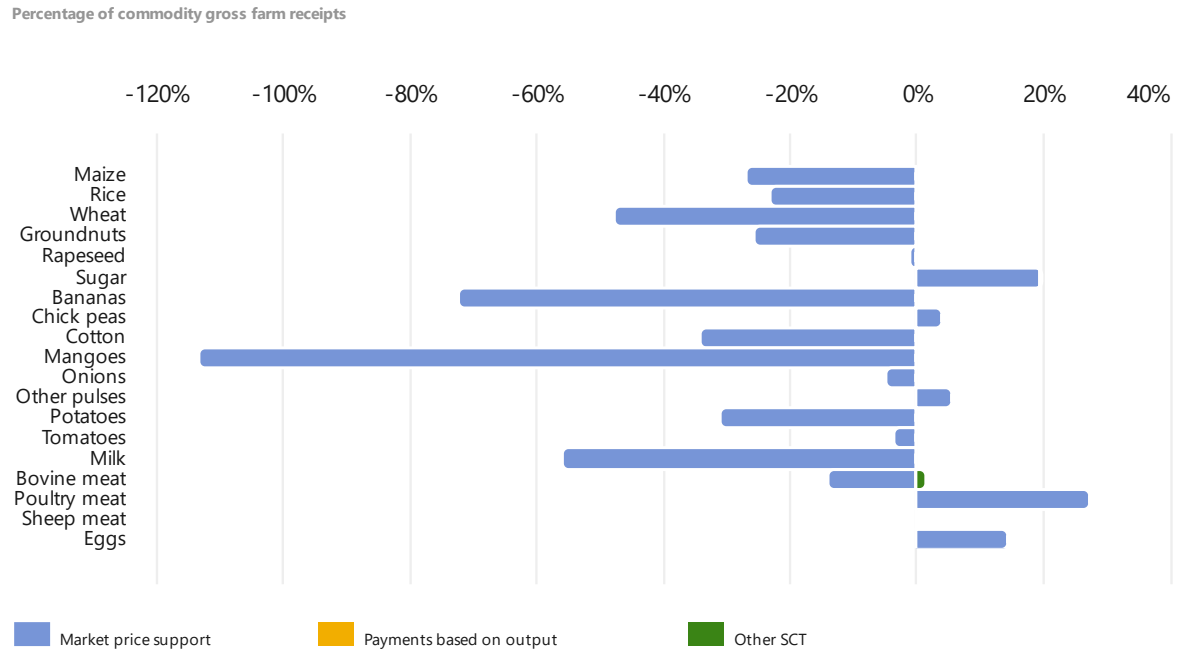


Figure 13.1D. India: Total Support Estimate



Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Figure 13.2. India: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Table 13.1. India: Estimates of support to agriculture

Million USD

	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**112 282**	**447 264**	**457 177**	**438 678**	**445 937**
of which: share of MPS commodities (%)	64.75	77.51	75.59	77.82	79.13
Total value of consumption (at farm gate)	**109 060**	**406 087**	**405 207**	**398 376**	**414 679**
Producer Support Estimate (PSE)	**-2 709**	**-77 802**	**-80 792**	**-94 923**	**-57 691**
Support based on commodity output	-11 243	-133 080	-133 431	-155 010	-110 798
Market price support[1]	-11 243	-133 181	-133 731	-155 012	-110 798
Positive market price support	3 583	10 607	9 274	12 354	10 193
Negative market price support	-14 827	-143 788	-143 005	-167 366	-120 992
Payments based on output	0	101	301	2	0
Payments based on input use	8 519	47 069	43 304	52 333	45 571
Based on variable input use	8 519	46 365	42 828	51 808	44 458
with input constraints	0	0	0	0	0
Based on fixed capital formation	0	615	386	451	1 008
with input constraints	0	0	0	0	0
Based on on-farm services	0	90	89	75	105
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	0	0	0	0	0
Based on Receipts / Income	0	0	0	0	0
Based on Area planted / Animal numbers	0	0	0	0	0
with input constraints	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	0	7 832	8 975	7 255	7 266
With variable payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
With fixed payment rates	0	7 832	8 975	7 255	7 266
with commodity exceptions	0	0	0	0	0
Payments based on non-commodity criteria	0	0	0	0	0
Based on long-term resource retirement	0	0	0	0	0
Based on a specific non-commodity output	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0
Miscellaneous payments	15	377	361	499	271
Percentage PSE (%)	**-2.31**	**-15.43**	**-15.84**	**-19.03**	**-11.56**
Producer NPC (coeff.)	**0.91**	**0.77**	**0.77**	**0.74**	**0.80**
Producer NAC (coeff.)	**0.98**	**0.87**	**0.86**	**0.84**	**0.90**
General Services Support Estimate (GSSE)	**3 526**	**18 050**	**17 662**	**17 546**	**18 942**
Agricultural knowledge and innovation system	402	1 321	1 274	1 269	1 420
Inspection and control	25	516	334	500	715
Development and maintenance of infrastructure	2 021	15 195	15 085	14 721	15 779
Marketing and promotion	14	103	12	147	151
Cost of public stockholding	1 044	901	953	892	858
Miscellaneous	21	13	4	17	19
Percentage GSSE (% of TSE)	**..**	**..**	**..**	**..**	**..**
Consumer Support Estimate (CSE)	**14 692**	**145 378**	**144 769**	**170 690**	**120 675**
Transfers to producers from consumers	10 856	115 916	116 743	136 252	94 753
Other transfers from consumers	-224	384	-80	1 157	76
Transfers to consumers from taxpayers	4 222	30 712	29 855	35 248	27 032
Excess feed cost	-163	-1 634	-1 749	-1 968	-1 186
Percentage CSE (%)	**14.12**	**38.65**	**38.57**	**47.01**	**31.13**
Consumer NPC (coeff.)	**0.91**	**0.78**	**0.78**	**0.74**	**0.81**
Consumer NAC (coeff.)	**0.88**	**0.72**	**0.72**	**0.68**	**0.76**
Total Support Estimate (TSE)	**5 040**	**-29 040**	**-33 274**	**-42 129**	**-11 717**
Transfers from consumers	-10 632	-116 300	-116 663	-137 409	-94 829
Transfers from taxpayers	15 896	86 876	83 469	94 123	83 035
Budget revenues	-224	384	-80	1 157	76
Percentage TSE (% of GDP)	**1.02**	**0.85**	**-1.06**	**-1.24**	**0.33**
Total Budgetary Support Estimate (TBSE)	**16 283**	**104 141**	**100 457**	**112 883**	**99 081**
Percentage TBSE (% of GDP)	**3.33**	**3.09**	**3.19**	**3.33**	**2.79**
GDP deflator (2000-02 = 100)	**100**	**327**	**308**	**333**	**339**
Exchange rate (national currency per USD)	**47.25**	**79.21**	**74.50**	**80.36**	**82.77**

.. Not available

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for India are: wheat, maize, rice, soybean, rapeseed, groundnuts, chick pea, other pulses, potatoes, onion, tomatoes, mango, bananas, sugar, cotton, milk, bovine meat, sheep meat, poultry and eggs.

Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

Agriculture and food is governed via six **major policy channels**: 1) managed prices and marketing channels for many farm products; 2) subsidised farm inputs; 3) general services for the agricultural sector as a whole; 4) public stockholding through purchasing, storing and making certain food staples available to selected groups of the population at subsidised prices; 5) regulated border transactions through trade policy; and more recently, 6) the income support scheme PM-KISAN (OECD/ICRIER, 2018[1]; ICRIER, 2022[2]; Gulati, Kapur and Bouton, 2020[3]).

States have constitutional responsibility for many aspects of agriculture, but the central government sets national approaches to policy and provides the necessary funds to implement programmes at the state level. The central government (Union Cabinet) is responsible for some key policy areas, notably international trade policies, and for the implementation of the National Food Security Act (NFSA) of 2013.

Policies affecting domestic prices and marketing channels

Policies governing the **marketing of agricultural commodities** in India – for both producers and the food chain – include the national-level Essential Commodities Act (ECA), which controls the production, supply, distribution, and pricing of essential commodities, and the state-level Agricultural Produce Market Committees (APMC) Acts, which regulate the pricing, procurement, stocking, and trading of commodities. The first point of sale of agricultural products occurs at regulated market yards (*mandis*) under the responsibility of Agricultural Produce Market Committees (APMC). The APMC Acts establish the framework for government procurement under the minimum support price (MSP) system. Differences exist among states in the status of their respective APMC Acts and in how these acts are implemented.[1]

Based on the recommendations of the Commission for Agricultural Costs and Prices (CACP), the central government establishes a set of MSPs for 23 commodities each year. The CACP bases its recommendations on the average cost of production considering both the actual covered cost of production and the imputed value of family labour. State governments may also provide a bonus payable over and above the MSP for some crops. National and state-level agencies operating on behalf of the Food Corporation of India (FCI) can buy wheat, rice, and coarse grains. Several other agencies can buy pulses, oilseeds, and cotton at MSPs – including through the umbrella scheme *Pradhan Mantri Annadata Aay Sanrakshan Yojna* (PM-AASHA), introduced in 2018, which is designed to ensure remunerative prices to farmers for their produce. Some horticulture commodities without MSP are also procured. However, procurement under the price support scheme effectively operates mainly for wheat, rice, and cotton, and only in a few states. The MSP scheme only applies when approved agencies purchase commodities, it is not a guaranteed price to the farmer if they sell to intermediaries, private traders, consumers, or non-approved agencies.

The electronic National Agricultural Market (e-NAM) set up in 2016 and a model Agricultural Produce and Livestock Marketing (Promotion and Facilitation) Act were both recommended by the central government for adoption by state governments.[2] E-NAM is an online trading platform for agricultural commodities in India, which aims to create a network of APMC *mandis*. It currently integrates more than 1 000 APMC markets in 18 states and 3 Union Territories (UTs); almost 17 million farmers and 150 000 traders are registered on the e-NAM platform.

Input subsidies and other budgetary transfers

Input support policies enable agricultural producers to obtain farm inputs at subsidised prices. Policies governing the supply of fertilisers, electricity and water are the largest of these. Other supported inputs are

seeds, machinery, credit, and crop insurance. State-level loan debt waivers, compensating lending institutions for forgiving debt to farmers, have grown in importance. Aiming to improve formal credit penetration in the agricultural sector, the Reserve Bank of India (RBI) has mandated banks to allocate 40% of their adjusted net bank credit to Priority Sector Lending, of which 18% is reserved for agricultural credit. However, only 41% of small and marginal farmers are able to access bank credit and about 30% of agricultural loans continue to come from non-institutional sources (e.g. moneylenders), as opposed to financial institutions such as commercial banks.

The government of India (GoI) has also been covering part of the premium for crop insurance since 2000, through mechanisms including the National Agricultural Insurance Scheme, the Modified National Agricultural Insurance Scheme, the Weather Based Crop Insurance Scheme, the Coconut Palm Insurance Scheme, the National Crop Insurance Program, the Restructured Weather Based Crop Insurance Scheme, and most recently, the *Pradhan Mantri Fasal Bima Yojna* (PMFBY) scheme. PMFBY, introduced in 2016, provides insurance to farmers for crop losses due to monsoon fluctuations or other extreme weather events.

The PM-KISAN scheme provides an annual **direct income transfer** of INR 6 000 (USD 84) per farmer to all farmers with land titles. The payment does not require farmers to produce, is irrespective of the farm size, and may be used for any need.

General services policies focus on programmes for the development and maintenance of infrastructure (85% of general services support in 2021-23), particularly related to irrigation. Budgetary support is also significant for agricultural knowledge and innovation (7%) and for public stockholding (5%).

Support to consumers

Public distribution of food grains is the joint responsibility of the central and state governments. The Targeted Public Distribution System (TPDS) operates under the National Food Security Act (NFSA) in all states and UTs. Other Welfare Schemes (OWS) also operate under the NFSA. The central government allocates food grains to state governments and the FCI transports food grains from surplus states to deficit states. State governments distribute the food grain entitlements by allocating supplies within the state, identifying eligible families, issuing ration cards, and distributing food grains mainly through Fair Price Shops.

Trade policy

India's **Foreign Trade Policy** is formulated and implemented by the Directorate General of Foreign Trade (DGFT) and announced every five years. It is reviewed and adjusted annually in consultation with relevant public agencies. The Basic Customs Duty (BCD), also known as the statutory rate, is agreed at the same time as the approval of the annual budget. In contrast to previous five-year Foreign Trade Policy frameworks, the latest Foreign Trade Policy 2023 – effective as of 1 April 2023 – does not include an end date.

Agricultural exports have been managed for several decades through a combination of **export restrictions**, including export prohibitions, licensing requirements, quotas, taxes, minimum export prices,[3] and state trading requirements. How these restrictions are enforced, extended or terminated may change several times per year, according to domestic supplies and prices. The 2018 Agriculture Export Policy framework tries to address some of these issues through three main areas of action:

- Recommending that processed agricultural products and organic products are not subject to export restrictions.
- Undertaking consultations among stakeholders and ministries to identify those essential food security commodities to which export restrictions may be applied under specific market conditions.

- Reducing import barriers applied to agricultural products for processing and re-export.

Innovation for sustainable productivity growth

In India, the comparatively low productivity of farmers, and particularly the prevalence of marginal and small-scale farmers with limited access to finance and technology, represents a substantial challenge. Over half of India's arable land relies on rainfall, directly influencing farmers' productivity and incomes. Farmers lack the resources necessary to bolster productivity or effectively combat adverse weather conditions, pests, and diseases. Insufficient storage, improper handling, and deficient transportation infrastructure add to these challenges, resulting in post-harvest losses. This is exacerbated by a fragmented and intricate supply chain involving numerous intermediaries.

The sustained growth in agricultural output and fertiliser use have put mounting pressures on natural resources, particularly land and water. This is reflected in the nutrient surplus intensities at the national level, which have grown over time and are much higher than the average for OECD countries. The share of agriculture in total GHG emissions is also higher than the OECD average, partly due to the weight of the agricultural sector in the Indian economy. Methane emissions due to enteric fermentation by livestock (54.6%), anaerobic conditions during rice cultivation (17.5%) and nitrous oxide emissions from application of nitrogenous fertilisers in agricultural soils (19%) account for 91% of GHG emissions from agriculture. Emissions from the burning of crop residues are particularly significant in northern India, although only 2.1% of total agricultural emissions.

The GoI's policies and initiatives in sustainable agriculture are designed to enhance farmers' income, ensure food security, and promote environmentally friendly farming practices. These efforts aim to achieve long-term agricultural sustainability while improving the livelihoods of farmers across the country.

Strategic planning

The National Mission for Sustainable Agriculture (NMSA), which became operational in 2014-15, aims to improve agricultural productivity while ensuring the long-term sustainability of natural resources by promoting environmentally friendly agricultural practices and site-specific approaches. NMSA emphasises sustainable development pathways through a gradual transition to green technology, energy efficient equipment, conservation of natural resources, and integrated agriculture. It also promotes soil health management, water efficiency, an efficient use of chemicals, crop diversification, and agroforestry.

India ratified the Paris Agreement on Climate Change on 2 October 2016. India updated its Nationally Determined Contribution (NDC) in August 2022. The 2022 NDC comprises eight goals, three of which are quantitative targets to be achieved up to 2030: 1) to reduce emissions intensity relative to GDP by 45% from the 2005 level; 2) to achieve about 50% cumulative electric power installed capacity from non-fossil-fuel-based energy resources; and 3) to create an additional carbon sink of 2.5 billion to 3 billion tonnes CO_2-equivalents through forest and tree cover.

Programme implementation

Mitigation efforts to reduce GHG emissions from agriculture are largely through production techniques that improve emissions intensity (e.g. initiatives such as horticulture land extension, increased rice intensification systems, direct-seed rice cultivation, solar pumps, micro-irrigation, neem coated urea scheme, bio-fertilisers, balanced feedstock, and bypass protein for livestock).

Environmental sustainability and resilience measures in agriculture – and climate-change adaptation measures in particular – have been gaining prominence, notably through programmes called "missions" focused on water management, integrated farming systems, and soil health management. In addition, the Union Budget 2022-23 promoted "chemical-free natural farming" throughout the country.[4]

One component of the NMSA, Farm Water Management, was implemented with the objective of enhancing water-use efficiency by promoting technological interventions such as drip and sprinkler technologies, efficient water application and distribution systems, and secondary storage. These activities have since been subsumed under the "Per Drop More Crop" (PDMC) component of the *Pradhan Mantri Krishi Sinchayee Yojana* (PMKSY) scheme in 2015-16. This scheme prioritises water conservation and its management in agriculture with the objective to extend the area under irrigation while preserving water resources.

Also under the NMSA, Rainfed Area Development focuses on Integrated Farming Systems to enhance productivity and minimise risks associated with climatic variability. Under this system, crops such as cereals or oilseeds are integrated with other activities such as horticulture, livestock, fisheries, agroforestry, and beekeeping to support farmers by providing additional income opportunities and mitigate the impacts of droughts, floods, or other extreme weather events.

The Mission for Integrated Development of Horticulture (MIDH) includes a sub-component focused on "Creation of water resources". Payments support the creation of water sources through construction of community tanks, farm ponds, and reservoirs with plastic or reinforced cement concrete lining for irrigation of horticulture crops. Payments under this programme are provided as support to fixed capital formation for horticulture farmers, as well as general services support. The National Food Security Mission (NFSM) includes components such as "Water Carrying Pipes" and "Mobile Rain Gun" focused on hydrological infrastructure and water-use efficiency. These programmes cover 50% of the cost when acquiring pipes and mobile rain guns (pressurised irrigation sprinklers).

The NMSA also includes the Soil Health Management component. It promotes integrated nutrient management through targeted use of mineral fertilisers, including secondary and micro-nutrients, in conjunction with organic manures and bio-fertilisers to improve soil health and productivity. It also improves soil and fertiliser testing facilities, providing soil test-based recommendations to farmers for improving fertility. The Soil Health Card implemented in 2015 provides information to farmers about the nutrient status of their soil and recommends the appropriate dosage of nutrients to improve its health and fertility.

India is implementing specific schemes to promote organic farming, including the Organic Value Chain Development for North-East Region, the MIDH component "Adoption of Organic Farming", and the *Paramparagat Krishi Vikas Yojana* Mission. Supporting Missions such as the National Mission on Agricultural Extension and Technology also aim to improve soil health and climate-resilient agro-ecological systems by providing technical assistance.

The 2023-24 Union Budget, released in February 2023, introduced the Prime Minister's Promotion of Alternate Nutrients for Agriculture Management (PM PRANAM) scheme, which seeks to promote soil health and agriculture productivity. PM PRANAM incentivises states and Union Territories to support balanced use of chemical fertilisers as well as the use of alternative fertilisers. The proposed budget for this initiative is sourced from the existing fertiliser subsidy schemes. It entails granting 50% of the saved fertiliser subsidy, resulting from decreased chemical fertiliser usage compared to the previous three-year average, to the respective State or Union Territory.

Research and innovation

Investments in agricultural research continue to be a major driver of sustainable productivity growth. Public-sector research focuses on developing new crop varieties and management practices to improve yields and tackle pests and diseases for various agro-climatic conditions. The Indian Council of Agricultural Research (ICAR) launched the National Innovations in Climate Resilient Agriculture (NICRA) project in 2011 to enhance the resilience of Indian agriculture to climatic variability and climate change through strategic research and technology demonstration in crops and livestock. The project focuses on selected sectors, such as wheat, rice, maize, pigeon pea, groundnut, tomato, mango, banana, cattle, buffalo, and

small ruminants. Major research themes include assessing the vulnerability of major production zones; assessing the impacts of and developing grain and horticulture varieties tolerant to climatic stresses; enhanced water- and nutrient-use efficiency and conservation agriculture; studying changes in pest dynamics, pest- and pathogen-crop relationships, and emergence of new pests and pathogens under climate change. The emphasis on new varieties and new technologies can be seen in the development of ICAR programmes such as Crop Science, Horticulture Science, and Plant Science.

Ongoing agro-climatic research includes the development of drought- and heat-tolerant genotypes in chickpea, pigeon pea, and mung bean and the development of drought-tolerant onions and other horticultural crops. India's research institutions have also developed flood- and drought-tolerant rice varieties and early maturing wheat varieties for late-sowing areas to avoid terminal heat stress at the time of maturity. The National Agricultural Research System (NARS) is developing location-specific wheat varieties with traits addressing crop duration, varied soil conditions, and improved grain qualities while increasing grain yield levels through traditional breeding.

ICAR and various state agricultural universities (SAU) are targeting research to develop response mechanisms through early planting and short-duration varieties to mitigate potential climate-change risks. The NFSM includes components focused on capacity building, namely "Cropping-system-based training and Demonstrations on improved package for rice", while the MIDH includes "Technology dissemination through demonstration and Good Agriculture Practices". Several programmes focus on improving production practices, such as the "National Innovations in Climate Resilient Agriculture" (NICRA), "Drought and heat tolerant genotypes", or "Agronomic management - Early planting".

Several government initiatives, such as the Digital Public Agriculture Infrastructure, Digital Agriculture Mission, and the electronic National Agricultural Market (e-NAM scheme), aim to promote diffusion and adoption of agri-tech solutions, including AI-based precision agriculture, Internet of Things-based real-time data collection systems, and drone-based agriculture to improve farmer yield and profitability.

Recent policy developments

Domestic policy developments in 2023-24

Strategic framework

The 2023-24 Union Budget, released in February 2023, introduced the Agriculture Accelerator Fund to encourage agricultural startups by young entrepreneurs in rural areas. The fund aims to develop innovative and affordable solutions for challenges faced by farmers, and support diffusion and adoption of modern technologies to transform agricultural practices, increase productivity and profitability. Through the 2023-24 Union Budget, financial support for subsidised agricultural credit was also increased by 11%.

The 2024-25 Union Budget, released early February 2024, aims to support agricultural productivity growth through interventions targeting crop insurance, expanding the use of nano-fertilisers,[5] and promoting self-sufficiency in oilseed production. The 2024-25 Union Budget also supports public and private investments in storage, as well as in marketing through the Prime Minister's Formalisation of Food Processing Micro-Enterprises scheme. The budget also foresees support for of a Dairy Development programme.

Domestic price support policies

In June 2023, the GoI increased the minimum support price (MSP) from the previous marketing season for several summer planted (*kharif*) crops, including rice (by 7%), maize (6.1%), groundnuts (6.3%), soybeans (6.5%), pigeon pea (5.7%), black gram (6%), and cotton (8.2%). In October 2023, the GoI also increased the minimum support prices for winter planted (*rabi*) crops, including wheat (by 7.1%), barley

(6.6%), gram (2%), lentils (7.1%), and rapeseed (3.7%). In June 2023, the GoI increased the Fair and Remunerative Price for sugarcane by 3.3%.

Policies impacting stocks

Several actions were taken in 2023 specifically with respect to the wheat crop. In April, India relaxed wheat procurement quality norms for regions where crops were damaged by heavy rains and winds. This includes the affected states of Punjab, Haryana, and Rajasthan. In August, India announced it would sell 5 million tonnes of wheat and 2.5 million tonnes of rice from public stocks on the domestic market, with a view to curbing domestic price inflation. In mid-September, India announced that as of mid-October 2023, traders, wholesalers, and large retailers would be allowed to maintain no more than 2 000 tonnes of wheat. This is down from a prior stock limit of 3 000 tonnes that was set in June 2023.

In May 2023, India approved a new grain storage programme of INR 1 trillion (USD 12 billion), to boost warehouse capacity. The programme aims to increase the storage capacity by 70 million tonnes, bringing the total to 215 million tonnes within the next five years.

In response to increasing domestic retail prices, India disposed of onions from public stocks on the domestic market through open market sales and direct retail sales to consumers. In 2023, the GoI has also directed the National Cooperative Consumers Federation of India (NCCF) and the National Agricultural Cooperative Marketing Federation of India (NAFED) to procure 700 000 tonnes of onions for national buffer stocks.

Input subsidies

Fertiliser subsidies were reduced in financial year 2023/24 from INR 2.55 trillion (USD 31 billion) to INR 1.9 trillion (USD 23 billion). This 25.5% reduction was triggered by lower fertiliser prices during the 2023/24 marketing year. The allocation foreseen for financial year 2024/25 is also lower, at INR 1.64 trillion (USD 20 billion).

Support to consumers

At the end of November 2023, India extended for five years the *Pradhan Mantri Garib Kalyan Anna Yojana* programme, which provides free food grains to the poorest segments of the population. The programme would cover more than 800 million beneficiaries and is expected to cost INR 11.8 trillion (USD 142 billion).

Other policy developments

In October 2023, the GoI launched the *Kasturi Cotton Bharat* Brand website,[6] an initiative that seeks to market Indian cotton as a premium brand by requiring farmers to produce cotton following a stipulated protocol. This is a joint initiative by the Ministry of Textiles, the Cotton Corporation of India, trade associations, and industry aimed at enhancing the global competitiveness of Indian cotton. The website will provide necessary information and updates for the registration process for ginners to produce cotton under this brand. To provide complete traceability of the brand across the supply chain, QR-based certification technology will be used at each stage of the processing and a blockchain based software platform will provide end-to-end traceability and transaction certificate.

In December 2023, India set a target of 20% blending of ethanol in petrol under the Ethanol Blending Programme (EBP) in ethanol supply year 2025-26. The estimated requirement is around 10.16 million litres, aiming to substitute this volume of petrol with ethanol. During the same month, the GoI also announced it would rely on maize for ethanol production to meet gasoline blending goals. However, in January 2024, India state fuel retailers raised the purchase price of maize-based ethanol by 8.8%, with the

objective to improve domestic availability of sugar, another ethanol feedstock, amid an expected decline in domestic sugar output in the current marketing year.

The GoI implemented a multi-stakeholder approach to celebrate the International Year of Millets in 2023. The action plan focused on strategies to enhance production and productivity, consumption, strengthening value chains, marketing, and creating awareness of the health benefits of millets. The Indian Institute of Millets Research in Hyderabad has been declared as the Centre of Excellence for sharing best practices, research, and technologies at the national and international levels. The Ministry of Food Processing Industries has implemented the Production Linked Incentive Scheme for Food Processing Industry for Millet-based products until 2026 with an outlay of INR 8 billion (USD 97 million). In addition, under India's G20 Presidency in 2023, the Agriculture Ministers endorsed the MAHARISHI Initiative (*Millets And OtHer Ancient Grains International ReSearcH Initiative*), emphasising the need to leverage the potential of millets for sustainable agriculture, food security, and rural development.

Trade policy developments in 2023-24

Export restrictions

On 20 July 2023, the Ministry of Commerce and Industry (MOCI) banned the export of non-basmati white rice, citing a significant rise in domestic prices.[7] Export consignments would be allowed under restrictive conditions.[8] This ban follows the export ban on broken rice in August 2022[9] and the levy of a 20% export duty on non-basmati white rice in September 2023. In addition, on 25 August 2023, India's Ministry of Finance announced a 20% export duty on parboiled non-basmati rice.[10] As of the last quarter of 2023, the GoI had imposed restrictions on nearly 80% of India's total rice exports. Following the imposition of restrictive measures on non-basmati rice, the GoI approved shipments of rice to several countries in Asia and Africa between October and December 2023, upon the request of importing governments.[11]

On 27 August 2023, the MOCI also introduced minimum export prices for basmati rice exports. The GoI instructed the Agricultural and Processed Food Exports Development Authority (APEDA), responsible for regulating basmati rice exports, to issue export certificates only to basmati rice consignments with values exceeding USD 1 200 per tonne. Export contracts falling below this threshold need to be placed in suspension for further evaluation by a committee charged with reviewing the variation in prices.

On 8 December 2023, the MOCI extended until 31 March 2024 a ban on the export of de-oiled rice bran, a major ingredient in the preparation of cattle and poultry feed. Exports of de-oiled rice bran were initially banned in July 2023.

On 18 October 2023, the MOCI extended the export ban on sugar beyond 31 October 2023 to an indefinite period. The restriction is a continuation of the sugar export ban imposed between June and October 2022.[12]

In August 2023, India had imposed a 40% export tax on onions up to 31 December 2023. On 28 October 2023, India introduced until 31 December 2023 a minimum export price of USD 800 per tonne for onions. On 8 December 2023, the GoI banned the export of onions until 31 March 2024 and extended it in April 2024. However, it allowed exports to certain countries on a case-by-case basis. Following the removal of the ban early May 2024, India reintroduced a 40% export tax on onions as well as a minimum export price of USD 550 per tonne.[13]

To address problems of under-invoicing of apples being imported into India, in May 2023, the MOCI prohibited[14] the import of apples where the cost, insurance and freight (CIF) import price is less than or equal to INR 50 (USD 0.6) per kg. The notification exempts Bhutan from the minimum import price conditions.

Tariff adjustments

On 1 April 2023, the GoI ended its 2022 tariff rate quotas (TRQs) of 2 million tonnes each for crude soybean and sunflower seed oils, which were previously set to function through 1 April 2024. The current revisions raise duties from 0% to 5.5% on both crude oils. This policy action attempts to reduce India's reliance on imported edible oils while incentivising farmers to maintain large oilseed crop areas. Since 2021, the GoI amended its edible oil import duties eight times, having mostly altered the rates of unprocessed edible oils while keeping refined oil duties elevated to support domestic refineries.

On 15 May 2023, India revised its import tariffs on certain oilseeds and reduced tariffs on some types of vegetable oil. The import tariff on crude palm oil was lowered from USD 1 001 to USD 988 per tonne, while the tariff for Refined, Bleached & Deodorized (RBD) palm oil has been revised from USD 1 022 to USD 1 020 per tonne. Import tariffs on other vegetable oils were also lowered, with crude palm olein tariffs set at USD 1 030 per tonne; those on RBD palm olein set at USD 1 033 per tonne; and those on crude soybean oil lowered to USD 983 per tonne. In addition, on 15 June 2023, the Ministry of Finance reduced the import duty on refined sunflower and soybean oils, from 17.5% to 12.5%, until March 2024. This aligns with the government's import duty for RBD palm olein and is intended to control fluctuating edible oil prices. On 22 December 2023, India announced it would extend the reduced tariff until March 2025.

On 5 September 2023, the Ministry of Finance lifted retaliatory tariffs imposed in 2019 on certain agricultural products of US origin. This includes products such as almonds, apples, chickpeas, lentils, and walnuts.[15]

In December 2023, India exempted imports of yellow peas from customs duties (set at 10%) and the domestic tax Agriculture Infrastructure and Development Cess[16] (40%) through 31 March 2024.[17] During this period, yellow pea imports are also allowed through ports other than Kolkata, which was the only authorised port prior to December 2023. However, all imports of yellow peas during this period are subject to compulsory registration under India's Import Monitoring System.

Other trade policy developments

In October 2023, the Ministry of Health and Family Welfare Food Safety and Standards Authority of India (FSSAI) announced that India's Customs Authority will no longer need to obtain the FSSAI's clearance for food ingredients or products that are imported into India for re-export or to produce value-added products for export markets.

Policy context

Key economic and agricultural statistics

India is the seventh largest country in the world by land area and became the most populous country worldwide in 2022. While the share of urban population continued to increase over the past decade, about two-thirds of the population still lives in rural areas. At just 0.13 ha per capita, agricultural land is very scarce.

Agriculture continues to be an important part of India's economy. The sector accounts for 16.7% of GDP, but the estimated 42.9% share of employment indicates that labour productivity remains significantly lower than in the rest of the economy (Table 13.2). The productivity gap is also reflected in the evolution of farm incomes, which have increased by less than one-third that of non-agricultural incomes in recent years. Agriculture's weight in the economy has gradually declined, mostly in favour of services, which have led economic growth over the last two decades and played a more important role in India's economic development than in most other major emerging economies.

Indian agriculture is continuing to diversify towards livestock and away from grain crops. While grains and milk remain dominant, there has been a gradual change in the composition of production to other crops – such as sugar cane, cotton, fruit and vegetables – as well as certain meat sub-sectors. The livestock sector has seen faster and less volatile growth than the crop sector. The agricultural sector continues to be dominated by a large number of small-scale farmers, as the national average farm size has been in steady decline.

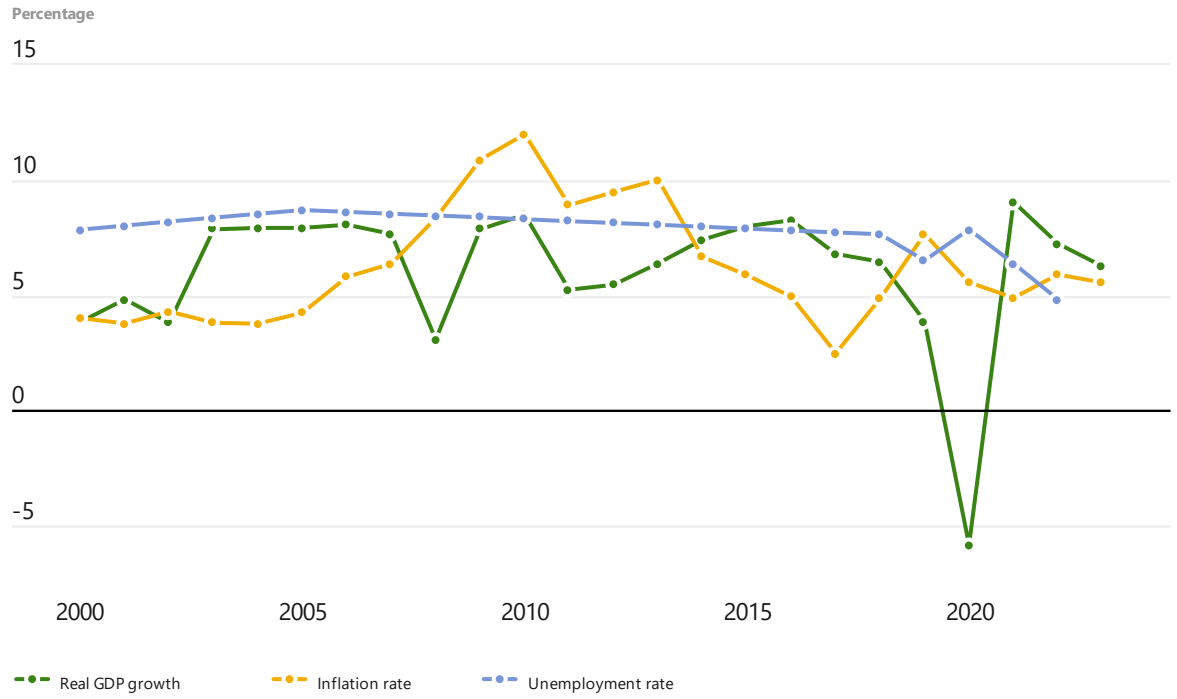
Table 13.2. India: Contextual indicators

	India		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	2 212	11 875	5.5%	8.7%
Population (million)	1 060	1 417	24.7%	26.9%
Land area (thousand km^2)	2 973	2 973	3.6%	3.6%
Agricultural area (AA) (thousand ha)	180 975	178 528	6.1%	6.1%
			All countries[1]	
Population density (inhabitants/km^2)	356	477	52	64
GDP per capita (USD in PPPs)	2 087	8 379	9 363	25 965
Trade as % of GDP	10.2	17.5	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	21.6	16.7	2.9	3.8
Agriculture share in employment (%)	59.6	42.9	-	-
Agro-food exports (% of total exports)	10.9	10.4	6.4	8.0
Agro-food imports (% of total imports)	5.6	5.2	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	73	63	-	-
Livestock in total agricultural production (%)	27	37	-	-
Share of arable land in AA (%)	89	87	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

Real GDP growth has been fluctuating between 4% and 8% over the last two decades, highlighting remaining structural bottlenecks in areas such as labour markets or the business environment. The COVID-19 pandemic and related restrictions led to a 5.8% drop in GDP, but growth rebounded to 9.1% in 2021, placing India again among the fastest growing G20 economies. Growth moderated, however, in 2022 and 2023 against the backdrop of Russia's war of aggression against Ukraine, supply chain disruptions, and rising energy and food prices. The relatively low unemployment figure (averaging about 6.4% in 2020-22) hides significant informal employment. Against a background of higher international prices and rising domestic wholesale prices for selected food items, inflation remains high at 5.6% in 2023 (Figure 13.3).

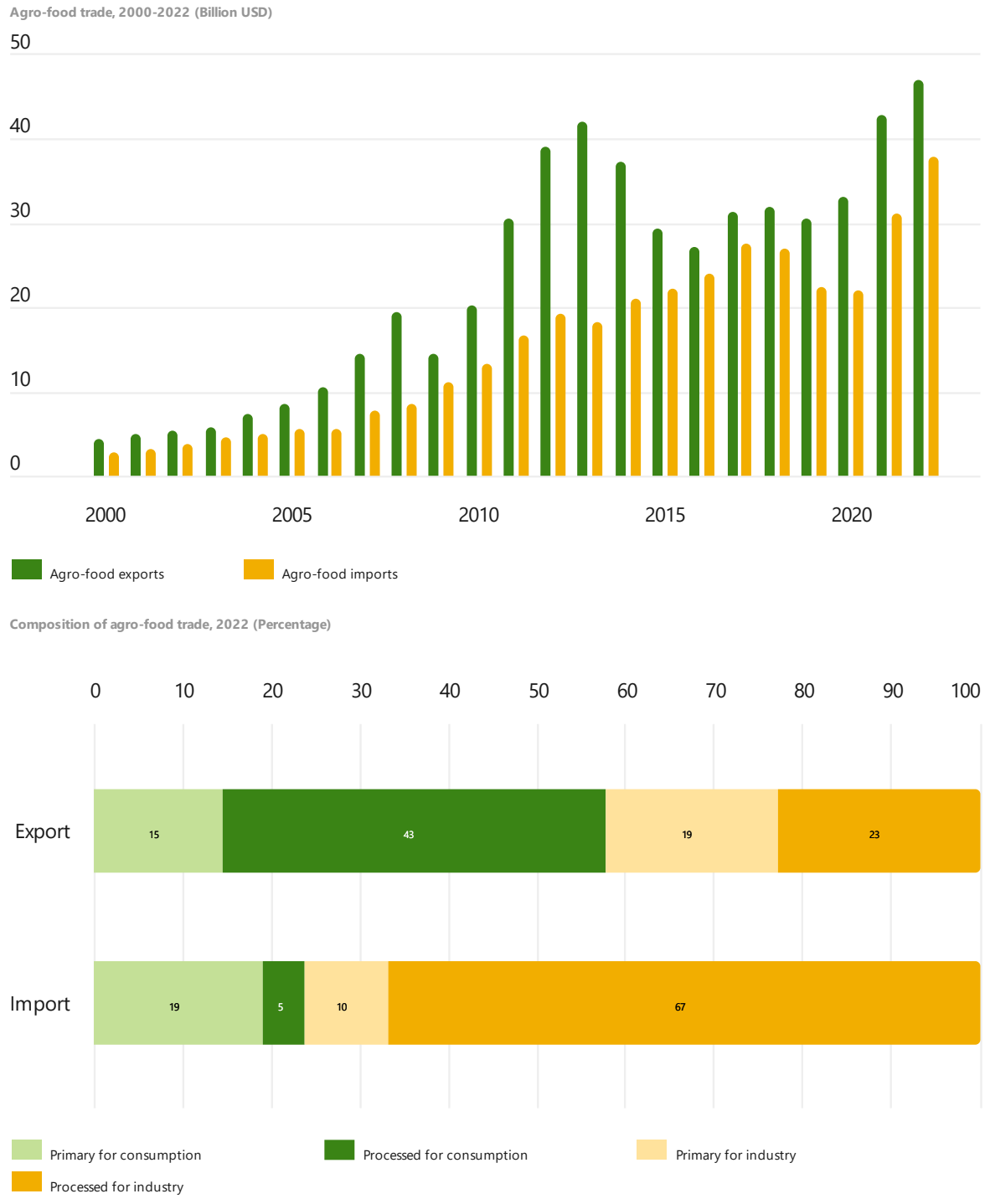
Figure 13.3. India: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

India is a consistent net agro-food exporter, with agro-food exports representing 10.4% of total exports. However, agro-food imports have until recently been growing faster than exports. Products for direct consumption – of low value, raw or semi-processed, and marketed in bulk – dominate agro-food exports, representing 58% of the total in 2022. Processed products for further processing by domestic industry are the main import category, accounting for 67% of total agro-food imports (Figure 13.4).

Figure 13.4. India: Agro-food trade



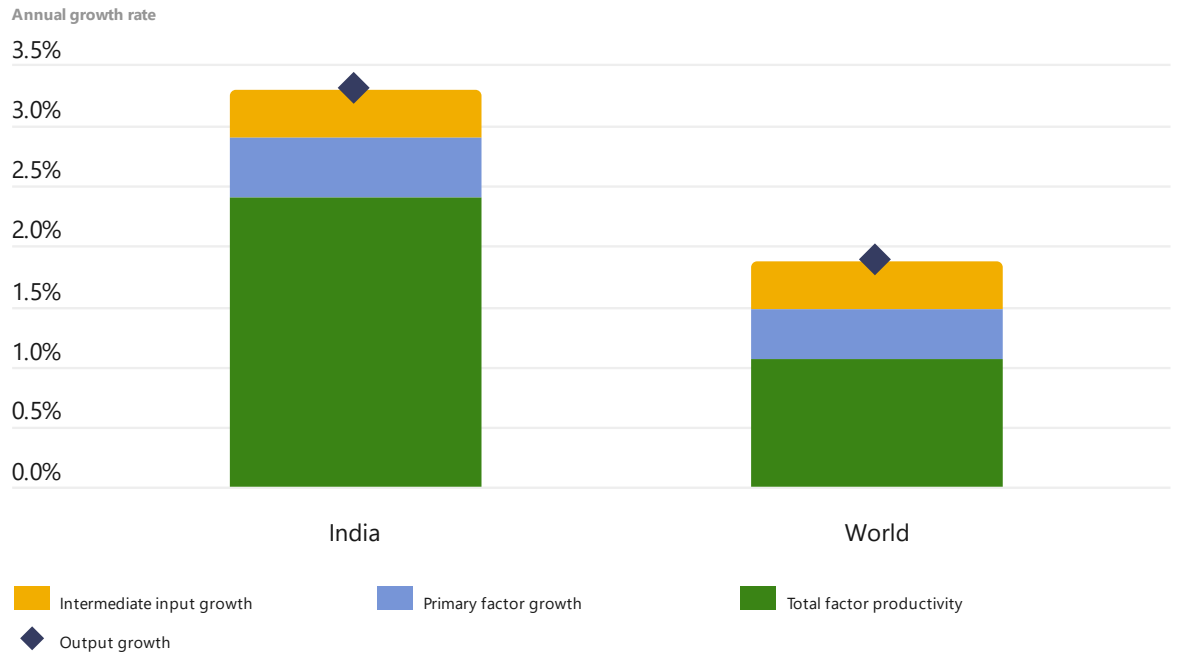
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Agricultural output growth in India averaged 3.3% in 2012-21, well above the world average (Figure 13.5). This has been driven mainly by a significant increase in total factor productivity (TFP) which grew at 2.4%

per year, backed by technological progress in the form of improved seeds and better infrastructure (including irrigation coverage, road density, and electricity supply).

However, the sustained growth in agricultural output and fertiliser use have put mounting pressures on natural resources, particularly land and water. This is reflected in the nutrient surplus intensities at the national level, which have grown over time and are much higher than the average for OECD countries (Table 13.3). Eighty-seven per cent of total water abstractions are by the agricultural sector. The share of agriculture in total GHG emissions is also higher than the OECD average, partly due to the weight of the agricultural sector in the Indian economy. Livestock rearing is the main source of GHGs.

Figure 13.5. India: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Table 13.3. India: Productivity and environmental indicators

	India		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	0.4%	2.4%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	90.7	128.6	32.1	28.2
Phosphorus balance, kg/ha	20.8	26.6	3.3	2.3
Agriculture share of total energy use (%)	5.3	4.8	1.7	2.0
Agriculture share of GHG emissions (%)	23.3	14.4	8.7	10.1
Share of irrigated land in AA (%)	33.4	39.4	-	-
Share of agriculture in water abstractions (%)	..	87.0	47.0	49.5
Water stress indicator	..	..	8.7	..

Note: * or closest available year.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

Food security has been an important objective of agricultural and trade policy since India's independence in 1947. Food shortages in the early 1960s made crop productivity and farm output a key policy ambition. While scope to further expand the area under cultivation was limited, the advent of the "green revolution" in the mid-1960s raised crop productivity through improved technologies and seed varieties. This was accompanied by expanded extension services and increased use of fertilisers, pesticides, and irrigation.

The government of India (GoI) introduced several marketing regulations affecting the sale, stocking, and trading of agricultural commodities. The Essential Commodities Act (ECA) introduced in 1955 provided for the control of production, supply, distribution, and pricing of essential commodities. During the 1960s and 1970s, most states also enacted and enforced Agricultural Produce Markets Regulation (APMR) Acts, with the first point of sale of agricultural products occurring at regulated market yards (*mandis*) under the responsibility of Agricultural Produce Market Committees (APMC). Two institutions were set up in 1965 to manage prices and distribution of wheat and rice, namely the Food Corporation of India (FCI) and the Agricultural Prices Commission, later renamed the Commission for Agricultural Costs and Prices (CACP). These institutions introduced complex domestic marketing regulations and border measures that increasingly penalised Indian farmers who often received less than international prices for their products.

In the 1970s, several government programmes were set up to increase production, covering industrial organisation, research, finance, and trade. In the case of milk production and processing, this took place at three levels:

- At the farm-level, dairy farmers were organised into co-operatives and provided with advanced technologies, such as animal breeds that produced more milk.
- At the district level, co-operative unions were formed, who owned and operated milk processing plants as well as storage and transport equipment and provided animal health services.
- At the state level, federations conducted and co-ordinated the nation-wide marketing of milk.

Government funding for agricultural research and extension increased, and many State Agricultural Universities (SAU) were set up. Institutional lending to farmers expanded by directing commercial banks (nationalised from 1969) to provide credit to agriculture. New financial institutions were established, such as the National Bank for Agriculture and Rural Development (NABARD) in 1982 and regional rural banks. Import competition was highly restricted to allow domestic agricultural production to increase.

In the 1980s and 1990s, yield-enhancing "green revolution" techniques were increasingly used, reaching new regions and crops such as pulses, oilseeds, and coarse grains. Broader economic deregulation at that time largely bypassed agriculture, in part because of the prevalence of state regulations in the sector. From 1980 to 1999, budgetary support to agriculture increased more than tenfold.

In the 2000s, agricultural policies focused increasingly on enhancing productivity and farmers' incomes. The National Agricultural Policy (NAP), formulated in 2000, prioritised increasing cropping intensity on existing agricultural land, developing rural infrastructure, and developing and disseminating agricultural technologies. The National Policy for Farmers (NPF), approved in 2007, identified a need to focus more on the economic well-being of farmers than just on production.

The Eleventh Five-Year Plan 2007-12 focused on bringing technology to farmers, improving the efficiency of investments, access for the poor to land, credit, and skills, and addressing water management concerns. The Twelfth Five-Year Plan 2012-17 was articulated around more budgetary support to agriculture and infrastructure along with an aim to improve the functioning of markets, more efficient use of natural resources, and improved delivery of government services such as credit and animal health.

The 2012-17 plan established the Targeted Public Distribution System (TPDS) to replace the previous Public Distribution System (PDS, established in 1997). The new system aimed to reduce the amount of grain released from government stocks for distribution that did not reach intended beneficiaries.[18] In addition, the plan redirected some food subsidies to other welfare schemes to better target the poor, introduced policies specific to individual states or areas, and redefined the definition of "poor" for the purpose of the TPDS. The 2013 National Food Security Act (NFSA) further addressed these concerns.

In 2016, the GoI set the target of doubling farmers' income by 2022-23 and by 2018 five-year plans were replaced by a framework of three-year action agendas. These agendas were prepared by the National Institution for Transforming India (NITI Aayog, the erstwhile Planning Commission of India), a policy think-tank of the government of India. The Agriculture Export Policy framework was established at the end of 2018, aiming to double agricultural exports by 2022-23 and boost the value-added of agricultural exports. To address farm indebtedness, several states implemented support packages for farm loan waivers between 2017 and 2020.

The only output support payments were introduced between 2018 and 2021 for clearing of arrears for sugar cane deliveries. The subsidies were provided directly to sugar cane farmers. These were replaced in 2022 by a support scheme for first-stage buyers of sugar cane (the scheme for providing assistance to sugar mills for expenses on marketing costs and other processing costs).

Marketing regulations under the Agricultural Produce Market Committees (APMC) Acts were progressively amended in 2003, 2007 and 2017. This was to address concerns around highly fragmented markets, inadequate physical marketing infrastructure, large numbers of intermediaries in supply chains and insufficient remuneration to farmers. Even though state governments were encouraged to adopt similar reforms, implementation of agricultural marketing reforms remained highly differentiated across India's states.

In June 2020, the GoI initiated reforms to domestic agricultural marketing regulations as part of a COVID-19 support package. The proposed reforms included a set of ordinances to deregulate major food crops from the 1955 ECA, allow farmers to sell their agricultural products outside of government-regulated markets and allow barrier-free inter- and intra-state trade of agricultural commodities. The central government had also proposed providing a legal framework for farmers to facilitate contract farming schemes with processors and other market actors in supply chains to reduce price risk. However, on 29 November 2021, the Parliament approved a bill withdrawing the three laws. Moreover, in December 2021, the GoI set up a committee to review the legal framework for the MSP system.

In 2022, India introduced export restrictions for several commodities with an open-ended timeframe and the objective of stabilising fluctuations in domestic prices following Russia's war of aggression against

Ukraine. Commodities affected by export bans, duties, or permits include various types of rice, wheat, sugar, and related products (e.g. wheat flour).

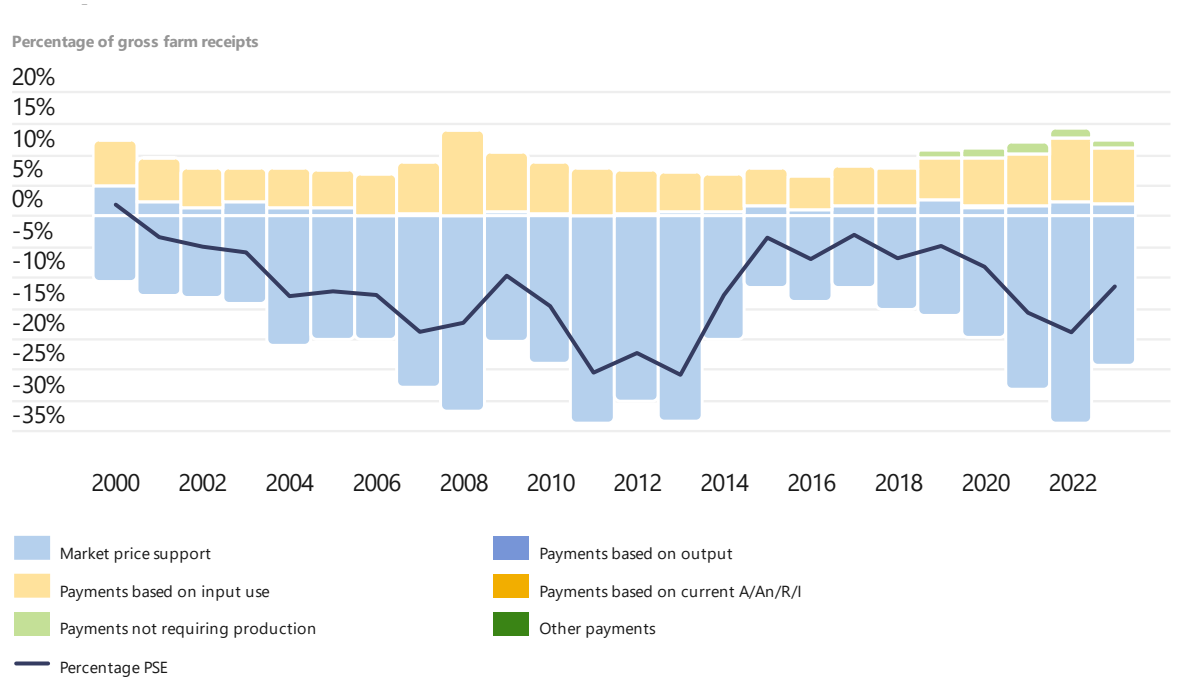
Table 13.4. India: Agricultural policy trends

Period	Broader framework	Changes in agricultural policies
1950-1965	Expansion of agricultural area was the main source of output growth	Agrarian reforms (abolition of intermediary landlordship, imposition of land ceiling) Strengthening of co-operative credit institutions Essential Commodities Act 1955
1965-1980	Increase in productivity main was the source of growth "green revolution"	Promoting the adoption of technological breakthroughs in rice and wheat production Policy support for marketing, research and credit Introduction and formalisation of lending to priority sectors, including agriculture New institutions, e.g. State Agricultural Universities, Food Corporation of India, Agricultural Prices Commission Programmes to increase production and processing of milk (support to breeds producing more milk, producer organisations, and processing and transport equipment) Minimum support prices
1980s	Widespread use of technology in major crop areas	Some delicensing and deregulation Increase in subsidies to agriculture
1990s	Economic and trade liberalisation in agriculture lags behind general economic reforms	Cautious relaxation of trade protection in some products, e.g. sugar, cotton, edible oils, wheat, rice Increases in input subsidies Targeting of beneficiaries of public distribution system of food grains
2000s	Demand-driven shift towards producing more fruit, vegetables and livestock products Increasing price gaps between international and domestic prices for producers	Alternate tightening and loosening of market and trade regulations (including export restrictions) Agricultural marketing regulations influencing pricing, procuring, stocking, and trading of commodities Large increases in input subsidies, including credit Support to high productivity seeds particularly cotton
Since 2010	Major participant in world markets for some commodities Continued price gaps between international and domestic prices taxing producers Increasing direct payments to producers Increasing support to consumers	More structured interaction between central and state level authorities Expansion of food subsidies and 2013 National Food Security Act Pilots to replace physical distribution of grains with cash transfers in selected states and Union Territories Agriculture Export Policy framework aimed at ensuring processed and organic products are not subject to export restrictions Doubling Farmers' Income by 2022-23 action plan State-level support packages for farm loan waivers Direct income transfer programme PM-KISAN Changes to domestic agricultural marketing regulations initiated in 2020 as part of the COVID-19 economic support package; withdrawal of reforms at the end 2021 Export restrictions applied to several commodities in 2022 and 2023 (rice, wheat, sugar, onions, and related products)

Over the past two decades, producer support was composed of negative market price support (MPS), and budgetary allocations, including almost exclusively input subsidies. India's percentage PSE fluctuated markedly, registering a high of zero in 2000, a low of -31% in 2007, followed by large swings before increasing negative support in 2021-23 (Figure 13.6). Export restrictions apply since 2022 to various types of rice, wheat, sugar, onions, and related products (e.g. wheat flour). These variations were driven primarily by changes in the relative levels of domestic and international prices underlying MPS, while input subsidies followed a more steadily increasing trend. The particularly large absolute size of negative MPS in 2011-13 (and to some extent in 2007 and 2008) coincides with periods of high international commodity prices not or only partially transmitted to the domestic market, due at least in part to India's use of export-impeding measures (for example, export restrictions or export bans applied in several of those years to wheat, non-basmati rice, chickpea, sugar and milk). The negative value of the PSE reflects that, on average, domestic producers were implicitly taxed, as the increasing budgetary payments to farmers did not offset the price-

depressing effect of complex domestic regulations and trade policy measures. Payments not requiring production have been increasing since 2018, driven by higher budgetary allocations to the direct income transfer programme *Pradhan Mantri Kisan Samman Nidhi* (PM-KISAN). Against a backdrop of increasing reference prices for the exported commodities covered since 2020, MPS has been higher than during 2015-19.

Figure 13.6. India: Development of the PSE and its composition, 2000 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

References

Gulati, A., D. Kapur and M. Bouton (2020), "Reforming Indian Agriculture", *Economic & Political Weekly*, Vol. 55/11, https://www.epw.in/journal/2020/11/special-articles/reforming-indian-agriculture.html (accessed on 15 March 2020). [3]

ICRIER (2022), *Background Analysis for India chapter in Agricultural Policy Monitoring and Evaluation Reports*. [2]

OECD/ICRIER (2018), *Agricultural Policies in India*, OECD Food and Agricultural Reviews, OECD Publishing, Paris, https://doi.org/10.1787/9789264302334-en. [1]

Notes

[1] In the seven states or Union Territories (UTs) that do not have an APMC act, procurement can take place outside *mandis*.

[2] Agriculture marketing also covers the futures market governed by the Securities and Exchange Board of India (SEBI), with the largest value of agricultural commodity trade taking place through the National Commodity Derivative Exchange (NCDEX). In addition, the Negotiable Warehouse Receipt System (NWRS) – established under the Warehousing Development and Regulatory Authority (WDRA) – aims to support farmers by storing products in warehouses. However, farmers, especially small and marginal, do not directly trade in agri-futures market in India.

[3] This represents the price below which exporters are not allowed to export a specific commodity. A minimum export price is set taking into consideration concerns about domestic prices and supply of that specific commodity.

[4] "Natural farming" is a chemical-free farming system rooted in Indian tradition enriched with modern understanding of ecology, resource recycling, and on-farm resource optimisation. It is considered as agroecology based diversified farming system which integrates crops, trees, and livestock with functional biodiversity. It is largely based on on-farm biomass recycling with major stress on biomass mulching, use of on-farm cow dung-urine formulations, maintaining soil aeration and exclusion of all synthetic chemical inputs. Natural farming is expected to reduce dependency on purchased inputs.

[5] Nano-fertilisers are nutrients that are encapsulated or coated within nanomaterial in order to enable controlled release, and its subsequent slow diffusion into the soil.

[6] Information on the website is available at: https://pib.gov.in/PressReleasePage.aspx?PRID=1969673.

[7] Notification No. 20/2023 – Amendment in Export Policy of Non-basmati Rice under Harmonized System (HS) Code 1006.30.90 (semi-milled or wholly milled, whether polished or not, glazed: other).

[8] Exports were allowed only if vessel loading was underway, the shipping bill was filed and the vessel was already berthed, arrived, or anchored, or if the rice consignment was handed over to Indian Customs and

registered in its system before MOCI's notification. The notification also includes provisions to allow non-basmati white rice exports, as authorised by the Indian Government, of consignments requested by foreign governments for their food security needs.

[9] Under HS code 1006.40.00.

[10] Notification No. 49/2023 (Customs) applying to HS code 1006.30.10.

[11] This includes countries such as Nepal, Cameroon, Côte d'Ivoire, Guinea, Malaysia, the Philippines, Seychelles, Senegal, Indonesia, Mali, Bhutan, Egypt, and Kenya.

[12] The export of raw, white, refined, and organic sugar under HS codes 1701.14.90 and 1701.99.90 is restricted. For the sugar marketing year 2022/23, India put the export cap at 6.1 million tonnes of sugar, compared to 11.1 tonnes from the previous marketing year.

[13] In 2022, India exported 2.6 million tonnes of onions.

[14] Notification No. 5/2023 *Amendment in Import Policy Conditions of Apples* under the Indian Trade Classification (ITC) HS code 0808.10.00 of Chapter 08 of the ITC (HS) 2022.

[15] On 15 June 2019, India had imposed retaliatory tariffs on 28 US-origin products, levying additional duties of between 10% and 20% in response to the United States invoking Section 232 national security measures on India's steel and aluminium and the termination of India's Generalized System of Preferences status. In June 2023, India agreed to lift retaliatory tariffs on five agricultural products and two non-agricultural products.

[16] AIDC was introduced in the 2021-22 Union Budget as a tax imposed on the commercial production of agricultural produce. The cess is imposed at a specific rate on the value of these goods. It aims to raise funds specifically for financing the development of agriculture infrastructure in India.

[17] The measure applies to customs product code 07.13.10.10 and implies that yellow peas are exempt from the minimum import price of INR 200 per kg restriction for duty assessment during this period. The measure is introduced through the Ministry of Finance Customs Notification No. 64/2023 and the MOCI Notification No. 50/2023.

[18] The Targeted Public Distribution System (TPDS) plays the same role as the Public Distribution System (PDS) before the TPDS but with a special focus on the poor.

14. Indonesia

Main findings

Support to agriculture

Producer support as a share of gross farm receipts in Indonesia declined to 5.2% in 2021-23 after peaking at 26.5% in 2015. The largest component is Market Price Support (MPS) to producers, in line with the government's focus on food sovereignty and self-reliance. Prices received by farmers were 1% higher than world prices on average. Staple products targeted by programmes aimed at self-sufficiency (e.g. sugar, maize, poultry, rice, and eggs) had the highest single-commodity transfers relative to their gross farm receipts, all above 15%.

The share of potentially most-distorting producer transfers was 92% in 2021-23, reflecting the prominence of MPS (including large negative price support due to increasing export taxes on palm oil) and payments based on unconstrained variable input use (particularly fertilisers) in the Indonesian policy mix.

Indonesia's food assistance programme (BPNT) supports poor consumers through electronic vouchers. However, this budget transfer is smaller than the support transferred from consumers to producers via price support measures for staple commodities. Therefore, consumers are penalised by agricultural policies with a Consumer Support Estimate (CSE) of -13% of consumer expenditures measured at the farm-gate level.

Expenditures on general services to the sector (General Service Support Estimate, GSSE) focus on irrigation infrastructure and public stockholding, and are small compared to producer support, at 6.7% of the Total Support Estimate (TSE). Expenditures for GSSE relative to the value of agricultural production were 0.5%, lower than in other emerging economies such as the People's Republic of China (hereafter "China").

TSE decreased from 1.2% of Gross Domestic Product (GDP) to 0.8% in the last two decades. This decline was driven by GDP growth outpacing growth in support, increasingly negative MPS for some commodities (notably palm oil), whereas positive support to the sector increased over the same period.

Key recent policy changes

Indonesia launched a rice distribution programme to low-income households in 2023, with a budget of IDR 18.6 trillion (USD 1.22 billion). This programme provides 10 kg of rice per month to 21.35 million low-income households and has become an important additional in-kind food assistance programme, partially reversing the trend towards cash transfers in the last decade. This rice transfer programme is operational through 2024 and is additional to the cash transfer programme *Bantuan Pangan Non Tunai* (BPNT).

Food inflation, a bad forecast for *El Niño* and a 5% decline in rice production pushed the government to increase rice reserves for 2024. To that end, in 2023, Indonesia agreed with India to allow the import of up to 1 million tonnes of rice, the National Food Agency also approved the import of 1 million tonnes of rice from China and the government announced a rice import quota of 2 million tonnes for 2024 and waived duties for 1.5 million tonnes of rice imports out of quota.

Assessment and recommendations

- Since 2001, Indonesia has significantly improved agricultural total factor productivity and this is currently the main driver of agricultural output growth. However, the expansion of agricultural land and of the use variable inputs such as fertilisers, remain significant and pose environmental challenges, calling for innovative solutions to improve environmental sustainability.
- The recently established National Research and Innovation Agency (BRIN) is an opportunity to prioritise applied research directed to climate-change adaptation and sustainable productivity growth in agriculture. There are already strategies and policies targeting the development of new technologies, breeds and seed varieties. A systematic assessment of the rates of adoption and the impacts of these new varieties on the ground would be useful to guide research and policy. Research could also benefit from stronger links with, and incentives to respond to local needs on improving both productivity and environmental sustainability.
- Indonesian agricultural policy focuses on self-sufficiency and trade measures to achieve food self-reliance. This creates large price gaps between domestic and international markets for imported products such as maize, poultry, and rice. The impact is most likely working against objectives that underpin the Food Law of 2012, including affordable prices for consumers who are penalised by positive MPS, and diversification in production and diet, which is undermined by the concentration of support to a few staple commodities.
- Government policies should prioritise investments in innovation, in particular at the adoption phase. The aim should be improving farmers' skills to manage production and natural resources and ensuring incentives and capacities to find the best solutions to improve sustainable productivity in the specific location and context of each individual farmer. The knowledge and capacity of agencies such as the Indonesian Agency of Agricultural Research and Development could be strengthened, with more skilled extension workers and more accessible services for farmers in need, and co-working between researchers, advisors, and farmers. Investing in knowledge transfer and advice to farmers would improve decisions on the allocation of inputs such as fertilisers to local production needs, contributing to long-term agricultural productivity growth and poverty reduction.
- The BPNT electronic food voucher system in place since 2019 represents an important improvement in the effectiveness of the food assistance programme. The partial return to in-kind food assistance since 2023 reverses this trend and is likely to reduce policy efficiency. Further steps could be taken to improve food security, particularly combining the vouchers with a reduction in positive MPS to staple commodities, which harms net food consumers.
- Fertiliser subsidies are costly and can lead to inefficient use. Use must consider local soil and production conditions to be effective and avoid negative environmental impacts. The government is aware that the fertiliser subsidy scheme is unsustainable in the context of high global fertiliser prices, which increase budgetary costs and generate potential for hoarding and counterfeiting. The proposed reforms in 2024 to replace the subsidies based on cap prices may help to discipline the government expenditure on this programme but inefficiencies are likely to remain. Converting these subsidies into payments per unit of land would make the support more efficient in transferring income to farmers.

Development of support to agriculture

Figure 14.1. Indonesia: Development of support to agriculture

Figure 14.1A. Indonesia: Producer Support Estimate and its composition

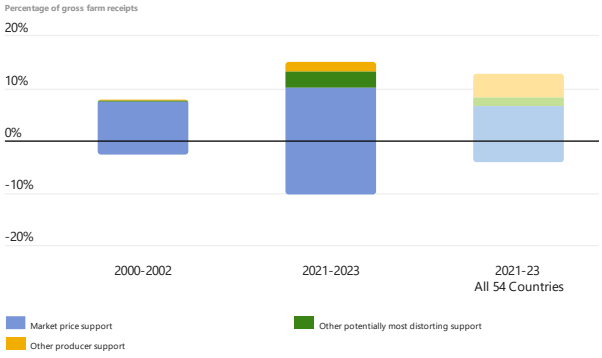


Figure 14.1B. Indonesia: Ratio of producer to border price

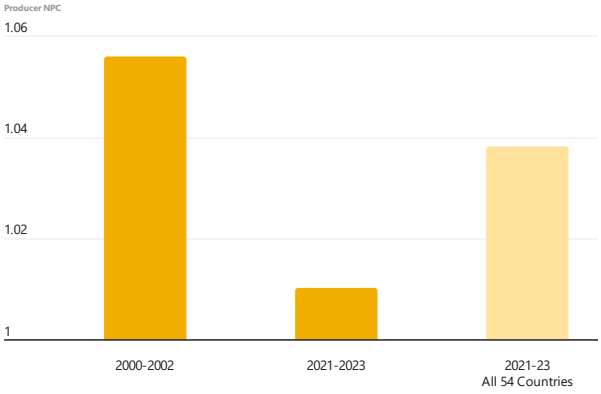


Figure 14.1C. Indonesia: General Services Support Estimate and its composition

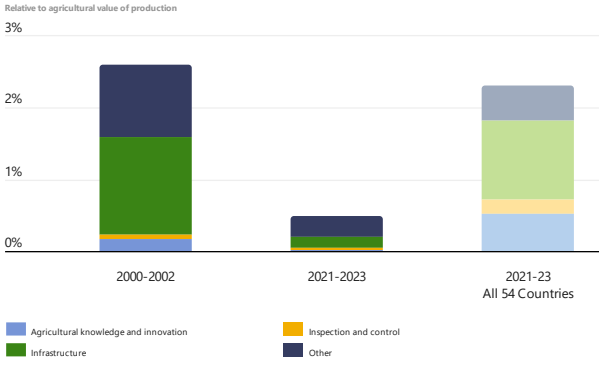
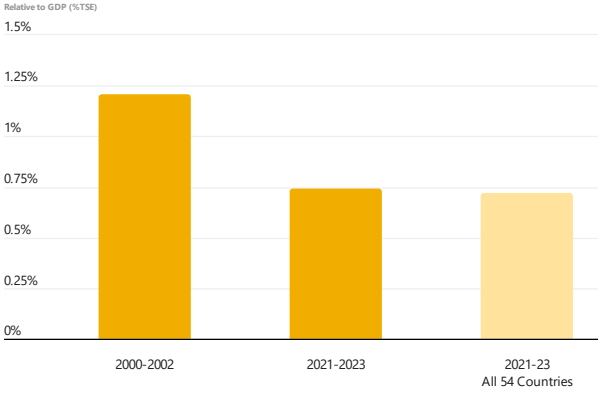
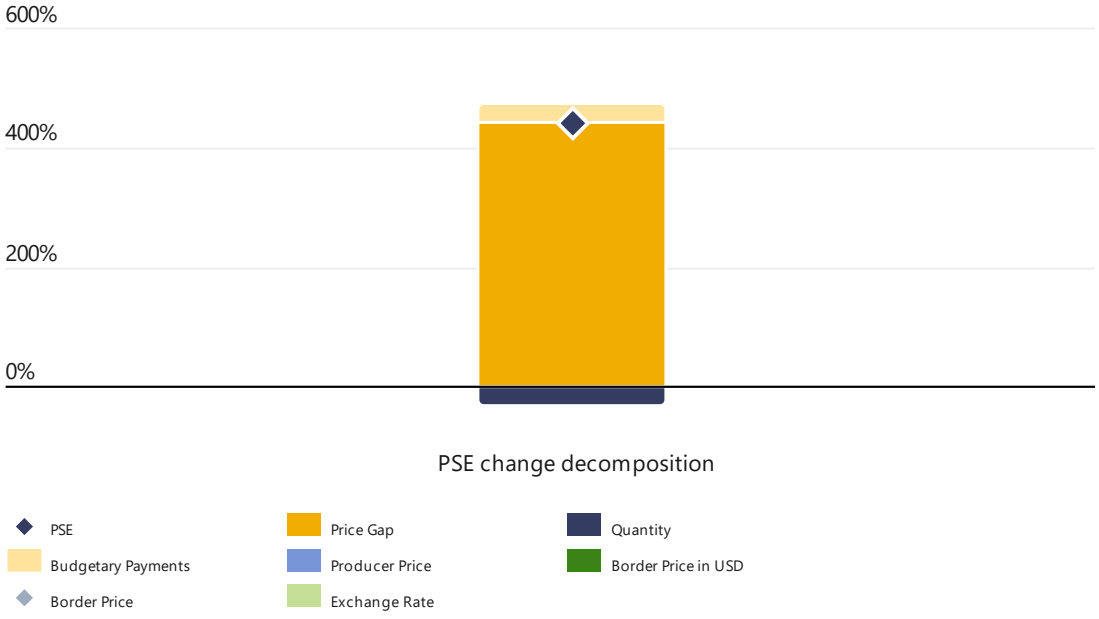


Figure 14.1D. Indonesia: Total Support Estimate



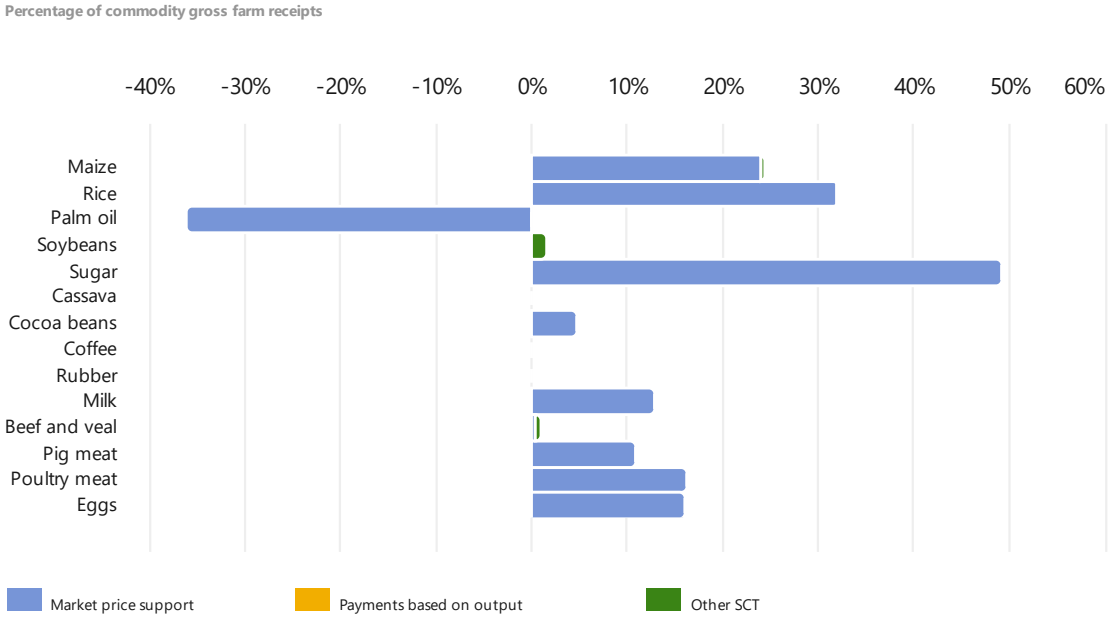
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Figure 14.2. Indonesia: Drivers of the change in PSE, 2022 to 2023



Note: % change of nominal Producer Support Estimate expressed in national currency. The producer price change and the border price change are not calculated when both negative and positive market price support (MPS) occur at the commodity level for the previous year. Note that negative MPS estimates for livestock products may arise in cases of aligned product prices if there is positive MPS for feed commodities.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Figure 14.3. Indonesia: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Table 14.1. Indonesia: Estimates of support to agriculture

Million USD

	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**23 813**	**127 491**	**120 654**	**132 726**	**129 093**
of which: share of MPS commodities (%)	71.96	80.34	79.54	81.21	80.26
Total value of consumption (at farm gate)	**22 684**	**81 891**	**75 879**	**83 568**	**86 225**
Producer Support Estimate (PSE)	**1 355**	**6 917**	**4 709**	**2 549**	**13 491**
Support based on commodity output	1 263	259	-6 711	-1 401	8 888
Market price support[1]	1 263	259	-6 711	-1 401	8 888
Positive market price support	1 860	13 898	13 627	12 649	15 418
Negative market price support	-597	-13 639	-20 338	-14 050	-6 529
Payments based on output	0	0	0	0	0
Payments based on input use	82	6 644	11 405	3 937	4 589
Based on variable input use	19	3 984	6 165	2 770	3 016
with input constraints	0	0	0	0	0
Based on fixed capital formation	59	2 239	4 152	1 084	1 483
with input constraints	1	5	0	0	13
Based on on-farm services	4	421	1 089	83	91
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	11	14	15	13	13
Based on Receipts / Income	11	14	15	13	13
Based on Area planted / Animal numbers	0	0	0	0	0
with input constraints	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	0	0	0	0	0
With variable payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
With fixed payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
Payments based on non-commodity criteria	0	0	0	0	0
Based on long-term resource retirement	0	0	0	0	0
Based on a specific non-commodity output	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0
Miscellaneous payments	0	0	0	0	0
Percentage PSE (%)	**5.58**	**5.22**	**3.57**	**1.87**	**10.09**
Producer NPC (coeff.)	**1.06**	**1.01**	**0.95**	**0.99**	**1.08**
Producer NAC (coeff.)	**1.06**	**1.06**	**1.04**	**1.02**	**1.11**
General Services Support Estimate (GSSE)	**623**	**648**	**565**	**659**	**719**
Agricultural knowledge and innovation system	45	32	35	33	28
Inspection and control	14	53	83	52	25
Development and maintenance of infrastructure	323	192	177	184	215
Marketing and promotion	0	5	7	5	5
Cost of public stockholding	240	365	264	386	447
Miscellaneous	0	0	0	0	0
Percentage GSSE (% of TSE)	**27.94**	**6.72**	**6.70**	**15.24**	**4.49**
Consumer Support Estimate (CSE)	**-1 476**	**-10 297**	**-4 927**	**-11 610**	**-14 353**
Transfers to producers from consumers	-1 533	-11 746	-8 326	-11 701	-15 210
Other transfers from consumers	-293	-1 417	-700	-1 480	-2 072
Transfers to consumers from taxpayers	328	2 025	3 154	1 118	1 802
Excess feed cost	22	842	946	452	1 127
Percentage CSE (%)	**-6.55**	**-13.00**	**-6.77**	**-14.08**	**-17.00**
Consumer NPC (coeff.)	**1.09**	**1.19**	**1.14**	**1.19**	**1.25**
Consumer NAC (coeff.)	**1.07**	**1.15**	**1.07**	**1.16**	**1.20**
Total Support Estimate (TSE)	**2 306**	**9 589**	**8 428**	**4 327**	**16 012**
Transfers from consumers	1 826	13 163	9 026	13 181	17 282
Transfers from taxpayers	773	-2 157	102	-7 375	803
Budget revenues	-293	-1 417	-700	-1 480	-2 072
Percentage TSE (% of GDP)	**1.21**	**0.75**	**0.71**	**0.33**	**1.16**
Total Budgetary Support Estimate (TBSE)	**1 044**	**9 330**	**15 139**	**5 728**	**7 124**
Percentage TBSE (% of GDP)	**0.56**	**0.71**	**1.28**	**0.43**	**0.52**
GDP deflator (2000-02 = 100)	**100**	**396**	**369**	**405**	**413**
Exchange rate (national currency per USD)	**9 322.08**	**14 796.84**	**14 307.82**	**14 845.71**	**15 236.99**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for Indonesia are: maize, rice, soybean, sugar, milk, beef and veal, pig meat, poultry, eggs, bananas, cassava, cocoa beans, coffee, palm oil and rubber.

Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

The Food Law of 2012 shapes Indonesia's current agricultural policy and set of core objectives, focussed on the principles of food self-reliance (*kemandirian pangan*) and food sovereignty (*kedaulatan pangan*). The law stipulates that domestic food demand can only be met by imports if local food sources are insufficient (USDA FAS, 2019[1]). This focus is also reflected in the Strategic Plan of the Ministry of Agriculture 2020-24 which calls for:

- Self-sufficiency in the production of selected staple-food commodities (rice, maize, soybeans, sugar and beef) to ensure food security.
- Ensuring food prices are affordable for consumers across the archipelago.
- Diversifying production and consumption away from carbohydrates (rice and wheat) towards animal-based products, and fruits and vegetables (particularly root vegetables).
- Raising the competitiveness of agricultural production and value-added processing.
- Increasing the availability of raw materials for bio-industry and bioenergy.
- Increasing farmers' incomes to reduce the level of rural poverty (OECD, 2012[2]).

The BPNT, co-ordinated by the Ministry of Social Affairs (Ministry of Social Affairs (Ministry of Social Affairs (Kementerian Sosial), 2019[3]) gives eligible households a monthly cash transfer via a purchasing card that can be used to buy rice at the market price from selected retailers. In 2023 the transfer was IDR 200 000 (USD 13.1) per month and the number of beneficiary households was 18.8 million.

Input subsidies are provided for fertilisers and credit. The percentage of subsidy varies across fertiliser types, with urea receiving the highest rate, 81.3%, in 2023. Subsidies are paid to fertiliser manufacturers who are mandated to sell fertilisers to farmers at a reduced price. Before the beginning of the planting season, the Ministry of Agriculture (MoA) issues a decree on the estimated demand for different types of fertilisers by province, along with the reference retail price of fertilisers. Based on this information, governors of the corresponding provinces break down the demand for fertiliser by district. The decree also serves as a reference for fertiliser companies to distribute fertilisers in the corresponding regions. In addition to the subsidy, the MoA also directly distributes fertilisers to food crop farmers in selected regions.

The MoA encourages small and medium-scale farm businesses through partnerships between the private sector and community investment that support Micro Business Credit. One large-scale programme focuses on the development of regional food production centres: the Food Estate (FE) programme brings together upstream and downstream activities in the food production chain.

Public investments in infrastructure are combined with exemptions for water transportation costs. Farmers are not charged for the cost of delivering water from the source to the tertiary system via primary and secondary canals. Facilitated by savings from reduced fuel subsidies since 2015 and responding to climate change, the government has pushed to improve irrigation infrastructure, mainly for rice production. This includes water pump and other irrigation infrastructure, and support for seeds in in new planted areas.

The National Food Agency (NFA/Bapanas) manages government food reserves and manages public interventions in the domestic market and imports through the state-owned enterprise Perum BULOG. The NFA is also responsible for market operations aimed at stabilising domestic prices. Perum BULOG can only buy rice from farmers when the market price is lower than or equal to the minimum price and must maintain a minimum year-end stock of 2 million tonnes, about 2.5% of annual consumption (USDA FAS, 2019[1]). Only BULOG can import medium-quality rice with a maximum of 25% broken grains. However, private companies can import specialty rice such as jasmine and basmati (USDA FAS, 2018[4]). Ceiling prices are in place for medium- and premium-quality rice at the retail level, which vary across regions.

When the retail price exceeds the ceiling, BULOG releases rice from stocks to the market. The state-owned food holding ID FOOD also plays a role in food-related policies, e.g. by facilitating the distribution of cooking oil.

Indonesia restricts trade of strategic commodities (those associated with self-sufficiency targets: rice, maize, soybeans, sugar and beef). Food imports are only allowed when domestic food production is not sufficient. Additionally, food exports are allowed only after the demands of the National Food Reserve and staple food consumption are met. Importing companies must receive Ministry of Trade approval as registered importers for animals as well as a range of processed products manufactured from meat, cereal, sugar and cocoa.

The trade weighted average of applied Most Favoured Nation (MFN) import tariffs on agro-food products was 5.6% in 2020, with rice and sugar having the highest specific tariffs. Quantitative import restrictions and licensing are in place, notably for rice, sugar and beef. Certain import requirements are imposed for food safety and religious reasons. The MFN tariff schedule is updated every five years by the Ministry of Finance (*Buku Tarif dan Kepabeanan*).

A variable export tax on crude palm oil is based on a reference price. It is zero for prices below USD 750 per tonne but applies using a sliding scale between USD 3 and USD 200 per tonne when prices exceed that reference. Since 2015, the government collects an additional export levy for crude palm oil on top of the variable export tax to finance subsidies to biodiesel, infrastructure, research and development projects on palm oil, replanting in small farms, market promotion and human resource development. Variable export taxes are also in place for cocoa.

A biofuel mandate requires a blend rate of 35% for palm oil based biodiesel for all uses (Halimatussadiah et al., 2021[5]). A subsidy to biofuel producers is provided via the Indonesia Oil Palm Estate Fund (BPDP). The BPDP collects an export levy and redistributes it to producers of biofuels who sell their products domestically. A moratorium on the issuance of licenses for new palm oil plantations is in place since 2018 to combat palm oil-driven deforestation and loss of peatland.

Indonesia is a member of the Association of Southeast Asian Nations (ASEAN), Asia-Pacific Economic Cooperation (APEC), and World Trade Organization (WTO). It participates in trade liberalisation between ASEAN members and their major trading partners in the region, including China, Japan, India, Korea, Australia, and New Zealand. The ASEAN economies committed in 2015 to complete the formation of the ASEAN Economic Community by 2025. This is intended to develop a single market and production base, a highly competitive economic region, a region of equitable economic development, and a region fully integrated into the global economy (ASEAN Secretariat, 2017[6]).

Innovation for sustainable productivity growth

Strategic planning

Indonesia's updated Nationally Determined Contribution (NDC) to the United Nations Framework Convention on Climate Change (UNFCCC) aims to reduce greenhouse gas (GHG) emissions by 29% by 2030 compared to a Business as Usual (BAU) scenario, or by 41% of the BAU contingent on sufficient international financial support.[1] The NDC also states Indonesia's plans to reach peak GHG emissions in 2030 and net-zero GHG emissions by 2060 or sooner (WRI, 2021[7]). Indonesia's Long-Term Strategy for Low Carbon and Climate Resilience (LTS-LCCR) 2050 aims to contribute to global mitigation goals while achieving national development, and finding a balance between objectives for emissions reduction, economic growth, justice and climate-resilience. While there is not an agriculture-specific target for GHG mitigation, according to this strategy, the AFOLU sector could become a net sink by 2050. The LTS-LCCR suggests technologies to apply to the agricultural sector but does not include quantitative targets. These suggestions include: (1) adoption of low-emission varieties and water-saving cultivation systems in paddy

fields; (2) utilisation of manure for biogas, and livestock feed improvement in livestock management; and (3) reduced use of synthetic fertiliser.

The strategic approach of Indonesia to promote innovation for sustainable productivity growth is based on the introduction of new technologies, breeds and seeds varieties, while facilitating adoption through the extension services. This approach emphasises increases in productivity. However, innovation adoption in Indonesia is hindered by lack of information, infrastructure, skills and working capital, and the limited capacities of the extension services. There are not specific targets in terms of sustainable productivity growth in Indonesia.

Research and innovation

Indonesia established a single National Research and Innovation Agency called *Badan Riset dan Inovasi Nasional* (BRIN) in 2021 to co-ordinate government R&D and innovation activities in an integrated manner. Consequently, R&D activities are no longer implemented by the MoA. The Ministry of Agriculture still has extension services co-ordinated by the Indonesian Agency for Agriculture Extension and Human Resources Development, including advisors working on technology dissemination and extension, particularly for small scale farmers. The former Indonesian Agency of Agriculture Research and Development (IAARD) transferred its research capacities to BRIN and was transformed in 2022 into a new agency on standards called *Badan Standar Instrument Pertanian* (BSIP).

New crop varieties and livestock breeds are developed by the private sector, universities and central and local governments. Between 2005 and 2021 the IAARD created 240 food crop varieties, 147 horticulture, 130 estate crops and 10 livestock breeds. After briefly slowing down during the pandemic and following the reform of the R&D public system, the pace of innovation in plant and animal breeding recovered such that 208 new crop varieties were released for dissemination in 2022 (Center for Plant Variety Protection and Agriculture, 2023[8]). These include 175 horticultural varieties (fruits, vegetables and ornamental plans), 23 food crop varieties, and 10 estate crop varieties.

In addition to new crop varieties and livestock breeds BRIN also develops on-farm technologies such as precision farming. These technologies are developed to improve production methods, make better use of marginal land and increase the efficiency of input use and feed formulation, and are expected to contribute to higher productivity while reducing the use of inputs such as fertilisers.

The main institution in charge of technology dissemination is the extension agency and its extension workers. The MoA targets having one extension worker in each village but is currently very far from that goal. The MoA also targets having one agricultural extension centre per sub-district, but currently there are only 5 762 such centres for the 7 252 sub-districts. The main challenges for technology adoption are lack of skills among advisors and farmers, weak knowledge flows between extension and research and poor telecommunication infrastructure, particularly in the east of the country.

Programme implementation

The government of Indonesia has issued several regulations to reduce agricultural GHG emissions, obliging farmers to implement environmentally sustainable practices. These regulations also apply for suppliers of inputs, irrigation systems and cultivation equipment (Bapenas, 2021[9]).

A Presidential Regulation in 2021 focused on the implementation of carbon economic value to achieve Nationally Determined Contribution (NDC) targets and control of greenhouse gas emissions in national development (Government of Indonesia, 2021[10]). This regulation defines a universal approach to measurement of the effort in reducing emissions, to be reflected in national targets. The economic value of carbon is used by the government to select the most efficient mitigation actions to contribute to national targets and to manage the trade-off between environmental sustainability and productivity. For instance, subsidised inorganic fertilisers and conventional irrigation systems contribute to increased food production,

but are also the largest contributors to agricultural GHG emissions in Indonesia. The economic value of carbon is used by the government to decide on how to support these activities.

Recent policy developments

Domestic policy developments in 2023-24

The Indonesian National Food Agency (NFA) introduced in March 2023 new caps on retail prices for medium and premium rice in different geographical areas to mitigate food price inflation. The maximum price for medium rice was increased by 15.9% on average over previous levels (which were set in 2017) and set at IDR 10 900 (USD 0.72) per kilogramme in zone 1 (Java, Lampung, South Sumatra, Bali, West Nusa Tenggara Barat, and Sulawesi); IDR 11 500 (USD 0.75) in zone 2 (Sumatra, South Sulawesi, East Nusa Tenggara Timur, and Kalimantan) and IDR 11 800 (USD 77) in zone 3 (Maluku and Papua).

The National Food and Drug Agency (BPOM) introduced a new regulation (No. 22/2023) with a more extensive list of prohibited raw materials in processed food and food additive ingredients. It strengthens the enforcement of this prohibition and introduces specific new standards for food. BPOM also introduced a new Law No. 23/2023 with additional requirements for the registration of food processing activities.

Food assistance

To help the poor to cope with food price inflation, Indonesia launched the non-cash rice transfer distributing programme to low-income households in two phases between March and May and between September and November 2023. A 10 kg allotment of rice per month was distributed to 21.35 million low-income households. The budgetary expenditure for this programme was IDR 18.6 trillion (USD 1.22 billion). This rice transfer programme is continued in 2024 with a budget of IDR 7.24 trillion (USD 4.8 billion), expected to reach 22 million households between January and March 2024. This programme has become an important additional form of in-kind food assistance, partially reversing the trend towards cash transfers in the last decade.

Fertiliser subsidies

In 2023 and 2024, fertiliser subsidies are provided by the Minister of Agriculture according to Regulation Number 10/2022. The fertiliser subsidy budget remained stable in 2023 at IDR 25.3 trillion (USD 1.66 billion) and was announced to be increased by 5.53% in 2024. Despite this budget stability, the volume of subsidised fertilisers decreased by 47.5% in 2023. While the price cap (Highest Retail Price, HRP) was relatively stable, the subsidy rate went up because of higher international prices of fertilisers and natural gas used in the production of fertilisers. With these high world prices, the budget only allowed for significantly smaller subsidised volumes, which in 2023 only met between 14% to 53% of the requirement, depending on the type of fertiliser (Directorate General of Infrastructure MoA, 2024[11]).

Table 14.2. Volume and maximum sale price of subsidised fertilisers in Indonesia

Fertiliser Type	Volume (thousand tonnes)			HRP (USD/kg)			Subsidy (USD/kg)		
	2022	2023	2024	2022	2023	2024	2022	2023	2024
Urea	4 233	5 570	2 711	0.15	0.15	0.15	0.22	0.22	0.21
NPK	2 471	3 232	2 001	0.15	0.15	0.15	0.57	0.56	0.54
NPK special formula (for Cocoa)	12	211	20	0.22	0.22	0.22	0.54	0.53	0.51

Source: (Ministry of Agriculture, 2023[12]).

The governance system of fertiliser subsidies was proposed to be changed in 2024. Two changes were proposed. First, an additional 55% increase in the 2024 budget for fertilisers. Second, a pilot reform in the fertiliser subsidy policy, moving from a subsidied price to direct payments to farmers based on the amount of fertiliser they use. The government would then distribute the available budget to reach the estimated volume of fertiliser needs. However, pilot projects of this new policy foreseen in the Provinces of Bangka Belitung Islands and South Kalimantan have been postponed.

Animal health

In June 2023, the Ministry of Agriculture (MOA) issued a decree regarding the Road Map for Foot and Mouth Disease Eradication from the Territory of the Republic of Indonesia. The plan includes the restocking of the dairy cattle population by importing livestock from abroad. To improve traceability systems for livestock and livestock diseases a registration and data collection system was introduced for all livestock using Eartag secure QR codes.

The Indonesian National Quarantine Agency (IQA/*Barantin*) was established in 2023, reporting directly to the president. This new agency integrates the former Agriculture Quarantine Agency (*Barantan*) under the Ministry of Agriculture and related units responsible for quarantine under the Ministry of Marine and Fisheries, and the Ministry of Environment and Forestry. The new agency aims to improve the quality of the quarantine services, pooling together the experience from different sectoral agencies and increasing the involvement of civil society into a participatory quarantine management.

Genetic engineering

A regulatory framework and control guidelines to monitor and evaluate the issuance of Genetically Engineered (GE) crops for cultivation was established in 2023. The Ministers of Environment & Forestry, Agriculture, Marine Affairs & Fisheries, and the Head of National Food and Drug Agency (BPOM) are the authorities responsible for approving and releasing GE products, as governed by MOA Regulation No. 23/2023. Based on the Presidential Regulation No. 45/2023, the National Quarantine Authority has been authorised to supervise and control imported genetically engineered products at the border, including plants, animals, and fish. In March 2023 genetically-modified HB4 wheat was approved for human consumption. This cereal had previously been approved for use as animal feed.

Palm oil and biofuel policies

Changes to the domestic market obligation (DMO) policy for palm oil were made in May 2023 in response to lower international prices. The new policy lowers the target for domestic cooking oil supply from 450 000 tonnes to 300 000 tonnes a month and tightens the target export ratio from 6 to 4 tonnes of exports per every tonne of palm oil used for domestic consumption. It also raises the incentives for packaged cooking oil, and releases, over the course of nine months, export permits that had previously been suspended.

In November 2023 the Ministry of Energy and Mineral Resources announced an increase in biodiesel production from 13.1 billion litres in 2023 to 13.4 billion litres in 2024. The ministry aims to maintain its biodiesel blending mandate at B35 (35% palm-based biodiesel), following a guidance in July for the handling and storage of biofuel fixing a maximum blending rate of 40% for diesel engines.

After a long dormant period for the bioethanol programme, in June 2023 the government announced bioethanol procurement based on the acceleration of sugar self-sufficiency goals. PR No. 40/2023 sets forth Indonesia's target of achieving self-sufficiency in sugar production for human consumption by 2028 and producing 1.2 billion litres of sugarcane ethanol by 2030. In mid-July 2023, the Ministry of Energy and Mineral Resource issued Decree No. 252/2023 on specifications for 95 RON gasoline with 5% ethanol blending.

Policies to mitigate emissions from agriculture

The Designing Article 6 Policy Approaches (DAPA) programme to facilitate international carbon trading, funded by Norway, is a co-operative initiative to support countries in reducing greenhouse gas emissions according to their Nationally Determined Contributions (NDCs). In Indonesia, the Coordinating Ministry of Economic Affairs (CMEA) leads the programme. An inter-ministerial Technical Advisory Committee (TAC) with six representatives is responsible for designing Indonesia's participation in carbon markets, with a Policy Approach Proposal (PAP) and a NDC tracking tool. The DAPA Program has been extended until the end of 2024, to complete a bilateral carbon trading agreement (Mitigation Outcome Purchasing Agreement, or MOPA) between Indonesia and Norway. The programme also focuses on developing a mixed regulatory regime, combining carbon market and carbon tax strategies for achieving NDC targets. Indonesia aims to become one of the first countries to participate in international carbon trading.

Indonesia continues to strengthen the policy framework for net zero emissions from forests and land use and is currently developing a financing roadmap for the Forest and Other Land Uses (FOLU) net sink 2030 plan. In 2023 Indonesia finalised OneMap to clarify tenurial status of land in different functions across the country. Indonesia provides fiscal incentives to district governments to ensure they complete their spatial plans for FOLU and provides a financing roadmap to support restoration investments by local authorities.

Trade policy developments in 2023-24

Indonesia strengthened the food safety regulation on imports of wheat or other grains. The objective is to manage risks of exposure and spread of pests and diseases as well as food contamination. Importing companies are required to demonstrate their compliances with prevention measures such as being equipped with proper facilities that are free from plant pests. This includes heat treatment, modern logistic systems with unloading and transporting grain using a conveyor belt or modern packaging. Countries that may be affected by this regulation include Argentina, Australia, Bulgaria, Canada, Denmark, France, India, Lithuania, Moldova, Pakistan, Russia, Korea, Ukraine, the United States, and Paraguay. Indonesia also requires the Good Agriculture Practices used at the production level to be registered by the competent authority. This procedure aims to develop guaranteed traceability systems for safety compliance from farm level along the supply chain.

To guarantee government supply of rice in the face of global inflation, *El Niño* weather forecast and other food supply problems, Indonesia and India agreed in 2023 to allow the import of up to 1 million tonnes of rice. At the same time, the National Food Agency also approved the import of 1 million tonnes of rice from China to increase the government's rice reserves for 2024 after a 5% decline in rice production. Finally, the government announced a rice import quota of 2 million tonnes for 2024 and waived duties for 1.5 million tonnes of rice imports out of quota. As of January 2024, 5 200 tonnes of rice from India or 0.5% of the agreed amount had been imported.

Policy context

Key economic and agricultural statistics

Indonesia is the fourth most populous country in the world with 276 million inhabitants, with rapid population growth and high population density. Indonesia is also one of the world's largest agricultural producers. Despite a reduction of the share of the sector in the economy in the last two decades, it still accounts for 12.4% of GDP. The reduction in the share of the work force employed in the agricultural sector has been proportionally much larger, declining from 45% in 2000 to 29% in 2022, with an increase in the average production per employed person in the sector.

Indonesia is a net agro-food exporter and the share of its total exports that come from the sector have almost tripled in the last two decades to 20% in 2022. The country is also a large importer of agro-food products. Total agricultural area in Indonesia has increased by one-third in the last two decades and currently represents 2.2% of the agricultural land in all countries covered in this report. While food crop production is predominantly based on small family farms, there are large commercial farms producing perennial crops, particularly palm oil.

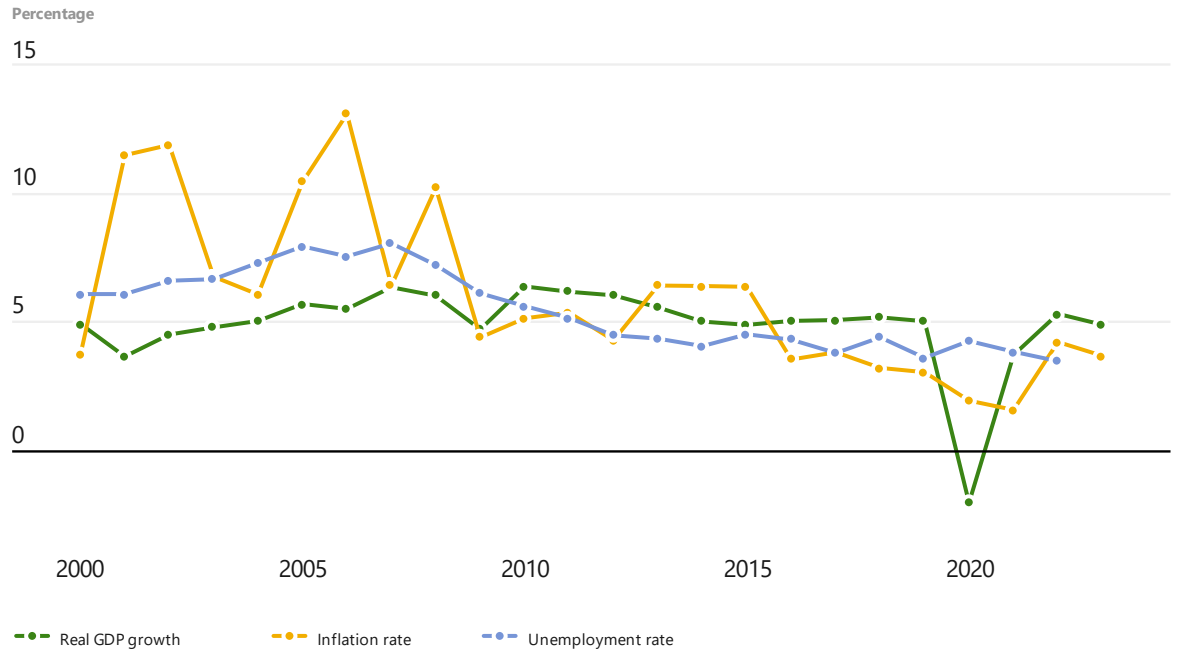
Table 14.3. Indonesia: Contextual indicators

	Indonesia		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	1 097	3 970	2.7%	2.9%
Population (million)	205	276	4.8%	5.2%
Land area (thousand km^2)	1 878	1 893	2.3%	2.3%
Agricultural area (AA) (thousand ha)	47 177	64 600	1.6%	2.2%
			All countries[1]	
Population density (inhabitants/km^2)	112	144	52	64
GDP per capita (USD in PPPs)	5 346	14 653	9 363	25 965
Trade as % of GDP	26.3	20.1	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	15.6	12.4	2.9	3.8
Agriculture share in employment (%)	45.3	29.3	-	-
Agro-food exports (% of total exports)	6.8	19.6	6.4	8.0
Agro-food imports (% of total imports)	12.7	11.9	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	84	81	-	-
Livestock in total agricultural production (%)	16	19	-	-
Share of arable land in AA (%)	43	41	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

Indonesia's economy has grown at around 5% per year between 2000 and 2019, almost tripling the real income per capita. In 2020, GDP decreased as a consequence of the COVID-19 pandemic and related restrictions, but economic growth was back to 5in 2022 and 2023. The inflation rate has been steadily decreasing from almost 10% in the 2000s to 1.6% in 2021, rebounding to in 2022 and 2023. The rate of unemployment has remained stable around 4% in the last decade.

Figure 14.4. Indonesia: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

The value of agro-food exports has oscillated around USD 30 billion in the last decade but strongly increased in the last two years up to USD 57.2 billion in 2022 driven by a large increase in palm oil export value due to a peak of world prices for palm oil. Imports reached USD 28.2 billion in the same year. Around 79% of agro-food exports are processed products to be further transformed by industries in other countries such as rubber and palm oil. A significant share of agro-food imports (71%) is destined for further processing in Indonesia.

Figure 14.5. Indonesia: Agro-food trade

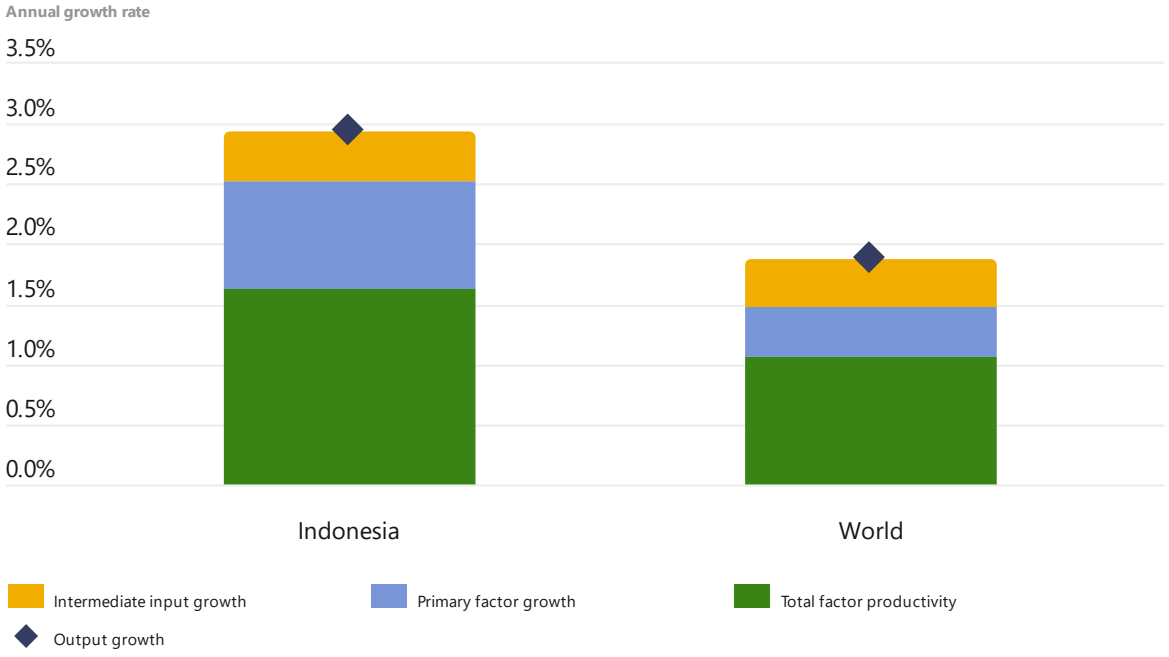
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Indonesia's agricultural production increased at an annual rate of 3% in 2012-21, well above the global average. Most of this growth is productivity driven: Total Factor Productivity (TFP) has increased by 1.6% per year, also above the world's average and representing technological improvements and improved

efficiency to combine different production factors. Additional primary factors, including land, and intermediate inputs have contributed an additional 0.9 and 0.4 points to the production growth, respectively. Unlike in the 1990s, Indonesia's growth in TFP has significantly outperformed the global averages during the last 10 years.

Indonesian agriculture accounts for an increasing share of national water extractions, which was 85.2% in 2022. However, the sector's shares of energy used has fallen since 2000 to 0.7% in 2022, while the share of GHG emissions has remained relatively stable at 13.3% in 2022, while the whole of agriculture, forest and other land use -in particular deforestation and forest degradation- represented more than half of Indonesian emissions in 2000-18. The country's phosphorous balance is below the OECD average, while the nitrogen balance has decreased in the last two decades to significantly negative levels in 2022.

Figure 14.6. Indonesia: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Table 14.4. Indonesia: Productivity and environmental indicators

	Indonesia		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	-0.1%	1.6%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	17.3	-68.6	32.1	28.2
Phosphorus balance, kg/ha	1.5	0.9	3.3	2.3
Agriculture share of total energy use (%)	2.4	0.7	1.7	2.0
Agriculture share of GHG emissions (%)	13.2	13.3	8.7	10.1
Share of irrigated land in AA (%)	11.5	10.5	-	-
Share of agriculture in water abstractions (%)	81.9	85.2	47.0	49.5
Water stress indicator	..	..	8.7	..

Note: * or closest available year.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

Indonesia's economy was relatively closed to trade for almost three decades from the 1960s to the 1980s. Trade liberalisation started only in the 1990s with the signature of agreements that created the WTO and the ASEAN Free Trade Area (AFTA).

Over the past 30 years, the main priorities of Indonesia's agricultural policy have been food self-sufficiency, food diversification, value added, competitiveness, and farmers' welfare. Agricultural producers benefit from a wide range of input subsidies for fertilisers, seeds, and credits, among others. The number and cost of these programmes grew rapidly starting in the mid-2000s. Since 1998, the government has increased the minimum producer price of rice, while targeted food assistance for the poor (via subsidised rice under the programme Raskin) was introduced, increasing expenditure on food assistance programmes.

Raskin went through a number of changes in the last decade and was eventually renamed as Rastra. These programmes allowed the Food Logistics Agency BULOG to distribute about 10 kg of rice per poor family per month. By 2019, this was replaced by the current BPNT programme that has grown to become a large-scale programme to provide an electronic food voucher, replacing physical rice distribution. Indonesia launched an additional in-kind rice distribution programme to low-income households in 2023 and 2024, reversing the trend towards cash transfers programmes for food assistance.

Tariffs fell significantly, with the average for agriculture (excluding alcoholic beverages) dropping from 20% in 1990 to 5% in 2010. Import monopolies, licensing requirements and export restrictions on agricultural products were removed in 1997-98. However, quantitative import restrictions were introduced, notably for rice, sugar and beef. Import requirements imposed for sanitary, phytosanitary and religious or cultural reasons (i.e. halal certification) are significant and potentially stringent. Export taxes were introduced in 1994 on crude palm oil (CPO) and its derivatives, and on cocoa in 2010. These and other export restrictions to CPO persist with adjustments over the years.

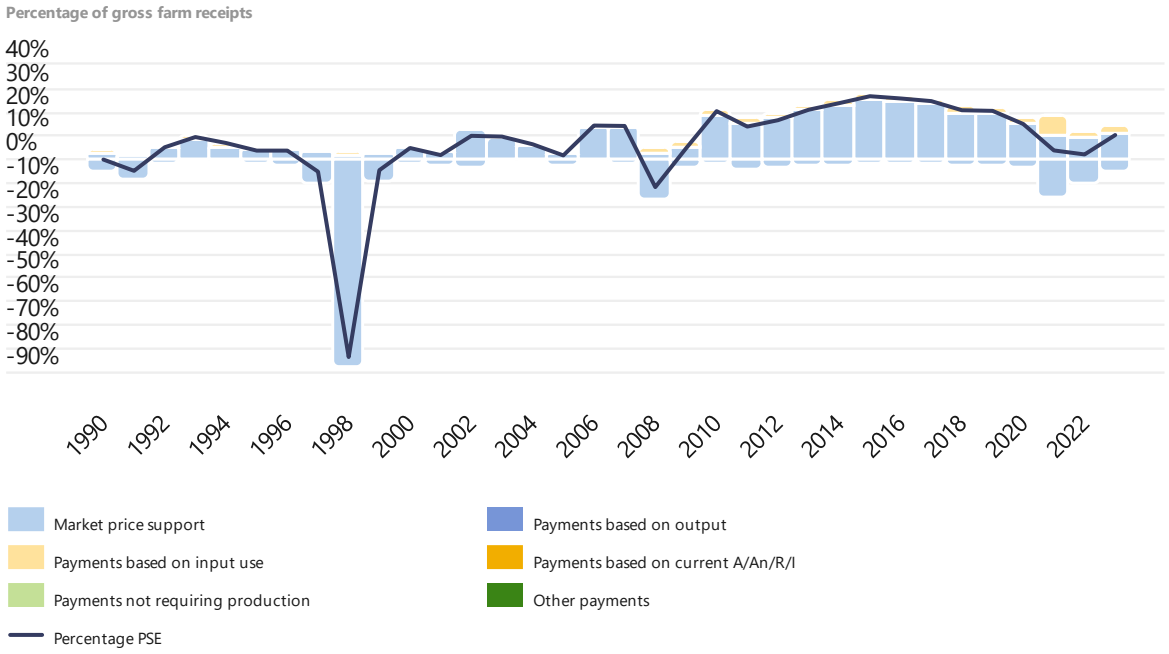
Indonesia's current agricultural policies are framed in the 2012 Food Law, which establishes the objectives of "food self-reliance and food sovereignty" (*kemandirian pangan dan kedaulatan pangan*). In practice, the goal is achieving self-sufficiency on staple and strategic commodities (rice, maize, soybean, sugar, and beef). The country provides subsidies for input use, particularly fertilisers and seeds.

Table 14.5. Indonesia: Agricultural policy trends

Period	Broader framework	Changes in agricultural policies
1960s to 1980s	Closed economy Production expansion to avoid social unrest, rise in oil prices and green revolution	Food Logistics Agency (BULOG) established in 1967 and its marketing role expanded Subsidised inputs such as fertilisers, pesticides and credit Significant spending on infrastructure Increased import tariff rates Quantitative control of exports and imports Export taxes on palm oil and its derivatives
1980s – 1996	Trade liberalisation	Abolishment of tariffs, general tariffs reduction programme Trade agreements (URAA, AFTA, APEC) New legislation on export tax on palm oil and its derivatives in 1994 Phase out of input subsidies
1997-1999	Market reform Asian financial crisis	Reduction of BULOG's monopoly powers, particularly in rice markets Reduction of fertiliser subsidy Introduction of targeted rice distribution programme (OPK/Raskin) Tariffs replace import licensing arrangements for sugar Abolishment of local content requirements for dairy and soybeans Temporary removal of export taxes on palm oil and its derivatives
2000-2012	Measures to revitalise the agricultural sector in response to poor productivity	Reinstated fertiliser subsidy Increased expenditures in extension services R&D and irrigation Increased tariffs on rice and sugar Quantitative controls on trade in rice, sugar and beef More stringent non-tariff measures Variable export tax on palm oil and its derivatives, and on cocoa
2012-present	2012 Food Law, policy focus on self-sufficiency of staple food (rice, maize, soybeans, sugar and beef)	Increased role of BULOG in rice imports and domestic market Distribution of rice at low prices, first through Raskin programme, then Rastra and finally BPNT electronic vouchers organising rice distribution More input subsidies for fertilisers, seeds and credit. Grant for machineries to targeted farmers' groups New initiative on food estate

Indonesia's producer support estimate has been mostly positive over the past 30 years, mainly due to market price interventions (tariffs and minimum prices). The only exception occurred during the financial crisis in 1998 and the food crisis in 2008, both leading to negative support to producers. Export taxes imposed on palm oil and cocoa result in negative support for those commodities. The negative price support to palm oil quadrupled in 2021 and 2022 due to skyrocketing world prices not fully transmitted to local consumers for which palm oil is a staple commodity, and fell with lower world prices in 2023. Budgetary transfers to producers (mainly input subsidies) are significantly smaller than the negative or positive support provided through producer prices. Food consumers are penalised by policy because the budgetary support they received represents only a small share of the negative support due to higher domestic prices of staple commodities such as sugar, maize, poultry, rice and eggs.

Figure 14.7. Indonesia: Development of the PSE and its composition, 1990 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

References

ASEAN Secretariat (2017), *ASEAN Economic Community Factsheet*, https://asean.org/wp-content/uploads/2012/05/7c.-May-2017-Factsheet-on-AEC.pdf. [6]

Bapenas (2021), *Rapid review of low carbon development policy and budget mapping: Input for the 2022 government work plan.Kajian Cepat Pemetaan Kebijakan dan AnggaranPpembangunan Rendah Karbon: Masukan untuk Rencana Kerja Pemerintah 2022)*, Indonesian Ministry of National Development Panning. Jakarta. [9]

Center for Plant Variety Protection and Agriculture, P. (2023), *Annual Report*, https://ppvtpp.setjen.pertanian.go.id/. [8]

Directorate General of Infrastructure MoA (2024), *Subsidized Fertilizer Policy Fiscal Year 2024.*, pp. Jakarta, 7 February 2024. [11]

Government of Indonesia (2021), *President Regulation Number 98/2021 on Implementation of Carbon Economic Value to Achieve Nationally Determined Contribution Targets and Control of Greenhouse Gas Emissions in National Development*, Government of Indonesia, Jakarta. [10]

Government of Indonesia (2021), *Updated Nationally Determined Conbtribution. Republic of Indonesia*. [13]

Halimatussadiah, A. et al. (2021), “Progressive biodiesel policy in Indonesia: Does the Government’s economic proposition hold?”, *Renewable and Sustainable Energy Reviews*, Vol. 150, p. 111431, https://doi.org/10.1016/j.rser.2021.111431. [5]

Ministry of Agriculture (2023), *Decree No. 734 of 2022 on Determining the Allocation and Highest Retail Price of Subsidized Fertilizers in the Agricultural Sector Fiscal Year 2023*. [12]

Ministry of Social Affairs (Kementerian Sosial) (2019), “PedomanUmumBantuanPangan Non-Tunai (General Guidance of the Non-Cash Food Assistance)”, Ministry of Social Affairs, Jakarta, Indonesia. [3]

OECD (2012), *OECD Review of Agricultural Policies: Indonesia 2012*, OECD Review of Agricultural Policies, OECD Publishing, Paris, https://doi.org/10.1787/9789264179011-en. [2]

USDA FAS (2019), “Indonesia Grain and Feed Annual Report 2019”, *GAIN ID1904*, USDA FAS. [1]

USDA FAS (2018), “Indonesia Grain and Feed Annual Report 2018”, *GAIN ID1808*, USDA FAS. [4]

WRI (2021), *Statement: Indonesia Submits New 2030 Climate Targets and First Long-Term Climate Strategy.*, World Research Institute. Jakarta, https://www.wri.org/news/statement-indonesia-submits-new-2030-climate-targets-and-first-long-term-climate-strategy. [7]

Note

[1] The Business as Usual scenario (BAU) implies an increase in GHG emissions of 115% higher than the level of emissions in 2010 (see Table 1.1 in (Government of Indonesia, 2021[13])).

15. Israel

Main findings

Support to agriculture

The share of producer support (Producer Support Estimate, PSE) in gross farm receipts amounted to 12.3% in 2021-23, below the OECD average and a significant reduction from the 2000-02 level of 19%. At the same time, the 89% share of potentially most-distorting forms of support remained twice as high as the OECD average. This can be explained by the persistence of domestic price support and border measures in favour of several meat and dairy products. Poultry producers benefit from the largest share of market price support, accounting for 46% of the total producer support in 2021-23. On average, border and price interventions raised producer prices by 12% relative to international prices in 2021-23.

Single Commodity Transfers (SCT) represented 84% of the PSE in 2021-23. Market price support is the main component of SCT: poultry, wheat, grapes, sheep meat and eggs have the highest share of SCT representing between 10.8% and 44% of the respective commodity gross farm receipts.

The General Services Support Estimate (GSSE) amounted to 2.5% of the value of the agriculture production in 2021-23, below the OECD average and a decline from 2000-02. These expenditures focused mostly on agricultural innovation and hydrological infrastructure. The Total Support Estimate (TSE) amounted to 0.3% of Gross Domestic Product (GDP) in 2021-23, half the share of the OECD average.

Key recent policy changes

The government has undertaken a broad set of measures to cope with the damages of the 7 October 2023 attacks and limit the effects of the evolving conflicts in the Middle East on agricultural activities and food security. Beyond emergency responses, this encompassed compensation, special incentives for planting, and a series of agricultural labour facilitation measures to address the major shortfall in field workers.

In response to growing discontent among affected stakeholders, related in part to a lack of compensation, the tariff reform for agricultural products was halted in December 2023. In 2024 custom tariffs for the concerned products will stay at their 2023 levels after two reduction phases.

An agreement with the egg growers' organisation was signed and anchored in legislation. The reform of the egg sector includes the elimination of production quotas within ten years (by June 2033) with an option to extend the period for another three years and includes investments in new chicken coops and compensation for those leaving the sector.

Assessment and recommendations

- The Ministry of Agriculture and Rural Development swiftly adopted a series of necessary measures in response to the 7 October 2023 attacks and the evolving conflicts in the Middle East to alleviate their impacts on agricultural production and food supply chains. Any additional government effort deemed necessary to sustain agricultural activities should be tailored, targeted and temporary.

- Government policies foster sustainable productivity growth with a long-term and context specific focus as it seeks to enhance agriculture's adaptation to climate change through innovation, research, and knowledge dissemination. This includes programmes to support technical changes, extension related activities, including the development of a climate-smart agriculture toolkit for producers. Continued efforts in co-ordination with farmers will help facilitate their transformative adaptation to more volatile climatic conditions.
- Reforms of agricultural support covering selected dairy and meat products, fruits, and vegetables that were started in recent years should proceed, as removing these market distorting measures will help lower food prices and associated food insecurity risks. The halting of the tariff reform on fruits and vegetables at the end of 2023 due to opposition shows the need to ensure appropriate information exchanges and temporary transitory measures for affected producers.
- Several commodities are subject to high levels of border protection. High tariffs for goods such as poultry meat or sheep meat could be gradually replaced by decoupled temporary payments on a transitional basis. The tariff system for agriculture could also be simplified, avoiding non-ad valorem tariffs. The adoption of further preferential or free trade agreements that include agriculture would help diversify food import sources and export destinations, therefore limiting risks of the reforms on local food security.
- Expenditure on agricultural knowledge and innovation systems should increase to improve the sector's productivity and environmental performance. Limited production growth from 2012 to 2021 was driven by rising input use rather than innovation, as measured by Total Factor Productivity (TFP), which is not sustainable in the long term. Additional funding could be made available by redirecting market-distorting subsidies – which amounted to about ILS 309 million (USD 90 million) annually during 2021-23 – towards agriculture knowledge and information systems for sustainable productivity growth.
- Water management, which succeeded to largely reduce agriculture's dependence on freshwater resources, will continue to play a central role to adapt to extreme water risks in a changing climate. A new Farmer Agreement should be pursued to ensure that producers contribute appropriately to their improved water security by charging water prices in line with the marginal costs of supplying water. The government could also facilitate water trading among irrigating farmers and other water users and compensate farmers not using their entire water quotas in severely dry years.
- The government should bolster its agri-environmental policy efforts to limit the sector's greenhouse-gas (GHG) emissions and the very high nutrient surpluses associated with agriculture production. Regional agri-environmental programmes should be scaled up and complemented by targeted and result based policies and regulations that incentivise better environmental performance, particularly in the case of nitrogen emissions. Research and development (R&D), and agriculture extension activities should encourage sustainable productivity improvements.

Development of support to agriculture

Figure 15.1. Israel: Development of support to agriculture

Figure 15.1A. Israel: Producer Support Estimate and its composition

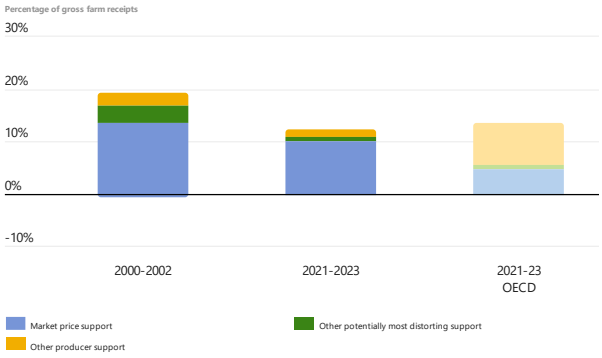


Figure 15.1B. Israel: Ratio of producer to border price

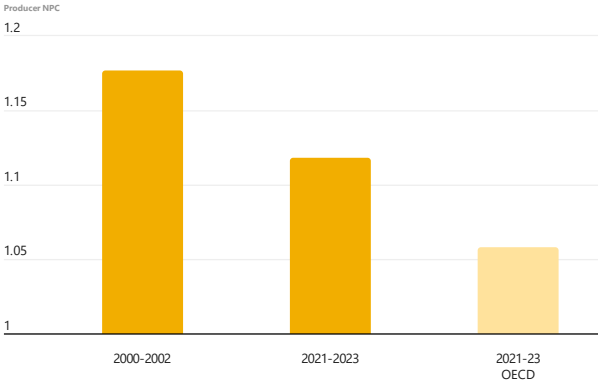


Figure 15.1C. Israel: General Services Support Estimate and its composition

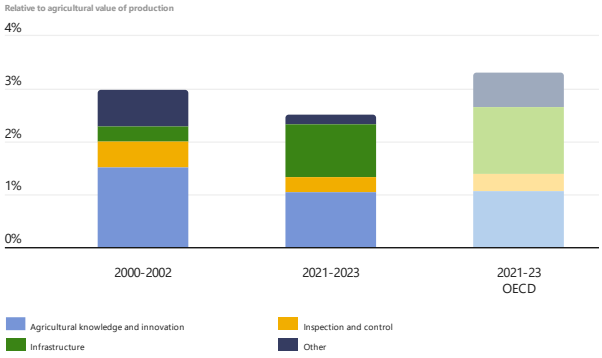
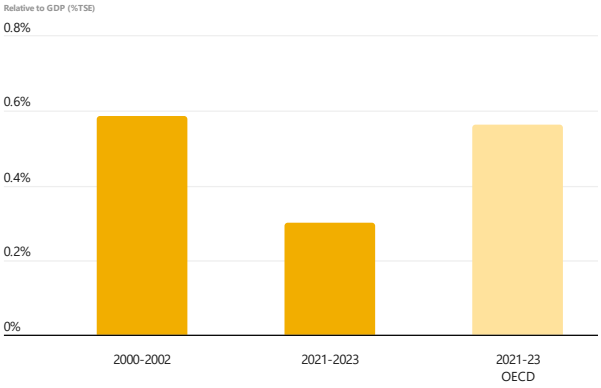
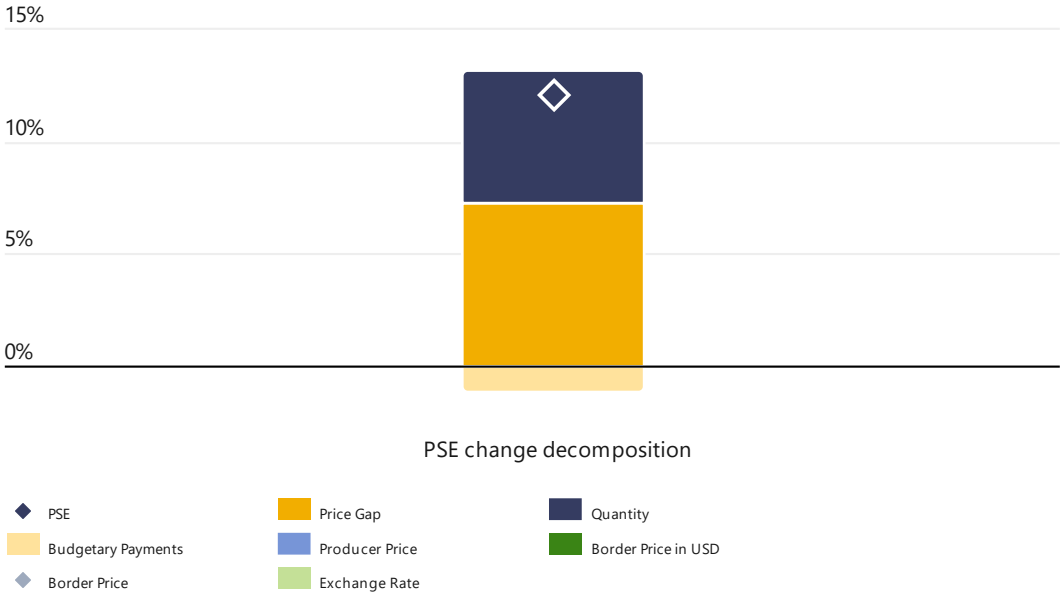


Figure 15.1D. Israel: Total Support Estimate



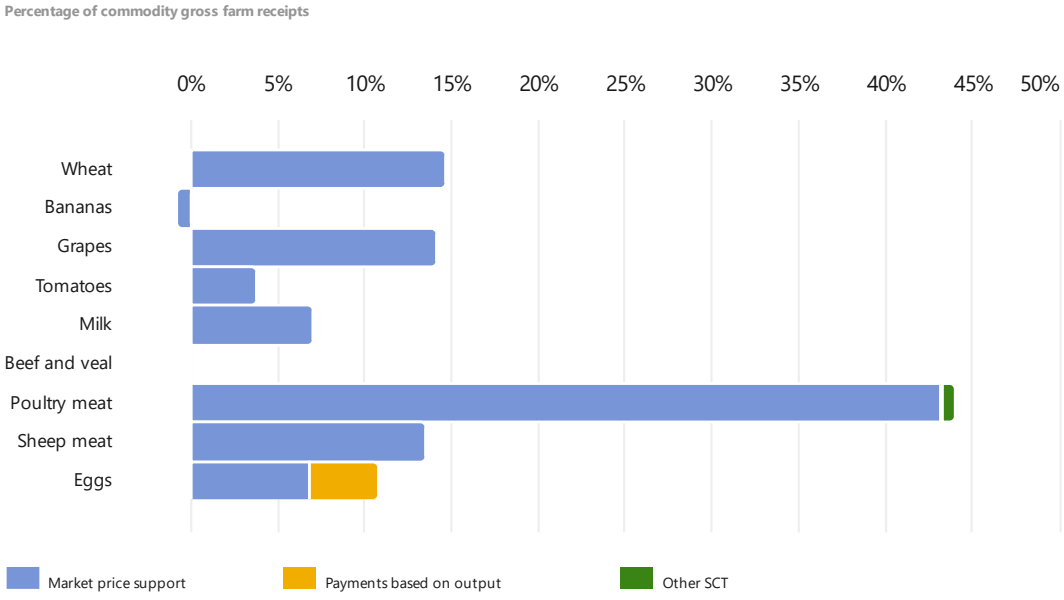
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 15.2. Israel: Drivers of the change in PSE, 2022 to 2023



Note: % change of nominal Producer Support Estimate expressed in national currency. The producer price change and the border price change are not calculated when both negative and positive market price support (MPS) occur at the commodity level for the previous year. Note that negative MPS estimates for livestock products may arise in cases of aligned product prices if there is positive MPS for feed commodities.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Figure 15.3. Israel: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Table 15.1. Israel: Estimates of support to agriculture

Million USD

	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**3 337**	**10 198**	**10 018**	**10 418**	**10 158**
of which: share of MPS commodities (%)	58.28	60.54	59.49	60.18	61.96
Total value of consumption (at farm gate)	**3 635**	**12 174**	**12 297**	**11 778**	**12 448**
Producer Support Estimate (PSE)	**680**	**1 287**	**1 270**	**1 281**	**1 309**
Support based on commodity output	485	1 068	1 040	1 053	1 111
Market price support[1]	475	1 052	1 021	1 035	1 098
Positive market price support	489	1 061	1 023	1 039	1 121
Negative market price support	-14	-9	-1	-3	-23
Payments based on output	10	16	19	17	13
Payments based on input use	160	110	126	106	98
Based on variable input use	106	74	96	70	55
with input constraints	0	0	0	0	0
Based on fixed capital formation	42	16	11	13	24
with input constraints	0	0	0	0	0
Based on on-farm services	12	21	18	23	20
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	25	103	97	116	95
Based on Receipts / Income	21	81	78	93	73
Based on Area planted / Animal numbers	4	21	19	23	22
with input constraints	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	8	6	7	7	5
With variable payment rates	5	6	7	7	5
with commodity exceptions	0	0	0	0	0
With fixed payment rates	2	0	0	0	0
with commodity exceptions	0	0	0	0	0
Payments based on non-commodity criteria	0	0	0	0	0
Based on long-term resource retirement	0	0	0	0	0
Based on a specific non-commodity output	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0
Miscellaneous payments	1	0	0	0	0
Percentage PSE (%)	**19.02**	**12.34**	**12.37**	**12.02**	**12.62**
Producer NPC (coeff.)	**1.18**	**1.12**	**1.12**	**1.11**	**1.12**
Producer NAC (coeff.)	**1.23**	**1.14**	**1.14**	**1.14**	**1.14**
General Services Support Estimate (GSSE)	**100**	**258**	**272**	**267**	**234**
Agricultural knowledge and innovation system	51	109	103	113	110
Inspection and control	16	28	25	33	26
Development and maintenance of infrastructure	10	102	121	102	84
Marketing and promotion	11	1	1	1	1
Cost of public stockholding	12	10	11	11	9
Miscellaneous	0	8	11	8	4
Percentage GSSE (% of TSE)	**12.96**	**16.63**	**17.63**	**17.26**	**15.19**
Consumer Support Estimate (CSE)	**-612**	**-1 555**	**-1 585**	**-1 247**	**-1 832**
Transfers to producers from consumers	-446	-1 028	-1 024	-998	-1 063
Other transfers from consumers	-172	-530	-566	-254	-770
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	5	3	5	5	0
Percentage CSE (%)	**-16.60**	**-12.83**	**-12.89**	**-10.59**	**-14.72**
Consumer NPC (coeff.)	**1.20**	**1.15**	**1.15**	**1.12**	**1.17**
Consumer NAC (coeff.)	**1.20**	**1.15**	**1.15**	**1.12**	**1.17**
Total Support Estimate (TSE)	**781**	**1 545**	**1 541**	**1 549**	**1 543**
Transfers from consumers	617	1 558	1 590	1 252	1 832
Transfers from taxpayers	335	517	517	551	481
Budget revenues	-172	-530	-566	-254	-770
Percentage TSE (% of GDP)	**0.59**	**0.30**	**0.32**	**0.30**	**0.30**
Total Budgetary Support Estimate (TBSE)	**305**	**493**	**520**	**514**	**445**
Percentage TBSE (% of GDP)	**0.23**	**0.10**	**0.11**	**0.10**	**0.09**
GDP deflator (2000-02 = 100)	**100**	**139**	**133**	**139**	**144**
Exchange rate (national currency per USD)	**4.34**	**3.43**	**3.23**	**3.36**	**3.69**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for Israel are wheat, cotton, groundnuts, peanuts, tomatoes, peppers, potatoes, avocados, bananas, oranges, grapefruit, grapes, apples, carrots, easy peelers, dates, milk, beef and veal, sheep meat, poultry and eggs.
The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

The government is involved in **allocating key factors of production**, including land, water and foreign labour. Land and water resources are almost entirely state-owned. Land is allocated to farmers for a nominal fee and is not tradeable. Water is allocated to farmers through a quota system; all water consumption is metered and charged. The government also applies a yearly quota of visas for foreign workers with permits to work in agriculture. Both the overall quota and the allocation of workers to individual farmers are regulated. After adding about 6 000 new visas to be implemented between 2021 and 2023, the total number of foreign worker visas under quotas reached about 31 000 in early 2023. In practice, not all visas are used due to technical issues.

Some commodities are supported by **guaranteed prices or production quotas**. Guaranteed prices for milk are based on the average cost of production and, while updated regularly, they diverge considerably from the level and evolution of prices on international markets. Minimum prices are also guaranteed for wheat, based on the Kansas market price, adjusted for quality and transportation costs. Egg production quotas are applied along with border protection. This forms the basis for calculating maximum retail prices. At the same time, consumer price controls are applied for a range of basic food products, including bread, milk and dairy products, and salt. Egg and poultry producers in "peripheral areas" at the northern border receive payments based on output levels for egg producers and encompassing a mixture of payments decoupled from production and output payments for poultry producers (OECD, 2010[1]).

Farmers who participate in the **investment support** scheme receive capital grants for investments as well as income tax exemptions and accelerated depreciation. Since 2009, an investment support programme has been in place to reduce demand for foreign workers in the agricultural sector, but the budget for this programme has declined in recent years.

The Insurance Fund for Natural Risks in Agriculture (Kanat) provides **subsidised insurance schemes**. The government covers 80% of the cost of the total insurance premium in the case of the multi-risk insurance schemes and 35% in the case of the insurance schemes against natural hazards. Since 2010, revenue insurance is available for rain-fed wheat and barley to protect against a loss of revenue caused by price falls, low yields or both.

In 2015, a **credit fund** was launched to help establish or expand small farms that specialise in crop production. The government guarantees 85% of the value of bank loans to ensure that small farms with insufficient collateral can access loans.

Israel's economy is characterised by a transparent and open trade regime overall. However, border tariff protection on agri-food products remains an important tool to support agricultural producers. Israel's average applied Most Favoured Nation (MFN) tariff on agricultural goods (WTO definition) was 11.7% in 2022, down from 27.7% in 2012 but higher than the 3.4% average for non-agricultural goods (WTO, ITC and UNCTAD, 2023[2]). Israel has WTO tariff rate quotas (TRQs) for wheat, fats and oils, walnuts, prunes, maize, citrus juices, sheep meat and various dairy products (WTO, 2019[3]). Most of Israel's preferential trade agreements also include tariff-quota commitments for agricultural products, often with reduced out-of-quota tariffs. In total, Israel implements over 250 preferential TRQs for agricultural goods.

Israel's **tariff profile for agricultural products** remains uneven. There are high or prohibitive tariffs for goods such as selected dairy products and eggs, and low or zero tariffs for other commodities such as certain coarse grains, sugar, oilseed, coffee and tea. The tariff system on agriculture is complicated, involving specific, compound or mixed duties (WTO, 2019[3]); in 2022, 20% of imported agricultural products were subjected to non-ad valorem rates, compared to around 4% for all goods (WTO, ITC and UNCTAD, 2023[2]). A 2022 reform to cut tariffs for an extensive list of fruits and vegetables was halted at

the end of 2023 (OECD, 2023[4]).[1] At the same time, half of agriculture imports entered Israel duty free, mostly through MFN access and preferential agreements (notably with the European Union and the United States). Except for beef, poultry, and mutton, and products thereof, there is no legal requirement that imported food and agricultural products be kosher.

Budgetary allocations for **research and development** account for over 20% of the annual agricultural budget in recent years. This includes a competitive research fund and an effective public extension service, which have allowed Israel to become a leader in agricultural technology, particularly for farming in arid and desert conditions.

While it has been actively supporting **climate change** adaptation in agriculture (see sections below), Israel has no sector-specific target for climate change mitigation in agriculture, which accounts for a limited share of the country's total GHG emissions (2.8% in 2022). Agriculture does not feature in Israel's Nationally Determined Contribution or national mitigation plan. However, the government has facilitated developing and adopting a number of agriculture practices and technical measures to reduce GHG emissions in addition to generating other environmental and economic benefits (OECD, 2022[5]).

Innovation for sustainable productivity growth

Government policies foster sustainable productivity growth with a long-term and context specific focus as it seeks to enhance agriculture's adaptation to climate change. The total agricultural innovation budget under the authority of the Chief Scientist of the Minister of Agriculture and Rural Development (MARD) reached ILS 45 million (USD 12 million) in 2023, including ILS 20 million (USD 5.4 million) for regional research and development centres and ILS 25 million (USD 6.8 million) to the call for proposals.

The following measures were taken to improve agricultural productivity sustainably in a changing climate:[2]

- **Development of a climate-smart agriculture toolkit for farmers**. One of the major applied research programmes launched by MARD's Chief Scientist in 2023 involved funding research for short term solutions aiming to promote climate smart practices and technologies. Eight research proposals were selected and initiated.
- **Investigating the required changes for food systems**. This research programme aims at building a scientific basis to understand medium and long-term effects to facilitate the adaptation of all food systems components and activities to climate change. This covers production, consumption and their effects, as well as their economic, health and environmental outcomes.
- **Improvement of fertility and productivity of soils and runoff management**. MARD allocated ILS 2 million (USD 0.5 million) to knowledge generation and dissemination as well as methods to improve soil and runoff management in order to promote sustainable agriculture.
- **Improvement of the pest-monitoring systems** in view of future climate change related impacts and international exchange with other countries.
- **Subsidies for Soil Conservation and Sustainable Agriculture**. This voluntary programme with a budget of ILS 16.5 million (USD 4.5 million) in 2023 provides direct payments to farmers to convert from conventional tillage to soil conservation and sustainable agriculture practices that promote soil health, minimum soil disturbance, biological diversity, and improved microclimate with the view to enhance resilience of agricultural production and food security.
- **Acceleration Program in Agriculture**. Under this programme, in place during the last three years, MARD supports technological innovation in agriculture through a budget of ILS 19 million (USD 5 million). ILS 9 million (USD 2.4 million) was allocated to directly assist farmers with maximum funding covering up to 50% of their investment. ILS 20 million (USD 5.4 million), sourced 50/50 from MARD and the Innovation Authority, has been allocated to companies that develop

innovative technologies and conduct experimental trials at farmers' sites, with funding covering up to 60% of the investment.

Recent policy developments

Domestic policy developments in 2023-24

Policy measures adopted to cope with the impacts of the 7 October attacks and limit the effects of the evolving conflicts in the Middle East on the agricultural sector

The 7 October attacks have had a major effect on the agricultural sector. Many of the victims and injured were farmers or from farming communities. Some of the hostages were farmers or agricultural labourers. The attacks also killed livestock and caused widespread destruction of communities, many of them agricultural oriented.

As a result of the evolving conflicts in the Middle East, many cities and communities in southern and northern Israel have been evacuated, preventing many farmers from cultivating their fields and farms. Moreover, there has been a sharp drop, overnight, of over 50% of the Israeli agricultural workforce, with injured workers, the departure of 10 000 Thai workers, the interdiction of Palestinian workers to access Israeli farms and drafted Israeli workers. More specific impacts of the attacks and evolving conflicts in the Middle East are shown in Box 15.1.

Box 15.1. Impacts of the attacks and the evolving conflicts in the Middle East on Israel's agriculture

As shown in Table 15.2, the impact of the 7 October attacks and evolving conflicts in the Middle East has been very significant on all agricultural production chains. This is particularly the case in the southern region of Israel, which was the most hit area from the attacks and the implications of the evolving conflicts in the Middle East. The area, which comprises 46 000 ha of which 38 000 ha is arable land, is Israel's most important region for vegetables, producing 48% of the total Israeli tomato production, 38% of potatoes and 13% of wheat. MARD has estimated that 20 000 ha have been affected with about 15 000 ha being abandoned – resulting in complete yield loss, together with large destruction of infrastructures and equipment. An additional 5 000 ha (25%) are expected to provide reduced yield, with similar but less severe damage. The attacks and the evolving conflicts in the Middle East also impacted directly the Northern border area, with the evacuation of the population including agriculture-related workers and farmers and damages to production systems. This area is rich in fruit growing, cattle herding, poultry including for table egg production and milk. Farmers in other regions of Israel have also been indirectly affected via supply chain disruptions and economic impacts.

Table 15.2. Impacts of the attacks and evolving conflicts in the Middle East on agriculture production, October 2023-February 2024

	Production region	Production damage	Comment
Wheat	Southern region of Israel	50% of the 12 000 ha in the area, corresponding to 13% of total wheat production, out of production	Wheat mostly used for hay and silage (and not imported for SPS reasons) had to be planted elsewhere to feed animals
Vegetables	Southern region of Israel	20% area loss of greenhouse tomatoes, 2/3 or 1 000 ha of potato and carrot area was damaged, there were also impacts on zucchini, peppers, eggplants and celery	The area produces 50-70% of vegetables nationally. Tomatoes had to be imported from other countries

Fruits	North (5km from border)	Most apples, pears, banana and kiwifruits were not collected in this 20 000 ha area	
Table egg and poultry	North (5km from border)	10 large chicken co-operatives were badly damaged, leading to the slaughter of 400 000 laying hens. Relocation of neighboring co-operatives was impossible, which led to the slaughtering of 300 000 chicks	The total producer estimates of farmer damages thus far is ILS 500 million (USD 135 million)
Dairy	Southern region of Israel	15 dairy farms, representing 7% of the Israeli milk quotas, were hit during the 7 October attacks, with many of their staff being murdered, kidnapped, or injured - as well as around 5 000 cows, hurt by direct shooting, missiles, fires, etc.	40% of the remaining cows never recovered
Mushroom	North (5km from border)	One of the largest agricultural plants, which produces approximately 30% of the mushroom production in Israel, was shut down as of October attacks	The plant employed about 250 workers and traded in the stock market

Source: Information provided by MARD.

The government has been operating under a special state of emergency since 7 October 2023 in which MARD's main objective is to ensure the smooth continuity and functionality of the Israeli agricultural sector and to help progress towards a prompt restoration. In this context, the ministry has adopted a broad set of short term and medium-term measures to help farmers, limit impacts on agriculture and food supply chains, and start recovery, as outlined below.

A few hours after the attacks had started, MARD's CEO officially opened an Agriculture Emergency Center at the Ministry's HQ. The Agriculture Emergency Center was available 24/7 for 10 weeks, and farmers directly hit or affected by the attacks contacted the centre by phone or email. During its operation, the Agriculture Emergency Center received over 5 000 inquiries, requesting assistance regarding workforce, security, financial aid, as well as other problems.

Exceptional financial support has been provided to different types of production to cope with shocks or enhance their efforts to continue supplying the domestic markets. More specifically, this support comprised of:

- *Compensations for direct and indirect damages*: in addition to compensations for any direct damage from the attacks and evolving conflicts in the Middle East, paid by the Israeli Government to the entire population (according to a set of national criteria), farmers living 0-7 km from the southern border or 0-9 km from the northern border, are entitled to advance payments for indirect damages. Farmers at further distances will also be compensated, based on defined criteria.
- *Special incentive for wheat sowing*: to maintain national wheat production for fodder despite the loss of 6 000 ha in the southern region of Israel, approximately ILS 9 million (USD 2.4 million), covering payments up to ILS 1 500 (USD 407) per hectare, were allocated as an incentive for growers to convert available areas into wheat (to be harvested between the months of March and May 2024).
- *Special incentive for converting relevant fields for sowing potatoes and carrots*: to ensure the supply flow of potatoes and carrots, with the southern region of Israel no longer able to produce these crops, a special incentive of up to ILS 9 500/ha (USD 2 600/ha) and ILS 7 million (USD 1.9 million) total was allocated to encourage producers with areas suitable for growing these crops, to prepare and adapt them for sowing.
- *Special incentive for early planting of tomatoes*: ILS 2 million (USD 0.5 million) was allocated by MARD for the early planting of fresh tomatoes throughout Israel to cope with the damaged and inactive greenhouse production in the southern region of Israel, which represented over 50% of total production.

- *Special incentives for agricultural facilities*: MARD allocated about ILS 20 million (USD 5.4 million) for the building of greenhouse and agricultural facilities in areas outside of the southern region of Israel, to grow a variety of crops, as well as to enable the reconstruction of destroyed greenhouses in the conflict areas. A complementary envelope of ILS 15 million (USD 4 million) was delivered for upgrading or constructing innovative technologies for vegetable greenhouses.
- *Support for agricultural insurance:* an additional subsidy was provided for insurance in affected agricultural areas in the southern region to cover the damages caused by the 7 October attacks and the evolving conflicts in the Middle East and help farmers continue to operate.

Several measures were taken by MARD to alleviate the impact of the large and sudden drop in the agricultural labour force in agriculture aiming to mobilise different groups of potential workers.

- In addition to the new quota of 9 000 *foreign workers* in agriculture approved just before the attacks, an additional quota of 10 000 was approved in January 2024, bringing the total quota of foreign agricultural workers to more than 50 000. Israel signed a bilateral agreement with Sri Lanka to allow foreign workers in agriculture to work in Israel and has started to negotiate similar agreements with other countries. The government ensured the rapid approval for 5 000 foreign workers via private contractors. Working permits that were about to expire were also extended, enabling skilled workers to prolong their stay until March 2024.
- Following a growing demand of volunteers from civil society to help on farms, MARD selected 24 NGOs that met specified criteria under a tender, to link and co-ordinate farmers and volunteers. ILS 50 million (USD 13.6 million) was allocated to fund these NGOs for transportation, food, and other logistical aspects. MARD also created a digital platform to link anyone wanting to volunteer with farmers in need and subsequently actively recruited volunteers in targeted groups such as the National Civil Service.
- MARD launched a campaign to try and recruit local workers, whose companies had been out of operation in the weeks following the attacks, to provide agricultural work. A financial incentive of ILS 3 000-ILS 20 000 (USD 800-USD 5 400) (depending on the area and duration) was offered on top of their regular salary. The programme was not continued as it did not register significant numbers of employees.

For the safety of farmers and workers, MARD allocated ILS 30 million (USD 8 million) to reinforce the pre-existing security measures particularly in the southern and northern border regions.

The government also took action to limit agricultural marketing disruptions. The evolving conflicts in the Middle East created an unexpected logistical problem for Israeli farmers with shortages of trucks and drivers, many of whom had been drafted to serve in the military. MARD launched a co-operation with the digital platform “Trucknet” (a private start-up company), whose application – given to the farmers free of charge – helps to connect farmers with truck drivers who normally do not work with farmers, and thus improve the transportation logistics of fresh agricultural produce from the field to the points of sale. In parallel, a new law obliging retailers to mark the origin of fresh agriculture products sold in bulk that had been approved before October 2023 entered into force in December 2023. In addition, retailers voluntarily started to promote domestic products.

A series of measures was taken to cope with the impacts of the attacks and the evolving conflicts in the Middle East on farm animals and domestic pets. Many farm animals and pets were severely injured or abandoned by their owners (in many cases due to their death, abduction, or injury) in October 2023. MARD served as a focal point to resolve related issues. This included rescuing animals from the evacuated areas in co-operation with other organisations, and the redirection of animals saved to further care in safe locations.

Shortly after the 7 October attacks, the government established the *Tekuma* rehabilitation administration. This service is dedicated to the rehabilitation of affected areas, in co-operation with all government

ministries and relevant bodies. MARD is taking an important part in the administration's steering committee, whose rehabilitation plan is being formulated for the immediate term of up to two years and the long term of up to five years.

Other domestic policy developments

Fruits and vegetables sector

The **tariff reform for fruits and vegetables** was halted as of January 2024. The reform led to a fierce argument between different stakeholders, especially as the direct support to farmers component, originally planned, was not introduced. In December 2023, the Minister of Finance and MARD agreed to halt the next tariff reduction phases planned for 2024-27, and to leave the customs tariffs at their 2023 levels after two reduction phases.

To limit the effect on the production of **garlic** after the elimination of tariffs in March 2022, MARD allocated up to ILS 3 million (USD 0.8 million) to growers who have sown garlic in the fall of 2023 and have made a commitment to collect it for use as seed material for the 2024 season.

In the last quarter of 2023, MARD and the Ministry of Finance agreed to reduce the **customs duties on olive oil** to 10% of the tariff in January 2022. In exchange, it was agreed that a yearly support of ILS 30 million (USD 8 million) would be provided for growers of olives for olive oil, starting from early 2024. The amount of support will vary for irrigated or non-irrigated farmers.

Animal product sector

An agreement with the **egg** growers' organisation was signed and anchored in legislation. The reform of the egg sector includes the abolishment of production quotas within ten years (by June 2033) with an option to extend the period for another three years. As part of the agreement, it was agreed that the government provide grants of ILS 380 million (USD 103 million) for the construction of chicken coops and ILS 100 million (USD 27 million) to redeem quotas from growers who choose to leave the industry.

The procedure for supporting the establishment and upgrading of **cage-free co-operatives in the egg sector** was published at the end of July 2023. Growers could apply for investment support until the end of October 2023. The October attacks in the north and the evacuation of the population living close to the northern border is obstructing the possibility to invest and construct new chicken coops and delaying the transition to upgraded chicken coops.

From May 2023, the update procedure of the controlled consumer prices under the Dairy Agreement is done automatically without the need of ministerial approval. Prices are updated based on a formula considering the development of input prices. The target price mechanism is planned to remain unchanged until 2025.

Planning, insurance, guaranteed fund and regulation requirements

A budget of ILS 25 million (USD 6.8 million) was set aside at the Ministry of Finance to prepare for the next *Shmita* year in 2028-29.[3] MARD intends to assess the implications from the 2022 *Shmita* year and develop a plan to be produced in 2027 in preparation for 2028.

In 2024, a new **insurance policy** will become available under the agricultural insurance system (*Kanat*) to compensate for losses resulting from a bird flu outbreak. The government will cover 80% of the premium cost and offer reinsurance for the policy.

An additional ILS 10 million (USD 2.7 million) was allocated to the **State Guaranteed Fund for Agriculture**, enlarging the fund to a total ILS 120 million (USD 32.4 million) in 2023. The scope of the fund, which up until 2022 served only growers in the horticulture sector, was extended to include farmers in the

animal husbandry sector. The farmers are entitled to request a loan of up to ILS 1 million (USD 0.3 million) with a state guarantee of up to 95% and a repayment period of up to 10 years. The loan can be purposed for investments, restocking, renewal of infrastructure, etc.

Regulatory flexibilities were introduced to enhance the efficiency of agriculture and food supply chains. This includes increased flexibility in the hours of poultry transportation to slaughterhouse, flexibility in sampling supervised raw meat facilities, adjustments to facilitate the export of fresh agricultural produce and the import of pets, or easing milk production requirements and automatic extension of animal food import permits. A digital platform was established to list and explain all the regulatory adjustments across ministries.

Water management

Water allocations remained unchanged in 2023. If the precipitation exceeds the multi-year average, the amount of water to farmers will be increased proportionally.[4] The connection of the Sea of Galilee (Kinneret Lake) to the upgraded national water carrier system has been completed. Regarding the Upper Galilee, it was decided to develop a local project, instead of connecting it to the national system. There is also progress in the Sorek Desalination Plant, and a new Desalination Plant in the Galilee is in its early phase.

Policies to facilitate climate change mitigation and adaptation in agriculture

A previously existing programme to improve the treatment of organic agricultural waste was relaunched in 2023. ILS 10.4 million (USD 2.8 million) has been allocated for grants to promote green waste, reduce tree uprooting, animal mortality management and other actions.

MARD, in collaboration with the Ministry of Energy, is conducting a multi-faceted research pilot project to examine the potential mutual benefits of dual agriculture-photovoltaic practices (also known as Agri-PV). The purpose is to implement the results in planning and developing AGRI PV commercial projects. The allocated research budget for the first year is ILS 14 million (USD 3.8 million) and the project is expected to span between three and five years. In addition, ILS 2.3 million (USD 0.6 million) was provided for the BIG Data Company to collect and analyse the data from the entire project. The aim of the pilot is to provide information of the best combination of photovoltaic technologies without affecting crops yields.

Government decision 207 of 2023 ordered the MARD to draw a plan considering flood risk management programmes for each watershed in Israel. These future programmes will result in operative strategies and action items to be delivered by approximately the end of 2025. The action items include solutions suggested for areas challenged by conflicts of urban development in flood plains. A new modelling study completed in 2023 found that 9% of agricultural land in Israel is at severe to high risk of soil erosion by water. The expected increase in sediment yield will affect the required budget for maintenance of flood regulation and retention reservoirs. Concurrently, new methods are being developed to help decision-makers to identify and prioritise agricultural source areas where intervention is needed for proper ecosystem stream management to improve soil conservation, protect water quality, and reduce flooding, with the overall goal of increasing resilience to climate change.

Trade policy developments in 2023-24

Trade policy measures adopted to cope with the impacts of the attacks and limit the effects of the evolving conflicts in the Middle East on the agricultural sector

A WTO duty free quota of 50 million eggs was introduced when the northern border area was attacked, acknowledging that about 70% of local egg production is located in this area. This quota, however, has not been used due to the high prices in source countries and local supply eventually increased.

After a first three-month suspension of raw milk customs between July and early October 2023, these customs were suspended again in response to the significant damages to the dairy production system in the southern region of Israel. This temporary measure which only resulted in 441 000 litres of additional milk import (after 667 000 litres during the first period), expired on 18 January 2024. The affected region represents 7% of total production.

The tariff reform for fruits and vegetables that was introduced in 2022 was halted in 2023. The reforms raised concerns that growing imports, particularly of tomatoes, would result in long term production capacity losses.

Other trade policy developments

In October 2023, the Plant Protection and Inspection Services (PPIS) notified the official contact points of all IPPC member states that Israel is prepared to accept e-Phytos from all contracting parties for the import of plants and plant products. The e-Phyto certificate will continue to gradually replace the Phytosanitary Certificate that was dispatched manually and printed on dedicated paper. The certificate is issued under the international ISPM12 standard.

The comprehensive economic partnership agreement (CEPA) with the United Arab Emirates entered into force on 1 April 2023. New free trade agreements (FTAs) negotiated with Guatemala and Viet Nam are in ratification process.

Negotiations on new FTAs with the People's Republic of China, India, and a new comprehensive economic partnership agreement (CEPA) with Bahrain are at varying stages of progress. Revised FTAs with MERCOSUR and the United Kingdom are under negotiation.

Policy context

Key economic and agricultural statistics

Israel's economy is relatively small but has been growing rapidly and its GDP per capita more than doubled over the last two decades, even as the population increased by 66%. The share of agriculture in total employment has been halved to under 1%, while the share of agriculture in GDP declined to 1.4% of during the same period.

Israel is unique among developed countries in that land and water resources are nearly all state-owned. Jewish rural communities, principally the kibbutz and moshav, dominate agricultural production, accounting for about 80% of agricultural output. Partly due to this structure, total agricultural area has moderately increased over the past 20 years. While the agricultural sector is relatively diversified, most of the value of production and exports is generated by high value fruits and vegetables.

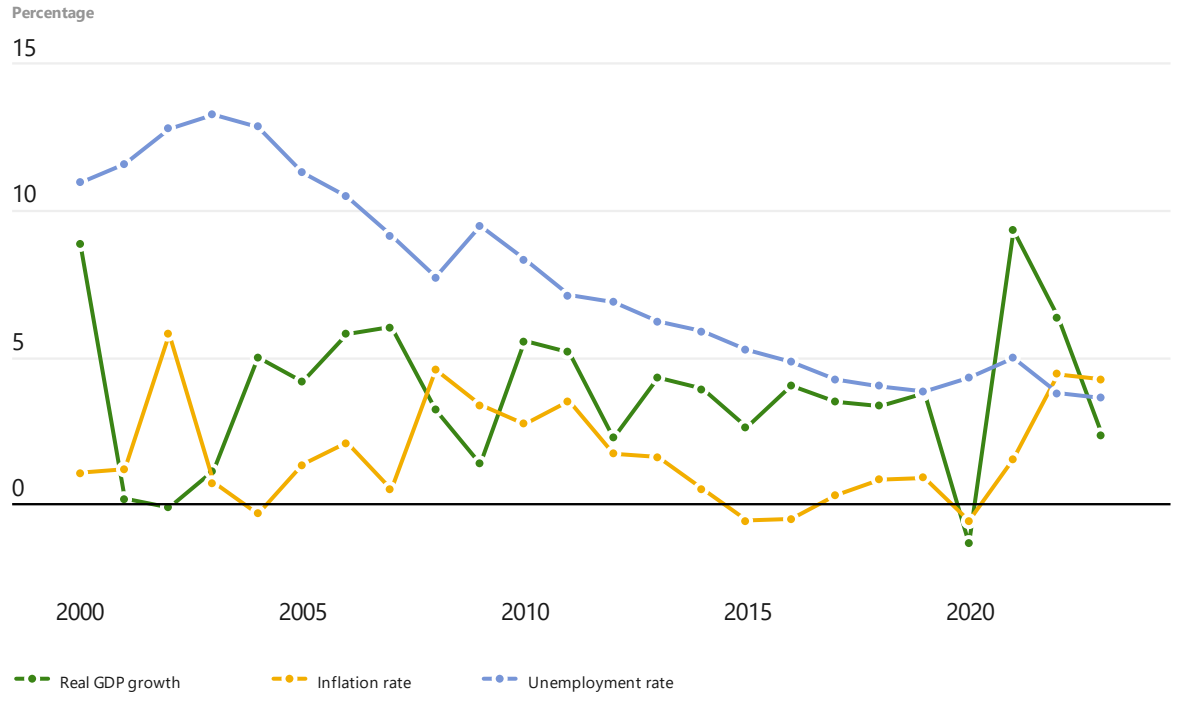
Table 15.3. Israel: Contextual indicators

	Israel		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	162	476	0.40%	0.35%
Population (million)	6	10	0.15%	0.18%
Land area (thousand km^2)	22	22	0.00%	0.00%
Agricultural area (AA) (thousand ha)	566	644	0.00%	0.00%
			All countries[1]	
Population density (inhabitants/km^2)	282	415	52	64
GDP per capita (USD in PPPs)	25 664	49 789	9 363	25 965
Trade as % of GDP	24.7	17.2	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	1.7	1.4	2.9	3.8
Agriculture share in employment (%)	2.2	0.8	-	-
Agro-food exports (% of total exports)	3.1	3.4	6.4	8.0
Agro-food imports (% of total imports)	5.3	8.7	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	55	55	-	-
Livestock in total agricultural production (%)	45	45	-	-
Share of arable land in AA (%)	60	59	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

Israel has maintained robust GDP growth exceeding 3% per year on average and close to full employment from 2017 to 2019. Its economy contracted in 2020 due to the COVID-19 pandemic and associated lockdown measures, but recovered quickly in 2021-22, while unemployment remained relatively low. At the same time inflation went up in 2021 to reach 4 % in 2022 and 2023 after multiple years of fluctuations around zero (Figure 15.4).

Figure 15.4. Israel: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

Israel is a consistent net-importer of agro-food products, and the agriculture trade balance continued to decline in 2022, with the value of imports of mainly processed food products exceeding the value of exports of mainly primary products for consumption (Figure 15.5). This gradual shift may be partly influenced by the relative appreciation of the Israeli currency compared to the US dollar and the Euro between 2015-2021, and most recently the tariff reductions to specific commodities.

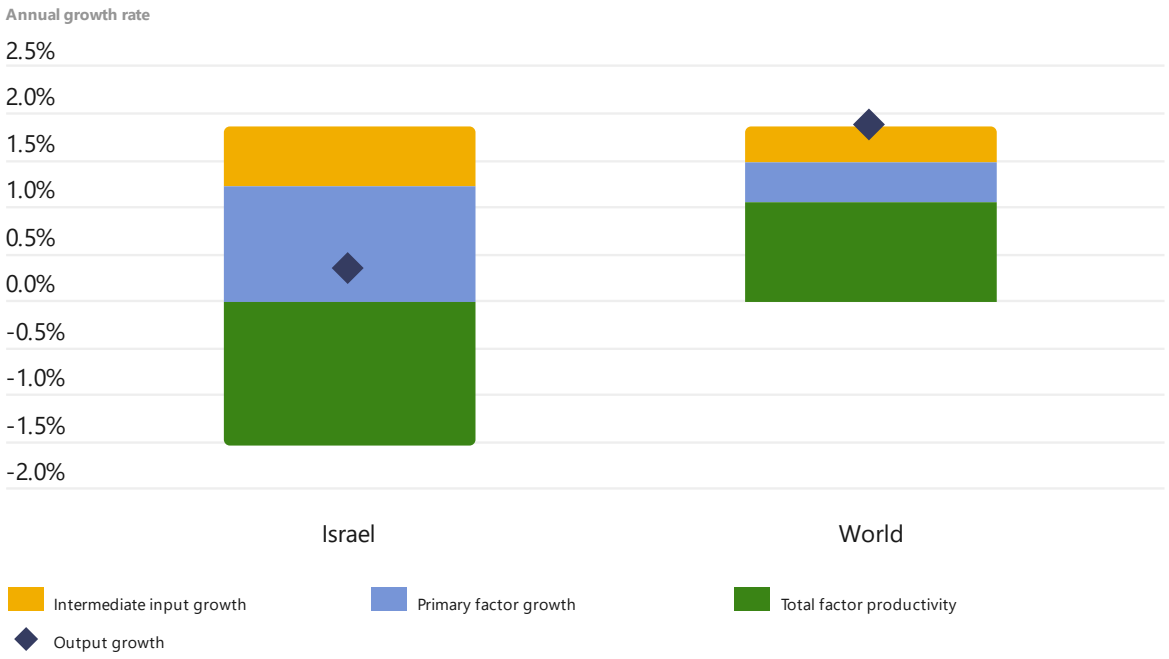
Figure 15.5. Israel: Agro-food trade

Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Despite investments in agriculture innovation, the overall productivity of Israeli agriculture, measured by total factor productivity (TFP), has been declining between 2012-21. The modest agriculture output growth in this period can be attributed to the increased use in inputs, particularly the use of farm machinery, and intermediate inputs such as animal feed (Figure 15.6).

Beyond a substantial reduction in freshwater use, the environmental performance of Israel's agriculture has been mixed since 2000. Despite a 76% increase in irrigation area, agriculture's share of freshwater abstraction has declined by more than 30 percentage-points, largely due to changes in water management, encompassing the extensive use of recycled water, efficient irrigation technologies and water demand policies. Nitrogen surplus has grown over time, particularly due to the increase in the use of fertilisers, to reach a level over seven times the OECD average level, while Phosphorus balance declined somewhat but remains excessively high; close to thirty times the OECD average (Table 15.4).

Figure 15.6. Israel: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Table 15.4. Israel: Productivity and environmental indicators

	Israel		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	2.3%	-1.5%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	184.6	197.7	32.1	28.2
Phosphorus balance, kg/ha	64.1	62.6	3.3	2.3
Agriculture share of total energy use (%)	1.2	2.1	1.7	2.0
Agriculture share of GHG emissions (%)	3.3	3.0	8.7	10.1
Share of irrigated land in AA (%)	43.4	67.2	-	-
Share of agriculture in water abstractions (%)[1]	64.0	33.4	47.0	49.5
Water stress indicator	61.0	53.1	8.7	..

Note: * or closest available year.
1. Share of agriculture fresh water abstraction in total fresh water abstraction.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

Agriculture policy in Israel during its early years was driven by three main factors. First, the state needed to settle undeveloped areas of the country for geopolitical security. Second it wanted to avoid food shortages, due in part to an inability to import agricultural products from surrounding countries. Third, it needed to provide employment and livelihoods for new immigrants to Israel (OECD, 2010[1]). Its main objectives are to improve food supply and self-sufficiency in agricultural products that can be produced locally, expand existing export markets, and maintain the rural population, particularly in the peripheral areas.

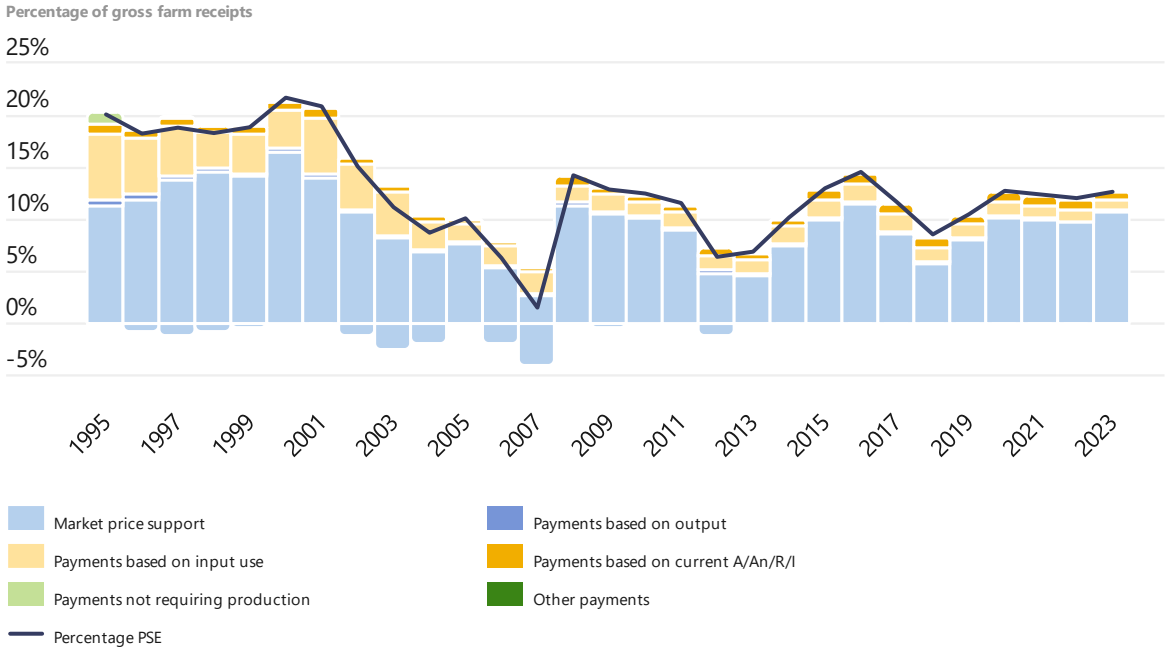
Over the past 30 years, Israel has reformed the way it provides subsidies, reduced central planning of agricultural industries, and changed the way production quotas, price controls and import protection are implemented. Major reforms in the agricultural sector began in the early 1990s with trade and market reforms to limit the role of the state in agricultural markets. Reforms continued into the 2000s with a focus on competitiveness and gradual efforts to limit interventions in the dairy and beef sectors. Over the course of 2021 and 2022 the government renewed its impetus to reform in order to lower food prices. In particular, in March 2022, a schedule of price reduction was approved for selected fruits and vegetables, in parallel to agreements on egg, dairy and beef (Table 15.5).

Table 15.5. Israel: Agricultural policy trends

Period	Broader framework	Changes in agricultural policies
1985-1990	Trade liberalisation General economic reforms	Economic stabilisation programme Privatisation of state-owned enterprises Dismantling of state grain trading (imports) agency Dismantling of regional co-operatives Debt restructuring and write offs Fruit and vegetable production quotas abolished
1991-1994	Market and trade reforms (export liberalisation)	Gradual abolition of state monopoly of fruits and vegetables exports State meat trading replaced with the Kosher Meat Import Law Consumer price controls removed (except milk, eggs and flour) Reform of agricultural production and marketing boards (diminishing functions) Changes in water pricing Uruguay Round Agricultural Agreement
1995-1999	Trade reforms (import liberalisation)	Non-tariff barriers removed and ceiling binding Broiler sector reformed Reduction of 40% of freshwater use for agriculture FTAs signed
2000- 2010	Focus on competitiveness	Foreign exchange controls abolished Dairy sector reform Abolished minimum prices and surplus removal for fruit and vegetables Abolition of broiler production quotas Farmers' agreement on water charges and water supplies FTAs signed
2010-2023	Continued efforts to reform key sectors	Reform agreement in the beef sector opening import quotas Dairy sector planning law 2011, second dairy agreement in 2022 Egg sector agreement and reform Measures to improve the agriculture marketing systems Water price reforms for equity reasons Tariff reductions for specific fruits and vegetables from 2022-2023 (halted in 2024) FTAs signed, use of electronic instruments to facilitate import inspections

Over the last 20 years, the trend in producer support in Israel, expressed as percentage of gross farm receipts, unrolled in four main phases: (1) a steady reduction until the food crisis of 2007-08; (2) a rapid rebound in support after this crisis, leading to a plateau in 2008-11; then (3) a fall and new increase in support from 2012-16; and (4) fluctuating levels since 2016. Fluctuations in agricultural support are largely attributable to market price support (and to input support early-on corresponding to changes in water price support), as budgetary support to producers remained relatively stable. The market price support results mainly from guaranteed minimum prices and import tariffs, while budgetary support is mostly provided based on current production and input use. (Figure 15.7).

Figure 15.7. Israel: Development of the PSE and its composition, 1995 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

References

OECD (2023), “Israel”, in *Agricultural Policy Monitoring and Evaluation 2023: Adapting Agriculture to Climate Change*, OECD Publishing, Paris, https://doi.org/10.1787/69aaf264-en. [4]

OECD (2022), “Israel”, in *Agricultural Policy Monitoring and Evaluation 2022: Reforming Agricultural Policies for Climate Change Mitigation*, OECD Publishing, Paris, https://doi.org/10.1787/65b56695-en. [5]

OECD (2010), *OECD Review of Agricultural Policies: Israel 2010*, OECD Review of Agricultural Policies, OECD Publishing, Paris, https://doi.org/10.1787/9789264079397-en. [1]

WTO (2019), *Trade Policy Review: Israel 2018*, Trade Policy Reviews, World Trade Organization, Geneva, https://doi.org/10.30875/5b4abf07-en. [3]

WTO, ITC and UNCTAD (2023), *World Tariff Profiles 2023, WTO, ITC, UNCTAD, Genega*, https://www.wto.org/english/res_e/booksp_e/world_tariff_profiles23_e.pdf. [2]

Notes

[1] Custom duties were abolished with immediate effect for certain vegetables and fruits (e.g. garlic, pineapple, avocado, mango) and agricultural inputs (plant propagation material, fertilisers and pesticides). Custom duties for selected additional fruit and vegetables would be decreasing gradually by 10% a year for 5 years, while custom duties for eight major vegetables and fruits would be lowered slower over time (OECD, 2023[4]).

[2] Other measures on climate change mitigation and adaptation are reported in other parts of the chapter.

[3] For explanations on grants to support the Jewish *Schmita* (Sabbatical) Year, see OECD (2023[4]).

[4] Precipitation in 2023 was 90% of the multi-year average.

16. Japan

Main findings

Support to agriculture

Japan has reduced its support to agriculture notably over the past decades. Support to producers (PSE) as a share of gross farm receipts declined to 33% in 2021-23, down from 54% 20 years earlier but still twice the OECD average. Total support (TSE) for the agricultural sector was estimated to be 0.8% of Japan's Gross Domestic Product (GDP) in 2021-23.

Market Price Support (MPS) remains the main element of Japan's agricultural support due to border measures, particularly for rice, pork, and milk. Slightly lower domestic prices and rising border prices, together with a depreciation of the Japanese yen (JPY) have contributed to reduce the share of MPS in producer support since 2022, particularly for rice and pork. Still, average producer prices overall are 38% higher than world reference prices in 2021-23. Budgetary support to producers consists mostly of payments based on area, income, or output. The share of potentially most-distorting support declined since 2010 but still accounted for 79% of PSE in 2021-23.

Expenditures for general services (General Service Support Estimate, GSSE) accounted for 26% of Japan's total support to the sector in 2021-23. GSSE corresponds to almost 13% of the value of agricultural production, higher than the OECD average but lower than in the 2000s. About 80% of the GSSE goes to developing and maintaining agricultural infrastructure (particularly irrigation), while 11% goes to financing the agricultural knowledge and innovation system.

Key recent policy changes

The Biodiversity Strategy of the Ministry of Agriculture, Forestry and Fisheries (MAFF) was revised and released in March 2023 in response to the Kunming-Montreal Global Biodiversity Framework (KM-GBF). The new strategy defines the 2030 vision and approaches to tackling biodiversity-related issues in the agriculture, forestry and fisheries sectors. The strategy calls for more efforts in reducing the impact of agriculture, forestry and fisheries on the global environment and facilitating collaboration for biodiversity conservation within the whole food supply chain. The strategy is also reflected in the National Biodiversity Strategy and Action Plan of Japan 2023-2030 (NBSAP), which was approved by the cabinet in March 2023.

A revised "Food Security Reinforcement Policy Framework" was adopted in December 2023. This policy framework, originally released in December 2022, presents a roadmap to ensure a stable food supply, and sets several targets to facilitate structural transformation by increasing production and use of domestic resources. The revision expanded targets such as facilitating adoption of smart technologies and securing stable imports.

To reduce excessive dependence on imported raw materials for chemical fertiliser, MAFF allocated supplementary budgets of JPY 6.8 billion (USD 48.4 million) for measures promoting the use of domestic organic fertilisers. The main measures include payments to livestock farmers and compost manufacturers

to support the manufacture of fertiliser pellets made from composted livestock manure. MAFF also provided support to cover the costs of pilot projects for the use of domestic materials such as sewage sludge in fertiliser and to strengthen networks of raw material providers, fertiliser producers, and fertiliser users to expand practical use of domestic fertilisers.

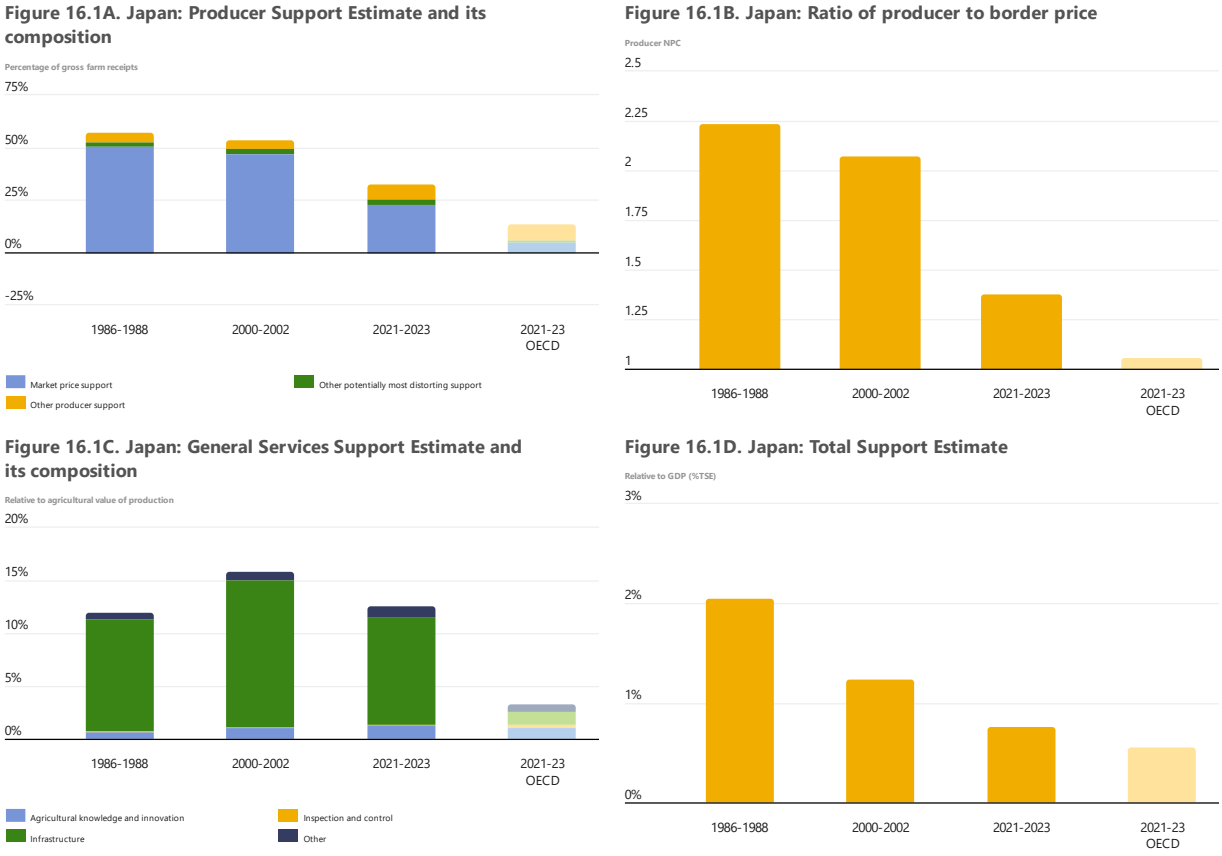
Japan experienced a range of natural events that caused extensive damage to agriculture, forestry and fisheries operations. This includes a series of torrential rains and flooding in June and July 2023, typhoon Lan in August 2023, and a magnitude 7.6 earthquake in the Noto Peninsula on 1 January 2024. Measures for restoration efforts in the sector included covering expenses required for removal sediments and disaster waste, providing financial support for the reconstruction and repair of damaged agriculture buildings and machinery, and grants for “direct payment to farmers in hilly and mountainous areas” and “multifunctional payment” for restoration of damage to farmland or agricultural waterways and joint use facilities in rural communities.

Assessment and recommendations

- Japan’s food system policy, the MIDORI Strategy, is a promising sector-wide initiative to accelerate sustainable productivity growth through innovation. In particular, the MIDORI Act supports producers and business operators working on reducing their environmental burden by incentivising the adoption of environmentally friendly practices and technologies. This initiative should be complemented by further efforts in promoting R&D, networking, capacity-building, strategic advice, and multi-actor partnerships.
- Japan has made progress in reforming agricultural support policies since the early 2000s but the relative support to producers remains twice the OECD average and continues to be dominated by MPS, which distorts markets and contributes to high food prices. Reducing MPS and other commodity-specific support can encourage agricultural and rural innovation, speed up needed structural change, and improve environmental sustainability.
- Japan sees Smart Agriculture and digitalisation as a way to boost sustainable productivity growth. Aligning these efforts with support for skills development and knowledge transfer will further help farmers to reap the benefits of technological innovations. Agricultural education, training and extension systems should keep track of technology and industry developments to be sure to provide farmers with the right skills and knowledge.
- Comprehensive financial safety nets for farmers, such as a revenue insurance programme, have played an important role in mitigating the risk and damage from natural disasters. Given that Japan faces various challenges such as ageing and depopulation in rural areas and expects more frequent and intense climate-related disasters, efforts to prepare wide-ranging programmes such as improved warning systems and better flood control to build the sector’s resilience should be strengthened.

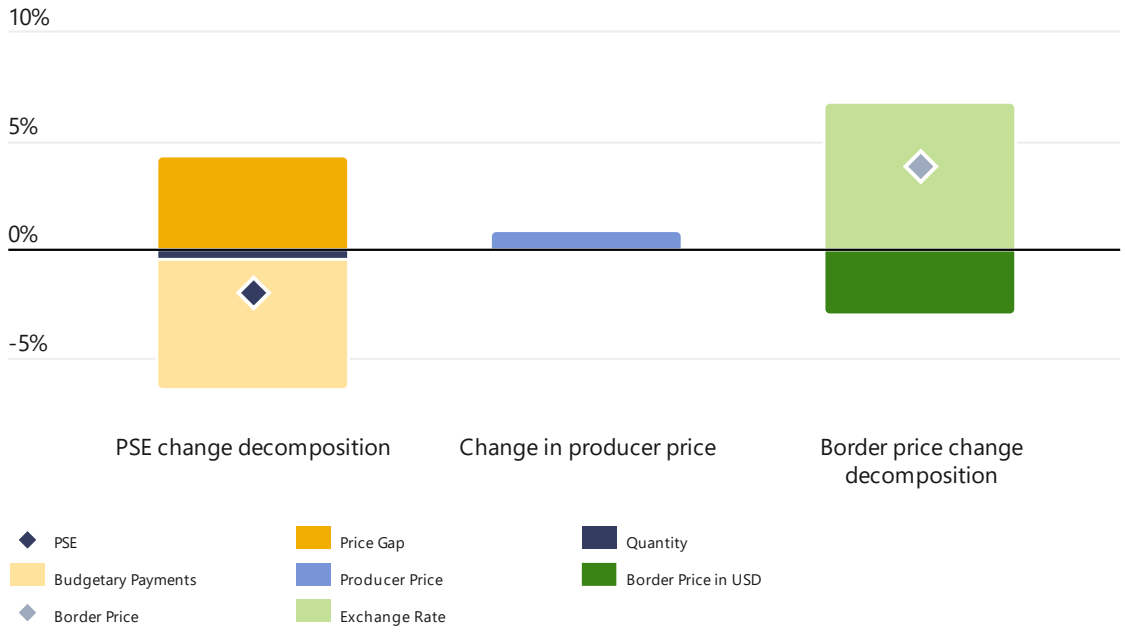
Development of support to agriculture

Figure 16.1. Japan: Development of support to agriculture



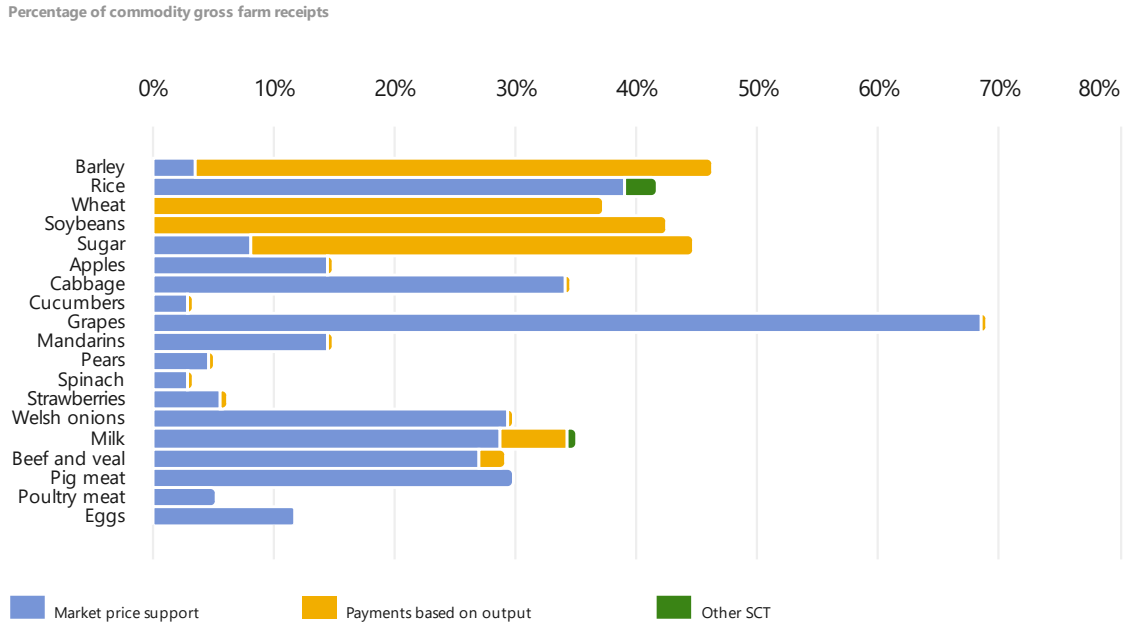
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 16.2. Japan: Drivers of the change in PSE, 2022 to 2023



Note: % change of nominal Producer Support Estimate expressed in national currency.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 16.3. Japan: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Table 16.1. Japan: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**72 767**	**76 354**	**70 845**	**80 521**	**68 490**	**63 525**
of which: share of MPS commodities (%)	68.36	63.81	67.37	67.31	67.30	67.49
Total value of consumption (at farm gate)	**94 458**	**107 904**	**101 824**	**117 687**	**97 281**	**90 504**
Producer Support Estimate (PSE)	**44 611**	**43 964**	**25 818**	**32 717**	**23 346**	**21 391**
Support based on commodity output	40 996	40 837	19 839	26 871	16 479	16 166
Market price support[1]	39 458	38 480	18 269	25 083	14 911	14 813
Positive market price support	39 458	38 480	18 269	25 083	14 911	14 813
Negative market price support	0	0	0	0	0	0
Payments based on output	1 539	2 358	1 570	1 788	1 568	1 353
Payments based on input use	1 434	976	1 258	738	2 313	724
Based on variable input use	403	85	507	10	1 472	39
with input constraints	403	85	0	0	0	0
Based on fixed capital formation	890	724	476	391	634	404
with input constraints	403	85	0	0	0	0
Based on on-farm services	142	167	275	336	208	280
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	621	613	1 872	1 990	1 918	1 708
Based on Receipts / Income	0	0	283	178	348	323
Based on Area planted / Animal numbers	621	613	1 589	1 813	1 570	1 386
With input constraints	0	0	1 226	1 356	1 199	1 123
Payments based on non-current A/An/R/I, production required	0	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	1 560	1 538	2 849	3 118	2 636	2 793
With variable payment rates	0	0	0	0	0	0
with commodity exceptions	0	0	0	0	0	0
With fixed payment rates	1 560	1 538	2 849	3 118	2 636	2 793
with commodity exceptions	1 560	1 257	2 643	2 883	2 437	2 607
Payments based on non-commodity criteria	0	0	0	0	1	0
Based on long-term resource retirement	0	0	0	0	1	0
Based on a specific non-commodity output	0	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0	0
Miscellaneous payments	0	0	0	0	0	0
Percentage PSE (%)	**57.42**	**53.62**	**32.61**	**37.11**	**30.35**	**30.51**
Producer NPC (coeff.)	**2.24**	**2.07**	**1.38**	**1.51**	**1.32**	**1.34**
Producer NAC (coeff.)	**2.35**	**2.16**	**1.48**	**1.59**	**1.44**	**1.44**
General Services Support Estimate (GSSE)	**8 769**	**12 141**	**8 943**	**10 374**	**9 216**	**7 238**
Agricultural knowledge and innovation system	514	861	935	1 044	896	866
Inspection and control	55	66	104	111	82	118
Development and maintenance of infrastructure	7 747	10 620	7 176	8 384	7 155	5 989
Marketing and promotion	152	248	622	719	985	161
Cost of public stockholding	301	345	105	115	98	103
Miscellaneous	0	0	0	0	0	0
Percentage GSSE (% of TSE)	**16.29**	**21.66**	**25.83**	**24.07**	**28.30**	**25.28**
Consumer Support Estimate (CSE)	**-53 525**	**-49 487**	**-26 518**	**-35 762**	**-21 708**	**-22 083**
Transfers to producers from consumers	-38 964	-38 469	-18 712	-25 875	-15 217	-15 042
Other transfers from consumers	-14 520	-11 104	-8 244	-10 578	-6 847	-7 308
Transfers to consumers from taxpayers	-108	35	5	5	4	4
Excess feed cost	68	51	434	686	353	262
Percentage CSE (%)	**-56.73**	**-45.82**	**-25.72**	**-30.39**	**-22.32**	**-24.40**
Consumer NPC (coeff.)	**2.31**	**1.85**	**1.35**	**1.45**	**1.29**	**1.33**
Consumer NAC (coeff.)	**2.31**	**1.85**	**1.35**	**1.44**	**1.29**	**1.32**
Total Support Estimate (TSE)	**53 272**	**56 139**	**34 765**	**43 096**	**32 567**	**28 633**
Transfers from consumers	53 485	49 573	26 956	36 453	22 064	22 350
Transfers from taxpayers	14 308	17 670	16 054	17 221	17 349	13 590
Budget revenues	-14 520	-11 104	-8 244	-10 578	-6 847	-7 308
Percentage TSE (% of GDP)	**2.06**	**1.24**	**0.77**	**0.86**	**0.77**	**0.69**
Total Budgetary Support Estimate (TBSE)	**13 814**	**17 659**	**16 496**	**18 014**	**17 656**	**13 820**
Percentage TBSE (% of GDP)	**0.53**	**0.39**	**0.37**	**0.36**	**0.42**	**0.33**
GDP deflator (1986-88 = 100)	**100**	**105**	**99**	**98**	**98**	**101**
Exchange rate (national currency per USD)	**147.09**	**118.19**	**127.23**	**109.77**	**131.43**	**140.51**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for Japan are: wheat, barley, soybean, rice, sugar, milk, beef and veal, pig meat, poultry, eggs, apples, cabbage, cucumbers, grapes, mandarins, pears, spinach, strawberries and Welsh onions.

Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

Legal and strategic frameworks

The Basic Plan for Food, Agriculture and Rural Areas revised in 2020 (hereafter "the 2020 Basic Plan") sets Japan's agricultural policy direction for the next decade. The 2020 Basic Plan aims to ensure a stable food supply and improved food self-sufficiency and continues necessary agricultural policy reforms both to make the sector competitive and manage issues facing the sector, while putting an increased emphasis on rural communities, smart agriculture and digitalisation, and risk management (e.g. with respect to natural disasters).

The Strategy for Sustainable Food Systems, MIDORI (hereafter the MIDORI Strategy), formulated in May 2021, defines the path to transform Japan's food systems and increase the agriculture and food systems' sustainability and productivity potential by 2050. This strategy involves: 1) enhancing engagement of stakeholders at each stage of food supply chains; and 2) promoting innovation to reduce environmental burdens. It sets 14 Key Performance Indicators (KPIs) to be achieved by 2050 through promoting the development and implementation of innovative technologies and production systems as well as enhancing efforts at each stage of inputs, production, processing and distribution, and consumption. More specifically, the agriculture-related KPIs include:

- Zero CO_2 emission from fossil fuel combustion in the agriculture, forestry and fisheries sectors
- 50% reduction in risk-weighted use of chemical pesticides1
- 30% reduction in chemical fertiliser use
- Increase of organic farming area to 1 million ha (equivalent to 25% of farmland)2
- 30% improvement of labour productivity in food production, including through automation (by 2030)
- Sustainable sourcing for import materials (by 2030)

Domestic farm support programmes

Japan maintains a system of border protection and domestic price support for key agricultural products. Average tariffs on agricultural products were 13.4% in 2022, compared to 2.4% for non-agricultural products. However, agricultural tariffs vary considerably. More than 35% of tariff lines are duty-free, but 2.3% of them are above 100% (ad valorem equivalent), while 13.1% of agricultural tariff lines have non-ad valorem tariffs (WTO, 2023[1]). Tariff rate quotas (TRQs) with high out-of-quota tariffs apply to some commodities, such as starch and dairy products.

Rice imports are managed by a state trading enterprise, fulfilling Japan's minimum-access commitment under the WTO Agreement on Agriculture. A TRQ of 682 200 tonnes (milled) applies. The maximum mark-up (collected by the government when importing and selling on domestic markets) for rice imports is set at JPY 292 (USD 2.1) per kg, and the out-of-quota tariff-rate is JPY 341 (USD 2.4) per kg.

A revenue-based payment is available for farmers meeting certain requirements who produce rice, wheat, barley, soybean, sugar beet and starch potato. The payment covers 90% of the difference between current revenue and a benchmark based on the previous five years' revenues, with the cost shared between the government (75%) and the farmers' reserve fund (25%).

The direct support payment for upland crops (wheat, barley, soybean, sugar beet, starch potato, buckwheat and rapeseed) is based on both area and output. The area-based payments are based on current planting, and output-based payments according to the volume of sales and the quality.

A crop diversification payment goes to farmers who switch their use of paddy fields from table rice production to other crops (wheat, soybeans, or rice for feed and processing). This payment is area-based, but output is also taken into account for rice for feed and flour. Within this crop diversification programme, a payment is also provided to municipal governments if the production area employs high-yield rice variety for feed and processing, or cultivates buckwheat or rapeseed.

The Livestock Stabilisation Programme, known as Marukin, provides support payments to beef cattle and hog producers when the standard sales price falls below the standard production cost. Ninety per cent of the difference between costs and sales prices are paid to producers, to which the government contributes 75% and the rest are provided by the producers' reserve fund. Apart from the Marukin, output-based compensation goes to producers of raw milk used for dairy processing.

Agricultural mutual aid is a form of commodity insurance that is voluntary and available for a range of commodities (rice, wheat, barley, livestock, fruit, and other field crops) and horticultural facilities. It covers yield losses, damage to facilities from pests and natural disasters, losses caused by death or culling of livestock and veterinary expenses. Crop quality losses are also insured for some agricultural products including rice, wheat, barley, and fruit. Government support covers around 50% of the insurance premium.

In 2019, Japan launched the non-product specific revenue insurance programme. The programme compensates the loss of farm revenue stemming from both market and natural causes, relative to a benchmark based on the previous five years' revenues. The government supports 50% of the insurance premium and 75% of the reserve fund. Farmers must choose between participating in the agricultural mutual aid programme or revenue insurance programme to avoid duplicate payments.

Japan provides financial support to young farmers (under 50 years old) during a training period and initial operation period. Annual subsidies are also available for agricultural management entities to employ and train young farmers.

The Agricultural Land Act authorises Agricultural Committees in municipalities to manage agricultural land use. Purchasing, selling and leasing of agricultural land need to be approved by the Committee. In 2014, farmland banks were established in all prefectures to promote the accumulation and concentration of agricultural land. The farmland banks have the role of lending out concentrated agricultural land to business farmers and improve agricultural land conditions and infrastructure (expansion of plots, investment in drainage equipment, etc.) as necessary. The government provides financial support to regions that lease agricultural land to the farmland banks and co-operate in accumulation and concentration of agricultural land. In addition, MAFF revised the "Act on Promotion of Improvement of Agricultural Management Foundation" in April 2023 and under the Act, municipalities formulate "Regional Plan" through discussions between farmers and local people. This plan can be a blueprint for regional agriculture that clarifies the future use of farmland and contribute to accelerating the accumulation and concentration of agricultural land.

Public investment in rural and agricultural infrastructure is a core agricultural policy, including agricultural roads, dams and irrigation and drainage facilities. The government also invests in natural disaster preparedness and restoring farm infrastructure, as well as constructing public health and recreational facilities associated with agriculture.

About 40% of total agricultural land and total agricultural output are located in hilly and mountainous areas. Area-based direct payments go to farmers in these areas to compensate for the physical disadvantages of these locations for agricultural production to prevent this land from being abandoned. Other payments are available to support collective engagement of local stakeholders in maintaining the multifunctional roles of agriculture.

Japan has defined an agricultural greenhouse gas (GHG) emissions reduction target of 49.5 $MtCO_2eq$ by 2030. GHG mitigation efforts in agriculture are conducted mostly via support payments, grants, credits or non-financial services. For instance, direct payments for environmentally friendly agriculture are provided

to farmers who conduct GHG mitigation activities, such as applying compost and extending midseason drainage in paddy field. These activities must be in conjunction with synthetic fertilisers and pesticides use that is less than half of that of conventional farming practices in the region. The government provides investment support for farmers using climate-smart technologies such as renewable energy and biomass-based greenhouse heating systems in horticulture.

Trade policies

Japan is currently a party to 20 Economic Partnership Agreements (EPAs) and other trade agreements, including with Singapore, Mexico, Malaysia, Chile, Thailand, Indonesia, Brunei Darussalam, the Association of Southeast Asian Nations (ASEAN), the Philippines, Switzerland, Viet Nam, India, Peru, Australia, Mongolia, the European Union, the United States, the United Kingdom, as well as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), and the Regional Comprehensive Economic Partnership (RCEP). In addition, Japan is engaged in EPA negotiations with Colombia, Türkiye, Bangladesh, and the Gulf Cooperation Council (GCC), as well as in negotiations for the plurilateral free trade agreement with the People's Republic of China (hereafter "China") and Korea.

Innovation for sustainable productivity growth

Strategic planning

Sustainable productivity growth is the core of **the MIDORI Strategy**. The strategy aims to boost productivity and sustainability of agriculture, forestry, fisheries and food industries in Japan through innovation. To facilitate the implementation of the MIDORI Strategy, the Act to Promote Low Environmental Impact Business Activities for the Establishment of Environmentally Harmonized Food Systems (hereafter the MIDORI Act) entered into force in July 2022. This Act supports producers and business operators working on reducing their environmental burden.

Under the MAFF, **the Agriculture, Forestry and Fisheries Research Council (AFFRC)** is responsible for planning and implementing relevant technology R&D policies. AFFRC formulates the Innovation Strategy for Agriculture, Forestry and Fisheries Research every year. The Innovation Strategies of 2023 and 2024 prioritise the following two goals: facilitating R&D to achieve the KPIs in the MIDORI strategy; and accelerating the implementation of Smart Agriculture to mitigate labour shortages. AFFRC co-ordinates, examines and evaluates R&D conducted by public agricultural research organisations such as National Agricultural Research Organisations (NARO) and Japan International Research Centre for Agricultural Sciences (JIRCAS), universities, other public R&D agencies, and some private companies. AFFRC also manages competitive research grants.

Programme implementation

At farm, sector, rural and global levels, MAFF funds a wide variety of actions to foster innovation, to share information about new innovative technologies and practices, and to incentivise producers to adopt them. MAFF's rural development policy also supports innovation and economic diversification. For instance, **Support for Innovations from Rural Areas** is a scheme launched in 2022 to create new businesses and added value by using local resources. The scheme supports those who seek diversification by facilitating investment and building platforms among entrepreneurs. Having multiple sources of income can stabilise incomes and provide new opportunities. Income sources could include farm tourism, food processing, and renewable-energy production. Inter-sectoral collaboration is key for these to succeed.

The MIDORI Act established **a certification system** to encourage the adoption of environmentally friendly practices and technologies. Producers can be certified by the prefectural and municipal governments by developing an implementation plan for environmentally friendly activities in co-ordination with the Basic

Plan of their region.[3] Business operators, which provide technologies, machinery and services that help producers reduce the use of chemical fertilisers and pesticides, or expand organic farming and other environmentally friendly practices, can be also certified by the MAFF. As of March 2024, more than 5 700 producers and 64 business operators have been certified. These certified producers and business operators are eligible for tax incentives and financial benefits.

Labelling for environmentally friendly agricultural products: in line with the MIDORI Act, MAFF launched the Visualization Labelling scheme in March 2024. Under the scheme, MAFF has developed a simple calculation tool and relevant guidelines for farmers to evaluate their efforts for reducing GHG emissions using primary data on their farming practices. Through MAFF's website, farmers can access to the calculation sheet, where the formula and relevant data that take into account the differences of each region have been pre-installed to calculate the GHG emission. The scheme covers 23 commodities including rice, vegetables and fruits. The label indicates avoided emissions compared to the estimated emissions of conventional farming in the region by 5% with one star, by 10% with two stars and by 20% or more with three stars. For rice, farmers' efforts to conserve biodiversity can also be evaluated and indicated through the labelling in accordance with the guidelines. In advance of launching the scheme, MAFF conducted a pilot project of selling products with a label to communicate the GHG reduction efforts, resulting in a total of 789 co-operating retail outlets as of March 2024.

Research and Innovation

Japan funds a wide variety of R&D and dissemination programs aimed at improving sustainable agricultural productivity growth. **National Agricultural Research Organisations (NARO)** is the largest knowledge generator in the field of agricultural science in Japan. NARO has more than 1 700 researchers among its 3 200 staff, 21 research centres and departments including five regional agricultural research centres, and an annual budget of JPY 74 billion (USD 526.7 million). In the current medium-term operational plan (2021-25), NARO sets four research segments: "agri-food business", "smart production systems" "agri-biosystem", and "robust agricultural system". The second and fourth segments are highly linked and relevant for sustainable productivity growth by e.g. facilitating a digital shift of production environment management and conducting data-driven pest and weed control technology for stable crop production.

In April 2021, NARO established **the Core Technology Research Headquarters (CTRH)** as an organisation consisting of four research centres to strengthen R&D on AI, data, agricultural robotics, genetic resources, and advanced analysis. CTRH promotes the development and utilisation of advanced technologies and research infrastructure, which are combined with agricultural and food industry technologies of other research centres, thereby accelerating NARO's R&D and contributing to the realisation of "Society 5.0" in the agricultural and food fields.[4]

Co-operative Agricultural Extension Service Programmes: prefectural governments deliver public agricultural extension services as an integrated system with prefectural agricultural research organisations. Traditionally, prefectural agricultural research centres developed breeding and farming techniques, and agricultural extension offices in each prefecture incorporated them into farming. As of 2022, there are about 7 200 prefectural extension advisors working in 361 extension service offices which cover 117 branch offices in Japan. MAFF provides guidelines for agricultural extension services and controls the quality of the prefectural extension advisors. Prefectural extension advisors need to pass a MAFF qualification examination. Prefectures receive subsidies from the national government that cover 5% of the cost of agricultural extension services. Additionally, there are several measures to support e.g. pilot studies in which extension advisors are required to participate and collaborate with researchers for testing environmentally friendly farming practices and smart technologies.

In 2012, MAFF introduced **a system of Agricultural Innovation Support Experts** to respond to the technical needs of advanced professional farmers. All prefectures established an agricultural innovation support centre, and as of 2023 a total of 629 agricultural innovation support experts are working among

the prefectural extension advisors having a high level of technical knowledge and coordination capacity. For instance, 95 of them are specialised in Smart Agriculture.

MAFF offers **an open innovation platform**, called Field for Knowledge Integration and Innovation (FKII). The FKII encourages networking and collaboration among various industries and fields such as private firms, producers, universities and R&D institutions. As of January 2024, it has 4 974 members and 176 R&D groups which create research strategies and business models for specific purposes, carry out R&D, and commercialise its results. For instance, "the platform for new livestock production systems using ICT" was established in 2017 under the FKII, and the collaboration among ICT vendors, electronics manufacturers, universities, research institutions and producers has created the new milking barn system, which incorporates cutting-edge technologies such as robots and AI to improve productivity and animal welfare. It is already on sale as a packaged product and is in operation at more than ten dairy farms nationwide.

As part of the Small Business Innovation Research (SBIR) that contributes to sustainable productivity growth, MAFF recently established the **Comprehensive Support for Startups**. This start-up funding provides step-by-step and systematic support to researchers at universities and research institutes from the development of technology seeds (defined as Phase 0) to efforts toward commercialisation (from Phase 1 to 3). A project for Phase 3, the final stage of commercialisation, was launched in 2023. In the first public competition, out of 111 applications 25 projects were selected covering topics such as smart agriculture, circular economy, and genome editing.

Since 2022, MAFF has conducted and led cultivar development and R&D to help increase the adoption of organic farming and to reduce the risk-weighted use of chemical pesticides and chemical fertilisers, among other things listed as the KPIs in the MIDORI Strategy. To make producers aware of new innovative technologies and varieties, MAFF published "Strategy for Sustainable Food Systems 'MIDORI' Technology Catalogue (Ver.3.0)" in May 2023 to promote 225 available technologies and 81 to be developed by 2030, which can contribute to achieving the MIDORI Strategy's KPIs.

The ASEAN-Japan MIDORI Cooperation Plan, adopted at the first ASEAN-Japan Ministers of Agriculture and Forestry Meeting (AJMAF) on 4 October 2023, aims to foster co-operation projects with ASEAN countries by utilising Japanese technology and sharing experience to build resilient and sustainable agriculture and food systems in the ASEAN region and, ultimately, to contribute to food security in the region. The ASEAN Member States (AMS) and Japan focus on the suitability and necessity of technologies in pursuing resilient and sustainable farming in implementing the co-operation between AMS and Japan which commonly share the regional particularities such as high humidity and temperature, abundance of paddy fields, and small- and medium-sized farmers.

To accelerate application of agricultural technologies which can contribute to enhance production potentials and achieve resilient and sustainable food systems in Asia-Monsoon region, MAFF assigned JIRCAS to conduct the project "Accelerating application of agricultural technologies which enhance production potentials and ensure sustainable food systems in the Asia-Monsoon region" from 2022 to 2025. The International Centre for the MIDORI Strategy, established as a networking hub, started dissemination of the information of scalable technologies for the region under the advice of the International Scientific Advisory Board for the MIDORI Strategy. As one of the activities, "Technology catalogue Contributing to Production Potential and Sustainability in the Asia-Monsoon Region (ver.2.0)", showcasing 31 scalable technologies, was released by the centre. The collaborative research activities have also been conducted in some Asia-Monsoon countries to demonstrate the application of scalable agricultural technologies such as BNI (Biological Nitrification Inhibition)-enabled wheat, AWD (Alternate Wetting and Drying), and rice blast differential system utilizing the research networks of Japanese agricultural research institutes.

Smart agriculture and digitalisation

Accelerating the implementation of smart agriculture and digitalisation is one of the key objectives of the 2020 Basic Plan to address labour shortages and improve productivity.[5] For example, efforts are being made to automate farm work and contribute to labour savings by utilising a smartphone-operated paddy field water management system, and agriculture management applications linked to location information will make it easier such that even unskilled farmers can take the initiative in production activities by digitising and automating work records.

In June 2022, MAFF revised the Smart Agriculture Promotion Comprehensive Package. The revisions clarify the roles of smart agriculture for stable and sustainable domestic food production. The document identifies specific measures necessary to reach the digital agriculture target of having "most of the business farmers in Japan practice data-driven agriculture by 2025." These measures include conducting demonstration projects and providing training opportunities.

- **Smart agriculture demonstration projects**, started in 2019, aim to promote field implementation of smart agriculture that utilises cutting-edge technologies such as robotics, AI, and IoT. The project offers selected farms to introduce advanced technologies by making an agreement to provide farm management data in return for free access to the technologies. Collected farm data are analysed to measure impacts of technology adoption, and results are open to public to disseminate knowledge and experience. As of 2023 a total of 217 demonstration projects have been conducted in different regions covering different farm types such as paddy rice, vegetables, horticulture, tea production, and livestock. Demonstrated technologies include autonomous tractor, drones for spraying pesticides, smartphone-operated paddy field water management system, and cattle GPS tracking system.
- As the use of smart agriculture continues to advance in agricultural settings, it is important to increase **opportunities for learning and training about smart agriculture at agricultural educational institutions** that foster future farmers. For this reason, from 2022 a lecture on smart agriculture was included in the curriculum of all agricultural high schools and farmers' academies. In addition, MAFF offers training opportunities for teachers to acquire the latest knowledge necessary to teach smart agriculture at agricultural educational institutions, as well as providing smart agricultural machinery and equipment to the institutions for practical training.
- **The Digital Garden City Nation Initiative**, established in December 2022, facilitates digitalisation in rural areas as a way to eliminate the digital divide between urban and rural regions. To accelerate digitalisation, the initiative supports broadband deployment in rural areas including disadvantaged areas (e.g. hilly and mountainous areas), as well as training digital professionals. According to the five-year action plan for the whole economy, 2.3 million digital professionals will be trained by the end of March 2027. In the agriculture, forestry and fisheries sectors, professional training to acquire new IT and digital skills in smart agriculture, forestry and fisheries is to be provided to 30 000 people per year.

Recent policy developments

Domestic policy developments in 2023-24

Food systems sustainability

The Biodiversity Strategy of the Ministry of Agriculture, Forestry and Fisheries was revised and released in March 2023 in response to the Kunming-Montreal Global Biodiversity Framework (KM-GBF) adopted in

December 2022. The new strategy defines the 2030 vision and approaches to tackling biodiversity-related issues in the agriculture, forestry and fisheries sectors. The strategy calls for:

- conserving biodiversity and ecosystem services in rural areas
- reducing the impact of agriculture, forestry and fisheries on the global environment and contributing to its conservation
- facilitating collaboration within the whole food supply chain
- promoting stakeholders' understanding of biodiversity and behavioural change through encouraging more use of environmentally friendly raw materials and disseminating information to consumers
- greening policy instruments
- encouraging stakeholders to utilise the Biodiversity Strategy in its main business.

The strategy is aligned with the MIDORI Strategy and the Basic Plan for Food, Agriculture and Rural Areas. It is also reflected in the National Biodiversity Strategy and Action Plan of Japan 2023-2030 (NBSAP), which was approved by the cabinet in March 2023.

In March 2023, MAFF published the "Guidance on Sustainable Management for Food Industry". It was the first guidance made by MAFF with the overall goal of facilitating sustainable development of the food industry by illustrating how to tackle environmental, social and governance (ESG) issues surrounding food companies. The guidance is mainly targeted to managers aiming to practice sustainable management in small and medium-sized enterprises (SMEs) that are business partners of large major food companies. It covers how to set targets (e.g. climate change, respect for human rights, and food loss and waste reduction) and implement specific measures for commitments, along with methods of information disclosure.

Risk management

A series of torrential rains and flooding hit Japan in June and July 2023, leaving extensive damage to agriculture, forestry and fisheries. Total estimated damages were JPY 162.4 billion (USD 1.2 billion).[6] In August 2023, typhoon Lan caused JPY 30.2 billion (USD 214.9 million) in damage to agriculture.[7] On 1 January 2024, a magnitude 7.6 earthquake struck the Noto Peninsula in Ishikawa Prefecture, leaving devastating damage in the region including the agricultural sector. MAFF adopts several measures for restoration efforts in the sector. They include covering expenses required for removal disaster waste, financial supports for the reconstruction and repair of damaged agriculture house and agricultural machinery, application of grants for "direct payment to farmers in hilly and mountainous areas" and "multifunctional payment" for restoration of damage to farmland/agricultural waterways and joint use facilities in rural communities, as well as the commodity and revenues insurance programmes.

Food security and diversifications of input supplies

The revision of the "Food Security Reinforcement Policy Framework" was made on 27 December 2023. The policy framework, originally released in December 2022, presents a roadmap to ensure a stable food supply, and sets several targets to facilitate the structural transformation by increasing production and utilisation of domestic resources. The revision expanded targets such as facilitating adoption of smart technologies and securing stable imports.

To reduce excessive dependence on imported raw materials for chemical fertiliser, MAFF implemented measures to increase the use of domestic resources for organic fertilisers. In total, MAFF allocated JPY 6.8 billion (USD 48.4 million) from the JFY 2023 supplementary budget.[8] The main measures include support payments to livestock farmers and compost manufacturers to partially cover costs for building facilities for the manufacture of fertiliser pellets made from composted livestock manure. Compost pellet is

a solution for wide-area distribution across regions. MAFF also provided support to cover the costs of pilot projects for the use of domestic materials such as sewage sludge in fertiliser and to strengthen networks of raw material providers, fertiliser producers, and fertiliser users to expand practical use of domestic fertilisers.

MAFF allocated JPY 4.5 billion (USD 32 million) from the JFY 2023 supplementary budget to strengthen food supply chain security, with an emphasis on supporting food manufacturers in strengthening collaboration with producing areas and diversifying raw material procurement sources. This is to reduce procurement risks in the context of high prices of imported raw materials.

Trade policy developments in 2023-24

Japan's agriculture, food, forestry and fishery exports reached a new record of JPY 1.45 trillion (USD 10.3 billion) in 2023. To build on this trend and reach the objectives of JPY 2 trillion (USD 14.2 billion) by 2025 and JPY 5 trillion (USD 35.6 billion) by 2030, Japan renewed the 2020 Strategy of Export Expansion of Agricultural, Forestry, Fishery Products and Food in December 2023.

The renewed strategy sets out additional measures to promote exports. These include further establishment of Japan Food Export platforms in promising countries and regions, and tightening collaboration between MAFF and Japan Agricultural Cooperatives (JA).[9] The platforms, consisting of Japan External Trade Organization (JETRO) overseas offices and overseas diplomatic missions, provide comprehensive, professional, and continuous support to exporters in destination countries and regions. There are eight platforms established in the United States, the European Union, Thailand, Viet Nam, Singapore, China, Hong Kong (China), and Chinese Taipei, with platforms under consideration in Malaysia and UAE. The collaboration with JA covers various measures such as the establishment of model case areas that specialise in producing export products under supervision, including by Japan Food Export platforms, to be aware of the demands and regulations of the destination countries and regions. MAFF also supports aspiring farmers and JA officers to receive training to be export experts.

Policy context

Key economic and agricultural statistics

Japan is the world's third largest economy after the United States and China with relatively small land area and high population density (Table 16.2). Agriculture constituted 1% of GDP and 3% of employment in 2022, but the agriculture and agro-food sector as a whole accounted for 9% of GDP if all food-related industries are considered (MAFF, 2024[2]). Livestock accounted for more than one-third of the total agricultural production value in 2022, followed by vegetables (25%), rice (16%) and fruits (10%) (MAFF, 2024[3]).

Two-thirds of the country area is covered by mountains, leaving only 12% of the total land area for agriculture, more than half of which are rice paddy fields. Total agricultural land has decreased from 4.8 million ha in 2000 to 4.3 million ha in 2022 (MAFF, 2022[4]) due to the abandonment and conversion of farmland to non-farm uses (e.g. residential, industrial, or commercial uses). The agricultural workforce declined by more than half since 1980 to 1.9 million in 2022, and the pace of this decline has accelerated in the last decade (SBJ, 2023[5]). The average farm size increased from 1.4 ha to 3.3 ha between 1990 and 2022 (MAFF, 2023[6]), but still remains small compared to other OECD countries. The average age of farmers was 68.4 years in 2022 and about 70% of farmers in Japan are over 65 years old (MAFF, 2023[6]; MAFF, 2024[7]).

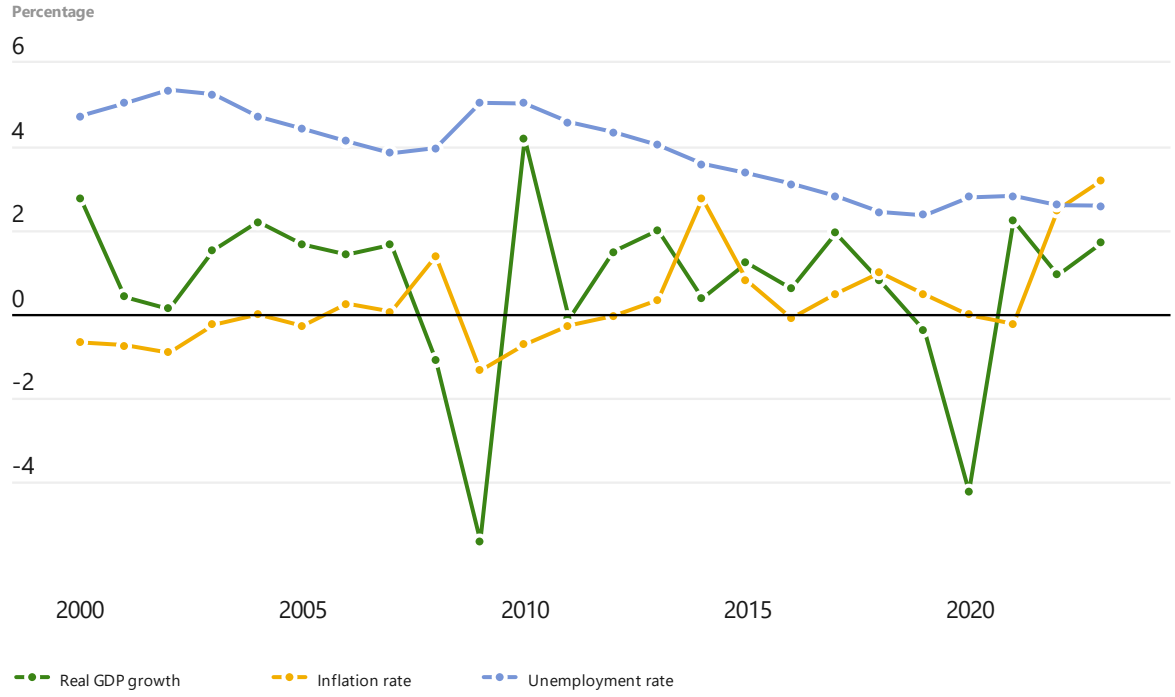
Table 16.2. Japan: Contextual indicators

	Japan		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	3 461	5 704	8.6%	4.2%
Population (million)	127	125	3.0%	2.4%
Land area (thousand km²)	365	365	0.4%	0.4%
Agricultural area (AA) (thousand ha)	4 830	4 325	0.2%	0.2%
			All countries[1]	
Population density (inhabitants/km²)	340	335	52	64
GDP per capita (USD in PPPs)	27 290	45 649	9 363	25 965
Trade as % of GDP	8.7	19.4	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	1.5	1.0	2.9	3.8
Agriculture share in employment (%)	5.0	2.9	-	-
Agro-food exports (% of total exports)	0.3	0.9	6.4	8.0
Agro-food imports (% of total imports)	9.7	7.8	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	74	61	-	-
Livestock in total agricultural production (%)	26	39	-	-
Share of arable land in AA (%)	93	88	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

The country has experienced slow economic growth and deflation for most of the past two decades, but has one of the lowest unemployment rates among OECD countries (Figure 16.4). Japan's average core consumer price index climbed 3.1 % in 2023, marking its fastest increase in 41 years, mainly driven up by rising food prices.

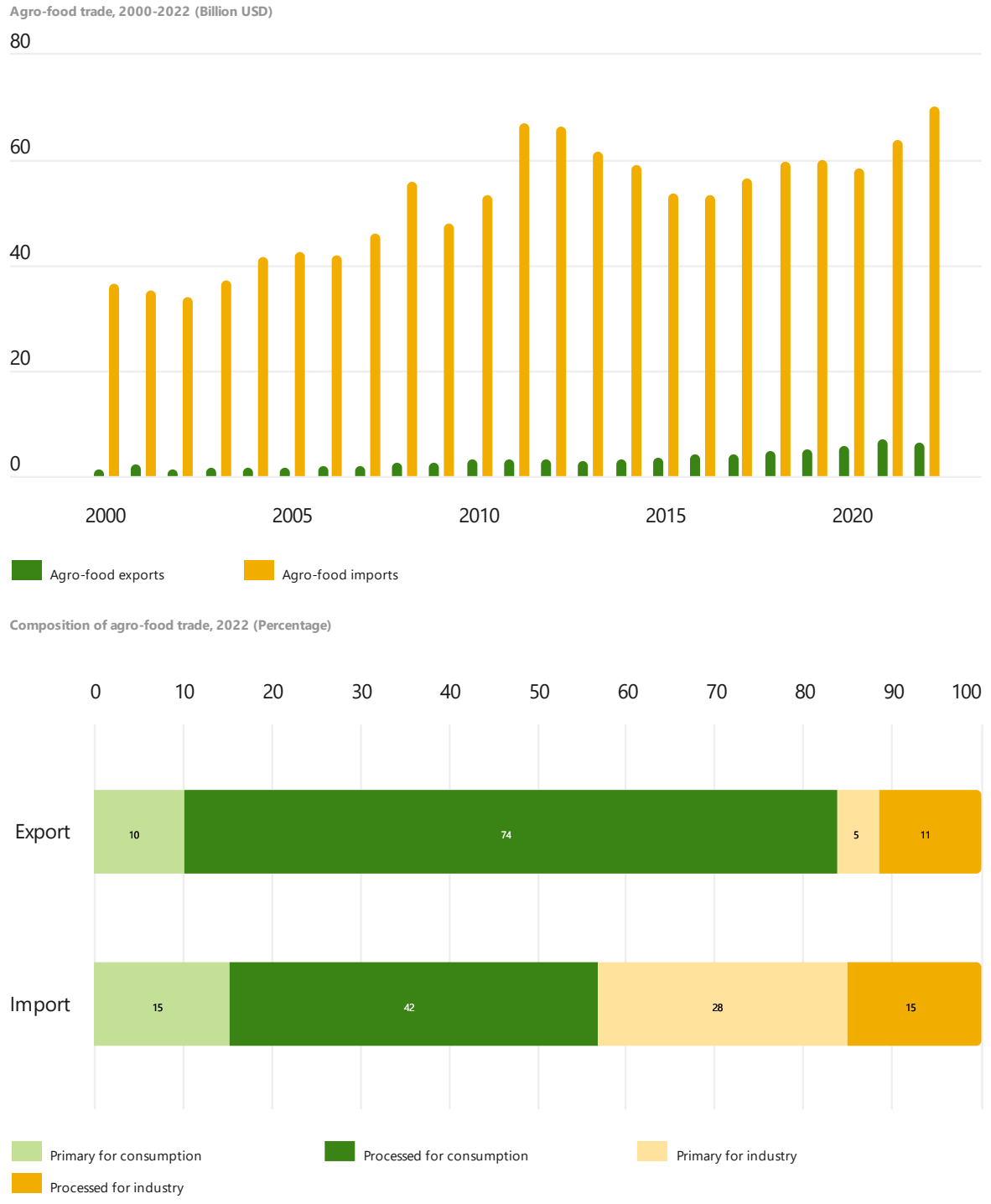
Figure 16.4. Japan: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

Japan is one of the world's largest importers of agro-food products, and the United States is the biggest source of agricultural imports. The food self-sufficiency rate was 38% in 2022 on a calorie basis, meaning that more than 60% of Japan's calorie supply depended on imports. Agro-food exports are much smaller than imports, but the export value in 2022 was JPY 886 billion (USD 6.3 billion) which is about five times higher than that of 2000 (MAFF, 2023[8]). Most of Japan's agro-food exports are directed at final consumers (Figure 16.5). Processed food products such as alcohol and beverages, sauces and seasonings, and snacks account for the majority of Japan's agro-food exports. Among unprocessed products, beef, green tea, and apples are the most exported.

Figure 16.5. Japan: Agro-food trade



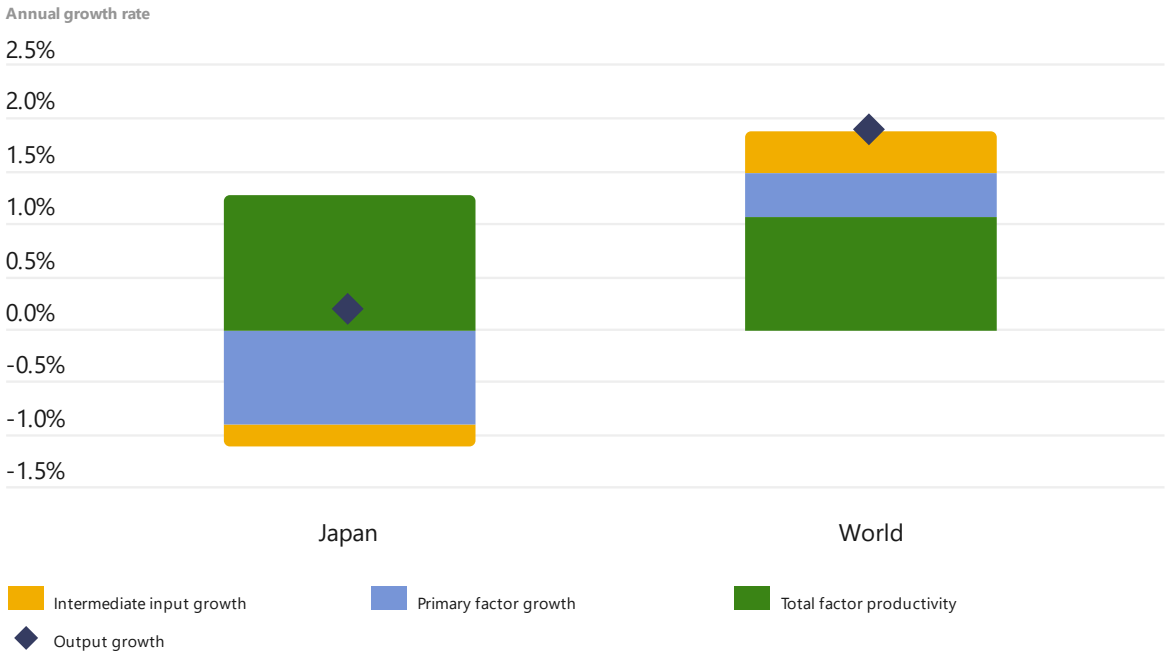
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Japan's agricultural Total Factor Productivity (TFP) growth averaged 1.3% a year between 2012 and 2021, which is slightly above the global average and twice the growth estimated for 1991-2000 (Figure 16.6;

Table 16.3). Recent TFP growth in Japan's primary agriculture has allowed some modest output growth, offsetting reductions in the use of primary production factors, in particular labour, and intermediate inputs.

Japan's nitrogen and phosphorus balances remain among the highest in OECD countries (Table 16.3). The high and increasing nitrogen balance is due to a combination of high fertiliser use and livestock production on limited pastureland. The high phosphorus balance, in contrast, is partly a result of soil characteristics (OECD, 2019[9]; Shindo, 2012[10]). Agriculture's share of total energy use is below the OECD average, as is its share in GHG emissions – partly a consequence of the sector's below-average contribution to the national GDP. The volume of agricultural water use has remained stable for the past few decades. In 2019, the Japanese agricultural sector used 67.9% of water of which over 90% was directed for paddy field irrigation (MLIT, 2022[11]). While average water stress in Japan has fallen somewhat, it remains much higher than the OECD average.

Figure 16.6. Japan: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Table 16.3. Japan: Productivity and environmental indicators

	Japan		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	0.7%	1.3%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	170.8	179.3	32.1	28.2
Phosphorus balance, kg/ha	72.0	56.8	3.3	2.3
Agriculture share of total energy use (%)	1.2	1.1	1.7	2.0
Agriculture share of GHG emissions (%)	2.6	2.8	8.7	10.1
Share of irrigated land in AA (%)	54.7	54.4	-	-
Share of agriculture in water abstractions (%)	65.8	67.9	47.0	49.5
Water stress indicator	20.7	18.7	8.7	..

Note: * or closest available year. Data for nutrients balance refer to the year 2016.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

Agricultural land reform was implemented immediately after World War II, transferring farmland ownership from landlords to previously tenanted farmers in order to improve their economic and social position. The Agricultural Land Act restricted sales of farmland for the purpose of non-cultivation or asset holding, as well as strongly protected farmers' rights. Acquisition of land rights for agricultural use was restricted to companies, other than farmers-organized companies, until 2009, when the Agricultural Land Act was revised to allow non-agricultural companies to lease farmland. Japan also invested in agricultural research, extension services, and land infrastructure to recover from the devastation of the war. At the same time, the government kept controls on rice procurement – from production to distribution to consumers – under the Food Management Law in order to secure food supply.

To address the rising disparity in living standards and productivity between agriculture and other sectors, Japan implemented the Agricultural Basic Act in 1961 to increase farmers' incomes by promoting the modernisation of agriculture. From the mid-1950s to the mid-1990s, agricultural policies focused on price and marketing control, including tariffs for key products, particularly rice, to ensure affordable food prices for consumers while increasing farm income in rural areas.

In 1993, at the conclusion of the Uruguay Round trade negotiations, Japan agreed to a preferential quota on rice imports. The Food Management Law was repealed in 1995, introducing market mechanisms for rice distribution. Following the replacement of the GATT with the WTO in1995, Japan converted non-tariff border measures to tariff rate quotas (TRQs) for major commodities, including rice.

Rapid globalisation of the economy, together with the continued decline in farming population and farmland area adversely impacted Japanese farming communities. In response, the Agricultural Basic Act was replaced by the Food, Agriculture and Rural Areas Basic Act in 1999 to establish four basic principles: 1) a stable food supply; 2) the desired multifunctional roles of agriculture; 3) sustainable development of agriculture; and 4) development of rural areas. Under the act, ten-year agricultural policy plans, named the Basic Plan for Food, Agriculture and Rural Areas, have been formulated since 2000.

Recent agricultural policy reforms have been aimed at helping the sector become more competitive and resilient. The government-administered rice production quota system was abolished in 2018, and other pro-competitiveness reforms have encouraged farmland accumulation and concentration, and re-organising agricultural co-operatives. In 2019, non-product specific revenue insurance was introduced to diversify farmers' risk-management tools. The "MIDORI" Strategy was introduced in 2021; this is a sector-

wide initiative to improve environmental, social, and economic outcomes throughout supply chains by 2050.

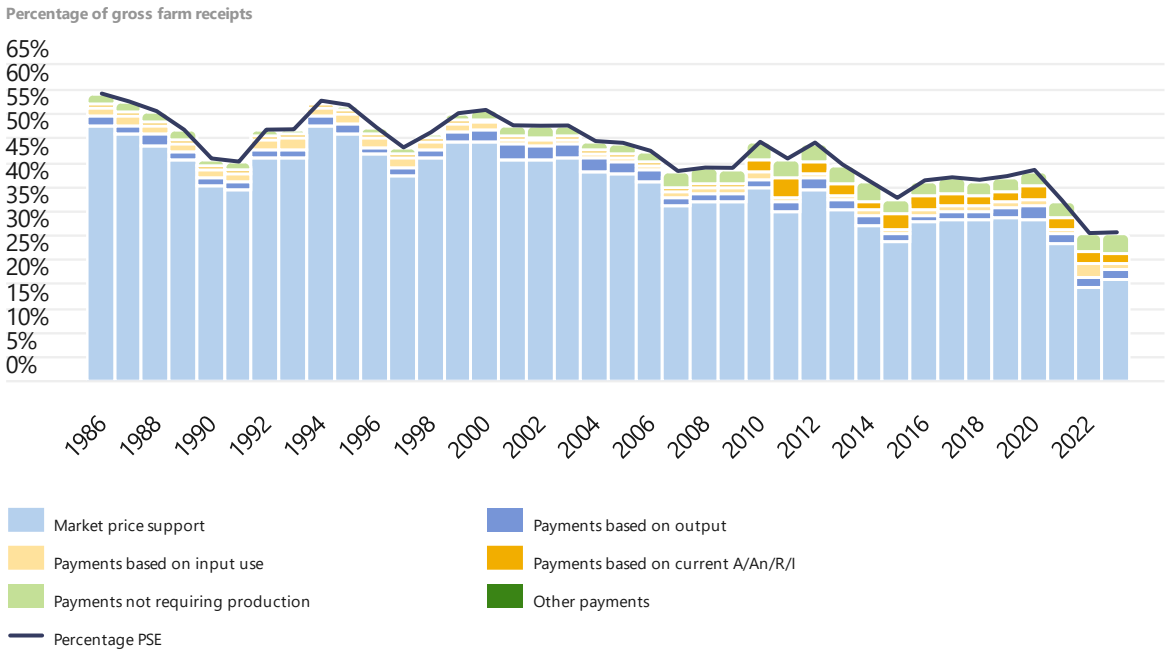
Promoting agricultural and food exports has also become a key policy goal, as demand for Japanese food products increases globally. Japan improved market access through large-scale trade agreements in recent years, including the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) in 2018, the Japan-EU Economic Partnership Agreement (Japan-EU EPA) in 2019, the Japan-US Trade Agreement in 2020, and the Regional Comprehensive Economic Partnership (RCEP) in 2022.

Table 16.4. Japan: Agricultural policy trends

Period	Policy directives	Changes in agricultural policies
Prior to1960	Eradication of rural poverty and securing food supply	Agricultural land reform implemented to help farmers own farmland (by transferring it from landlords to previously tenanted farmers in order to improve their economic and social position) Arrangements to increase food production (Agricultural Co-operatives Act of 1947, Agricultural Disaster Compensation Act of 1947, Agricultural Land Act of 1957) Policy priority given to increasing rice production to solve serious food shortage (Food Management Law of 1942, Five Year Food Production Increase Plan of 1952)
1960-1980	Reduction of income disparities between agriculture and other industries	Agricultural Basic Act (1961) to increase farmers' income by increasing farm size, improving farmland, adopting agricultural machinery and technology and shifting from rice and wheat-based production to livestock, vegetables and fruits. Rice policy goal changed from increasing rice production to managing quantity as full self-sufficiency achieved in 1967 Rice production adjustment control introduced in 1971
1980-2010	Adjusting towards internationalisation, bringing market principles to the agricultural sector, and integrating concepts of 'rural area' and 'food' into agricultural policies	Agricultural Management Framework Reinforcement Act (1993) systematises support for qualified farmers Act on Stabilization of Supply, Demand and Prices of Staple Food (1994) changes the role of government in rice state trading; government only purchases for stockpiling purposes Quantitative quotas of rice replaced by tariff rate quota (1999) Act on Food, Agriculture and Rural Areas (1999) aims to establish stable agricultural structure in the new economic and social conditions; food self-sufficiency goal and direct payments for farmers in mountainous areas introduced
2010-Present	New agricultural reforms to enhance competitiveness and resilience	Farmland reforms (2009 revision of Agricultural Land Act to allow non-agricultural companies to lease farmland, 2013 Act on Promotion of Agricultural Land Intermediary Management to facilitate agricultural land consolidation) Amendment of Agricultural Co-operatives Act (2015) Abolition of rice production quota system (2018) Introduction of the revenue insurance programme (2019) Large-scale trade agreements (CPTPP, Japan-EU EPA, Japan-US Trade Agreement, RCEP) and export promotion of agricultural and food products Formation of the MIDORI Strategy with sustainability and food related goals (2021)

Support to farmers declined from close to 57% of gross farm receipts in the mid-1980s to less than 31% in 2023. The share of market price support also declined, while Japan provides a range of budgetary forms of producer support, higher domestic prices continue to provide the majority of transfers to producers, accounting for close to 70% of PSE in 2021-23 (Figure 16.7).

Figure 16.7. Japan: Development of the PSE and its composition, 1986 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

References

MAFF (2024), *GDP calculation for agriculture and food related sector (in Japanese)*, https://www.maff.go.jp/j/tokei/kouhyou/keizai_keisan/index.html. [2]

MAFF (2024), *Statistics on agricultural labour (in Japanese)*, https://www.maff.go.jp/j/tokei/sihyo/data/08.html. [7]

MAFF (2024), *Total agricultural output (national estimate) (in Japanese)*, https://www.maff.go.jp/j/tokei/kouhyou/nougyou_sansyutu/. [3]

MAFF (2023), *Agricultural structure statistics 2022 (in Japanese)*, https://www.maff.go.jp/j/tokei/kouhyou/noukou/. [6]

MAFF (2023), *Overview of import and export of agricultural, forestry, and fishery products (in Japanese)*, https://www.maff.go.jp/j/tokei/kouhyou/kokusai/attach/pdf/index-58.pdf. [8]

MAFF (2022), *Arable land area as of 15 July 2022 (in Japanese)*, https://www.maff.go.jp/j/tokei/kouhyou/sakumotu/menseki/. [4]

MLIT (2022), *Water resources in Japan (in Japanese)*, https://www.mlit.go.jp/mizukokudo/mizsei/mizukokudo_mizsei_tk2_000014.html. [11]

OECD (2019), *Innovation, Agricultural Productivity and Sustainability in Japan*, OECD Food and Agricultural Reviews, OECD Publishing, Paris, https://doi.org/10.1787/92b8dff7-en. [9]

SBJ (2023), *Labour Force Survey, Statistics Bureau of Japan (in Japanese)*, https://www.e-stat.go.jp/dbview?sid=0003007108. [5]

Shindo, J. (2012), "Changes in the nitrogen balance in agricultural land in Japan and 12 other Asian Countries based on a nitrogen-flow model", *Nutrient Cycling in Agroecosystems*, Vol. 94/1, pp. 47-61, https://doi.org/10.1007/s10705-012-9525-x. [10]

WTO (2023), *World Tariff Profiles 2023*, https://www.wto.org/english/res_e/publications_e/world_tariff_profiles23_e.htm. [1]

Notes

[1] The risk-weighted use of chemical pesticides is estimated based on the Acceptable Daily Intake (ADI) level of a chemical in humans.

[2] It is planned to expand the total area of organic farming from 25 000 ha as of 2020 to 1 million ha by 2050.

[3] According to the MIDORI Act, prefectural and municipal governments are required to jointly develop a "Basic Plan" by introducing and implementing environmentally friendly measures that focus on improving soil health, reducing the use of chemical pesticides and fertilizers, and reducing GHG emissions suited to the natural, economic, and social conditions of their regions.

[4] Society 5.0 is the vision of the future society that Japan should strive towards that follows the eras of the hunting society (Society 1.0), agricultural society (Society 2.0), industrial society (Society 3.0), and information society (Society 4.0). The 6th Science, Technology, and Innovation Basic Plan (Cabinet decision of 26 March 2021), depicts Society 5.0 as "a society that is sustainable and resilient against threats and unpredictable and uncertain situations, that ensures the safety and security of the people, and that individual to realize diverse well-being."

[5] Smart agriculture refers to agriculture using advanced technologies such as robots, Artificial Intelligence (AI), and the Internet of Things (IoT). It is expected to save labour and automate farming work, while the use of data is expected to improve the quality and productivity of agricultural products.

[6] Total damages were estimated as of July 2024.

[7] Total damages were estimated as of July 2024.

[8] Japanese fiscal year (JFY) runs from 1 April to 31 March.

[9] Japan Agricultural Cooperative (JA) is organised in every prefecture and municipality throughout the country, based on the principle of mutual co-operation, with the purpose of protecting farming and living of its individual members.

17. Kazakhstan

Main findings

Support to agriculture

Support to producers as a percentage of Gross Farm Receipts (GFR) in Kazakhstan has almost halved in a 20-year span, accounting for 4.9% in 2021-23, compared to 8.6% in 2000-02. The share of potentially most-distorting producer transfers fell from an average of 98% in the early 2000s to 49% in 2021-23, with positive (and negative) transfers mostly based on Market Price Support (MPS) and variable input use without constraints. On average, domestic prices were lower than world prices for several agricultural commodities, with negative MPS worth -3.3% of GFR and positive MPS worth 2.2% of GFR. Single Commodity Transfers (SCT) in 2021-23 were negative for rice, sunflower, eggs and maize, while SCTs with the largest positive transfers were for barley, sheep meat, and cotton.

Support based on variable input use and fixed capital formation account for most budgetary transfers to producers. In total, budgetary producer support amounted to 4.9% of GFR in 2021-23.

Support to general services (General Service Support Estimate, GSSE) accounted for 14.4% of total budgetary support to agriculture in 2021-23 and for 1.2% of the value of agricultural production. Spending on inspection and control accounted for 67% and spending on knowledge creation accounted for 17% of GSSE.

Total agricultural support (Total Support Estimate, TSE) declined from 1.7% of Gross Domestic Product (GDP) in the early 2000s to 0.5% in 2021-23.

Key recent policy changes

The Concept for the Development of Agriculture for 2021-2030 was substantially amended in 2023 to add new target indicators. These indicators included those for self-sufficiency (for apples, sausages, cheese and poultry meat), for aligning mineral fertiliser use with scientifically justified levels, for increasing investment and employment, and for increasing the use of water-saving technologies.

The government expanded the dairy preferential financing initiative of the North Kazakhstan region, which had helped to create 100 dairy farms with regional agricultural co-operatives. It allocated KZT 100 billion (USD 219 million) to fund 65 dairy farms across 11 regions in 2023. In 2024, the plan foresees allocating another KZT 100 billion (USD 219 million) to finance 73 projects.

A 6-month import ban on wheat initiated in April 2023 was prolonged to April 2024. The measure aimed to support domestic farmers and to stabilise the price of locally produced wheat, which is facing strong competition from cheaper Russian grain.

In February 2023, the government introduced an export duty on sunflower seeds of 20% but no less than EUR 100 (USD 109) per tonne. The measure is intended to curb price increases in the country.

Assessment and recommendations

- Kazakhstan would benefit from an approach that mainstreams sustainability issues into planning processes for agricultural policy. Assessing new projects and policies based on appropriate environmental indicators will ensure coherence between objectives for food security, sector development, climate change mitigation and environmental management.
- While total support to agriculture is small relative to the economy, most producer support is provided in forms that are potentially most-distorting to agricultural production and trade, and likely to exacerbate pressures on natural resources. Redirecting this support towards needed services for the sector, notably the relatively underfunded agricultural knowledge and innovation system (AKIS) will help promote sustainable productivity growth. Using support to provide incentives to adopt new technologies and take action to conserve and sustainably use natural resources can lead to improved co-ordination between farmers and the AKIS.
- The recipient of support has changed for loans and fertilisers. These are now paid to the input provider (bank or manufacturer) instead of the farmer. With the entry point higher up in the value chain, fewer payments have to be made, with respective administrational savings. However, in these cases, the full subsidy may not be passed on to the farmer. Monitoring systems should be put in place to ensure that farmers are the main beneficiaries.
- Investment programmes to support the creation of new livestock (processing) industries should be based on sound business plans and linked to strong environmental and animal welfare standards. To use them in the most efficient way, concomitant knowledge creation and capacity building should be in place.
- Positive developments in land management have been observed, such as the introduction of digital monitoring of land use. Kazakhstan should clarify its land-use objectives with respect to production, adaptation and conservation. The doubling of taxation on unused land and the commitment to increase labour productivity 2.5 times demonstrates Kazakhstan's ambition to increase production. Sustainability concerns should be mainstreamed into these plans to ensure long term results.
- Adverse weather conditions, pests and diseases, and price volatility pose challenges for farmers and agribusiness firms, and responding to these can strain government finances. Kazakhstan should enhance the resilience of its agricultural sector by adopting a broader, more integrated approach to risk management, which sees beyond ad-hoc, ex-post emergency responses to local disasters. The approach should ensure that disaster assistance does not impede the development of on-farm strategies and market solutions, such as insurance.
- Increasing the use of water-saving technologies can play an important step towards more sustainable productivity growth. Conditioning support rates for investments in irrigation on the use of water savings technologies is a positive step. However, to be effective, this needs to be accompanied by water management policies and planned against the background of a changing climate. Services for teaching farmers to implement more sustainable practices and to adopt new technologies could also be provided.
- The introduction of a digital system to register and distribute subsidies is an important step towards improving transparency and the accuracy of monitoring.

Development of support to agriculture

Figure 17.1. Kazakhstan: Development of support to agriculture

Figure 17.1A. Kazakhstan: Producer Support Estimate and its composition

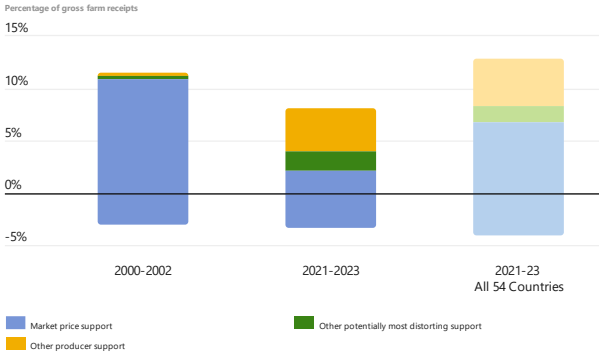


Figure 17.1B. Kazakhstan: Ratio of producer to border price

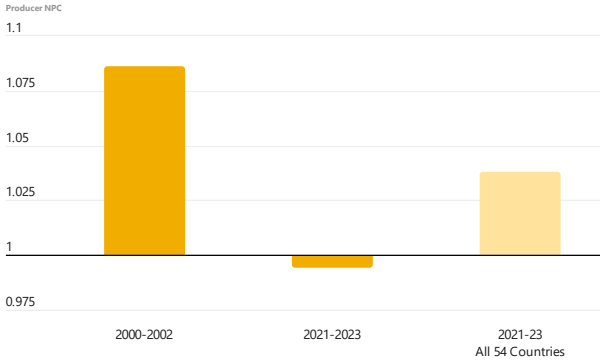


Figure 17.1C. Kazakhstan: General Services Support Estimate and its composition

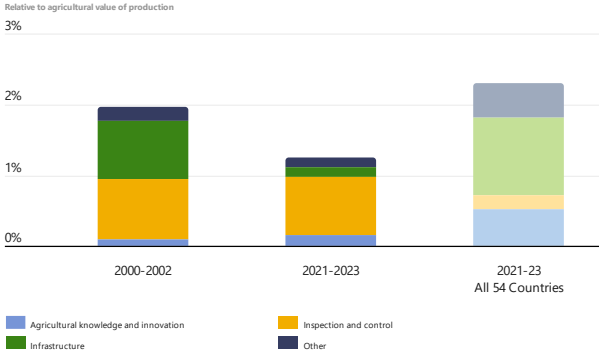
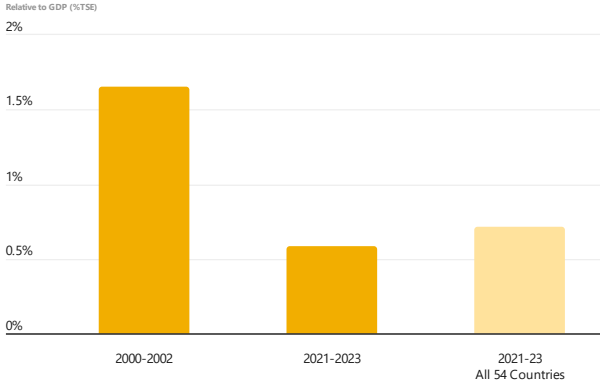
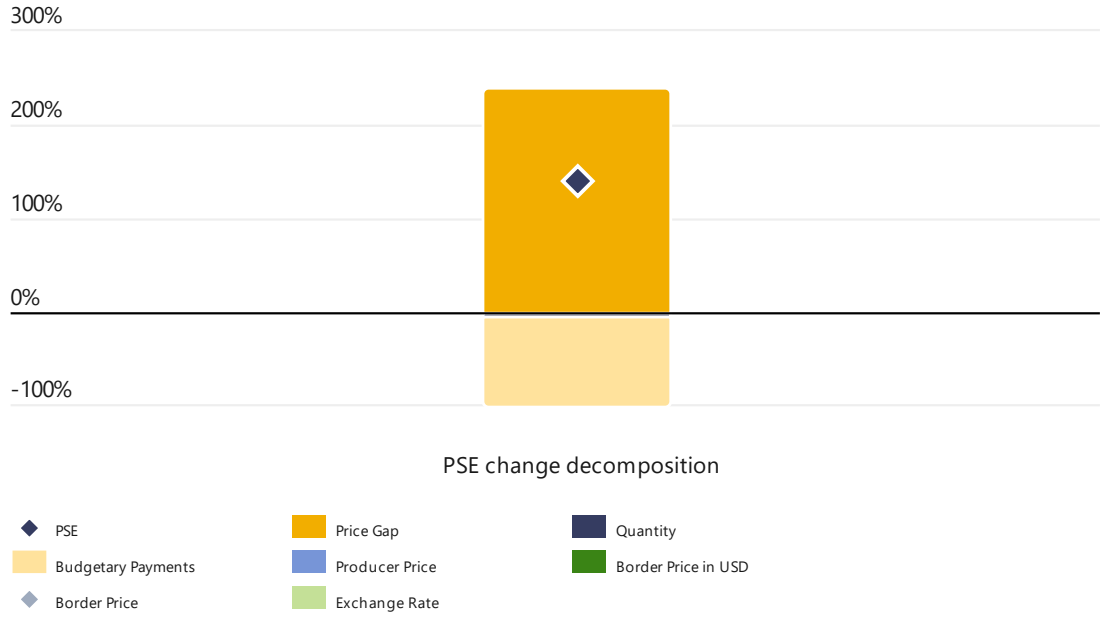


Figure 17.1D. Kazakhstan: Total Support Estimate



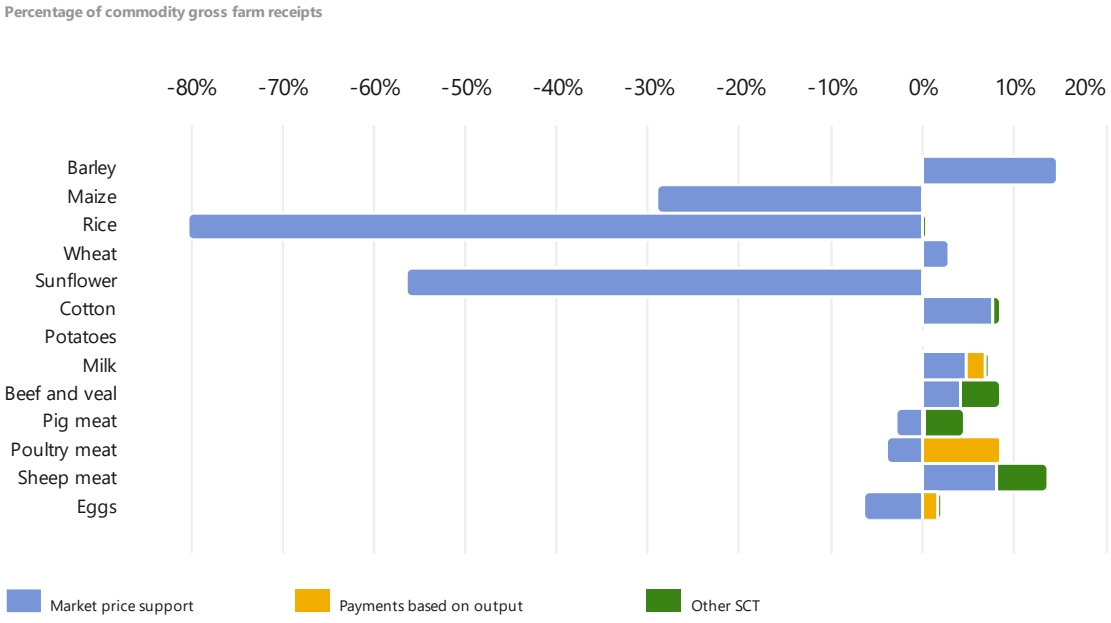
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 17.2. Kazakhstan: Drivers of the change in PSE, 2022 to 2023



Note: % change of nominal Producer Support Estimate expressed in national currency. The producer price change and the border price change are not calculated when both negative and positive market price support (MPS) occur at the commodity level for the previous year. Note that negative MPS estimates for livestock products may arise in cases of aligned product prices if there is positive MPS for feed commodities.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Figure 17.3. Kazakhstan: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Table 17.1. Kazakhstan: Estimates of support to agriculture

Million USD

	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**3 367**	**19 646**	**17 614**	**20 573**	**20 750**
of which: share of MPS commodities (%)	76.60	59.12	59.46	62.07	55.83
Total value of consumption (at farm gate)	**2 933**	**16 872**	**15 212**	**18 309**	**17 096**
Producer Support Estimate (PSE)	**292**	**1 025**	**1 023**	**601**	**1 452**
Support based on commodity output	272	-126	-236	-784	644
Market price support[1]	272	-223	-330	-878	539
Positive market price support	372	468	420	47	938
Negative market price support	-100	-691	-750	-925	-399
Payments based on output	0	97	94	93	105
Payments based on input use	21	1 105	1 235	1 353	727
Based on variable input use	8	277	284	310	236
with input constraints	0	0	0	0	0
Based on fixed capital formation	10	823	945	1 038	486
with input constraints	0	0	0	0	0
Based on on-farm services	2	6	6	6	5
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	0	24	14	22	36
Based on Receipts / Income	0	0	0	0	0
Based on Area planted / Animal numbers	0	24	14	22	36
with input constraints	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	0	0	0	0	0
With variable payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
With fixed payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
Payments based on non-commodity criteria	0	0	0	0	0
Based on long-term resource retirement	0	0	0	0	0
Based on a specific non-commodity output	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0
Miscellaneous payments	0	21	10	10	44
Percentage PSE (%)	**8.67**	**4.89**	**5.39**	**2.73**	**6.70**
Producer NPC (coeff.)	**1.09**	**0.99**	**1.00**	**0.96**	**1.02**
Producer NAC (coeff.)	**1.09**	**1.05**	**1.06**	**1.03**	**1.07**
General Services Support Estimate (GSSE)	**67**	**249**	**219**	**256**	**271**
Agricultural knowledge and innovation system	3	34	40	36	27
Inspection and control	29	160	140	141	199
Development and maintenance of infrastructure	28	27	28	23	31
Marketing and promotion	0	8	8	8	9
Cost of public stockholding	5	19	3	48	5
Miscellaneous	1	0	1	0	0
Percentage GSSE (% of TSE)	**18.65**	**18.51**	**16.93**	**29.37**	**14.43**
Consumer Support Estimate (CSE)	**-316**	**315**	**314**	**786**	**-154**
Transfers to producers from consumers	-291	184	136	757	-340
Other transfers from consumers	-21	-6	0	0	-17
Transfers to consumers from taxpayers	0	74	51	15	156
Excess feed cost	-4	62	126	14	46
Percentage CSE (%)	**-10.80**	**1.88**	**2.07**	**4.30**	**0.91**
Consumer NPC (coeff.)	**1.12**	**0.99**	**0.99**	**0.96**	**1.02**
Consumer NAC (coeff.)	**1.12**	**0.98**	**0.98**	**0.96**	**1.01**
Total Support Estimate (TSE)	**359**	**1 348**	**1 293**	**871**	**1 879**
Transfers from consumers	312	-179	-136	-757	357
Transfers from taxpayers	68	1 532	1 429	1 628	1 539
Budget revenues	-21	-6	0	0	-17
Percentage TSE (% of GDP)	**1.66**	**0.59**	**0.66**	**0.39**	**0.74**
Total Budgetary Support Estimate (TBSE)	**88**	**1 571**	**1 622**	**1 749**	**1 340**
Percentage TBSE (% of GDP)	**0.41**	**0.69**	**0.82**	**0.78**	**0.53**
GDP deflator (2000-02 = 100)	**100**	**1 004**	**914**	**1 095**	**..**
Exchange rate (national currency per USD)	**1.00**	**447.70**	**426.03**	**460.85**	**456.24**

.. Not available

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for Kazakhstan are: wheat, rice, maize, barley, sunflower, potatoes, cotton, milk, beef and veal, pig meat, sheep meat, poultry and eggs.

Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

The National Development Plan of the Republic of Kazakhstan (hereafter "the National Plan"), from February 2024, states the medium-term objectives and tasks for the county's whole economy, including its agri-food sector. The Concept for the Development of Agriculture for 2021-2030 (hereafter "the Concept") provides the overarching policy frameworks for the development of the agricultural sector.

The National Plan sets out the following six priority directions for its agri-food sector:

- increasing yields
- increasing water use efficiency
- expansion of livestock farming
- increasing added value in agriculture
- supporting export activities
- fostering scientific progress in farming.

The Concept sets out a number of key priority areas including:

- ensuring food security and improving quality of food
- adjusting support mechanisms to focus on competitive products
- industry development based on manufacturing, digitalisation, sustainability and development of human capital
- development and strengthening of phytosanitary and veterinary services
- more efficient land use systems and water use for the production of agricultural products
- growth of incomes and social support systems for the rural population, development of rural infrastructure
- the creation of production and distribution chains.

Kazakhstan applies a range of border and domestic price intervention measures. Border measures are implemented within the Customs Union of the Eurasian Economic Union (EAEU) and include tariff rate quotas (TRQs) and non-tariff measures. TRQs apply to imports of lower-grade beef and of poultry products.

Intervention in domestic markets is twofold. The State Commission for the Modernisation of the Economy undertakes intervention purchases of grains at fixed prices under a forward contract to support domestic producer prices. At the same time, consumption price stabilisation is in place for 29 commodities.

Purchases of mineral fertiliser and high-quality seeds are supported by subsidies per unit of input. Administered prices below market prices apply to diesel fuel sold to agricultural producers for pre-determined volumes during sowing and harvesting periods.

Investment subsidies, together with concessional credit, represent the principal forms of support to agriculture. Concessional credit comes through numerous channels. Several credit agencies provide loans at reduced interest rates mainly under the umbrella of KazAgroFinance. This public financial institution is a subsidiary of the Agrarian Credit Corporation (ACC), which in turn is part of the state company Baiterek Holding. Along with agricultural producers, food processors benefit from concessional credit and leasing of machinery and equipment.

For crops, output payments go to the producers of oilseeds, rice, sugar beet and cotton used for processing. Headage and output payments support the livestock sector. Large commercial livestock producers receive most of these as they account for the largest shares of production and herd size. Other

forms of support to livestock are silage and fodder subsidies, support to artificial insemination and to the purchase of young cattle for feedlots.

The current interest rate subsidy applies to loans issued by financial institutions with a nominal interest rate not exceeding 17% per annum. The interest rate subsidy reduces nominal rates by 10% for loans for the purchase of agricultural machinery, equipment and farm animals, purchase of fixed assets and construction; by 7% for working capital; and by 9% for spring field work and harvesting.

There are separate terms for interest rate subsidies for loan agreements concluded under the Economy of Simple Things programme, designed by the Ministry of National Economy to raise domestic production and reduce imports of consumer products such as of food, textiles, and furniture. These loans are targeted towards production and processing of products deemed of strategic importance. The programme is financed by the National Bank and applies to loans with a nominal interest rate not exceeding 15% per annum. For this programme, the interest rate subsidy is transferred through the Damu Entrepreneurship Development Fund and local governments. It reduces the nominal interest rate by 10% for loans for investment purposes, by 9% for loans to replenish working capital and for spring field and harvesting work.

The credit guarantee system guarantees loans from second-tier banks through the Damu Entrepreneurship Development Fund. The terms of the guarantee provide for the issuance of a loan of up to KZT 3 billion (USD 7 million) at a rate of no more than 17% per annum, for a period of up to 10 years. The commission for guaranteeing is 30% of the amount of the guarantee, of which 29.9% is paid by the local executive body and 0.1% is paid by the agricultural producer. The guarantee is provided for investment projects in agriculture and food production. Priority investment areas receive higher guarantee rates.

Individual farms of less than 3 500 ha can pay an alternative Single Land Tax set as a percentage of the cadastral value of land owned or used, which replaces the usual land tax and five other business taxes. Finally, individual farms pay a 10% income tax for physical persons with an income above KZT 150 million (USD 0.3 million).

Kazakhstan is a member of the Treaty on the Eurasian Economic Union (EAEU) established in 2015, together with Armenia, Belarus, Kyrgyzstan and the Russian Federation (hereafter “Russia”). Kazakhstan’s border measures are implemented within the Customs Union of the EAEU and certain national responsibilities in the area of customs regulations are transferred to the EAEU, including SPS and technical regulations.

Kazakhstan is a party to the Paris Agreement on Climate Change. Through its Nationally Determined Contribution (NDC), Kazakhstan set an economy-wide target starting in 2021 to reduce GHG emissions by 15% compared to 1990 by 2030. This target covers all emissions, including from agriculture. Specific targets or reduction plans for the agricultural sector were not defined.

There are no mitigation policies directed at the agricultural sector. There are however cross-compliance requirements linked to some support payments that could help lower GHG emissions from agriculture. For example, some interest rate subsidies provided to livestock producers require rehabilitation of pasture lands.

Innovation for sustainable productivity growth

Kazakhstan is facing a steady decline in land quality, water shortages and outdated equipment. One important pillar of support to increase productivity is in the form of investment subsidies. Together with the United Nations Food and Agriculture Organization (FAO) the Ministry of Agriculture is developing a plan to combat desertification and land degradation.

Although there are no direct indicators for sustainable productivity growth, the Concept includes policy measures aimed at encouraging sustainable increases in productivity. These measures involve educating

small and medium-sized farms in the best sustainable practices and technologies, as well as establishing an environmental monitoring system, particularly for livestock greenhouse gas emissions.

An essential part of government support is aimed at irrigation measures. In order to encourage farmers to adopt modern water-saving technologies, the amount of subsidy is conditioned on the type of irrigation method. Subsidy rates for initial investment costs, starting from 50%, will decrease over time for non-water-saving irrigation methods, while rates for water-saving technologies will increase to up to 85%.

Domestic policy developments in 2023-24

The Concept, which has been substantially amended in 2023, now includes additional target indicators, including for self-sufficiency (for apples, sausages, cheese and poultry meat), for aligning mineral fertiliser use with scientifically justified levels, for increasing investment and employment, and for increasing the use of water-saving technologies.

As in previous years, preferential interest rates and capital grants for investments play an important role in supporting Kazakhstan's agriculture. However, the delivery mechanisms are about to change in 2024. Instead of the subsidies being paid to the farmer, they will be paid to the financial institutions. This will ensure that the farmer benefits directly from lower interest rates and investment grants, rather than having to pay the full financial cost up front and getting reimbursed later on.

The Law on Pasture Use from February 2024 forms the legal basis to withdraw unused and irregularly issued land in order to reduce the deficit of pastures for residents of villages and districts.

The investment initiative of the North Kazakhstan region has helped create 100 dairy farms through preferential financing by regional agricultural co-operatives. The initiative offers a 2.5% annual interest rate, a loan term of up to 10 years, and a maximum loan amount of up to KZT 5 billion (USD 11 million). The loans are intended for new projects or expanding existing ones, including:

- dairy farms with a capacity of at least 400 heads of cattle
- poultry meat production farms with an output of at least 5 000 tonnes of poultry meat per year
- vegetable storage facilities capable of storing at least 1 000 tonnes
- irrigated agriculture projects for potatoes and vegetables, as well as fodder production, utilising modern water-saving technologies like sprinkler and drip irrigation.

For 2023, KZT 100 billion (USD 219 million) was allocated from the national budget to fund 65 dairy farms across 11 regions. In 2024, the plan includes allocating another KZT 100 billion (USD 219 million) to finance 73 projects: 14 dairy farms, 33 irrigation projects, 23 vegetable storage facilities, 2 poultry farms, and 1 meat livestock project.

The reimbursement rate for investment subsidies was increased in 2023 from 25% to 50%. This is intended to help modernise the physical infrastructure of domestic seed producers with modern equipment and to encourage the construction and renovation of seed cleaning complexes and seed preparation lines. An additional KZT 12.7 billion (USD 28.8 million) in subsidies is earmarked for the development of the domestic seed industry in 2024.

From 2024, the mechanism of the fertiliser subsidy will be changed. For domestic fertiliser, the subsidy will be paid to the manufacturer instead of to the farmer and will increase by ten percentage points from 50% to 60%. For imported fertiliser, the subsidy rate remains unchanged at 50% and continues to be paid to the farmer directly.

Trade policy developments in 2023-24

In February 2023, an export duty of 20% but no less than EUR 100 (USD 109) per tonne was imposed on sunflower seeds. The measure is intended to promote domestic production of sunflower oil and to curb price increases in the country.

From April 2023, a 6-month import ban on wheat was implemented. It has since been extended to end in April 2024. The aim is to support domestic farmers and to stabilise the price of locally produced wheat, which is facing strong competition from cheaper Russian grain.

In line with the Eurasian Economic Union (EAEU) agreement, the Eurasian Economic Commission (EEC) sets tariff quotas for certain categories of agricultural products originating from third countries and imported into the EAEU customs territory. For 2024, Kazakhstan's tariff quotas are set at 21 000 tonnes for beef imports and 140 000 tonnes for poultry meat and by-products.

Policy context

Key economic and agricultural statistics

Kazakhstan has the ninth largest land area in the world and is one of the least densely populated countries. It has the second-highest per-capita availability of arable land in the world. Kazakhstan is also an important exporter of fossil fuels. The country is an upper middle-income economy and the richest country in Central Asia, but its economy remains highly dependent on oil and commodity markets. Its high share of trade in GDP (30%) highlights the strong focus on international markets.

Although the contribution of agriculture to the economy has declined sharply since the early 1990s, agriculture remains an important economic sector, contributing to 5% of GDP and 13% of national employment (Table 17.2). Over 75% (or 214 million ha) of the country's territory is suitable for agricultural production, but only about half of that is currently under agricultural production. Kazakhstan is one of the top ten grain exporters in the world, exporting to over 70 countries. The country's major crops are wheat, barley, cotton and rice, with wheat exports a major source of foreign currency. Livestock products, including dairy, leather, meat and wool also comprise an important share of agricultural output.

The farm structure is dualistic: with large-scale and often highly vertically integrated operations dominating the production of the sector, while rural and subsistence-farming households account for the majority of farms. Kazakhstan's agricultural sector is particularly vulnerable to the effects of climate change, as increasingly frequent hot weather and severe droughts reduce water availability.

Table 17.2. Kazakhstan: Contextual indicators

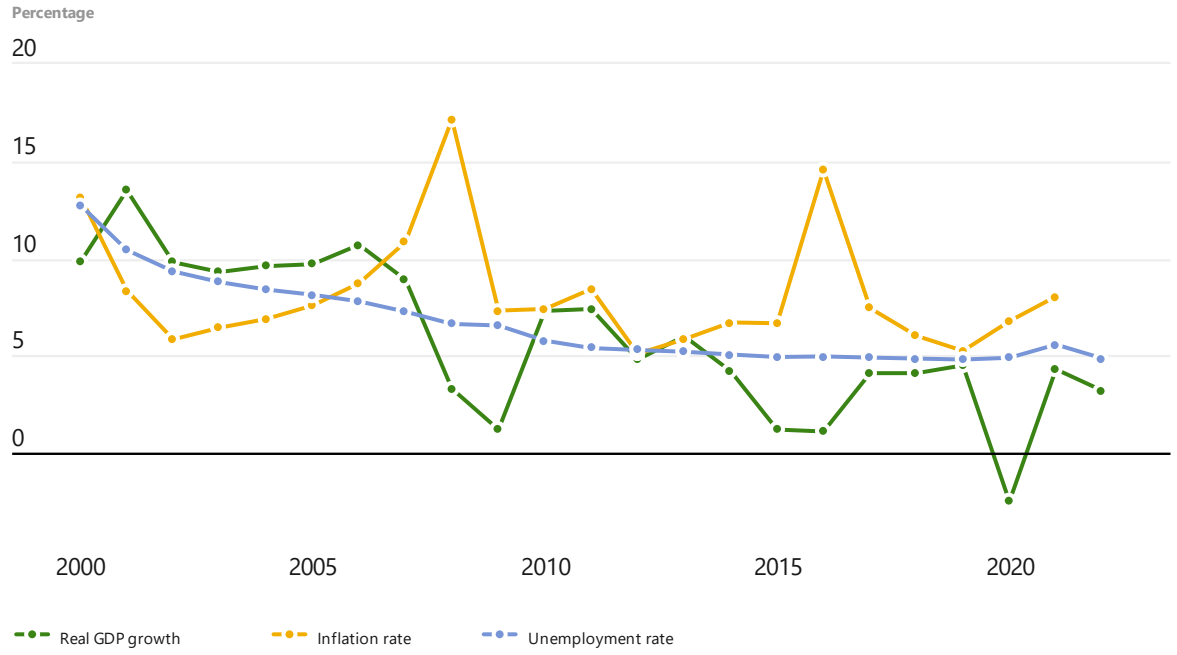
	Kazakhstan		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	115	605	0.3%	0.4%
Population (million)	15	19	0.4%	0.4%
Land area (thousand km²)	2 700	2 700	3.3%	3.3%
Agricultural area (AA) (thousand ha)	215 393	213 796	7.2%	7.3%
			All countries[1]	
Population density (inhabitants/km²)	6	7	52	64
GDP per capita (USD in PPPs)	7 725	30 810	9 363	25 965
Trade as % of GDP	37.4	29.9	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	8.1	5.2	2.9	3.8
Agriculture share in employment (%)	36.1	12.9	-	-
Agro-food exports (% of total exports)	2.0	6.6	6.4	8.0
Agro-food imports (% of total imports)	0.7	11.7	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	56	61	-	-
Livestock in total agricultural production (%)	44	39	-	-
Share of arable land in AA (%)	14	14	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

Kazakhstan's GDP grew by 3.2% in 2022 coming out of the COVID-19 pandemic (Figure 17.4). The pandemic hit the economy more than the crises in 2008 and 2015-16. The recovery in 2022 was also more muted than that following the 2008 crisis, but in line with that of 2015-16. Economic data is not yet available to describe the Kazakh economy following Russia's full-scale invasion of Ukraine.

Kazakhstan has been a net agro-food importer since the mid-2000s, yet the country remains one of the world's largest wheat exporters (Figure 17.5). More than 60% of agro-food exports are in primary commodities, the vast majority of which goes to processing by industry. More than 60% of agro-food imports are processed commodities, the bulk of which are for final consumption.

Figure 17.4. Kazakhstan: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

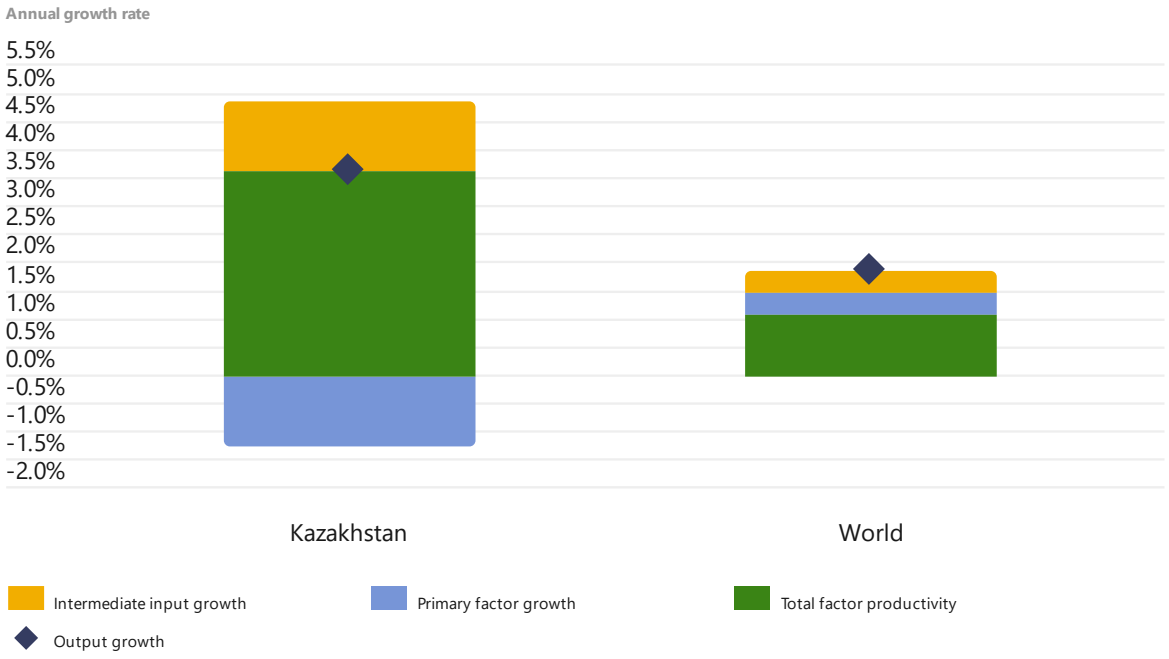
Agricultural output grew very rapidly in Kazakhstan in the decade 2012-21, at an annual average rate of 3.6% (Figure 17.6). Intermediary inputs grew at only 1.2% and agricultural labour force fell with labour moving out of agriculture to other sectors. The strong output growth was only possible because of high productivity gains of 3.6% per year, well above the world average.

The persistent negative average nutrient balances suggest that soil fertility is being eroded which will have a negative impact on yields and output (Table 17.3). Studies indicate that there is a high degree of land degradation in Kazakhstan and that soils are very poor in nitrogen and phosphorus, particularly in the rangelands (Shpedt and Aksenova, 2021[1]; Hu, Han and Zhang, 2020[2]). Agriculture's share of energy use and agriculture's share of GHG emissions have both declined and appear to be converging with OECD averages. The share of agriculture in abstracted water has increased slightly and remains much higher than the OECD average.

Figure 17.5. Kazakhstan: Agro-food trade

Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Figure 17.6. Kazakhstan: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Table 17.3. Kazakhstan: Productivity and environmental indicators

	Kazakhstan		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	1.9%	3.6%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	-14.8	-13.3	32.1	28.2
Phosphorus balance, kg/ha	-2.7	-2.0	3.3	2.3
Agriculture share of total energy use (%)	4.0	2.2	1.7	2.0
Agriculture share of GHG emissions (%)	27.1	12.7	8.7	10.1
Share of irrigated land in AA (%)	0.9	0.6	-	-
Share of agriculture in water abstractions (%)	66.7	62.7	47.0	49.5
Water stress indicator	..	..	8.7	..

Note: * or closest available year.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

In the Soviet era, all sectors of Kazakhstan's economy, including agriculture, were regulated by central planning. Production, the marketing of agricultural inputs and outputs, and processing and distribution of food were controlled by state enterprises. Agriculture was supported by high administered prices and considerable input and output price subsidies, in addition to policies such as cheap energy and transport, which were not agriculture-specific.

Kazakhstan became an independent country in 1991 following the collapse of the Soviet Union. Stabilisation and transition to a market economy were its main economic challenges. During the transition, the agricultural sector was affected by economic shocks, land reform and reduced government support. The main agricultural policies were geared towards decreasing food import-dependency and increasing domestic food production (Baubekova, Tikhonova and Kvasha, 2021[3]).

Agricultural products and inputs became exposed to market forces post-independence in the 1990s. After this early period of market reform, Kazakhstan made little progress in pursuing further trade liberalisation. It was not until its accession to the WTO in 2015 that the country restarted trade liberalisation measures. However, Kazakhstan continues to apply a range of border and domestic price intervention measures such as tariff rate quotas and non-tariff measures. They have also imposed export restrictions in times of global uncertainty or high prices, such as 2008, 2020 and 2022.

The State Programme of Agro Industrial Complex Development for 2017-2021 (hereafter, "the 2021 State Programme") provided the main agricultural policy framework in Kazakhstan up until the end of 2021. While maintaining the principles of the previous framework (Agribusiness-2020 Programme), the 2021 State Programme put a stronger emphasis on the development of, and support to, individual household plots and small farms, agricultural producer co-operatives and agriculture supporting services and infrastructure. In addition, some input subsidies including on seed, fertiliser and pesticides were increased.

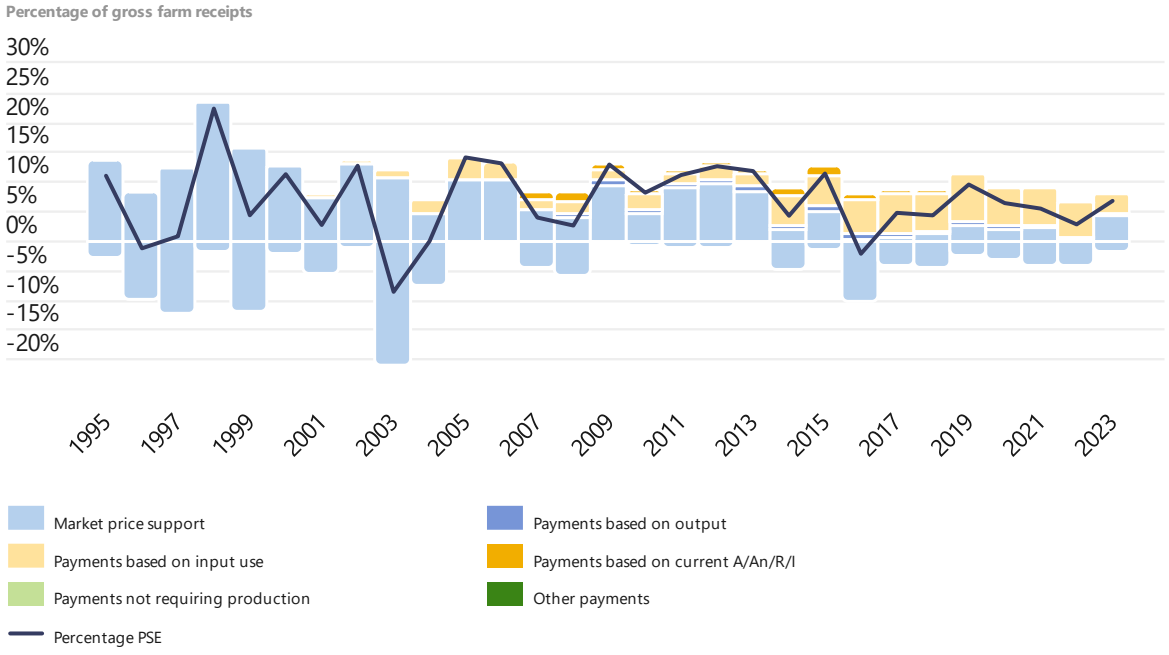
Table 17.4. Kazakhstan: Agricultural policy trends

Period	Broader framework	Changes in agricultural policies
Prior to 1992	Soviet era Closed economy	Government control of the agricultural economy through regional trade controls, input supply controls, and the continuation of soft budget constraints Taxation of the agricultural sector to support the industrial sector Tariffs Low administrated prices on energy and transport
1992-1997	Initial structural reforms towards an open economy	Price liberalisation of agricultural products and inputs Emergence of new policy institutions
1998-2002	Economic crisis Stabilisation measures	Debt rescheduling Limited support to the sector Agrarian Credit Corporation created as main agricultural lender (credit at preferential rates) Restructuring agricultural enterprises
2003-2015	Agriculture as part of economic diversification	Price support Support for import-competing products Tariff protection for meat Taxation of agricultural exports
2015-present	Reforms to trade liberalisation	WTO accession 2015 EAEU membership in 2015 Elimination of payments per hectare for priority crops Promotion of agricultural co-operatives Increase in land tax rates Debt restructuring programme Introduction of investment subsidies Introduction of interest concessions Agricultural insurance reform

Producer support in Kazakhstan tends to vary considerably between years. Levels of support from price interventions have declined over time in favour of budgetary support. The %PSE fluctuated considerably between 1995 and 2020. In some years, negative support provided through depressed market prices for some products offset budgetary allocations and positive support provided through higher domestic prices for others. However, net producer support was positive in most years (Figure 17.7), due to increasing support related to the use of production inputs, in particular credit, over the past ten years. Overall, total

budgetary support to agriculture increased relative to the size of the economy and is now about 2.6% of gross farm receipts.

Figure 17.7. Kazakhstan: Development of the PSE and its composition, 1995 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

References

Baubekova, A., A. Tikhonova and A. Kvasha (2021), "Evolution of Agricultural Policy in Kazakhstan", in *Kazakhstan's Developmental Journey*, Springer Singapore, https://doi.org/10.1007/978-981-15-6899-2_3. [3]

Hu, Y., Y. Han and Y. Zhang (2020), "Land desertification and its influencing factors in Kazakhstan", *Journal of Arid Environments*, Vol. 180, p. 104203, https://doi.org/10.1016/j.jaridenv.2020.104203. [2]

Shpedt, A. and Y. Aksenova (2021), "Modern assessment of soil resources of Kyrgyzstan", *IOP Conference Series: Earth and Environmental Science*, Vol. 624/1, p. 012233, https://doi.org/10.1088/1755-1315/624/1/012233. [1]

18. Korea

Main findings

Support to agriculture

Korea has gradually reduced its support to producers relative to gross farm receipts. Despite these reform efforts, Korea is one of the countries with the highest level of relative support to producers. Producer support for agriculture (Producer Support Estimate, PSE) in Korea amounted to 44% of gross farm receipts in 2021-23, down from 53% in 2000-02, but much higher than the OECD average.

Market Price Support (MPS) remains the main component of producer support, representing 86% of support to farmers in 2021-23 and covering key imported commodities such as rice, soybeans, barley, garlic, red peppers, and pig meat. These market-distorting transfers result from the maintenance of tariff rate quotas (TRQs) with high out-of-quota tariffs. On average, domestic producer prices are 63% higher than comparable world prices but the price gap has gradually decreased over the past decades.

Budgetary support mostly consists of direct payment programmes, agricultural insurance schemes and subsidies based on variable input use. This support accounted for 6% of gross farm receipts in 2021-23. Budgetary support increased by nearly 80% over the last two decades, but the proportion is relatively small, 0.38% of Gross Domestic Product (GDP).

General services expenditures (General Service Support Estimate, GSSE) declined from 10% in 2000-02 to 7% in 2021-23 relative to the agricultural value of production but remains higher than the OECD average of 3.4%. The majority (53%) of GSSE goes to developing and maintaining infrastructure, particularly irrigation facilities. Agricultural knowledge and innovation system (26%), public stockholding (11%), and inspection and control (10%) are the next largest GSSE components.

The share of Total Support Estimate (TSE) relative to GDP declined from 7.6% in 1986-88 to 2.9% in 2000-02, and further to 1.5% in 2021-23, though it remains higher than the OECD average of 0.6%.

Key recent policy changes

In July 2023, the Act on Fostering and Supporting Smart Farming set out the policy direction for infrastructure development, distribution, expansion, and support for smart agriculture. The act mandates five-year basic plans and annual implementation plans and requires provincial governors to create locally tailored plans. The act also designates institutions for smart agriculture education, introduces the “Smart Agriculture Manager” system, supports AI and robotics development, and standardises equipment and data. A smart agricultural data platform will be established for efficient data use.

The First Agricultural Disaster Insurance Development Basic Plan (2023-27) was established in January 2023. It aims to expand agricultural disaster insurance, targeting 60% farm enrolment and 95% coverage of production by 2027. The plan seeks to minimise insurance blind spots, increase payouts, and address institutional deficiencies. Premiums will be calculated based on detailed farming information, and a streamlined enrolment and payout using smart technologies will be implemented.

The Third Comprehensive Seed Industry Development Plan (2023-27) was announced in 2023. This plan aims to grow the Korean seed industry to KRW 1.2 trillion (USD 919 million) and expand exports to USD 120 million by 2027. The plan supports developing seeds for crops and vegetables suitable for smart and vertical farms, mechanisation, and policy demand. It also includes training data experts for digital breeding, enhancing corporate breeding links, and opening government genetic resources to private companies.

In August 2023, the Act on Revitalisation of Economic and Social Services in Rural Areas Based on Rural Community was enacted to address service shortages and support sustainable development in rural communities. The act provides a legal basis for supporting local communities and social enterprises. It offers administrative and financial support, as well as education, training, and counselling for rural residents. Additionally, the act supports consulting, information provision, promotion, programme management, and facility improvement.

The 2030 Greenhouse Gas Reduction and Green Growth Strategy in the Livestock Sector was announced in January 2024. The strategy aims to enhance sustainability and reduce greenhouse gas emissions in the livestock sector. The strategy includes expanding manure digesters, enhancing wastewater purification, and improving low-carbon breeding management as well as investing in facilities to convert livestock waste into biochar. It also supports the development of greenhouse gas reduction technologies, promotes a low-carbon certification system, and provides incentives to farms that feed low-methane and low-protein feed.

Assessment and recommendations

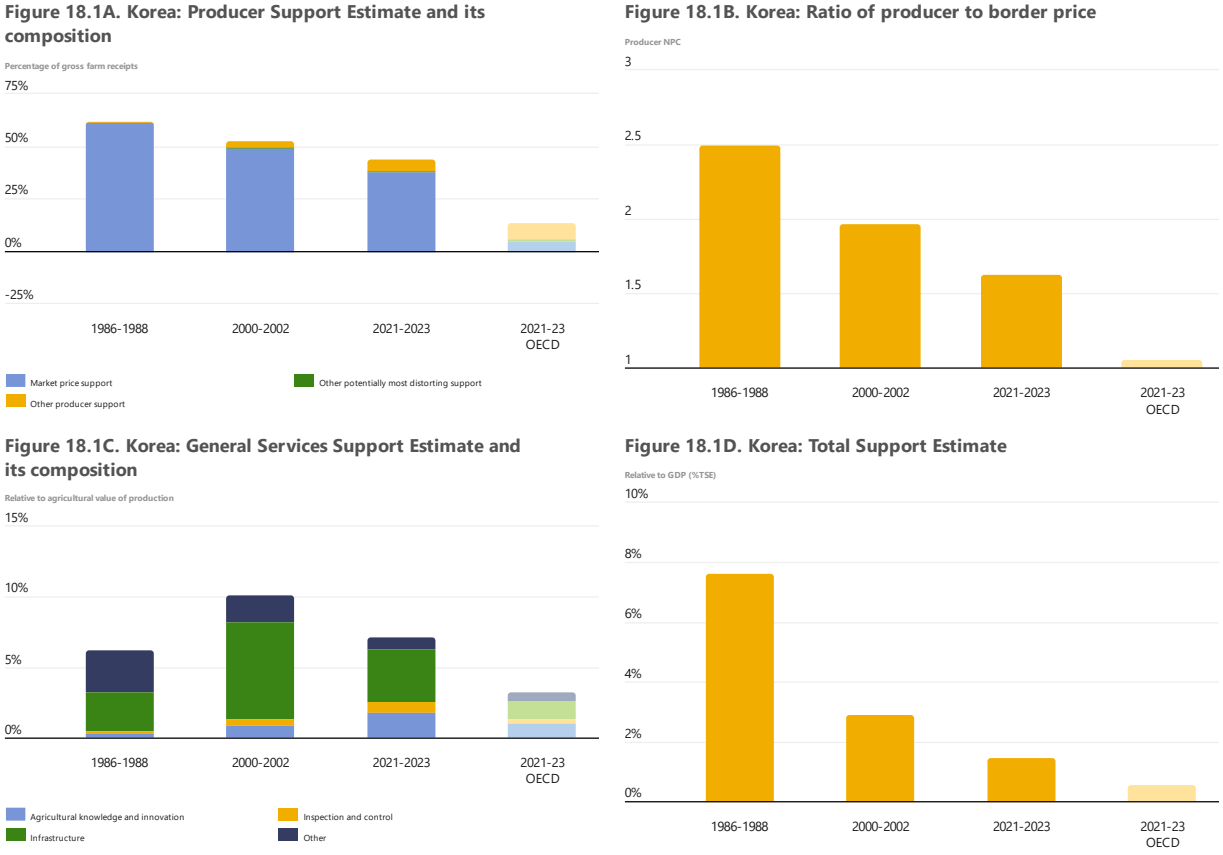
- As part of efforts to enhance sustainable productivity growth, the spread of smart agriculture is being emphasised in Korea. While some progress has been made such as the development of smart farm technologies by leading companies, it remains in the early stages of government-led dissemination using Smart Farm Innovation Valleys. Stronger partnerships with the private sector can accelerate development and dissemination of smart farm technologies.
- Korea has reformed agricultural support policies over the past decades. However, the level of support to producers remains higher than the OECD average. Commodity-specific support is still the dominant type of support. This type of support, by encouraging production of specific commodities, can reduce farmers' incentives to try new products. Support that is not commodity specific can give a better enabling environment for farmers that lets them more quickly adapt and react to new challenges and opportunities.
- Korea's agricultural innovation system is characterised by the dominance of public actors such as public research institutions and public extension services. Public agricultural R&D should be redefined and concentrated more on basic and preliminary research, which are complementary to private R&D. A more collaborative and demand-driven system between public and private sectors including higher education institutions can help guide public research and make private R&D more successful.
- Agricultural disaster insurance has helped stabilise the income of farmers by expanding the eligible commodities and coverage. Government support for insurance premiums have helped increase the use of insurance by farmers. However, it is necessary to evaluate whether agricultural insurance premium subsidies are affecting farmers' other risk management efforts or hindering the development of the agricultural insurance market. In the long term, the subsidy should be gradually reduced to increase the role of the private sector.
- Korea has reduced the use of chemical fertilisers over the past two decades, but the rapid expansion of intensive livestock production has offset the improvement in nutrient balance. Nitrogen and phosphorus surpluses remain well above the OECD average. The livestock sector is one of the main agricultural sources of water and soil pollution. Proper manure management is

essential for sustainable livestock development, and policies should encourage environment-friendly manure management.

- Climate change is likely to have a negative impact on agricultural productivity and output. Extreme weather events are causing increasing volatility in agricultural production. Strengthening systemic preparedness is needed to maintain agricultural productivity and ensure food security. In order for the early warning system to effectively reduce damage in the field, efforts to enhance disaster response capabilities should be made in conjunction with agricultural extension services and other related support.
- The livestock sector will play an important role in Korea's climate-mitigation policy as it accounts for 40% of agricultural greenhouse gas emissions as of 2018. Technologies that reduce greenhouse gas emissions and other environmental impacts will be crucial for sustainable growth in the livestock sector. Government support can help livestock farmers adopt these best practices. In the long term, the livestock industry needs to transition to a flexible structure that can adapt to changes in consumer diets.

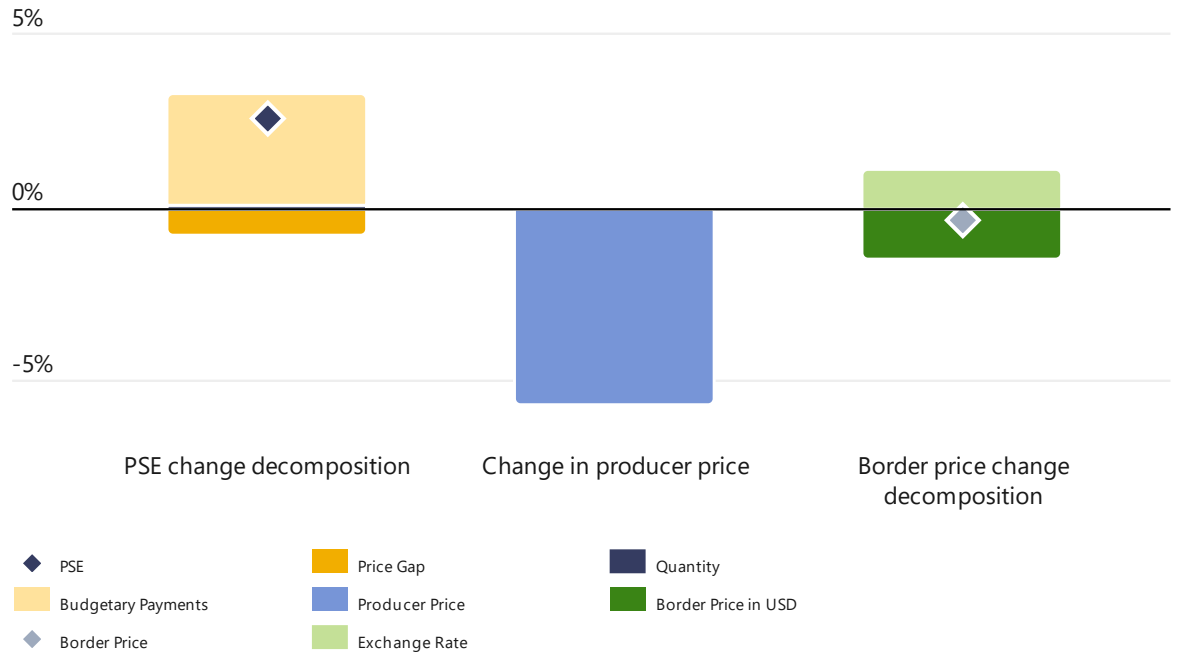
Development of support to agriculture

Figure 18.1. Korea: Development of support to agriculture



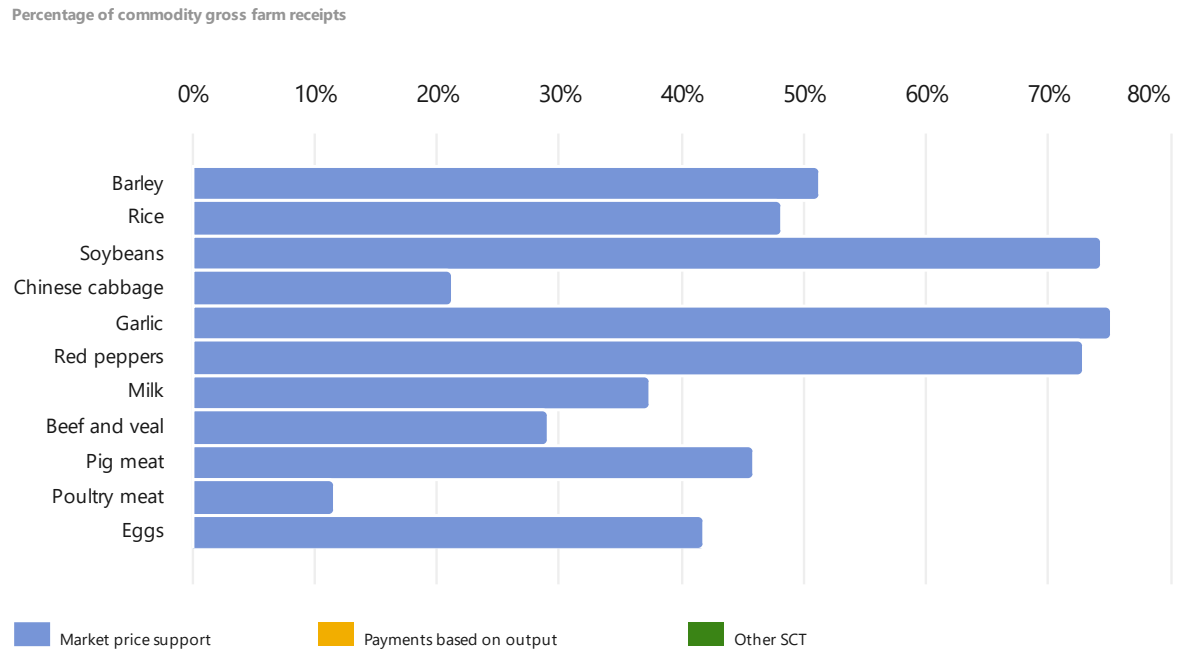
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 18.2. Korea: Drivers of the change in PSE, 2022 to 2023



Note: % change of nominal Producer Support Estimate expressed in national currency.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 18.3. Korea: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Table 18.1. Korea: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**16 985**	**26 360**	**47 517**	**51 730**	**44 838**	**45 982**
of which: share of MPS commodities (%)	74.33	63.27	59.49	61.11	60.89	56.47
Total value of consumption (at farm gate)	**17 247**	**33 199**	**63 639**	**67 835**	**60 419**	**62 665**
Producer Support Estimate (PSE)	**10 682**	**14 466**	**22 340**	**26 491**	**20 123**	**20 407**
Support based on commodity output	10 562	13 505	19 233	23 285	17 367	17 046
Market price support[1]	10 562	13 505	19 233	23 285	17 367	17 046
Positive market price support	10 562	13 505	19 233	23 285	17 367	17 046
Negative market price support	0	0	0	0	0	0
Payments based on output	0	0	0	0	0	0
Payments based on input use	90	470	534	549	476	576
Based on variable input use	29	207	321	312	277	374
with input constraints	4	34	45	45	44	47
Based on fixed capital formation	57	246	151	149	150	154
with input constraints	0	18	36	44	34	30
Based on on-farm services	4	17	62	88	50	48
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	29	490	602	613	496	697
Based on Receipts / Income	29	292	153	231	74	153
Based on Area planted / Animal numbers	0	198	449	382	421	544
With input constraints	0	160	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	0	0	1 972	2 045	1 784	2 088
With variable payment rates	0	0	0	0	0	0
with commodity exceptions	0	0	0	0	0	0
With fixed payment rates	0	0	1 972	2 045	1 784	2 088
with commodity exceptions	0	0	0	0	0	0
Payments based on non-commodity criteria	0	1	0	0	0	0
Based on long-term resource retirement	0	1	0	0	0	0
Based on a specific non-commodity output	0	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0	0
Miscellaneous payments	0	0	0	0	0	0
Percentage PSE (%)	**62.26**	**52.66**	**43.94**	**48.22**	**42.28**	**41.36**
Producer NPC (coeff.)	**2.50**	**1.97**	**1.63**	**1.75**	**1.61**	**1.55**
Producer NAC (coeff.)	**2.65**	**2.11**	**1.78**	**1.93**	**1.73**	**1.71**
General Services Support Estimate (GSSE)	**1 066**	**2 676**	**3 414**	**3 541**	**3 326**	**3 375**
Agricultural knowledge and innovation system	67	243	884	886	846	922
Inspection and control	26	126	339	357	319	342
Development and maintenance of infrastructure	467	1 811	1 794	1 925	1 744	1 713
Marketing and promotion	0	26	37	42	35	34
Cost of public stockholding	505	471	360	332	383	365
Miscellaneous	0	0	0	0	0	0
Percentage GSSE (% of TSE)	**8.92**	**15.62**	**13.30**	**11.77**	**14.15**	**14.17**
Consumer Support Estimate (CSE)	**-10 147**	**-15 375**	**-23 985**	**-28 301**	**-22 033**	**-21 621**
Transfers to producers from consumers	-10 015	-12 814	-18 217	-21 662	-16 917	-16 072
Other transfers from consumers	-205	-2 654	-5 813	-6 680	-5 168	-5 591
Transfers to consumers from taxpayers	73	93	45	41	51	43
Excess feed cost	0	0	0	0	0	0
Percentage CSE (%)	**-58.95**	**-46.08**	**-37.53**	**-41.75**	**-36.50**	**-34.53**
Consumer NPC (coeff.)	**2.45**	**1.86**	**1.60**	**1.72**	**1.58**	**1.53**
Consumer NAC (coeff.)	**2.44**	**1.85**	**1.60**	**1.72**	**1.57**	**1.53**
Total Support Estimate (TSE)	**11 821**	**17 235**	**25 800**	**30 073**	**23 500**	**23 825**
Transfers from consumers	10 220	15 468	24 030	28 342	22 085	21 664
Transfers from taxpayers	1 805	4 421	7 583	8 411	6 584	7 753
Budget revenues	-205	-2 654	-5 813	-6 680	-5 168	-5 591
Percentage TSE (% of GDP)	**7.64**	**2.93**	**1.48**	**1.65**	**1.40**	**1.39**
Total Budgetary Support Estimate (TBSE)	**1 258**	**3 731**	**6 567**	**6 788**	**6 133**	**6 780**
Percentage TBSE (% of GDP)	**0.81**	**0.64**	**0.38**	**0.37**	**0.37**	**0.40**
GDP deflator (1986-88 = 100)	**100**	**209**	**309**	**305**	**308**	**314**
Exchange rate (national currency per USD)	**812.03**	**1 224.03**	**1 247.29**	**1 144.46**	**1 291.41**	**1 306.01**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for Korea are: barley, garlic, red pepper, Chinese cabbage, rice, soybean, milk, beef and veal, pig meat, poultry and eggs.

Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

The Framework Act on Agriculture, Rural Community and Food Industry, enacted in 2007, establishes Korea's agricultural policy framework. It requires the government to establish a national policy plan every five years with the purpose of providing direction for national policies to pursue the sustainable development of agriculture and rural communities, to ensure the stable supply of safe agricultural products and quality food, and to enhance the level of income and quality of life of farmers. The 3rd National Plan to Develop Agriculture, Rural Communities and the Food Industry (2023-27) was established in 2023, reflecting the national policy agenda and the agricultural policy goals of the government newly formed in 2022. This recent plan includes five policy objectives: 1) securing food sovereignty; 2) fostering the agro-food industry as a growth engine; 3) strengthening the safety net for farm households; 4) enhancing food safety in the supply chain; and 5) creating comfortable and attractive rural areas.

The public stockholding scheme for rice, known as the Public Storage System for Emergencies, was established in 2005. One of its objectives is to guarantee food security in times of natural disaster or temporary shortages driven by a mismatch between supply and demand. Under the scheme, the government purchases rice from farmers at prevailing market prices during the harvest season and resells into the market at a later date. The size of the stockpile is determined through consultation with relevant ministries, considering recommendations from international organisations and domestic research. The timing of releases is managed in a rotating manner, linked to the volume of the purchase, to maintain a constant stockpile. The government has a similar purchasing programme for soybeans.

The Direct Payment System, revised in May 2020, aims to stabilise the incomes of small to medium-sized farms and to improve farm compliance with regulatory obligations in order to promote public good in agriculture and rural communities. Farmers must comply with 17 regulatory obligations covering environmental protection, food safety, and farm management standards such as standards for pesticide application. There is also a direct payment for the transfer of the farm management rights to enable retired farmers to sell or lease their farmlands while maintaining their incomes and to create more opportunities for young farmers.

Agricultural disaster insurance, revenue insurance and work safety insurance are provided by private companies with government subsidies covering 50% of the insurance premiums. The agricultural disaster insurance scheme, which covers 70 crops and 16 livestock products including apples, pears, grapes, onions, and garlic., protects farmers against losses in crop yield and livestock. Agricultural revenue insurance covers seven crops: grapes (coverage began in 2015), onions (2015), soybeans (2015), garlic (2016), potatoes (2017) sweet potatoes (2017), and cabbage (2018). Work safety insurance covers injuries, illnesses and accidents, or deaths of farm workers that occur during on-farm work and contributes to stabilising farm income.

The Act on Support for Restructuring and Regeneration of Rural Spaces was passed by the National Assembly in February 2023 and laid the legal foundation for the systematic management of rural spaces. It aims to help meet the challenges in rural areas linked to rapid economic growth, which has exacerbated the urban-rural gap in terms of living conditions and community services, resulting in rural out-migration. The Spatial Plan for Rural Communities aims to address this gap via improved land use management systems, restructured rural areas, and enhanced daily services such as housing, transportation and employment in rural areas. The Ministry of Agriculture, Food and Rural Affairs (MAFRA) aims to help improve rural residential areas, relocate locally unwanted facilities and provide necessary social services.

The Enhanced Update of its First Nationally Determined Contribution for achieving the Net-zero across all the sectors was announced in November 2021. This requires GHG emissions in agriculture and fisheries to decline 27.1% relative to 2018 levels by 2030 and 37.7% by 2050. Accordingly, the 2050 Agri-Food

Carbon Neutrality Strategy was revealed in December 2021. This sectoral strategy contained a detailed implementation plan for GHG emission reduction for food production, distribution, consumption and energy conversion. Moreover, as a member of the Global Methane Pledge, Korea is working to reduce methane emissions in the agricultural sector by 20.6%.

Tariffs and tariff rate quotas (TRQs) are the main agriculture trade policy measures. A total of 63 agricultural products are subject to TRQs, including rice, corn and soybeans. In-quota tariff rates range from 0% to 50% with out-of-quota rates between 9% and 887%. A TRQ volume of rice (408 700 tonnes, about 10.7% of annual rice consumption) has been maintained at a 5% tariff rate (the out-of-quota tariff is 513%).

Korea is engaged in 21 bilateral and regional free trade agreements (FTAs). Some of these agreements include significant tariff reductions for livestock and fruit products, but rice is excluded from tariff concessions Import tariffs on various meats from major exporting countries such as the United States, Australia, Canada and the European Union are being progressively phased out over periods between 10 and 15 years from the entry into force of the respective agreements.

Innovation for sustainable productivity growth

Korean agriculture achieved a substantial improvement in total factor productivity during the past three decades, despite a persistent decrease in the agricultural labour force and farmland. The agricultural TFP growth in Korea has been historically higher than the OECD average. The growth of output was the highest in the 1970s but slowed down to nearly zero in recent years. In the last two decades, feed and capital inputs have grown and fertiliser and land inputs declined, reflecting Korea's structural change from crop to livestock production (OECD, 2018[1]).

Korea has a particularly well-developed information and communication technology (ICT) infrastructure, but fragmentation of farmland and dominance of small-scale farms are a major constraint to improving the productivity of land-intensive agriculture. MAFRA is fostering smart agriculture to enhance sustainability and improve resilience against climate change and natural disasters. Smart agriculture[1] is expected to contribute to addressing the decreasing workforce in rural areas and minimising the environmental impacts while continuing innovation and increasing productivity in the agricultural sector.

In 2018, MAFRA announced the Smart Farm Expansion Plan to strengthen the overall competitiveness of the smart farming industry by going beyond the conventional distribution of smart farms at the individual farm level. The plan focuses on establishing basic infrastructure and creating innovative models of smart farming suitable for the Korean conditions and allows the government to expand its policy targets to include young farmers and upstream and downstream industries. It aims to foster smart farming expertise by promoting the establishment of diffusion hubs with integrated functions for education, research, and production. This includes programmes such as strengthening the training of smart farm experts, creating lease-based smart farms for young farmers, and establishing demonstration sites for research and commercialisation for food companies, research institutions and farmers.

Following the plan, the government selected four regions as Smart Farm Innovation Valleys, including Gimje and Sangju in the first phase (2018) and Goheung and Miryang in the second phase (2019). Between 2019 and 2022, the Smart Farm Innovation Valleys were constructed and equipped with Smart Farm Youth Startup Incubation Centres, Smart Farm Demonstration Sites, and Big Data Centres.

The Smart Farm Youth Startup Incubation Centre supports prospective young farmers with 20 months of theoretical and practical training to settle in agriculture areas through smart farms. Additionally, exceptional students are provided with the opportunity to lease a smart farm for three years to enhance their management and cultivation capabilities. The Smart Farm Demonstration Site offers various facilities, equipment, and support services for technology verification to participating companies. The Big Data

Centre aims to collect smart farm data produced in the Smart Farm Innovation Valley. This data will serve as basic information for enhancing productivity within the Innovation Valley and across the country.

In July 2023, the government enacted the Act on Fostering and Supporting Smart Farming, outlining the policy direction for infrastructure development, distribution, expansion, and support for smart agriculture. To foster and support smart agriculture, five-year basic plans and annual implementation plans are to be established. The act commits provincial governors to formulate plans tailored to local conditions. It also allows MAFRA to designate public institutions with expertise in smart agriculture as Smart Agriculture Support Centres capable of carrying out major projects related to smart agriculture.

To enhance the technical capabilities of farmers, industrial workers and experts, the act provides for the designation of institutions for the education of smart agriculture professionals and introduces the "Smart Agriculture Manager" system to handle education, information technology dissemination and counselling. The act also lays the groundwork for supporting the development of artificial intelligence and robotics, and the standardisation for equipment and data used in advanced smart agriculture. To promote the introduction of developed equipment and services into the field, related regulations for support technology verification, equipment testing, and follow-up management were incorporated in this act.

In addition, the government will support technology and service development by establishing a smart agricultural data platform so that farmers and companies can efficiently utilise and trade data collected through Internet of Things (IoT) equipment.

Recent policy developments

Domestic policy developments in 2023-24

Risk management

The First Agricultural Disaster Insurance Development Basic Plan (2023-27) was established in January 2023, mandated by the revised Agricultural Disaster Insurance Act. The objective of the plan is to ensure a comprehensive and robust safety net by expanding agricultural disaster insurance. MAFRA aims to have approximately 60% of all farms enrolled in agricultural disaster insurance by 2027 and expand the coverage of agricultural disaster insurance to around 95% of the total agricultural and forestry production. As of 2022, crop disaster insurance recorded a 50% enrolment rate and livestock disaster insurance had a 95% enrolment rate, resulting in a total enrolment rate of 54% for all farms.

Since the introduction of livestock disaster insurance in 1997 and crop disaster insurance in 2001, the scope and coverage of insurance have steadily expanded. The coverage of agricultural disaster insurance still remains limited in terms of eligible commodities and insured regions. The plan will minimise insurance blind spots and increase the payout amount.

The plan addresses rare situations where insurance benefits received by insured farms are less than government payments to support recovery costs. The relevant laws will be amended to pay insured farms the difference between recovery cost support payments and insurance benefits when recovery cost support payments exceed the insurance payout. This will ensure that there is no disadvantage for producers to use insurance.

To ensure insurance rates adjusted to farmers' conditions, premiums will be calculated on the basis of more detailed information on cultivation area, crop varieties, and cultivation characteristics. Moreover, the plan includes creating a streamlined insurance enrolment process and establishing a system for quick and accurate insurance payouts using smart technologies.

Fostering the development of the seed industry

The 3rd Comprehensive Seed Industry Development Plan (2023-2027) was announced in 2023. This plan envisions the development of seed industry through technological innovation. It aims to increase the size of the Korean seed industry to KRW 1.2 trillion (USD 919 million) and expand seed exports to USD 120 million by 2027

Based on this plan, the government supports the development of seeds for food crops including corn, soybeans, wheat, potatoes and rice as well as tailored seeds for leafy and fruit vegetables, suitable for smart farms and vertical farms with high market growth potential. Emphasis will also be placed on developing:

- wheat and soybean varieties that respond to the transition to mechanisation
- powdered rice varieties for increasing policy demand to promote rice processing industry
- royalty-free vegetable and fruit varieties such as one-person-sized cabbage, and flower varieties.

The plan provides for training the data experts for digital breeding, enhancing the link between corporate breeding and data, and facilitating the collection and analysis of genetic information for seeds by private companies through government research facilities. Additionally, government-held genetic resources will be opened for private companies to directly evaluate traits. The government will concentrate on developing and sharing basic science, while businesses will be responsible for developing seed varieties in a collaborative partnership.

Farm income stabilisation

The direct payment system was modified in 2024 to enhance farm income stability and increase the effectiveness of the policy:

- The rate of the direct payment for strategic crops, introduced last year, was doubled for soybeans and powdered rice to KRW 2 million per ha (USD 1 531), and a direct payment will be newly provided for corn.
- The unit price of the basic direct payment for small-scale farms with less than 0.5 ha was increased from KRW 1.2 million (USD 919) to KRW 1.3 million (USD 995). To mitigate income volatility caused by natural disasters, the coverage of agricultural revenue insurance was expanded from 7 to 10 items.
- A new support programme of retirement direct payments for elderly farmers was introduced to help stabilise their livelihood; land transferred through this programme will be prioritised for allocation to young farmers.
- The target group for support for living expenses (monthly KRW 1.1 million – USD 842) to help young farmers settle in the early stages of farming was expanded from 4 000 to 5 000 individuals.
- A new pilot programme for supporting low-carbon farming activities, such as Alternate Wetting and Drying (AWD) and low-methane feed, was introduced. The target area of the direct payment for landscape conservation was significantly expanded from 15 000 ha to 24 000 ha, taking into account the increased demand for landscape crops contributing to local economic revitalisation.

Revitalisation of rural areas

The government enacted the Act on Revitalization of Economic and Social Services in Rural Areas Based on Rural Community in August 2023 to address service shortages in rural areas and to support the revitalisation and sustainable development of rural communities. The act establishes the legal basis for supporting local communities and social enterprise including social farms for rural residents to resolve service shortages.

Under this law, administrative and financial support is provided for local communities established by rural residents to offer services within rural areas. The government also supports these communities by providing education, training, and counselling for rural residents. Additionally, this law allows for support for consulting, information provision, promotion, programme management, and facility improvement.

To implement these measures, the central government is to formulate a National Rural Economy and Social Services Revitalisation Plan based on rural communities every three years. Provincial governors can establish their local Rural Economy and Social Services Revitalisation Plans every three years under the national plan.

Policies to mitigate emissions from agriculture

The 2030 Greenhouse Gas Reduction and Green Growth Strategy in the Livestock Sector was announced in January 2024. The strategy aims to enhance sustainability and contribute to carbon neutrality in the livestock sector, which has recently seen an increase in greenhouse gas emissions. The strategy involves:

- Reducing emissions through the direct management of greenhouse gas emission sources in the livestock sector. To reduce emissions generated during the composting and anaerobic digestion process of manure, this includes expanding greenhouse gas reduction facilities such as manure digesters, and distributing them to farms, as well as enhancing the purification of wastewater generated from the manure treatment. Low-carbon breeding management and improvement of productivity will also be pursued as complementary measures.
- Increasing the number of biogas facilities using livestock manure, to replace fossil fuels in the region's energy use by electricity and waste heat generated from these facilities. Regulatory improvements and increased investment in production facilities to use livestock waste as biochar are also part of the strategy.
- Transitioning from high-input livestock breeding practices to a low-input and low-emission structure. This involves using smart equipment and solutions and converting more agricultural by-products into feed to further link livestock and crops.
- Developing greenhouse gas reduction technologies and promoting low-carbon certification system for livestock products. Additionally, a low-carbon programme will support farms that feed low-methane and low-protein feed and encourage carbon reduction by farms.

Policies to facilitate climate change adaptation in agriculture

In June 2023, the 3rd National Climate Change Adaptation Plan (2021-2025), established in December 2020, was revised to strengthen the overall adaptation infrastructure across sectors and enhance action plans applicable on the ground. The goal is to establish a basis for climate change adaptation by creating a sustainable agricultural environment. This includes enhancing agricultural meteorological information services, strengthening the development of climate-adaptive crop varieties, supporting the expansion of public stockholding and securing private overseas supply chains in preparation for extreme weather events.

This supplemental plan reinforces action in several ways:

- Improving climate monitoring and early warning systems and improved accessibility to adaptation information for the public.
- Encouraging increased participation of stakeholders in climate adaptation initiatives. Supplementing regional diagnostics and farm-level assessments to predict productivity changes in crops and livestock. This includes expanding on-site observation teams and using AI technology.
- Developing prevention and pest control technologies to better track, predict, and control sudden pest invasions.

- Establishing new water resources and digitalising irrigation systems to improve the efficiency of water resource utilisation and minimise drought damage.
- Improving and reinforcing drainage facilities to strengthen flood preparedness for agricultural production infrastructure in flood-prone areas.
- Promoting the adoption of smart farming, developing optimised solutions tailored to the region, crop and farming practices, expanding advanced mitigation technologies to prepare for damage caused by extreme weather events, and fostering climate-adaptive crop varieties.
- Better environmental management of cultivation, including water and soil quality to increase resilience.
- Enhancing disaster insurance and recovery measures to improve the capacity to respond to disasters.
- Expanding emergency stockpiles and establishing stable overseas supply chains in times of crisis.

Trade policy developments in 2023-24

Several free trade agreements (FTAs) were recently concluded, including the Strategic Economic Cooperation Agreement with Ecuador (October 2023), the Comprehensive Economic Partnership Agreement with the United Arab Emirates (October 2023) and the FTA with the Gulf Co-operation Council (December 2023). These agreements are scheduled to be formally signed in 2024, with efforts to expedite the domestic approval processes, including ratification, to facilitate their early enforcement. The FTA with the Philippines was finally signed in September 2023, after it was concluded in October 2021.

Policy context

Key economic and agricultural statistics

Korea's economy has been growing, having its GDP nearly tripled over the last two decades. However, the growth rate has slowed and is converging with that of advanced OECD economies. Korea is a high-income country in terms of per capita incomes.

As of 2022, Korea's arable land was 1.6 million ha, accounting for 16% of the total land area. The average arable land per farm was 1.5 ha. Conversely, Korea has one of the highest population densities among OECD countries and is experiencing a rapidly ageing population due to a low fertility rate and increased life expectancy. The ageing of rural communities is much more severe, as young generations have migrated to urban areas.

Trade is an important driver of Korea's economy. In 2022, trade accounted for 42.3% of the GDP. The remarkable growth of the Korean economy changed the status of agriculture. In the 1970s, agriculture contributed approximately 25% to GDP, but this share declined to 1.8% in 2022. Similarly, the share of agriculture in national employment decreased from 10.6% to 5.4% between 2000 and 2022. Both agricultural exports and imports slightly increased over this period. Korea remains a large importer of agricultural products.

The structure of agricultural production has significantly evolved. While cereal production has declined, the production of fruits, vegetables, and livestock products has increased. Crop production accounted for 56% of the total value of agricultural production in 2022 down from 75% in 2000. In contrast, the livestock sector has experienced the highest growth in recent decades. The share of livestock products in agricultural production increased from 25% to 44% in 2000-22.

Table 18.2. Korea: Contextual indicators

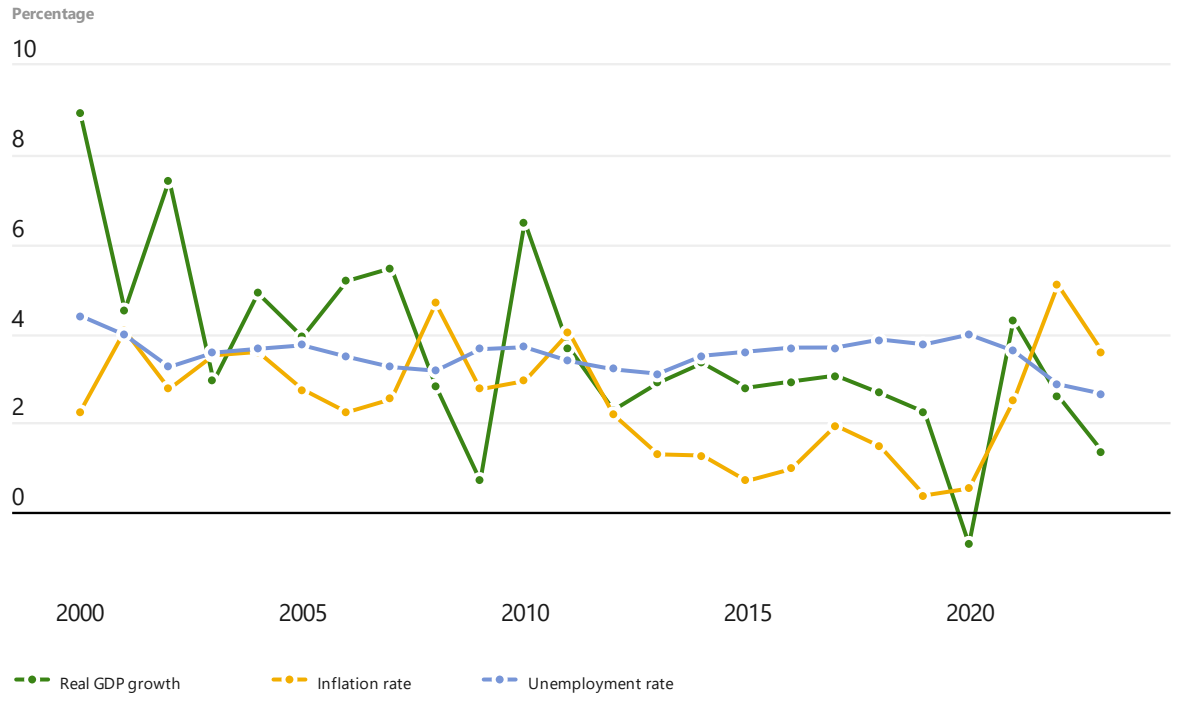
	Korea		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	871	2 598	2.2%	1.9%
Population (million)	47	52	1.1%	1.0%
Land area (thousand km²)	96	98	0.1%	0.1%
Agricultural area (AA) (thousand ha)	1 973	1 603	0.1%	0.1%
			All countries[1]	
Population density (inhabitants/km²)	473	519	52	64
GDP per capita (USD in PPPs)	18 539	50 331	9 363	25 965
Trade as % of GDP	28.9	42.3	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	4.3	1.8	2.9	3.8
Agriculture share in employment (%)	10.6	5.4	-	-
Agro-food exports (% of total exports)	0.9	1.2	6.4	8.0
Agro-food imports (% of total imports)	5.2	5.6	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	75	56	-	-
Livestock in total agricultural production (%)	25	44	-	-
Share of arable land in AA (%)	87	84	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

After the economic downturn caused by the COVID-19 pandemic, Korea's economy recovered in 2021. Sound health management and supportive policies helped Korea emerge swiftly from the pandemic. However, economic growth slightly slowed from 4.3% in 2021 to 1.4% in 2023. Exports mainly drove real GDP growth in 2023, whereas private consumption was feeble, and investment contracted due to high interest rates (OECD, 2024[2]).

The unemployment rate fell from 2.9% to 2.7%, reaching the lowest over the two decades. The labour market is performing well, with historically high employment and low unemployment. However, the inflation rate peaked at 5.1% in 2022 and slightly declined to 3.6% in 2023. Inflation remains high due to the increase in energy and food prices (Figure 18.4).

Figure 18.4. Korea: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

Korea is one of the largest net importers of agro-food products. Over the past 20 years, both agro-food imports and exports in Korea have shown a steady increase. The agri-food imports increased more rapidly than exports. In 2022, agro-food imports amounted to USD 40.9 billion, marking a 17.4% increase from the previous year. Meanwhile, the export value saw a modest 3% rise to USD 8.4 billion year-on-year. The agro-food import value is more than 4.8 times bigger than the agro-food export value, with this gap widening further in recent years.

Specifically, over 87% of agro-food exports are products for final consumption, while about 50% of agro-food imports are used for final consumption. Export products comprise a significant portion of processed foods such as noodles, snacks and beverages. Key imported agricultural commodities include livestock products such as beef, pork, and dairy products, as well as grains including maize, soybeans, and wheat (Figure 18.5).

Figure 18.5. Korea: Agro-food trade

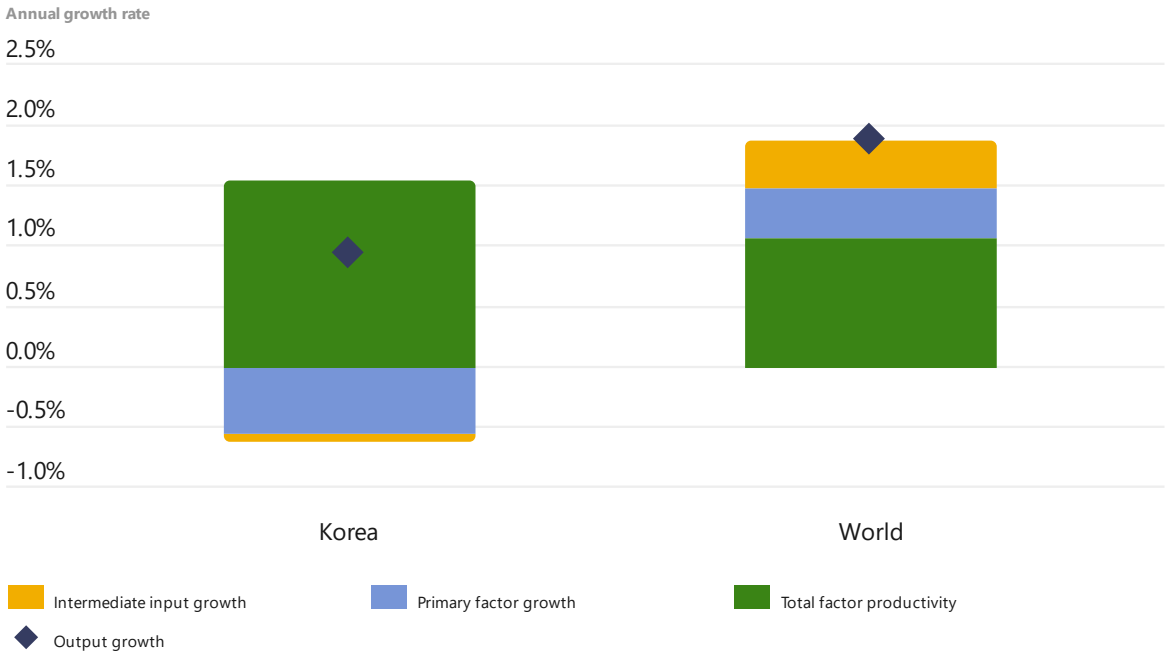
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Agricultural output in Korea has annually grown by 0.9% between 2012 and 2021, lower than the world average during this period. This growth has mainly been driven by Total Factor Productivity (TFP) growth, despite a reduction in the use of primary factors, particularly labour force and agricultural land. However,

TFP annual growth rate in Korea declined from 3.4% in 1991-2000 to 1.5% in 2012-21, slightly higher than the global average during the period of 2012-21 (Figure 18.6).

The average nitrogen and phosphorus surpluses remain well above OECD averages and have increased by 8.5% and 21.0%, respectively, over the last two decades. The recent increase in nitrogen balance was primarily attributed to livestock manure rather than chemical fertilisers. The share of agriculture in water abstractions experienced a slight decrease compared to the level in 2000, reaching the OECD average level. Korea utilised a significant amount of water for rice paddy fields in agriculture. Meanwhile, water stress has been increasing and remains very high compared to other OECD countries. The annual GHG emissions from the agricultural sector accounted for 3.2% of total emissions, well below the OECD average of 10.1% (Table 18.3)

Figure 18.6. Korea: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Table 18.3. Korea: Productivity and environmental indicators

	Korea		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	3.4%	1.5%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	218.5	237.1	32.1	28.2
Phosphorus balance, kg/ha	39.6	47.9	3.3	2.3
Agriculture share of total energy use (%)	2.9	1.0	1.7	2.0
Agriculture share of GHG emissions (%)	4.3	3.2	8.7	10.1
Share of irrigated land in AA (%)	41.0	39.7	-	-
Share of agriculture in water abstractions (%)	53.4	48.9	47.0	49.5
Water stress indicator	27.1	28.1	8.7	..

Note: * or closest available year.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

Korea's agricultural sector has undergone rapid structural change, following the country's rapid industrialisation and economic growth. After the Korean War, it was vital for Korean agriculture to be able to feed the population. From the 1950s to the 1970s, the focus was on increasing crop productivity and achieving self-sufficiency in staple crops, particularly rice. During the process of industrialisation, the agricultural sector also provided cheap and high-quality labour to the manufacturing sector and laid a foundation for stable economic growth.

Throughout the late 1980s and 1990s, the main policy objectives shifted to restructuring the agricultural sector and improving its competitiveness. The government adopted more market-oriented policy frameworks, and this period was marked by the progressive liberalisation of agriculture and food markets via free trade agreements. In the late 1990s, policy objectives further diversified into areas such as enhancing productivity, improving long-term agricultural sustainability and increasing provision of public goods.

During the late 1990s and 2000s, trade measures on agricultural products were gradually converted into tariffs and tariff rate quotas (TRQs), with the exception of rice as agreed in the Uruguay Round Agreement on Agriculture. In January 2015, the non-tariff measure on rice was also replaced by a TRQ.

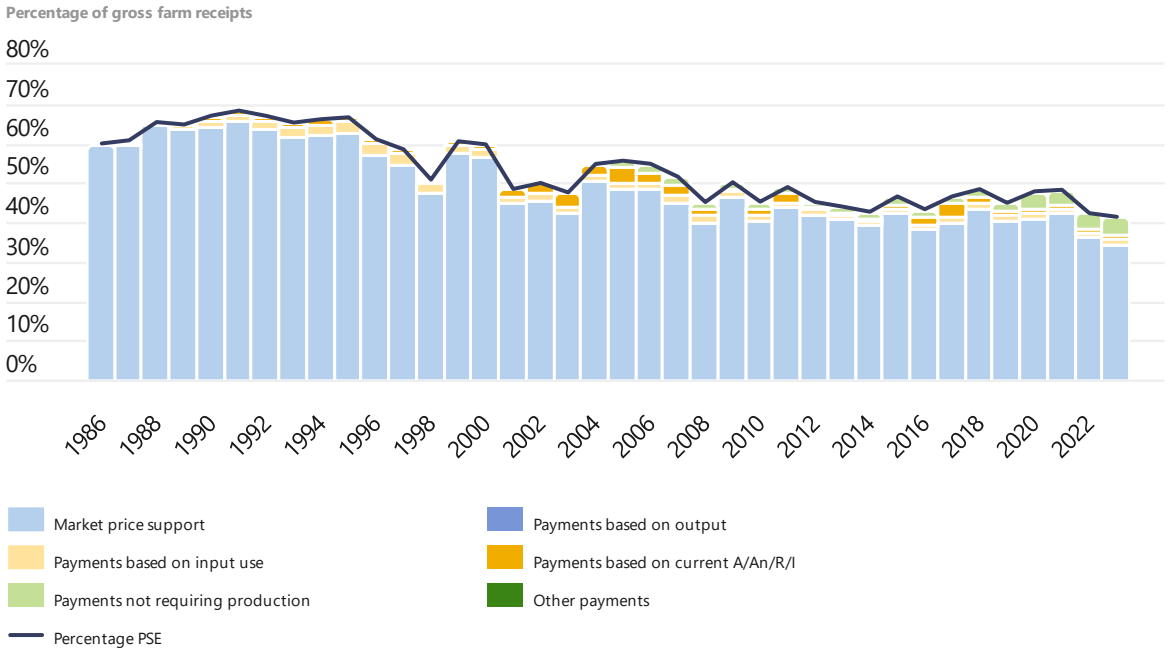
Slowed economic growth and demographic changes moved objectives in the 2000s further from growth to broader public policy goals. These goals included revitalising the rural economy, expanding export markets, improving the environmental performance of agriculture and promoting the food industry. A holistic food policy began to take shape that took into account production, consumption, safety, nutrition, welfare and the environment, as well as food availability for low-income groups. This entailed a shift from central government leadership to horizontal governance for participation and collaboration with a larger role for local governments and the stakeholders.

Support to producers in Korea has been gradually decreasing since 1990. However, the share of PSE remains high, accounting for about 41% of gross farm receipts as of 2023. While MPS makes up most of the producer support, the proportion of payments not requiring production has increased since the introduction of the new direct payment scheme in 2020, which was decoupled from the current production (Figure 18.7).

Table 18.4. Korea: Agricultural policy trends

Period	Broader framework	Changes in agricultural policies
Prior to 1970s	Relatively closed economy Policy focus on productivity and self-sufficiency	Price support and government procurement programmes for crops Subsidies for inputs (including fertilisers and seeds) Land reclamation, land consolidation and water system projects to rearrange the production base R&D and extension projects to enhance productivity (the Rural Development Administration established in 1962) Development of new rice varieties such as Tongil
1980-1990	Exposure of domestic producers to open market Structural adjustment programmes	Non-tariff measures replaced by tariffs and tariff rate quotas (except for rice) Rural restructuring plan (announced in 1991) Government procurement programme for crops Direct payment programmes (early retirement payments from 1997) Agricultural insurance scheme (from 1997) Investment in the renovation of the production base and modernisation of distribution facilities
2000-present	Responding to changing market demands Diversified policy objectives	Tariffs and tariff rate quotas Tariff concession through Free Trade Agreements Public stockholding scheme for major staple crops Direct payment programme for rice (2005-2019) Direct payment scheme reformed (from 2020) Environment-friendly agricultural programmes

Figure 18.7. Korea: Development of the PSE and its composition, 1986 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

References

OECD (2024), *OECD Economic Outlook Volume 2024 Issue 1*, OECD Publishing, Paris, https://doi.org/10.1787/69a0c310-en. [2]

OECD (2018), *Innovation, Agricultural Productivity and Sustainability in Korea*, OECD Food and Agricultural Reviews, OECD Publishing, Paris, https://doi.org/10.1787/9789264307773-en. [1]

Note

[1] Smart agriculture is defined in relevant laws as the integration of advanced technologies, including information and communication technology, into the agricultural sector to enhance productivity and quality, and reduce operational and labour costs (the Act on Promotion and Support of Smart Agriculture).

19. Mexico

Main findings

Support to agriculture

Mexico's agricultural support (Producer Support Estimate, PSE) was equal to 10.6% of gross farm receipts in 2021-23, down from 25.2% in 2000-02 and below the OECD average. Market Price Support (MPS), as a percentage of gross farm receipts, decreased over the past 20 years from 17.7% in 2000-02 to 6.2% in 2021-23, mostly due to trade liberalisation and domestic policy reforms. On average, domestic prices are 7% higher than border prices. MPS is also the main component of Single Commodity Transfers (SCT), which are highest for, sugar, rice, coffee, and poultry.

For 2021-23, payments based on input use (fertilisers and electricity) and land represented 90% of total budgetary transfers to producers and are mostly targeted to small-scale farmers, although the electricity subsidy to pump water reaches all types of farmers. Payments based on land comprise of land-based support for the production of staple crops by subsistence farmers and the "sowing life" payment scheme based on area for afforestation and agroforestry.

Expenditures for general services (General Service Support Estimate, GSSE) equalled 1.4% of agriculture's value of production in 2021-23, less than half the OECD average. Most of those expenditures focus on agricultural innovation, extension, training, and on development and maintenance of infrastructure, particularly on large hydrological works. Total support to agriculture in Mexico was 0.6% of Gross Domestic Product (GDP) in 2021-2023.

Key recent policy changes

The Fertiliser for Wellbeing Programme was expanded to the entire country in 2023, reaching 3 million ha and benefiting 2 million small-scale farmers. The distinct Production for Wellbeing Programme reached more than 2 million farmers, of which 34% were women and 50% were farmers from indigenous communities.

In 2023, the Mexican food security institution SEGALMEX bought staple products from 112 369 small-scale producers, while the milk distribution programme LICONSA reached 6.4 million beneficiaries, distributing 800 million litres of milk. Around 60% of all beneficiaries were women, and the programme reached around 4 million children.

The mitigation programme No Fires in my Parcel (*Mi parcela no se quema*) was expanded in 2023. Several workshops were held throughout the country, serving 493 municipalities, and an estimated 36 879 ha of forest fires were prevented through this programme. Moreover, in 2023 the Agrifood Technical Workshops (MTA) took place, which consist of a space for discussion between producers, technicians, and academics on the expected changes in rainfall and temperature in their region and how these changes may affect their crops, 25 workshops were held across the country and where 30% of participants were women farmers.

The National Strategy on Soil for Sustainable Agriculture (ENASAS) was implemented in 2023. The strategy aims to promote, strengthen, and co-ordinate actions to promote sustainable management of agricultural soils in the country. Farmers in eight states of the country were certified during 2023. As part of ENASAS, the Water Footprint Working Group took place, this group implemented several pilot projects to estimate the water footprint of maize, wheat, beans, barley, avocado, walnut, alfalfa and agave.

Assessment and recommendations

- Limited co-ordination among institutions, scarce funding, the mismatch between farmers' needs and research institutions, and limited extension services all constrain the agricultural innovation system of Mexico and impede its sustainable productivity growth. As a result, there are low levels of technology adoption particularly among small-scale producers. Further public investments on the innovation system, extension services, and capacity building would help agriculture progress to become more sustainable.
- Sustainable agricultural practices should be encouraged and scaled up the existing ones, for example by continuing to promote climate-smart, zero till, crop diversification and soil recovery practices, building on traditional knowledge and taking an outcome-based approach. Programmes supporting the conservation of local plant genetic resources, particularly among smallholders in poor areas, could help strengthen the resilience of agricultural systems and the genetic diversity of crops. Linking payments to the implementation of sustainable farming practices, or where possible to environmental improvements, could also reduce the sector's environmental impact.
- Mexico has undertaken significant efforts to reorient its budgetary support towards tailored and targeted producer payments for vulnerable populations, in line with previous OECD recommendations. This includes the area-based Production for Wellbeing programme, the Fertiliser for Wellbeing Programme, and the Sowing Life Programme.
- However, further efforts should made to ensure that these programmes deliver on their sustainability objectives. For example, the Fertiliser for Wellbeing Programme should be complemented with more training, scaled up at a national level, on good agricultural practices and include systematic analysis of soil characteristics and nutrient requirements prior to distributing fertilisers. The government should ensure that the Sowing Life Programme does not incentivise farmers to deforest their land to become beneficiaries and integrate complementary payments for environmental services to preserve their existing forests. The efficiency of these programmes could be further improved by the parallel development of a zoning system that identifies land use based on agri-climates and soil fertility characteristics. Finally, support to producer organisations (e.g. co-operatives), as well as improved access for small-scale and poor farmers to output and input markets, could help overcome barriers related to scale.
- Mexico's agriculture would benefit from larger public investments on general services including climate-smart infrastructure, price and weather information systems, and rural and agricultural infrastructure, particularly for water management. Mexico should also consider reforming its electricity subsidies, which continue to encourage the overuse of water, and improve water management more broadly to better prepare for the future of agriculture under a changing climate.
- The national adaptation guidelines for agriculture are aligned with good adaptation practices. However, more detailed and concrete actions embedded in the country's agricultural policy instruments can be developed to strengthen the resilience of the sector and its adaptation to climate change. Moreover, better climate-change adaptation information, such as adaptation actions could help with assessing the impact of policies.
- Additional actions are needed to achieve the GHG emission reduction target for agriculture (8% by 2030, compared to a Business as Usual (BAU) scenario), as existing support and financing for

increased use of bio-digesters in livestock farms and for conserving and restoring grasslands are insufficient to deliver the needed results.

Development of support to agriculture

Figure 19.1. Mexico: Development of support to agriculture

Figure 19.1A. Mexico: Producer Support Estimate and its composition

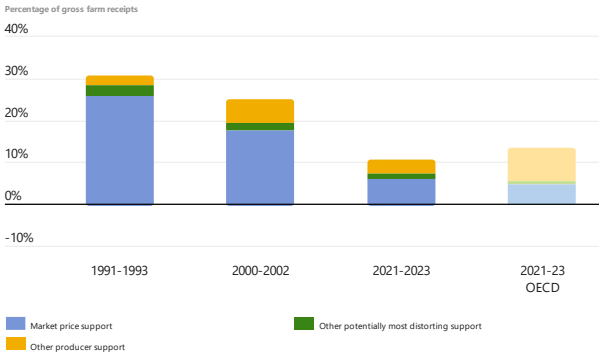


Figure 19.1B. Mexico: Ratio of producer to border price

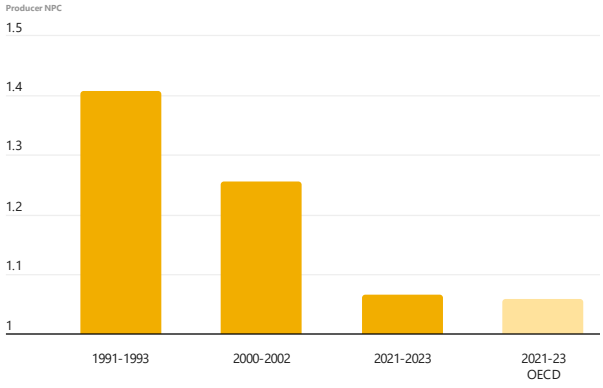


Figure 19.1C. Mexico: General Services Support Estimate and its composition

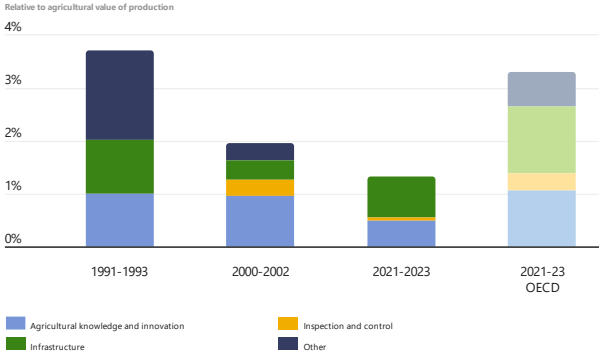
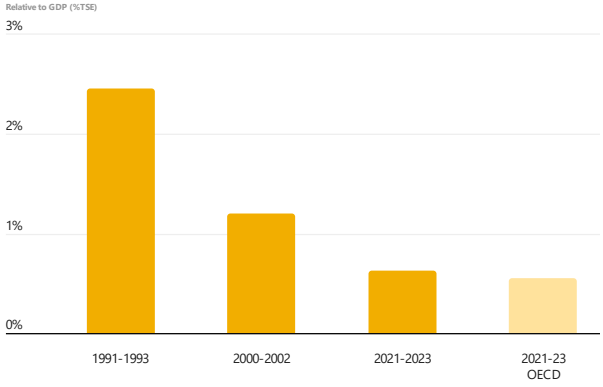
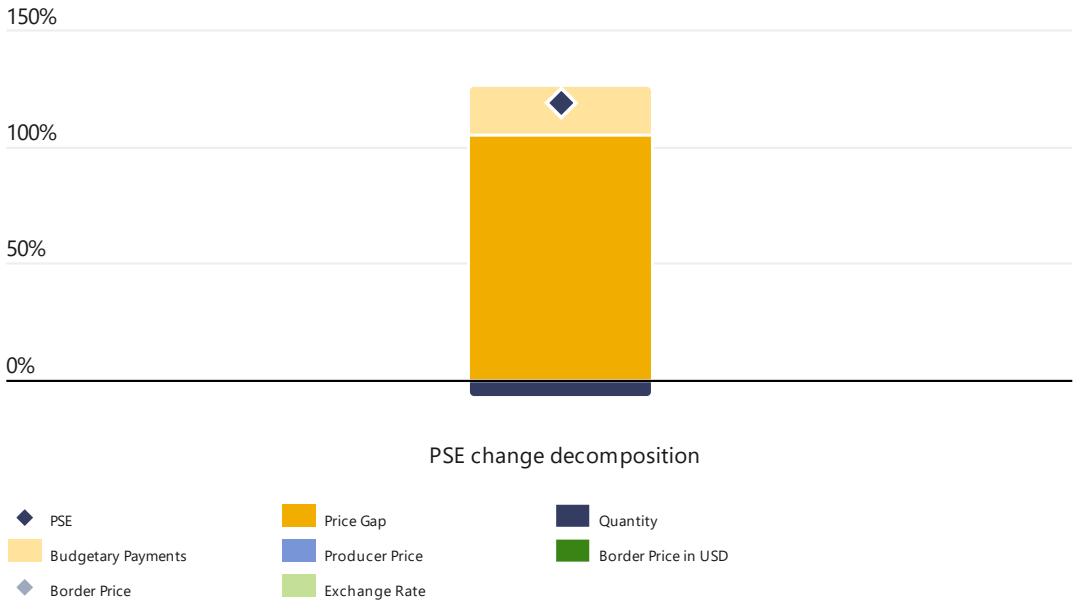


Figure 19.1D. Mexico: Total Support Estimate



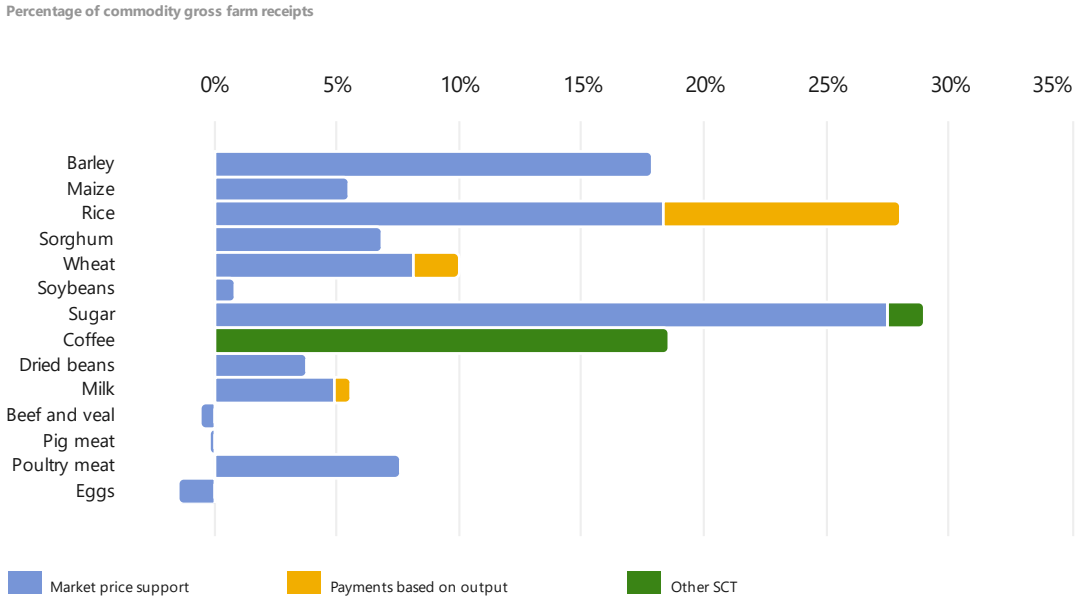
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 19.2. Mexico: Drivers of the change in PSE, 2022 to 2023



Note: % change of nominal Producer Support Estimate expressed in national currency. The producer price change and the border price change are not calculated when both negative and positive market price support (MPS) occur at the commodity level for the previous year. Note that negative MPS estimates for livestock products may arise in cases of aligned product prices if there is positive MPS for feed commodities.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Figure 19.3. Mexico: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Table 19.1. Mexico: Estimates of support to agriculture

Million USD

	1991-93	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**28 112**	**31 345**	**76 769**	**63 731**	**73 377**	**93 199**
of which: share of MPS commodities (%)	68.31	66.28	63.68	64.01	62.84	64.18
Total value of consumption (at farm gate)	**28 196**	**34 362**	**82 913**	**54 822**	**75 869**	**118 049**
Producer Support Estimate (PSE)	**9 144**	**8 540**	**8 690**	**7 137**	**5 433**	**13 500**
Support based on commodity output	7 698	6 282	5 042	4 255	2 261	8 609
Market price support[1]	7 646	5 968	4 966	4 187	2 192	8 519
Positive market price support	7 693	5 999	5 112	4 187	2 192	8 959
Negative market price support	-47	-32	-147	0	0	-440
Payments based on output	52	315	76	68	69	91
Payments based on input use	1 443	953	1 342	887	1 096	2 041
Based on variable input use	746	349	949	574	749	1 526
with input constraints	0	0	0	0	0	0
Based on fixed capital formation	545	362	238	173	202	339
with input constraints	0	4	33	28	38	34
Based on on-farm services	152	241	154	141	146	176
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	3	137	0	0	0	0
Based on Receipts / Income	0	59	0	0	0	0
Based on Area planted / Animal numbers	3	78	0	0	0	0
With input constraints	0	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	0	641	564	607	751
Payments based on non-current A/An/R/I, production not required	0	1 167	0	0	0	0
With variable payment rates	0	0	0	0	0	0
with commodity exceptions	0	0	0	0	0	0
With fixed payment rates	0	1 167	0	0	0	0
with commodity exceptions	0	0	0	0	0	0
Payments based on non-commodity criteria	0	0	1 666	1 431	1 468	2 099
Based on long-term resource retirement	0	0	1 666	1 431	1 468	2 099
Based on a specific non-commodity output	0	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0	0
Miscellaneous payments	0	0	0	0	0	0
Percentage PSE (%)	**30.91**	**25.22**	**10.65**	**10.70**	**7.09**	**13.75**
Producer NPC (coeff.)	**1.41**	**1.26**	**1.07**	**1.05**	**1.03**	**1.11**
Producer NAC (coeff.)	**1.45**	**1.34**	**1.12**	**1.12**	**1.08**	**1.16**
General Services Support Estimate (GSSE)	**1 048**	**621**	**1 035**	**579**	**679**	**1 847**
Agricultural knowledge and innovation system	288	304	393	358	374	446
Inspection and control	0	102	53	50	51	58
Development and maintenance of infrastructure	284	112	589	171	254	1 342
Marketing and promotion	83	103	0	0	0	0
Cost of public stockholding	392	0	0	0	0	0
Miscellaneous	0	0	0	0	0	0
Percentage GSSE (% of TSE)	**9.49**	**6.52**	**10.32**	**7.35**	**10.67**	**11.87**
Consumer Support Estimate (CSE)	**-7 013**	**-5 521**	**-3 908**	**-2 223**	**-1 409**	**-8 093**
Transfers to producers from consumers	-7 668	-5 893	-4 386	-2 387	-1 655	-9 117
Other transfers from consumers	-396	-124	-10	-4	-4	-22
Transfers to consumers from taxpayers	852	348	209	168	250	210
Excess feed cost	199	148	279	0	0	836
Percentage CSE (%)	**-25.65**	**-16.27**	**-4.60**	**-4.07**	**-1.86**	**-6.87**
Consumer NPC (coeff.)	**1.40**	**1.21**	**1.05**	**1.05**	**1.02**	**1.08**
Consumer NAC (coeff.)	**1.34**	**1.19**	**1.05**	**1.04**	**1.02**	**1.07**
Total Support Estimate (TSE)	**11 044**	**9 509**	**9 934**	**7 883**	**6 361**	**15 557**
Transfers from consumers	8 064	6 017	4 396	2 391	1 659	9 139
Transfers from taxpayers	3 376	3 616	5 547	5 496	4 707	6 439
Budget revenues	-396	-124	-10	-4	-4	-22
Percentage TSE (% of GDP)	**2.47**	**1.22**	**0.64**	**0.60**	**0.43**	**0.87**
Total Budgetary Support Estimate (TBSE)	**3 398**	**3 541**	**4 968**	**3 697**	**4 169**	**7 038**
Percentage TBSE (% of GDP)	**0.76**	**0.45**	**0.32**	**0.28**	**0.28**	**0.39**
GDP deflator (1991-93 = 100)	**100**	**391**	**1 127**	**1 065**	**1 136**	**1 179**
Exchange rate (national currency per USD)	**3.08**	**9.49**	**19.33**	**20.22**	**20.07**	**17.69**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for Mexico are: wheat, maize, barley, sorghum, coffee, dried beans, tomatoes, rice, soybean, sugar, milk, beef and veal, pig meat, poultry and eggs.

Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

The Sectoral Programme for Agriculture and Rural Development 2019-2024 defines agricultural policies in Mexico and is implemented mainly by the Secretariat (Ministry) of Agriculture and Rural Development (SADER, 2024[1]). Key objectives of the Sectoral Programme include: 1) improve agricultural productivity for food self-sufficiency; 2) reduce poverty rates in rural areas; 3) increase the income of small-scale agricultural producers; 4) develop an inclusive, sustainable, healthy, and nutritional agri-food system; 5) promote a sustainable use of soil and water.

Agricultural policies in Mexico are delivered mostly via the following programmes:

- Fertiliser for Well-being programme
- Production for Wellbeing programme
- Guaranteed Prices programme for basic food products for small and medium scale farmers implemented by the Mexican Food Security Agency (SEGALMEX)
- Sowing for Life programme under the responsibility of the Secretariat (Ministry) of Wellbeing
- Domestic milk acquisition and the social milk supply programme under the responsibility of the social milk supply programme (LICONSA)
- Rural supply programme (PAR) under the responsibility of DICONSA a network of convenience stores owned by the state
- Subsidy for water pumping via reduced electricity tariffs
- Agro-food health and safety measures
- Programme for the Promotion of Agriculture, Livestock, Fishing and Aquaculture.

The Fertiliser for Well-Being programme, launched in the state of Guerrero in 2019, physically provides nitrogenous and phosphate fertilisers (up to 600 kg per farmer per year) to small-scale producers. Beneficiaries include producers of maize, beans, rice, or any other crop with holding no more than 3 ha and located in highly marginalised and poor communities of the country (SADER, 2024[1]).

The Production for Wellbeing programme provides area-based payments that target small-scale producers. Payment rates decrease with farm size and differ by product. The products covered are maize, rice, beans, wheat, amaranth, chia, sugarcane, coffee, cocoa, nopal-cactus, honey, and milk.

In the Guaranteed Prices programme, prices are granted to small and medium-sized producers of maize, beans, wheat, milk, and rice. Guaranteed minimum prices set by SEGALMEX (the agency in charge of food security) try to address various challenges faced by farmers. These include the lack or insufficiency of infrastructure such as rural roads, storage facilities, market information, or the lack of co-operatives. These challenges often push farmers to sell their produce to middlemen at prices lower than market prices. Guaranteed prices set a minimum price that must be paid to farmers. SEGALMEX buys staple products directly from small-scale farmers or pays the difference between the price received by farmers from buyers and the minimum price set by SEGALMEX. For medium-scale maize producers (those with more than 5 ha of rain fed area), support is provided through a price hedging mechanism, where the difference between the guaranteed price and a reference price is covered by an insurance for which the SEGALMEX pays part of the premium (SADER, 2024[1]).

The Sowing for Life programme supports agroforestry projects implemented by small-scale farmers located in poor municipalities. The programme provides direct payments, in-kind support (e.g. plants, seeds, sowing tools and nurseries) and technical support. The programme is under the responsibility of the Ministry of Wellbeing.

LICONSA, a state enterprise, buys milk from small-scale producers and then collects it in its network of 58 collection centres and 10 industrial plants. Once the milk is bought, LICONSA processes and distributes it in established stores and the milk is sold at subsidised prices to low-income population that are part of the national social programmes.

The state enterprise DICONSA operates the Rural Supply Program (PAR), with SEGALMEX as provider of food. The PAR programme aims to facilitate physical access to basic food products to improve the food security of the population living in the rural areas in poverty conditions. DICONSA seeks to facilitate (by selling at reduced prices) physical access to staple food products to populations living in localities with high levels of marginalisation and poverty. It has more than 24 000 convenience stores (fixed or mobile) across the country buying and selling 30 products defined as staple food basket. DICONSA distributes and sells the products purchased by SEGALMEX, such as beans, rice, and maize, in its stores located in vulnerable and poor rural and urban regions. DICONSA can also purchase some of its products directly from smallholders. Both DICONSA and LICONSA support food actions for vulnerable poor populations.

Subsidies supporting electricity for water pumping continue to be provided. This programme benefits all types of farmers. Investments in general services for the sector predominantly include agricultural knowledge and innovation system, hydrological infrastructure and animal and plant health inspection and control. Investments in hydrological infrastructure support the rehabilitation and maintenance of off-farm irrigation systems. SENASICA, the agency in charge of implementing sanitary measures in the agro-food chain, implements sanitary and phytosanitary campaigns and measures for early detection of pests and diseases. This programme supports inspection and monitoring projects of sanitary risks, control and prevention of pests and diseases, inspection of goods that are transported in the country, implementation of systems for reducing contamination risks in production units and promotion of good sanitary practices.

Mexico continues to use its 12 free trade agreements that involve more than 50 countries, as well as treaties, and a large share (98%) of Mexico's agricultural trade occurs under these agreements and treaties for both agricultural products and inputs.

In terms of climate change mitigation, agriculture contributes around 13% of GHG emissions in Mexico. The country's pledge to the Paris Climate Conference in December 2015 includes unconditional and conditional targets. Under the 2020 update of its Nationally Determined Contribution (NDC), Mexico committed to unconditionally lower GHG emissions by 22% and black carbon emissions by 51% relative to BAU by 2030. Agriculture GHG emissions reduction targets are -8%. Depending on international support, this could increase to 36% of total emissions and to 70% of black carbon emissions. To achieve these targets, the agricultural sector strategy promotes agricultural practices adapted to climatic and environmental conditions such as soil conservation and reduced burning of residues considering community and scientific knowledge; and adopting agroforestry, agroecology and biodigesters on livestock farms (SADER, 2024[1]).

Innovation for sustainable productivity growth

Strategic planning

As stipulated in the Sectoral Programme for Agriculture and Rural Development 2019-2024, sustainable productivity growth is mainly approached by improving agricultural productivity for food self-sufficiency and promoting a sustainable use of soil and water (SADER, 2024[2]).

Research and innovation

Mexico has several institutions that are part of the national agricultural innovation and knowledge system, including agricultural public research institutes across the country, such as the National Institute of Agricultural and Livestock Forestry Research (INIFAP) or the agriculture research institutes (COLPOS), a

network of agricultural schools at technical level (DGETAs), universities at national and state level, etc. However, the country does not have a network of extension services *per se*, these are provided through ad hoc programmes of different public institutions (e.g. INCA Rural), by different public-private initiatives (e.g. MasAgro), or by private companies. Significant challenges for the agricultural innovation system relate to the lack of co-ordination among institutions, limited funding, disconnect between farmer needs and research institutions, limited technical assistance resulting in low levels of technology adoption (SADER, 2024[2]).

Besides the Sectoral Programme for Agriculture and Rural Development 2019-2024, which aims to improve sustainable productivity to achieve food security for the poorest segments of population across the country; more specific innovation initiatives for sustainable productivity growth have been implemented. For example, the government has also developed specific strategies that promote environmental sustainability such as the sustainable technology transfer package for maize, implemented by the Ministry of Agriculture, which aims to increase yields and reduce the production costs.

Programme implementation

The country also has developed an agricultural bioeconomy training programme for small-scale farmers that has three objectives: waste and pollution reduction, circular use of products and materials, and regeneration and conservation of natural resources. This programme aims to offer consumers food products produced in an environmentally sustainable way, but also products that have social and economic benefits to poor farmers. In 2023, the programme reached 1 230 producers in the states of Campeche, Chiapas and Jalisco. In addition, indigenous groups are provided with comprehensive training for innovation and capacity building to increase sustainable productivity in agriculture, aquaculture, and fishing. To sustainably add value to primary crops, small-scale producers are provided with workshops and webinars, on adding value to different crops to increase income and to prolong the shelf life of their produce (SADER, 2024[2]).

Mexico also promotes organic agriculture through training on production methods and on the certification process. The more than 1.2 million ha of certified organic land represent around 1% of total agricultural area.

The Ministry of Agriculture, in co-ordination with other federal government agencies, carries out the Special Concurrent Programme for Sustainable Rural Development. This programme has, among many other projects, three areas related with increasing sustainable productivity:

- Subsidies for strategic projects to increase sustainable productivity in rural priority areas such as beans, native maize, and cactus.
- Technical and social training to beneficiaries of the programme Sowing for life (agroforestry programme).
- Support and training to projects for timber harvesting and management of non-timber forest resources and forest management certification.

A strategy for access to financing is carried out by the National Guarantee Fund for the Agricultural, Forestry, Fisheries and Rural Sectors FONAGA and Trust for Agriculture FIRA. This strategy aims to provide loans to beneficiaries of the Production for Wellbeing Programme. The strategy allows producers to complement the subsidy received with short- or long-term credit for financing the production, acquisition of capital goods, harvesting, post-harvest, value added or marketing in order to increase sustainable productivity. Credit recipients are required to follow certain good agricultural practices.

Mexico is part of several international groups and forums, where technical discussions on strategies for the conservation of livestock soils in the country are organised. Moreover, a regular forum between

indigenous peoples of Mexico and First Nations of Canada allows to exchange experiences on the sustainable development, including agricultural activities, within their territories.

Recent policy developments

Domestic policy developments in 2023-24

During 2023, the Fertiliser for Well-being programme has been expanded to the whole country. For 2024 it will cover an estimated 3 million ha and benefit 2 million small-scale producers. The budget of the programme for 2024 is of MXN 17.5 billion (USD 985 million) (SADER, 2024[1]).

In 2023, the Production for Wellbeing programme established the minimum and maximum support given to small-scale farmers. The minimum was MXN 6 200 (USD 349), and the maximum MXN 24 000 (USD 1 351) per beneficiary. The programme is implemented through the national development bank (*Banco del Bienestar*). The budget for the programme for 2024 is MXN 16.3 billion (USD 915 million) reaching more than 2 million farmers. The programme stipulates that at least 34% of beneficiaries need to be women, and 50% of beneficiaries need to be living in the 1 033 municipalities with indigenous populations. The guaranteed minimum price programme run by SEGALMEX bought from 112 369 small-scale producers in 2023.

For 2024, several support prices for small-scale farmers were defined. The price for maize from farmers with maximum of 5 ha of rainfed land and with a maximum output of 35 tonnes was defined at MXN 6 915 per tonne (USD 389). The guaranteed price for beans from farmers with up to 30 ha of rainfed or up to 5 ha of irrigated land and producing no more than 15 tonnes destined to SEGALMEX was set at MXN 21 000 per tonne (USD 1 182). The guaranteed price for wheat that applies to medium-size farmers producing up to 200 tonnes was set at MXN 7 050 per tonne (USD 397), small-scale producers producing no more than 50 tonnes was set at MXN 7 600 (USD 428) per tonne. For small-scale and medium-scale rice producers, guaranteed prices were set at MXN 7 905 (USD 445) and at MXN 8 500 (USD 479), respectively. The total budget allocated to the programme for 2024 is MXN 12.5 billion (USD 706 million) (SADER, 2024[1]).

In 2023, LICONSA reached 6.4 million beneficiaries, distributing 800 million litres of milk. Around 60% of all beneficiaries were women, and the programme reached around 4 million children between 0-15-years old. For 2024, the budget allocated to the programme amounts to MXN 1.4 billion (USD 80 million).

Policies to mitigate emissions from agriculture

A key programme on mitigation that continues to take relevance in 2023 is No Fires in my Parcel (*Mi parcela no se quema*), created in 2021. The programme is a campaign that provides alternatives to the use of fire in productive systems and the regulations associated with this activity. It uses an application on smartphones to warn of agricultural fires as well as forest fires. In 2023, workshops were held throughout the country, serving 493 municipalities, it is calculated that 36 879 ha of forest fires were prevented.

Policies to facilitate climate change adaptation in agriculture

In 2023, the Agrifood Technical Workshops (MTA) continued to take place, which consist of a space for discussion between producers, technicians and academics on the expected changes in rainfall and temperature in their region and how these changes may affect their crops. At these workshops climate forecasts are discussed, and based on scientific and traditional knowledge, producers determine the management that seems most appropriate (species, varieties, planting times, types of fertilisation, pest incidence forecasts, etc.) and as a result, an agro-climatic bulletin is prepared that summarises the climate forecasts analysed and generates recommendations and adaptive measures for each type of crop. In

2023, 25 workshops were held across the country gathering 2 800 participants, of which 30% were women farmers, producing 25 bulletins (SADER, 2024[3]) .

The National Strategy on Soil for Sustainable Agriculture (ENASAS) developed in 2022, continues to operate in 2023 and 2024. It is an instrument that aims to promote, strengthen, and co-ordinate actions to promote sustainable management of agricultural soils in the country. The aim is to contribute to food security and the well-being of the rural population, through the conservation of soils and the restoration of degraded agricultural soils. Besides the ENASAS the country also has the Soil Doctor Programme, which its objective is to train and certify farmers on sustainable soil management. In 2023, it has certified farmers in 8 states of country (SADER, 2024[3]).

In 2023, the Water Footprint Working Group implemented several pilot projects to estimate the water footprint of agricultural crops (e.g. maize, wheat, beans, barley, avocado, walnut, alfalfa and agave, among others) in eight irrigation districts in the states of Guanajuato, Hidalgo, Jalisco, Sonora, Chihuahua, Sinaloa, Tamaulipas, Lagunera region, and Jalisco. The main objective is to determine a viable system for estimating the water footprint of such crops, which can be applied more broadly in different productive regions of the country. The pilot projects are expected to contribute to providing information for reducing the water footprint in production processes and improving sustainable water management. The Water Footprint Working Group had been set up in 2022 with the participation of several water related public institutions to explore the development and implementation of estimation and reduction systems for the water footprint of the agricultural sector (SADER, 2024[2]).

Trade policy developments in 2023-24

In May 2022, Mexico and the United Kingdom began negotiations for a free trade agreement. The countries are seeking an agreement that strengthens trade in goods and services, increases investment flows, and promotes digital and cross-border trade. It should be noted that the bilateral negotiation process between Mexico and the United Kingdom is currently on pause, awaiting future approaches to continue the negotiation process.

Policy context

Key economic and agricultural statistics

Mexico had a population of 129 million in 2022 and ranks as the 12th largest world economy. Agriculture's contribution to GDP has increased from 3.2% in 2000 to 4% in 2022. Despite the decline over the past two decades, agriculture's share of total employment remains relatively high at 11.8% in 2022. Trade is an important driver of Mexico's economy; in 2022 it represented 40.3% of GDP, up 17 percentage points since 2000. Agro-food trade is an important fraction of total trade, both in terms of exports and imports, representing 7.1% and 4.8% respectively.

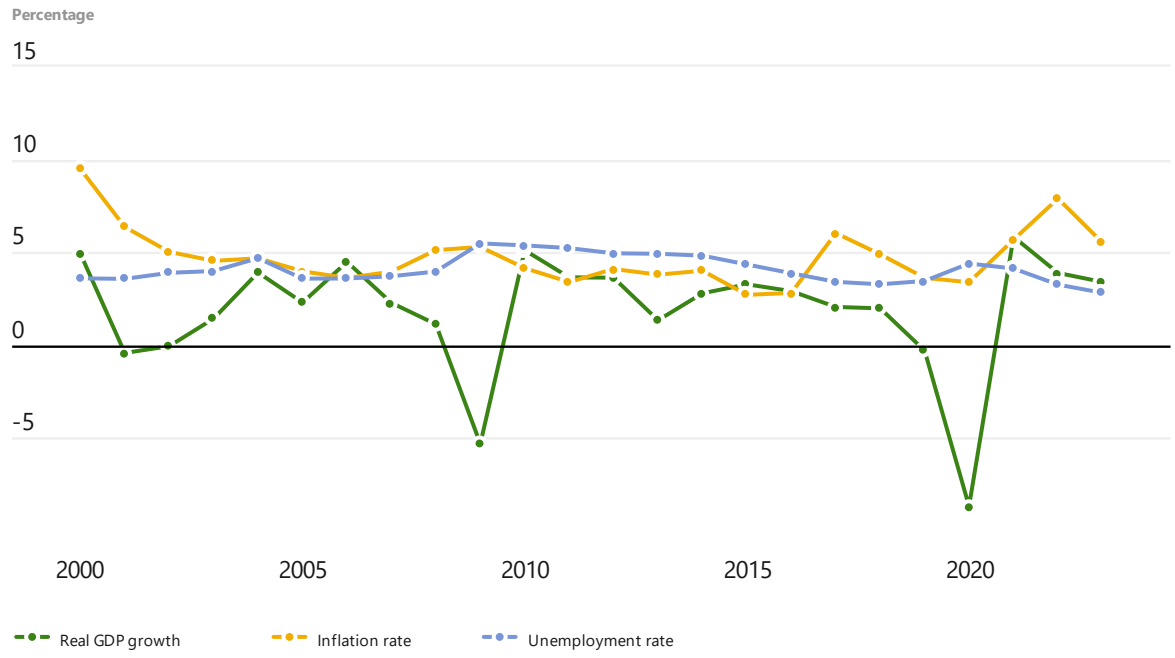
Table 19.2. Mexico: Contextual indicators

	Mexico		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	1 150	2 838	2.9%	2.1%
Population (million)	101	129	2.4%	2.4%
Land area (thousand km²)	1 944	1 944	2.4%	2.4%
Agricultural area (AA) (thousand ha)	106 330	97 126	3.6%	3.3%
			All countries[1]	
Population density (inhabitants/km²)	52	65	52	64
GDP per capita (USD in PPPs)	11 394	22 073	9 363	25 965
Trade as % of GDP	23.3	40.3	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	3.2	4.0	2.9	3.8
Agriculture share in employment (%)	17.3	11.8	-	-
Agro-food exports (% of total exports)	4.6	7.1	6.4	8.0
Agro-food imports (% of total imports)	5.5	4.8	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	57	60	-	-
Livestock in total agricultural production (%)	43	40	-	-
Share of arable land in AA (%)	22	21	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

Mexico has seen fairly stable GDP growth between 2010 and 2019, averaging 2.6% per year. After an 8.6% contraction due to the COVID-19 pandemic, the economy grew more quickly with a rebound by 5.8% in 2021 and continued growth above the pre-pandemic levels reaching 3.4% in 2023. Inflation has declined to 5.5% in 2023 after registering a peak of 7.9% in 2022, while the unemployment rate fell to 2.8% in 2023, the lowest level in more than two decades.

Figure 19.4. Mexico: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

Since 2015, Mexico has registered a positive and growing net agro-food trade balance reaching a USD 11.8 billion surplus in 2022. While most agro-food exports are for final consumption (either primary or processed), more than half of agro-food imports are intermediate products for further processing.

Figure 19.5. Mexico: Agro-food trade

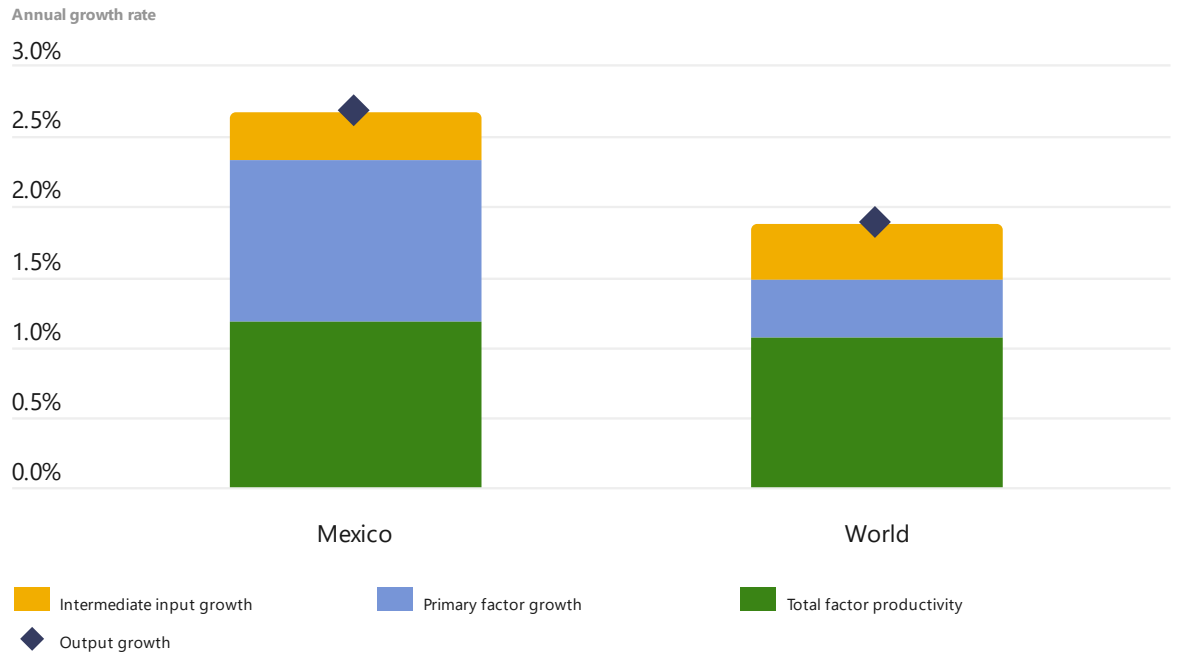
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Mexico's agricultural output growth of 2.7%, over the past decade was due predominantly to the increased use of primary factors, notably capital and land. In addition, total factor productivity (TFP) grew by 1.2%

per year between 2012 and 2021, slightly faster than the world average but less than during the 1990s. Increased use of intermediate inputs, notably fertilisers and feed, contributed less to the output growth.

Nutrient balances in Mexico have increased in the last decade and reached nearly 35.4 kg/ha for nitrogen and 4 kg/ha of phosphorus in 2022, both above the OECD average. Agricultural GHG emissions represent 19% of the country's total, which is also higher than the OECD average and above its relative contribution to the country's economy. Water stress is well above the OECD average, and agriculture is partly responsible for this pressure due to its high share of total water abstractions.

Figure 19.6. Mexico: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Table 19.3. Mexico: Productivity and environmental indicators

	Mexico		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	2.5%	1.2%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	26.4	35.4	32.1	28.2
Phosphorus balance, kg/ha	1.8	4.0	3.3	2.3
Agriculture share of total energy use (%)	3.0	3.1	1.7	2.0
Agriculture share of GHG emissions (%)	19.1	19.1	8.7	10.1
Share of irrigated land in AA (%)	4.5	6.2	-	-
Share of agriculture in water abstractions (%)	82.0	74.0	47.0	49.5
Water stress indicator	15.6	19.9	8.7	..

Note: * or closest available year.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

Starting in the 1980s, reforms to price support reduced its prominence in the policy mix. In 1988-89, guaranteed prices for wheat, sorghum, barley, rice and oilseeds were eliminated. After the enactment of the North American Free Trade Agreement (NAFTA) in 1994, guaranteed prices for maize and beans were phased out and the government withdrew from procurement and marketing except for beans and maize, for which government involvement was reduced but not eliminated (Anderson, K. and Valdes, A., 2007[4]; OECD, 2006[5]).

The old system of market supports was replaced by a new one of direct income support payments (Procampo) based on historic cultivated crop area, which was given to all farm sizes. During this period of trade liberalisation, subsidies for financial instruments to reduce financial risks (price hedge instruments) were also put in place. Input subsidies for seeds, fertiliser, pesticides, machinery and diesel fuel were reduced in the 1990s, but the input subsidy for electricity to pump groundwater was maintained (Anderson, K. and Valdes, A., 2007[4]; OECD, 2006[5]).

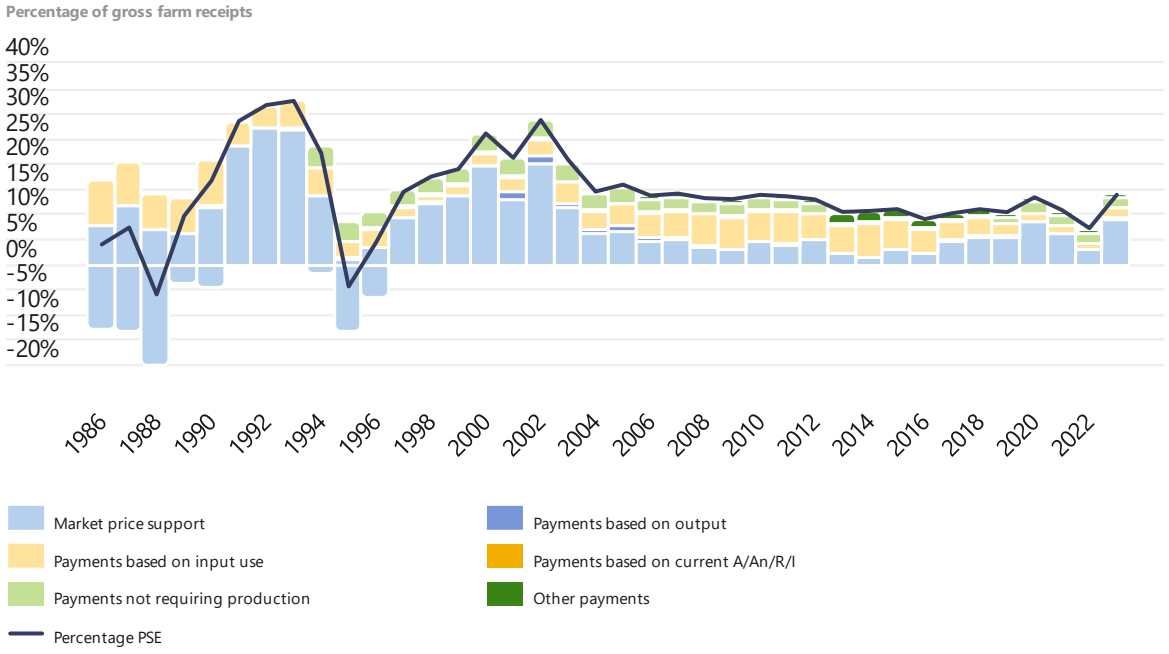
In 2018 direct payments were redirected to target small and medium-scale farmers located in poor regions of the country. Minimum guaranteed prices for staple crops were reinstated in the form of government purchases of crops from a limited number of farmers, targeted to smallholders, at a minimum price. Crops purchased under this intervention were then distributed to poor households at subsidised prices in both rural and urban areas. The Procampo programme was renamed “Production for Wellbeing” and reformed to provide support only to small-scale farmers, with particular focus on those located in poor communities. Furthermore, subsidies for large farms and food processors to encourage price hedging were dismantled. A fertiliser programme targeted to smallholders was created as well as the programme Sowing life that subsidises agroforestry activities carried out by smallholders.

Table 19.4. Mexico: Agricultural policy trends

Period	Broader framework	Changes in agricultural policies
Prior to 1990s	Import substitution model	Agricultural tariffs and import quotas Minimum prices for staple food (maize, rice, beans, wheat, etc.) State food marketing enterprise (CONASUPO) Subsidies for inputs (fertilisers, seeds, electricity for water pumps) Preferential agricultural credit
1990-2018	Trade liberalisation	Dismantling of tariffs on agricultural products (except sugar) Dismantling of state marketing enterprise Elimination of input subsidies, except electricity for water pumps Elimination of minimum prices Reforms to land tenure NAFTA and other FTAs signed Preferential agricultural credit Creation of direct payment to farmers (PROCAMPO) Insurance and price hedge subsidies
2018- present	Reforms to target and tailor direct payments to smallholders	Guaranteed minimum prices on staples (maize, beans, wheat, rice and milk) are targeted to smallholders and limited to a certain amount of production volume. PROCAMPO was renamed “Production for Wellbeing” and reformed to provide payments to only small-scale producers, emphasising the poorest states located in the south of the country. Fertiliser for wellbeing programme was created to target only small-scale farmers and limited to only 600kg per year per farmer. Sowing Life programme was created to support agroforestry projects implemented by small-scale farmers. Electricity subsidies for water pumps continues. Preferential agricultural credit continues at a lower reach, while financial institutions have been reformed or dismantled.

Mexico provides relatively low levels of support to its agricultural sector, and this has decreased over the year. The Mexican Producer Support Estimate (PSE) was mostly comprised of market price support until the end of the 1990s. After this period, the share of market price support declined while that of budgetary support grew, until 2016 when market price support and input-based support again became the largest components of producer support (Figure 19.7)

Figure 19.7. Mexico: Development of the PSE and its composition, 1986 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

References

Anderson, K. and Valdes, A. (2007), *Distortions to Agricultural Incentives in Latin America, World Bank Group, Washington, DC,*, http://documents.worldbank.org/curated/en/518211468170062688/Distortions-to-agricultural-incentives-in-Latin-America. [4]

OECD (2006), *Agricultural and Fisheries Policies in Mexico: Recent Achievements, Continuing the Reform Agenda*, OECD Publishing, Paris, https://doi.org/10.1787/9789264030251-en. [5]

SADER (2024), *Secretaria de Agricultura y Desarrollo Rural. Mexico: Main Changes in Public Policies for the Agricultural Sector of the Agricultural Sector, 2023-2024*. [1]

SADER (2024), *Secretaria de Agricultura y Desarrollo Rural. Mexico: Public Policies to Address Climate Change in the Agricultural Sector, 2023-2024*. [3]

SADER (2024), *Secretaria de Agricultura y Desarrollo Rural. Mexico: Public Policies to Promote Agricultural Innovation for Sustainable Agricultural Productivity Growth, 2023-2024*. [2]

20. New Zealand

Main findings

Support to agriculture

Support to agricultural producers in New Zealand consistently ranks among the lowest in the OECD. During 2021-23, the Producer Support Estimate (PSE) averaged 0.7% of gross farm receipts, slightly higher than the 0.5% reported for 2000-02 but far below the OECD average.

Almost all prices align with world market prices. Exceptions are fresh poultry and table eggs, and some bee products, which cannot be imported into New Zealand due to biosecurity regulations. These restrictions result in some market price support (the only form of support to individual commodities in New Zealand), amounting to 4% of gross commodity receipts for poultry meat and 39% for eggs in 2021-23. Additional minor producer support is provided through on-farm services, mainly related to animal health and disaster relief.

Thanks to structurally low producer support, around 70% of all support to the sector for most of the past two decades was for general services. Such support (General Service Support Estimate, GSSE) is estimated at just 1.7% of the value of agricultural production during 2021-23, well below the OECD average. It focuses on relief payments in response to natural disasters, animal disease control, and investments in the agricultural knowledge and innovation system.

Total support to the sector represented just over 0.2% of Gross Domestic Product (GDP) during 2021-23. This level is largely unchanged from two decades earlier and remains at less than half the average share across the OECD.

Key recent policy changes

Several urgent measures were implemented following a series of severe weather events in early 2023, which caused widespread flooding and landslides that damaged critical infrastructure and resulted in losses of horticultural crops and agricultural assets. Government support in response to this situation included farmers' and growers' grants, funding for urgent response and support projects, and the North Island Weather Event Regional Recovery Funding. Initial funding available for these measures totalled NZL 103.3 million (USD 63.4 million).

A ban on the sale of eggs raised in battery cages came into effect in January 2023 after a phase-in period of more than ten years. A ban on the export by sea of live cattle, sheep, goats and deer came into effect in April 2023.

In April 2023, the Organic Products and Production Act became law. The act aims to help with developing new standards for organic products, and to set requirements for businesses in the organic sector from production through to sale.

Funding and advisory services were made available to Māori agribusinesses to help them to realise the potential value of their land and primary sector assets, to develop and implement local solutions to improve freshwater quality, and to identify needs and encourage equitable access to government cyclone recovery funding and support.

The New Zealand-United Kingdom FTA entered into force on 31 May 2023, while the New Zealand-European Union FTA, signed in July 2023, was ratified in March 2024 to enter into force on 1 May 2024. Both agreements include Māori trade and co-operation chapters to increase trade opportunities for Māori primary producers, and to allow for differentiated arrangements for Māori businesses without breaching the free trade agreements.

Assessment and recommendations

- New Zealand's agricultural productivity growth has been slowing significantly, while maintaining high nitrogen and phosphorus balances. Its ruminant livestock sector is responsible for a large share of the country's GHG emissions. To address these challenges, significant sustainable productivity improvements will be needed.
- The country's strong focus on research and innovation, combined with investments in partnership-based extension systems, provide a solid basis for progress in achieving sustainable productivity growth. New Zealand's engagement in various national and international research streams predominantly aims to lower the emission intensity of production and improve the sustainability of pest management. However, public investments in the agricultural knowledge and innovation system relative to the sector's size remain below the OECD average. This suggests that additional funding could be considered.
- The Productive and Sustainable Land Use package aims to improve value creation and environmental outcomes. An evaluation of the impacts of these efforts, and of the end of the Extension Services programme in June 2023, could be useful. Moreover, the government should carefully assess the need for additional measures, such as regulatory approaches or results-based programmes, to limit the significant (and increasing in the case of nitrogen) nutrient surpluses.
- In addition to R&D efforts to reduce the emission intensity, notably of its livestock industry, New Zealand's move towards pricing agricultural GHG emissions is remarkable at the international stage. While the exact design and timing of such a pricing mechanism remains to be seen, pricing has been shown to be the most efficient ways to reduce GHG emissions.
- At the same time, farmers must adapt to a changing climate and a growing frequency and intensity of weather-related adverse events. In addition to its engagement in climate-change related research and adaptation planning, New Zealand could consider an enhanced measurement of adaptation outcomes and resilience-oriented measures, beyond short-term responses to adverse events.
- With its strong trade focus, underlined by the country's laudable absence of formal trade barriers and its engagement in many FTAs, New Zealand's IHS are key to its biosecurity vis-à-vis imported products. However, some livestock products (including eggs, fresh chicken meat, and honey) cannot be imported into New Zealand because no IHS has been developed for them. While these products represent a small share of New Zealand's agricultural output and consumption, the development of relevant IHS would provide consumers lower prices and larger choice without compromising biosecurity.
- Kiwifruit exports to markets other than Australia by entities besides Zespri (the main company) continue to be subject to regulatory authorisation by Kiwifruit New Zealand. New Zealand should ease these restrictions, as they burden participation in kiwifruit exports by other firms wishing to do so, reducing competition and efficiency in the kiwifruit trade.

Development of support to agriculture

Figure 20.1. New Zealand: Development of support to agriculture

Figure 20.1A. New Zealand: Producer Support Estimate and its composition

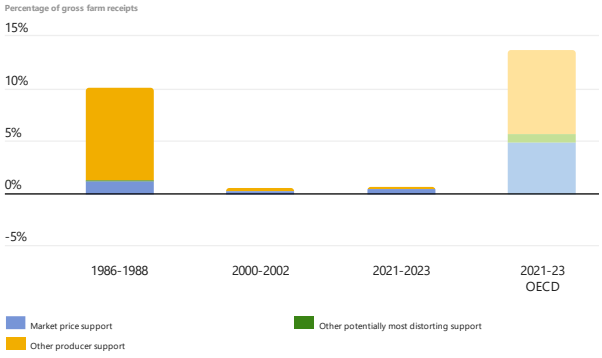


Figure 20.1B. New Zealand: Ratio of producer to border price

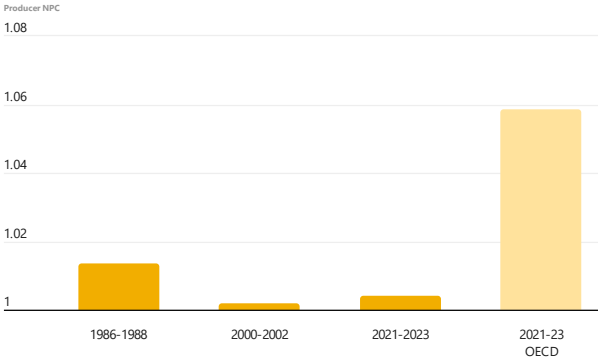


Figure 20.1C. New Zealand: General Services Support Estimate and its composition

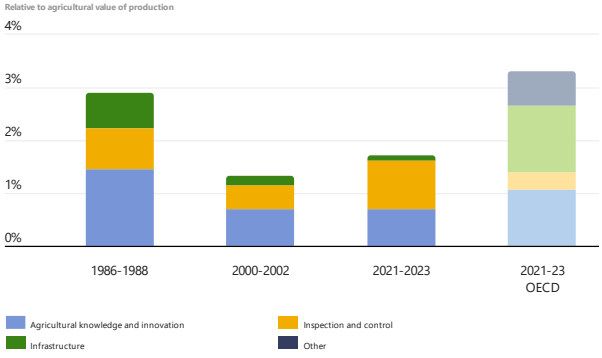
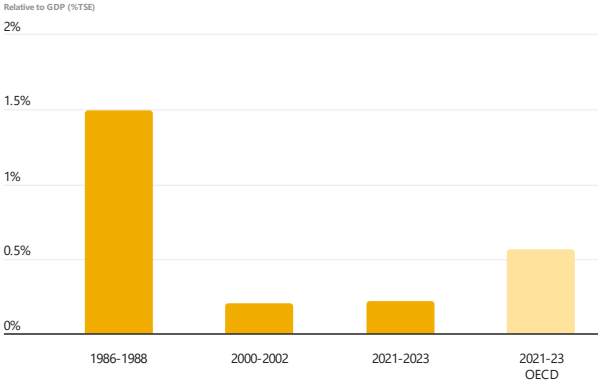
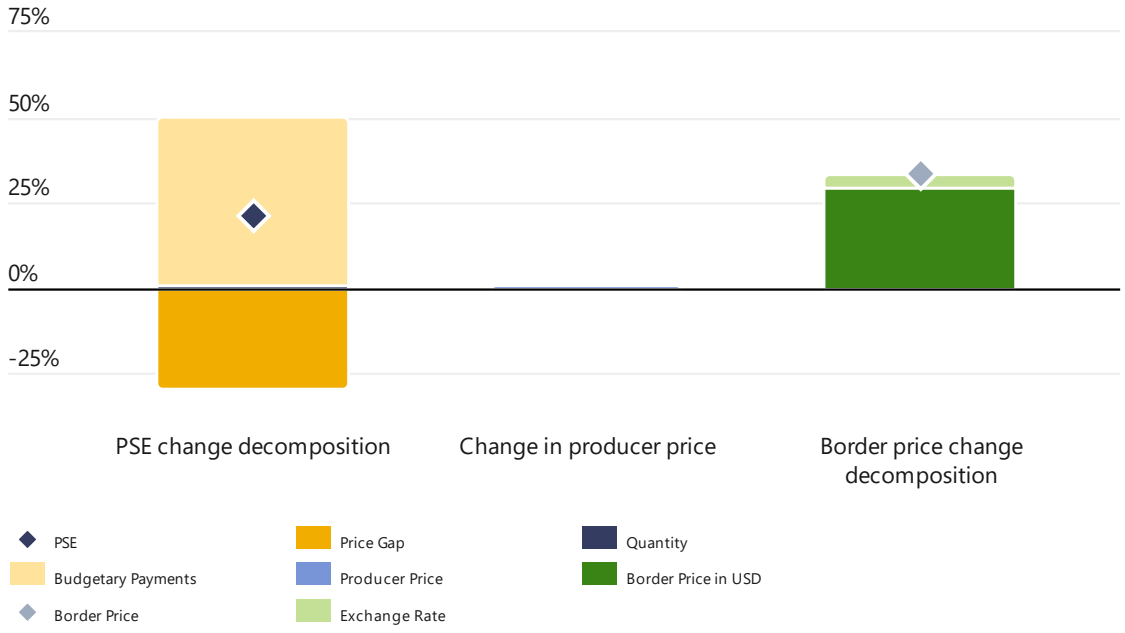


Figure 20.1D. New Zealand: Total Support Estimate



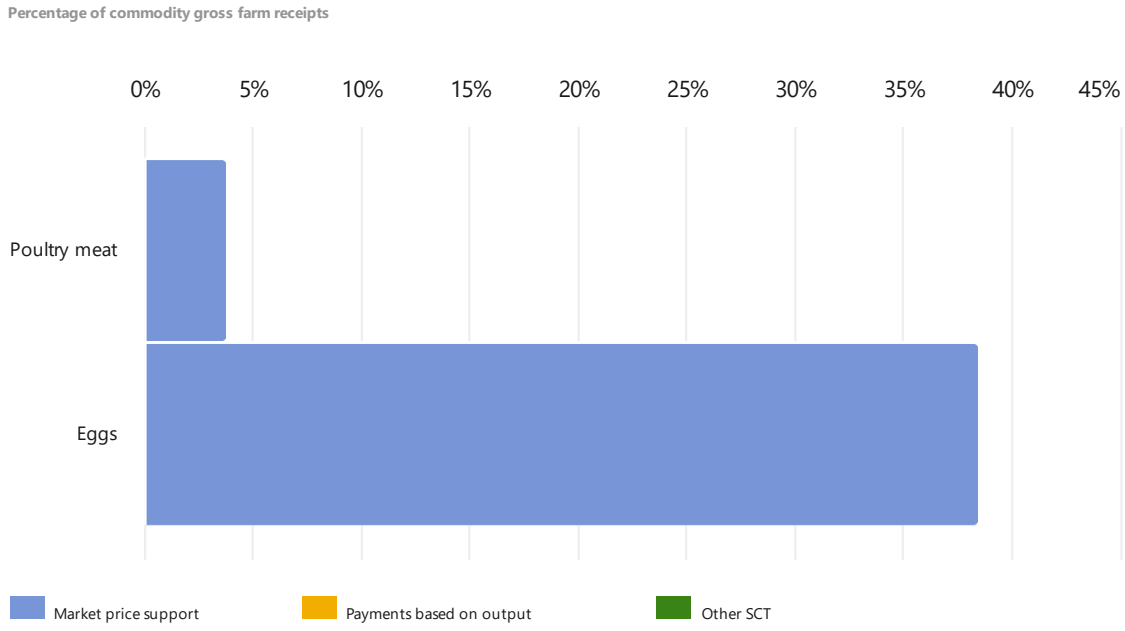
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 20.2. New Zealand: Drivers of the change in PSE, 2022 to 2023



Note: % change of nominal Producer Support Estimate expressed in national currency.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 20.3. New Zealand: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Table 20.1. New Zealand: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**4 067**	**6 371**	**21 988**	**24 609**	**21 508**	**19 849**
of which: share of MPS commodities (%)	72.09	73.07	75.43	76.03	75.63	74.63
Total value of consumption (at farm gate)	**1 624**	**2 589**	**10 172**	**11 026**	**9 693**	**9 797**
Producer Support Estimate (PSE)	**424**	**33**	**154**	**180**	**130**	**152**
Support based on commodity output	54	15	98	138	97	58
Market price support[1]	53	15	98	138	97	58
Positive market price support	53	15	98	138	97	58
Negative market price support	0	0	0	0	0	0
Payments based on output	1	0	0	0	0	0
Payments based on input use	179	17	34	39	29	33
Based on variable input use	2	0	0	0	0	0
with input constraints	0	0	0	0	0	0
Based on fixed capital formation	154	0	0	0	0	0
with input constraints	0	0	0	0	0	0
Based on on-farm services	23	17	34	39	29	33
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	26	1	22	3	4	61
Based on Receipts / Income	26	1	22	3	4	61
Based on Area planted / Animal numbers	0	0	0	0	0	0
With input constraints	0	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	165	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	0	0	0	0	0	0
With variable payment rates	0	0	0	0	0	0
with commodity exceptions	0	0	0	0	0	0
With fixed payment rates	0	0	0	0	0	0
with commodity exceptions	0	0	0	0	0	0
Payments based on non-commodity criteria	0	0	0	0	0	0
Based on long-term resource retirement	0	0	0	0	0	0
Based on a specific non-commodity output	0	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0	0
Miscellaneous payments	0	0	0	0	0	0
Percentage PSE (%)	**10.16**	**0.52**	**0.70**	**0.73**	**0.60**	**0.76**
Producer NPC (coeff.)	**1.01**	**1.00**	**1.00**	**1.01**	**1.00**	**1.00**
Producer NAC (coeff.)	**1.11**	**1.01**	**1.01**	**1.01**	**1.01**	**1.01**
General Services Support Estimate (GSSE)	**119**	**85**	**380**	**412**	**360**	**368**
Agricultural knowledge and innovation system	60	46	159	186	147	144
Inspection and control	31	28	200	201	189	211
Development and maintenance of infrastructure	27	11	21	25	24	13
Marketing and promotion	0	0	0	0	0	0
Cost of public stockholding	0	0	0	0	0	0
Miscellaneous	0	0	0	0	0	0
Percentage GSSE (% of TSE)	**20.97**	**71.98**	**68.59**	**67.06**	**70.94**	**67.97**
Consumer Support Estimate (CSE)	**-53**	**-14**	**-89**	**-120**	**-98**	**-49**
Transfers to producers from consumers	-51	-14	-97	-137	-97	-58
Other transfers from consumers	-2	0	-12	-6	-19	-13
Transfers to consumers from taxpayers	0	0	21	23	18	22
Excess feed cost	0	0	0	0	0	0
Percentage CSE (%)	**-3.36**	**0.53**	**0.87**	**-1.09**	**-1.02**	**0.50**
Consumer NPC (coeff.)	**1.03**	**1.01**	**1.01**	**1.01**	**1.01**	**1.01**
Consumer NAC (coeff.)	**1.03**	**1.01**	**1.01**	**1.01**	**1.01**	**1.01**
Total Support Estimate (TSE)	**542**	**118**	**554**	**614**	**507**	**541**
Transfers from consumers	53	14	110	143	116	71
Transfers from taxpayers	491	105	457	477	410	483
Budget revenues	-2	0	-12	-6	-19	-13
Percentage TSE (% of GDP)	**1.50**	**0.21**	**0.22**	**0.25**	**0.21**	**0.22**
Total Budgetary Support Estimate (TBSE)	**489**	**103**	**456**	**476**	**410**	**483**
Percentage TBSE (% of GDP)	**1.36**	**0.18**	**0.18**	**0.19**	**0.17**	**0.19**
GDP deflator (1986-88 = 100)	**100**	**137**	**228**	**216**	**228**	**241**
Exchange rate (national currency per USD)	**1.71**	**2.25**	**1.54**	**1.41**	**1.58**	**1.63**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for New Zealand are: wheat, maize, oats, barley, milk, beef and veal, sheep meat, wool, pig meat, poultry and eggs.

Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

Agricultural support in New Zealand is limited largely to expenditures on general services, primarily in the form of agricultural research and biosecurity controls for pests and diseases. A significant share of the costs of regulatory and operational functions, including for border control, is charged to beneficiaries (e.g. farmers) or those who create risks (e.g. importers).

Market and trade regulations

Practically all New Zealand's agricultural production and trade is free from economic regulation. Export rights of some dairy products to certain markets with import quotas have been allocated to dairy companies based on the share of milk solids collected from farmers. Export regulations are in place for kiwifruit: the New Zealand company Zespri has the default right, although not an exclusive right, to export kiwifruit to all markets other than Australia.[1]

New Zealand currently has 13 Free Trade Agreements (FTAs) in force, which cover approximately 65% of the value of New Zealand's agro-food exports and 60% of its agro-food imports during 2021-23 – shares that are slightly lower than those for its total trade (67% and 66%, respectively).

Biosecurity and food safety

All agro-food business operates under the Food Act 2014, which applies a risk-based approach focused on safe and suitable food. It avoids using prescriptive regulation and aligns the domestic food system with the risk-based approach of other New Zealand food statutes that have more of an export focus and with international trends in food regulation.

Together with the Animal Products Act 1999, the Agricultural Compounds and Veterinary Medicines Act 1997, and the Food Act 2014, the Biosecurity Act 1993 defines the legal obligations of food importers. **Import Health Standards (IHS) issued under the Biosecurity Act set the requirements for importing risk goods into New Zealand**.[2] Risk goods, including animal and plant products, can be imported only with an IHS in place for the product, and with the product meeting all relevant IHS measures. For some products (e.g. table eggs, uncooked chicken meat, honey), no IHS is in place. These products therefore cannot be imported, leading to some market price support as their domestic prices are above the world market level.

The Government Industry Agreement for Biosecurity Readiness and Response (GIA) established an integrated approach through voluntary partnerships between the government and primary industry sector groups to manage pests and diseases that could damage New Zealand's primary industries, economy, and the environment. Signatories share decision-making responsibilities and costs in preparing for and responding to biosecurity incursions. In total, the number of industry groups partnering with the Ministry for Primary Industries under GIA now stands at 23.[3]

Farm assistance services

Under the Commodity Levies Act 1990, "industry good" activities (such as research and development, forming and developing marketing strategies, and providing technical advice) are managed by industry organisations and funded by levies collected from producers.[4] Levies can only be imposed when approved by producers, who also decide how to spend them.

Policies for Indigenous peoples

Introduced in 2015, the Māori Agribusiness: Pathway to Increased Productivity (MAPIP) framework supports Māori primary sector asset owners on a one-on-one basis[5] to increase the productivity of their primary sector assets, including land, agriculture, horticulture, forestry, and seafood. The Māori Agribusiness Extension Programme (MABx) additionally enables the government to partner with Māori to achieve economic, environmental, social and cultural aspirations through the sustainable development of primary sector assets. In 2019, the government committed NZD 12 million (USD 7.4 million) over a four-year period to facilitate MAPIP and MABx projects. Such projects may also be eligible for funding under the SFF futures fund (see section on Innovation for sustainable productivity growth below) and the Māori Agribusiness workforce skills and training programme (see below).

In addition, the government provides targeted funding to help Māori agribusinesses realise the potential value of their land and primary sector assets. This funding is available to eligible applicants and is typically used for measures such as land-use assessments and feasibility studies to lift the productivity of underutilised land. Targeted advisory services are also provided to Māori farmers and foresters, notably in the context of adverse events.

Sustainability policies

The Sustainable Land Management Hill Country Erosion Programme (HCEP) aims to protect New Zealand's estimated 1.4 million ha of pastoral hill country classified as erosion prone. It funds regional councils to develop and deliver four-year erosion control programmes, co-funded by councils and landowners. The government approved a total of NZD 25.2 million (USD 15.5 million) for the period 2023-27. Funded activities include:

- developing farm-scale erosion control plans in collaboration with landowners
- wide-spaced planting of poplars and willows as agroforestry
- land retirement from production to revert to native vegetation
- small-scale forest-based activities
- regional training and resourcing for delivering targeted erosion control programmes.

Although the main purpose of the HCEP is to reduce erosion and to build on-farm resilience, it also aims to reduce sediment loss to waterways, increase on-farm biodiversity, enhance climate change adaptation, and contribute to the sequestration of carbon.

Climate change mitigation and adaptation

Primary agriculture is responsible for about half of New Zealand's gross greenhouse gas (GHG) emissions. This share is large relative to other OECD countries, due to the prevalence of livestock-based agriculture and the large share of renewable sources in the electricity mix. Most agricultural emissions are in the form of methane from dairy, sheep, and beef cattle.

In its 2021 Nationally Determined Contribution (NDC) to the Paris Agreement, New Zealand committed to halve its national net GHG emissions by 2030 relative to gross 2005 levels. This economy-wide target covers, among others, agriculture and other land use sectors and corresponds to a 41% reduction on a multi-year emissions budget for 2021-30.

The Zero Carbon Amendment Act 2019 (Zero Carbon Act) sets separate long-term emission reduction targets for long-lived and short-lived GHG emissions, including a target for biogenic methane. In particular, the emissions reduction targets set out in the Zero Carbon Act aim to reduce all GHG emissions, except biogenic methane, to net zero by 2050; and reduce gross biogenic methane emissions to 10% below 2017 levels by 2030 and 24-47% by 2050.[6]

The New Zealand Emissions Trading Scheme (NZ ETS) is the main emissions pricing tool for the New Zealand economy and a key component of New Zealand's climate change response. It currently requires companies in the agricultural supply chain (e.g. meat processors, dairy processors, nitrogen fertiliser manufacturers and importers) to report their agricultural emissions, although these companies are not required to pay for their emissions at this time.[7] The NZ ETS also imposes a cost on emissions from transport fuels, electricity production, synthetic GHGs, waste and industrial processes, including in primary sectors. Eligible forests can be recognised for their carbon sequestration in the NZ ETS.

As part of the One Billion Trees programme aiming to double previous tree planting rates over the decade 2018-28, the One Billion Trees Fund was launched in November 2018. For the financial year ending 30 June 2023, the fund provided NZD 37.7 million (USD 23.1 million) for tree planting grants to landowners including farmers and NZD 83.2 million (USD 51.1 million) for partnership initiatives to help overcome the barriers to tree planting. The fund closed to new applications in June 2021, but the programme will continue until 2028 for grants that have already been approved.

The New Zealand Government researches and develops mitigation technologies to reduce agricultural GHG emissions. It does so primarily through the Centre for Climate Action on Agricultural Emissions (CCAAE, see section on Innovation for sustainable productivity growth below), as well as in co-ordination with the member countries of the Global Research Alliance on Agricultural Greenhouse Gases (GRA).

The GRA, a network of 68 member countries and 29 partner organisations, was established in 2009. New Zealand hosts the Secretariat and GRA Special Representative, and co-chairs its Livestock Research Group. The GRA facilitates collaborative and evidence-based dialogue and knowledge sharing. GRA members collaborate on research, development and extension of technologies and practices to deliver more climate-resilient food systems without growing GHG emissions. New Zealand builds future capability and capacity through running training programmes and supporting GRA scholarship programmes in developing countries, including in South-East Asia and southern and eastern Africa. New Zealand also funds international collaborative efforts to accelerate global research in mitigating GHG emissions from agriculture, especially for pastoral livestock farming, and co-funds and participates in several international research calls designed to decrease agricultural emissions.[8]

New Zealand's first National Climate Change Risk Assessment, published in 2020, sets out the priority and significant risks New Zealand faces from the impacts of climate change. The first National Adaptation Plan listing actions to address these risks was published in August 2022. The new government elected in October 2023 is considering priorities to deliver a strategic adaptation framework to ensure that New Zealand's policy and other system settings provide for an enduring, efficient and affordable climate adaptation response while addressing wellbeing, fairness, transition, and specific Māori interests.

Land rights policies

The Overseas Investment Act 2005 makes acquisitions of "sensitive land" involving "overseas persons", as defined under the act, subject to consent of the Toitū te Whenua Land Information New Zealand. Most of the country's land is considered as "sensitive" under the act. The criteria that apply depend on the land being acquired and on who is purchasing the land, for instance overseas investors must demonstrate how their investment will benefit the country.

Innovation for sustainable productivity growth

As indicated above, agricultural GHG emissions, and specifically methane, are a key challenge for New Zealand. Many its programmes thus focus on reducing emissions through new technologies, genetics and breeding programmes, and fertiliser reduction, among others. New Zealand also experienced strongly declining productivity growth and high nitrogen balances (see the Policy context section below).

Research and innovation

The Centre for Climate Action on Agricultural Emissions (CCAAE) was launched in November 2022. It brings together efforts to accelerate research in developing new tools, technology and practices to lower on-farm emissions. and ensuring farmers have equitable access to affordable tools to cut their emissions while maintaining efficiency in on-farm practices and land use. It comprises AgriZero^{NZ} – a public-private joint venture with key industry agribusinesses − and the New Zealand Agricultural Greenhouse Gas Research Centre (NZAGRC).

Funded from the Climate Emergency Response Fund with an allocation of NZD 339 million (USD 208 million), by December 2023 the CCAAE has made more than NZD 54 million (USD 33.2 million) in investments, which are co-funded by industry. Projects include developing a methane inhibiting bolus,[9] increasing the pool of researchers with skills in agricultural greenhouse gas mitigation, and building a new greenhouse gas testing facility for large cattle.

The NZAGRC, funded by the Ministry for Primary Industries and the Ministry of Business, Innovation and Employment, brings together nine organisations that conduct research to reduce agricultural GHG emissions. The research focuses on practical ways to reduce on-farm methane and nitrous oxide emissions while improving productivity and sequestering soil carbon, as well as Māori-focused research and future farm systems' research. Industry partners co-invest in some of the research led by NZAGRC.

Another key pillar of this work is the Sustainable Food and Fibre Futures (SFF Futures), a public co-investment programme that finances projects to create value and improve sustainability in the food and fibre industries. SFF Futures has a budget of NZD 60 million (USD 36.8 million) per year and enables farmers, growers, harvesters, and industry to apply for funding for a range of projects that deliver economic, environmental and social benefits. SFF Futures projects can range from less than NZD 100 000 to multi-million-dollar, multi-year programmes. Community projects require co-investment from the partner organisation of at least 20% of costs. Commercially-driven projects require a co-investment of at least 60% of costs.

One of the SFF Futures funded programme brings the horticulture, wine, and arable sectors together to find ways to meet consumer demands for food produced through more sustainable pest management practices. It shifts away from traditional crop protection to integrate biological and ecological processes.

New Zealand is also placing an increasingly greater focus on technological solutions to increase productivity and reduce emissions. NZ Sheep of the Future is an SFF Futures programme launched in August 2023 with funding for seven years, that focusses on new farm system approaches for a range of sheep breeds, using genetics to help future-proof the industry, breeding sheep with optimum meat and wool production as well as a greater tolerance for hot weather and with lower methane emissions.

Programme implementation

The Ministry for Primary Industries' Productive and Sustainable Land Use package promotes improved value creation and environmental outcomes. One part of the programme, Extension Services, supported and enables producers to improve environmental, social and wellbeing outcomes in their communities by helping them design their own solutions. Extension Services, which ran from July 2019 to June 2023 with a total budget of NZD 35 million (USD 21.5 million), partnered with farmers through catchment groups, regional stakeholders and agricultural professionals to ensure services are relevant to the needs and priorities of local communities.

Recent policy developments

Domestic policy developments in 2023-24

Responses to biosecurity threats and adverse events

The 10-year programme to eradicate the cattle disease Mycoplasma bovis (M. bovis), launched in 2018, is being transitioned to the disease management agency OSPRI. Background surveillance continues to monitor the disease status of the national herd. M. bovis has resulted in significant production losses for dairy and cattle farmers. Compensation payments are provided to farmers impacted by the eradication programme.

The agricultural sector and rural communities were impacted by a series of severe weather events: Cyclone Hale, the Auckland Anniversary weekend floods (both in January 2023), and Cyclone Gabrielle (February 2023), which caused widespread flooding and landslides that damaged critical infrastructure and resulted in substantial losses of horticultural crops and agricultural assets around the North Island. The Ministry for Primary Industries (MPI) reacted by supporting the primary industries and rural communities' response to the event, drawing on its on-the-ground presence to help regions actively manage the risks they face.

The clean-up and recovery costs are estimated to reach about NZD 1 billion (USD 614 million), half of which are in the horticulture sector with the remainder in the sheep and beef, dairy and forestry sectors. Initial funding available to the agriculture sector from central government included Farmers and Growers grants (NZL 64 million for more than 4 700 farmers); a mobilisation fund for urgent response and support projects (NZD 3.9 million in funding across 25 projects, including aerial surveys, mental wellbeing initiatives, recovery advice, transport and logistics); and the North Island Weather Event (NIWE) Regional Recovery Funding (NZD 35.4 million) (USD 39.3 million, USD 2.4 million and USD 21.7 million, respectively).

Restoration of productive land in the North Island east coast is dependent on the removal of silt, sediment and woody debris dislodged during the weather events. To date, NZD 240 million (USD 147 million) has been earmarked to clear remaining waste materials from lowland orchards, pasture, and catchment areas. Cost-sharing arrangements were implemented for the removal of silt and debris from commercial properties.

Farm services and workforce initiatives

The Ministry for Primary Industries is establishing an on-farm support service to deliver assistance to farmers and growers. Public sector organisations provide resources, advice, funding opportunities and extension services. As of January 2024, the service had 43 staff in the regions and has been allocated NZD 55 million (USD 33.8 million) over four years.

The New Zealand Recognised Seasonal Employee Scheme (RSE) scheme allows employers in the horticulture and viticulture sectors to recruit seasonal workers from eligible Pacific Island countries. The RSE underwent several changes in 2023. Specifically, the annual cap was increased by 500 places to allow access to 19 500 workers from September 2023, the minimum wage for RSE workers was indexed to 10% above the general minimum wage from October 2023, and provisions for access to sick leave entitlements were modified from October 2023. A multi-stakeholder review of the RSE scheme made recommendations for further scheme changes. Reduced working holiday makers in New Zealand as a result of COVID-19 (although numbers are now recovering) and persistent global workforce shortages have further added to workforce tensions.[10]

Animal welfare

A ban on the sale of eggs raised in conventional (battery) cages came into effect in January 2023, after a phase-out period that had started in 2018. A ban on the export of live cattle, sheep, goats and deer by sea came into effect in April 2023 following a 2022 amendment of the Animal Welfare Act 1999.[11] Livestock exports by sea represent less than 1% of total primary sector exports.

Natural resource policies and organic farming

The Sustainable Land Management and Climate Change Freshwater Mitigation fund (SLMACC FM) is wrapping up in June 2024. SLMACC FM is a four-year project aimed at quantifying the effectiveness of mixed species and soil cover-based management approaches that avoid or reduce the transfer of contaminants from soil to water.

In April 2023, **the Organic Products and Production Act became law**. The act aims to help develop new standards for organic products, and to set requirements for businesses in the organic sector from production through to sale.

Policies for Indigenous peoples

Targeted funding to help Māori agribusinesses realise the potential value of their land and primary sector assets is anticipated to total approximately NZD 5 million (USD 3 million) in the year ending June 2024. The government also contributed NZD 6.1 million (USD 3.7 million) to help Māori landowners and primary producers develop and implement local solutions to improve freshwater quality.

Targeted advisory services to Māori farmers and foresters provided support in the regions most impacted by Cyclone Gabrielle, which have large Māori populations and high proportions of Māori-owned land. Māori agribusiness advisors connected with tribal entities and isolated communities in the impacted regions, to identify needs and encourage equitable access to government cyclone recovery funding and support.

Policies to mitigate emissions from agriculture

An independent Climate Change Commission advises on setting carbon budgets and policies to meet them. In December 2023, it released its “2023 Advice” (Climate Change Commission, 2023[1]) to inform the strategic direction of the government’s second emissions reduction plan (ERP) covering 2026-30. The report contains 27 recommendations covering a wide range of policy actions. The second ERP will be published by the end of 2024.

Trade policy developments in 2023-24

The New Zealand-United Kingdom Free Trade Agreement came into force on 31 May 2023. **The new FTA removes customs duties for a range of food products, such as wine, honey, onions, kiwifruit, and a range of dairy products.** Dairy and horticultural products will be 100% tariff free within seven years of the agreement’s entry into force. Trade in beef and sheep meat will be liberalised over a longer time frame of 10 years and 15 years, respectively.

The New Zealand-European Union Free Trade Agreement, signed in July 2023, was ratified by New Zealand in March 2024 to enter into force on 1 May 2024. **For horticultural products, 99.9% of New Zealand’s current trade with the European Union will enter tariff free at entry into force.** Dairy and meat will see a reduction in tariffs, as well as new FTA quota access, some of which will be duty free. Other agricultural products, such as wine, honey, and seeds, will see duties on 97% of tariff lines eliminated as of entry into force, rising to 99.5% on full implementation. This agreement includes a Sustainable Food Systems chapter, one of the first FTAs globally to do so.

Both the New Zealand-United Kingdom and the New Zealand-European Union FTAs include Māori trade and co-operation chapters. These chapters are expected to increase trade opportunities for Māori primary producers in the UK and European markets. These chapters also allow the government to make differentiated arrangements for Māori businesses without breaching the free trade agreements, around matters such as intellectual property over heritage species. Both agreements also recognise the status of *Te Tiriti o Waitangi*, a treaty signed between representatives of the British Crown and Māori in 1840. All New Zealand's free trade agreements since 2001 have included a *Tiriti o Waitangi*/Treaty of Waitangi clause to reflect the Treaty's constitutional significance to New Zealand.

Policy context

Key economic and agricultural statistics

New Zealand is a relatively small and sparsely populated country with a per capita GDP that is slightly above the OECD average. Its high degree of market openness is related to its dependency on international trade. Agriculture has a comparatively high, albeit slowly shrinking, importance to the economy, accounting for around 6% of both GDP and employment. Moreover, agro-food products account for more than two-thirds of New Zealand's total exports.

With little arable land, grass-fed livestock products represent the backbone of the agricultural sector, and livestock products account for 80% of its total production value. New Zealand is the world's largest exporter of sheep meat, and among the largest exporters of dairy products. Beef, fruit and horticultural products also contribute significantly to the country's agro-food exports.

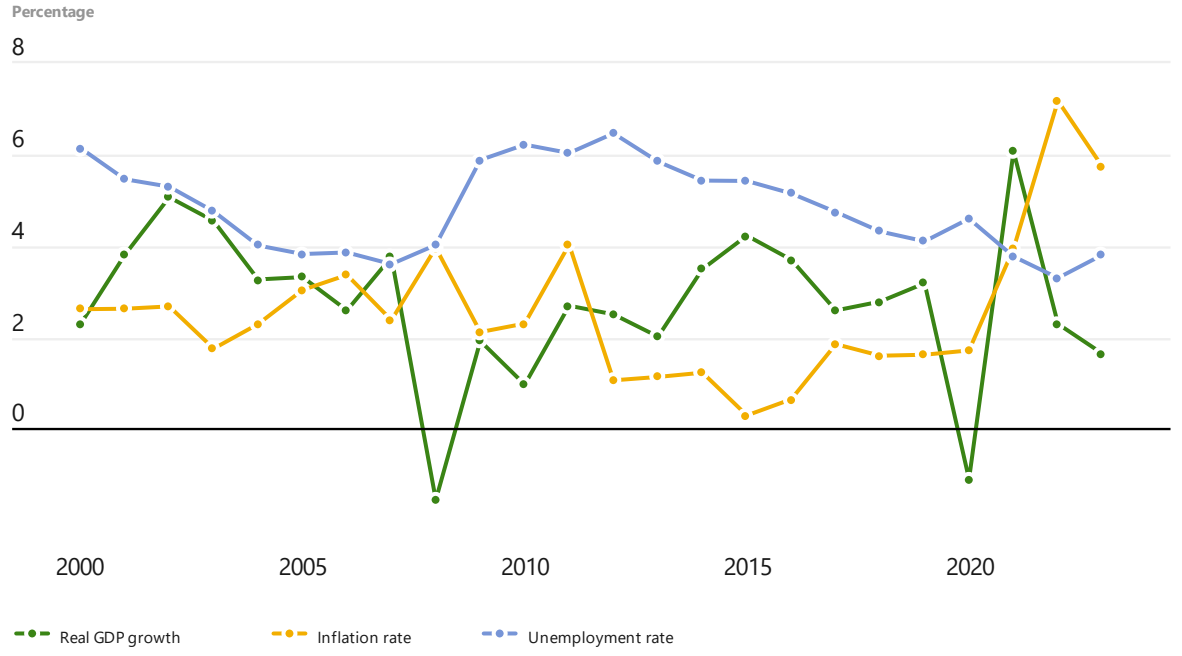
Table 20.2. New Zealand: Contextual indicators

	New Zealand		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	83	265	0.2%	0.2%
Population (million)	4	5	0.1%	0.1%
Land area (thousand km²)	263	263	0.3%	0.3%
Agricultural area (AA) (thousand ha)	12 340	10 175	0.4%	0.3%
			All countries[1]	
Population density (inhabitants/km²)	15	19	52	64
GDP per capita (USD in PPPs)	21 459	51 636	9 363	25 965
Trade as % of GDP	24.5	20.5	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	8.3	6.1	2.9	3.8
Agriculture share in employment (%)	8.5	6.0	-	-
Agro-food exports (% of total exports)	50.7	68.6	6.4	8.0
Agro-food imports (% of total imports)	7.9	11.2	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	17.7	21.5	-	-
Livestock in total agricultural production (%)	82	79	-	-
Share of arable land in AA (%)	3	6	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

New Zealand has a stable economy having experienced growth and relatively low inflation for most of the past decade. However, after rebounding from the COVID-19 related recession to a growth rate above 6% in 2021, the globally difficult economic situation due to Russia's war of aggression in Ukraine reduced GDP growth in 2022 and 2023 to rates around 2%, while inflation peaked at close to 7.2% before declining to 5.7%, still well above levels seen in recent decades.

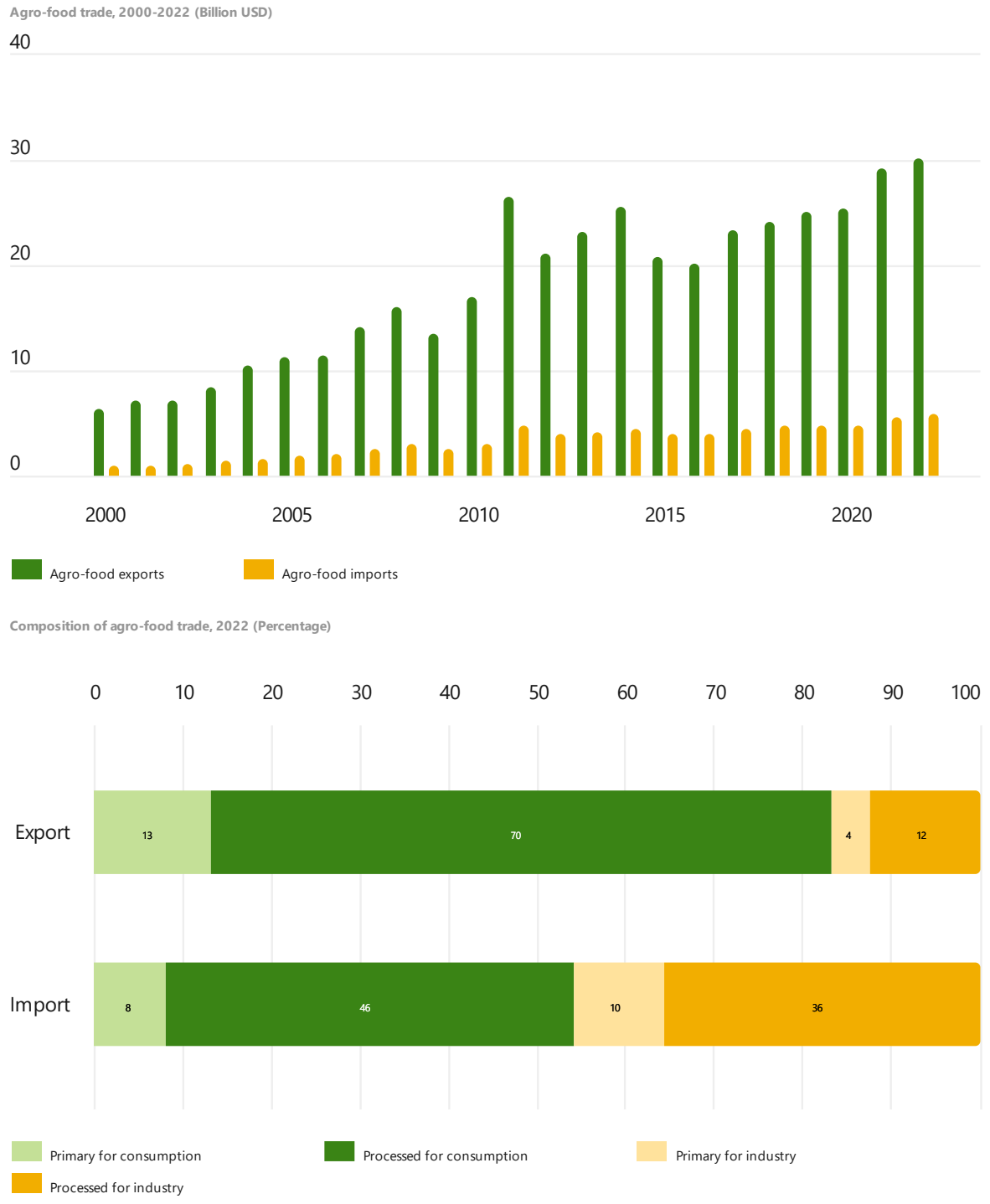
Figure 20.4. New Zealand: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

New Zealand is a consistent and growing net exporter of agro-food products, which after some drops in 2015 and 2016 due to, among others, lower dairy prices, have picked up again since 2017 and reached new record levels in 2022. Most of New Zealand's agro-food trade, and in particular of its exports, is processed food for final consumption. On the import side, however, intermediary products represent nearly half of the trade basket.

Figure 20.5. New Zealand: Agro-food trade



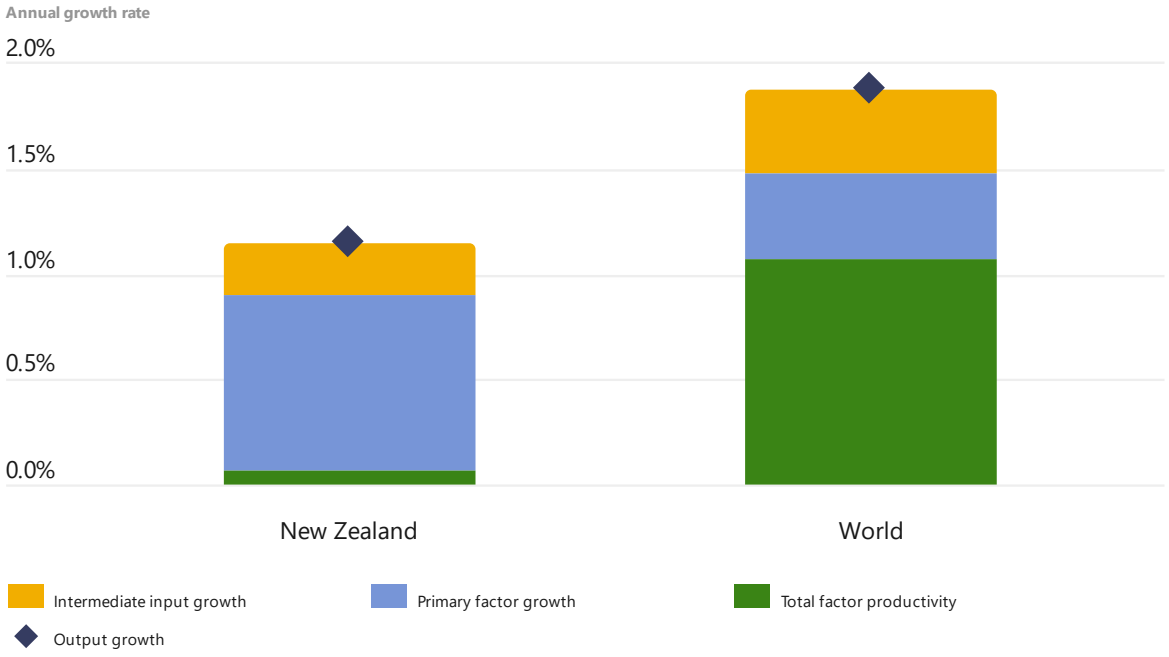
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

New Zealand's growth in agricultural output over the 2012-21 decade has been below the global average, driven by low productivity growth: at less than 0.1%, the estimated average growth in total factor

productivity (TFP) is well below the global average. It is also well below the TFP growth measured for the 1990s.

Agriculture is responsible for half of New Zealand's GHG emissions. This is due to the dominant role of dairy and ruminant meat production and to the large share of renewables in electricity generation, among other factors. Almost three-quarters of agricultural emissions are in the form of enteric methane from ruminant livestock. Nutrient surpluses are also well above the respective OECD averages, although the phosphorous balance has declined somewhat from its levels in the 1990s. The sector is also the main user of freshwater as irrigated land has expanded, partly in response to climate related uncertainties. Nonetheless, its overall level of water stress, while higher than in the 1990s, is relatively low.

Figure 20.6. New Zealand: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Table 20.3. New Zealand: Productivity and environmental indicators

	New Zealand		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	2.1%	0.1%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	36.7	62.6	32.1	28.2
Phosphorus balance, kg/ha	13.2	11.8	3.3	2.3
Agriculture share of total energy use (%)	3.6	5.1	1.7	2.0
Agriculture share of GHG emissions (%)	49.5	49.2	8.7	10.1
Share of irrigated land in AA (%)[1]	3.7	7.3	-	-
Share of agriculture in water abstractions (%)	..	61.7	47.0	49.5
Water stress indicator	0.7	3.0	8.7	..

Note: * or closest available year.
1. Data are not comparable between time periods due to change in methodology.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

Prior to the 1970s, New Zealand exported more than half its agricultural production to the United Kingdom and support for agricultural producers was largely non-existent except for some import-competing sectors such as eggs and poultry. At the same time, New Zealand's Statutory Marketing Boards, operating since the end of World War I, enjoyed significant rights to regulate the supply and trade of several key export products. Overall, relative to the more protected manufacturing sectors, agriculture was implicitly taxed (Anderson et al., 2008[2]).

The accession of the United Kingdom to the European Economic Community in 1973 weakened New Zealand's access to its most important market, and the oil shock of the mid-1970s generated significant foreign exchange shortfalls given the country's dependence on oil imports. In response, the government introduced policy measures to support agricultural production (MPI, 2017[3]). These included input subsidies, minimum prices supported by import barriers and export incentives, tax concessions, low-interest loans and development grants (MPI, 2017[3]; Harris and Rae, 2004[4]).

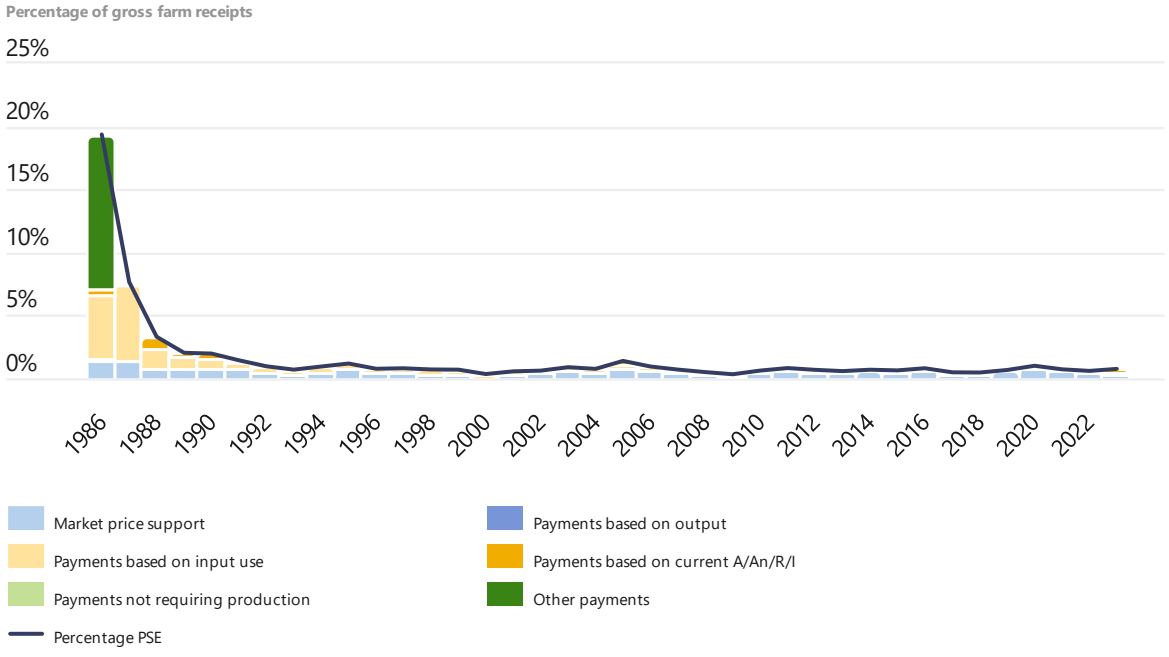
In response to macroeconomic problems, including the substantial fiscal burden of these support measures, a new government implemented significant economic reforms during the second half of the 1980s. By the end of that decade, production and trade distorting policies supporting the farm sector practically disappeared (Table 20.4). In the context of these reforms, New Zealand's Statutory Marketing Boards lost most of their authority or were dissolved (Nayga and Rae, 1993[5]).

Table 20.4. New Zealand: Agricultural policy trends

Period	Broader framework	Changes in agricultural policies
Prior to 1975	Export-oriented agriculture with little policy intervention. Implicit taxation notably of exporting agriculture relative to the manufacturing sector	Statutory Marketing Boards with significant authority to regulate production and trade of key export products Agricultural and manufacturing import tariffs Limited farm support, including some input subsidies
1975-1984	Incentivising agricultural production	Introduction of significant farm support measures: price support, input subsidies, tax concessions, low-interest loans, development grants
Late 1980s	Reforms to market and trade liberalisation	Dismantling of price support and most other forms of direct farm support, along with economy-wide reforms liberalising the manufacturing industry as well Restricted function or dismantling of the Statutory Marketing Boards. Exit packages and debt restructuring programmes for farmers who had to stop operating
1990-present	Continuing trade liberalisation	Focus on general services and disaster aid

Since the policy reforms of the late 1980s, New Zealand's level of support to agricultural producers has been the lowest among OECD countries (Figure 20.7). For the last almost 20 years, PSE has been consistently below 1% of gross farm receipts. While this low support has been dominated by SPS-related market price support, most of the budgetary producer support has consistently been provided for livestock disease control. Most of the support for the sector, however, has consistently been in the form of provision of general services to the sector, notably through the agricultural knowledge and innovation system and related to the country's biosecurity controls for pests and diseases.

Figure 20.7. New Zealand: Development of the PSE and its composition, 1986 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

References

Anderson, K. et al. (2008), "Distortions to Agricultural Incentives in Australia and New Zealand", *Agricultural Distortions Working Paper*, No. 09, World Bank, Washington, DC, https://openknowledge.worldbank.org/handle/10986/28184. [2]

Climate Change Commission (2023), *2023 Advice on the direction of policy for the Government's second emissions reduction plan*, https://www.climatecommission.govt.nz/public/Advice-to-govt-docs/ERP2/final-erp2/ERP2-Final-Advice-for-web.pdf. [1]

Harris, D. and A. Rae (2004), "Agricultural Policy Reform and Industry Adjustment in Australia and New Zealand", *Conference paper for International Agricultural Trade Research Consortium, Philadelphia, 6-7 June 2004*, https://doi.org/10.22004/ag.econ.15762. [4]

MPI (2017), *New Zealand Agriculture. A policy perspective*, Ministry for Primary Industries, New Zealand, https://www.mpi.govt.nz/dmsdocument/27282/direct. [3]

Nayga, R. and A. Rae (1993), "New Zealand's statutory marketing boards: Their history and some recent developments", *Journal of Food Distribution Research*, Vol. 24, pp. 94-100, https://core.ac.uk/download/pdf/6988122.pdf. [5]

NZIER (2007), *Productivity, profitability and industry good activities. Report to Dairy Insight*, New Zealand Institute of Economic Research, https://nzier.org.nz/static/media/filer_public/11/cb/11cb415e-a97b-4ac9-b86c-a0b238de9b61/productivity_profitability_and_industry_good_activities_feb_2007.pdf. [6]

Notes

[1] Other traders can export kiwifruit to markets other than Australia in collaboration with Zespri, subject to approval by Kiwifruit New Zealand, the relevant regulatory body.

[2] Risk goods are any items that may constitute, harbour, or contain an organism that may cause unwanted harm to natural or physical resources, or to human health in New Zealand (https://www.mpi.govt.nz/import/importing-into-nz-how-it-works/import-health-standards).

[3] Three more industry groups, which have not signed the deed, are represented by other signatories.

[4] Activities "beneficial to the industry, but whose benefits cannot be captured by those who fund or provide the activity", or "long-term investments in the industry made with the expectation of accelerating delivery of better technology and products for the industry" (NZIER, 2007[6]).

[5] The one-on-one approach focuses on tangible support by working with Māori landowners to develop funding applications including advice to address individual problems, in contrast to the one-on-many approach offered by the MABx programme working with clusters of Māori landowners and agribusinesses.

[6] The 2050 bionic methane target is currently being reviewed by the Climate Change Commission as well as an independent ministerial advisory panel.

[7] In June 2024, the government has announced its intent to remove these agricultural and fertiliser reporting obligations and to ensure that agriculture would not enter the NZ ETS.

[8] Other funders of the GRA include the Climate Change, Agriculture and Food Security programme of the Consultative Group on International Agricultural Research (CGIAR-CCAFS) and the government of the Netherlands.

[9] A large capsule filled with the methane-inhibiting substance that is released over a longer period of time.

[10] Working holiday schemes allow young adults from other countries that participate in the programme to work and take holidays in New Zealand for between 6 and 36 months depending on the nationality.

[11] However, in June 2024 the new government, elected in 2023, has signalled its intent to introduce an amendment to the Act in 2025 that would overturn the ban.

21. Norway

Main findings

Support to agriculture

Norway provides the highest relative levels of agricultural support among the 54 countries analysed in this report. In 2021-23, transfers to producers (Producer Support Estimate, %PSE) constituted 49% of gross farm receipts, the highest proportion in the OECD.

Domestic market prices are maintained through border protection and market regulations. Market Price Support (MPS) decreased in recent years, however, it remains high and constitutes the second largest component of producer support (33% in 2021-23), affecting most commodities except sheep meat and wool. Payments based on current production factors, such as land area and animal numbers, form the largest share of producer support (36%).

Support for general services, measured by the General Service Support Estimate (GSSE), accounts for a relatively small portion of total agricultural support. In 2021-23, GSSE accounted for 4.6% of total sector support, equivalent to 3.8% of the value of agricultural production. Nearly two-thirds of GSSE is allocated to agricultural education services at the Norwegian University of Life Sciences, with most of the remaining funds directed towards agricultural product-safety and inspection services managed by the Norwegian Food Safety Authority.

Total support (TSE) amounted to 83% of the value of production at farmgate prices. Although this represents a significant decrease from the 125% average recorded in 2000-02, it remains substantially higher than the OECD average of 23%.

Key recent policy changes

Norway's Agricultural Agreement is set to embrace a more climate- and environmentally conscious approach. This strategic pivot aligns with the objectives outlined in the 2023 Climate Agreement between the Norwegian Government and the farmers' unions. Recognising the urgency of climate action, the agreement has elevated climate and environmental initiatives to a top-tier priority. Consequently, funding for targeted climate and environmental schemes has seen a substantial increase. The parties have agreed to allocate NOK 9.3 billion (USD 881 million) to climate and environmental measures, representing nearly a third of the Agricultural Agreement's total budgetary framework.

The annual Agricultural Agreement has marked a substantial increase in support for agricultural producers. In particular, the government has earmarked NOK 888 million (USD 84 million) in response to escalating input costs and to adjust for inflationary pressures, in 2023. This allocation is specifically intended to offset the discrepancy between projected and actual farmers' incomes, providing a financial buffer to ensure the stability and continuity of agricultural operations.

The recent settlement has underscored the economic aspects of dairy farming, particularly milk production. In an effort to balance production with sustainability, the milk quota's production ceiling will undergo a

reduction. For cow's milk, the quota will decrease from 900 000 litres to 700 000 litres. Similarly, for goat milk, the new ceiling is set at 350 000 litres.

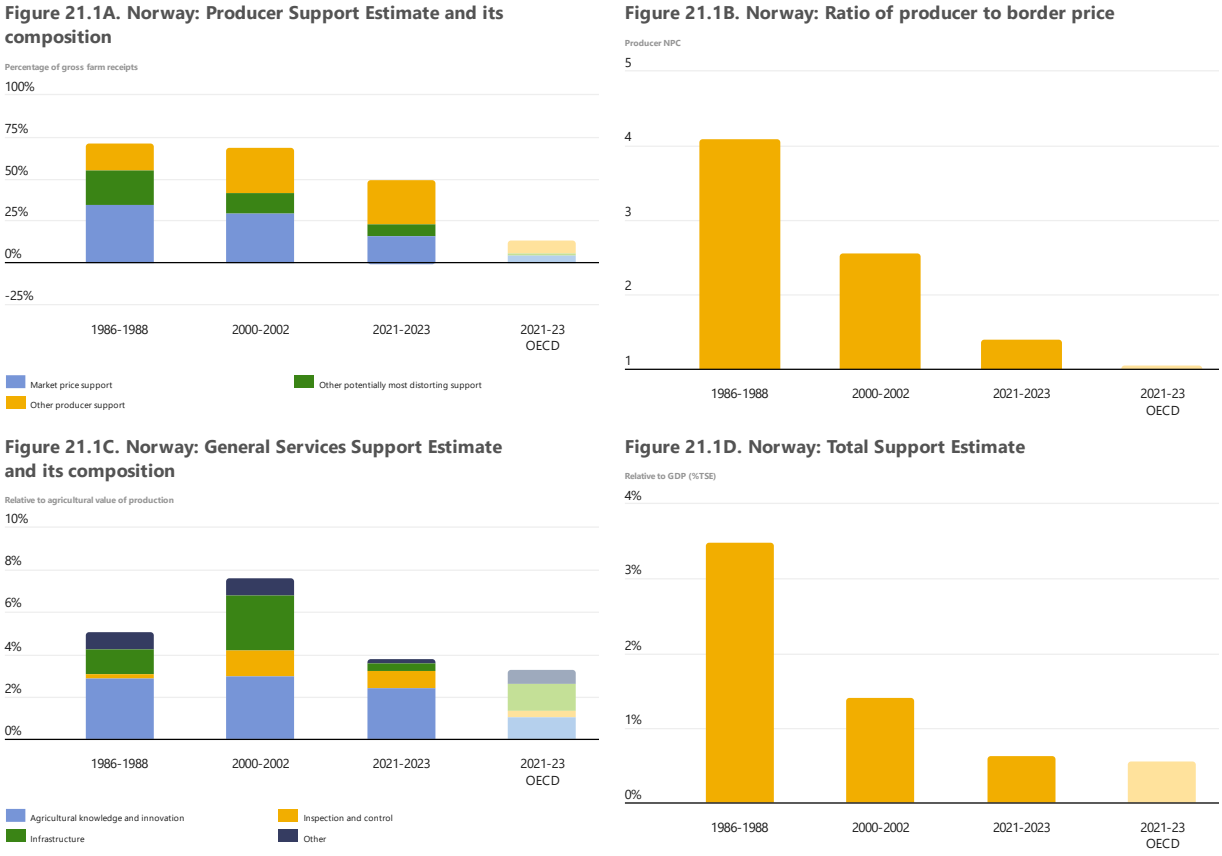
The maximum land conversion away from agriculture was lowered from 300 ha/year to 200 ha/year in 2023.

Assessment and recommendations

- The annual agricultural negotiations in Norway play a crucial role in shaping the country's agricultural policies by facilitating a dialogue between the government and farmer representatives. These negotiations ensure that the interests of farmers are considered in policy decisions, however, they may lessen the mid- and long-term transitional objectives of the agricultural sector. Norway should explore wider stakeholder engagement in agricultural policymaking. Reviewing the annual negotiations between the government and farmer representatives to ensure alignment with current and emerging policy objectives is essential. Implementing a multiyear framework agreement and involving a wider range of stakeholders could enhance performance concerning environmental and social objectives.
- The largest part of Norway's support to agriculture relates to targeted support mechanisms that are connected to production. A large part of this support targets the livestock sector. Re-orienting (a part of) this support towards general services and making the support less-commodity specific may help Norway reorient its production along its consumer preferences and climate change objectives. This approach can provide income support and complementary incentives to maintain agricultural land while improving environmental performance.
- Norway's nitrogen and phosphorus surpluses highlight significant environmental pressures from the agricultural sector, with levels among the highest in the OECD. These surpluses may negatively impact soil, water, and air quality, underscoring the need for improved nutrient management practices in the agricultural sector. Promoting the development of environmental plans at the farm level is crucial. Establishing a robust system to monitor the agri-environmental performance of farms will help ensure sustainable agricultural practices and improved environmental outcomes. In addition to creating the Bionova tool for decreasing emissions along the value chains, Norway may consider providing farmers with tools to guide emission and pollution reduction from at the production side.
- Norway sets high ambitions for most of its sectors in the Green Industrial Initiative. It incorporates some of its sectors' strength in the bioeconomics development area. Norway should find a larger role for the agricultural sector in its Green Industrial Initiative as it would offer new opportunity for the sector to provide fossil fuel replacements (such as bio-plastics) and to reduce Norway's overall GHGs emissions.

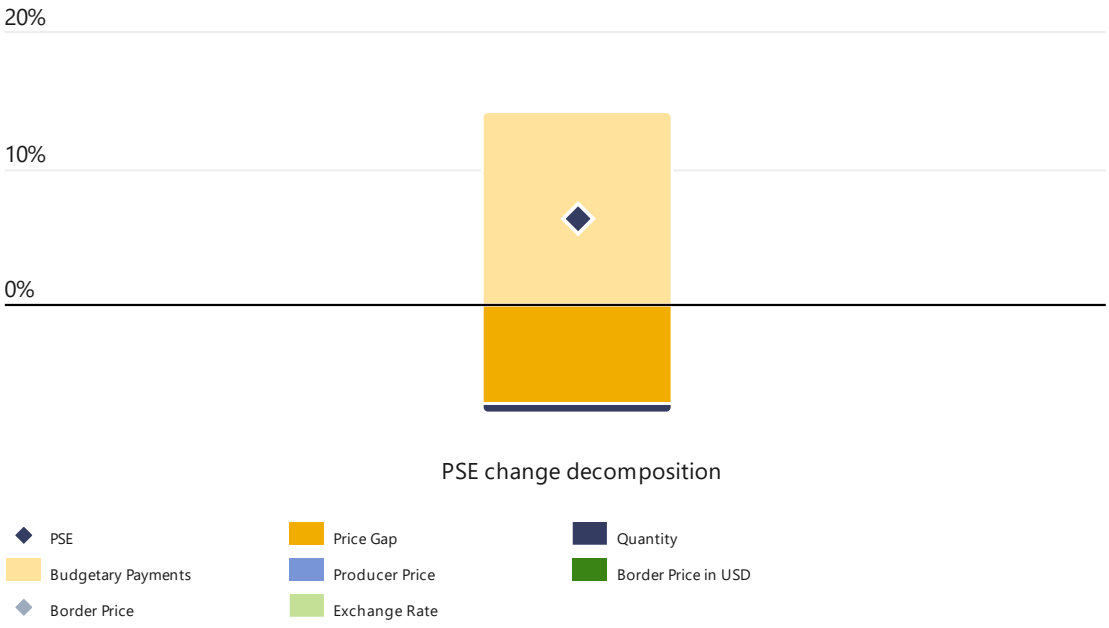
Development of support to agriculture

Figure 21.1. Norway: Development of support to agriculture



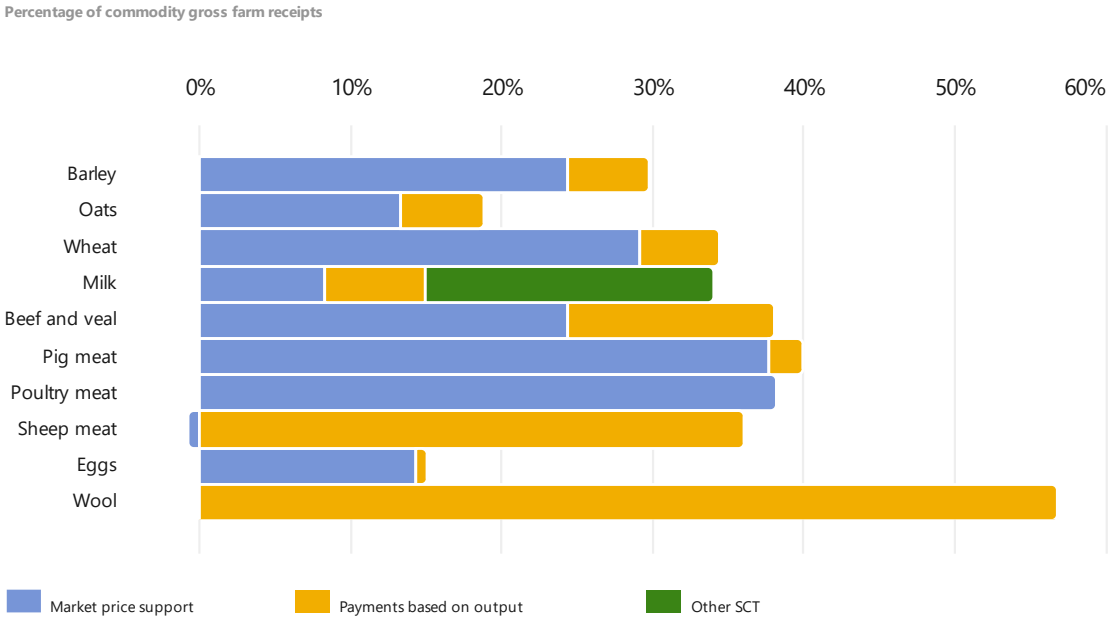
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 21.2. Norway: Drivers of the change in PSE, 2022 to 2023



Note: % change of nominal Producer Support Estimate expressed in national currency. The producer price change and the border price change are not calculated when both negative and positive market price support (MPS) occur at the commodity level for the previous year. Note that negative MPS estimates for livestock products may arise in cases of aligned product prices if there is positive MPS for feed commodities.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Figure 21.3. Norway: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Table 21.1. Norway: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**2 533**	**2 052**	**3 991**	**4 140**	**4 080**	**3 754**
of which: share of MPS commodities (%)	73.28	80.83	73.12	71.64	73.56	74.16
Total value of consumption (at farm gate)	**2 687**	**2 085**	**4 176**	**4 457**	**4 156**	**3 916**
Producer Support Estimate (PSE)	**2 844**	**2 339**	**2 937**	**2 996**	**2 956**	**2 861**
Support based on commodity output	2 070	1 348	1 271	1 434	1 337	1 043
Market price support[1]	1 397	1 011	962	1 111	1 040	734
Positive market price support	1 397	1 011	978	1 112	1 040	783
Negative market price support	0	0	-17	-1	0	-49
Payments based on output	673	337	310	323	297	309
Payments based on input use	250	117	216	194	236	217
Based on variable input use	149	71	124	103	154	116
with input constraints	0	0	0	0	0	0
Based on fixed capital formation	91	38	81	80	73	90
with input constraints	0	0	0	0	0	0
Based on on-farm services	11	8	10	11	10	10
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	524	871	1 065	1 005	1 026	1 163
Based on Receipts / Income	0	49	93	81	98	98
Based on Area planted / Animal numbers	524	822	972	923	928	1 065
With input constraints	371	644	816	756	779	914
Payments based on non-current A/An/R/I, production required	0	0	380	357	350	432
Payments based on non-current A/An/R/I, production not required	0	0	0	0	0	0
With variable payment rates	0	0	0	0	0	0
with commodity exceptions	0	0	0	0	0	0
With fixed payment rates	0	0	0	0	0	0
with commodity exceptions	0	0	0	0	0	0
Payments based on non-commodity criteria	0	3	6	6	6	6
Based on long-term resource retirement	0	0	0	0	0	0
Based on a specific non-commodity output	0	3	6	6	6	6
Based on other non-commodity criteria	0	0	0	0	0	0
Miscellaneous payments	0	0	0	0	0	0
Percentage PSE (%)	**71.44**	**69.03**	**49.19**	**49.72**	**49.30**	**48.65**
Producer NPC (coeff.)	**4.11**	**2.56**	**1.40**	**1.47**	**1.40**	**1.36**
Producer NAC (coeff.)	**3.50**	**3.23**	**1.97**	**1.99**	**1.97**	**1.95**
General Services Support Estimate (GSSE)	**129**	**158**	**153**	**168**	**152**	**139**
Agricultural knowledge and innovation system	74	62	97	107	96	88
Inspection and control	5	25	34	37	34	31
Development and maintenance of infrastructure	29	54	13	15	13	12
Marketing and promotion	21	15	9	10	9	9
Cost of public stockholding	0	2	0	0	0	0
Miscellaneous	0	0	0	0	0	0
Percentage GSSE (% of TSE)	**4.04**	**6.16**	**4.61**	**5.03**	**4.56**	**4.30**
Consumer Support Estimate (CSE)	**-1 388**	**-1 036**	**-876**	**-1 100**	**-869**	**-658**
Transfers to producers from consumers	-1 675	-1 101	-961	-1 119	-965	-799
Other transfers from consumers	-178	-75	-81	-122	-39	-82
Transfers to consumers from taxpayers	220	71	207	172	225	225
Excess feed cost	244	70	-41	-31	-90	-2
Percentage CSE (%)	**-56.34**	**-51.15**	**-21.80**	**-25.69**	**-22.10**	**-17.84**
Consumer NPC (coeff.)	**3.23**	**2.28**	**1.33**	**1.39**	**1.32**	**1.29**
Consumer NAC (coeff.)	**2.29**	**2.05**	**1.28**	**1.35**	**1.28**	**1.22**
Total Support Estimate (TSE)	**3 193**	**2 568**	**3 297**	**3 336**	**3 333**	**3 224**
Transfers from consumers	1 853	1 176	1 042	1 242	1 004	881
Transfers from taxpayers	1 518	1 467	2 336	2 216	2 368	2 424
Budget revenues	-178	-75	-81	-122	-39	-82
Percentage TSE (% of GDP)	**3.49**	**1.42**	**0.64**	**0.68**	**0.58**	**0.67**
Total Budgetary Support Estimate (TBSE)	**1 796**	**1 557**	**2 336**	**2 225**	**2 293**	**2 490**
Percentage TBSE (% of GDP)	**1.96**	**0.86**	**0.45**	**0.45**	**0.40**	**0.52**
GDP deflator (1986-88 = 100)	**100**	**163**	**375**	**327**	**419**	**378**
Exchange rate (national currency per USD)	**6.88**	**8.59**	**9.59**	**8.59**	**9.61**	**10.56**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for Norway are: wheat, barley, oats, milk, beef and veal, sheep meat, wool, pig meat, poultry and eggs.

Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

The strategic objectives of Norway's agricultural and food policies are set out in the 2016 White Paper "Change and development – A future oriented agricultural production". These include:

- safeguarding food security and maintaining preparedness
- maintaining agricultural production in all parts of the country
- increasing value creation
- ensuring sustainable agriculture and lower greenhouse gas emissions.

The Agricultural Agreements in Norway function as a structured mechanism where an annual negotiation process takes place between the government and farmers' representatives. These negotiations culminate in an annual agreement that outlines the terms of financial support for the farming community. The mechanism is designed to adjust target prices, provide budgetary allocations, and offer tax incentives. Target prices are provided for milk, grains and some fruits and vegetables.

The principal policy instruments supporting agriculture include border measures, budgetary payments differentiated by commodity and region, and domestic market regulation based on the Marketing Act. This act covers certain types of meat (beef, mutton, pork and poultry); milk, butter and cheese; eggs; cereals and oilseeds; potatoes, vegetables, fruit and berries; and fur skins.

Dairy production is controlled by a milk quota system. Milk quotas are farm-specific and tradeable only within the same regional area. Quotas were introduced in 1983, with trading of quotas being introduced in 1997 and leasing of quotas allowed since 2009.

Various direct payments are provided to farmers, including acreage and headage payments, as well as payments based on product quantities for meat. Many of these are differentiated by region and farm size to equalise incomes across all types of farms and regions. This is designed to maintain the geographic distribution of farms and production in the country.

Since 2004, agri-environmental measures have been implemented as part of the National Environmental Programme (*Nasjonalt miljøprogram)*, which aims to contribute to sustainable agriculture production with reduced greenhouse gas (GHG) emissions, as well as to fulfilling Norway's international commitments on environment and climate in the agricultural sector.

The most important agri-environmental measures are the Acreage and Cultural Landscape Support (*Areal- og kulturlandskapstilskudd*), which provides payments to farmers as an incentive for land to remain in production and prohibits major changes to the natural landscape, such as levelling agricultural land, spraying edge vegetation or channelling rivers or streams. There are requirements and support for livestock on pasture, with extra payments for grazing on unimproved land. Other measures include those for organic agriculture, payments for regional environmental programmes for specific agri-environmental measures, Special Environmental Measures in Agriculture (*Spesielle Miljøtiltak I jordbruket*) and organised grazing measures (*Tiltak I beiteområder*). Environmental levies are applied on agricultural pesticides.

The Selected Cultural Landscapes in Agriculture (*Utvalgte kulturlandskap I jordbruket, UKL*) initiative supports farmers who want to make an extra effort to care for the environmental values of cultural landscapes in 51 selected areas deemed important or exceptional. The investment is based on voluntary agreements between the state and landowners. Co-ordination of these cultural landscapes nationally is the responsibility of the Norwegian Directorate of Agriculture, in collaboration with the Norwegian Environment Agency and the National Heritage Board. Each of the selected areas is co-managed by the municipality, landowners and agricultural enterprises, in collaboration with regional agricultural, natural and cultural heritage management.

The Regional Environmental Programme includes payments to reduce water pollution from agricultural fields, environmentally-friendly spreading of manure, management of fields deemed of high natural value or with special biodiversity, and maintenance around heritage sites in the agricultural landscape.

Article 19 of the European Economic Area (EEA) Agreement concerning trade in basic agricultural products is reviewed periodically. The last round of these reviews was finalised in April 2017 and changes agreed entered into force in October 2018. Under the EEA, tariff rate quotas (TRQs) expanded on several products, including meat, cheese, vegetables, and certain products used in the food industry for making processed agricultural goods. Through the European Free Trade Association (EFTA),[1] Norway has negotiated 30 free trade agreements (FTAs) with 41 partner countries. All agreements include agricultural products, although average tariffs remain above those outside the agricultural sector. For agricultural products, simple average MFN applied tariffs were 37.1% (comparing with 3.2% for other commodities) in 2017.

In 2017 the government introduced the Climate Change Act as part of its goal to transition to a low-emission society by 2050. The act prescribed into law the country's targets for emissions reductions by 2030 and 2050 which are to be reviewed every five years. In 2021, these economy-wide targets were officially set at a reduction in emissions of at least 50-55% by 2030 and 90-95% by 2050 relative to 1990 levels (an increase in ambition from the reduction targets of 40% and 80-95% prescribed in the initial 2017 iteration of the act). The government has since announced its intention to increase its 2030 target to a minimum reduction of 55% based on 1990 levels and submitted it ahead of the UN Climate Change Conference (COP27) in Egypt.

The agricultural sector in Norway also has a sectoral target to reduce net CO_2 equivalent emissions by 5 million tonnes (or around 70% of agricultural emissions including land use and land use change) in the 10-year period 2021-30 and the responsibility for reducing emissions is shared between the agricultural sector and the government. This target was formed as part of the 2019 annual agreement with the farmers' organisations and was included in the government's climate action plan in 2021 (Norwegian Ministry of Climate and Environment, 2021[1]).

The shared responsibilities of mitigation agricultural and food emissions are explicitly stipulated in a Letter of Intent between the agricultural organisations and the government. The agricultural sector is expected to achieve a substantial share of the emission reductions, for example through breeding programmes, better fertiliser management and a switch to fossil-free energy use. The government's efforts to promote changes in consumption patterns may indirectly reduce greenhouse gas emissions that are accounted for in the agricultural sector. These efforts include initiatives to achieve the goal of reducing food waste by 50 % by 2030 and to persuade people to follow the dietary recommendations from the Directorate of Health.

Fossil fuel emissions from the agricultural sector are subject to the nation's carbon tax. A combination of economic and regulatory instruments exists to reduce run-off and comply with commitments of the EEA agreement for water protection. For instance, autumn tillage is restricted in areas surrounding the vulnerable Oslofjord estuary to reduce run-off.

For animal welfare reasons, routine prophylactic use of antibiotics and the use of antibiotics as growth promoters in animal feed are banned. Veterinary services are provided in the whole country to ensure all animals have access to treatment. Investments to promote animal welfare are given priority in the ordinary investment programme for agriculture. A new white paper on animal welfare is due to be presented to the parliament in 2024.

Innovation for sustainable productivity growth

Several factors are favourable for creating profitable and green jobs in Norway – including abundant natural resources, industrial experience, digital literacy, and a skilled workforce. In addition, significant emission reductions across all sectors is among Norway's key policy objectives.

To achieve this, Norway launched, in 2022, **the Green Industrial Initiative**. It identifies 9 strategic sectors and outlines nearly 150 actions to enhance their competitiveness, innovation, and sustainability, including for the agricultural sector. The initiative also aims to increase Norway's exports of green goods and services, creating new opportunities for growth and jobs.

The Norwegian Government has updated its Green Industrial Initiative with a **new roadmap that reflects the latest developments and challenges in the green transition**. The roadmap was a joint endeavour of the Ministry of Trade and Industry and Ministry of Agriculture and Food. It emphasises the importance of the Green Industrial Initiative as a guiding framework for Norway's economic transformation and climate action.

The roadmap provides a vision for the nine priority sectors, including implementation measures. For the agricultural sector the measures include, among others:

- establishment of the Bionova tool (a tool to help reducing emissions through supporting innovation and value creation within the bioeconomy related to agriculture, forestry and aquaculture)
- stimulation of knowledge-based development of regulation for circular bioeconomics
- stimulation of market access for circular bio-based products
- stimulation of more sustainable feed.

The National environmental framework (2023-26) outlining the **comprehensive environmental strategies and initiatives for the period 2023 to 2026** was officially released in September 2022. This document encompasses a broad spectrum of environmental actions at the national, regional, and local levels. While numerous initiatives detailed within are integral to the yearly agricultural accord, the framework itself is distinct and not a part of the agreement.

The public funding of **research and innovation** targets the four strategic objectives of Norway: food security and preparedness, agriculture throughout the country, increase value creation, and sustainable agriculture with lower emissions of greenhouse gases. As such, all public funding of R&I contributes to sustainable productivity growth within the agriculture sector. Particular emphasis is placed on research, innovation and technology development that will contribute to enough, healthy and safe food produced on Norwegian farms and increase self-sufficiency.

Recent policy developments

Domestic policy developments in 2023-24

Norway's **Agricultural Agreement** is set to **embrace a more climate- and environmentally conscious approach**. This strategic pivot aligns with the objectives outlined in the 2019 Climate Agreement (2021-2030) between the Norwegian Government and the farmers' unions. Funding for targeted climate and environmental schemes has increased to NOK 9.3 billion (USD 881 million), representing nearly a third of the Agricultural Agreement's total budgetary framework.

The annual Agricultural Agreement for 2023 contains a substantial **increase in support for agricultural producers**. In response to increasing input costs and to adjust for inflationary pressures, the government has earmarked NOK 888 million (USD 84 million). This allocation is specifically intended to offset the discrepancy between projected and actual farmers' incomes, providing a financial buffer to ensure the stability and continuity of agricultural operations. The enhancement of welfare schemes aims to increase the social support within the agricultural sector.

In an effort to bring production within sustainable limits during the 2023 agricultural negotiations, parties decided to reduce the milk quota's production ceiling in 2024. For cow's milk, the quota will decrease from 900 000 litres to 700 000 litres. Similarly, for goat milk, the new ceiling is set at 350 000 litres. These

adjustments are designed to apply uniformly to either a single enterprise or an individual agricultural property, ensuring a fair and standardised approach to dairy production across the sector.

To preserve the productive capacity of agriculture, in 2023 the ambition for **limiting land conversion** away from agriculture was further strengthened to a maximum of 200 ha per year, down from 300 ha per year set previously.

Policies to mitigate emissions from agriculture

In 2023, an inventory committee has been established to monitor the 2019 climate agreement for agriculture. The deal sets **a shared goal of reducing emissions and enhanced removals** by 5 $MtCO_2$-eq. overall in the 10-year period 2021–30, a reduction of approximately 10% compared to the Business as Usual (BAU) projections. The committee's first status report is expected to be delivered in 2024.

Policies to facilitate climate change adaptation in agriculture

Particular policies and **measures to foster adaptation** contained in a 2023 White Paper include **support for investments in drainage systems** to handle excessive water, and **for cropping practices** that abate erosion and run-off. Support is also provided for contingency storage of seed and grain, research in crop and livestock varieties suited for Norway's northern position, and for conservation and management of genetic resources, including the Svalbard Seed Vault, that all support the availability of food, seed and breeding material under a changing climate.

Norway's Strategy for Climate Change Adaptation and the Fight Against Hunger (Norwegian Ministry of Foreign Affairs, 2023[2]), launched in April 2021, aims **to reduce climate change vulnerability and hunger in developing countries**. The strategy follows Norway's commitment at COP26 in Glasgow to double its climate finance. Norway's investments are expected in five main areas:

- early warning systems and climate services
- nature-based solutions
- climate-resilient food production
- infrastructure
- innovative development financing mechanisms.

Norway will also mainstream environmental and climate issues in all funding decisions and enhance support for building resilient societies that can adapt to climate change. Sustainable and climate-smart food production and food security will be prioritised.

The Ministry of Agriculture and Food has prepared an action **plan for the conservation and sustainable use of Norway's national genetic resources for food and agriculture**. The action plan is directed at preserving the national genetic resources in crops, livestock, and trees – both in a dynamic way in the field, in nature, in the barn, and also as seeds, tissues and sperm in frozen gene banks.

Beyond preserving Norwegian biodiversity, Norway is also **storing seeds from all over the world**. In February 2024 around 14 000 seeds were deposited in the Svalbard Global Seed Vault. The seed vault now has more than 1.2 million seed duplicates from about 80 countries.

Trade policy developments in 2023-24

In March 2024, the European Free Trade Association (EFTA) members and India signed a Trade and Economic Partnership Agreement (TEPA). This agreement is designed to **enhance market access**, streamline customs procedures, and foster investment opportunities between the parties. The TEPA is

expected to lead to increased trade and investment flows, job creation, and economic growth, with EFTA countries committing to investing USD 100 billion and creating 1 million jobs in India over the next 15 years.

As part of its commitment to global health and safety standards, on 15 February 2024, Norway contributed NOK 16 million (USD 1.5 million) to the Standards and Trade Development Facility (STDF) to **help developing economies and least-developed countries** (LDCs) **meet international sanitary and phytosanitary (SPS) standards**, facilitating their access to global markets. Meeting international SPS requirements can be particularly challenging for developing countries due to the technical and financial constraints they often face.

Policy context

Key economic and agricultural statistics

Norway is a small, open economy. Norway boasts one of the world's highest GDP per capita at USD 114 932 in 2023, underpinned by its substantial petroleum sector. Agriculture amounts to about 1.7% of Norway's GDP (Table 21.2). Farmland in Norway accounts for about 3% of the mainland land mass. The agricultural sector tends to focus on a limited selection of goods. About 71% of agricultural value stems from livestock, due to extensive grasslands. Crop cultivation is located in most suitable, central regions, while milk and meat production thrive in less favourable rural areas. Sheep farming, cattle rearing for both dairy and beef, and cereal cultivation, predominantly for livestock feed, are the mainstay activities. The industry is characterised by small-scale family-owned farms, a significant number of which operate in isolated areas.

Table 21.2. Norway: Contextual indicators

	Norway		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	166	627	0.4%	0.5%
Population (million)	4	5	0.1%	0.1%
Land area (thousand km^2)	365	364	0.4%	0.4%
Agricultural area (AA) (thousand ha)	1 042	985	0.00%	0.00%
			All countries[1]	
Population density (inhabitants/km^2)	12	15	52	64
GDP per capita (USD in PPPs)	36 989	114 932	9 363	25 965
Trade as % of GDP	27.5	33.1	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	2.0	1.7	2.9	3.8
Agriculture share in employment (%)	4.1	2.2	-	-
Agro-food exports (% of total exports)	0.8	0.5	6.4	8.0
Agro-food imports (% of total imports)	5.6	9.4	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	29	29	-	-
Livestock in total agricultural production (%)	71	71	-	-
Share of arable land in AA (%)	84	82	32	34

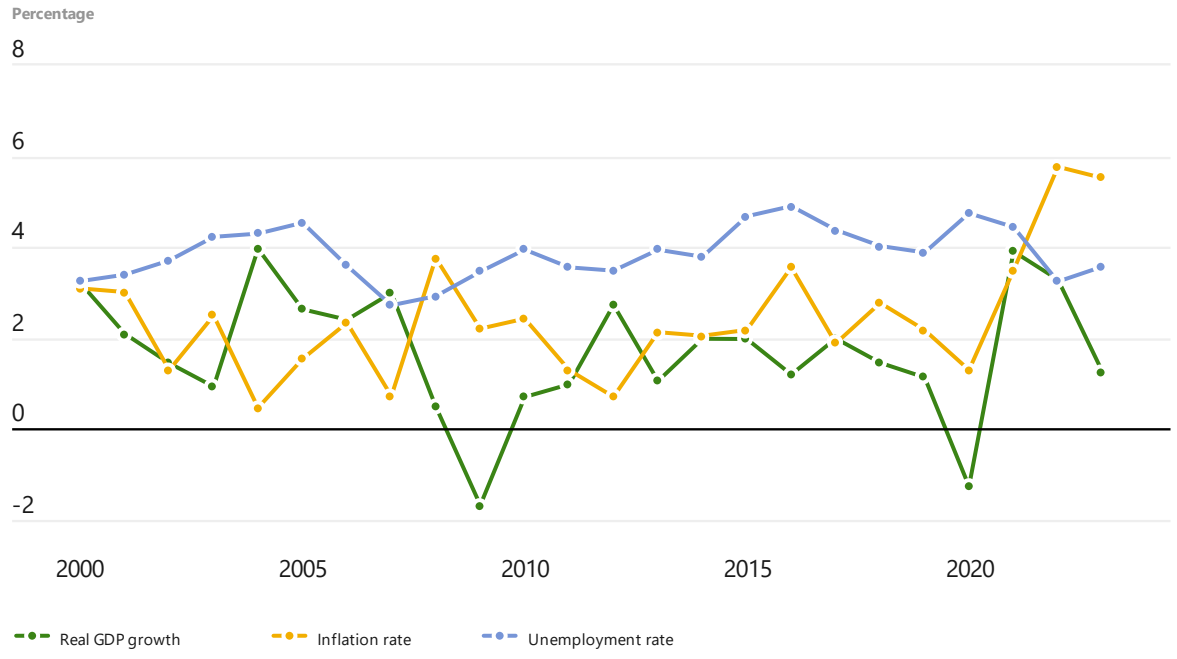
Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

Norway's economic and social achievements continue to be noteworthy. The nation's commitment to reducing inequality and ensuring universal access to essential public services such as health and education has been effective, resulting in one of the smallest income disparities and lowest poverty rates in the OECD.

However, Norway has seen a spike in consumer price inflation. The inflation rate stood at 5.5% in 2023, which was influenced by several factors (Figure 21.4). The Norges Bank decided to raise the interest rate to 4.5% in December 2023 to address the high inflation, which was still markedly above the 2% target. The increase in the interest rate was aimed at reducing the risk of inflation remaining high over an extended period. While the economy was cooling down, inflation was persistently high, driven by increased business costs, prospects of continued high wage growth, and a depreciating krone, which contributed to keeping inflation elevated.

In 2023, Norway's GDP growth was recorded at 1.2%, which is below the OECD average of 1.7% (OECD, 2023[3]). The high GDP per capita is supported by a substantial petroleum sector and a regulatory environment that promotes business growth.

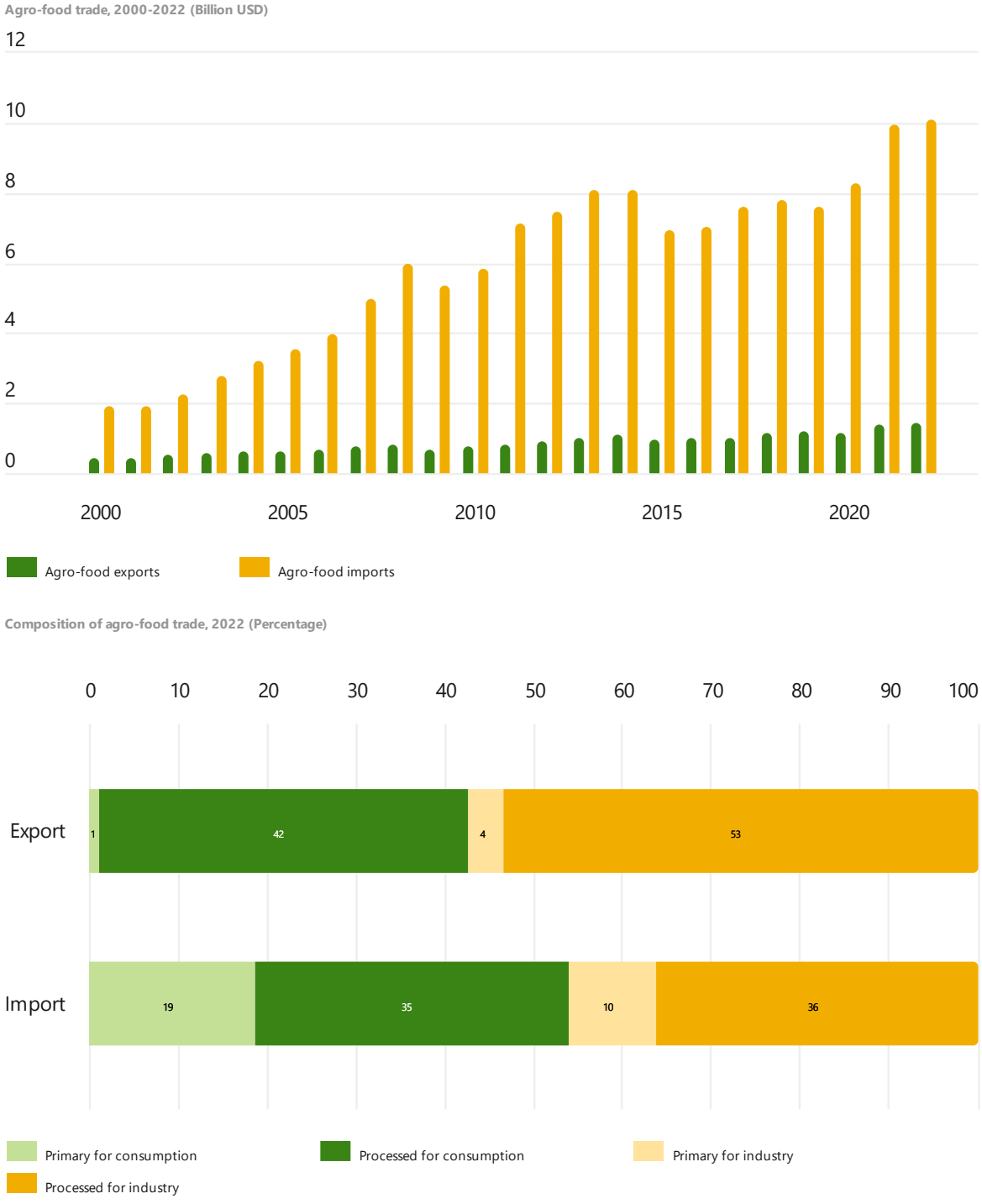
Figure 21.4. Norway: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

Norway primarily imports agricultural goods, with the exception of fish, and these goods make up about 10% of its total imports. In contrast, agro-food commodities constitute only about 1.2% of Norway's total exports (Figure 21.5). The European Union (EU) is Norway's chief commercial ally, responsible for nearly two-thirds of the country's import and export activities. Within the EU, Sweden and Denmark combined are the destination for one-third of Norway's agro-food exports. Beyond the EU, the United States and Japan stand out as significant markets for Norwegian agro-food products. The majority of Norway's agro-food imports are ready for consumer use, while just over half of the exports are intended for additional processing.

Figure 21.5. Norway: Agro-food trade

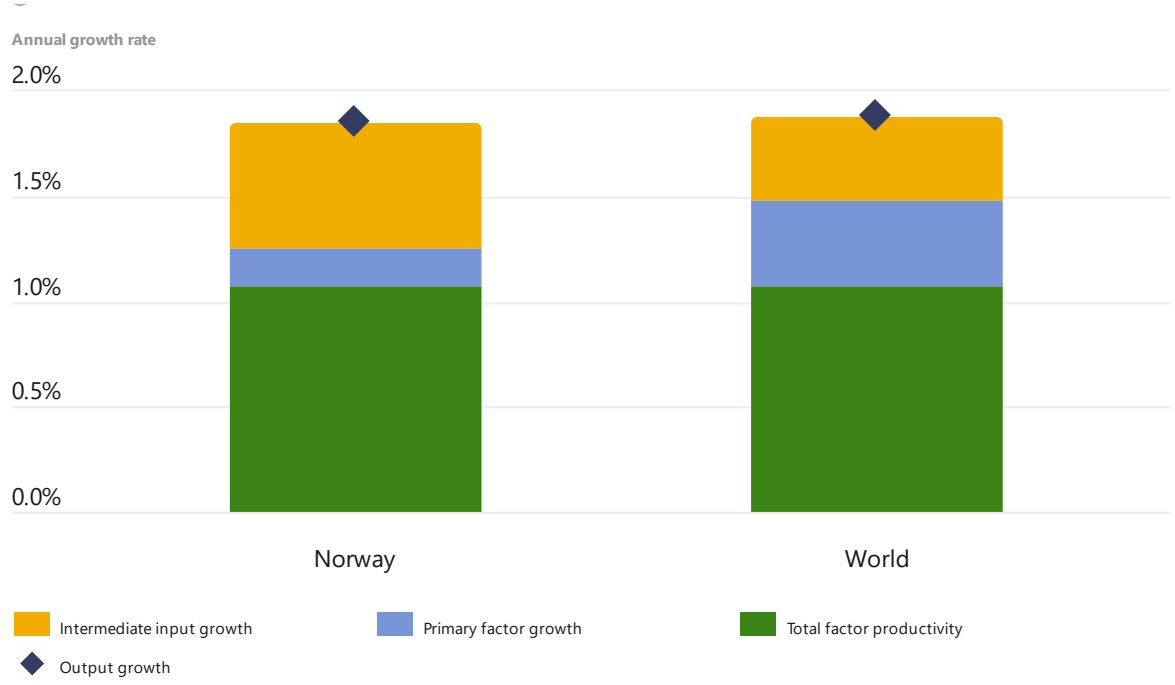


Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Agricultural output in Norway increased at an average rate of 1.1% between 2012 and 2021, in line with the global average growth rate (Table 21.3). This growth in Norway has been primarily driven by productivity improvements, as indicated by the total factor productivity (TFP) measure. The intensification

of intermediate inputs, such as the use of fertilisers, is a second important part of the growth in agricultural output (Figure 21.6). Norway's productivity rate has been plateauing recently, the high use of nitrogen fertilisers, coupled with a reduction in total agricultural land and non-decreasing livestock numbers, has led to minimal environmental improvements (Table 21.3). Currently, Norway's nitrogen and phosphorus surpluses, which negatively impact soil, water, and air quality, are among the highest in the OECD.

Figure 21.6. Norway: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Table 21.3. Norway: Productivity and environmental indicators

	Norway		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	5.7%	1.1%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	85.3	94.5	32.1	28.2
Phosphorus balance, kg/ha	12.0	11.0	3.3	2.3
Agriculture share of total energy use (%)	1.6	1.5	1.7	2.0
Agriculture share of GHG emissions (%)	8.7	9.6	8.7	10.1
Share of irrigated land in AA (%)	4.2	3.3	-	-
Share of agriculture in water abstractions (%)	..	..	47.0	49.5
Water stress indicator	..	..	8.7	..

Note: * or closest available year.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

Historically, Norway's agricultural policies relate to food security and ensuring farm incomes, employment opportunities and regional distribution of production. Today, these objectives are complemented by consumer and societal concerns such as sustainability and environmental issues, climate, food safety and animal welfare, cultural landscape, innovation, agri-tourism, and the small-scale food industry. Norway adopts a four-pillar approach to implement these objectives: i) border protection; ii) legal frameworks to secure family-owned farms; iii) annual negotiations between the state and farmers' organisations to determine producer prices, budget transfers and allocation of funds; and iv) domestic regulations to balance the market through producer co-operatives.

Since the mid-1980s there has been modest policy reform towards market orientation, and modest reductions in the level of support. Farmers in Norway remain heavily supported through border measures, domestic market regulations, budgetary payments and tax breaks, however, some policy reforms were conducted since then. These trends are summarised in Table 21.4.

Environmental cross-compliance was introduced in 1991 with the *Acreage and Cultural Landscape Programme* which grants payments on the condition that farmers meet cultural landscape requirements. Norwegian agri-environmental policies are underpinned by the premise that certain environmental public goods are most cost-effectively provided through positive externalities of agricultural commodity production.

Prompted by the WTO Uruguay Agreement on Agriculture, in force since 1995, a number of changes were introduced to agricultural policies, to improve cost efficiency and market orientation, including increased flexibility in milk quotas, removal of administered prices for eggs, poultry, pork, beef and sheep, and phasing out of export subsidies. But high levels of protection remain against imports of the most important and sensitive agricultural products, such as meat, dairy, eggs and grains. Moreover, the primary agricultural sector is exempt from standard competition law.

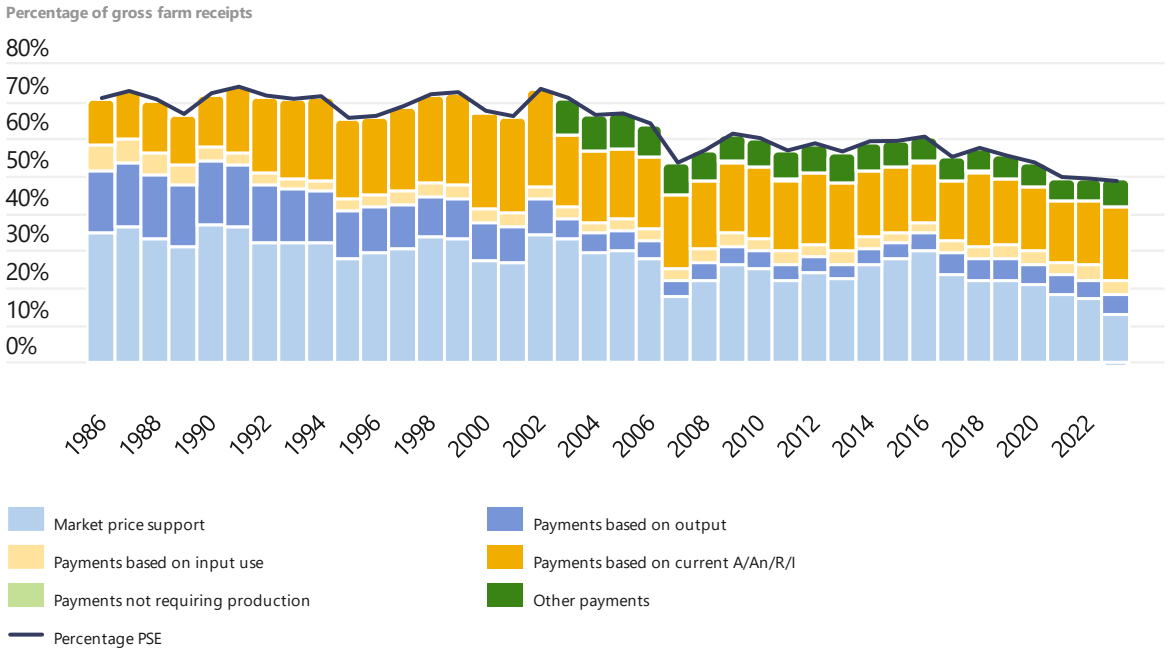
Most of Norway's tariff rate quotas (TRQs) were eliminated in 2000 when the WTO bound tariff rates became equal to the in-tariff quota rates. Tariffs for some products, particularly livestock products are set between 100% and 400%. However, there is a system of "open periods" allowing imports at reduced tariff rates in the event that domestic prices rise above threshold levels due to a deficit in domestic production. Since 1 January 2015, Norway has unilaterally eliminated import duties on 114 agricultural tariff lines. While these duties were low (and not important for protecting Norwegian agricultural production), their elimination resulted in reduced customs procedures and administrative costs. Export subsidies were abolished at the end of 2020.

Table 21.4. Norway: Agricultural policy trends

Period	Broader framework	Changes in agricultural policies
Prior to 1985	Closed economy	High agricultural import tariffs and non-tariff measures Administered prices of agricultural products Production quotas of certain products
1985-1994	Modest domestic reforms	Modest reduction in agricultural import tariffs Removal of several administered prices Increased flexibility in the milk quota system
1995-2000	Implementation of the WTO Uruguay Agreement on Agriculture; more emphasis on environmental sustainability issues	Modest import tariff reduction; tariffication of non-tariff measures Introduction of environmental cross-compliance
2000-present	Continuation of trade reforms	Lower border protection Abolition of export subsidies Removal of several administered prices Introduction of environmental programmes

Source: (OECD, 2021[4]).

Figure 21.7. Norway: Development of the PSE and its composition, 1986 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

References

Norwegian Ministry of Climate and Environment (2021), *Norway's Climate Action Plan for 2021-2030*, http://www.government.no/. [1]

Norwegian Ministry of Foreign Affairs (2023), *Climate Change, hunger and vulnerability: strategy for climate change adaptation and the fight against hunger*. [2]

OECD (2023), *OECD Economic Outlook, Volume 2023 Issue 1*, OECD Publishing, Paris, https://doi.org/10.1787/ce188438-en. [3]

OECD (2021), *Policies for the Future of Farming and Food in Norway*, OECD Agriculture and Food Policy Reviews, OECD Publishing, Paris, https://doi.org/10.1787/20b14991-en. [4]

Note

[1] EFTA comprises Iceland, Liechtenstein, Norway and Switzerland.

22. Philippines

Main findings

Support to agriculture

Support to agricultural producers (Producer Support Estimate, PSE) in the Philippines averaged 19% of gross farm receipts in 2021-23, lower than in 2000-02 (22%) and down from a peak of support in 2014 (29%).

Market Price Support (MPS) and payments for inputs accounted for 96% of support to farmers in 2021-23. Although budgetary support gained in prominence, support to farmers continues to be dominated by MPS, primarily for sugar, rice and animal products. As a result, domestic producer prices were 23% higher than world market prices on average in 2021-23. Payments to farmers support variable inputs and investment in agricultural equipment and facilities.

Support for general services in agriculture (General Services Support Estimate, GSSE) amounted to 4% of the sector's value of production in 2021-23, more than 1.5 times the share observed in 2000-02. This included mainly investments in infrastructure, notably for irrigation systems and farm-to-market roads, and in the agricultural knowledge and innovation system particularly for education and extension programmes.

Total support to the agricultural sector accounted for 2.1% of GDP in 2021-23, lower than the 2.9% in 2000-02 but still the highest among countries reviewed in this report.

Key recent policy changes

In July 2023, the Philippines introduced the New Agrarian Emancipation Act that writes off PHP 57.65 billion (USD 1.04 billion) of credit debt for 610 054 farmers. The act cancels all principal loans, unpaid amortisation and interests incurred by agrarian reform beneficiaries (ARBs) from their allocated land under the existing agrarian laws since 1972 and for farmers who have outstanding loan balances to the Land Bank of the Philippines and to private landowners.

The first food stamp programme *Walang Gutom* 2027 was launched in 2023. This programme aims to reduce hunger and malnutrition among food-insecure households by providing monetary-based assistance through Electronic Benefit Transfer (EBT) cards that can be used to purchase a range of food commodities from eligible stores. The programme allows identified beneficiaries, who earn less than PHP 8 000 (USD 144) a month, to receive digital food vouchers equivalent to PHP 3 000 per month (USD 54) for a period of 6 months. The vouchers can be spent to buy food items from accredited or registered retailers or supermarkets, including those from the government-run KADIWA centres.

The government, in co-operation with the Green Climate Fund (as a co-funder) and the FAO, launched the programme Adapting Philippine Agriculture to Climate Change (APA). This programme aims to develop climate-resilient agriculture (CRA) services and information through the use of low-emission technologies. Supported activities include institutional capacity building for the development of CRA services, efforts to promote the adoption of CRA by farmers (and the provision of an enabling environment for mainstreaming CRA practices, services and decision support tools into programmes of the Department of Agriculture (DA).

APA will be implemented until 2030 and is expected to reduce the equivalent of 4.38 $MtCO_2eq$ over 20 years.

In September 2023, the Philippines-Korea Free Trade Agreement (FTA) was signed. Once in force, it will improve market access for Philippine agricultural products such as bananas, processed pineapples and other tropical fruits, industrial products and selected services sectors. The FTA also includes provisions for capacity building and technical co-operation (including on smart farming) between both countries.

Assessment and recommendations

- The Philippines' agricultural sector is faced with high nutrient balances and low total factor productivity growth. Fostering agricultural productivity gains has been a key priority in the successive development plans of the agricultural sector during the last 20 years, and remains a key objective in the 2021-2030 National Agriculture and Fisheries Modernisation and Industrialisation Plan.
- Several initiatives are underway to promote sustainable productivity growth along the value chain. Yet most budgetary support to agriculture still consists of input subsidies, which is likely to deter progress in this area. Furthermore, general services support has been steady. Increasing long-term investments in public goods such as R&D, infrastructure and extension services, complemented by an increased focus on strengthening the agriculture innovation system, would help lift agricultural productivity while improving climate adaptation and resilience in the sector.
- The Philippines' key priorities for agriculture over the past few decades have been food security and poverty alleviation through guaranteeing a stable supply of rice at affordable prices. The objective of rice self-sufficiency has driven a range of domestic and trade policy measures that effectively support rice producers, but at the same time acts as a tax for rice consumers. Removing commodity-specific support will benefit poor consumers and encourage farmers to diversify production away from rice and maize toward higher value commodities. This will help diversify farm income sources and better manage farmers' risks.
- The new targeted food stamp programme in the form of Electronic Benefit Transfer (EBT) cards is a key component of policy measures to enhance food security. It lets the government address the impacts of rising prices on poor households without interfering with price incentives for farmers. Moreover, this programme can effectively target households in need, promote more varied diets and generate better nutrition outcomes. Still, consumer support programmes such as the EBT could incorporate more flexibility by allowing transfers to vary according to consumer prices.
- The APA project to reduce GHG emissions, co-funded by the Green Climate Fund and supported by the FAO, is a good first step towards the Philippines' commitment to reduce GHG emissions by an unconditional 2.7%, and by 75% conditional on international and technical support, relative to projected Business as Usual (BAU) cumulative emissions between 2020 and 2030. Additional measures will be required to support this goal. Among others, the Philippines should accelerate efforts to provide an enabling environment, for example through improved financial services, that will incentivise private investors to channel more financial resources to climate change mitigation solutions.

Development of support to agriculture

Figure 22.1. Philippines: Development of support to agriculture

Figure 22.1A. Philippines: Producer Support Estimate and its composition

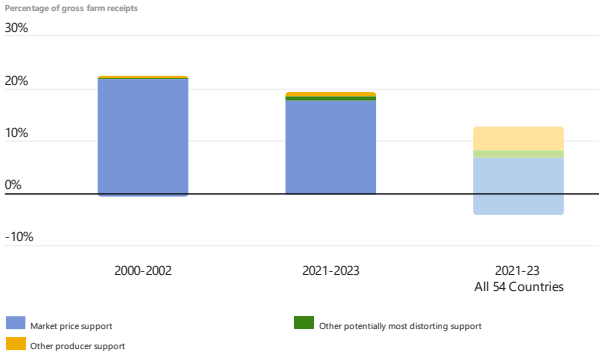


Figure 22.1B. Philippines: Ratio of producer to border price

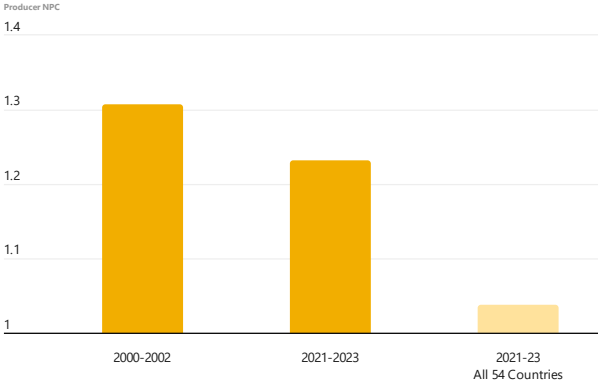


Figure 22.1C. Philippines: General Services Support Estimate and its composition

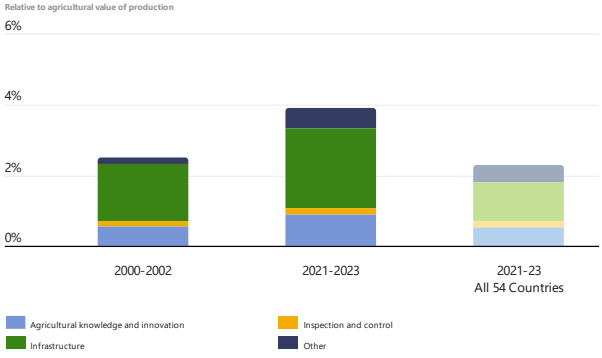
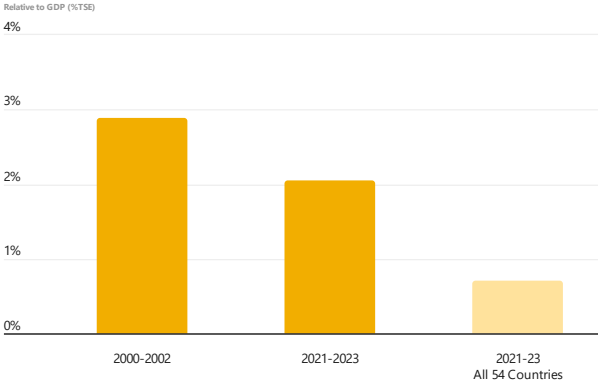
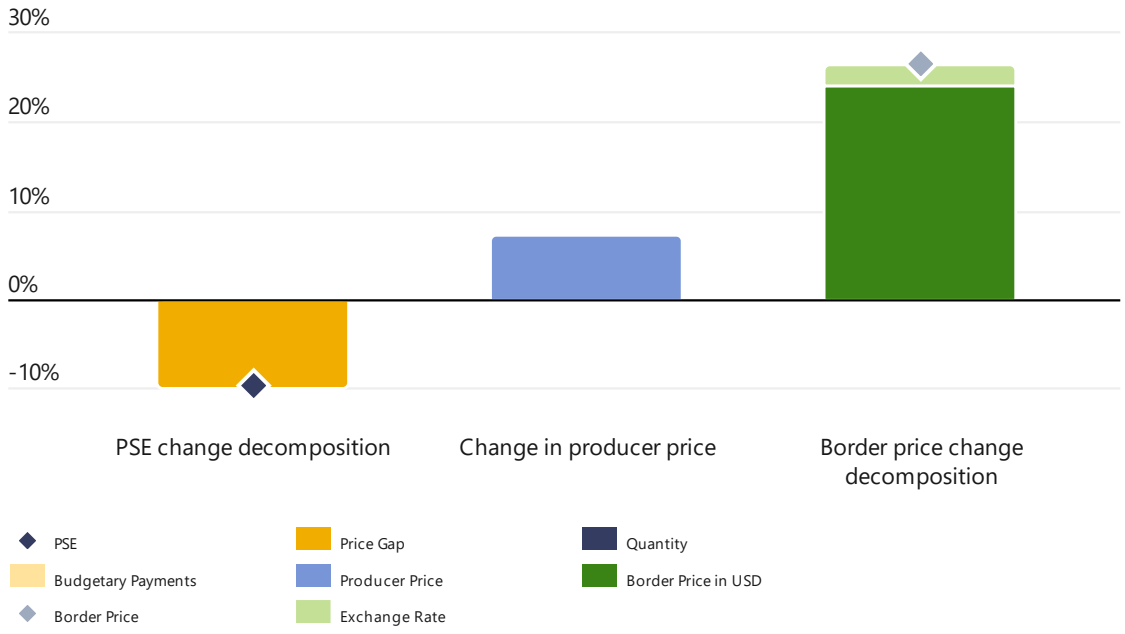


Figure 22.1D. Philippines: Total Support Estimate



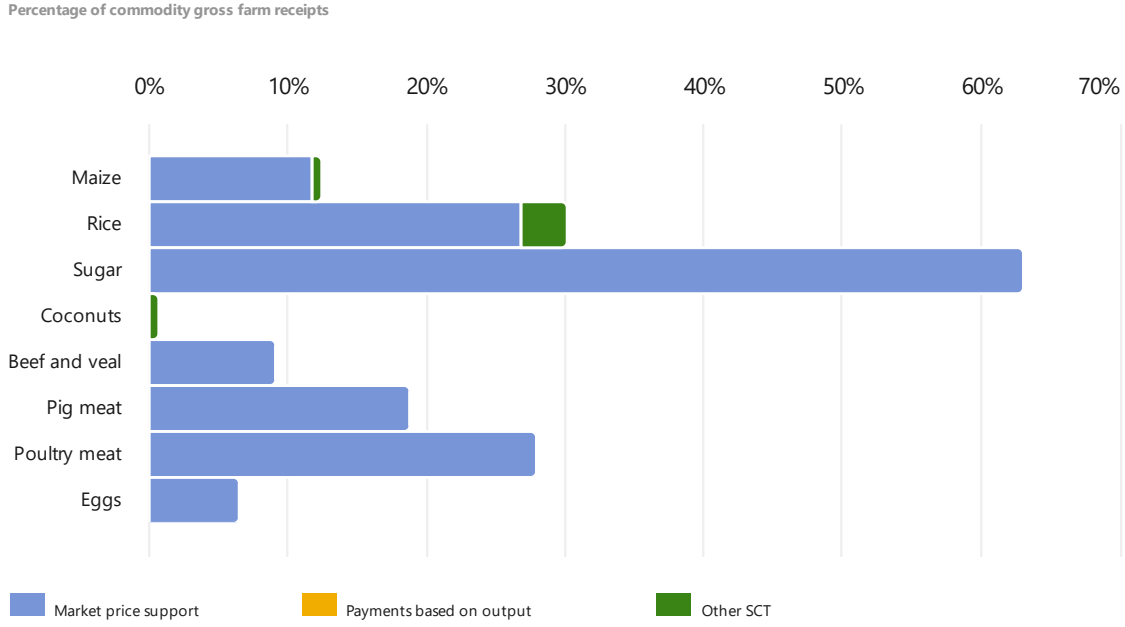
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 22.2. Philippines: Drivers of the change in PSE, 2022 to 2023



Note: % change of nominal Producer Support Estimate expressed in national currency.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 22.3. Philippines: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Table 22.1. Philippines: Estimates of support to agriculture

Million USD

	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**9 599**	**35 964**	**35 707**	**35 081**	**37 106**
of which: share of MPS commodities (%)	90.37	87.85	85.77	89.44	88.35
Total value of consumption (at farm gate)	**9 950**	**37 549**	**35 856**	**37 678**	**39 113**
Producer Support Estimate (PSE)	**2 156**	**7 138**	**7 164**	**7 567**	**6 683**
Support based on commodity output	2 083	6 521	6 569	6 932	6 062
Market price support[1]	2 083	6 521	6 569	6 932	6 062
Positive market price support	2 122	6 521	6 569	6 932	6 062
Negative market price support	-40	0	0	0	0
Payments based on output	0	0	0	0	0
Payments based on input use	69	599	579	615	602
Based on variable input use	36	328	339	325	319
with input constraints	0	0	0	0	0
Based on fixed capital formation	32	271	240	290	284
with input constraints	0	0	0	0	0
Based on on-farm services	0	0	0	0	0
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	0	0	0	0	0
Based on Receipts / Income	0	0	0	0	0
Based on Area planted / Animal numbers	0	0	0	0	0
with input constraints	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	0	0	0	0	0
With variable payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
With fixed payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
Payments based on non-commodity criteria	0	0	0	0	0
Based on long-term resource retirement	0	0	0	0	0
Based on a specific non-commodity output	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0
Miscellaneous payments	5	18	15	20	19
Percentage PSE (%)	**22.20**	**19.49**	**19.73**	**21.19**	**17.71**
Producer NPC (coeff.)	**1.31**	**1.23**	**1.25**	**1.26**	**1.20**
Producer NAC (coeff.)	**1.29**	**1.24**	**1.25**	**1.27**	**1.22**
General Services Support Estimate (GSSE)	**244**	**1 422**	**1 595**	**1 347**	**1 324**
Agricultural knowledge and innovation system	56	329	395	298	294
Inspection and control	14	66	67	66	65
Development and maintenance of infrastructure	155	822	913	784	768
Marketing and promotion	6	50	52	50	49
Cost of public stockholding	12	132	142	128	126
Miscellaneous	1	23	26	21	23
Percentage GSSE (% of TSE)	**10.16**	**16.56**	**18.21**	**15.11**	**16.54**
Consumer Support Estimate (CSE)	**-2 237**	**-7 235**	**-7 442**	**-7 749**	**-6 515**
Transfers to producers from consumers	-2 274	-6 576	-7 029	-6 898	-5 799
Other transfers from consumers	-151	-988	-976	-1 082	-907
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	188	329	564	231	191
Percentage CSE (%)	**-22.40**	**-19.20**	**-20.76**	**-20.57**	**-16.66**
Consumer NPC (coeff.)	**1.32**	**1.25**	**1.29**	**1.27**	**1.21**
Consumer NAC (coeff.)	**1.29**	**1.24**	**1.26**	**1.26**	**1.20**
Total Support Estimate (TSE)	**2 400**	**8 560**	**8 759**	**8 914**	**8 007**
Transfers from consumers	2 425	7 564	8 006	7 981	6 706
Transfers from taxpayers	126	1 984	1 729	2 015	2 208
Budget revenues	-151	-988	-976	-1 082	-907
Percentage TSE (% of GDP)	**2.90**	**2.07**	**2.22**	**2.20**	**1.83**
Total Budgetary Support Estimate (TBSE)	**318**	**2 039**	**2 190**	**1 981**	**1 946**
Percentage TBSE (% of GDP)	**0.38**	**0.49**	**0.56**	**0.49**	**0.44**
GDP deflator (2000-02 = 100)	**100**	**193**	**188**	**198**	**..**
Exchange rate (national currency per USD)	**48.96**	**53.12**	**49.26**	**54.48**	**55.64**

.. Not available

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for Philippines are: maize, rice, sugar, beef and veal, pig meat, poultry, eggs, bananas, coconut, mango and pineapple.

Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

Tariffs, tariff rate quotas (TRQs) and domestic market regulations are the most important agricultural support policies. **Tariff protection is the Philippines' main trade policy tool**. The simple average applied Most Favoured Nation (MFN) tariff on agricultural products was 9.9% in 2021 (compared to 5.5% for industrial products). Tariff lines applied for agricultural commodities are ad valorem and range from 0% to 65% (UNCTAD TRAINS, 2024[1]).

Tariff rate quotas are applied to 14 agricultural products, with in-quota tariffs ranging from 30% to 50% and out-of-quota from 35% to 65%. Products covered by the TRQs included live swine, goats and poultry and poultry meat, potatoes, coffee, maize, rice and sugar. In March 2019, quantitative restrictions on rice imports were replaced with an import tariff system, under the Rice Tariffication and Liberalisation Law (RA 1120) implemented to comply with the Philippines' WTO obligations. Import licensing is required for all regulated products (including those under TRQs). Additionally, grains, grain products and sugar require export permits.

The National Food Authority (NFA) implements rice price support by buying buffer stocks at administered prices from domestic producers and selling these stocks at subsidised prices to consumers. To offset the effects of rice liberalisation and to encourage self-sufficiency, the Philippines Department of Agriculture (DA) has implemented several support programmes for rice producers.

To encourage self-sufficiency in production and boost farmers' incomes, budgetary support is provided for producers' use of variable inputs, including seeds and fertilisers. Investments in general services are mainly for infrastructure and agricultural research and development.

To achieve its Nationally Determined Contribution (NDC) objectives, the Philippines focusses mitigation efforts on the major sources of agricultural GHG emissions (paddy rice cultivation, livestock enteric fermentation, soil cultivation, and livestock manure management) by adopting nature-based solutions (e.g. microbial inoculants or diet modification to reduce emissions from livestock), crop management techniques (such as supplements like biochar and organic fertiliser to increase soil friability) or renewable energy for water management. The Philippines committed to reduce GHG emissions by 75% relative to projected Business as Usual cumulative emissions between 2020 and 2030, of which 2.7% is unconditional and 72.3% is conditional (UNFCCC, 2021[2]).[1] For 2021-30, the conditional target GHG emission reduction for agriculture is 29.4% below the Business as Usual scenario of 539.09 $MtCO_2eq$ cumulative emissions (Department of Agriculture (DA), 2022[3]).

Innovation for sustainable productivity growth

Agricultural production in the Philippines has grown at an annual rate of 0.5% on average between 2011 and 2020, **well below the world average** of 1.9%. Poor productivity performance is linked to uncertainties in the implementation of the agrarian reform that has limited investment in the sector, a focus on rice self-sufficiency that discourages diversification towards high value products, and a high vulnerability to natural disasters and extreme weather-related events (OECD, 2017[4]; World Bank, 2018[5]). **Total factor productivity (TFP) growth**, which shows the importance of innovation, technological improvements and improved efficiency in production, **has been low in the Philippines** at 0.1%, well behind that of other countries in the Asian region and globally (Figure 22.3).

Strategic planning

Fostering agricultural productivity gains has featured in successive development plans of the agricultural sector over the last 20 years. The 2021-30 National Agriculture and Fisheries Modernisation

and Industrialisation Plan (NAFMIP) underlines the importance of agricultural innovation as the main source of improved productivity, competitiveness and growth for Philippine agriculture.

The Philippines Department of Agriculture (DA) systematically incorporates considerations of productivity and sustainability when formulating agricultural programmes. Major acts including such consideration are:

- The Organic Agricultural Act of 2010 (RA 10068) provides for the development and promotion of organic agriculture and reaffirmed the government's objective to increase farm productivity and income, reduce pollution and prevent the depletion of natural resources.
- The 2019 Philippines Innovation Act (RA 11293) recognises the importance of an "efficient innovation ecosystem that addresses and delivers action in various policy areas" including the agricultural sector.

Programme implementation

The Adaptation and Mitigation Initiative in Agriculture (AMIA) was launched in 2013 to increase uptake of climate-resilient agriculture technology and promote sustainable production and management practices in communities across the countries. In December 2023, as part of the AMIA programme, the Climate Resilient Agriculture Office launched the updated version of the National Color-Coded Agricultural Guide (NCCAG) Map, a database showing the natural suitability of crops (such as water availability and climate data) and eight major hazards based on projected climate scenarios for 2050. Designed as a science-based decision-support tool, the NCCAG helps increase farmers' productivity and income by advising on crop selection for optimal production and identifying climate risk.

The Masagana Rice Industry Development Plan was launched in September 2023. It aims to enhance farmers' resilience and productivity through climate change adaptation strategies such as adjusting the planting calendar from the wet to the dry season, promoting crop diversification or using balanced fertilisation and climate smart practices. The programme also helps the technological and digital transformation of the rice industry by providing timely, targeted and location-specific information for decision making using satellite technology (Department of Agriculture, 2023[6]).

The Balanced Fertiliser Strategy (BFS) encourages the use of organic-inorganic fertiliser combinations to increase crop production and maintain soil health for long term productivity. In 2022, the DA-Fertilizer and Pesticide Authority (FPA) and the DA-Bureau of Soils and Water Management (BSWM) organised multiple training sessions and demonstration fields across the country to help farmers complement or alternate inorganic fertiliser with organic materials.

In 2023, the Bureau of Plant Industry (BPI) approved the commercial propagation of Bt cotton, the fourth genetically modified crop for the country after corn (2002), rice (2021), and aubergines (2022). The genetically engineered crop is resistant to bollworm (Heliothis armigera) and other pests. Bt cotton is also expected to reduce the need for chemical insecticides and pesticides (USDA, 2023[7]).

In 2023, the government continued to invest in several digital planning and information systems such as the Agricultural and Biosystems Engineering Management Information System and the Geographic Information System for Agricultural and Fisheries Machinery and Infrastructure (GEOAGRI), two interactive mapping systems that provide information on agricultural machinery and equipment, irrigation, farm to market road and other infrastructures. These digital tools aim at improving logistics for perishable products, establishing sustainable infrastructures and upgrading processing, postharvest, and storage facilities.

The government launched the establishment of Agri-Business Corridors (ABCs) to attract more investment in agriculture and to introduce innovative agricultural technologies to farmers. Several innovation pilot sites were created in different regions including the rehabilitation of post-harvest facilities (such as ice plant or cold storage facilities), the development of high-yielding seed laboratories or the development of technology business incubation hubs.

Research and innovation

Internationally, **in October 2023, the Philippines together with other ASEAN members states signed the ASEAN-Japan-MIDORI Cooperation Plan** which aims to strengthen co-operation programmes using new Japanese technologies to enhance resilience and sustainable agriculture for ensuring regional food security. Ongoing co-operation with the Philippines includes developing GHG mitigation technologies economically beneficial for small-farmers, smart agriculture pilot projects and knowledge transfer. Futures projects, such as soil diagnosis of farmland using satellite data, are expected to contribute to the reduction of fertiliser use.

In 2023, the DA-BAR supported the Research for Development (R4D) programme which uses innovation and research generated technologies to increase and sustain agricultural production in the country. R4D applied research and technology projects include:

- Productivity assessment of white and yellow corn in different agro-ecological conditions (such as elevation, soil or climate conditions).
- Development of alternative and cost-effective methods for controlling pest and diseases in mango and banana crop cultivation. Improvement of post-harvest facilities and cold storage systems using low-cost technologies and renewable energy for vegetables.
- Development and promotion of sustainable organic alternative feeds for poultry, swine and small ruminants.
- Development of rice varieties adapted to various biotic and abiotic constraints that limit plant productivity (in co-ordination with Philrice, a government corporate entity under the DA). In 2022-23, 13 new inbred varieties adapted to environmental stresses (drought, salinity, and flooding) were distributed to local farmers in Bicol and Eastern Visayas. Philrice also developed technologies for smarter crop management and postharvest operations (Department of Agriculture, 2023[6]; Department of Agriculture, 2022[8]).

Recent policy developments

Domestic policy developments in 2023-24

General strategies and plans

In January 2023, **the DA published the 2023-28 Philippines Development Plan**, the country's medium-term programme for socio-economic development. The plan set out strategies to modernise agriculture and to make the sector productive, competitive, resilient, and globally connected. It presents the challenges facing agriculture and the objectives helping address these challenges, namely:

- enhancing the efficiency of the agriculture, forestry, and fisheries sector
- expanding access to global markets for agriculture and fisheries
- improving the resilience of agriculture value chains
- strengthening agricultural institutions (National Economic and Development Authority, 2023[9]).

In August 2023, **DA adopted the National Agricultural and Fishery Mechanisation Program (NAFMP) 2023-28** which supports the implementation of the National Agri-Fisheries Modernisation and Industrialisation Plan (NAFMIP) and the Philippine Development Plan 2023-28. The NAFMP also aligns with the mandate of the administration to boost domestic agricultural production through consolidation, modernisation, mechanisation, and improvement of value chains. The NAFMP has five major components:

- local assembly and manufacture

- research, development, and extension
- standards and regulations
- support services and institutional development
- human resources development.

In June 2023, the DA in collaboration with other Departments approved the implementation of the National Farm-to-Market Roads Network Plan (FMRNP) 2023-28. FMRNP aims to link agriculture production sites and post-harvest facilities to markets through construction and rehabilitation of roads and highways. The plan foresees farm-to-market investment plans at national and sub-national levels. A single digital FMRNP portal between government agencies is to support FMRNP's project operation, maintenance, and monitoring and evaluation (Department of Agriculture, 2023[10]).

Producer policies

In July 2023, **the New Agrarian Emancipation Act - Republic Act (RA) 11953 was signed into law, which will write off PHP 57.65 billion (USD 1.04 billion) of credit debt for 610 054 farmers**, operating on a total of 1.17 million ha of agricultural land (around 9% of the total agricultural land). The New Agrarian Emancipation Act will write-off loans, including principal, interest, and penalties incurred by agrarian reform beneficiaries (ARBs) from land allocated to them under the existing agrarian laws (Presidential Decree 27 of 1972, RA 6657 of 1988 and RA 9700 of 2009). The write off will concern farmers who have outstanding loan balances to the Land Bank of the Philippines and to private landowners. Under these laws, ARBs were required to pay for land in the form of an annual amortisation for a maximum period of 30 years. In addition, the government approved a compensation to landowners under the Voluntary Land Transfer and the Direct Payment Scheme amounting to PHP 206 million (USD 3.7 million).

The excess rice tariff collection from financial year 2022 (above PHP 10 billion – USD 180 million, mandated under the RCEF), was allocated to the Rice Farmers Financial Assistance programme (RFFA). In 2023, the excess income from tariff revenues amounted to PHP 12.7 billion (USD 228 million), which was distributed to 2.4 million small rice farmer beneficiaries (with 2 ha or less planted of rice) as an unconditional cash transfer of PHP 5 000 (USD 90) per farm. Under the programme of Cash and Food Subsidy for Marginal Farmers and Fishers, small producers of maize, coconut and sugar cane received similar support in the form of cash and food assistance amounting to PHP 3 000 (USD 54) in cash and PHP 2 000 (USD 36) equivalent in food per farm.

In April 2023, the DA implemented a Fertiliser Assistance for rice farmers as part of the National Rice Program in 15 participating regions across the country. This assistance was in the form of fertiliser discount vouchers valued at PHP 4 000 (USD 72) per hectare of land or in fertilisers directly procured by the local DA Regional Field Offices. In October, the government modified the modalities of distribution and made it possible to receive fertiliser assistance through Interventions Monitoring Cards that can be used as electronic wallets by eligible beneficiaries to claim fertiliser from DA-accredited merchants (Department of Agriculture, 2023[10]).

In 2023, the National Food Authority (NFA) increased its buying price of rice from PHP 19 (USD 0.34) to PHP 23 (USD 0.41) per kg for dry palay (rice)and from PHP 16 (USD 0.29) to PHP 19 (USD 0.34) per kg for wet palay respectively. The NFA kept its selling price at the same level as in 2022, between PHP 23 (USD 0.41) and PHP 27 (USD 0.48) per kg according to the variety of rice and the type of buyers (authorised retail outlets, government agencies or private institutions) (National Food Authority, 2023[11]).

To mitigate the impact of the oil price surges on the farming sector, a total of PHP 510 million (USD 9 million) was allocated to the Fuel Assistance to Farmers Project. Implementation of the programme was based on DA guidelines issued in May 2023 and done in co-ordination with the Department of Budget and Management and the Department of Energy. The programme provided for PHP 3 000 (USD 54) as assistance to farmers owning or renting agricultural machineries for crop production when the average

Dubai Crude Oil Price based on Mean of Platts Singapore reaches or exceeds USD 80 per barrel for three consecutive months (Department of Agriculture, 2023[10])

Marketing and promotion of agricultural products

During 2023, as the country continued its recovery from the COVID-19 pandemic, programmes ensuring food accessibility, quality and affordability to Philippine households were extended. The network of government stores programme selling at regulated price *KADIWA ni Ani at Kita* was renamed *KADIWA ng Pangulo* (KNP) and expanded by signing Memorandums of Agreement across multiple local government units nationwide. The government implemented the KADIWA Financial Grant Assistance to provide for up to PHP 5 million (USD 89 864) assistance to farmers and fisherfolks to cover post-harvest, processing, packaging, transport, and distribution activities, as well as the establishment of new KADIWA stores.

Consumer and nutrition policies

During 2023, to protect consumers from rising commodity prices, **the government imposed suggested retail prices (SRPs) on basic food items** including processed milk, coffee, bread, noodles, beef and onions. In August 2023, in order to slow down the increase of rice prices the Executive Order (EO) No. 39 mandated retail price ceilings for two categories of rice accounting for 90% of consumption: a retail price ceiling of PHP 41 (USD 0.74) per kg for regular-milled rice and PHP 45 (USD 0.81) per kg for well-milled rice. The EO was lifted in October 2023.

The Food Stamp Programme *Walang Gutom 2027* was launched in July 2023 to reduce hunger and malnutrition among food-insecure households by providing monetary assistance through Electronic Benefit Transfer cards. Objectives of the programme also aim to reduce the high rate of child stunting and micronutrient deficiency. The programme is implemented by the Department of Social Welfare and Development (DSWD). It allows identified beneficiaries earning less than PHP 8 000 (USD 144) a month to buy selected food items from DSWD accredited or registered retailers or supermarkets, including KADIWA centres. Digital food vouchers for PHP 3 000 (USD 54) per month are provided for 6 months. Beneficiaries are required to attend trainings or present certificates showing effort to find employment. The programme has started as a pilot for 6 months with a total of 3 000 targeted families. The longer-run target is to feed 1 million beneficiaries (300 000 beneficiaries in the first year, 300 000 in the second year, and 400 000 in the third year) (Asian Development Bank, 2023[12]).

Biosecurity policies

In the context of the continued spreading of African Swine Fever (ASF), the National Zoning and Movement Plan for the prevention and control of ASF was updated, alongside reinforced surveillance and intensified co-ordination with local government units. Financial assistance to set up bio-secure hog facilities under the Integrated National Swine Production Initiatives for Recovery and Expansion (INSPIRE) was doubled from PHP 5.5 million (USD 98 851) to PHP 10 million (USD 179 728) in 2023. INSPIRE was initially launched to hasten hog repopulation in ASF-affected areas. The INSPIRE programme is complemented by the *Bantay ASF sa Barangay* programme that institutes biosecurity and disease control measures through co-operation between different actors such as local authorities, specialist biosecurity officers and farmers. Grants have been distributed to farmers co-operatives and associations (FCA) that would establish new bio-secure or conventional facilities. Funding also covered the purchase of pigs, feed and other products such as disinfectants. The Bureau of Animal Industry – National African Swine Fever Prevention and Control Program of the DA launched a caravan tour to raise awareness in markets across the country about ASF, to dissuade transportation of pig and pig meat products and to remind consumers to buy products certified by the National Meat Inspection Services.

In April 2023, in response to the hog cholera viral diseases affecting pigs in Negro Occidental province, the government implemented an immunisation campaign. More than 65 000 doses of vaccines were distributed to backyard farms by local government units of the province.

Policies to facilitate climate change adaptation in agriculture

In April 2023, the new adaptation programme Adapting Philippine Agriculture to Climate Change (APA) was launched, co-funded by the Green Climate Fund (USD 26.3 million) and the government of the Philippines (USD 12.98 million). The Green Climate Fund was established by the United Nations Framework Convention on Climate Change (UNFCCC) in 2010 and is the largest dedicated fund helping countries respond to climate change. The project is implemented by the DA and the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), with the support of the FAO. APA aims to develop climate-resilient agriculture (CRA) services and information using low-emission technologies. Expected outcomes include institutional capacity building for the development of CRA services, the adoption of CRA by farmers (notably by women, youth, and indigenous communities) and providing an enabling environment to mainstream CRA practices, services and decision support tools into DA programmes. The project builds on the Adaption and Mitigation Initiative in Agriculture (AMIA) programme, the flagship programme of the DA's climate agriculture policy which enhances the uptake of CRA technologies and practices in rural areas. APA will be implemented until 2030 and is expected to reduce 4.38 $MtCO_2eq$ over 20 years (USDA, 2023[13]; Green Climate Fund, 2023[14]) .

In 2023, the Land Bank (as GCF partner), the International Rice Research Institute and the World Agro-forestry (ICRAF) prepared **a complementary project to the APA on "accelerating the adoption of climate-resilient agricultural production systems through integrative landscape approach to manage climatic risks"**. This project, still in the design phase, addresses the technical and financial barriers to scaling climate resilient agriculture in the Philippines. It will support smallholder farmers at risk of climate change with:

- the development of investment packages for scaling up CRA practices and technologies
- accelerated uptake of finance
- strengthened capacities and knowledge management (Green Climate Fund, 2023[15]; Green Climate Fund, 2023[14]).

Trade policy developments in 2023-24

Temporary reductions on tariffs on rice (35% both in-quota and out-of-quota) and on maize (5% in-quota; 15% out-of-quota) and for pig meat were extended until the end of 2023 and later further extended to the end of 2024. These reductions are to mitigate the high inflation caused by supply constraints, the impact of ASF, to augment the supply of agricultural commodities in the country and diversify sources of supply. In addition, a reduced tariff rate of 5% for mechanically deboned or separated meat of turkey and chicken will be applied until 31 December 2024.

The Sugar Regulatory Administration (SRA) issued Sugar Order 1, which recommends allocating all raw sugar domestically produced to the domestic market in the current crop year 2023-24 amid a projected 10% to 15% decline of production due to the El Niño phenomenon. Over the last three years, the country has not been able to take advantage of its export quota to the United States as it earmarked its entire domestic sugar production for domestic use (Department of Agriculture, 2023[10]).

In 2023, several temporary import bans were imposed to address concerns relating to animal disease. This included bans on domestic and wild birds (and products thereof) from Belgium, Chile, Czechia, Denmark, Ecuador, Ireland, Moldova, the Netherlands, Peru, Poland, Chinese Taipei and Türkiye due to HPAI outbreaks. Cattle-related imports were suspended from Brazil and the Netherlands due to the detection of

mad cow disease. The Philippines issued temporary bans on the importation of wild and domestic pig meat and related products from Singapore and Sweden, among others, due to ASF.

After its ratification in February 2023, the Regional Comprehensive Economic Partnership (RCEP) entered into force on 2 June 2023 in the Philippines. The Bureau of Customs produced a Memorandum Order (CMO No. 12-2023) to guide importers and exporters on the issuance of proof of origin, application of differential tariff treatment and verification of procedures to support traders comply with the agreement's provisions (Bureau of Customs, 2023[16]). In the agricultural sector, 15 out of 33 tariff lines for agricultural commodities in RCEP have tariff reductions foreseen. Most of the products covered are not produced in the Philippines (the relevant tariff lines account for 1.9% of the Philippines' agricultural tariff lines and 0.8% of its imports).

In September 2023, the Philippines signed a bilateral Free Trade Agreement with South Korea, the third after the Philippines-Japan Economic Partnership Agreement signed in 2006 and the FTA with the European Free Trade Association (composed of Iceland, Liechtenstein, Norway and Switzerland) signed in 2016. The FTA with Korea improves market access for the Philippines for agricultural products such as bananas, processed pineapples and other tropical fruit, industrial products and selected services sectors. The FTA includes provisions for capacity building and technical co-operation (including on smart farming) between both countries.

Policy context

Key economic and agricultural statistics

The Philippines is a mid-size country in terms of land area, but its population of 116 million makes it the world's 13th most populous country. Just under half, 48%, of Filipinos live in urban areas. With a median age of 25 years, the Philippines has a comparatively young population. At USD 10 133 in purchasing power parity (PPP), GDP per capita accounts for less than 40% of the average GDP per capita of all countries analysed in this report (Table 22.2). Overall, the Philippines' economy is well integrated into international markets as measured by a ratio of trade to GDP of 28% in 2022.

Agriculture remains an important sector for the Philippines, but the sector's 24% share in total employment compared to its 9.5% contribution to GDP highlights a significant gap in labour productivity. Farms tend to be small, with an average landholding of just 1.3 ha.

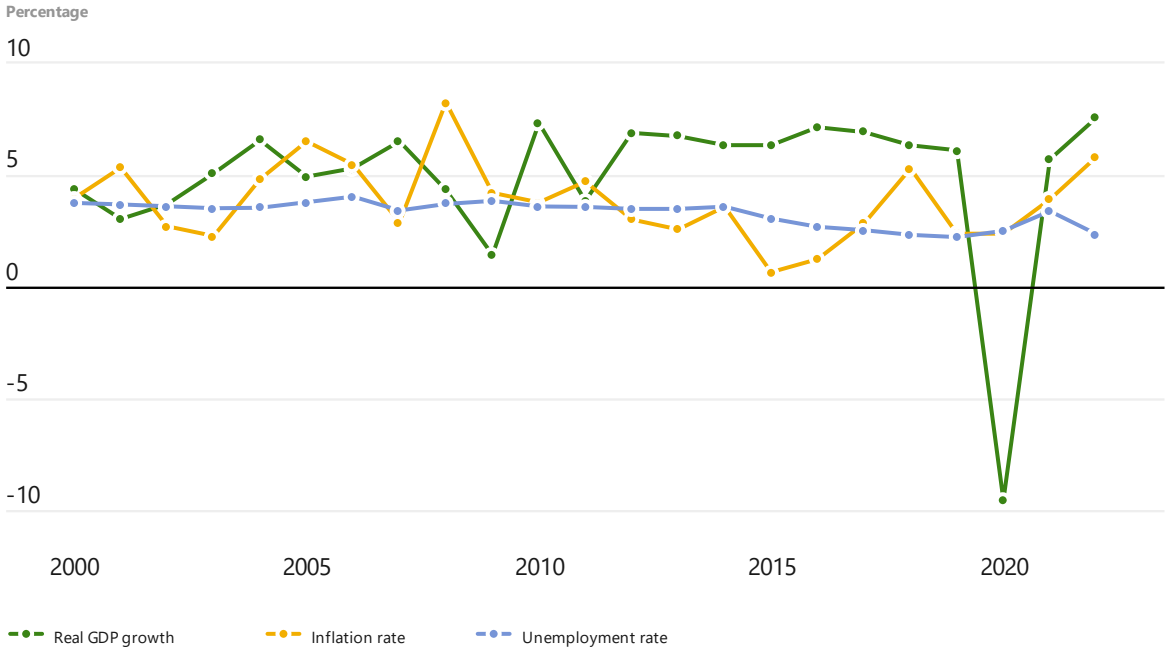
Table 22.2. Philippines: Contextual indicators

	Philippines		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	268	1 171	0.7%	0.9%
Population (million)	78	116	1.8%	2.2%
Land area (thousand km²)	298	298	0.4%	0.4%
Agricultural area (AA) (thousand ha)	11 234	12 683	0.4%	0.4%
			All countries[1]	
Population density (inhabitants/km²)	260	385	52	64
GDP per capita (USD in PPPs)	3 437	10 133	9 363	25 965
Trade as % of GDP	44.9	27.8	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	13.9	9.5	2.9	3.8
Agriculture share in employment (%)	37.1	23.7	-	-
Agro-food exports (% of total exports)	4.0	8.6	6.4	8.0
Agro-food imports (% of total imports)	7.3	14.0	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	62	58	-	-
Livestock in total agricultural production (%)	38	42	-	-
Share of arable land in AA (%)	45	44	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

Since 2012, the Philippines has achieved a relatively stable GDP growth of around 6% annually and enjoys comparatively low levels of unemployment that had been falling since 2015 to approach 2% in 2019 (Figure 22.4). However, due to the COVID-19 pandemic, the economy contracted by around 10% in 2020 and unemployment levels increased. In 2021, the Philippines' GDP growth rate rebounded to 5.7%, close to pre-pandemic levels and increased again in 2022 to reach 7.6%. Inflation has been fluctuating. After lower rates in 2019 and 2020, inflation rose to 4% in 2021 and almost 6% in 2022.

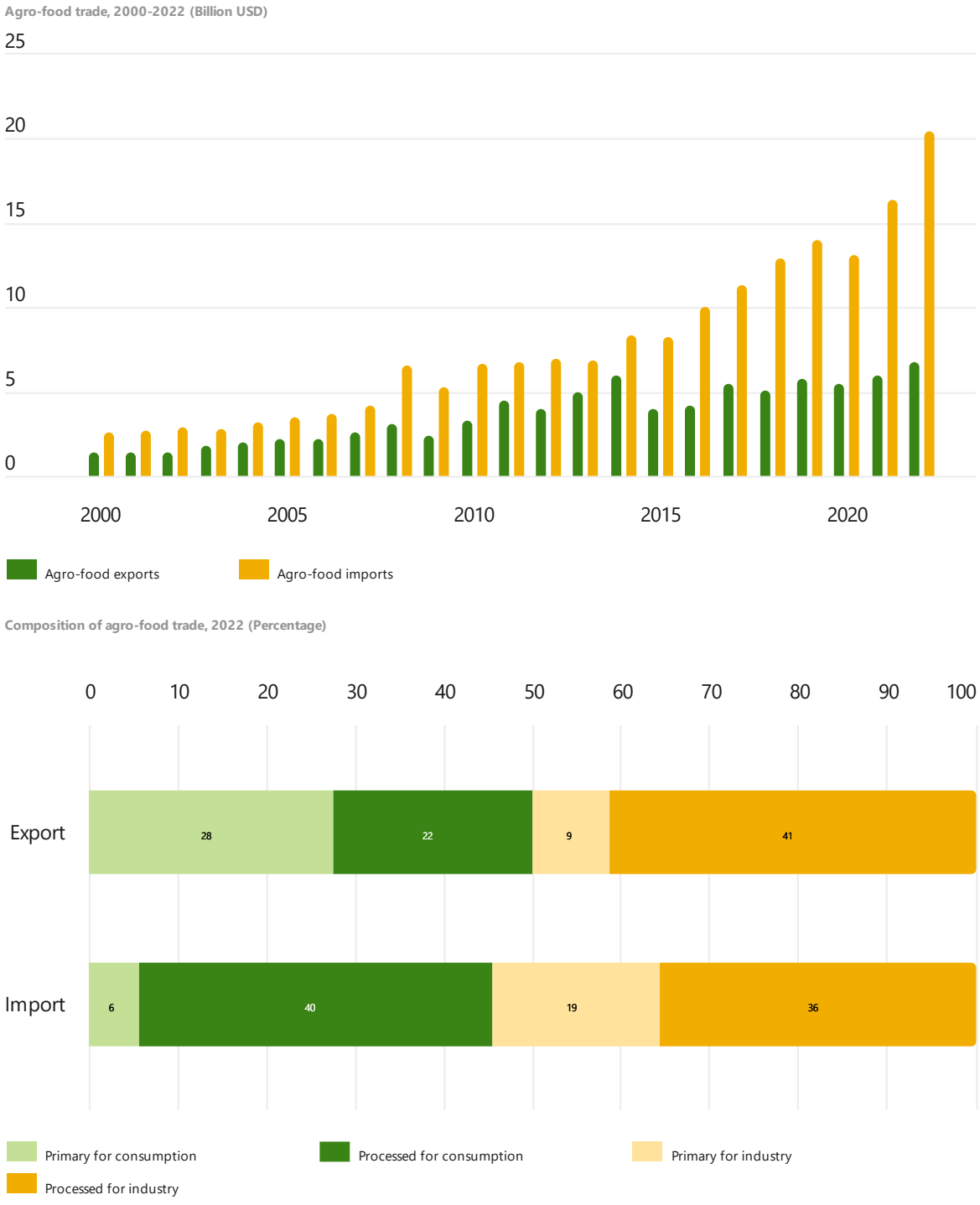
Figure 22.4. Philippines: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

The Philippines has been a consistent and increasing net agro-food importer since 2000. Still, agro-food exports have been growing over the last two decades (Figure 22.5). While agro-food exports plateaued since 2017, agro-food imports have continued to increase at a higher rate during this period. The significant increase in agro-food imports since 2020 has been driven notably by stronger imports of grains (wheat and rice), oilcake, meat and palm oil. Processed products for final consumption dominate the Philippines' agro-food imports representing 40% of the total in 2022. In turn, processed products for the industry (mainly crude coconut oil) constitute an important export category, accounting for 41% of agro-food exports, followed by primary products for final consumption (mainly fruit such as bananas or pineapple).

Figure 22.5. Philippines: Agro-food trade



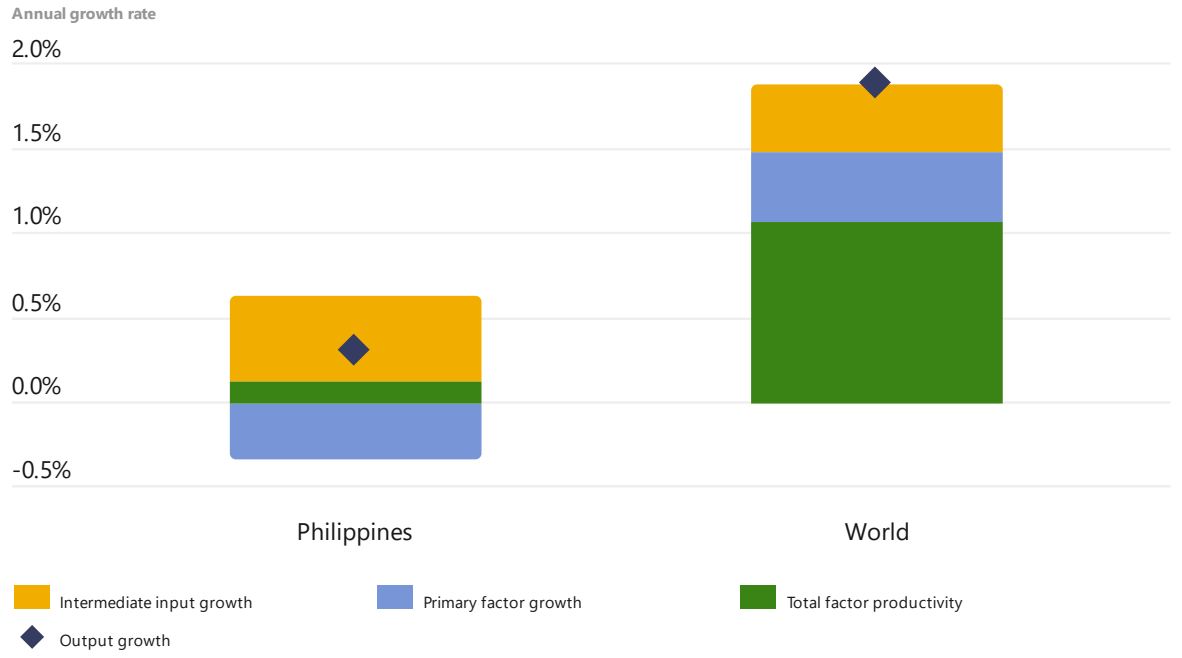
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Agricultural production increased in the Philippines by only 0.3% p.a. on average from 2012-21, well below the world average (Figure 22.6). This growth was driven mainly by above-average growth in intermediate

inputs (0.5% p.a.), whereas the growth in total factor productivity declined further from the already low levels two decades earlier and is measured at 0.1% p.a. In turn, primary factor use declined (-0.3% p.a.).

Agriculture remains the most important user of water, accounting for 79% of total water consumption in 2022. However, the sector's share in total energy abstractions remains low (1.1%). Compared to 2021, the country's nitrogen balance decreased in 2022. However, together with the country's phosphorus balance it remains high compared to world averages.

Figure 22.6. Philippines: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Table 22.3. Philippines: Productivity and environmental indicators

	Philippines		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	0.3%	0.1%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	50.8	42.2	32.1	28.2
Phosphorus balance, kg/ha	7.7	9.3	3.3	2.3
Agriculture share of total energy use (%)	0.4	1.1	1.7	2.0
Agriculture share of GHG emissions (%)	29.2	..	8.7	10.1
Share of irrigated land in AA (%)	15.3	14.9	-	-
Share of agriculture in water abstractions (%)	82.4	79.0	47.0	49.5
Water stress indicator	..	..	8.7	..

Note: * or closest available year.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

Heavy government interventions in agricultural markets within a closed economy characterised the Philippines during the period from 1970 to 1986. The government had monopoly control over trade in rice, sugar and maize, operated by the National Grains Authority (NGA) established in 1972 (later renamed the National Food Authority [NFA]). Sugar trade was nationalised under the National Sugar Trading Corporation. At the same time, high-yield rice varieties were introduced and their use was encouraged with input subsidies, as was the use of fertilisers and pesticides. Public spending in the sector increased (particularly on irrigation), financed by a mix of taxes on major agricultural exports and foreign loans. Access to credit was facilitated by legally obliging financial institutions to provide 25% of their loans to the agricultural sector. Budgetary expenditures financed extension services to the farming sector (OECD, 2017[4]).

Partial liberalisation of the sector was implemented gradually from 1986 to 2000. Reforms undertaken in the 1990s aimed to improve services provided to agriculture, particularly extension services, and infrastructure. Market interventions were gradually reduced, as were tariffs and non-tariff measures on agro-food imports. The policy of self-sufficiency in rice continued with the provision of input subsidies to farmers, mainly for fertilisers and certified seeds, but also with credit facilitation and the provision of support to public services for agriculture, such as investments in irrigation and farm-to-market roads. At the end of the 1980s and in the middle of the 1990s, the Philippines negotiated two trade agreements: the ASEAN Free Trade Area and the Global System of Trade Preferences among Developing Countries. Upon joining the WTO in 1995, the country committed to removing quantitative restrictions on imports of sensitive agricultural products, with the exception of rice, and to gradual liberalisation of agro-food trade. Public expenditure on agriculture declined substantially in the late 1990s, due to tight fiscal policies adopted in the aftermath of the Asian Financial Crisis (OECD, 2017[4]).

Since 1988, the Philippines has undertaken an ambitious agrarian reform to redistribute agricultural land to landless farmers and land workers. The reform covered close to three-quarters of the country's agricultural area. While the redistribution of land was effectively complete by the end of 2015, property rights remained unsettled and almost half of the reform beneficiaries still have collective ownership certificates instead of individual property rights.

During the 2000s, the government undertook policy measures to further reduce market interventions in agriculture. Subsidised credit programmes were terminated, and private traders allowed to import rice at limited levels. However, the focus on food (rice) self-sufficiency was reinforced and after the global food price crisis in 2008 spending on irrigation and input subsidies increased substantially. The Food Staples Sufficiency Programme, launched in 2011, retained a focus on rice and other selected staples, but shifted emphasis away from input subsidies towards providing public services to agriculture, such as extension and infrastructure (OECD, 2017[4]). Following the Uruguay Round Agreement on Agriculture, the system of quantitative restrictions for rice was abolished in March 2019 and replaced by a tariff rate quota system. The government established the Rice Competitiveness Enhancement Fund (RCEF) in 2019 to offset the effect of the liberalisation of rice imports on producers' incomes. This fund has an annual appropriation of PHP 10 billion (USD 203 million) for six years (until 2025) and is financed with receipts from rice import tariffs. The RCEF supports purchases of farm machinery and equipment (50% of the budget), rice seed development and promotion (30%), subsidised credit to rice farmers (10%) and extension services (10%).

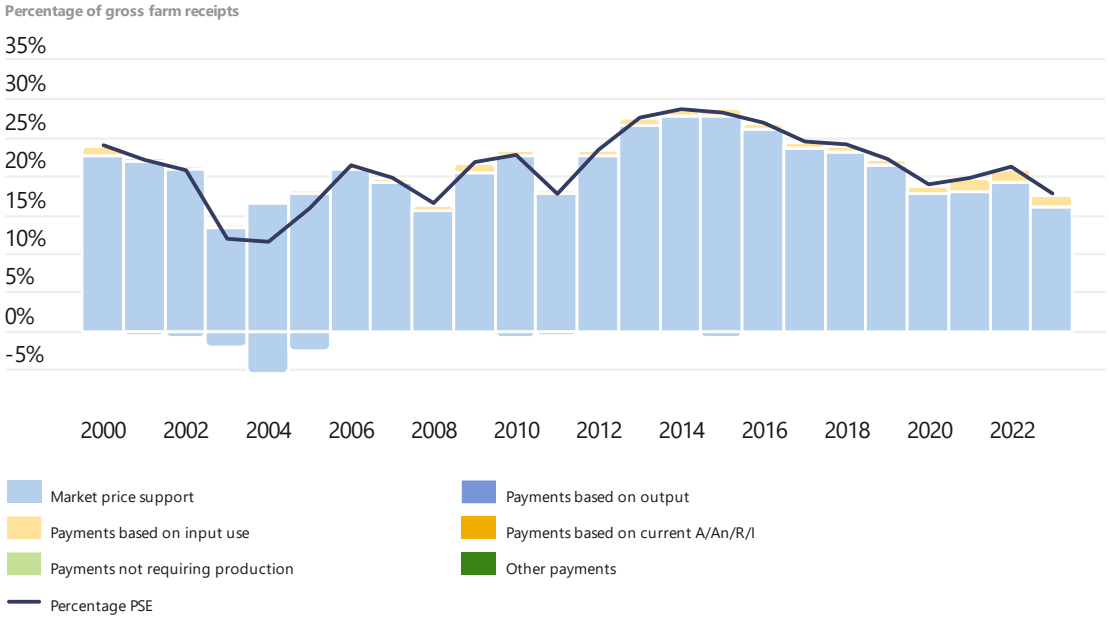
In 2018 the government established a comprehensive National Feeding Program *Masustansyang Pagkain Para sa Batang Pilipino Act* to address under-nutrition and nutrient-deficiency among children in public day care, kindergarten, and elementary schools. The programme includes several components: the School-based Feeding Programme (implemented by the Department of Education), the Supplemental Feeding Programme for children in day care (Department of Social Welfare and Development in co-ordination with local government units) and the Milk Feeding Programme (DA in co-ordination with the National Dairy Authority and the Philippine Carabao Center). In co-operation with the Philippines Carabao Centre and the

National Dairy Authority, a large portion of the targeted milk volume required by the programme was supplied by local dairy farmers and co-operatives.

Table 22.4. Philippines: Agricultural policy trends

Period	Broader framework	Changes in agricultural policies
Prior to 1986	Closed economy with heavy state interventions in agricultural markets and trade	Agricultural import tariffs; Export taxes on agricultural products State monopoly control over rice and maize trade (NGA, now NFA) Food self-sufficiency (rice and other staples); Increasing support to those commodities Nationalisation of sugar production; Creation of the National Sugar Trading Corporation
1986-2000s	Gradual reforms towards trade liberalization	Continued policy of food self-sufficiency (rice) Land reform started in 1988 (redistribution of land) National Sugar Trading Corporation reduced its functions and changed to the Sugar Regulatory Administration Investments in general services (irrigation, roads) Input subsidies declined due to the Asian financial crisis Removal of quantitative restrictions of all agricultural products except rice FTAs and WTO accession
2000-present	Minor policy change, some forms of state intervention in markets and trade maintained	Food self-sufficiency (rice) continues to be the main objective Quantitative quotas for imports of 14 agricultural commodities High tariffs of some agricultural products, particularly rice and maize Subsidised credit was dismantled Input subsidies for rice Import quantitative restrictions for rice abolished and replaced by import tariffs (2019) Increased budgetary support to rice producers

Figure 22.7. Philippines: Development of the PSE and its composition, 2000 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

References

Asian Development Bank (2023), *Philippines : Food Voucher Program to Reduce Food Insecurity and Malnutrition*, https://www.adb.org/projects/57138-001/main. [12]

Bureau of Customs (2023), *Customs Memorandum Order (CMO) 2023*, https://customs.gov.ph/customs-memorandum-order-cmo-2023/. [16]

Department of Agriculture (2023), *Bureau of Agricultural Research*, http://www.bar.gov.ph. [6]

Department of Agriculture (2023), *Information sourced from the DA website*, https://www.da.gov.ph/. [10]

Department of Agriculture (2022), *Annual Report*, https://www.da.gov.ph/media-resources/da-annual-reports/. [8]

Department of Agriculture (DA) (2022), *Information provided to the OECD Secretariat by the Philippines Department of Agriculture*. [3]

Green Climate Fund (2023), *Accelerating adoption of climate-resilient agricultural production systems through integrative landscape approach to manage climatic risks (PILAR)*, https://www.greenclimate.fund/document/accelerating-adoption-climate-resilient-agricultural-production-systems-through-integrative. [15]

Green Climate Fund (2023), *Adapting Philippine Agriculture to Climate Change (APA)*, https://www.greenclimate.fund/project/fp201. [14]

National Economic and Development Authority (2023), *Philippine Development Plan*, https://pdp.neda.gov.ph/philippine-development-plan-2023-2028/. [9]

National Food Authority (2023), *Buying/Selling Price*, https://nfa.gov.ph/buying-selling-price. [11]

OECD (2017), *Agricultural Policies in the Philippines*, OECD Food and Agricultural Reviews, OECD Publishing, Paris, https://doi.org/10.1787/9789264269088-en. [4]

UNCTAD TRAINS (2024), *WITS (World Integraded Trade Solution)*, https://wits.worldbank.org/tariff/trains/country-byhs6product.aspx?lang=en. [1]

UNFCCC (2021), *Republic of the Philippines, National Determined Contribution, Communicated to the UNFCCC on 15 April 2021*, https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Philippines%20First/Philippines%20-%20NDC.pdf. [2]

USDA (2023), *Adapting Philippine Agriculture to Climate Change*, https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Adapting%20Philippine%20Agriculture%20to%20Climate%20Change_Manila_Philippines_RP2023-0031.pdf. [13]

USDA (2023), *Philippine Bt Cotton - 4th GE Crop Approved for Commercial Propagation*, https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Philippine%20Bt%20Cotton%20-%204th%20GE%20Crop%20Approved%20for%20Commercial%20Propagation_Manila_Philippines_RP2023-0060.pdf. [7]

World Bank (2018), *Growth and Productivity in the Philippines: Winning the Future*, World Bank, Washington, D.C., https://hdl.handle.net/10986/30450. [5]

Note

[1] Unconditional refers to policies and measures which can be undertaken using nationally mobilised resources. Conditional refers to policies and measures which require support or the means of implementation under the Paris Agreement.

23. South Africa

Main findings

Support to agriculture

Support to producers in South Africa amounted to 2.5% of gross farm receipts in 2021-23, down from 7.4% in 2000-02. Market Price Support (MPS) and support for variable input use without constraints are the largest components of producer support, with the share of potentially most-distorting gross producer transfers amounting to 95% in 2021-23, slightly lower than the average of 97% observed in 2000-02. Overall, domestic prices for most commodities align with world prices. Sugar is an exception, mainly due to import tariffs, leading to single-commodity support worth 20% of gross receipts. Most direct payments are provided as input subsidies (fuel tax refund) or as investment subsidies directed towards small-scale farming.

Support for general services to the sector (General Service Support Estimate, GSSE) has declined relative to the size of the sector. The GSSE averaged 1.1% of the value of agricultural production during 2021-23, below the 3.9% observed in the early 2000s, and below the average of 2.3% observed for the 54 countries covered in this report. Most payments to general services go to the agricultural knowledge and innovation system, and to infrastructure (mainly related to land reforms, irrigation, and other infrastructure). Support in these categories targets an enabling environment for small-scale farming, which became a priority following land reforms. Expenditures for inspection and control are also an important and growing element of the GSSE.

Total support to the sector fell in relative terms from an average 0.6% of Gross Domestic Product (GDP) in 2000-02 to 0.2% in 2021-23, with more than two-thirds of the support transferred to individual producers.

Key recent policy changes

The Agricultural Products Standards Amendment Bill was approved by parliament and entered into force on 3 April 2024. The bill makes provisions that allow the minister to assign independent entities to perform certain audit and inspection functions for quality control of agricultural products.

The Department of Agriculture, Land Reform and Rural Development (DALRRD) in partnership with the Land Bank established the ZAR 1.2 billion (USD 65 million) Agro Energy Fund (AEF) in 2023. The AEF is a blended finance programme that provides financial support to acquire renewable energy assets to alleviate the burden of load shedding on agricultural day-to-day operations. The fund targets farm operations that are energy intensive and has a sector-specific focus on dairy farming, poultry and piggeries, irrigated commodities, and on-farm processing.

The Preservation and Development of Agricultural Land Bill was passed by the National Assembly on 5 December 2023 and approved by the National Council of Provinces on 9 May 2024. The bill outlines the principles for the management of agricultural land and aims to secure the protection of high-potential agricultural land.

Assessment and recommendations

- Agricultural output growth over the past decade has predominantly been driven by increased use of intermediate inputs, while total factor productivity (TFP) growth has lagged behind the world average. In addition to electricity shortages, transport infrastructure and logistical barriers, environmental factors are an important constraint to sustainable productivity growth. In particular, nutrient balances are very low and even negative in the case of nitrogen, suggesting that low soil fertility is a problem across South Africa. The government should focus on improving soil fertility though conservation practices and other measures to strengthen sustainable productivity growth.
- Overall support is low, but the support that remains is highly market distorting and may be harmful to the environment. MPS for sugar remains high, and the government should consider reducing the import duty. The diesel rebate accounts for a large share of budgetary support and should also be phased out. It could be replaced with credit for working capital that is not input-specific, while providing targeted cash transfers and social welfare assistance to ease the transition for low-income and vulnerable farm households.
- Carbon taxes in place since January 2022 under the Carbon Tax Act have not been applied to agriculture. South Africa could consider extending the scope of the carbon tax to progressively include agricultural emissions, along with social safety-net policies to offset potential income losses for poor households and producers caused by this change. Furthermore, a sectoral emissions target for agriculture could be established under the Climate Change Bill once it becomes law, as such targets can be helpful for focusing mitigation efforts and measuring progress.
- Budgetary spending continues to be oriented towards land reform and its beneficiaries (mainly smallholders and emerging commercial farmers) in the form of research and development, knowledge transfer, and infrastructure. The government should focus efforts on strengthening land reform delivery instruments, providing adequate and timely funding for economically viable farm businesses, and tailoring support programmes to the needs of emerging commercial farmers.
- If support programmes are to help emerging entrepreneurs become commercial producers, they must draw upon the experiences of successful commercial farmers. Specifically, public-private partnerships and industry associations can help to strengthen programmes and services offered by public authorities and support the transfer of know-how to new entrant farmers.
- Expropriation of property without compensation remains a concern. Despite the failed attempt to amend the constitution for this purpose, uncertainty about property rights remains, and could undermine investor confidence in the sector.
- The pace of land reform should be linked to developing an enabling environment for its beneficiaries, including education, training, infrastructure, and access to modern farming equipment, finance, and markets. Particularly important is upskilling public-extension officers and providing them with resources to service rural communities and emerging commercial producers.
- Capacity in the private sector and learning and training institutions can be leveraged to revitalise public-extension services. Without these developments, land redistribution cannot deliver the expected outcomes, such as improving the welfare of rural black populations, increasing food security in rural areas, and developing a viable commercial sector.
- Recent outbreaks of foot-and-mouth disease (FMD) and highly pathogenic avian influenza (HPAI) underscore the need to strengthen the country's biosecurity system. Temporary closures of export markets are costly for the agricultural sector, and the government should work closely with the private sector to address weaknesses in surveillance, strengthen livestock health, and build local capacity for animal disease control. This will be essential to achieving South Africa's ambition of expanding its livestock exports and establishing itself as a reliable supplier in world markets.

Development of support to agriculture

Figure 23.1. South Africa: Development of support to agriculture

Figure 23.1A. South Africa: Producer Support Estimate and its composition

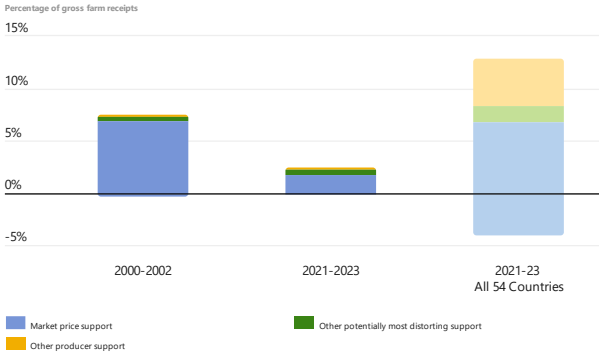


Figure 23.1B. South Africa: Ratio of producer to border price

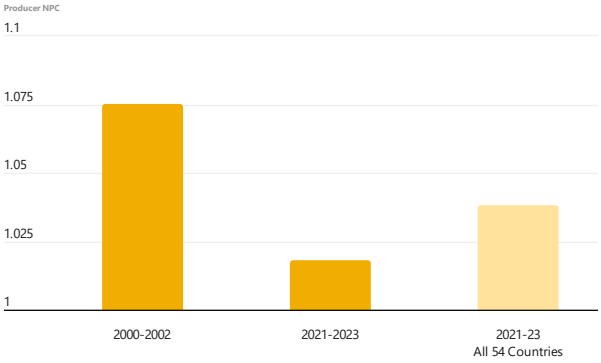


Figure 23.1C. South Africa: General Services Support Estimate and its composition

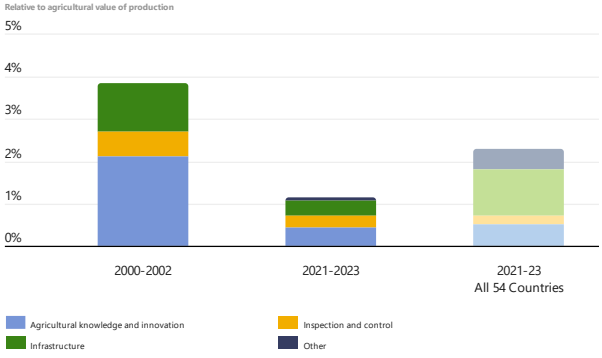
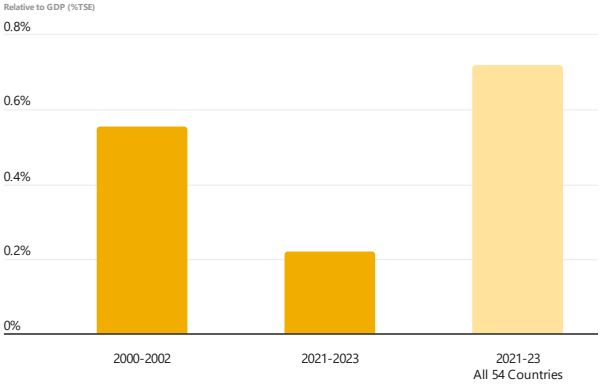
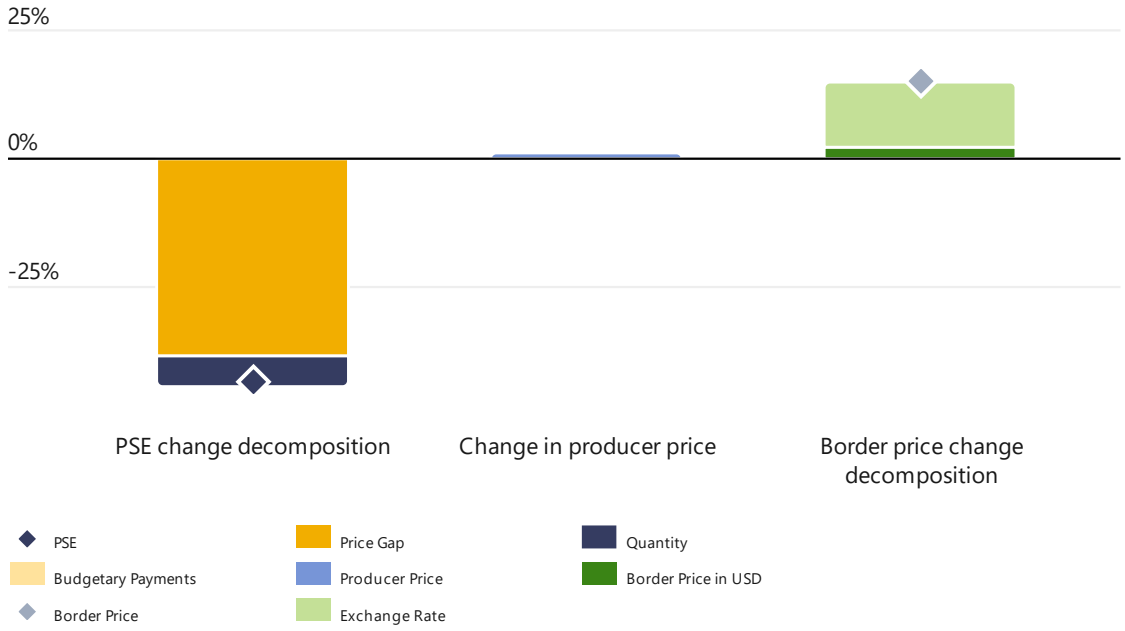


Figure 23.1D. South Africa: Total Support Estimate



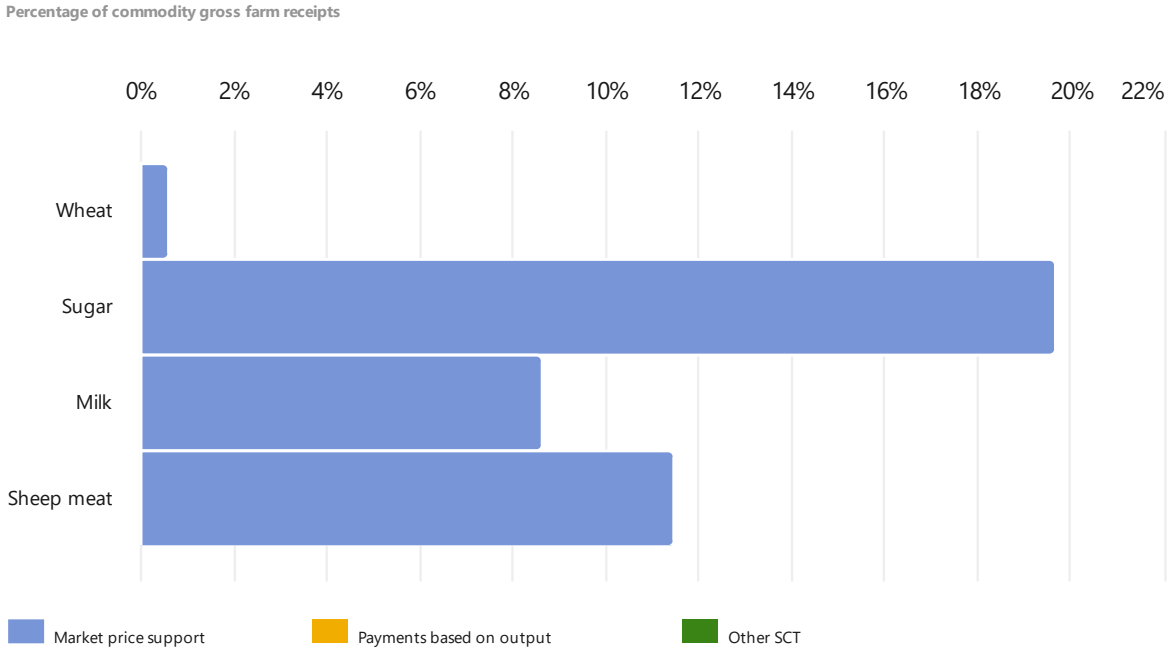
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 23.2. South Africa: Drivers of the change in PSE, 2022 to 2023



Note: % change of nominal Producer Support Estimate expressed in national currency.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 23.3. South Africa: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Table 23.1. South Africa: Estimates of support to agriculture

Million USD

	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**6 824**	**24 420**	**25 214**	**25 366**	**22 680**
of which: share of MPS commodities (%)	74.75	77.03	77.25	79.20	74.65
Total value of consumption (at farm gate)	**6 000**	**20 500**	**20 262**	**20 397**	**20 842**
Producer Support Estimate (PSE)	**480**	**618**	**635**	**816**	**404**
Support based on commodity output	441	449	458	644	247
Market price support[1]	441	449	458	644	247
Positive market price support	453	449	458	644	247
Negative market price support	-12	0	0	0	0
Payments based on output	0	0	0	0	0
Payments based on input use	36	169	177	172	157
Based on variable input use	25	137	139	138	134
with input constraints	0	0	0	0	0
Based on fixed capital formation	11	31	38	34	22
with input constraints	0	0	0	0	0
Based on on-farm services	1	1	1	1	0
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	3	0	0	0	0
Based on Receipts / Income	3	0	0	0	0
Based on Area planted / Animal numbers	0	0	0	0	0
with input constraints	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	0	0	0	0	0
With variable payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
With fixed payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
Payments based on non-commodity criteria	0	0	0	0	0
Based on long-term resource retirement	0	0	0	0	0
Based on a specific non-commodity output	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0
Miscellaneous payments	0	0	0	0	0
Percentage PSE (%)	**7.37**	**2.49**	**2.50**	**3.19**	**1.77**
Producer NPC (coeff.)	**1.08**	**1.02**	**1.02**	**1.03**	**1.01**
Producer NAC (coeff.)	**1.08**	**1.03**	**1.03**	**1.03**	**1.02**
General Services Support Estimate (GSSE)	**264**	**285**	**323**	**271**	**261**
Agricultural knowledge and innovation system	146	111	129	110	93
Inspection and control	39	70	70	58	82
Development and maintenance of infrastructure	78	85	103	85	68
Marketing and promotion	0	19	21	18	17
Cost of public stockholding	0	0	0	0	0
Miscellaneous	0	0	0	0	0
Percentage GSSE (% of TSE)	**34.04**	**31.71**	**33.70**	**24.93**	**39.24**
Consumer Support Estimate (CSE)	**-354**	**-403**	**-357**	**-590**	**-263**
Transfers to producers from consumers	-351	-391	-342	-585	-247
Other transfers from consumers	-18	-12	-16	-6	-16
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	14	0	0	0	0
Percentage CSE (%)	**-6.08**	**-1.94**	**-1.76**	**-2.89**	**-1.26**
Consumer NPC (coeff.)	**1.07**	**1.02**	**1.02**	**1.03**	**1.01**
Consumer NAC (coeff.)	**1.06**	**1.02**	**1.02**	**1.03**	**1.01**
Total Support Estimate (TSE)	**745**	**903**	**957**	**1 087**	**665**
Transfers from consumers	368	403	357	590	263
Transfers from taxpayers	394	512	616	502	418
Budget revenues	-18	-12	-16	-6	-16
Percentage TSE (% of GDP)	**0.56**	**0.22**	**0.23**	**0.27**	**0.18**
Total Budgetary Support Estimate (TBSE)	**304**	**454**	**500**	**443**	**418**
Percentage TBSE (% of GDP)	**0.22**	**0.11**	**0.12**	**0.11**	**0.11**
GDP deflator (2000-02 = 100)	**100**	**353**	**337**	**353**	**369**
Exchange rate (national currency per USD)	**8.69**	**16.53**	**14.78**	**16.37**	**18.45**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for South Africa are: wheat, maize, sunflower, sugar, milk, beef and veal, pig meat, sheep meat, poultry, eggs, groundnuts, grapes, oranges and apples.

Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

South Africa's National Development Plan 2030 (NDP) is a key national policy that was launched in 2012 and offers a comprehensive and forward-looking strategy to provide all sectors with a roadmap to address social, economic, and political challenges by 2030. For the agricultural sector, Chapter 6 of the NDP outlines the sector's vision to contribute to an integrated and inclusive economy through the expansion of agricultural activity, effective land reform, and sustainable rural development. In the medium term, this vision is expressed in priority one (economic transformation and job creation) of the Medium-Term Strategic Framework (MTSF) (2019-2024) which is aligned with the Medium-Term Expenditure Framework (MTEF).

The Agriculture and Agro-processing Masterplan (AAMP) was approved in May 2022 and identifies four pillars of agricultural policy:

- Resolving policy ambiguities and creating an investment friendly environment; investing in and maintaining an enabling infrastructure critical to industry.
- Providing comprehensive farmer support; improving food security.
- Facilitating market expansion and promoting trade.
- Increasing local food production and reducing reliance on imports.

The Agricultural Land Holding Account (ALHA) allows the state to proactively and legally target and acquire land using funds appropriated by parliament, in order to meet the demand or need for land to build sustainable rural livelihoods. Over the medium term, the entity aims to acquire 110 850 ha of strategically located land, of which 50% is set to be allocated to women, 40% to young people, and 10% to people with disabilities.

The Comprehensive Agricultural Support Programme (CASP) helps new beneficiaries of land reform to access credit from commercial banks and the government-owned Land and Development Bank. The CASP targets subsistence, smallholder, and black commercial farmers from a previously disadvantaged background. It focuses on providing producers with on- and off-farm infrastructure and production inputs; capacity building; marketing and business development support; advisory services; regulatory services; and financial services.

The Micro Agricultural Financial Institutions of South Africa (MAFISA) provides financial services to smallholders in the agriculture, forestry, and fisheries sector. The objective of the scheme is to address the financial services needs of smallholders. Services provided through the scheme include production loans, savings facilitation, and capacity building for member-owned financial institutions (intermediaries).

South Africa is a founding member of the Southern African Customs Union (SACU[1]), a full customs union with a common external tariff. Border measures applied on SACU common borders are the only price support policy. Such import protection for agricultural and food products at the SACU level is based on specific and ad valorem tariffs. The average applied Most Favoured Nation (MFN) tariff for agricultural products is 8.7%, which is higher than the average applied MFN tariff for non-agricultural products of 7.4% (WTO, 2023[1]). Tariff rate quotas (TRQs) exist for a range of agricultural products under the WTO minimum market access commitments.[2] A zero import-tariff for maize applies since 2007. No tariffs have been levied on wheat imports since July 2021. Beef and sheep meat are subject to tariff rate quotas with outside-quota tariffs of 40% or ZAR 2.40/kg (USD 0.13/kg) for beef, and 40% or ZAR 2.00/kg (USD 0.11/kg) for sheep meat. For pork meat the outside-quota tariff is 15% or ZAR 1.30/kg (USD 0.07/kg), except for ribs, which are not subject to tariffs. Poultry products have import tariffs ranging from zero to 82%.

South Africa applies the dollar-based reference price (DBRP) mechanism to ensure that the price importers pay for imported sugar (inclusive of the duty) cannot fall below a fixed DBRP level, currently set at USD 680 per tonne. If import prices are lower than the DBRP, an import duty is applicable, whereas if import prices are higher than the DBRP, no import duty is owed (USDA, 2024[2]).[3]

South Africa is also a member of the Southern African Development Community (SADC[4]). Trade between South Africa and the European Union takes place under the SADC-EU Economic Partnership Agreement (EPA) regime. This is a free trade agreement between the SADC EPA States (comprised of all SACU Member States plus Mozambique) and the European Union. The most important benefit for South Africa is the enhanced market access for agricultural products such as sugar, wine, some dairy products, flowers, fruits and nuts as well as their preparations. The Agreement has contributed to an increase in South Africa's exports of agricultural products to the European Union in recent years.

Other free trade agreements relevant to agriculture include the SACU-EFTA FTA, a free trade agreement between members of the European Free Trade Association (EFTA) and the SACU which came into force in 2008, and the SACU and Mercosur Preferential Trade Agreement (PTA) which came into force in 2016. Trade between South Africa and the United Kingdom is governed by the SACUM-UK EPA,[5] which is a replica of the SADC-EU EPA in terms of market access commitments with the exception of a few provisions that were modified during negotiations. The agreement provides important benefits for South Africa, including enhanced market access for wines and sugar into the United Kingdom.

South Africa is also a beneficiary of the US African Growth and Opportunity Act (AGOA), a non-reciprocal trade preference programme that grants eligible Sub-Saharan African countries duty-free, quota-free (DFQF) access to the United States for selected export products. AGOA was enacted in 2000 for eight years. The Act has been extended twice and is now in place until 2025. During the 20th AGOA Forum in November 2023, African trade ministers called for another extension, preferably for more than 10 years, and an early decision on renewal by the United States by 2024. South Africa's major export products benefiting from AGOA are mandarins, oranges, macadamia nuts and wine.

According to South Africa's Low Emission Development Strategy and its Nationally Determined Contribution (NDC), the country aims to reach net zero emissions by 2050 and has a fixed target of limiting annual greenhouse gas (GHG) emissions to 350-420 $MtCO_2eq$ in 2030. Emissions from agriculture totalled 41 $MtCO_2eq$ in 2020 (excluding LULUCF) and accounted for about 8.7% of total GHG emissions.

The Carbon Tax Act is an integral part of government policy on climate change and will be implemented in three phases. The carbon tax rate since January 2022 was ZAR 144 (USD 7.80) per tonne of carbon dioxide equivalent (tCO_2eq), increasing to ZAR 159 (USD 8.62) in 2023 and ZAR 190 (USD 10.30) in 2024. The tax covers about 90% of South Africa's GHG emissions, but excludes the agriculture, forestry, land use and waste sectors. Agriculture will continue to be excluded from the carbon tax until at least 2026, for the duration of the first transition phase of the carbon tax.

Fuel taxes are relatively high in South Africa and contribute about 6% to government revenues (OECD, 2022[3]). However, primary producers on land (farming, forestry and mining) qualify for full or partial relief for the fuel levy. The refund amounts to 100% of the Road Accident Fund levy and 40% of the fuel levy, applicable to 80% of eligible diesel fuel purchases. In order to claim the refund, farmers must be registered for VAT purposes and are required to maintain records of purchase invoices, sales invoices, and logbooks.

Innovation for sustainable productivity growth

The Agriculture and Agro-processing Master Plan (AAMP) is the product of a social compact between the government, business, labour, and civil society organisations. It was co-created in 2022 and sets out a number of specific objectives for the agricultural sector, including: increasing food security; promoting and accelerating sustainable transformation; improving access to local and export markets; enhancing competitiveness and entrepreneurship opportunities through technological innovation; creating an effective

farmer support system; creating decent, growing and inclusive employment; improving the safety of the farming community; creating a capable state and enabling policy environment; and enhancing resilience to the effects of climate change. However, labour organisations have not signed the AAMP, and implementation continues without their consent.

The National Advisory Council on Innovation (NACI) monitors and evaluates South Africa's National System of Innovation (NSI), including that of the agricultural sector. Funding in agricultural sciences research has grown between 2011/12 and 2020/21 by 55.2%, and more than 60% of all published research papers involve international collaboration (NACI, 2023[4]). Over the same period, agriculture's share of total business-sector R&D expenditure has grown from 2.7% to 4.5%. Agriculture and agritech (ICT) accounted for 6.8% of the value of all venture capital investments in 2020/21.

The National Biosecurity Hub was launched by the Department of Science and Innovation (DSI) and the Department of Agriculture, Land Reform and Rural Development (DALRRD) in October 2022 under the Technology Innovation Agency (TIA). The TIA is responsible for the Agriculture Bioeconomy Innovation Partnership between DSI and industry. This partnership supports the creation of enabling environments for the development of agricultural technologies and facilitates technology transfer to emerging farmers. To date, three technology innovation clusters in agriculture have been formed by TIA, including the Animal Health Cluster, the Beef Genomics Programme, and the Dairy Genomics Programme. The programme also seeks to enable collaboration and innovation to support the prevention, reduction and management of crop and animal diseases. DALRRDs MTEF allocation, as part of its Agricultural Production, Biosecurity and Resources Management programme, is ZAR 2.3 billion (USD 124.7 million) to strengthen biosecurity, sanitary and phytosanitary standards for agricultural products.

TIA has funded efforts by the firm AgriViro to develop novel environmentally friendly biopesticides to manage economically important pests such as codling moth (*Cydia pomonella*), oriental fruit moth (*Grapholita molesta*), and Lepidopteran on fruits including apples, cherries, peaches, and apricots. TIA also funded the Council for Scientific and Industrial Research's (CSIR) efforts to develop a point-of-care diagnostic kit for early foot-and-mouth disease detection in rural areas. This kit has the added advantage of being linked to South Africa's regulator database, which ensures timely monitoring and improves the government's disease surveillance.

On 12 August 2023, South Africa hosted the 13th Meeting of BRICS Ministers of Agriculture under the theme "Strengthening collaborations among BRICS countries towards sustainable agricultural production and increasing productivity". There was strong consensus that the outcomes of the COP27 Joint Work on Implementation of Climate Action on Agriculture and Food Security are critical to climate change adaptation in the agricultural sector. There was also strong support for the development of research programmes under the framework of the BRICS Agricultural Research Platform (BARP). BARP is designed to facilitate the exchange of research findings, innovations, and best practices, and to foster their widespread adoption in the respective BRICS nations.

Recent policy developments

Domestic policy developments in 2023-24

The Agricultural Products Standards Amendment Bill was approved by Parliament on 23 November 2023 and entered into force on 3 April 2024. This bill aims to modify provisions in Act No. 119 of 1990 to address deficiencies in the management control system of agricultural products. Specifically, it makes provisions that allow the minister to assign independent entities to perform certain audit and inspection functions for quality control of agricultural products.

DALRRD in partnership with the Land Bank established the ZAR 1.2 billion (USD 65 million) Agro Energy Fund (AEF) in 2023. The AEF is a blended finance programme that provides financial support to acquire renewable energy assets to alleviate the burden of load shedding on agricultural day-to-day operations. The fund targets farm operations that are energy intensive and has a sector-specific focus on dairy farming, poultry and piggeries, irrigated commodities, and on-farm processing.

In 2023/24, the Livestock Development Strategy (LDS) programme appropriated ZAR 449 million (USD 24.3 million) to support farms with production inputs, mechanisation, on-farm infrastructure, machinery, and operational costs.

In 2022, 15 853 and 25 781 farmers were supported by the Comprehensive Agricultural Support Programme (CASP) and Ilima/Letsema grants, respectively. A provision of ZAR 2.15 billion (USD 116.5 million) has been set aside for 2023/24 for these programmes to further assist farmers with production inputs and infrastructure development.

The Plant Health (Phytosanitary) Bill was introduced to the National Assembly on 20 February 2024 but is still under consideration with proposed amendments. This bill provides measures for the control of pests, by controlling their entry, establishment and spread throughout the country.

The Preservation and Development of Agricultural Land Bill was passed by the National Assembly on 5 December 2023 and approved by the National Council of Provinces on 9 May 2024. This followed extensive public consultations and a series of public hearings conducted in all nine provinces from 30 June to 20 September 2023 and in Parliament on 10 October 2023. The bill aims to outline the principles for the management of agricultural land, secure the protection of high-potential agricultural land, promote a balanced approach to the use of agricultural land by introducing strategic and technical instruments to preserve agricultural land, and provide the general objectives of agro-ecosystem management.

Policies to facilitate climate change mitigation and adaptation

The Climate Change Bill was approved by the National Assembly in October 2023 and the National Council of Provinces (NCOP) in April 2024, and is awaiting signature by the President. Once passed into law, the Climate Change Bill will serve as the legal framework for action on climate change to move to a net-zero emissions economy by 2050. It will establish sectoral emissions targets, including for agriculture.

In July 2023, the government released the South African Renewable Energy Masterplan (SAREM) for public comment. SAREM seeks to develop renewable energy value chains to enable inclusive participation in its energy transition efforts. Within SAREM, DALRRD is assigned the mandate to design and implement concessional financing mechanisms for small and medium-sized farming operations to procure renewable energy and storage. This mandate is implemented by the Industrial Development Corporation (IDC), Land Bank, and National Empowerment Fund.

South Africa has been fostering collaborations in its efforts for carbon reduction and will host the Global Research Alliance on Agricultural Greenhouse Gases (GRA) Council in 2024. The GRA's broad work encompasses efforts to develop solutions that minimise agricultural GHG emissions in four specific research areas, including livestock, paddy rice, croplands, and integrative research.

Trade policy developments in 2023-24

Exports of fresh produce have been expanding as a result of concerted efforts by the government to address sanitary and phytosanitary barriers. In August 2023 during the BRICS summit, South Africa's Minister of Agriculture, Land Reform and Rural Development signed an agreement with China's Minister of Foreign Affairs granting South African avocados access to the Chinese market. South Africa also recently obtained market access for avocado exports to India and Japan in 2024.

To alleviate regulatory challenges faced by South Africa's citrus industry, DALRRD and the Land Bank secured ZAR 19 million (USD 1 million) of funding for the Ripplemead Citrus Pack shed to assist exporters to meet stringent regulations on prolonged cooling by EU importers.

On 4 August 2023, the South African Revenue Service reduced the sugar import duty from ZAR 1.5254 (USD 0.083) per kg to zero. Thus, no duty was owed on imports of sugar below the DBRP (USD 680/tonne). However, due to a decline in international sugar prices towards the end of 2023, on 15 March 2024, the custom duty on sugar was adjusted to ZAR 1.4091 (USD 0.076) per kg (USDA, 2024[2]).

In response to an unprecedented number of foot-and-mouth disease (FMD) outbreaks in areas of the country that were not previously affected, a number of trade partners (including China) temporarily banned South African exports of live cattle, other cloven-hooved animals, and their products (including beef). Project Separako was launched to strengthen and assist the veterinary services of Limpopo to bring the outbreaks of FMD to a stop and prevent spillover of outbreaks to the rest of the country.

In response to outbreaks of highly pathogenic avian influenza (HPAI), a number of trade partners including Namibia, Botswana and Lesotho imposed restrictions on South African poultry exports. To replenish egg stock levels, DALRRD opened import permits for eggs and poultry products from a select few countries where outbreaks of HPAI had not been reported. The HPAI outbreaks affected exports of poultry to the Middle East for a significant period, as well as exports of ostrich meat mainly to the European Union. According to the South African Poultry Association, over 7 million birds have been culled since April 2023, including approximately 5 million layers and 2.5 million broilers. The government announced containment measures to limit the spread of the disease, including placing affected farms under quarantine and culling of infected birds. At the request of industry, South Africa registered a few vaccines and a vaccination protocol was signed into effect in November 2023. A temporary rebate provision on meat and edible offal, fresh, chilled or frozen fowls[6] was implemented on 26 January 2024.

The imposition of anti-dumping duties on bone-in poultry meat from Brazil, Denmark, Ireland, Poland, and Spain had been suspended for a twelve-month period by the Minister of Trade, Industry and Competition, and were reinstated in August 2023.

South Africa has applied anti-dumping duties to US origin poultry since 2000 and is currently applying them on all other major exporting countries except Argentina. A tariff rebate is in place, rebating the full anti-dumping duties on the importation of frozen bone-in cuts of chicken meat, imported from or originating in the United States. In 2023/24 an import tariff rate quota (TRQ) of 71 963 metric tonnes was set, which is free of the anti-dumping duty of ZAR 9.40/kg (USD 0.51/kg). However, South Africa applies a de-facto restriction on general tariff rebates for poultry imported under the TRQ.

South Africa has signed and ratified the African Continental Free Trade Agreement (AfCFTA). On 25 February 2023 SACU finalised and submitted its tariff offer that covers 90% of the tariff book to the AfCFTA Secretariat. After its technical verification and approval by the AfCFTA Council of Ministers, it then became SACU's Provisional Schedule of Tariff Concessions. This paved the way for SACU to participate in the Guided Trade Initiative that is intended to pilot the implementation of the AfCFTA on the basis of the concluded and approved work programme and legal instruments. Negotiations to finalise remaining work continues as part of the Built-in Agenda. Twelve countries, including South Africa, have finalised their legal modalities to enable trade to commence in thousands of product lines, including food and beverages.

Policy context

Key economic and agricultural statistics

South Africa has the most industrialised and diversified economy in Africa, and the second largest economy (after Nigeria) on the African continent. With the largest GDP per capita of the continent, it ranks as an upper middle-income country. However, income inequality is high and widespread poverty persists.

Agriculture represents a small share of the economy, at just 2.8% of GDP, although its share in employment is substantially higher, at 19.3% (Table 23.2). South Africa has abundant agricultural land, but only 12% of it is arable, while the remaining agricultural area is mostly semi-arid pastures with extensive livestock production. The farm structure is highly dualistic, with a well-developed and market-oriented sector of large-scale commercial farms and a large number of smallholder farms.

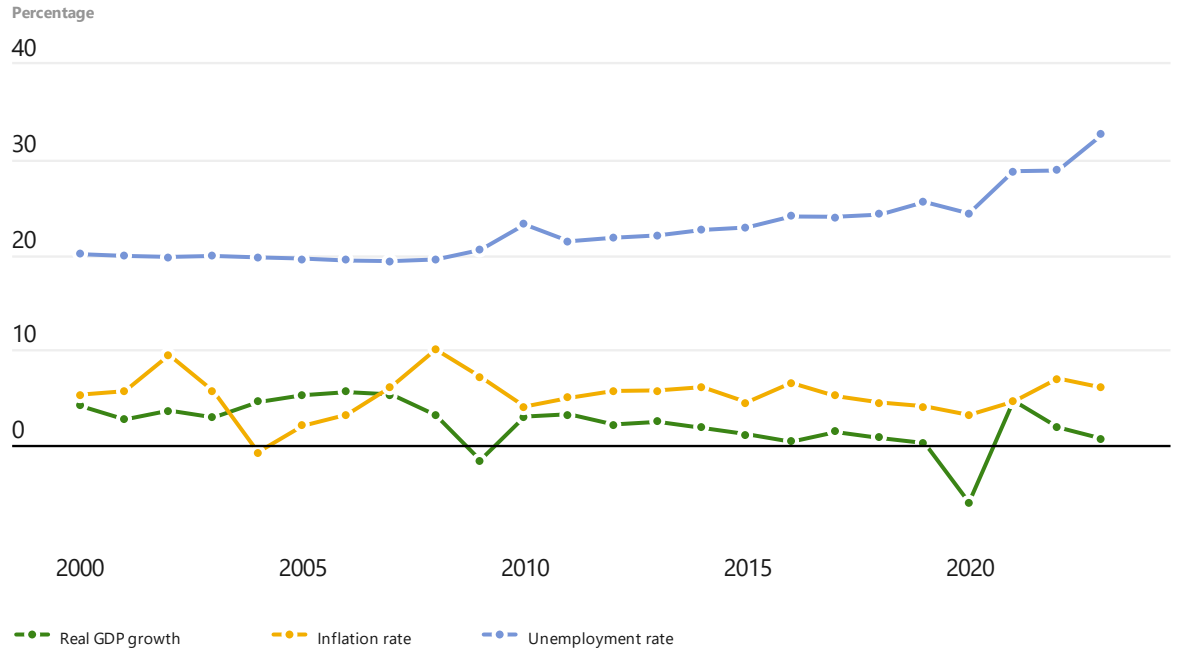
Table 23.2. South Africa: Contextual indicators

	South Africa		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	382	953	1.0%	0.7%
Population (million)	44	60	1.0%	1.1%
Land area (thousand km^2)	1 213	1 213	1.5%	1.5%
Agricultural area (AA) (thousand ha)	98 125	96 341	3.3%	3.3%
			All countries[1]	
Population density (inhabitants/km^2)	38	49	52	64
GDP per capita (USD in PPPs)	8 154	15 905	9 363	25 965
Trade as % of GDP	17.5	28.7	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	2.8	2.8	2.9	3.8
Agriculture share in employment (%)	21.0	19.3	-	-
Agro-food exports (% of total exports)	8.5	10.6	6.4	8.0
Agro-food imports (% of total imports)	5.2	6.5	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	56	53	-	-
Livestock in total agricultural production (%)	44	47	-	-
Share of arable land in AA (%)	14	12	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

Inflation in South Africa has been relatively moderate, increasing gradually from 3% in 2020 to 6% in 2023. The unemployment rate is persistently high, reaching 33% in 2023, and remains an obstacle for alleviating poverty. Real GDP growth has been declining since 2011 and dropped to -6% in 2020, in response to COVID-19 restrictions and impacts, before rebounding strongly in 2021 to 5% and then slowing to just 0.7% in 2023 (Figure 23.4).

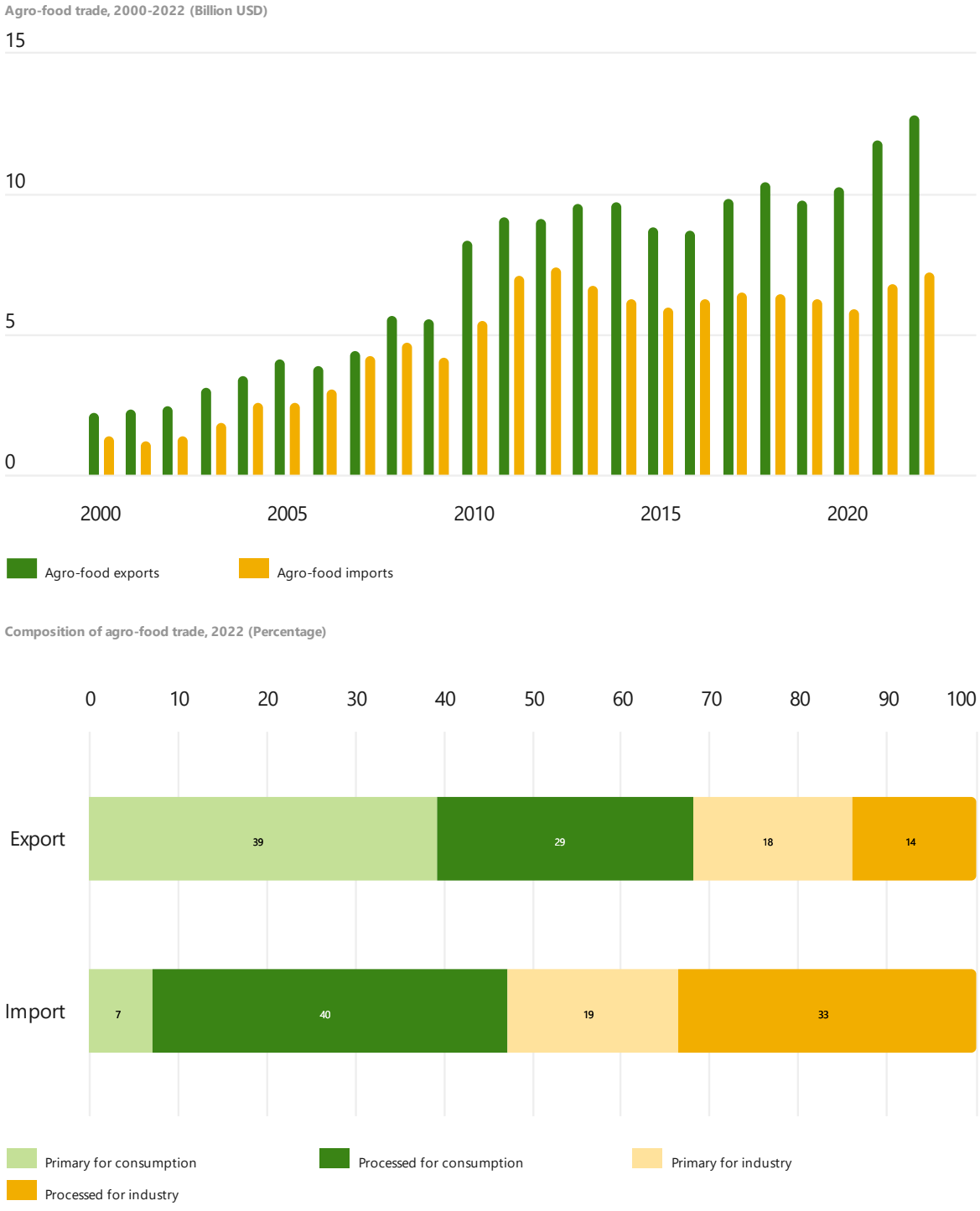
Figure 23.4. South Africa: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

South Africa is consistently a net exporter of agro-food products (Figure 23.5). In 2022, the share of agro-food exports in total exports was around 11%, while the share of agro-food imports was around 6.5% (Table 23.2). The majority (57%) of agro-food exports are primary agricultural products, whereas around three-quarters of agro-food imports are processed products (Figure 23.5).

Figure 23.5. South Africa: Agro-food trade



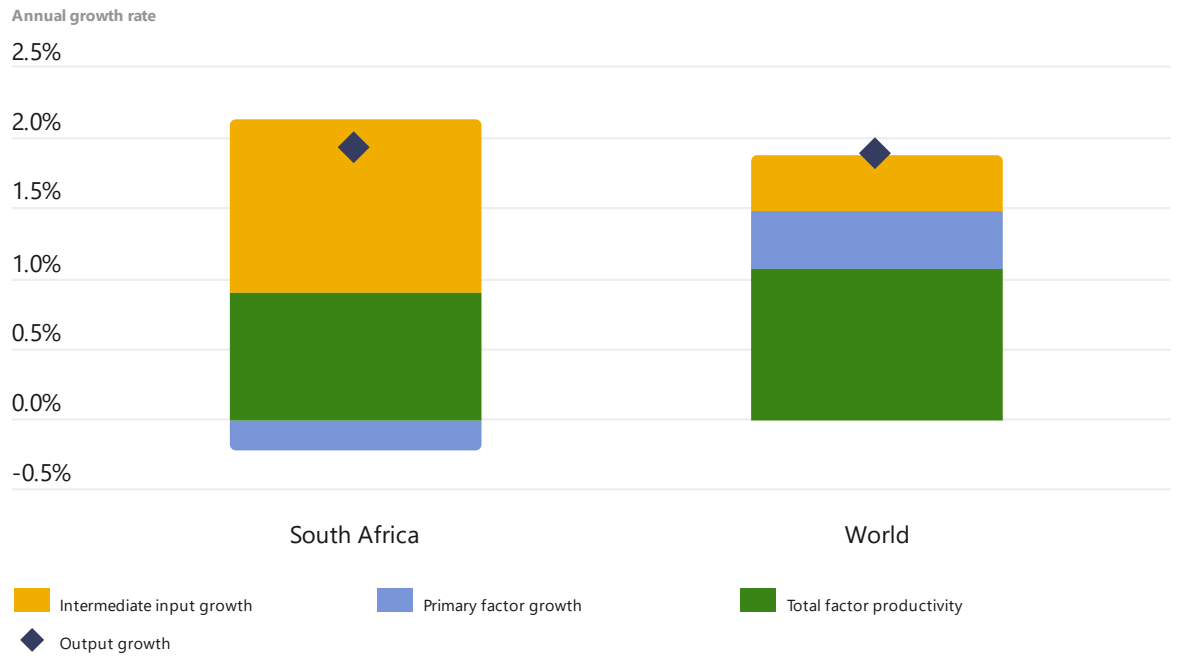
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Agricultural output growth has been similar to the global average over the 2012-21 period, but driven predominantly by increased use of intermediate inputs (Figure 23.6). This was not the case in the 1990s,

where annual TFP growth averaged 1.6%, however TFP growth has slowed somewhat since then, growing by 0.9% per year during 2012-21, slightly below the world average (Table 23.3).

Phosphorus and nitrogen balances are very low and negative, respectively, and well below the OECD average. Although agriculture uses most (58%) of abstracted water, only a few regions have irrigated land, and water resources are scarce in most of the agricultural areas (Table 23.3). The livestock sector is an important source of water consumption. Agriculture's share in total energy use has increased to 3% and remains above the OECD average.

Figure 23.6. South Africa: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Table 23.3. South Africa: Productivity and environmental indicators

	South Africa		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	1.6%	0.9%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	-6.3	-4.3	32.1	28.2
Phosphorus balance, kg/ha	0.2	0.0	3.3	2.3
Agriculture share of total energy use (%)	2.6	3.0	1.7	2.0
Agriculture share of GHG emissions (%)	9.1	8.7	8.7	10.1
Share of irrigated land in AA (%)	1.5	2.2	-	-
Share of agriculture in water abstractions (%)	70.6	57.5	47.0	49.5
Water stress indicator	33.7	65.8	8.7	..

Note: * or closest available year.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

Widespread support, regulation, and price and production control within a closed economy characterised agricultural policy in South Africa under the apartheid regime between 1955 and 1990.

Post-apartheid, quick and substantial reforms in the mid-1990s reduced state intervention in agricultural markets and led to more market-oriented commercial farming. Domestic marketing of agricultural products was deregulated, and barriers to agricultural trade were reduced by replacing direct import controls with tariffs, removing state controls over exports, and eliminating export subsidies. These reforms reduced market price support and budgetary support to commercial farming.

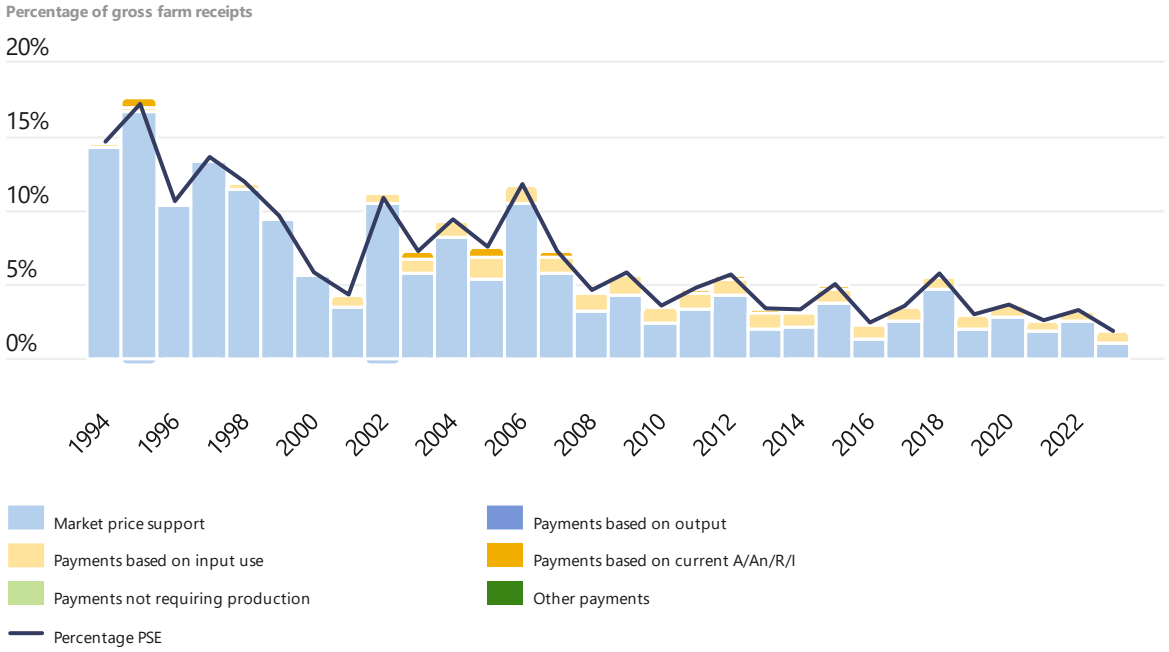
As stated in the White Paper on Land Policy of 1997, land reform aimed to redress past injustices, foster reconciliation and stability, support economic growth, improve household welfare, and alleviate poverty. Key elements of the land reform included land restitution, land redistribution and land-tenure reform. The land reform process is ongoing and further legislative regulations have been submitted to facilitate the acceleration of the land reform process: 13.22 million ha (or 17% of land used for agriculture) had been transferred away from white landowners (this includes restitution, redistribution, private transactions, and State procurement) by 2020 (Kirsten and Sihlobo, 2021[5]). Of this, 3.08 million ha have been transferred to the state and 10.14 million ha have been transferred to black owners. In several instances, communities elected to receive financial compensation where land was successfully identified for restitution (2.34 million ha in addition to the transferred land). Since it started, the land reform has been accompanied by agricultural support targeting black smallholders and emerging producers who were previously excluded from support by the apartheid government. Mainly provided within the Comprehensive Agricultural Support Programme (CASP), these measures include subsidies for variable and fixed input credit and financial support, extension, marketing, and training services (Table 23.4).

Table 23.4. South Africa: Agricultural policy trends

Period	Broader framework	Changes in agricultural policies
Prior to mid-1990s	Closed economy under the apartheid regime	Large subsidies for commercial agricultural producers Import controls; export subsidies for agricultural products Price and production controls under the Agricultural Marketing Act of 1937
Mid-1990s-present	Post-apartheid period; democratic government; market deregulation and trade liberalisation Land redistribution; emphasis on black small-scale producers' development	Marketing of Agricultural Products Act (1996) brings market deregulation and trade liberalisation WTO accession Agricultural tariffs replace import controls Import tariffs applied to sugar and livestock products (except eggs), with tariff-free imports of maize (since 2007) and wheat (since 2021) Land restitution and redistribution Land reform-related programmes supporting black smallholder farmers: - Increased spending to finance the land reform process - Direct support targeting black smallholders

Support to farmers has been decreasing as a share of gross farm receipts (with some year-to-year variation) during 1995–2007 because of policy reforms and deregulation of the market. Since then, support has tended to stabilise at a relatively low level, around 4% of gross farm receipts. Budgetary support to producers, mostly input subsidies, is targeted to black smallholders. Budgetary expenditures on general services to the sector are increasing and spent mainly on knowledge transfer and infrastructure.

Figure 23.7. South Africa: Development of the PSE and its composition, 1994 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

References

Kirsten, J. and W. Sihlobo (2021), *How a land reform agency could break South Africa's land redistribution deadlock*, https://theconversation.com/how-a-land-reform-agency-could-break-south-africas-land-redistribution-deadlock-165450 (accessed on 10 June 2024). [5]

NACI (2023), "South African Science, Technology & Innovation Indicators Report", *National Advisory Council on Innovation*, https://www.naci.org.za/wp-content/uploads/2023/08/STI-Indicators-2023-Report.pdf (accessed on 6 June 2024). [4]

OECD (2022), *OECD Economic Surveys: South Africa 2022*, OECD Publishing, Paris, https://doi.org/10.1787/d6a7301d-en. [3]

USDA (2024), "South Africa: Sugar Annual", *Global Agricultural Information Network (GAIN)*, https://fas.usda.gov/data/south-africa-sugar-annual-8 (accessed on 6 June 2024). [2]

WTO (2023), *Tariff profiles - South Africa*, https://www.wto.org/english/res_e/statis_e/daily_update_e/tariff_profiles/ZA_e.pdf (accessed on 3 April 2024). [1]

Notes

[1] The SACU members are: Botswana, Eswatini (former Swaziland), Lesotho, Namibia, and South Africa.

[2] TRQs are allocated based on historical trade as specified under each TRQ. If the TRQs are unused by 1 September each year, then unused TRQs are available to other member states. The establishment of a permanent TRQ Management System at the SACU level is still in progress.

[3] Adjustments to the level of protection granted are made when the 20-trading day moving average of the London No. 5 settlement price shows a variance of more than USD 20 per tonne from the previous trigger level for 20 consecutive trading days. The resulting Dollar duty is then converted to Rand, based on the Rand/Dollar exchange rate prevailing on the day that the adjustment is triggered, and subsequently adjusted with the latest available Real Effective Exchange Rate as published by the South African Reserve Bank.

[4] The SADC member countries are: Angola, Botswana, Democratic Republic of Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia, and Zimbabwe.

[5] The Economic Partnership Agreement between the SACU Member States (Botswana, Eswatini, Lesotho, Namibia and South Africa) and Mozambique on the one part, and the United Kingdom of Great Britain and Northern Ireland on the other part (SACUM-UK EPA) entered into force on 1 January 2021.

[6] The rebate was implemented in Government Gazette No. 50045, Notice R.4282 and applied to the species *Gallus Domesticus* classifiable under HS0207.1.

24. Switzerland

Main findings

Support to agriculture

Since the 1980s, Switzerland has undertaken gradual reforms to liberalise agricultural trade, resulting in moderate reductions in support to agriculture, which plateaued in the early 2010s. Support to producers as a share of gross farm receipts remains at 48% on average in 2021-23, more than three times the OECD average. However, the structure of support has changed, with direct payments replacing a substantial share of market price support (MPS).

MPS remains the main component of support, arising mostly from tariff rate quotas (TRQs) with high out-of-quota tariffs. MPS represented 41% of total producer support in 2021-23, down from 62% in 2000-02. Domestic producer prices were 43% above world prices on average in 2021-23. Large price gaps lead to substantial shares of Single Commodity Transfers (SCT) in commodity gross farm receipts for many products – notably poultry, eggs, and pig meat – while sugar benefits from direct budgetary support.

Switzerland provides significant direct payments to farmers, almost all of which are subject to environmental cross-compliance. The share of these payments in total support to producers increased from 38% in 2000-02 to around 60% in recent years, following the phase down of MPS. Direct support was reformed in 2014 towards more decoupled payments and mostly consists of area-based payments for agricultural land not tied to a specific commodity, payments to maintain farming in less-favoured areas, and payments to farmers who voluntarily apply additional environmental or animal-welfare-related practices.

Switzerland's expenditures for general services (General Services Support Estimate, GSSE) rose from below 6% in 2000-02 to nearly 9% relative to production value in 2021-23, which is among the highest proportion for countries covered in this report. Almost half of GSSE expenditure goes to the agricultural knowledge and innovation system.

Total support to agriculture (Total Support Estimate, TSE) fell as a share of Gross Domestic Product (GDP) from 2% in 2000-02 to less than 1% in 2021-23.

Key recent policy changes

Switzerland published its new Climate Strategy for Agriculture and Food 2050 in September 2023. This document confirmed previously announced targets and strategic orientations, including the 40% greenhouse gas (GHG) emissions reduction target for the sector by 2050, compared to 1990 levels, and the reduction by two-thirds of consumer emission footprint over the same time horizon, compared to 2020 levels. The related action plan also introduces mid-term objectives by 2030: reducing domestic agricultural emissions by 20% compared to 1990 levels and reducing the consumer footprint by 25% compared to 2020. In the area of food loss and waste in particular, the objective of a reduction by 50% of food waste by 2030 was also confirmed, with a longer-term reduction by 75% envisaged by 2050.

New agri-environmental payment programmes were introduced in 2023 with the aim to reduce the use of pesticides, promote functional biodiversity, increase soil fertility and lower GHG emissions. These represent a total of CHF 260 million (USD 290 million, i.e. 7% of the budgetary support to producers). This new expenditure has been compensated through reductions in other direct payments in the budgets 2024-25.

In parallel, agri-environmental measures were adjusted to reduce the level of regulatory pressure on Swiss farmers. The 2030 reduction target for nitrogen losses, originally set at 20%, was revised down to 15%. The 2023 waiver from the obligation of setting aside 3.5% of cropland for the protection of biodiversity, was extended by one year. The share of cropland to be covered by crops for the eligibility to the direct payment on soil cover was reduced from 100% to 80% for annual crops.

After 16 years of negotiation, the EFTA-India Free Trade Agreement was signed in March 2024. This agreement, the first of its kind in Europe with the most populated country of Asia contains provisions on trade in industrial goods and in processed and unprocessed agricultural products, as well as other provisions, including on non-technical barriers to trade and sustainable development. Another new trade agreement was also concluded and signed between EFTA and the Republic of Moldova in June 2023.

Assessment and recommendations

- The Swiss strategic vision for agriculture puts an important emphasis on environmental sustainability, innovation, and reinforcement of know-how as parts of the agricultural policy. This approach is expected to support sustainable productivity growth. Still, unequal diffusion of innovation across territories hinders widespread adoption of new technologies. Despite a federal budget for agricultural research among the highest of the OECD relative to the value of production, total factor productivity growth remains below the OECD average.
- While Switzerland reduced its share of most-distorting producer support over the past decades, border measures and output-based payments remain among the highest in the OECD. Continued efforts to decouple income support from farm output would decrease food prices and reduce pressure on the environment. It would also support further innovation in the sector by encouraging farms' competitiveness and diversification.
- Payments allocated to improved farming practices have helped to reduce environmental pressures. Shifting more budget towards enhanced production systems is a positive evolution for environmental and climate goals, provided it supports resource efficiency improvements and does not come at the expense of other sustainability objectives. The nitrogen surplus in the country is still twice the OECD average, and several measures aimed at increasing environmental ambition were put on hold or softened in 2023-24, including the reduction targets on nitrogen fertiliser application. A more results-based approach to policy design, combined with stronger regulations are likely needed to address this structural issue.
- The new climate strategy is a positive move towards more clearly endorsed targets for Switzerland's agriculture, paving the way for enhanced adaptation and mitigation efforts. Research and innovation will play a key role in this area, with investments planned to adapt breeds and practices and better monitor climate and natural resources. Identifying new needs for structural improvement is a useful step, but has to generate concrete investments.
- The food systems perspective taken by the new climate strategy should help Switzerland achieve its sustainability objectives more consistently. The production mix of the agricultural sector needs to be reconsidered in light of its climate and environmental objectives, as livestock production, which accounts for the majority of agricultural output, remains the main driver of GHG emissions and is also the main contributor to the nitrogen and phosphorus surpluses. Self-sufficiency targets should be reconciled with these sustainability objectives, as exports of livestock products require further feed crop imports, which exacerbate soil nutrient imbalances.

Development of support to agriculture

Figure 24.1. Switzerland: Development of support to agriculture

Figure 24.1A. Switzerland: Producer Support Estimate and its composition

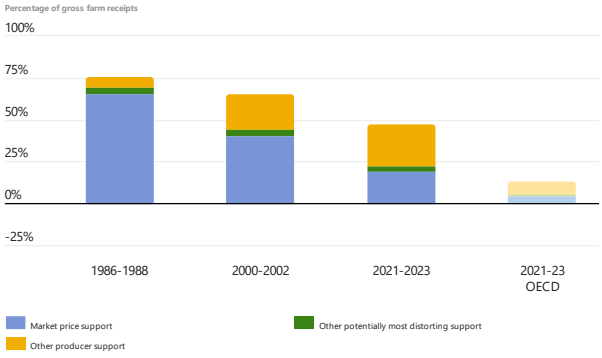


Figure 24.1B. Switzerland: Ratio of producer to border price

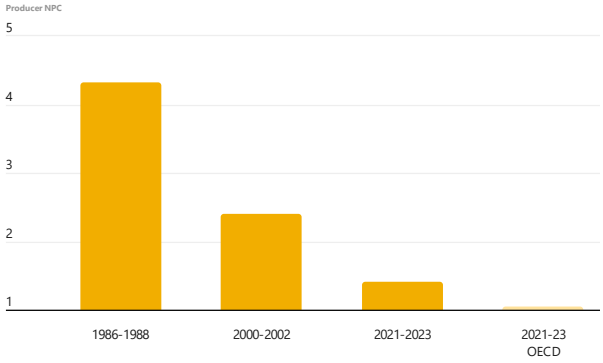


Figure 24.1C. Switzerland: General Services Support Estimate and its composition

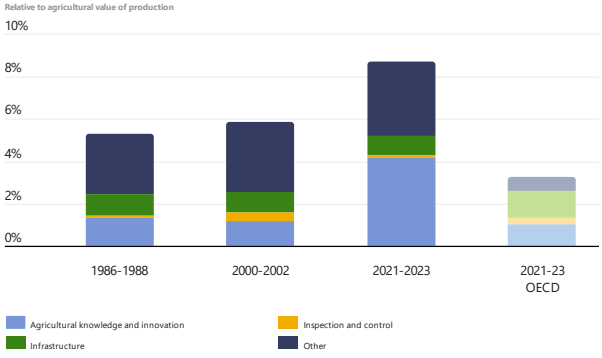
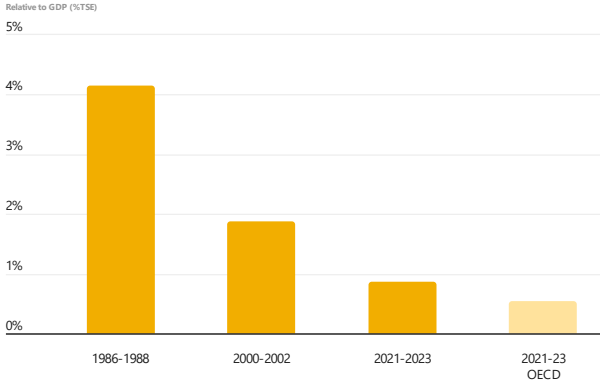
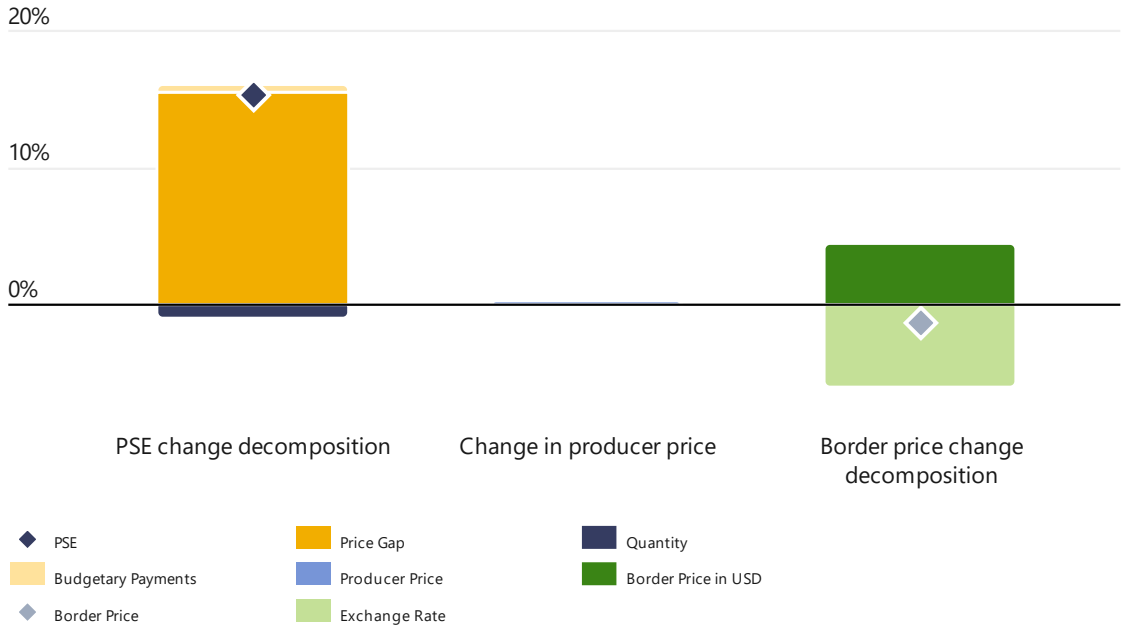


Figure 24.1D. Switzerland: Total Support Estimate



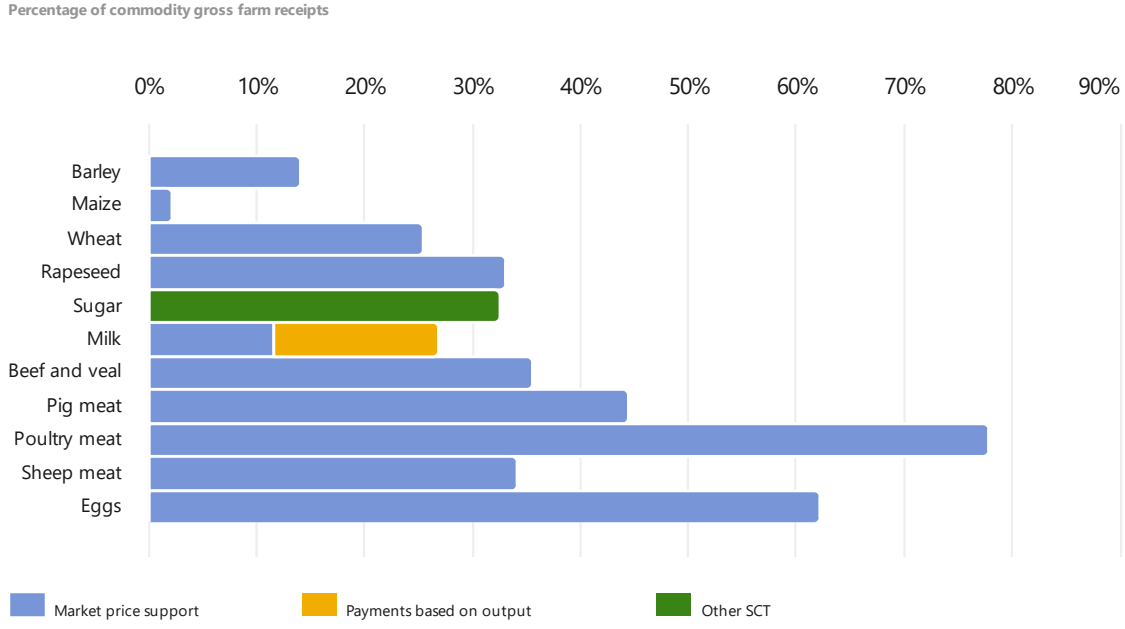
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 24.2. Switzerland: Drivers of the change in PSE, 2022 to 2023



Note: % change of nominal Producer Support Estimate expressed in national currency.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 24.3. Switzerland: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Table 24.1. Switzerland: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**8 025**	**5 695**	**9 934**	**9 691**	**9 652**	**10 459**
of which: share of MPS commodities (%)	62.80	57.98	62.43	63.91	62.66	60.73
Total value of consumption (at farm gate)	**12 693**	**8 853**	**16 102**	**15 696**	**15 814**	**16 795**
Producer Support Estimate (PSE)	**6 842**	**5 035**	**6 590**	**6 768**	**5 841**	**7 160**
Support based on commodity output	5 938	3 341	3 105	3 265	2 493	3 558
Market price support[1]	5 911	3 123	2 690	2 847	2 088	3 137
Positive market price support	5 911	3 123	2 690	2 847	2 088	3 137
Negative market price support	0	0	0	0	0	0
Payments based on output	27	218	415	418	406	421
Payments based on input use	358	126	144	158	141	133
Based on variable input use	289	67	73	73	70	75
with input constraints	0	14	0	0	0	0
Based on fixed capital formation	46	53	72	86	71	58
with input constraints	0	0	29	47	34	5
Based on on-farm services	23	6	0	0	0	0
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	392	564	1 191	1 094	1 054	1 424
Based on Receipts / Income	10	0	0	0	0	0
Based on Area planted / Animal numbers	382	564	1 191	1 094	1 054	1 424
With input constraints	217	540	1 141	1 044	1 007	1 372
Payments based on non-current A/An/R/I, production required	18	51	1 065	1 142	1 089	963
Payments based on non-current A/An/R/I, production not required	0	774	51	68	56	29
With variable payment rates	0	0	0	0	0	0
with commodity exceptions	0	0	0	0	0	0
With fixed payment rates	0	774	51	68	56	29
with commodity exceptions	0	0	0	0	0	0
Payments based on non-commodity criteria	0	58	792	790	764	821
Based on long-term resource retirement	0	0	0	0	0	0
Based on a specific non-commodity output	0	58	792	790	764	821
Based on other non-commodity criteria	0	0	0	0	0	0
Miscellaneous payments	137	120	242	251	244	231
Percentage PSE (%)	**76.27**	**66.14**	**47.57**	**49.72**	**43.57**	**49.44**
Producer NPC (coeff.)	**4.34**	**2.41**	**1.43**	**1.48**	**1.33**	**1.49**
Producer NAC (coeff.)	**4.21**	**2.95**	**1.91**	**1.99**	**1.77**	**1.98**
General Services Support Estimate (GSSE)	**431**	**337**	**870**	**867**	**846**	**898**
Agricultural knowledge and innovation system	110	70	420	421	410	429
Inspection and control	9	24	10	11	10	8
Development and maintenance of infrastructure	80	54	93	92	91	97
Marketing and promotion	29	37	72	71	68	77
Cost of public stockholding	66	32	55	50	54	61
Miscellaneous	137	120	220	222	213	226
Percentage GSSE (% of TSE)	**5.43**	**6.11**	**11.68**	**11.35**	**12.64**	**11.14**
Consumer Support Estimate (CSE)	**-8 981**	**-5 011**	**-4 374**	**-4 663**	**-3 174**	**-5 284**
Transfers to producers from consumers	-6 037	-3 223	-2 701	-2 877	-2 097	-3 128
Other transfers from consumers	-3 786	-1 985	-1 679	-1 797	-1 081	-2 159
Transfers to consumers from taxpayers	700	147	4	5	4	3
Excess feed cost	141	50	2	6	0	0
Percentage CSE (%)	**-74.74**	**-57.56**	**-27.04**	**-29.72**	**-20.08**	**-31.47**
Consumer NPC (coeff.)	**4.39**	**2.43**	**1.37**	**1.42**	**1.25**	**1.46**
Consumer NAC (coeff.)	**3.96**	**2.36**	**1.37**	**1.42**	**1.25**	**1.46**
Total Support Estimate (TSE)	**7 973**	**5 519**	**7 464**	**7 640**	**6 691**	**8 062**
Transfers from consumers	9 822	5 208	4 380	4 674	3 178	5 287
Transfers from taxpayers	1 937	2 296	4 764	4 763	4 594	4 934
Budget revenues	-3 786	-1 985	-1 679	-1 797	-1 081	-2 159
Percentage TSE (% of GDP)	**4.17**	**1.89**	**0.89**	**0.94**	**0.82**	**0.91**
Total Budgetary Support Estimate (TBSE)	**2 063**	**2 396**	**4 774**	**4 793**	**4 604**	**4 925**
Percentage TBSE (% of GDP)	**1.08**	**0.82**	**0.57**	**0.59**	**0.56**	**0.56**
GDP deflator (1986-88 = 100)	**100**	**127**	**139**	**136**	**140**	**141**
Exchange rate (national currency per USD)	**1.58**	**1.64**	**0.92**	**0.91**	**0.95**	**0.90**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for Switzerland are: wheat, maize, barley, rapeseed, sugar, milk, beef and veal, sheep meat, pig meat, poultry and eggs.

Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

Policy objectives

Swiss agricultural policy falls under the framework of the Agriculture Act (AgricA) from 1998, which establishes the principles and instruments for the regulation of the sector. The AgricA aims to ensure that agriculture is sustainable and innovative. It focuses on 1) food security for the population; 2) conservation of natural resources; 3) preserving cultivated landscape; 4) decentralised occupation of the territory; and 5) improving animal welfare.

The key elements of the AgricA have been enshrined in the Swiss Federal Constitution (Art. 104). In 2017 a referendum led to the adoption of a new article on food security (Art. 104a), emphasising the need to guarantee the supply of food to the population through:

- safeguarding the basis of agricultural production, especially land
- adapting food production to local conditions and using natural resources efficiently
- ensuring that the agriculture and food sector meet the market's needs
- building trade relationships that contribute to the sustainable development of the agriculture and food sector

using food in a way that conserves natural resources.

The Constitution and the AgricA require securing sufficient long-term food supplies for the population, based on both domestic production and imports, and considering the entire value chain. This is achieved through specific measures developed within four-year budget and programme cycles.

Budgetary support

The current support programmes are defined by the agricultural budget for the period 2022-25 (AP 2022-25). **The budget allocation for agriculture has been rather stable in nominal terms over the past decade, at about CHF 3.4 billion (USD 3.8 billion) per year.** The AP 2022-25 budget is 0.6% larger than the previous AP 2018-21 one, which itself was 1.7% below the AP 2014-17 budget.

Budgetary support to agriculture consists of three main elements, including direct payments, production and marketing expenditures, and support to improve the production base.

Direct payments to farmers target provision of basic food products, environmental services (landscape, biodiversity, sustainable use of resources) and animal welfare. These payments are subject to environmental conditions, with specific "ecological services requirements".

Production and marketing expenditures mainly support dairy producers via three types of payments: (1) for milk processing into cheese; (2) for milk production without silage feed; and since 2019 (3) for milk and dairy product sales from the farm. In addition, area payments apply to oilseeds, protein crops, cereals (introduced in 2019) and sugar beet. Some expenditures under this heading are for general services to the sector, including marketing and product promotion.

Policies to improve the production base include direct support for on-farm investments as well as general support for infrastructure improvement, social aid to farmers, and advisory services, which were all initiated as part of the AP 2014-17 policy framework.

Following the abolition of milk quotas in 2009, the inter-branch organisation for milk, *l'Interprofession du Lait* (IP Lait), implemented standard milk delivery contracts for its members. These set different prices and volumes for milk delivery (contingents A, B and C). These contracts became compulsory for all milk

producers in 2013, including those outside IP Lait. In effect, this replaced the previous production quota system with another production control mechanism implemented on a private basis. This scheme was extended in 2021 by the Federal Council (Switzerland's federal government) and is still in place today.

Trade policy instruments

Agro-food imports to Switzerland are largely regulated by tariff rate quotas (TRQs) with relatively low in-quota tariffs and relatively high out-of-quota tariffs. These TRQs cover meat, milk, eggs and egg products, potatoes, fruits, vegetables, bread cereals and wine. Since 1999, an auction system allocates some of the TRQs or parts thereof to traders. A notable exception to the quota system is feed grains, which are subject to single tariffs. These are regularly adjusted depending on market conditions to stabilise feed prices for the livestock sector.

Preferential tariff rates apply unilaterally to imports from developing countries under the general system of preferences. The Swiss Government grants zero tariffs to all products from Least Developed Countries (LDCs), so agricultural imports from LDCs (according to the official UN definition) are duty- and quota-free since September 2009.

Export subsidies for primary agricultural products were eliminated by 1 January 2010. The remaining export subsidies for live horses and some processed products were abolished at the end of 2015 and 2018, respectively, following the Nairobi agreement in 2015. To compensate the impacts of that reform, additional payments to producers for commercial milk (AgricA Art. 40) and grain (AgricA Art. 55) were introduced.

Switzerland's network of trade agreements consists of the European Free Trade Association (EFTA) Convention,[1] the Free Trade Agreement with the European Union and 33 agreements in place with 43 countries, and two more recently concluded awaiting ratification. All these agreements were signed within EFTA, with the exception of agreements with the People's Republic of China, Japan, the United Kingdom, and the Faroe Islands.

Climate change policies in agriculture

Switzerland set the goal in 2019 to reach climate neutrality by 2050 and defined specific commitments for emissions reductions in the agricultural sector. Since the Climate Strategy for Agriculture and Food 2050 was adopted in 2023 (see further below), **an objective of agricultural emissions reduction of 40% by 2050 (compared to 1990 levels) has been confirmed.**

The Climate Strategy for Agriculture and Food 2050 defines the action areas for specific mitigation objectives. These are in the livestock sector (breed, herd management, animal feed, animal building), the crop sector (crop and variety type, management practices), fertiliser management (application rate, storage and spreading), and energy consumption (building, machinery and renewable energy). Beside mitigation objectives for national production, an overall emissions reduction target by 2050 of two-thirds had also been set in 2011 for at consumer level, compared to 1990 levels. An intermediate target was introduced in 2021 with the 2030 Sustainable Development Strategy, which called for reducing the GHG emissions footprint of each food consumer (including imported food) by 25% by 2030, based on 2020 levels.

Several measures currently support climate mitigation in agriculture:

- A carbon tax on fossil fuels used to heat greenhouses and barns for livestock, as set out by the 2011 version of the CO2 Act. Transportation fuels are not subject to the carbon tax. Since 2022, the level of this tax has been at CHF 120 (USD 133) per tonne CO_2. Producers can opt out of the tax payment by submitting a long-term decarbonisation plan for their installations.

- A requirement for fossil fuel producers and importers to offset part of transport-related CO2 emissions through national emissions reductions projects. Domestic agricultural projects can contribute to these with investments in anaerobic digesters or fertilisation improvements.
- New measures were adopted in 2022-23, such as the new water quality plan setting a nitrogen fertiliser reduction target of 15% by 2030 and strengthened contributions to sustainable production systems through soil fertility improvement measures, higher use of organic fertilisers and longer productive lifetime for cows to reduce emissions per unit of output (see further below).

Adaptation to climate change is more specifically governed by the latest national Action Plan 2020-25, released in 2020, that specifies measures for all sectors of the economy. This plan contains 75 adaptation measures, including 46 already initiated over a first programming period (2014-19).[2] It clarifies what actions to undertake at federal, cantonal and communal levels, and lays out international collaboration channels to support climate adaptation. Some measures target agriculture specifically, while others have indirect implications in related domains (e.g. water management, biodiversity, human health, animal welfare).

Adaptation measures for agriculture, as defined in the successive adaptation plans, are organised around three axes: **(1) adapting products, production systems, and production practices; (2) improving knowledge of adaptation possibilities; and (3) mitigating weather-related risks for production and prices.** Work started with the following action tracks: optimised use of plants and suitable animal breeds, including pest management; enhanced use of land and water resources; data development for operations adapted to production sites; extension of monitoring and early-warning systems; and analysis of opportunities to support private risk-management. Initiatives are also in place to foster R&D, knowledge dissemination and innovation for climate action. These fund information platforms, association initiatives for climate protection in agriculture, or development of sustainability schemes.

Sustainable Development Goals

In 2021, **the Federal Council adopted a 2030 Sustainable Development Strategy (SDS)** and a related action plan, which was further updated in January 2024 to schedule measures for the period 2024-27. The SDS identifies three priority themes with specific objectives for 2030: sustainable consumption and production; climate, energy and biodiversity; and social equity. For the transformation towards sustainable food systems, four targets were defined as part of the SDS Sustainable Consumption and Production theme:

- A 25% reduction of food GHG emissions footprint for Swiss consumers by 2030 compared to 2020 (described earlier).
- A share of one-third of the total population with healthy and sustainable dietary patterns by 2030, in line with the food pyramid (national dietary recommendations).3
- A reduction of 50% in food waste per capita by 2030 compared to 2017, and a substantial reduction in food losses along the supply chain.
- An increase by one-third by 2030 in the share of farms exceeding mandatory ecological services requirements in a verifiable manner, compared to 2020.

The SDS is also complemented by a National Pathway for Food Systems Transformation, developed in 2021 in co-ordination with stakeholders, that specifies more detailed measurable goals towards 2030, as well as concrete actionable measures.

Innovation for sustainable productivity growth

The Constitution and the AgricA provisions both emphasise the need to satisfy basic food supply while using natural resources efficiently and conserving them. For this purpose, the Federal Council lists the **reinforcement of innovation and know-how throughout the food supply chain as part of the four**

action lines of its long-term strategy for agriculture, in its 2022 orientation report for the future of the sector. The SDS also identifies training, research and innovation as part of the four drivers supporting sustainable development for the Swiss economy as a whole, and research and innovation is given a key role in the National Pathways for Food Systems Transformation.

Productivity growth is expected to play an important role to support sustainability in agriculture according to the long-term strategic vision from the 2022 orientation report. More efficient use of inputs can contribute to achieve climate and other environmental objectives, and could help addressing some of the challenges faced by the country, such as the high nutrient imbalances. However, the country potential is hindered by disparities in performance across territories, and innovation in rural areas tends to focus more on incremental innovation in processes and less on product innovation in science and technology fields (OECD, 2022[1]).

Meanwhile, **total factor productivity growth in Swiss agriculture remains relatively low**, at 0.4% on average between 2012 and 2021, compared to 1.1% for the OECD average (see Key economic and agricultural statistics below). In the meanwhile, the federal budget dedicated to agricultural research more than doubled from CHF 73 million (USD 81 million) in 2000-02 to CHF 190 million (USD 212 million) in 2021-23, and it increased seven-fold, from CHF 23 million (USD 26 million) to CHF 160 million (USD 178 million) for knowledge transfer over the same period, mostly through support to university and specialised schools. A new regulation aiming at reinforcing collaboration between higher education institutions, research organisations and the private sector is currently in public consultation and should enter into force in 2025 to strengthen skills and innovation in the agriculture and food sector.

In 2023, the Swiss Office for Agriculture also identified, at the request of the Swiss Parliament (National Council), the **key future investments needed for the sector to remain both competitive and sustainable** in its "Strategy on Structural Improvement 2030+" report. Beside usual investments into agricultural buildings and infrastructure, the analysis identified the need to ramp up federal investments in irrigation and soil quality, as well as climate, environmental and animal welfare, from CHF 2 million (USD 2.2 million) today to CHF 44 million (USD 48million) by 2040. Additional investments would also be needed in the form of public credits.

Innovation in production technologies

Digitalisation in agriculture has been identified as a key driver for future productivity gains, as highlighted by the 2018 Charter on Agriculture and Food Chain Digitalisation and the Digital Switzerland Strategy and its action plan. The adoption of digital technologies by farmers has been mixed and still has strong potential for further development (Groher, Heitkämper and Umstätter, 2020[2]). To better monitor the use of fertilisers and pesticides, the Swiss Office for Agriculture launched in 2023 its data platform digiFlux, on which all farmers will be required to report their chemical products use as from 2026. Digital transformations also relate to the improvement of market efficiency. In December 2023, Switzerland deployed a new public platform to provide further transparency on trends in agricultural and food market volumes and prices.

To foster the use of new seeds and breeds, **Switzerland launched its second call for projects on crop breed selection** in December 2023, implementing its Crop Selection Strategy 2050. An emphasis is given on crop breeds resistant to pests and resilient to climate change. Since January 2023, new financial support (CHF 30 000, or USD 33 400, per ha) is also provided to viticulturists to use new breeds resisting better to diseases, with a view to reduce the use of pesticides. In October 2023, the Federal Council also laid out the guidelines for the preparation of new legislation to be submitted for consultation in 2024 on the use of crop seeds created through new breeding techniques.

Environmental protection and sustainability

New water-quality measures in place since 2023 include a ban on high-risk pesticides, more-restrictive spraying rules, and adjustments in direct payments to disincentivise pesticide use. These measures support the **goal of reducing pesticide-related risks by 50% by 2027**. The Swiss Office for Agriculture also published in 2023 several guidance documents for farmers and project promotors to better preserve water quality and improve the efficient use of fertilisers.

Targeted projects oriented towards improvement of environmental practices have been identified as key tools to support sustainable productivity growth, notably under the Swiss Programme on Sustainable Use of Resources. This programme, in place since 2014, had funded a total of 52 projects by the end of 2022. The support allocated to this programme in 2022 was CHF 28.6 million (USD 31.8 million), mostly oriented towards better soil and water protection, reduction of chemical use, and reduction of GHG and other air pollutant emissions. For instance, the two most recently launched projects, Lait KlimaStaR and RISC, are both oriented towards more climate-friendly practices for participating farms, through a better management of grass-based dairy cattle, and more sustainable cropping soil management practices, respectively. In 2023, 18 projects under this programme were still active, representing a total investment of CHF 136 million (USD 151 million) over their lifetime.

Domestic policy developments in 2023-24

Environmental measures

Several new forms of direct support to farmers entered into force in 2023 in the context of the contribution to production systems, aiming to help by reducing the use of pesticide, promoting functional biodiversity, increasing soil fertility and reducing greenhouse gas emissions. The good uptake of these programmes, supporting direct forms of more sustainable production practices, generated an additional support of CHF 260 million (USD 290 million), representing 7% of the total budgetary support to producers. To keep a balanced budget in 2024-25, the Federal Council decided to reallocate CHF 100 million (USD 111 million) previously devoted to support food security, biodiversity and animal welfare.

In 2023, **several adjustments to agri-environmental measures were made to reduce the level of regulatory pressure on Swiss farmers**. This follows previous decisions in 2022 to put new environmental regulations on hold until 2024 due to the difficult market conditions, notably as a consequence of Russia's war of aggression against Ukraine. Among new adjustments announced in 2023:

- The target of 20% of reduction in nitrogen losses by 2030, set in 2022 in the context of the new water quality legislation, was revised down to 15%. The objective of reduction remains set at 20% for phosphorus losses, however.
- The 2023 waiver from the obligation of setting aside 3.5% of cropland for the protection of biodiversity was extended by one year and is set to end in 2025.
- The threshold on the share of soil to be covered for the eligibility to the direct payment on cropland soil cover was reduced from 100% to 80% for annual crops.

Adjustments of existing support schemes

In April 2023, the Federal Council revised the ordinance on livestock rearing. In particular, **the support to the conservation of traditional breeds of cows was increased** by CHF 3.9 million (USD 4.3 million).

In November 2023, additional measures were adopted by the Federal Council for 2024, through its annual set of ordinances under the AgricA. These include:

- A complementary payment for farms practicing pasture summering to protect cattle from predators.

- The inclusion of farmland partly equipped with photovoltaic panels among agricultural land eligible for direct payments.

Food systems resilience

In June 2023, Switzerland ended its policy of strategic reserves release of fertilisers, activated in 2021 amid supply difficulties on international markets. The country however opened discussion in November 2021 for the adaptation of its strategic reserve policy and further follow-up public consultations are scheduled in 2024 on this issue in relation to food security.

In February 2024, several food market regulations were revised to strengthen the labelling of products as to their origin (bakery products), to reduce the use of wrapping material and to facilitate the donation of food left-overs from retailers and restaurant to charities with a view to reducing food waste.

Policies to mitigate emissions from agriculture

In September 2023, the new Climate Strategy for Agriculture and Food 2050 was released by the Federal Office of Agriculture, jointly with the Federal Office for the Environment, and the Federal Office for Food Safety and Veterinary Affairs. This document, which replaces the previous Climate Strategy for Agriculture from 2011, confirms previous targets and strategic orientations from the future orientation of the agricultural policy published in 2022. This includes the 40% emissions reduction target for the sector by 2050, compared to 1990 levels, and the reduction by two-thirds of consumer emission footprint by the same year, compared to 2020 levels. These targets have to be achieved while maintaining a self-sufficiency of at least 50% for the country.

The action plan accompanying the strategy introduces mid-term objectives by 2030: reducing domestic agricultural emissions by 20% compared to 1990 and reducing consumer footprint by 25% compared to 2020. The plan includes 42 measures, 25 of which have already started, and covering both the production and the consumption sides. These fit within eight areas of action: sustainable consumption, waste reduction, sustainable trade, optimal production mix, better nutrient management, water resource protection, soil quality conservation, and more efficient energy use. In the area of food waste reduction, in particular, the SDS objective of reduction by 50% of food waste is confirmed, with a longer-term reduction by 75% envisaged by 2050.

Trade policy developments in 2023-24

After 16 years of negotiation, the EFTA-India Free Trade Agreement was signed in March 2024. With this agreement, EFTA countries are the first in Europe concluding a trade partnership with the South Asian country. The agreement contains provisions on trade in industrial goods and in processed and unprocessed agricultural products. Other provisions relate to technical barriers to trade, sanitary and phytosanitary measures, rules of origin, trade facilitation, trade in services, investment promotion, protection of intellectual property, competition, public procurement (development clause), dispute settlement and trade and sustainable development.

The EFTA-Moldova Free Trade Agreement was signed in June 2023 to foster economic exchanges and co-operation between the four countries of the free trade zone and Moldova. Key areas of focus for the agreement are trade in industrial products, as well as agro-food products (including sea products), technical barriers to trade, sanitary and phytosanitary measures, rules of origin, trade facilitation, trade in services, investments, intellectual property rights, competition, public procurement, conflict arbitration and sustainable trade.

In January 2024, the EFTA states concluded negotiations on the modernisation proposal of the trade agreement with Chile, in place since 2004. The new agreement, to be signed in June 2024, includes an

extended access to goods, strengthened clauses related to sustainable trade, financial services, small and medium enterprises, and digital trade. It also plans for a better recognition of geographic indications. In March 2023, Switzerland published a list of 157 recognised geographic indications for Chilean products.

In October 2023, Switzerland used temporary adjustments to its tariff rate quotas to address conjunctural market shortages. The in-quota volume for eggs was increased by 5 500 tonnes or 31% until the end of 2023. The butter in-quota volume was raised by 500 tonnes (for an annual consumption of around 40 000 tonnes).

Policy context

Key economic and agricultural statistics

Switzerland is a small economy with high GDP per capita, that had experienced low and periodically negative inflation until the 2022 global inflation surge with unemployment rates below 5% over the past two decades. GDP growth has been stable at around 2% prior to the COVID-19 pandemic, and following a high-growth recovery period in 2021, it resumed in 2023 with growth rates below pre-crisis levels.

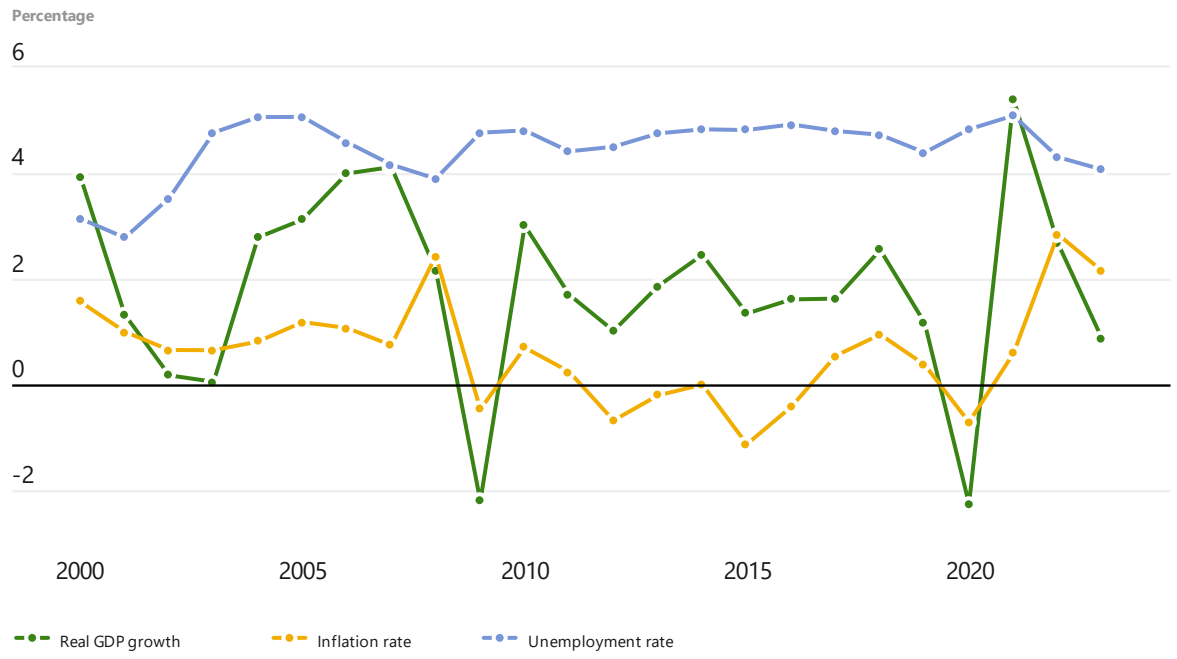
The relative importance of agriculture in the Swiss economy is low, accounting for just 0.6% of GDP and around 2.3% of employment. The farm structure is dominated by relatively small family farms. Hills and mountain farming areas (including alpine summer pastures) are used for extensive milk and meat production, while more intensive pork and poultry production is located in valleys. Agricultural land covers 36% of the country area and is composed mostly of grassland, with arable land representing only 26% of agricultural land. Crop production has shifted away from traditional arable crops (grains, oilseeds) towards an increasing production of fruits and vegetables over time.

Table 24.2. Switzerland: Contextual indicators

	Switzerland		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	264	743	0.7%	0.5%
Population (million)	7	9	0.2%	0.2%
Land area (thousand km^2)	40	40	0.00%	0.00%
Agricultural area (AA) (thousand ha)	1 566	1 499	0.1%	0.1%
			All countries[1]	
Population density (inhabitants/km^2)	180	219	52	64
GDP per capita (USD in PPPs)	36 352	84 593	9 363	25 965
Trade as % of GDP	29.2	46.2	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	1.1	0.6	2.9	3.8
Agriculture share in employment (%)	4.6	2.3	-	-
Agro-food exports (% of total exports)	2.4	2.7	6.4	8.0
Agro-food imports (% of total imports)	5.2	4.4	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	50	43	-	-
Livestock in total agricultural production (%)	50	57	-	-
Share of arable land in AA (%)	26	26	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

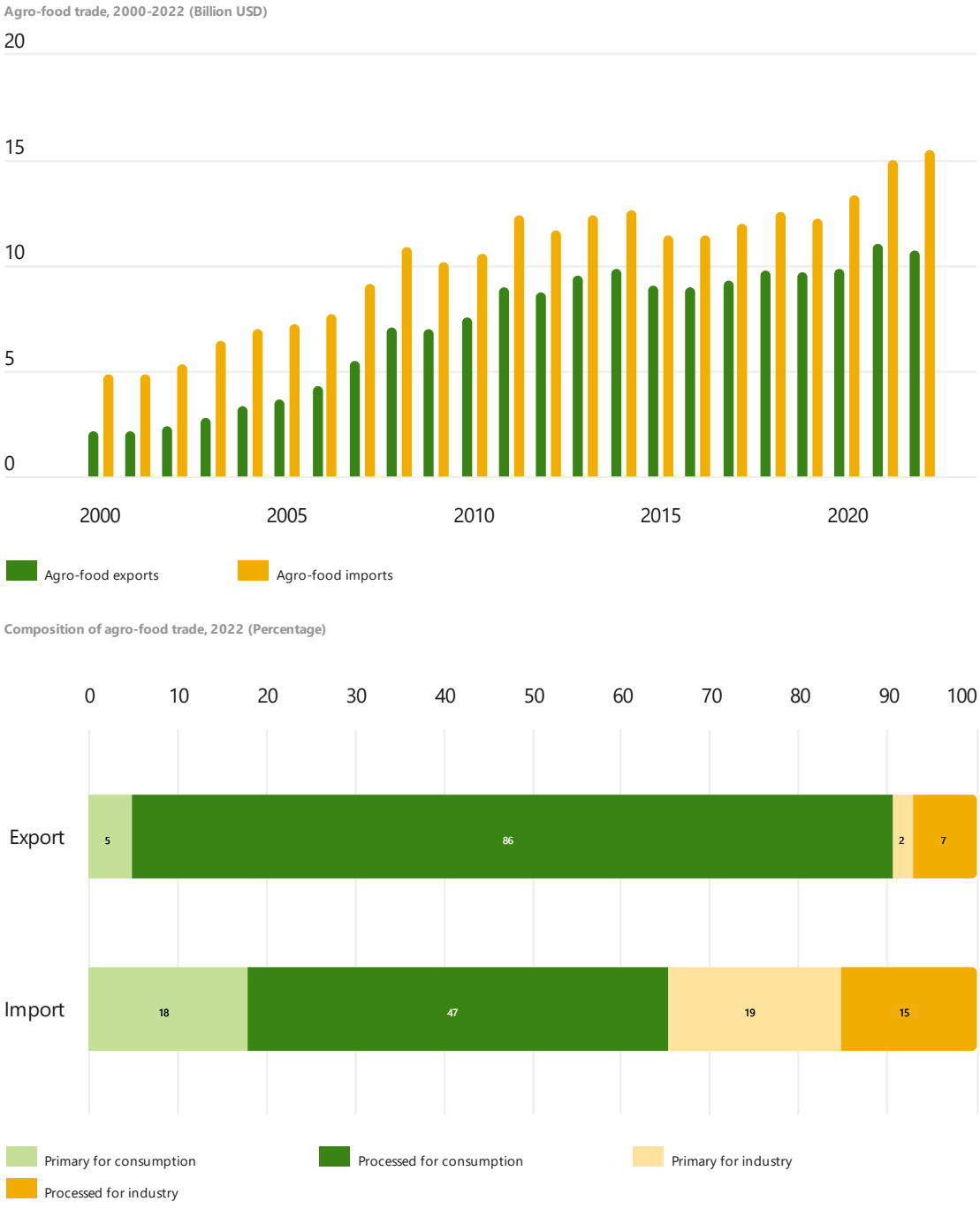
Figure 24.4. Switzerland: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

Switzerland has consistently been a net agro-food importer, with USD 15.6 billion of total imports of agro-food products in 2022, compared to USD 10.8 billion for its agro-food exports. Swiss agro-food exports consist mostly of processed products for final consumption (86% of total agro-food exports). This category also represents almost half of the agro-food imports (Figure 24.5).

Figure 24.5. Switzerland: Agro-food trade

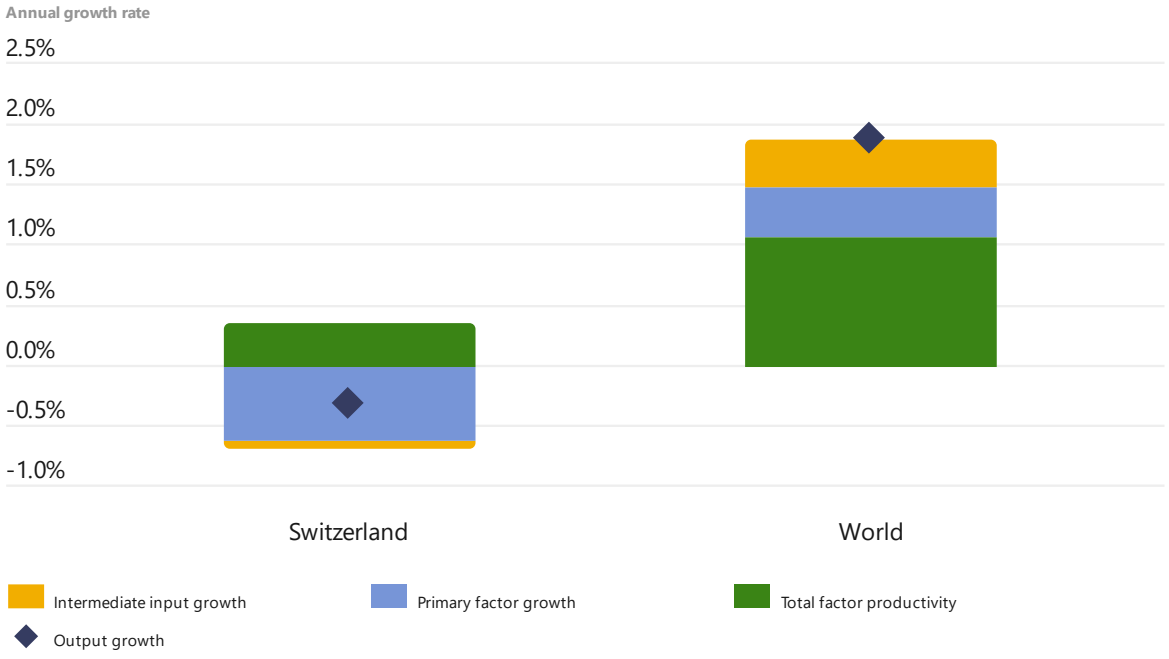


Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Total factor productivity (TFP) growth in agriculture has been 0.4% between 2012 and 2021. However, both the use of intermediary inputs (-0.1%) and primary factors (-0.6%) decreased. As a result, overall output has declined over that period.

Swiss agriculture is largely rain-fed. Swiss farmers irrigate only 3.3% of their agricultural land and the share of agriculture in the country's water abstraction (8%) is less than one-sixth of the OECD average. In addition, the water stress indicator is well below the OECD average. Agriculture's share of energy use went down as well and is less than a third of the OECD average. On the other hand, while nutrient surpluses have declined moderately, the surplus of nitrogen (59 kg/ha for N) is still twice the OECD average, which negatively impacts water quality and GHG emissions. Swiss agriculture emissions amounted to 5.9 $MtCO_2eq$ in 2021 (13.1% of national emissions), not counting emissions from energy consumption in agriculture, forestry and fisheries (0.6 $MtCO_2$, i.e. 1.4%). This places the country above the OECD average. While the LULUCF sector in Switzerland is a net sink, thanks to forest management (-2.3 $MtCO_2$ per year since 1990), cropland and grassland also emit together an average 0.7 $MtCO_2$ (1.5% of the national emissions) due to changes in soil carbon.

Figure 24.6. Switzerland: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Table 24.3. Switzerland: Productivity and environmental indicators

	Switzerland		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	0.0%	0.4%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	63.0	59.4	32.1	28.2
Phosphorus balance, kg/ha	2.8	3.5	3.3	2.3
Agriculture share of total energy use (%)	0.6	0.6	1.7	2.0
Agriculture share of GHG emissions (%)	11.4	13.1	8.7	10.1
Share of irrigated land in AA (%)	2.8	3.3	-	-
Share of agriculture in water abstractions (%)	..	8.0	47.0	49.5
Water stress indicator	4.9	3.8	8.7	..

Note: * or closest available year.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

Until the early 1990s, Swiss agriculture was largely isolated from world markets, due to high trade barriers and strong domestic market regulations. Substantial reforms of agricultural policy were implemented in the mid-1990s and early 2000s. These were prompted by commitments made under the GATT and later the WTO. There have been no systematic policy reforms since 2013, and current schemes are expected to extend until at least 2025.

The reforms implemented between 1993 and 2003 had three main elements:

1. Reduced barriers to imports and greater transparency in border measures, gradual removal of price guarantees and other market regulations, maintenance of production quotas for milk, and introduction (in 1998) of new market regulations for sugar.
2. New direct payments less coupled to production, and voluntary ecological direct payments linked to ecological services (1993-1998).
3. Cross-compliance requirements connecting almost all direct payments to proof of ecological performance as of 1999.

Between 2004 and 2013, policy reforms were comparatively modest and focussed on deregulation of agricultural markets. Export subsidies were phased out, and milk quotas were abandoned in 2009 even though the market remained strongly regulated.

In 2013, a new Agricultural Policy framework for 2014-17 (AP 2014-17) reformed the system of payments (OECD, 2015[3]). This framework was extended since then and is still in place today. The direct payment scheme was modified under this reform to improve its efficiency and effectiveness and create links to specific agricultural practices (OECD, 2017[4]).

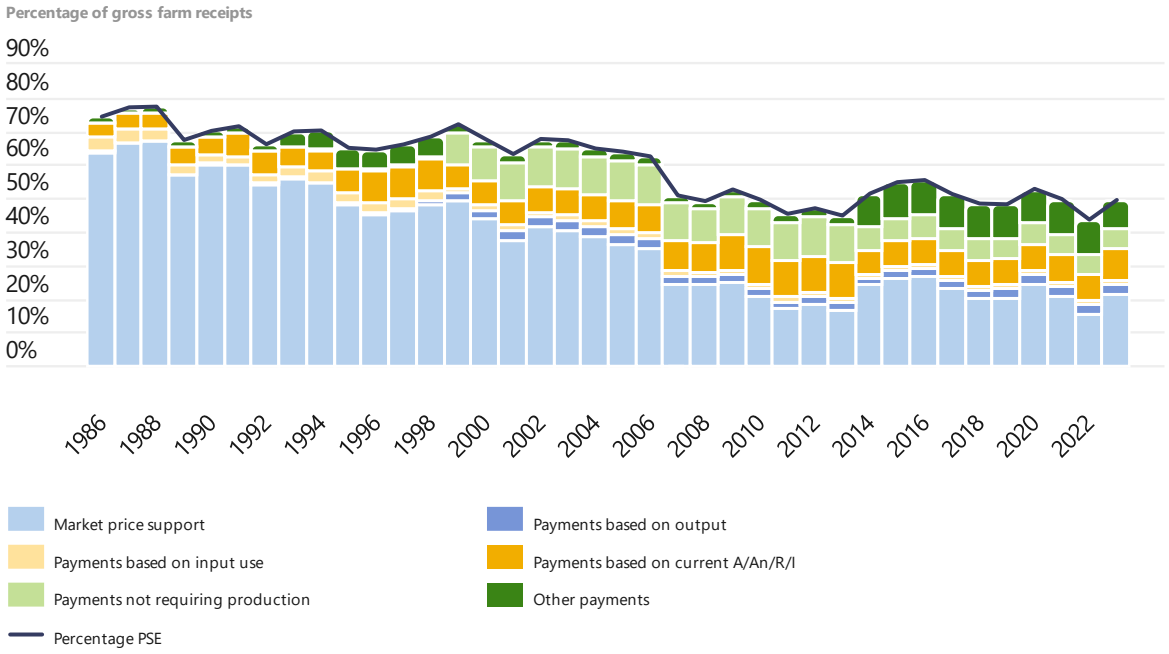
Strengthening of the environmental modalities (regulations on pesticide and nutrient surpluses, cross-compliance requirements and budgetary support to sustainable practices) has been considered in the context of the latest reform discussions for the Swiss Agricultural Policy beyond 2022 (AP22+). Although the reform process was suspended, the future orientation of the agricultural policy, published by the government in 2022, set new milestones for policy reform, and some first environmental measures started to be implemented.

Table 24.4. Switzerland: Agricultural policy trends

Period	Framework	Changes in agricultural policies
Prior to 1993	Closed market	High border protection; regulated prices and interventions in domestic agricultural markets Payments based on output and input use; commodity-specific area and headage payments
1993-1998	Reforms to open up markets New system of direct payments	Reduced import barriers; enhanced transparency Reduction of export subsidies for some agricultural and processed products Reduction of domestic market regulations except for milk (production quotas); introduction of sugar production quotas and guaranteed prices Creation of General Direct Payments, including: - Complementary Direct Payments based on area (arable and grassland) and other supplementary payments - Payments for integrated production - Payments for farming in difficult conditions Introduction of Ecological Direct Payments as voluntary schemes based on environmental services provided by farmers (biodiversity, landscape, animal welfare, etc.), and incentives for more sustainable use of resources and pollution reduction
1999-2004	Continuation of reforms to open up markets Changes in the system of direct payments	Further gradual reduction of import barriers Reform of the General Direct Payments; Complementary Direct Payments replaced by a general Area Payment not requiring production of particular crops; introduction of a general payment for ruminants Abolition of payments for integrated production Introduction of environmental cross-compliance; all direct payments conditional to a proof of ecological requirements
2005-2013	Abolition of export subsidies Removal of production quotas (dairy, sugar)	Further gradual reduction of import barriers Abolition of export subsidies for primary agricultural products (2010) Abolition of dairy quotas and related guarantee prices for milk (2009) Abolition of sugar market regulations and introduction of area payments for sugar-beet to compensate for related price reductions (2009)
2014-present	Reform of the general direct payments	Reform of the system of General Direct Payments (2014) Abolition of general area payments Reallocation of payments related to specific agricultural practices Introduction of transition payments to make the reform socially acceptable Replacement of general headage payments to ruminants with area payments to pastures with a minimum stocking density Continuation of environmental cross-compliance conditions within the new system of payments Abolition of remaining export subsidies for some processed products (1 January 2019) New payments to producers of commercial milk and grains to compensate for price reductions due to the abolition of export subsidies for processed products (2019)

Support to farmers declined from close to 80% of gross farm receipts in the late 1980s but remained high at 48% on average during 2021-23. Potentially most production- and trade-distorting support (mainly market price support) also declined from around more than 90% to some 48% of producer support between 1986-88 and 2021-23, while other payments grew.

Figure 24.7. Switzerland: Development of the PSE and its composition, 1986 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

References

Groher, T., K. Heitkämper and C. Umstätter (2020), "Nutzung digitaler Technologien in der Schweizer Landwirtschaft", *Agrarforschung Schweiz*, Vol. 11, pp. 59-67, https://doi.org/10.34776/afs11-59. [2]

OECD (2022), "The agricultural innovation system in Switzerland", in *Enhancing Innovation in Rural Regions of Switzerland*, OECD Publishing, Paris, https://doi.org/10.1787/fda0a725-en. [1]

OECD (2017), "Reforming agricultural subsidies to support biodiversity in Switzerland: Country Study", *OECD Environment Policy Papers*, No. 8, OECD Publishing, Paris, https://doi.org/10.1787/53c0e549-en. [4]

OECD (2015), *OECD Review of Agricultural Policies: Switzerland 2015*, OECD Review of Agricultural Policies, OECD Publishing, Paris, https://doi.org/10.1787/9789264168039-en. [3]

Notes

[1] EFTA currently comprises four countries: Iceland, Liechtenstein, Norway and Switzerland.

[2] In 2020, the Swiss Government found that 14 of the 63 measures in the first adaptation plan were fully completed, 28 were in advanced implementation, 19 were in the initial phase of implementation, and 2 were on hold.

[3] This target is an intermediate milestone for a long-term ambition of the whole population adopting a healthy and sustainable diet by 2050.

25. Türkiye

Main findings

Support to agriculture

Türkiye's agricultural producer support (Producer Support Estimate, PSE) is near the OECD average at about 11% of gross farm receipts in 2021-23, a decline from 40% in 2000-02. About 68% of PSE is market price support (MPS) generated by tariffs, combined with reductions of exporters' debts and equity injections to state enterprises. While the role of MPS has declined since 2000-02, it remains above the OECD average. Domestic price and exchange rate movements have been influenced by generally high domestic inflation. This makes the most recent estimates of market price support less reliable than in previous years.

Budgetary support to producers is provided through output support in the form of premium payments to producers of specific commodities. There are also some commodity-specific area payments, such as for hazelnuts. Other forms of support are crop insurance based on area as, and support to defray the cost of diesel and fertiliser.

General support to the sector (General Service Support Estimate, GSSE) accounted for 21% of total support (Total Support Estimate, TSE) in 2021-23, above the OECD average of 14%. This high share has been relatively stable over time (it was 27% in 2000-02). The largest components of the GSSE are for development and maintenance of infrastructure (mainly irrigation), and marketing and promotion (duty-loss payments and equity injections).

Total support to the sector was 1% of GDP in 2021-23. This is substantially less than the 5.4% in 2000-02 – reflecting a faster pace of overall economic growth compared to the sector – but is above the OECD average of 0.6%.

Key recent policy changes

The 2024-2028 Strategic Plan of the Ministry of Agriculture and Forestry was published in January 2024. It has the following strategic objectives:

- Ensuring sufficient, accessible and sustainable agricultural product supply
- Ensuring food and feed safety from production to consumption
- Improving the quality of life, Welfare Level and Economic Diversity in the Rural Areas
- Creating a planned, resilient and open to development agricultural sector
- Ensuring sustainable management of soil and water resources and biological diversity
- Increasing adaptation capacity and resilience to climate change
- Developing institutional capacity.

A transition to a production planning model in the agricultural sector began in 2023. The aim of this model is to ensure food security and safety, increase productivity, preserve the environment, and establish sustainability. Once the transition is complete, the Ministry of Agriculture and Forestry will determine the

minimum and maximum production quantities on a regional or enterprise basis for which products or product groups will be produced.

Support for economic investments targeting agriculture within the scope of rural development support and rural economic infrastructure investments was increased in 2023.

The “Implementation Principles of the Rural Development Investment Support Program for the 2023-2024 Application Period” were amended to include small family businesses engaged in animal production.

Assessment and recommendations

- Innovation for sustainable productivity growth (SPG) in Türkiye strongly focuses on improving irrigation and developing and using crops appropriate to local conditions. The Basin-Based Support Model is a powerful tool in this regard. However, this model should be applied in a way that does not discourage farmers from trying new crops or methods. That is, it should focus on providing an enabling environment for farmers rather than being prescriptive.
- Türkiye has made good progress in recent years in reducing the importance of MPS in the policy mix. This progress could be continued in the future by reviewing the role of state-owned enterprises with a view to reducing their reliance on annual transfers from the government budget to support their operations.
- Water stress is higher than the OECD average and irrigation is a main tool for expansion of agricultural production. Sound water management policies, including pricing water according to scarcity, will be crucial to manage this limited resource and obtain the maximum benefit from it.
- Interest-reduced agricultural credits to farmers would be more efficient if the requirement that credit above a certain threshold be used for diesel or fertiliser were eliminated. This would give more flexibility to farmers as well as encouraging them to use fertiliser and diesel less intensively.

Development of support to agriculture

Figure 25.1. Türkiye: Development of support to agriculture

Figure 25.1A. Türkiye: Producer Support Estimate and its composition

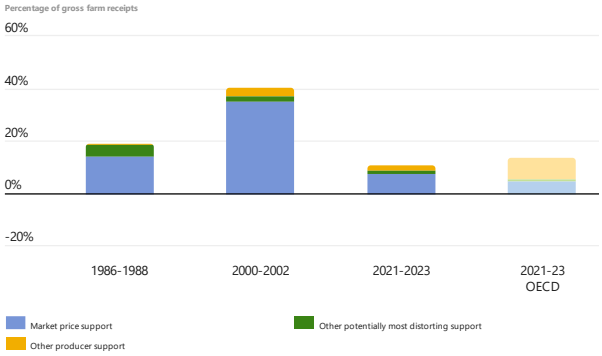


Figure 25.1B. Türkiye: Ratio of producer to border price

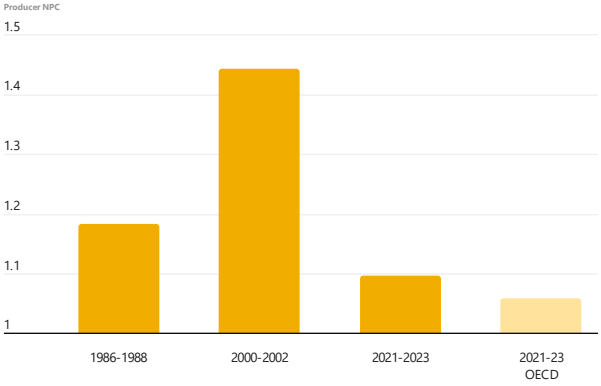


Figure 25.1C. Türkiye: General Services Support Estimate and its composition

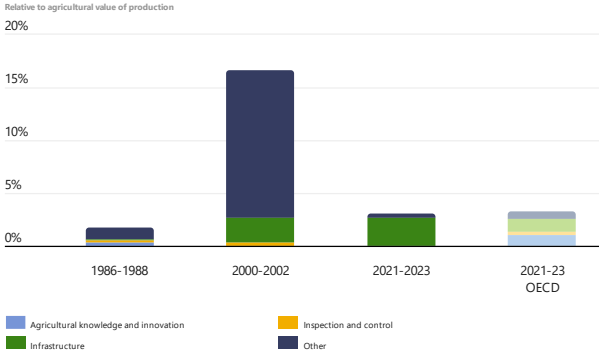
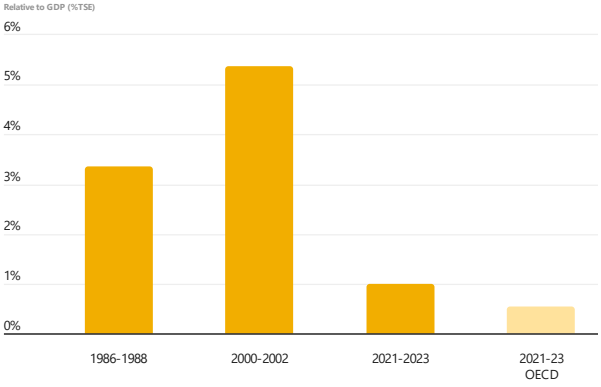
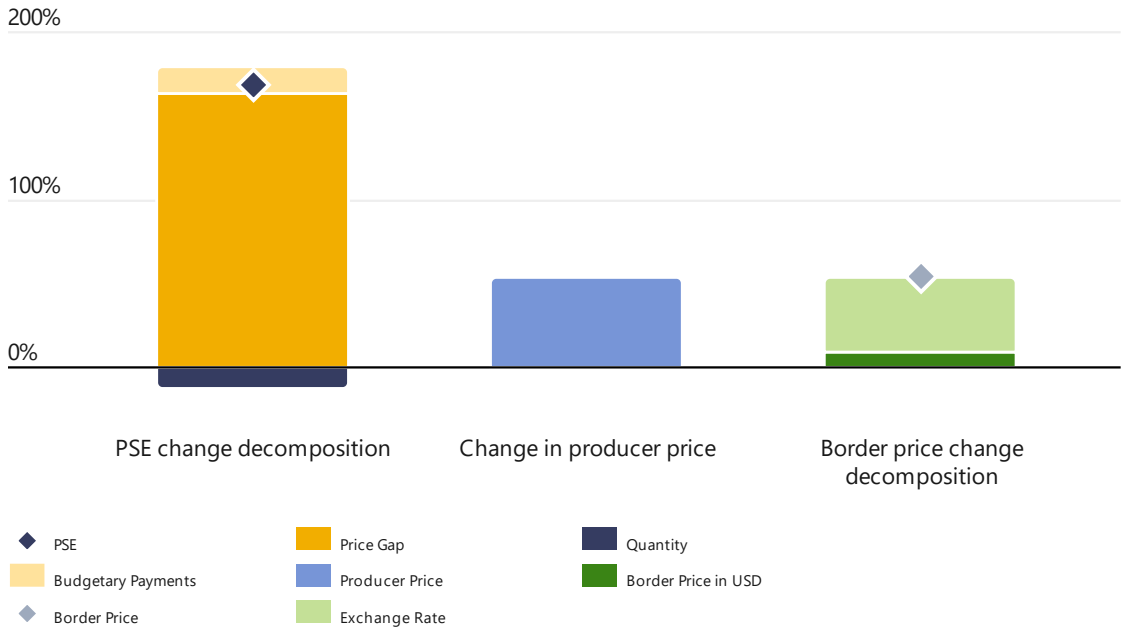


Figure 25.1D. Türkiye: Total Support Estimate



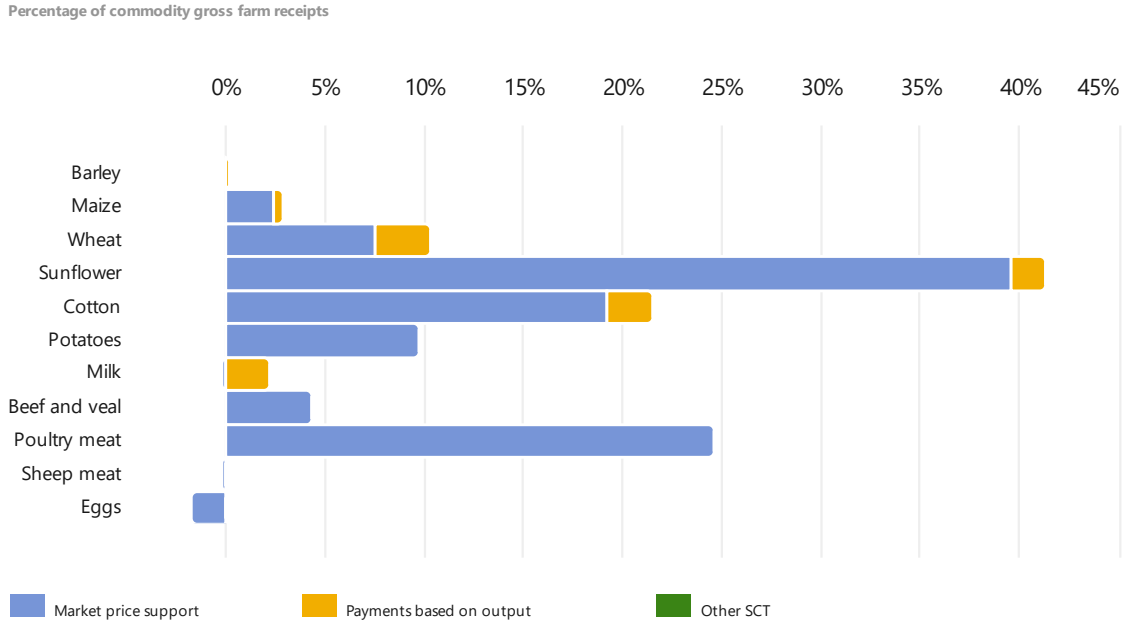
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 25.2. Türkiye: Drivers of the change in PSE, 2022 to 2023



Note: % change of nominal Producer Support Estimate expressed in national currency.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 25.3. Türkiye: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Table 25.1. Türkiye: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**18 343**	**22 169**	**65 868**	**53 410**	**68 491**	**75 703**
of which: share of MPS commodities (%)	55.00	99.02	83.65	83.74	84.54	82.67
Total value of consumption (at farm gate)	**12 037**	**22 577**	**61 977**	**50 797**	**61 801**	**73 334**
Producer Support Estimate (PSE)	**3 578**	**9 041**	**7 480**	**7 753**	**5 120**	**9 567**
Support based on commodity output	2 693	8 154	5 851	5 949	3 687	7 919
Market price support[1]	2 682	7 838	5 095	5 033	2 846	7 406
Positive market price support	2 685	7 885	5 131	5 033	2 846	7 515
Negative market price support	-2	-47	-36	0	0	-109
Payments based on output	11	316	756	916	841	512
Payments based on input use	885	426	263	327	293	168
Based on variable input use	850	302	205	266	248	100
with input constraints	0	0	0	0	0	0
Based on fixed capital formation	19	116	42	42	33	51
with input constraints	0	0	0	0	0	0
Based on on-farm services	16	8	16	19	12	18
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	0	25	1 366	1 477	1 140	1 480
Based on Receipts / Income	0	0	293	197	242	441
Based on Area planted / Animal numbers	0	25	1 073	1 280	899	1 039
With input constraints	0	0	64	75	53	66
Payments based on non-current A/An/R/I, production required	0	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	0	436	0	0	0	0
With variable payment rates	0	0	0	0	0	0
with commodity exceptions	0	0	0	0	0	0
With fixed payment rates	0	436	0	0	0	0
with commodity exceptions	0	0	0	0	0	0
Payments based on non-commodity criteria	0	0	0	0	0	0
Based on long-term resource retirement	0	0	0	0	0	0
Based on a specific non-commodity output	0	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0	0
Miscellaneous payments	0	0	0	0	0	0
Percentage PSE (%)	**18.96**	**40.36**	**10.82**	**13.81**	**7.24**	**12.29**
Producer NPC (coeff.)	**1.18**	**1.45**	**1.10**	**1.12**	**1.06**	**1.12**
Producer NAC (coeff.)	**1.23**	**1.68**	**1.12**	**1.16**	**1.08**	**1.14**
General Services Support Estimate (GSSE)	**333**	**3 714**	**2 100**	**2 110**	**2 032**	**2 158**
Agricultural knowledge and innovation system	67	29	47	47	26	69
Inspection and control	51	67	14	11	14	19
Development and maintenance of infrastructure	22	513	1 778	1 408	1 892	2 034
Marketing and promotion	95	3 094	260	644	101	36
Cost of public stockholding	0	0	0	0	0	0
Miscellaneous	99	11	0	0	0	0
Percentage GSSE (% of TSE)	**8.73**	**27.16**	**21.39**	**21.39**	**28.42**	**18.40**
Consumer Support Estimate (CSE)	**-2 583**	**-4 981**	**-5 202**	**-4 207**	**-3 158**	**-8 239**
Transfers to producers from consumers	-2 578	-4 962	-4 285	-3 879	-2 418	-6 558
Other transfers from consumers	-48	-52	-983	-328	-740	-1 882
Transfers to consumers from taxpayers	0	0	0	0	0	0
Excess feed cost	43	33	67	0	0	200
Percentage CSE (%)	**-21.48**	**-21.49**	**-8.87**	**-8.28**	**-5.11**	**-11.24**
Consumer NPC (coeff.)	**1.28**	**1.28**	**1.10**	**1.09**	**1.05**	**1.13**
Consumer NAC (coeff.)	**1.27**	**1.27**	**1.10**	**1.09**	**1.05**	**1.13**
Total Support Estimate (TSE)	**3 911**	**12 755**	**9 580**	**9 862**	**7 152**	**11 724**
Transfers from consumers	2 626	5 014	5 268	4 207	3 158	8 440
Transfers from taxpayers	1 333	7 793	5 294	5 983	4 734	5 166
Budget revenues	-48	-52	-983	-328	-740	-1 882
Percentage TSE (% of GDP)	**3.39**	**5.40**	**1.01**	**1.21**	**0.79**	**1.09**
Total Budgetary Support Estimate (TBSE)	**1 229**	**4 917**	**4 484**	**4 829**	**4 307**	**4 318**
Percentage TBSE (% of GDP)	**1.07**	**2.00**	**0.45**	**0.59**	**0.48**	**0.40**
GDP deflator (1986-88 = 100)	**100**	**139 552**	**2 867 825**	**1 397 574**	**2 739 751**	**4 466 150**
Exchange rate (national currency per USD)	**0.00**	**1.12**	**16.40**	**8.86**	**16.56**	**23.79**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for Türkiye are: wheat, maize, barley, rice, sunflower, sugar, potatoes, tomatoes, grapes, apples, cotton, tobacco, milk, beef and veal, sheep meat, poultry and eggs.

Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

Border measures, in particular tariffs on imported products, are the main form of support. Production quotas apply at the farm level for sugar beet. Budgetary support comes through price-stabilising (deficiency) payments and area-based payments linked to production characteristics. Purchases of inputs and marketing of major commodities is handled through the state enterprises and collective marketing boards (SEEs and ACSUs), which have price-setting power. Irrigation infrastructure is the main target of general support to the sector.

A large share of budgetary support is allocated according to the Basin-Based Support Model. This model identifies 21 products that are considered to be in short supply, are of strategic or regional importance, or are important in terms of human nutrition-health and animal production. Producers of these products receive directed support including for input purchases, deficiency payments or income supports depending on the commodity.

The average applied most-favoured-nation (MFN) tariff on agricultural imports in 2022 was 41.6%, above the 19.1% faced by non-agricultural products. Certain sectors face significantly higher rates, such as dairy (136.8% on average), other animal products (100.4%) and sugars (95.8%) (World Trade Organization, 2023[1]). Türkiye also has tariff rate quotas (TRQs) for the import of certain agricultural and food products, including in the context of its trade agreements. Türkiye has a Customs Union Agreement with the European Union (in force since 1995) and 24 free trade agreements (FTAs) with partners across the world. Türkiye has also imposed temporary export bans to stabilise the domestic prices of certain agro-food products such as grains and olive oil.

The Agricultural Law “Regulation on Planning of Agricultural Production” was established in 2023 to plan agricultural production, ensure food security and safety, increase productivity, protect the environment and establish sustainability. This is implemented through the Basin-Based Support Model (*Havza Bazlı Destekleme Modeli*). Agricultural areas are divided into 945 basins, each identified with a set of strategic products that receive support. These **strategic products are considered by the government to be the most ecologically and economically suitable for that basin**. Most payments to producers are organised through this model to support the production of the identified strategic products.

Deficiency payments are set to raise the price of specific commodities to encourage a certain pattern of production according to the government’s evaluation of environmental sustainability and economic suitability. Research and development (R&D) is targeted to increase the yield and quality of local varieties. Basin- and product-based fertilisation and chemical pesticide guides and plant-based water consumption guides are provided to producers to encourage efficient production.

Some area-based payments directly support specific commodities, such as hazelnuts. Other payments are more oriented towards farming practices such as using certified seeds or cultivating fodder crops. Farmers can also receive area payments for using certified saplings, organic farming, using good agricultural practices and for the rehabilitation of olive groves.

State-supported agricultural insurance (TARSİM) is implemented through a public-private partnership where private insurance companies deliver uniform policies to farmers. The state pays between 50% and 67% of the total insurance premium on behalf of farmers.

Agricultural credits are provided to farmers through Ziraat Bank and Agricultural Credit Cooperatives. Low interest or profit-share-supported business loans to provide liquidity for traditional crop production are available up to TRY 300 000 (USD 12 610) in 2024, with the condition that 70% of the amount borrowed must be used to purchase fuel oil, fertiliser, seed, seedlings, chemicals and similar agricultural inputs.

Supports are provided to seed production and use, including Certified Seed Use Support, Certified Seed Production Support, Certified Seedling Production Support, and Certified Seedling/Standard Seed Use Support. The aim is to **promote the use of certified seeds and propagation materials, encourage the use of high-yielding and climate-resistant varieties, and contribute to the sustainable development of agricultural production**.

Water management and irrigation

Investment in irrigation infrastructure is a key public service to the sector. Investments target adoption of advanced technology and modern irrigation systems. Within the framework of the Rural Development Investments Support Program, support in the form of grants for up to 50% of the investments is available for the installation of drip or sprinkler irrigation systems. Since 2003, the use of closed system irrigation projects has been accelerated to reduce loss and leakage. By the end of 2023, 35% of the irrigated area used piped irrigation networks, compared to 6% in 2003.

Grants and credit support have aided approximately 330 000 producers, and pressurised irrigation systems were installed on a total area of 1.12 million ha by the end of 2021, out of a total irrigated area of over 5 million ha. Solar-powered irrigation systems are also supported, helping to ensure the energy consumption used in agricultural irrigation from renewable energy sources. Support is also provided for Smart Irrigation Systems that irrigate in the most effective way and to obtain maximum efficiency from water.

Within the scope of Water Efficiency Campaign, a Water Efficiency Strategy Document and Action Plan in the Framework of Adaptation to a Changing Climate was published. The document aims to **increase irrigation efficiency to 60% by 2030 and 65% by 2050**. Based on these targets, strategies and actions have been identified for the dissemination of practices that increase agricultural irrigation efficiency.

Climate change mitigation

Türkiye updated its Nationally Determined Contribution (NDC) to the UNFCCC in 2023. The NDC sets out a commitment to reduce its greenhouse gas (GHG) emissions by 41% through 2030 (695 $MtCO_2eq$ in year 2030) compared to the Business as Usual (BAU) scenario given in Türkiye's first NDC (also INDC) considering 2012 as the base year (reference year).

Policies referenced in the NDC include reducing methane emission through regulating animal feed rations, rehabilitation of grazing lands, land consolidation in agricultural areas, supporting the minimum tillage methods, environmental agricultural land protection programme, chemical fertiliser management, animal manure management, reducing food loss and waste, adopting innovative technology and practices, organic agriculture, and good agricultural practices.

Innovation for sustainable productivity growth

Strategic planning

Türkiye adopted the Green Deal Action Plan in 2021 with targets and actions to increase the sustainability of agriculture. The Action Plan's "Sustainable Agriculture" and "Tackling Climate Change" headings include actions such as reductions in the use of pesticides, anti-microbials, and chemical fertilisers; developing organic production; increasing renewable energy use in agriculture; reducing food loss; and sustainable water use and reuse of wastewater.

The Enhancement of Agroecological Management Systems Through Promoting Ecosystem-Oriented Food Production project is being carried out in Bolu province. This project will help shape an eventual National Agroecological Management Strategy after the project is completed in 2025.

In the Strategic Plan of the Ministry of Agriculture and Forestry (2024-2028), under the aim of Increasing Climate Change Adaptation Capacity and Resilience, the objectives are:

- Increasing the capacity to adapt to climate change.
- Increasing the greenhouse gas emission reduction capacity and expanding the use of renewable energy.
- Increasing the capacity to combat agricultural drought.
- Controlling the negative effects of floods.

In addition, the National Climate Change Action Plan (2012-2023) and the Research Master Plan (2021-2025) of the General Directorate of Agricultural Research and Policies (TAGEM) specifically support research and innovation for net zero carbon targets.

The 2023-27 Strategy and Action Plan for Combating Agricultural Drought (*Türkiye tarimsal kuraklikla mücadele stratejisi ve eylem plani*) is designed to minimise the effects of drought by increasing public awareness, involving all stakeholders in the process, planning sustainable agricultural water use, taking necessary measures during periods when there is no drought, and implementing an effective response during crisis periods. Taking a holistic approach in economic, social, and environmental terms, priority will go to drought-combatting activities that complement those for other disasters affecting the agricultural sector.

Programme implementation

The Basin-Based Support Model, is the main policy instrument to deliver sustainable productivity growth. As described above in the *Main policy instruments* section, this programme **plans and supports the production of appropriate agricultural products based on basin characteristics**. Investments in irrigation infrastructure are also an important vehicle to increase water use efficiency, along with technical and planning support for irrigators.

A Residue Action Plan is being implemented in 13 provinces for the conscious and controlled use of pesticides in peppers, citrus fruits, leafy vegetables, grapes, pomegranate and quince with high residue risk. This measure is part of the Green Deal Action Plan. In addition, phytosanitary activities for the same purpose are carried out within the scope of the European Union's pre-accession assistance instrument for 2021-27 (IPA III). Also in the scope of the green deal action plan, eleven specialised greenhouse projects have been established. These are constructed on land otherwise unsuitable for agriculture and make use of geothermal energy.

Support payments are made to producers who engage in biological or biotechnical control to reduce the use of chemical pesticides and apply alternative control techniques in crop production. These payments **support the use of biological or biotechnical control products** against main pests in 16 strategically important plants. In addition, information campaigns are carried out to familiarise producers with these products and methods. These payments are available to producers of pepper, citrus and edible vegetables, vineyard, pomegranate and quince in 2024.

Organic agriculture and sustainable farming practices are promoted through the Dissemination and Control of Organic Agriculture Project, the Dissemination and Control of Good Agricultural Practices Project, and the Gökçeada-Bozcaada Agricultural Development and Settlement Project, managed by the Ministry of Agriculture and Forestry. Organic agriculture and good agricultural practices are also supported by area payments.

Within the framework of Digital Transformation in Agriculture, the Digital Water Management (DISU) Project was launched in seven regions to help farmers make production plans and ensuring their traceability, taking into account water constraints as part of basin-based planning. The project is carried out by TAGEM and monitors plant development and determines plant watering time using remote sensing.

Research and innovation

The Agricultural Research Master Plan sets out priorities for planning of R&D to support sustainable productivity growth that are updated every five years. The approval and implementation process of research projects is carried out in accordance with the principles contained in the "Agricultural Research Projects Implementation Instructions". The Research Management Committee (AYK) approves successful research projects. The decisions of the AYK are taken as basis for the acceptance of new projects and changes to ongoing projects. Project selection criteria for coping with climate change in the field of soil and water resources take into account both climate adaptation-mitigation and agricultural drought mitigation strategies.

Approved research projects include agronomy studies to develop new varieties that are tolerant to biotic and abiotic stress conditions that affect field and horticulture crops as a result of changing climatic conditions. The drought test centre in Konya and the cold test centre in Erzurum test the water use capacity and efficiency and stress tolerance levels of plants in all field and horticulture crops grown in Türkiye. Research institutes implement breeding programmes to develop plant varieties resistant to stress conditions and research activities on cultivation techniques.

Research on greenhouse gas emissions from animal production and fertiliser management is also undertaken as part of the General Directorate of Agricultural Research and Policies (GDARP) to determine the greenhouse gas emissions from enteric and fertiliser-based animal production systems. Studies are ongoing for cattle, sheep, goat and poultry production in order to determine the Tier 2 model of emission factors (EF) recommended by the IPCC (2019) that reflect national conditions.[1] Additionally, to provide information and data for Land Use, Land Use Change and Forestry Sector (LULUCF), a pilot research study started in 2022 focusing on determining and modelling soil organic carbon under different land use categories.

Research projects are carried out in line with the principles of integrated pest management. Priority is given to control methods such as bio-technical control studies, biological control studies, toxicology and resistance studies, prevention of excessive pesticide practices, use of resistant varieties (using for example CRISPR/Cas9), mechanical and physical control and cultural measures that can be alternatives to chemical control, and R&D studies are carried out for new control methods using digital technologies such as artificial intelligence applications, prediction warning models. In this context, the Research Center for Plant Protection Products Side Effects was inaugurated within Adana Biological Control Research Institute, the Soil-Borne Pathogens R&D Center was established within Ankara Plant Protection Central Research Institute, and the Biotechnical Control Research Center was established within Bornova Agricultural Control Research Institute.

Recent policy developments

Domestic policy developments in 2023-24

The 2024-2028 Strategic Plan of the Ministry of Agriculture and Forestry was published in January 2024. The plan has the following strategic objectives:

- Ensuring sufficient, accessible and sustainable agricultural product supply
- Ensuring food and feed safety from production to consumption
- Improving the quality of life, welfare level and economic diversity in the rural areas
- Creating a planned, resilient and open to development agricultural sector
- Ensuring sustainable management of soil and water resources and biological diversity
- Increasing adaptation capacity and resilience to climate change

- Developing institutional capacity.

In 2023, a legal regulation was implemented in Türkiye, transitioning to a production planning model in the agricultural sector. The aim of this model is to ensure food security and safety, increase productivity, preserve the environment, and establish sustainability. The Ministry of Agriculture and Forestry plans to determine, taking into account the supply and demand quantities and adequacy levels, the minimum and maximum production quantities on a regional or enterprise basis for which products or product groups will be produced. Additionally, it is planned that permission must be obtained from the Ministry before commencing the production of products or product groups designated by the Ministry.

The maximum levels of support were increased in 2023 per project for economic investments targeting agriculture within the scope of rural development support and rural economic infrastructure investments. For support for "Economic Investments in Agriculture", the upper limits per eligible project were doubled to TRY 14 million (USD 588 606) for new applications. The amounts have been increased from TRY 5 million to TRY 12 million (USD 504 519) for applications that complete existing projects and from TRY 4 million to TRY 10 million (USD 420 433) for applications related to capacity, technology renewal or modernisation. The upper limit of support for rural economic infrastructure investments has been increased to TRY 3 million (USD 126 129).

In addition, the Implementation Principles of the Rural Development Investment Support Program for the 2023-2024 Application Period were amended to **include small family businesses engaged in animal production**. Holdings with at least 5 cattle heads or 25 sheep or goats will be eligible for grants covering 50% of the purchase of feed preparation machines, manure scrapers, milking machines, milk cooling tanks, animal scratch brushes, drinkers, air conditioning and ventilation systems, and electricity generation systems of up to 5 kW for transhumance and nomads.

The Financial Framework Partnership Agreement with the European Union, which constitutes the legal basis for support within the scope of the third period of the instrument for pre-accession assistance for 2021-27 (IPA III), entered into force in December 2022. One of its components is the instrument for pre-accession assistance for rural development (IPARD). The Sectoral Agreement between The Government of the Republic of Türkiye and the European Commission setting out Provisions for the Management and Implementation of Union Financial Assistance to Türkiye under the Rural Development Programme of the Instrument for Pre-Accession Assistance (IPARD III) entered into force in April 2023. The implementation of the IPARD III period will begin in 2024.

Trade policy developments in 2023-24

Reductions in import tariffs enacted during the COVID-19 pandemic have been revoked, returning tariffs to previous levels. Consequently, as of 1 May 2023, customs duties for wheat, corn, barley, rye, sorghum and oats were increased to 130%, and as of 1 July 2023 to 19.3% for chickpeas, lentils and dry beans. As of 1 June 2023 customs duties for crude sunflower seed oil and sunflower seeds were increased to 36% and 27% respectively.

Türkiye announced a three-month export ban on olive oil in bulk and in barrels due to the shortage of olive oil production in Mediterranean countries and subsequent negative effects on domestic prices. Türkiye also announced new regulations on the pulse sector, which restricts lentil and chickpea exports. These restrictions are similar to those in past years.[2]

Policy context

Key economic and agricultural statistics

Türkiye has the 11th largest economy in the world as measured by GDP in PPP. Per capita GDP has more than tripled since 2000 and is above average for the countries included in this report. Türkiye has a large agricultural sector that employed 16% of the country's working population and accounted for 6.5% of GDP in 2022. Türkiye is a net exporter of agro-food products, which accounted for 11.4% of all exports (Table 25.2).

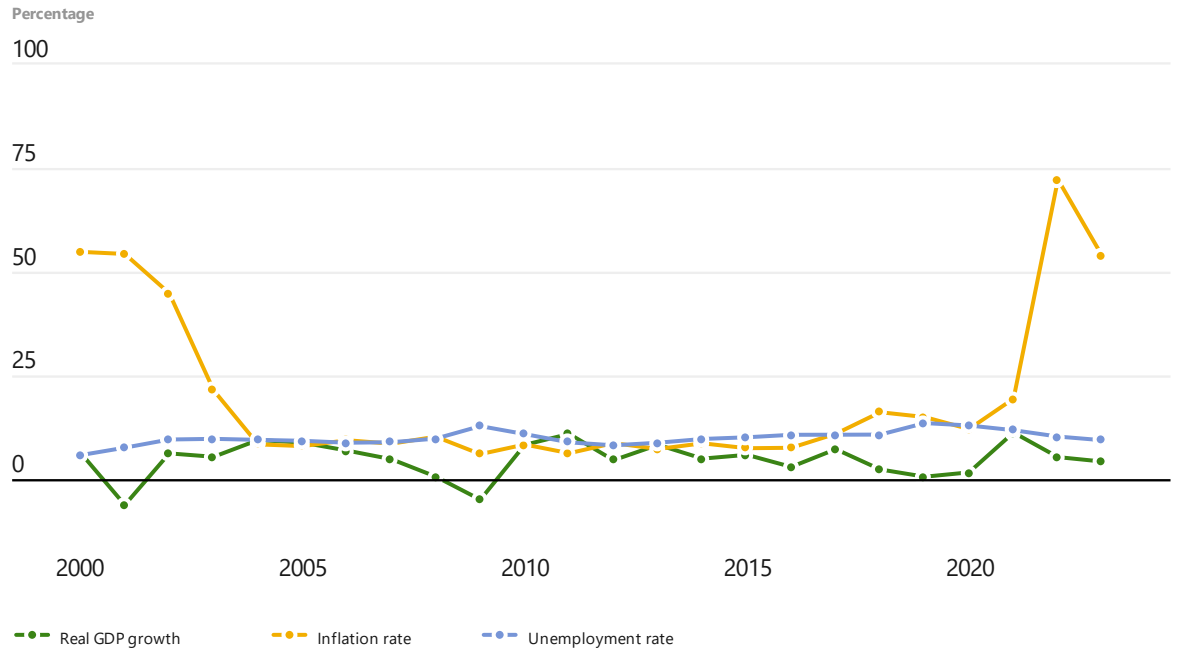
Table 25.2. Türkiye: Contextual indicators

	Türkiye		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	609	3 181	1.5%	2.3%
Population (million)	64	85	1.5%	1.6%
Land area (thousand km²)	770	770	0.9%	0.9%
Agricultural area (AA) (thousand ha)	40 479	38 089	1.4%	1.3%
			All countries[1]	
Population density (inhabitants/km²)	83	111	52	64
GDP per capita (USD in PPPs)	9 477	37 300	9 363	25 965
Trade as % of GDP	14.9	34.1	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	10.0	6.5	2.9	3.8
Agriculture share in employment (%)	36.0	15.7	-	-
Agro-food exports (% of total exports)	13.1	11.4	6.4	8.0
Agro-food imports (% of total imports)	5.9	7.3	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	72	56	-	-
Livestock in total agricultural production (%)	28	44	-	-
Share of arable land in AA (%)	59	52	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

Real GDP growth is projected to slow from 4.5% in 2023 to 3.4% in 2024 and 3.2% in 2025. Tighter financial conditions and the adverse impact of inflation on purchasing power will subdue household consumption. Exports will gradually strengthen reflecting an improved external environment (OECD, 2024[2]). Inflation peaked in 2022 but remains elevated and unemployment shows moderate but steady improvement (Figure 25.4).

Figure 25.4. Türkiye: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

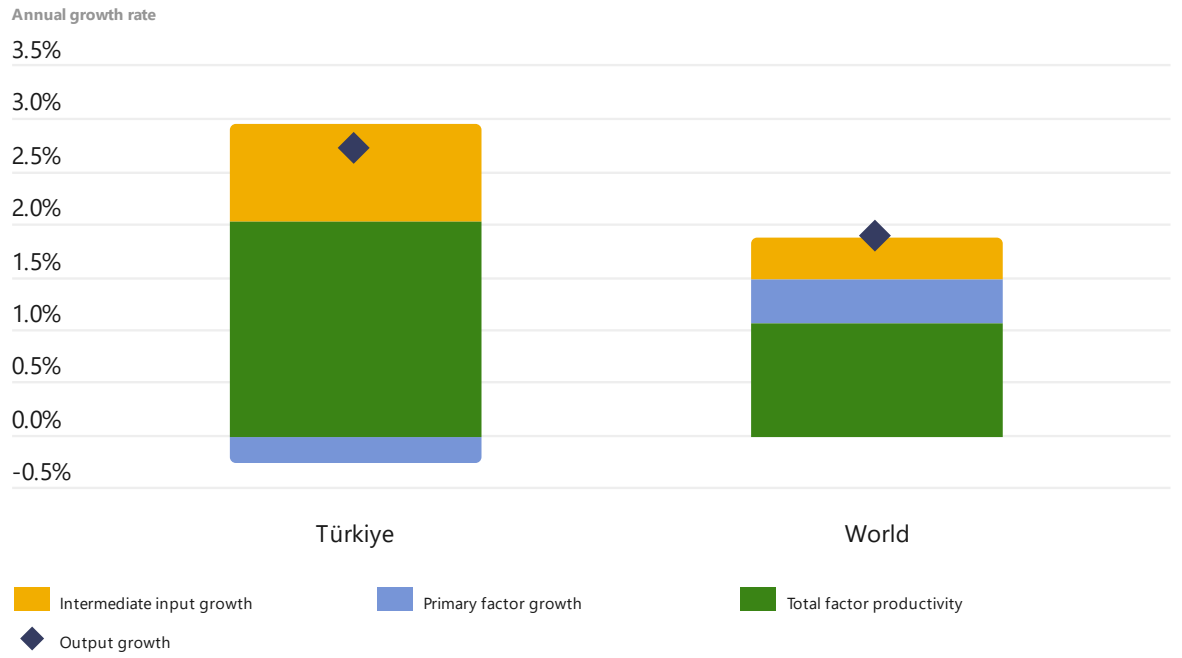
Türkiye is a significant agricultural exporter of nuts, dried fruits, and some fresh vegetables; main export destinations include the European Union, Iraq, the Russian Federation and the United States. Türkiye is a major producer of wheat, sugar beets, milk, poultry, cotton, tomatoes and other fruits and vegetables, and is the top producer in the world for apricots and hazelnuts as well as the largest global exporter of quinces and raisins. Agricultural trade has been steadily increasing and Türkiye is a net exporter. Most imports are products destined for further processing, while most exports are products for consumption (Figure 25.5).

Figure 25.5. Türkiye: Agro-food trade

Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Agricultural growth has been predominantly based on total factor productivity (TFP) growth and increased use of inputs (Figure 25.6). Improved productivity may be connected to increased irrigated area, opening more land to intensive production.

Figure 25.6. Türkiye: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Agriculture uses about 85% of the freshwater abstracted by all sectors. Water stress is increasing and above the OECD average (Table 25.3). Average precipitation is expected to decline because of climate change, increasing stress on the hydrological system. Nitrogen balances have been increasing, and the phosphorus balance is well above the OECD average due to intensive livestock production. Agriculture represents 4.3% of energy use, below its share of GDP (6.5%), but it accounts for a relatively high share of national GHG emissions (12.8%).

Table 25.3. Türkiye: Productivity and environmental indicators

	Türkiye		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	0.9%	2.0%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	27.8	25.1	32.1	28.2
Phosphorus balance, kg/ha	8.0	7.3	3.3	2.3
Agriculture share of total energy use (%)	5.0	4.3	1.7	2.0
Agriculture share of GHG emissions (%)	14.2	12.8	8.7	10.1
Share of irrigated land in AA (%)	8.0	12.1	-	-
Share of agriculture in water abstractions (%)	75.4	85.1	47.0	49.5
Water stress indicator	24.2	35.2	8.7	..

Note: * or closest available year.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

Before 1980, an import substitution policy was in place in Türkiye and agriculture was tightly controlled to meet policy objectives, which included maintaining stable grain prices, increasing yields and production and developing exports. Some agricultural products were taxed while others received subsidies, but the sector was a net payer to the government budget overall.

From the 1980s until 2000, the sector was a net beneficiary of support, directed towards import-competing farm products. The main agricultural policy instruments were price support for crop products and input subsidies. Programmes provided low-cost credit, agricultural chemicals, seeds, irrigation, and fertiliser. Livestock production was supported mainly through border measures.

State enterprises managed intervention buying, in the form of State Economic Enterprises (SEEs) as exclusive purchasers of grains, pulses, sugar, tobacco and tea; and Agricultural Sales Cooperative Unions (ASCUs) responsible for horticultural crops, cotton, oilseeds, nuts, and olive oil. Support prices were announced after planting, and farmers received payment a year or more after harvest and delivery. These bodies also maintained stocks, executed exports, issued export licenses and distributed input subsidies.

After 2000, the country embarked on a process of structural reform as a condition for receiving macroeconomic stabilisation assistance from the International Monetary Fund (IMF) and the World Bank. These reforms were carried out between 2001 and 2008 through the Agricultural Reform Implementation Project (ARIP). ARIP was intended to improve efficiency in the agri-food sector by removing market distortions, and to contribute to fiscal consolidation. Under ARIP, Turkish agricultural policy was oriented towards closer alignment with the European Union's Common Agricultural Policy.

Reforms after 2001 reduced the State's role in setting prices, marketing, and trade of agri-food products. SEEs and producer co-operatives were made independent to varying degrees and at different speeds and became more exposed to market conditions. Structural adjustment in agriculture was promoted through aid to convert land to alternative production, or land consolidation, and with transition support and aid for rural development. This period also saw a shift away from output and input subsidies towards direct income support payments, although high border protection for agri-food products remained in place.

The first national Rural Development Strategy for 2007-2013 was adopted in 2006 as the basis of the EU Instrument for Pre-Accession Assistance Rural Development (IPARD-I). The IPARD II Program, covering the years 2014-20, started with the entry into force of the Financing Agreement on 8 May 2017. The latest National Rural Development Strategy for 2021-23, adopted in 2022, also covers the IPARD-III (2021-27) programming period.

Since 2010, production-linked payments were re-established for many products. Current agricultural policies also include import tariffs, fixed purchasing prices, deficiency payments (income support payments), insurance support, area-based payments and interest concessions (reductions). In addition, there is an emphasis on infrastructure, particularly for irrigation, also connected to rural development objectives.

Until the end of 2022, export subsidies applied to 14 commodity groups, out of the 19 groups eligible under Türkiye's WTO commitments. These included processed fruit and vegetables, poultry meat and eggs. Export subsidies were granted in the form of reductions of the exporters' debts to public corporations (for example, for taxes, and telecommunications or energy costs). Under the Nairobi Ministerial Decision on Export Competition, these export subsidies were phased out at the end of 2022.

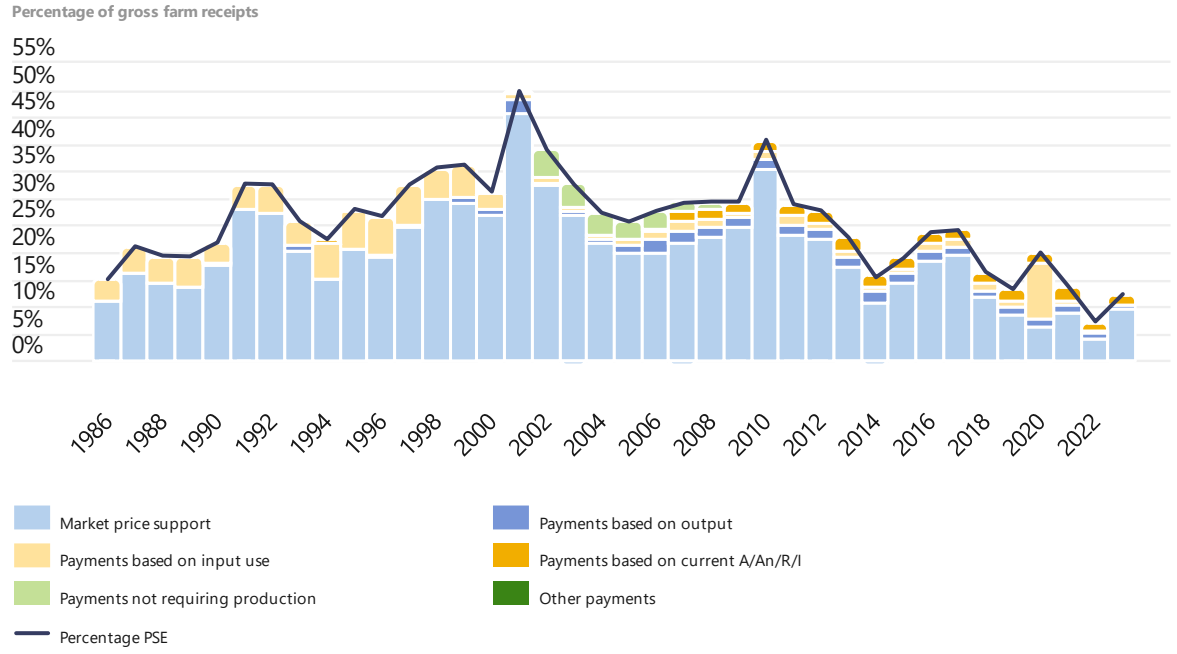
Table 25.4. Türkiye: Agricultural policy trends

Period	Broader framework	Changes in agricultural policies
Prior to 1980s	Closed economy (import substitution regime)	High tariffs for border protection Agricultural price controls Input subsidies Import controls by the State Economic Enterprises (SEE) which controlled agricultural marketing and production Agricultural Sales Co-operatives Unions (ASCU) and agricultural member cooperatives (ASC) Agricultural Credit Cooperatives State-owned Agricultural Bank
1980-2010	Gradual reform to liberalise trade but with agricultural protection	Agricultural Reform Implementation Project (ARIP) as a precondition of the World Bank and IMF programmes Privatisation of some SEEs and restructuring of ASCUs Price-fixing by government discontinued for some products but remains for others Gradual reduction of tariffs for some agricultural inputs and outputs Progressively reduced role for ASCUs and ASC Price controls continued Product and input subsidies phased out Introduction of Direct Income Support Compensatory payments to cover the cost of switching from crops in excess supply (e.g. hazelnuts and tobacco) to alternative activities (net imported products) Introduction of agri-environmental policies and cadastral works FTAs signed
2010-present	Open market economy but with some agricultural protection	Agricultural tariffs continue to be used Export subsidies (up to the end of 2022) Deficiency payments differentiated according to 945 agricultural basins throughout the country Infrastructure investments increased

The PSE has been declining steadily as a percentage of gross farm receipts since the late 1990s, and now is at historic lows. Exchange rate movements and domestic inflation have affected nominal rates of support, but the policy situation is stable when expressed as a share of gross farm receipts (Figure 25.7).

Budgetary payments have grown in importance, starting with the move towards decoupled payments in the early 2000s, and remained significant through successive reforms that changed their basis. Budgetary support jumped in 2020 due to exceptional spending related to COVID-19, mainly for concessional loans and interest concessions, but levels have since returned to the historical trend.

Figure 25.7. Türkiye: Development of the PSE and its composition, 1986 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

References

OECD (2024), *OECD Economic Outlook, Volume 2024 Issue 1: Preliminary version*, OECD Publishing, Paris, https://doi.org/10.1787/69a0c310-en. [2]

World Trade Organization (2023), *World Tariff Profiles 2023: Türkiye*, https://www.wto.org/english/res_e/statis_e/daily_update_e/tariff_profiles/TR_E.pdf. [1]

Notes

[1] A tier represents a level of methodological complexity. Tier 1 is the basic method, Tier 2 intermediate and Tier 3 the most demanding in terms of complexity and data requirements. Tiers 2 and 3 are sometimes referred to as higher tier methods and are generally considered to be more accurate on condition that adequate data are available to develop, evaluate and apply a higher tier method.

[2] See https://fas.usda.gov/data/turkey-turkey-re-introduces-olive-oil-and-pulse-export-restrictions.

26. Ukraine

Main findings

Support to agriculture

The agricultural sector continues to be affected by Russia's war of aggression against Ukraine, with a relatively low total value of production in 2023 compared to the pre-war level in 2021. Throughout the past three decades, support to the sector has been low or negative, mostly driven by market price support (MPS) which has been negative for some exported commodities but positive for several imported ones. Despite a slight increase in MPS in 2023, the average level of producer support for 2021-23 remained negative at -0.03% of gross farm receipts.

For the past two decades, Ukraine maintained negative MPS for oats, sunflower and milk, with average producer prices set below international reference levels. In contrast, sugar and pig meat benefited from tariff protection and a positive level of MPS. In 2023, producers of sunflower oil received positive MPS for the first time. MPS and payments for the unconstrained use of variable inputs, which are Ukraine's most production- and trade-distorting measures, account for 87.4% of producer transfers. Other budgetary support mainly comes in the form of agricultural tax benefits, while many traditional support programmes have been suspended under martial law.

Support for general services (General Service Support Estimate, GSSE) has historically been below the average of the countries covered in this report, and further shrank to 0.7% of the value of agricultural production in 2021-23. Most of this support goes to inspection and control, which has increased slightly in the past two decades. The share of GSSE allocated to agricultural knowledge and innovation systems has declined, and spending on infrastructure has fallen to nearly zero for the past 10 years. Overall, total support to the sector as a percentage of Gross Domestic Product (GDP) declined from 0.4% in 2000-02 to 0.2% in 2021-23, and the interventions still in place are also being affected by the war.

Key recent policy changes

A large portion of the agricultural land base cannot be used for production due to contamination by chemicals and mines. In 2023, Ukraine introduced a plan to demine agricultural land, specifying priority areas for action on 470 000 ha spanning nine regions. To date, more than 300 000 ha of agricultural land have been demined and returned to economic use. The law currently exempts farmers from paying tax on land that is contaminated by, or may be contaminated by, explosive objects.

Ukraine has been in the process of gradually undertaking land reform. In 2023, the next step in the planned opening of land markets was undertaken, allowing domestic legal entities, such as companies, banks and territorial communities, to purchase up to 10 000 ha. Prior to the change, only individual citizens were eligible to purchase agricultural land plots. Additional laws were introduced to simplify land transactions and to provide for changes in state-owned land and the possibility of converting state-owned enterprises into limited liability companies.

Actions to implement the Ukraine-EU Association Agreement continue, with the goal of translating European Union directives into national legislation. The past year saw the introduction of new laws for food safety and quality, animal health and welfare, and the certification of seeds and planting materials.

Assessment and recommendations

- Rebuilding Ukraine's agricultural sector is vital for supporting the country's economic recovery and for sustaining trade. Given that Ukraine is one of the world's leading producers and exporters of agricultural commodities, both temporary and longer-term efforts should be undertaken to restore the sector. External aid has provided invaluable support, helping to overcome logistical challenges and strengthen or maintain trade flows. However, domestic spending on general services, including knowledge systems and infrastructure, remains historically low and declining. Investments in these areas should be priority areas of investment when possible, to build the foundations for future growth.
- The need to demine agricultural lands has garnered international attention and progress has been made in restoring some of these lands to economic use. A large proportion of the agricultural land base has also been chemically contaminated, potentially posing long-term risks to agricultural productivity, environmental quality and public health. Systematic assessment and monitoring of the degree of damage should be undertaken to determine the scope of the problem. The sector will need to balance short-term recovery efforts with investments to restore its ecological integrity.
- The suspension of traditional producer support programmes is likely to affect the structure and sustainability of the agricultural sector. As funding becomes available, prioritising measures that enhance sustainable productivity could support short-term recovery as well as build increased resilience to shocks in the long run. In particular, further investments to support the digital transformation in agriculture, improve soil fertility on degraded lands, and reconcile Ukraine and European Union standards for GMO crops could contribute to this objective.
- Multilateral efforts to protect international trade, including the suspension of trade barriers by key partners, have been effective in sustaining agricultural exports. Close collaboration with neighbouring countries to reduce the transportation costs associated with shipping higher volumes through neighbouring ports like Constanta in Romania will help ensure that alternative options to the main export port of Odessa are available if needed.

Development of support to agriculture

Figure 26.1. Ukraine: Development of support to agriculture

Figure 26.1A. Ukraine: Producer Support Estimate and its composition

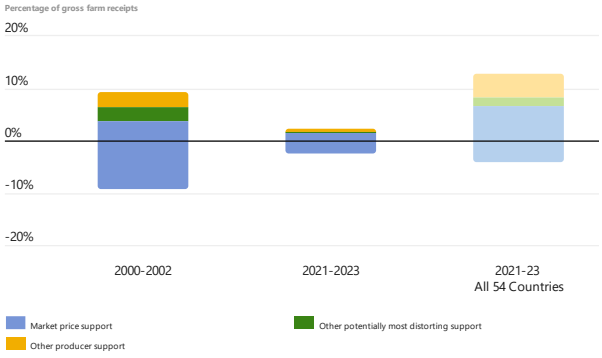


Figure 26.1B. Ukraine: Ratio of producer to border price

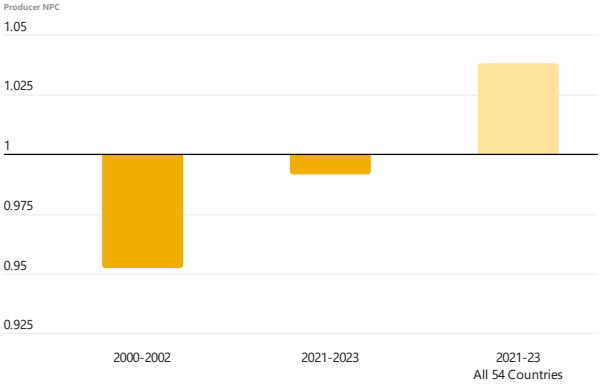


Figure 26.1C. Ukraine: General Services Support Estimate and its composition

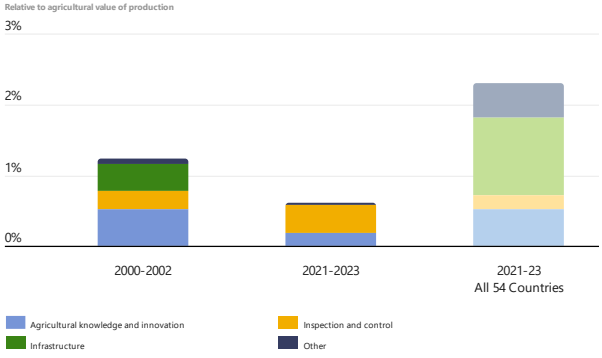
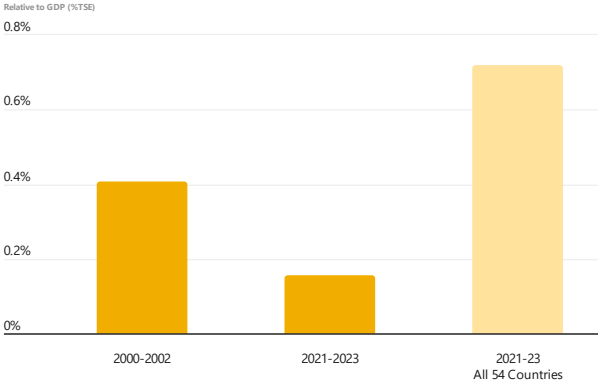
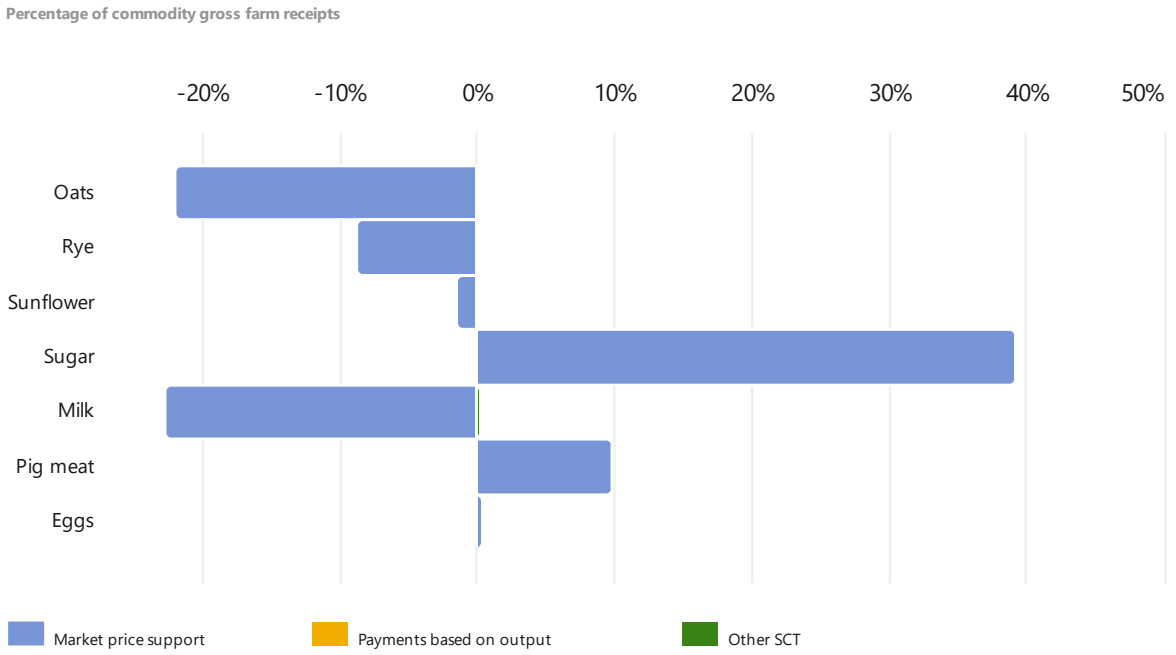


Figure 26.1D. Ukraine: Total Support Estimate



Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 26.2. Ukraine: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Table 26.1. Ukraine: Estimates of support to agriculture

Million USD

	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**9 619**	**39 008**	**50 143**	**34 546**	**32 333**
of which: share of MPS commodities (%)	86.77	79.95	85.70	77.38	76.78
Total value of consumption (at farm gate)	**8 841**	**24 573**	**30 786**	**21 590**	**21 344**
Producer Support Estimate (PSE)	**36**	**-13**	**57**	**-874**	**777**
Support based on commodity output	-432	-327	-271	-1 167	457
Market price support[1]	-548	-327	-271	-1 167	457
Positive market price support	389	587	500	429	832
Negative market price support	-937	-914	-771	-1 596	-375
Payments based on output	116	0	0	0	0
Payments based on input use	203	161	150	110	222
Based on variable input use	169	118	48	109	196
with input constraints	0	0	0	0	0
Based on fixed capital formation	31	43	102	2	26
with input constraints	0	0	0	0	0
Based on on-farm services	2	0	1	0	0
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	265	153	178	183	98
Based on Receipts / Income	265	130	158	133	98
Based on Area planted / Animal numbers	0	23	20	50	0
with input constraints	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	0	0	0	0	0
With variable payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
With fixed payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
Payments based on non-commodity criteria	0	0	0	0	0
Based on long-term resource retirement	0	0	0	0	0
Based on a specific non-commodity output	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0
Miscellaneous payments	0	0	0	0	0
Percentage PSE (%)	**0.37**	**0.05**	**0.11**	**-2.51**	**2.38**
Producer NPC (coeff.)	**0.95**	**0.99**	**0.99**	**0.97**	**1.01**
Producer NAC (coeff.)	**1.00**	**1.00**	**1.00**	**0.98**	**1.02**
General Services Support Estimate (GSSE)	**121**	**257**	**268**	**262**	**241**
Agricultural knowledge and innovation system	51	80	75	88	78
Inspection and control	26	163	177	160	153
Development and maintenance of infrastructure	36	3	5	2	2
Marketing and promotion	1	0	0	0	0
Cost of public stockholding	1	0	0	0	0
Miscellaneous	7	10	10	12	9
Percentage GSSE (% of TSE)	**76.19**	**..**	**82.40**	**..**	**23.71**
Consumer Support Estimate (CSE)	**397**	**319**	**279**	**1 089**	**-411**
Transfers to producers from consumers	490	337	291	1 104	-384
Other transfers from consumers	-38	-10	-8	-16	-6
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	-55	-8	-4	1	-20
Percentage CSE (%)	**4.47**	**1.20**	**0.91**	**5.05**	**-1.93**
Consumer NPC (coeff.)	**0.95**	**0.99**	**0.99**	**0.95**	**1.02**
Consumer NAC (coeff.)	**0.96**	**0.99**	**0.99**	**0.95**	**1.02**
Total Support Estimate (TSE)	**157**	**244**	**325**	**-612**	**1 018**
Transfers from consumers	-452	-327	-283	-1 088	391
Transfers from taxpayers	647	580	616	492	634
Budget revenues	-38	-10	-8	-16	-6
Percentage TSE (% of GDP)	**0.41**	**0.16**	**0.16**	**0.38**	**0.62**
Total Budgetary Support Estimate (TBSE)	**705**	**571**	**596**	**554**	**562**
Percentage TBSE (% of GDP)	**1.83**	**0.33**	**0.30**	**0.35**	**0.34**
GDP deflator (2000-02 = 100)	**100**	**2 294**	**1 958**	**2 631**	**..**
Exchange rate (national currency per USD)	**5.38**	**32.07**	**27.29**	**32.34**	**36.57**

.. Not available

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for Ukraine are: wheat, maize, rye, barley, oats, sunflower, sugar, potatoes, milk, beef and veal, pig meat, poultry and eggs.

Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

Agricultural producers are eligible for a Single Tax[1] set as a percentage of normative agricultural land values. The Single Tax replaces three taxes – the profit tax, the land tax for land used in agricultural production and a special water use fee that other businesses must pay. The Single Tax regime provides tax savings to agricultural producers of around UAH 4.3 billion (USD 133 million) annually.

In addition to the Single Tax regime, the general budget programme, On Financial Support of Agricultural Producers, provides measures targeted to specific activities, including partial compensation for the costs of agricultural machinery and equipment and interest rate subsidies on bank loans. For livestock producers, these also include interest rate support for loans funding livestock husbandry and breeding; partial reimbursement of costs related to the construction and reconstruction of animal farms and buildings; per-head payments for cows to agricultural enterprises and for young cattle to rural households; and partial compensation to agricultural producers purchasing breeding animals, semen and embryos. In turn, on the crop side, support is provided in the form of reimbursements for different types of on-farm investments and debt repayments.

Import tariffs are in place for most agricultural products, with applied Most Favoured Nation (MFN) tariffs for agricultural products averaging 9.1%, above the average for non-agricultural products of 3.7% (WTO, 2022[1]). While most imports face ad valorem tariffs, Ukraine maintains a global tariff rate quota for raw cane sugar. This quota was only used in 2011 and 2021, as there was an excess sugar supply on the Ukrainian market in other years. Export duties are applied to some oilseeds, live animals, and raw hides. Preferential import tariffs apply for products from EU countries for whom a trade agreement is in place.

Following the DCFTA with the European Union, which came into force in January 2016, and the subsequent suspension by Russia of the provisions of the Commonwealth of Independent States (CIS) free trade agreement with Ukraine, and the implementation of a ban by Russia on imports of agro-food products from Ukraine, Ukraine banned imports from Russia. This ban now covers 46 agricultural product groups, including meat and meat by-products, fish, milk and dairy products, tea, coffee, grain, baby foods, beer, vodka and cigarettes. Ukraine had also abolished zero import duty rates for goods from Russia. Both measures remain in place through the end of 2024.

Innovation for sustainable productivity growth

A policy priority and key area of investment for Ukraine is in the digital transformation. The Ministry of Digital Transformation, created in 2019, was founded with the goal of building a “digital state” that supports online access to all public services. In 2023, the Ministry of Digital Transformation, with the Ministry of Education and Science, issued the “Global Innovation Vision of Ukraine 2030”. The document outlines key priorities for the country, including digital transformation in the agricultural sector. The plan also laid out strategies for modernisation and innovation in processes and in cultivation practices. These include reaching a goal of 55-65% processed products in agricultural exports; implementing automated harvesting technologies; and restoring degraded and infertile agricultural lands.

Policy measures undertaken to support sustainable productivity growth largely focus on the regulation of GMO crops, supporting the capacity of entrepreneurs to undertake breeding and research on seeds and improved veterinary training. A law adopted in 2023 ensures the compatibility of Ukrainian legislation with EU law pertaining to GMOs by defining the powers of state authorities with respect to GMOs, risk assessment and registration systems, and requirements for labelling and traceability. Several resolutions passed in 2023 simplify the import of unregistered varieties of plants and seeds to ensure compliance with the OECD Seed Schemes and to enable breeding research. A resolution that defines new rules for

postgraduate education of veterinary medical professionals will enter into force one year after the termination of martial law.

State support for innovations in the agricultural sector of Ukraine has been suspended due to Russia's war of aggression against Ukraine. Before, some private companies invested in agricultural innovations, particularly in the production of cereals. Precision agriculture technologies are already in use on 45% of the land base in cereal production and have the potential for even broader diffusion (Prikhodo et al., 2022[2]).

Recent policy developments

Domestic policy developments in 2023-24

Starting in 2022 and continuing into 2024, agricultural policy and support mechanisms deviated significantly from pre-war conditions. Virtually all traditional support programmes were suspended, while new temporary measures were introduced under martial law.

Changes in agricultural support measures

The majority of subsidy and grant programmes that operated prior to the war were suspended starting in 2022 and have not been reinstated. Two new measures introduced in 2022 to support small producers in wartime conditions – a subsidy per unit of arable land for producers with up to 120 ha in cultivation and a subsidy for keeping cows for producers with 3 to 100 animals – were not extended in 2023. However, grant payments that were introduced in 2022 for the construction of greenhouses and horticultural gardens were increased to UAH 936.2 million (USD 25.6 million) in 2023 a substantial increase over the 2022 amount of UAH 53.7 million (USD 1.5 million). State support in the form of a budget subsidy to cost share the adoption of sprinkler irrigation was restarted in 2023 (after a pause in 2022), with transfers totalling UAH 8.9 million (USD 243 344).

Some measures were introduced or continued to operate to allow farmers to carry out consistent field operations during wartime. The Plan of Actions for Demining Agricultural Land, approved on 20 March 2023, defines priority tasks for carrying out demining measures on an estimated 470 000 ha of agricultural lands in nine regions (Ministry of Defence of Ukraine, 2023[3]).[2] Overall, some 2.5 million ha of arable land may have been mined in early 2023.[3] More broadly, according to the government, more than 300 000 ha of agricultural land have been demined and returned to economic use in 2023.[4] Ongoing measures to support production include the extension of chemical use permits, simplified registration of agricultural machinery and forgiveness of loans for assets destroyed as a result of military aggression.

The government continued to provide reduced interest rates on agricultural loans under the Affordable Loans 5-7-9% programme, with the total amount of funds for the programme nearly doubling to UAH 6.8 billion in 2023 (USD 185 925) from UAH 3.5 billion (USD 95 697) in 2022.[5] The state also provides relief to offset the fee on obligatory national social insurance for members or heads of family farms that are not classified as legal entities. In 2023, a total of UAH 1.9 million (USD 51 950) was transferred to these producers.

Changes to the legal framework

Some changes were made to the legal framework in 2023. Notably, a law was passed that ensures no environmental tax applied on land that is contaminated by, or potentially contaminated by, explosive objects. Progress was made on land reform with the opening of land markets to legal entities based in Ukraine, such as companies, banks and territorial communities, which can now purchase up to 10 000 ha. The powers of the State Land Cadastre were modified and a law introduced to simplify land transactions.

The law, On Amendments to Certain Legislative Acts of Ukraine on Increasing the Efficiency of Land Use by Individuals and Subjects of the State Sector of the Economy, which entered into force on 3 September 2023, provides for changes in state-owned land including the possibility to lease plot and to convert state-owned enterprises into limited liability companies.

In 2023, Ukraine set up the foundational legislation required to establish the National Institute of Veterinary Medicines and Feed Additives, which is intended to manage applications and scientific evaluations pertaining to drugs and feed additives, as well as provide expert recommendations for their state registration. Under martial law, there is currently no budget for the Institute; as a temporary solution, the State Service of Ukraine on Food Safety and Consumer Protection has the power to authorise existing scientific institutions to perform the functions of the Institute.

In terms of agri-environmental measures, the procedure for carrying out environmental impact assessments (EIA) was modified substantially with the intent of improving the assessment process. In particular, the period for conducting an EIA was shortened from 216 to 67 days, with a reduction in public hearing times from 20 to 12 days and full digitisation of the permit procedure. With regards to GHG emissions and commitments, a resolution of 7 July 2023 approves measures to implement climate policy to contribute to the Global Methane Pledge by introducing state support to partially reimburse the costs of facilities to support biomethane production from agricultural waste.

The Ministry of Economy of Ukraine, along with MAPF, continues to translate European Union directives into national legislation as part of the implementation of the Association Agreement. Actions in 2023 included laws to harmonise legislation related to the safety and quality of food products; animal health and welfare; and the simplification of certification processes for seeds and planting materials. Additional measures have been signed into law but will not enter into force until late 2024 or 2025, including phytosanitary measures and the protection of geographical indications of alcoholic beverages.

Consumer support measures

Under martial law, state bodies are required to ensure price controls for a basket of goods including wheat flour, pasta, bread, buckwheat groats, pork, beef, poultry, milk, chicken eggs, sunflower oil, granulated sugar, white cabbage, onion, beetroot, carrot, and potatoes. State regulation also established a maximum trade markup of 10%, which was extended through 2023 for wheat flour, milk, eggs, poultry carcasses, sunflower oil and rye-wheat bread.

Trade policy developments in 2023-24

Starting in 2021, Ukraine set its tariff quota on raw cane sugar at 260 000 tonnes with a 2% tariff. In 2023, the Ministry of Economy accepted applications for raw cane sugar importers for a volume of 267 800 tonnes with a 2% tariff, though a total of only 307 tonnes was imported. Ukraine also introduced special duties on the import of cut fresh roses from any country of origin through May 2024, and applies an anti-dumping duty of 23.8% on the import of potato starch from Belarus through January 2027.

Several trade agreements in response to the war have been extended. The abolition of import duties and tariff quotas in bilateral trade with the United Kingdom, which began in 2022, was extended to 2029. In 2022, Canada cancelled import duties and quantitative restrictions on Ukrainian products, a decision that has been extended until 9 June 2024.

The European Union also adopted a regulation extending the suspension of all customs duties, quotas and trade defence measures on Ukrainian exports until June 2024. However, from 2 May to 5 June 2023, the European Commission adopted exceptional and temporary preventive measures on imports of a limited number of products from Ukraine under the Autonomous Trade Measures Regulation. These measures were in response to logistical bottlenecks for four products (wheat, maize, rapeseed and sunflower seed)

in five Member States (Bulgaria, Hungary, Poland, Romania and Slovakia). On 15 September 2023, the European Union cancelled the ban on the import of certain agricultural goods from Ukraine, though the import ban was extended on the same day by Slovakia, Poland, and Hungary. In accordance with the rules of the WTO governing disputes, Ukraine filed requests for consultations with these three countries.[6]

On 1 January 2024 a resolution entered into force establishing goods for which export and import are subject to licensing and quotas for 2024. The resolution prohibits the export of salt suitable for human consumption, and lists products subject to licensing, namely wheat, rye, barley, oats, corn, soybeans, rapeseed, sunflower seeds, soybean oil, sunflower oil and rapeseed oil. Some exceptions are permitted depending on the foreign entity involved.

Policy context

Key economic and agricultural statistics

Agriculture plays a substantial role in the Ukrainian economy, in large part because Ukraine has a relatively large area of fertile arable land. The importance of agriculture in the economy has declined over time but remains a key sector representing 8.2% of the GDP, 15.1% of employment, and more than half of total exports in 2022 (Table 26.2).

Following a decline in Ukraine's GDP of 28.8% in 2022, real GDP recovered somewhat, with an estimated growth of 5.0-5.5% in 2023. Even so, Ukraine's GDP remains substantially below the level observed prior to the war. In 2023, approximately half of the state budget went to defence, with defence expenditures exceeding 30% of GDP according to the Centre for Economic Strategy of Ukraine. The country entered 2023 with record-high inflation of 26% but brought inflation under control with the help of foreign aid and a good harvest, which stabilised food prices, resulting in a drop in the Consumer Price Index for food products from 134.4 to 104.0.

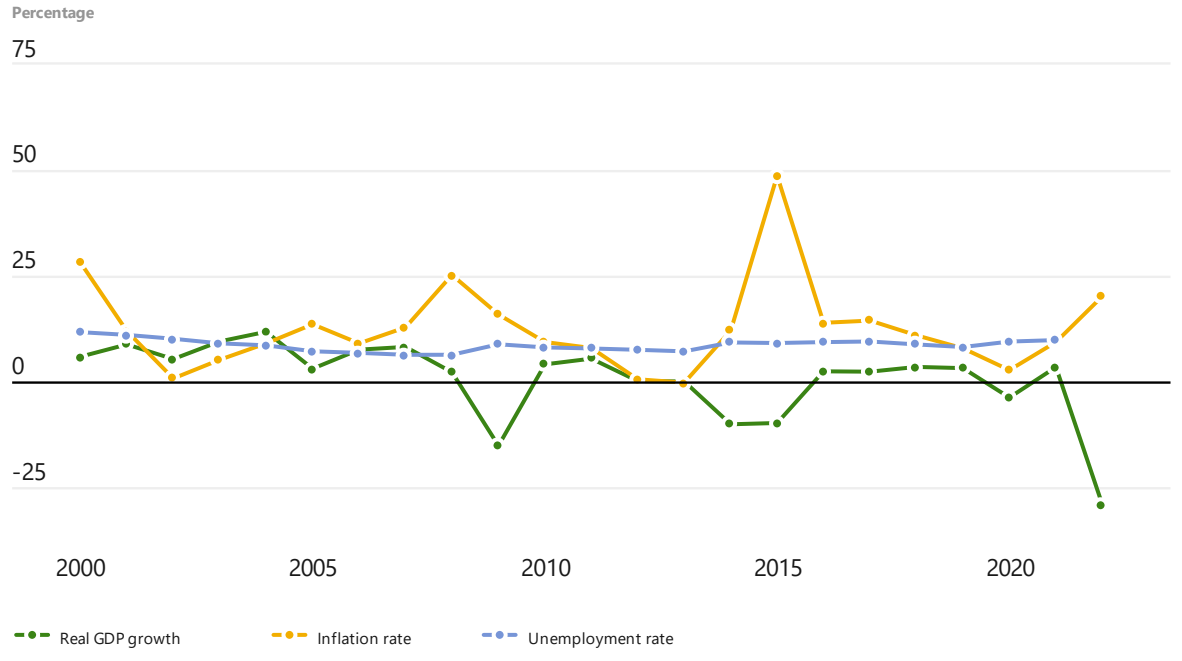
Weather in 2023 was favourable for agricultural production in Ukraine, allowing for good harvests despite the loss of a significant portion of the arable land base due to occupation or contamination. Total agricultural production in 2023 increased by 7.7% relative to 2022, with growth in crop production of 10.1% and a small loss in livestock production of 0.9% as estimated by the State Statistics Service and the Ministry of Agrarian Policy and food of Ukraine. In particular, the yield of grain crops per hectare increased by 20% in 2023 relative to 2022, resulting in an increase in harvest of 10.8%. Sunflower and sugar beet production also increased relative to 2022, by 14% and 22%, respectively. Poultry and pig production increased in 2023, but cattle numbers and beef production declined by 6% and 13%, respectively.

Table 26.2. Ukraine: Contextual indicators

	Ukraine		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	210	449	0.5%	0.3%
Population (million)	49	40	1.1%	0.8%
Land area (thousand km²)	579	579	0.7%	0.7%
Agricultural area (AA) (thousand ha)	41 406	41 311	1.4%	1.4%
			All countries[1]	
Population density (inhabitants/km²)	84	69	52	64
GDP per capita (USD in PPPs)	4 260	12 671	9 363	25 965
Trade as % of GDP	44.1	31.0	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	14.0	8.2	2.9	3.8
Agriculture share in employment (%)	22.3	15.1	-	-
Agro-food exports (% of total exports)	10.1	53.2	6.4	8.0
Agro-food imports (% of total imports)	6.1	9.6	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	59	78	-	-
Livestock in total agricultural production (%)	41	22	-	-
Share of arable land in AA (%)	79	80	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

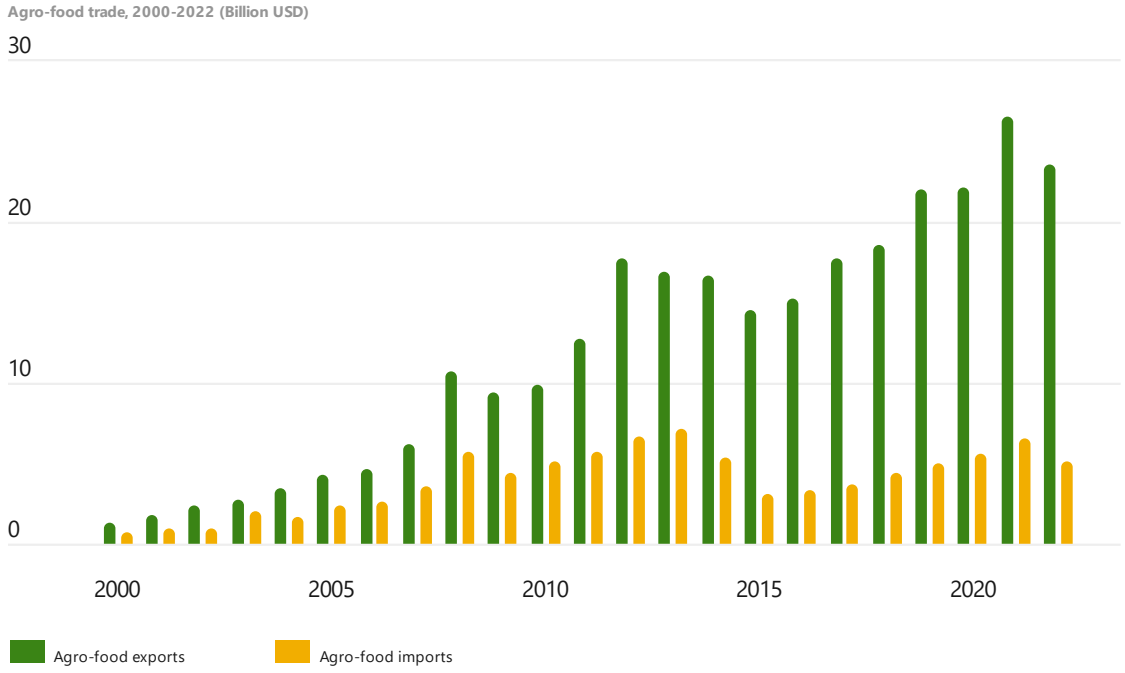
Figure 26.3. Ukraine: Main economic indicators, 2000 to 2023

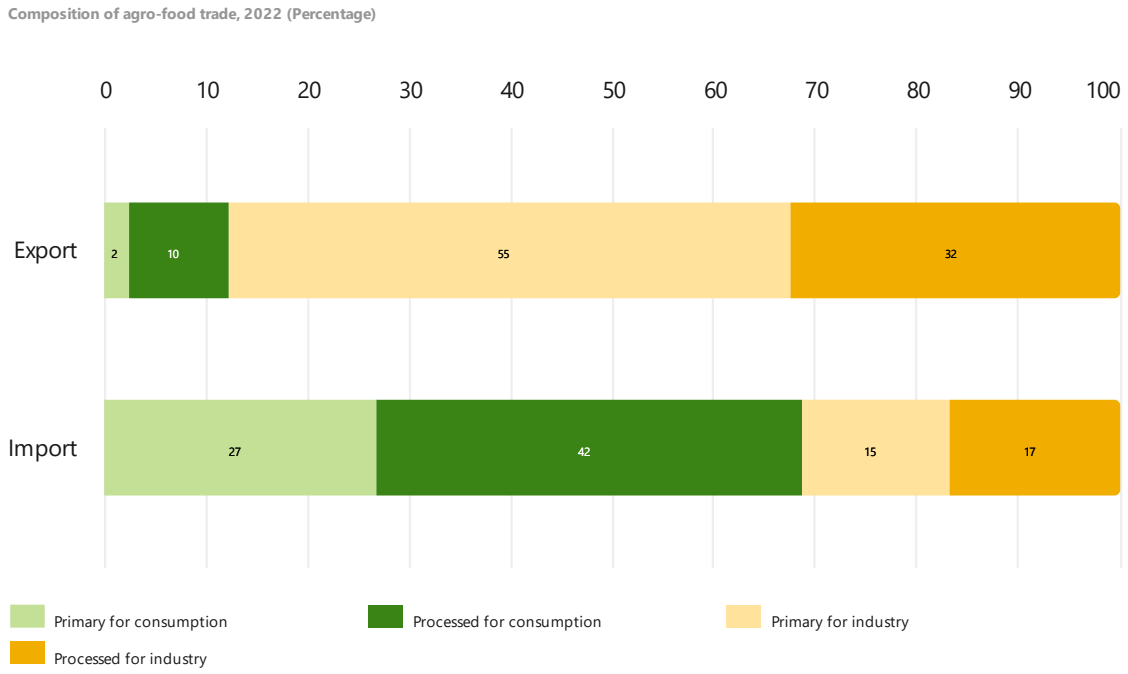


Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

Ukraine is among the world's leading exporters of agricultural commodities, in particular grain products (wheat, barley and maize) and vegetable oils (rapeseed and sunflower). Exports of agro-food products grew steadily from 2015 to 2021, reaching a high of USD 26.7 billion before the war (Figure 26.4). In 2022, following Russia's war of aggression against Ukraine, exports of the country declined at USD 23.7 billion but could be for a large part safeguarded thanks to two initiatives: the Black Sea Grain Initiative brokered with the assistance of Türkiye and the United Nations that allowed Ukraine to resume exports of grain through the Black Sea; and the "Solidarity Lanes" established by the European Union to ensure export of grain and import of essential inputs through continental infrastructure. In 2023, Ukraine established its own maritime corridor to the Black Sea ports of the Odesa region after Russia withdrew from its obligations under the Black Sea Grain Initiative, which allowed for a gradual increase in the export of grain and other goods, as well as a revival of maritime imports. Most agro-food exports are primary and processed products used by industry. European Union countries remain the primary destination for Ukrainian exports, accounting for 57% of total agro-food exports.

Figure 26.4. Ukraine: Agro-food trade

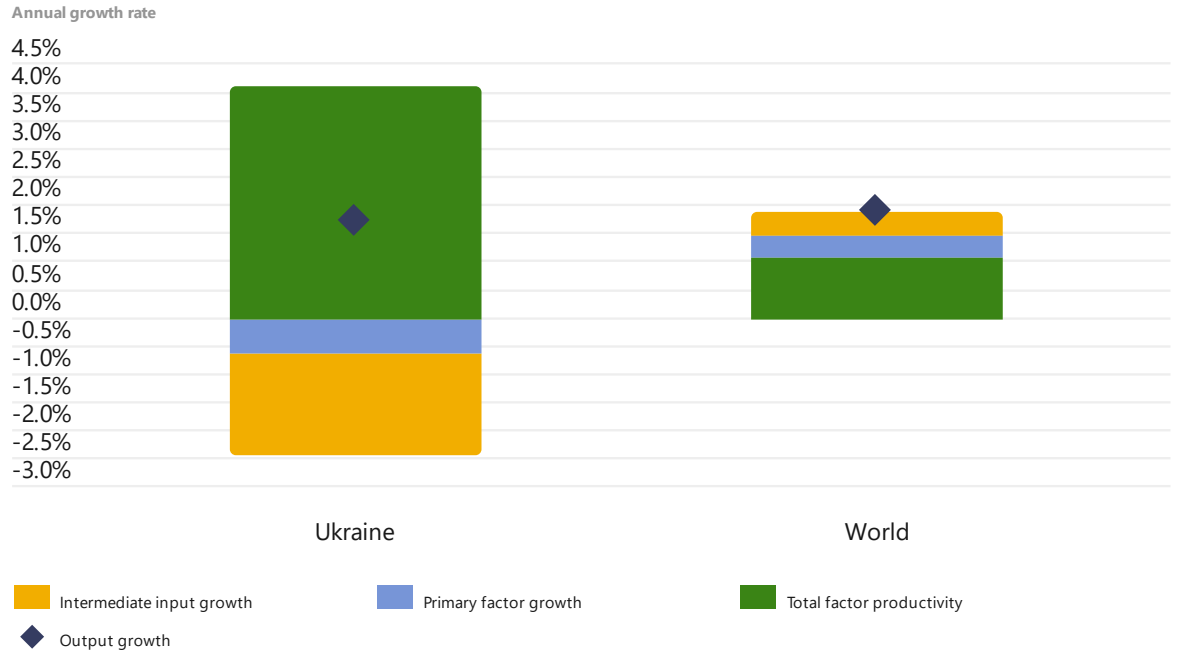




Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Prior to the war, growth in total factor productivity in Ukraine had increased from negative levels in the 1990s to a positive level that exceeded the global level for the period 2012-2021, at 4.1% (Figure 26.5). Intermediate inputs and the use of primary factors shrank over the same period. The overall level of output growth was 1.7%, roughly on par with the worldwide level. The war has had significant impacts on the performance of the sector, but more recent data on its productivity development are unavailable to date.

Figure 26.5. Ukraine: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Although agriculture's role has declined in the Ukrainian economy, the share of the sector in national GHG emissions increased, from 8.7% in 1991-2000 to 14.4% in 2012-2021 (Table 26.3). The nitrogen balance per hectare fell over the same period and remains well below the OECD average. The phosphorus balance is negative, which may pose challenges in terms of sustaining soil fertility in the long run. Soil health has also posed a significant challenge since the start of the war, with a large portion of agricultural land base that cannot be used for production due to contamination by chemicals and mines (see above).

Table 26.3. Ukraine: Productivity and environmental indicators

	Ukraine		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	-1.4%	4.1%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	23.9	12.6	32.1	28.2
Phosphorus balance, kg/ha	2.6	-3.0	3.3	2.3
Agriculture share of total energy use (%)	2.1	3.6	1.7	2.0
Agriculture share of GHG emissions (%)	8.7	14.4	8.7	10.1
Share of irrigated land in AA (%)	5.8	5.3	-	-
Share of agriculture in water abstractions (%)	36.8	33.3	47.0	49.5
Water stress indicator	..	..	8.7	..

Note: * or closest available year.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

Prior to the 1990s, central planning regulated all sectors of Ukraine's economy, including agriculture, as part of the Soviet Union. The state administered prices and state enterprises controlled the production and marketing of agricultural inputs and outputs as well as the processing and distribution of food. The first reforms initiating a transition towards a market-based economy began at the end of the 1980s. A limited right to private production was established for land leased from collective farms or individuals, enabling the establishment of private family farms (von Cramon-Taubadel et al., 2008[4]).

However, Ukraine went through an economic crisis in the early 1990s, involving significant economic contraction and inflation that impacted the agricultural sector and resulted in substantial reductions in agricultural output and productivity. Consequently, several trade and price liberalisation policy reforms were reversed in the mid-1990s. Renewed reforms in agribusiness privatisation and collective farm restructuring intensified only after macroeconomic stabilisation in the 2000s (OECD/The World Bank, 2004[5]). While prior to the 1990s, the state owned all land,[7] today about three-quarters of agricultural land is private property (StateGeoCadastre, 2017[6]).[8]

In 2005, the State Agrarian Fund was established as a state-owned public joint stock company (reorganised in 2013). Its initial mandate was to regulate grain prices through intervention purchases, to store grain in state-owned silos and sell it to bakeries to guarantee bread prices, and to provide loans to grain producers. The fund progressively became involved in other activities, such as state purchases and sales of a broad range of agricultural and food products; forward contracts; flour processing and wholesaling; and sales of fuel and mineral fertilisers to producers (OECD, 2015[7]). Starting in 2016, no state funds were allocated to the Agrarian Fund for the purchase of grain. In 2020, a law entered into force that excludes the activities of the Agrarian Fund from the law, "On state support of agriculture of Ukraine", which implies that the Agrarian Fund may be liquidated in the future. In 2023, the Agrarian Fund was transferred from the Ministry of Agrarian Policy and Food of Ukraine to the State Property Fund.

Prior to the large-scale military aggression of Russia, two key events helped shape agricultural policies today in Ukraine. First, in 2008, Ukraine became a member of the WTO, setting its agricultural bound tariffs at an average of 10.8%, expanding its export opportunities, and contributing to changes in the system of state support for agriculture. Second, in 2014, the European Union and Ukraine signed the Deep and Comprehensive Free Trade Area (DCFTA) as part of their Association Agreement. The DCFTA formally

entered into force in September 2017 and involves tariff reductions and duty-free import quotas to facilitate trade between Ukraine and the European Union, including in agricultural and food products.

Other free trade agreements (FTAs) in which Ukraine is engaged include the FTA with the European Free Trade Association (EFTA), in force since June 2012; the multilateral FTA with the Commonwealth of Independent States (CIS), in force since August 2012; bilateral agreements with all CIS members; and the Canada-Ukraine FTA, in force since August 2017.[9] FTAs with Israel and the United Kingdom entered into force in January 2021. In February 2022, Ukraine and Türkiye signed a new FTA that is expected to enter into force in 2024.

From 1999 to 2016, the state provided significant support through VAT accumulation, based on an agriculture-specific VAT regime. Agricultural producers accumulated in special bank accounts the VAT due on their primary and processed products. The accumulated funds were directed to cover VAT on purchased inputs, with the residual available for any other production purpose. From 2014 to 2016, this mechanism provided 90% of total state support. In 2017, a development subsidy partially replaced this source of support, before the support was phased out altogether in 2018. Other domestic policy measures notably comprised input subsidies, tax concessions, price controls, import tariffs, non-tariff trade regulation, minimum purchase prices, direct state purchases, and preferential loans (Table 26.2).

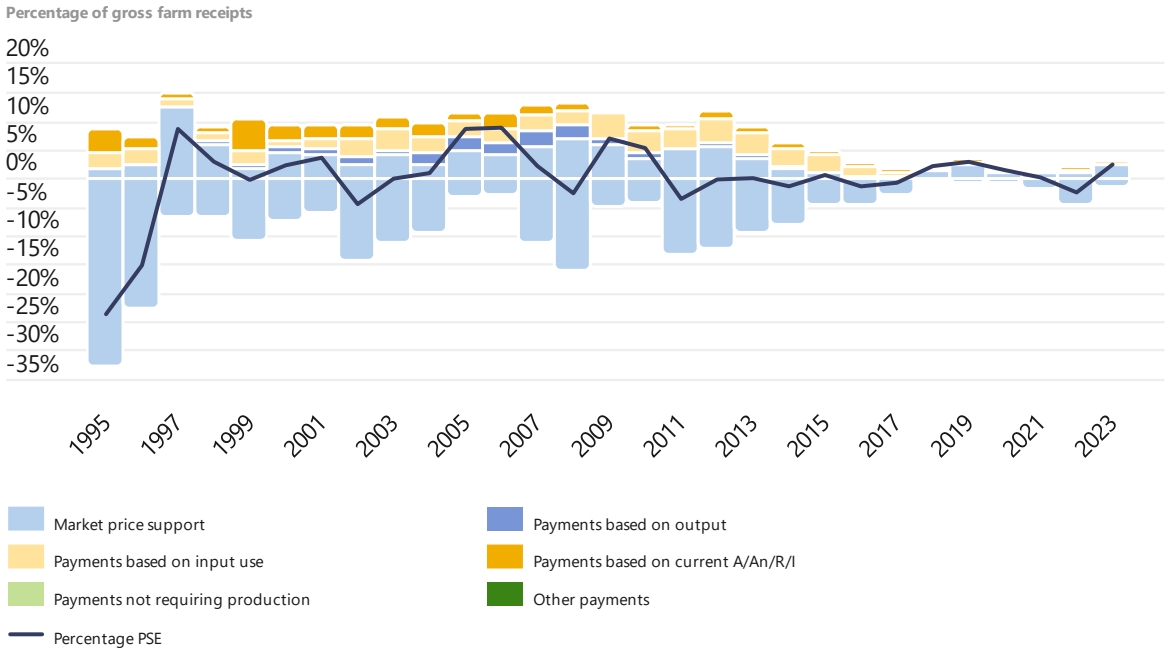
A moratorium banning the sale of agricultural land was put in place in 2002, although leasing for cultivation was permitted. The moratorium was extended annually until and including 2019. It was not formally extended into 2020. From July 2021, a new law came into force that lifts the ban on the sale of agricultural land and grants individual citizens the right to purchase up to 100 ha of land. Since January 2024, larger purchases of up to 10 000 ha are permitted for Ukrainian citizens and Ukrainian legal entities, including companies, banks and territorial communities. Foreigners do not have the right to buy or sell land in Ukraine.

Table 26.4. Ukraine: Agricultural policy trends

Period	Broader framework	Changes in agricultural policies
Prior to 1990s	Planned economy	Planned agricultural production, state administered prices State controlled value chain and agricultural trade, including marketing of agricultural inputs and outputs
1990-2000	Transition economy: gradual reforms towards market economy Interrupted by deep economic crisis in the early 1990s	Increased import tariffs for agricultural and processed food products Land reform to allow private ownership Gradual dismantling of centralised marketing schemes Reversal of reforms during economic crisis
2000-2022	Renewed reforms towards an open economy	Reduction of agricultural tariffs following WTO accession Export taxes and quotas for main exported products, successively eliminated or replaced by MoUs State Agrarian Fund (price controls, production controls, marketing, loans, etc.) with market interventions through minimum reference prices and state food purchases successively reduced Sugar production quotas until 2018 Various subsidies for inputs, interest support and tax concessions
2022-present	Period of martial law due to large-scale military aggression of the Russian Federation	Reallocation of agricultural support funds to security and defense Suspension of traditional support programmes Introduction of temporary measures applicable during period of martial law, including tax breaks, food security measures, and simplified regulatory requirements

Due to the negative MPS only partly offset by transfers to producers through tax concessions and other measures, support to agricultural producers was negative for most of the 1990s. While the level continued to fluctuate over the recent decade, it has been closer to zero (Figure 26.6). With little budgetary support to general services or consumers, total support to the sector remained small for most of the past 25 years.

Figure 26.6. Ukraine: Development of the PSE and its composition, 1995 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

References

Ministry of Defence of Ukraine (2023), *Oleksii Reznikov: Action plan for demining agricultural land for sowing campaign approved*, https://www.kmu.gov.ua/en/news/oleksii-reznikov-skhvaleno-plan-zakhodiv-iz-rozminuvannia-silskohospodarskykh-zemel-dlia-provedennia-posivnoi. [3]

OECD (2015), *Sector competitiveness strategy for Ukraine - Phase III. Review of Agricultural Investment Policies of Ukraine*, OECD Eurasia Competitiveness Programme, https://www.oecd.org/eurasia/competitiveness-programme/eastern-partners/Agricultural_Investment_Policies_Ukraine_ENG.pdf (accessed on 20 March 2023). [7]

OECD/The World Bank (2004), *Achieving Ukraine's Agricultural Potential: Stimulating Agricultural Growth and Improving Rural Life*, The World Bank, Washington, D.C., https://doi.org/10.1787/9789264055841-en. [5]

Prikhodo, D. et al. (2022), *Digital technologies in the grain sector of Ukraine*, FAO, https://doi.org/10.4060/cc1600en. [2]

StateGeoCadastre (2017), *Review of the State of Land Relations in Ukraine*, https://land.gov.ua/wp-content/uploads/2017/03/Land-Review-Monthly_3_final-1.pdf (accessed on 20 March 2023). [6]

von Cramon-Taubadel, S. et al. (2008), "Ukraine", in Anderson, K. and J. Swinnen (eds.), *Distortions to agricultural incentives in Europe's transition economies*, World Bank, Washington, D.C., https://issuu.com/world.bank.publications/docs/9780821374191. [4]

WTO (2022), *World Tariff Profiles 2022, WTO ITC UNCTAD*, https://www.wto.org/english/res_e/publications_e/world_tariff_profiles21_e.htm (accessed on 29 March 2023). [1]

Notes

[1] Termed the "Fixed Agricultural Tax" before 2015.

[2] The regions most in need of surveying are Dnipropetrovsk, Zaporizhzhya, Kyiv, Mykolaiv, Sumy, Kharkiv, Kherson, Chernihiv and Cherkasy.

[3] Ukraine's First Deputy Minister of Agrarian Policy and Food, as reported in March 2023 by Reuters.

[4] Ukraine's Deputy Minister of Agrarian Policy and Food in charge of digital development, digital transformations and digitalisation, in a comment to the news agency Ukrinform, as reported in March 2024 by Ukrainska Pravda.

[5] Under the programme, the state compensates lenders for the difference between the market interest rate and a reduced rate for clients.

[6] See https://www.wto.org/english/news_e/news23_e/ds619_620_621rfc_21sep23_e.htm.

[7] Article 3 of the Land Code of the Ukrainian SSR, https://zakon.rada.gov.ua/laws/show/2874%D0%B0-07/ed19920101#Text.

[8] More recent estimates suggest that the share of private property in agricultural land is even higher, at 80%: Mykola Solsky (People's Deputy, Chairman of the Verkhovna Rada Committee on Agrarian and Land Policy), "It's all about the land", 2 April 2020, https://www.epravda.com/ua/columns/2020/04/2/658911/.

[9] Other members and associate members of the CIS are Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, and Uzbekistan.

27. United Kingdom

Main findings

Support to agriculture

The United Kingdom left the European Union (EU) on 31 January 2020. As a part of its transition from the EU Common Agricultural Policy (CAP), CAP-related support measures continued during 2023 while new domestic agricultural policy measures were phased in.

The Producer Support Estimate (PSE) amounted to 18% of gross farm receipts in 2021-23, well below the 30% measured for the European Union in 2000-02. While the largest item in the PSE is decoupled payments (42%), Market Price Support (MPS) makes up a significant share as well (41%), in particular for livestock products such as beef and poultry, which are subject to tariffs and tariff rate quotas (TRQs). Payments based on input use account for approximately 8% of producer support.

Support for general services (General Services Support Estimate, GSSE) was 2.3% of the value of agricultural production in 2021-23, below the OECD average of 3.3%. Expenditures on agricultural knowledge and innovation systems account for about half of the GSSE and have declined in recent years. Expenditures on inspection and control services make up one-third of the GSSE, while expenditures on marketing and promotion of farm products represent 8% of the GSSE.

The Total Support Estimate (TSE) for agriculture represented 0.3% of Gross Domestic Product (GDP) on average in 2021-23, about half the OECD average.

Key recent policy changes

England introduced higher payments and more grants, along with around 50 new environmental actions under the integrated Sustainable Farming Incentive and Countryside Stewardship scheme. An additional 34 new Landscape Recovery projects were launched across England, along with an expanded grant offer for investments in productivity and innovation, slurry infrastructure, and improving the health and welfare of farmed animals. Increased funding was provided to both the Farming Equipment and Technology Fund and the Improving Farming Productivity Fund.

The Agriculture and Rural Communities (Scotland) Bill was introduced to the Scottish Parliament in September 2023, establishing the provisions for the future payments framework. The Scottish Government also published the Agricultural Reform Route Map, which sets out the process for transitioning to a new agricultural support framework and provides information on how to prepare for these changes from 2025 onwards.

The Agriculture (Wales) Act was passed in the Welsh Parliament in 2023 and establishes Sustainable Land Management as the overarching framework for future support to agriculture in Wales. A new Sustainable Farming Scheme starting in 2026 will pay farmers for delivering sustainable land management outcomes, such as water quality, biodiversity, and animal health.

Northern Ireland's Department of Agriculture, Environment and Rural Affairs (DAERA) launched or started piloting several schemes in 2024, including the Carbon Footprinting Project, the Farming for the Generations programme (pilot), and a new suite of Knowledge Transfer and Innovation programmes. The government also introduced the Beef Carbon Reduction Scheme in January 2024, which aims to improve the efficiency of the beef sector and reduce livestock GHG emissions.

The third National Adaptation Programme (NAP3) was published in July 2023, and addresses 61 risks and opportunities identified in the third UK Climate Change Risk Assessment. NAP3 includes dedicated responses to risks from climate change to domestic agricultural productivity and UK food availability, safety, and quality.

The United Kingdom concluded several Free Trade Agreements (FTAs) in 2023-24, providing enhanced market access for a range of agricultural and food products. In addition to new FTAs with Australia and New Zealand, the United Kingdom signed its accession protocol to join the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), providing tariff-free access or preferential tariffs for agricultural and food exports across the 11 countries in the trade bloc.

Assessment and recommendations

- The United Kingdom's agricultural sector faces challenges in fostering sustainable productivity growth. Total factor productivity (TFP) growth has been nil over the past decade, and the growth in agricultural production was almost entirely driven by increased use of intermediate inputs and (to a lesser extent) increases in primary factors. While nutrient balances have been declining over the past few decades, nitrogen and phosphorus surpluses remain significantly higher than the OECD average. At the same time, agriculture's share in total GHG emissions has been rising, reaching 10% in 2022.
- New programmes, including England's Environmental Land Management schemes; Scotland's Preparing for Sustainable Farming programme and Farm Advisory Service; and various grant schemes to encourage sustainable farming practices in Wales and Northern Ireland could contribute to progress towards sustainable productivity growth. These initiatives will need to be carefully monitored to ensure the additionality and permanence of environmental improvements over the long run.
- Investments in R&D and innovation are also essential for supporting sustainable productivity growth. England's Farming Innovation Programme and Scotland's Environment, Natural Resources and Agriculture Research Programme support the development of new technologies and collaborative research projects to increase productivity and sustainability. Research efforts should also be directed at facilitating long-term transformative change and the emergence of new and diverse income sources as complements to revenue from traditional farming systems. Examples include renewable energy generation and the development of market-based mechanisms to encourage emissions reductions, carbon sequestration, and biodiversity conservation.
- MPS remains high for some commodities, in particular beef, poultry, and sugar. These policies can contribute to higher food prices and discourage farmers from changing production in response to climate and environmental concerns. Phasing out these price distortions would help to advance progress on sustainable productivity growth.
- The transition from CAP measures to new domestic schemes is creating short-term complexity for the sector. As CAP payments are phased out, new domestic policy measures have undergone pilot testing and fine-tuning prior to a larger-scale rollout. Much of the short-term policy challenge revolves around scaling up these schemes and ensuring sufficient incentives for farmers to adopt sustainable production practices at scale, while maintaining flexibility and predictability for farmers over the long-term.

- Agriculture needs to achieve ambitious emissions reductions to contribute meaningfully to the United Kingdom's target of reaching net-zero emissions by 2050. Expanding the United Kingdom's Emissions Trading Scheme to include agriculture could encourage deeper cuts in emissions while opening opportunities for farmers to earn additional revenues from afforestation and soil carbon sequestration. Technologies such as remote sensing and earth observation could strengthen monitoring, reporting and verification of land-use changes such as afforestation and peatland restoration. Ultimately, a combination of policy instruments including abatement subsidies, emissions pricing, standards, regulations, and demand-side measures may be required to create sufficient incentives for the adoption of sustainable farming practices and changes in land use.

Development of support to agriculture

Figure 27.1. United Kingdom: Development of support to agriculture

Figure 27.1A. United Kingdom: Producer Support Estimate and its composition

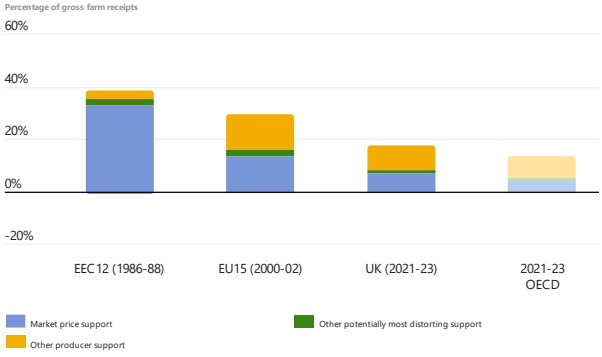


Figure 27.1B. United Kingdom: Ratio of producer to border price

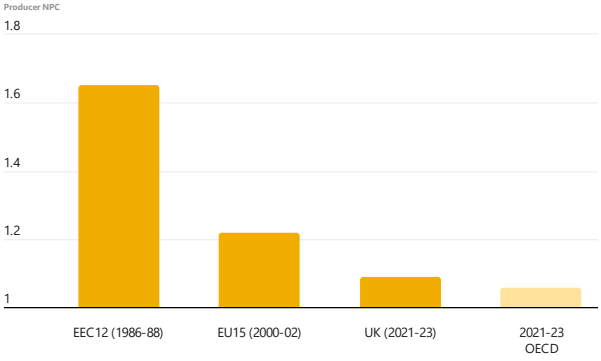


Figure 27.1C. United Kingdom: General Services Support Estimate and its composition

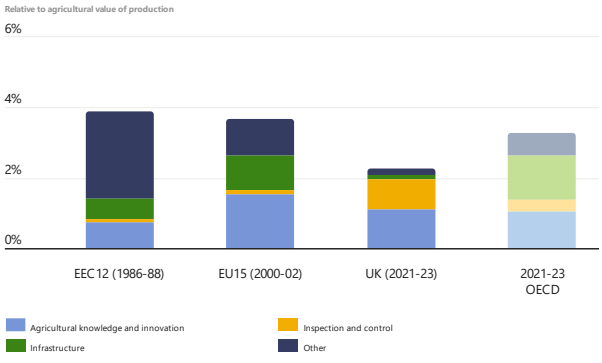
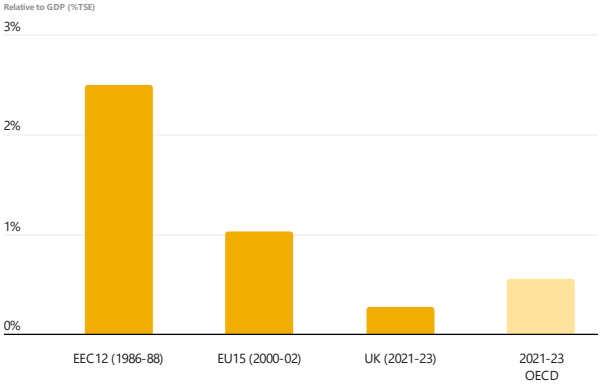
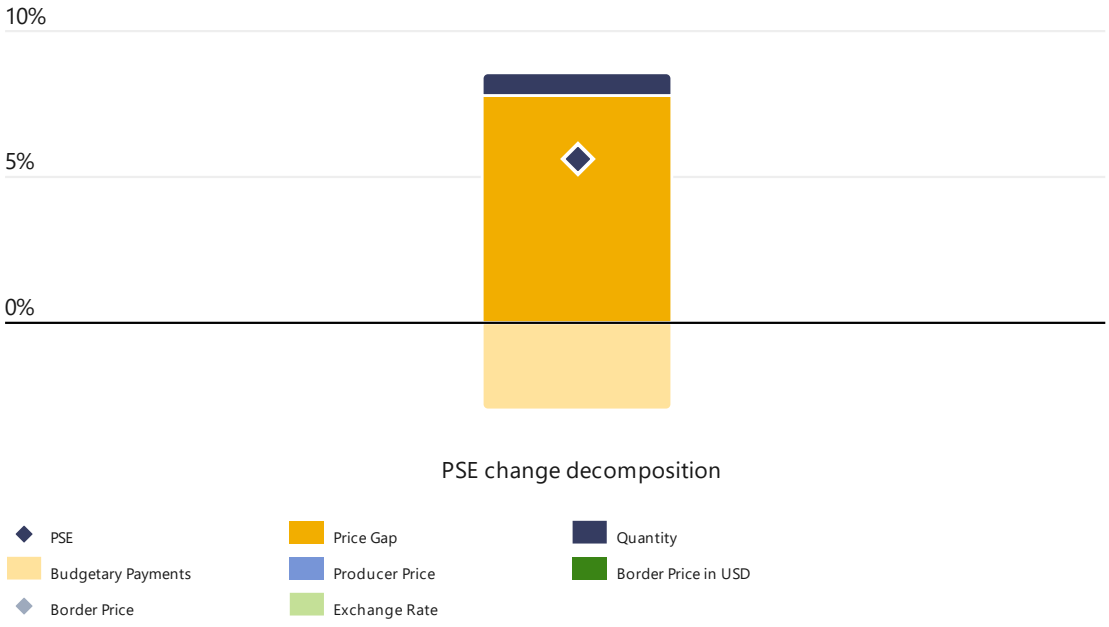


Figure 27.1D. United Kingdom: Total Support Estimate



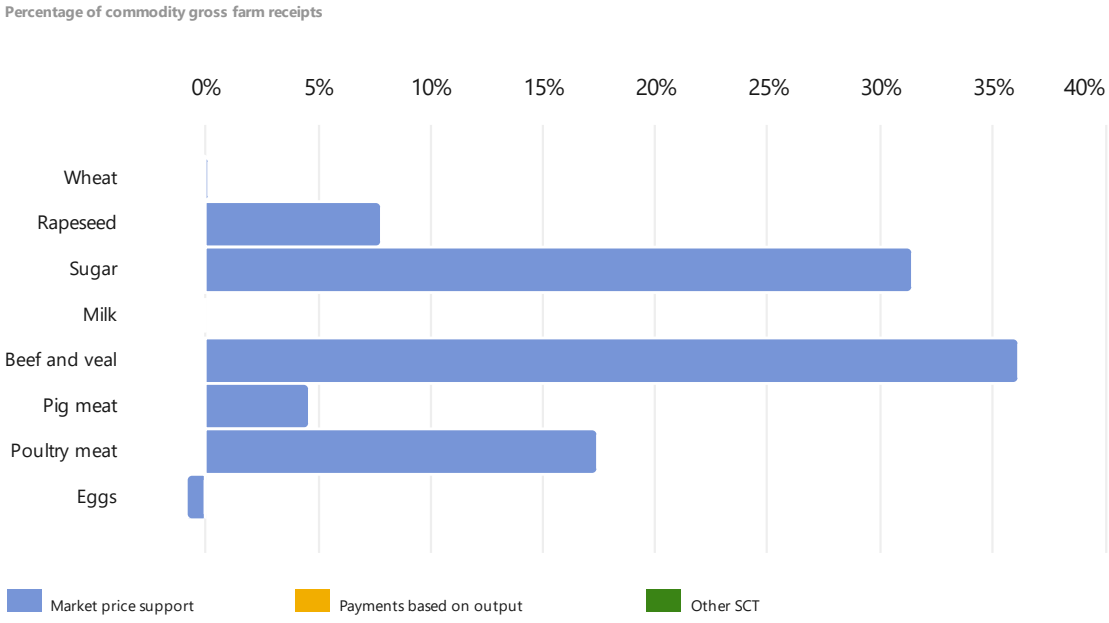
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 27.2. United Kingdom: Drivers of the change in PSE, 2022 to 2023



Note: % change of nominal Producer Support Estimate expressed in national currency. The producer price change and the border price change are not calculated when both negative and positive market price support (MPS) occur at the commodity level for the previous year. Note that negative MPS estimates for livestock products may arise in cases of aligned product prices if there is positive MPS for feed commodities.
Source: OECD (2024), "Producer and Consumer Support Estimates", OECD Agricultural policy monitoring (database), https://data-explorer.oecd.org/.

Figure 27.3. United Kingdom: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Table 27.1. United Kingdom: Estimates of support to agriculture

Million USD

	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	..	**39 601**	**37 485**	**39 379**	**41 939**
of which: share of MPS commodities (%)	..	72.76	72.81	76.54	68.92
Total value of consumption (at farm gate)	..	**42 930**	**41 225**	**41 456**	**46 109**
Producer Support Estimate (PSE)	..	**8 054**	**9 801**	**6 956**	**7 406**
Support based on commodity output	..	3 277	4 292	2 458	3 082
Market price support[1]	..	3 277	4 292	2 458	3 082
Positive market price support	..	3 288	4 314	2 466	3 082
Negative market price support	..	-10	-22	-8	0
Payments based on output	..	0	0	0	0
Payments based on input use	..	654	781	587	595
Based on variable input use	..	563	651	519	521
with input constraints	..	0	0	0	0
Based on fixed capital formation	..	82	114	62	70
with input constraints	..	0	0	0	0
Based on on-farm services	..	9	16	6	4
with input constraints	..	0	0	0	0
Payments based on current A/An/R/I, production required	..	730	659	712	819
Based on Receipts / Income	..	0	0	0	0
Based on Area planted / Animal numbers	..	730	659	712	819
With input constraints	..	336	552	350	107
Payments based on non-current A/An/R/I, production required	..	7	17	4	0
Payments based on non-current A/An/R/I, production not required	..	3 126	3 817	2 980	2 580
With variable payment rates	..	0	0	0	0
with commodity exceptions	..	0	0	0	0
With fixed payment rates	..	3 126	3 817	2 980	2 580
with commodity exceptions	..	0	0	0	0
Payments based on non-commodity criteria	..	257	226	217	328
Based on long-term resource retirement	..	107	162	67	92
Based on a specific non-commodity output	..	98	63	51	181
Based on other non-commodity criteria	..	52	1	99	55
Miscellaneous payments	..	3	9	0	0
Percentage PSE (%)	..	**17.99**	**22.80**	**15.85**	**16.01**
Producer NPC (coeff.)	..	**1.09**	**1.13**	**1.07**	**1.08**
Producer NAC (coeff.)	..	**1.22**	**1.30**	**1.19**	**1.19**
General Services Support Estimate (GSSE)	..	**914**	**865**	**946**	**930**
Agricultural knowledge and innovation system	..	451	461	452	441
Inspection and control	..	335	282	373	351
Development and maintenance of infrastructure	..	52	43	47	66
Marketing and promotion	..	75	79	74	71
Cost of public stockholding	..	0	0	0	0
Miscellaneous	..	0	0	0	0
Percentage GSSE (% of TSE)	..	**10.27**	**8.11**	**11.97**	**11.15**
Consumer Support Estimate (CSE)	..	**-3 997**	**-5 270**	**-3 044**	**-3 677**
Transfers to producers from consumers	..	-3 339	-4 426	-2 510	-3 082
Other transfers from consumers	..	-719	-970	-589	-597
Transfers to consumers from taxpayers	..	3	2	3	3
Excess feed cost	..	59	124	52	0
Percentage CSE (%)	..	**-9.19**	**-12.78**	**-7.34**	**-7.97**
Consumer NPC (coeff.)	..	**1.10**	**1.15**	**1.08**	**1.09**
Consumer NAC (coeff.)	..	**1.10**	**1.15**	**1.08**	**1.09**
Total Support Estimate (TSE)	..	**8 971**	**10 668**	**7 906**	**8 338**
Transfers from consumers	..	4 058	5 396	3 099	3 679
Transfers from taxpayers	..	5 631	6 242	5 396	5 256
Budget revenues	..	-719	-970	-589	-597
Percentage TSE (% of GDP)	..	**0.28**	**0.34**	**0.26**	**0.25**
Total Budgetary Support Estimate (TBSE)	..	**5 693**	**6 376**	**5 448**	**5 256**
Percentage TBSE (% of GDP)	..	**0.18**	**0.20**	**0.18**	**0.16**
GDP deflator (1986-88 = 100)	..	**260**	**246**	**258**	**277**
Exchange rate (national currency per USD)	..	**0.78**	**0.73**	**0.81**	**0.80**

.. Not available

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. Market Price Support (MPS) is net of producer levies and excess feed cost.
MPS commodities for the United Kingdom are: wheat, barley, oats, rapeseed, sugar, milk, beef and veal, sheep meat, pig meat, poultry and eggs.
The method for estimating MPS changes between 2020 and 2021. Market Price Differentials (MPD) for the United Kingdom are assumed equal to those of the European Union for the years until 2020, while they are calculated from UK domestic and reference prices from 2021.

Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

Agricultural policy in the United Kingdom is devolved to the governments of Scotland, Wales, and Northern Ireland. The Department for Environment, Food and Rural Affairs (Defra) has responsibility for England's agricultural policy. Defra also sets some standards and regulations at national level (e.g. animal health and welfare, veterinary services, and plant health), and represents the United Kingdom in international negotiations.

Following the United Kingdom's departure from the European Union, Ministers of the UK Government, Scottish Government, Welsh Government and the Department of Agriculture, Environment and Rural Affairs (DAERA) in Northern Ireland agreed to develop a non-legislative framework for UK collaboration and co-operation on agricultural support. This builds upon commitments already developed between the parties to work together at a UK level. However, since agricultural policy is devolved, each nation retains the powers to create and implement specific countrywide legislation in relation to agriculture.

In 2019, the United Kingdom became the first major economy to legislate a binding target to reach net-zero emissions by 2050. Since then, it has progressively increased the ambition of its Nationally Determined Contribution (NDC), aiming to reduce GHG emissions to 68% below 1990 levels by 2030. In 2021, the Net Zero Strategy: Build Back Greener set out a pathway to reach the net-zero target, including sector-by-sector goals (GOV.UK, 2021[1]). Within this, emissions in the agriculture, forestry, and other land use (AFOLU) sector may need to fall by 17-30% by 2030 and 24-40% by 2035. The Sixth Carbon Budget (2033-37) models a balanced net zero pathway for agricultural emissions to fall from 54.6 $MtCO_2eq$ in 2018 to 39 $MtCO_2eq$ by 2035 and 35 $MtCO_2eq$ by 2050 (Climate Change Committee, 2020[2]). Across the United Kingdom, responsibility to reduce GHG emissions in agriculture is devolved, with each nation free to develop its own strategy to reach the target. Scotland, Wales and Northern Ireland have released separate Net Zero Strategies that detail how they will contribute to the UK's Net Zero target.

England

England is moving away from direct area-based payments that were in place under the CAP to payments for actions that boost sustainable food production while delivering positive outcomes for the environment, animal health, and reducing GHG emissions. As part of its seven-year Agricultural Transition Programme 2021-28, Defra has continued to implement its farming reforms made up of ongoing payments under the Environmental Land Management (ELM) schemes (Countryside Stewardship, Sustainable Farming Incentive, and Landscape Recovery schemes), and one-off productivity and innovation grants to help farmers invest in new technologies and more sustainable farming systems.

The ELM schemes are delivered through a combination of scheme payments and one-off grants, and target improved outcomes relating to biodiversity, water quality, climate change adaptation and mitigation, air quality, natural flood management, coastal erosion risk mitigation, animal health and welfare, as well as access and heritage. ELM schemes have been co-designed with farmers, land managers and other key stakeholders through tests and trials and are being implemented and adapted through ongoing dialogue. As of 1 June 2024, there were 59 700 live agri-environment agreements across more than 41 400 farming businesses in England.

- The Sustainable Farming Incentive scheme pays farmers to take actions that support food production, farm productivity and resilience, whilst protecting and enhancing the environment. There are currently 23 actions on offer under the new scheme, including on soil health, moorland, hedgerows, integrated pest management, farmland wildlife, buffer strips, and low input grassland.

- The Countryside Stewardship scheme pays farmers, land managers and foresters for more locally targeted actions relating to specific locations, features and habitats, including woodlands and water courses. The scheme supports a range of enhanced environmental outcomes, from restoring habitats to creating woodlands to managing flood risk. The scheme provides Mid Tier agreements for the majority of farmers and land managers, and Higher Tier agreements for more complex environmental management in high priority areas. Capital grant items for boundaries, trees and orchards, water quality, and air quality are also available under the scheme along with a range of other capital grants. There were over 35 000 live Countryside Stewardship agreements in place across England as of April 2024.
- The Landscape Recovery scheme provides funding for long-term, large-scale projects that help farmers and land managers to produce environmental and climate goods on their land through bespoke 20+ year agreements. Funding is awarded based on competitive application rounds focused on the delivery of specific environmental outcomes.

Support for R&D is a key focus of the new domestic agricultural policy. This includes the Farming Innovation Programme (described in detail below) and the Future Farming Resilience Fund, which was launched in 2021 and helps farmers to navigate changes during the agricultural transition period.

The Farming Investment Fund was launched in November 2021 and provides support for farmers to improve productivity and enhance the environment, via two key strands:

- The Farming Equipment and Technology Fund, which provides grants of up to GBP 50 000 (USD 62 000) for the adoption of sustainable technologies and practices, such as equipment to reduce soil compaction, minimum tillage, fostering regenerative farming, supporting animal health and welfare, and improved slurry application.
- The Farming Transformation Fund provides grants of up to GBP 500 000 (USD 621 000) based on a set of themes including water management, improving farm productivity, adding value, slurry storage and improving calf housing. These grants are targeted at more complex higher-value investments with the potential to bring transformational improvements to business performance and the environment.

Scotland

The Agriculture (Retained EU Law and data) (Scotland) Act 2020 enables the continuation of former CAP schemes beyond 2021, and allows Scotland to maintain policy stability until 2025. However, the powers of the 2020 Act only enable limited simplifications and improvements to the operation of CAP legislation and preclude substantive changes until the new Agriculture and Rural Communities (Scotland) Act 2024 comes into force.

The Scottish Government's Vision for Agriculture was published in March 2022 and outlines a long-term vision to transform support for farming and food production and to make Scotland a global leader in sustainable and regenerative agriculture. The Vision is aligned to the key objectives of the EU CAP and ensures Scotland will have a robust and coherent framework to underpin future agricultural support from 2025 onwards, and to deliver climate mitigation and adaptation, nature restoration, and high-quality food production.

The Agricultural Reform Route Map was published in June 2023 and then updated in June 2024, providing further clarity on how the Scottish Government intends to deliver the ambitions set out in the Vision. The Route Map sets out the process for transitioning to a new agricultural support framework with information on important dates, the measures being considered now, when current schemes will transition or end, the support available, and how to prepare for these first changes from 2025 onwards. In the future, at least half of all funding for farming and crofting will be targeted towards outcomes for biodiversity gain and a drive towards low carbon approaches to improve the resilience, efficiency, and profitability of the sector.

There will be no cliff edges in support as the Scottish Government has committed to maintaining direct payments beyond 2026.

The Agriculture Reform Implementation Oversight Board (ARIOB) was established in 2021 and incorporates relevant recommendations from farmer-led groups to reduce agricultural emissions, support the production of sustainable high-quality food, address the twin climate and biodiversity crises, and design new systems and approaches. The government provides financial support for farmers and crofters to carry out carbon audits, soil testing and nutrient management planning, establishing a clear baseline and options for action for all who participate.

The Scottish Government continues to deliver on the Update to the Climate Change Plan 2018-2032, which sets out a broad range of policies and actions for reducing agricultural emissions to net-zero by 2045. A key underlying principle is that farmers should continue to receive regular and reliable income support, conditional on the delivery of emissions reductions and biodiversity improvements. The plan outlines a range of measures, including: the development of new agricultural support measures; providing advice and guidance and developing peer to peer knowledge transfer initiatives; supporting the dissemination of information and advice on climate change mitigation measures; strengthening policies on nitrogen use; reviewing the storage and application of silage, slurry and liquid digestate; exploring feed additive methane inhibitors and other methods for livestock GHG emissions reduction; exploring options for land use change to multi-faceted land use including forestry, peatland restoration and management and biomass production; supporting the integration of small woodlands; and increasing peatland restoration and management.

Wales

The Basic Payment Scheme has continued in Wales and will remain in place until 2026, providing stability and certainty to farmers following the United Kingdom's transition out of the European Union. The Agriculture (Wales) Act 2023 was passed in the Welsh Parliament (the *Senedd*) on 17 August 2023. The act provides powers to amend legislation derived from the European Union and establishes Sustainable Land Management (SLM) as the overarching framework for future support to agriculture in Wales. The four SLM objectives included in the act are:

- To produce food and other goods in a sustainable manner.
- To mitigate and adapt to climate change.
- To maintain and enhance the resilience of ecosystems and the benefits they provide.
- To conserve and enhance the countryside and cultural resources and promote public access to and engagement with them, and to sustain the Welsh language and promote and facilitate its use.

Following a series of consultations on the future of agricultural support in Wales among farmers, rural communities and environmental groups, the Welsh Government announced the development of a new Sustainable Farming Scheme starting in 2026 to pay farmers in return for delivering actions which meet the sustainable land management outcomes, such as water quality, biodiversity, and animal health. A preparatory phase of activity will run in 2025 to help calculate an appropriate payment methodology for the scheme. It will also include an updated economic assessment, as well as any further and alternative proposals to achieve additional carbon sequestration within the scheme.

The Welsh Government's Environment (Wales) Act 2016 was updated in March 2021 setting a target of net zero emissions by 2050. The act requires a system of five-year carbon budgets and interim targets, which help to provide long-term predictability and ensure that regular progress is made towards the net zero target. The Net Zero Wales Carbon Budget 2 (2021-25) sets out an ambitious vision for mitigation action through a series of practices to reduce emissions from soils (e.g. leys and cover crops), livestock (e.g. diets, animal health, and breeding), and waste and manure management. The farming sector is a

major driving force to achieve these goals with the National Farmers' Union of Wales (NFU Cymru) pledging to reach net zero emissions by 2040.

The Welsh Government provides a range of programmes and support measures to encourage climate change adaptation in the agricultural sector:

- Grant schemes for the horticulture sector contribute towards new equipment that can improve productivity and encourage climate change adaptation via the adoption of viable alternative species and varieties of plants and trees.
- A new Organic Support Payment was introduced to succeed the Glastir Organic Scheme, providing payments to fully certified organic farmers in 2024.
- The Growing for the Environment grant scheme encourages the cultivation of crops and pastures that provide an environmental benefit, such as mixed leys, cover crops, and protein crops.
- The Control of Agricultural Pollution Regulations aim to reduce the impacts of pesticides, fertilisers, and manure on water quality, ecosystems, and soils.
- The Farming Connect advisory service supports sustainable practices to improve livestock health and productivity.
- The Capability, Suitability and Climate Programme assessed a range of climate scenarios and the potential for a range of cropping options and undertook research to assess how grass growth might respond under future climate scenarios.

Northern Ireland

A simplified Basic Payment Scheme has continued in Northern Ireland and is planned to remain in place until the end of 2024, providing stability and certainty for farmers.

DAERA launched the Future Agricultural Policy Framework Portfolio for Northern Ireland on 24 August 2021. The framework sets out the direction of future agricultural policy through four key targets: increased productivity, environmental sustainability, improved long-term resilience, and supply chain functionality. DAERA launched the Consultation on Future Agricultural Policy Proposals for Northern Ireland on 21 December 2021. Based on these consultations 54 policy decisions were announced, based on four key outcomes (increased productivity, environmental sustainability, improved resilience, and an effective functioning supply chain). The decisions are contributing to the design of new domestic agricultural policies, as well as targeted support measures under the Farm Support and Development Programme.

The Climate Change Act (Northern Ireland) 2022 sets a target of net zero GHG emissions by 2050 for Northern Ireland, along with interim targets including a 48% reduction in net emissions by 2030. Section 23 of the Act requires DAERA to make regulations that set carbon budgets, with the first three carbon budgets for Northern Ireland relating to the periods 2023-2027, 2028-2032 and 2033-2037. DAERA is required to produce five-year climate action plans to set out the policies that Northern Ireland will implement to meet the corresponding carbon budget, as well as how the emissions reduction targets will be achieved.

Innovation for sustainable productivity growth

The United Kingdom has committed significant funding to increasing productivity, enhancing the environment, and supporting the agriculture and food sectors in achieving the net zero targets. The UK Government views R&D as essential to identifying, developing, and scaling up technologies that will transform agriculture and horticulture into productive, sustainable, and low-carbon industries that can help to meet the challenges of climate change. The UK Government has invested extensively in farmer-led innovation to boost productivity sustainably, and to bring together farmers and research communities to address food system challenges.

England

The Farming Innovation Programme is a GBP 270 million (USD 336 million) grant scheme that was launched in October 2021 and aims to strengthen agricultural innovation and productivity while enhancing environmental sustainability, improving food security, and enabling more effective adaptation to climate change. The programme provides funding to develop new, innovative methods and technologies that benefit farmers in England such as feed additives, vertical farming, robotics and automation, novel breeding, genetic technologies, and alternative proteins.

Defra's Farming Innovation Investor Partnership aims to provide later stage investment to agri-tech businesses that are developing and implementing new technologies. The scheme combines grant funding from Defra with equity funding from private investors and is open to businesses that can demonstrate the potential to grow and generate revenue through farm-focused innovations which solve the challenges of productivity, sustainability, and net-zero emissions.

Defra's Follow-on Fund provides further support to projects previously in receipt of funding that have not yet been able to commercialise their outputs. Funding is provided through a competitive process for up to 30% of the total project costs, and funded projects can range between GBP 100 000–GBP 300 000 (USD 124 000–USD 373 000) and can last for up to one year.

As part of the 2013 Agri-Tech Strategy, UK Research & Innovation (UKRI) established four independent Agri-Tech Centres. Three of those bodies (Crop Health and Protection, the Centre for Innovation in Livestock, and Agri-EPI) merged in April 2024 to form the UK Agri-Tech Centre, with the objective of improving co-ordination and bringing renewed focus on accelerating the late-stage development and adoption of agricultural innovations.

The Genetic Technology (Precision Breeding) Act 2023 provides a new proportionate regulatory regime in England for organisms produced through precision breeding technologies such as gene editing, where the genetic changes could have arisen through traditional breeding. The act covers precision bred plants and animals, as well as food and feed produced from precision bred plants and animals. It aims to ensure that precision bred products are regulated proportionately to risk and will introduce simpler regulatory measures to enable these products to be released for field trials and brought to market more easily.

Scotland

The Environment, Natural Resources and Agriculture (ENRA) Research Programme is a large-scale multidisciplinary programme that invests nearly GBP 50 million (USD 62 million) per year into a portfolio of strategic research to ensure that Scotland maintains its position at the cutting edge of advances in agriculture, natural resources, and the environment. The programme supports national science facilities such as the Langhill Breeding Herd and the Dairy Research and Innovation Centre at Scotland's Rural College (SRUC) Crichton Royal Farm. The programme also directly supports Scotland's academic research institutes and provides funding for research areas to address Scotland's specific challenges, including GHG reductions for agriculture and livestock, feeding and breeding strategies for climate-resilient livestock, vaccine research into animal diseases, and data-driven innovations for improved sustainability of ruminant production systems.

Scotland has five Centres of Expertise that work at the interface between policy and research on water, climate change, animal disease outbreaks, plant health, and knowledge exchange. The centres draw on the expertise of researchers from the Scottish Environment, Food and Agriculture Research Institutes (SEFARI), universities, government agencies, and research organisations.

The Scottish Government has provided approximately GBP 7.5 million (USD 9.3 million) in funding since 2015 to support 52 projects under the Knowledge Transfer and Innovation Fund. The fund supports projects that focus on improving biodiversity or reducing GHG emissions and has provided financing for

nearly 20 NGOs to undertake vocational training, skills development, and knowledge transfer. Projects are typically delivered through workshops, training courses, coaching, information dissemination actions, and farm visits.

The Farm Advisory Services have a budget of approximately GBP 5 million (USD 6.2 million) per year and provide crofters, farmers, and land managers with access to advisory and consultancy services. These include support for the development of integrated land management plans, specialist advice, mentoring for new entrants to farming, and carbon audits. In addition, farmers also have access to knowledge transfer services (events, publications, videos, podcasts, and online tools), and discounted general advisory and one-to-one consultancy services.

Wales

The government of Wales has provided a package of support worth over GBP 200 million (USD 249 million) during the transitional period ahead of the introduction of the Sustainable Farming Scheme. From 2026 onwards, the Sustainable Farming Scheme will support climate change resilience through measures such as benchmarking and soil testing to enable targeted management decisions, agroforestry, the creation and management of woodlands, an enhanced biosecurity and animal disease surveillance system, and the development of an Animal Health Improvement Cycle.

Northern Ireland

DAERA has developed the Ruminant Genetics Programme in partnership with Sustainability Ruminant Genetics Ltd. The programme aims to drive improvements in the productivity and environmental performance of the ruminant livestock sectors. The first phase of this programme is currently underway and will provide farmers with the data and evidence to make better informed breeding decisions to advance genetic gain in dairy and beef animals.

DAERA has collaborated with Defra to include a Northern Ireland element within the Defra Dairy Demonstrator Research Call, which launched in November 2023. This project provides funding for researchers, industry, and farm business clients to formulate and test livestock concentrate diets which reduce GHG emissions, ammonia emissions, and phosphorus losses to the environment. Findings from this project will help to inform knowledge transfer programmes to farmers, while supporting policy developments on the future use of methane-reducing feed additives and the impact of dietary changes on ammonia and phosphorus losses.

DAERA is also planning to deliver a Livestock Dietary Emissions Challenge Fund, which will enable the testing of livestock concentrate diets on commercial farms. This programme helps to inform knowledge transfer programmes to farmers, while supporting policy development on the future use of methane-reducing feed additives and the impact of dietary changes on ammonia and phosphorus losses.

The GBP 37.6 million (USD 46.7 million) Soil Nutrient Health Scheme is the largest baseline soil sampling programme ever undertaken in Northern Ireland. The scheme runs from 2022 to 2026 and aims to improve productivity and sustainability in the farming sector, by providing farmers with information on soil nutrient levels, and baseline estimates of carbon stored in their soils, hedgerows, and trees. This will help farmers to more accurately match nutrient applications to crop needs, thereby increasing efficiency, reducing excess run-off to watercourses, improving sustainability, and contributing to the climate change agenda. The scheme is being delivered by the Agri-Food and Biosciences Institute and is being rolled out on a zonal basis throughout Northern Ireland.

Recent policy developments

Domestic policy developments in 2023-24

England

The Sustainable Farming Incentive and Countryside Stewardship schemes have continued to develop, with almost half of farmers in England currently participating. Farmers can pick and choose from a menu of over 100 environmental actions, including actions on soil health, moorland, hedgerows, integrated pest management, farmland wildlife, buffer strips, and low input grassland.

Under the Landscape Recovery Scheme, 22 projects are currently underway which aim to restore over 600 km of rivers and protect and provide habitats for at least 263 species. In 2024 there were 34 new landscape recovery projects across England, receiving a share of GBP 25 million (USD 31 million) in funding through round two of the scheme. The projects involve over 700 farmers and landowners working together to sustainably manage and restore over 200 000 ha of land (including 35 000 ha of peatland, more than 20 000 ha of woodland including some temperate rainforest, and more than 160 protected sites).

Defra announced a number of updates to its farming reforms in early 2024. These include:

- A 10% increase in the average value of agreements in the Sustainable Farming Incentive and Countryside Stewardship driven by increased payment rates, with uplifts automatically applied to existing agreements.
- Around 50 new environmental actions under the integrated Sustainable Farming Incentive and Countryside Stewardship offer that farmers can get paid for across all types of farm businesses, including actions for agroforestry and new agricultural technologies such as robotic mechanical weeding.
- Enhanced payments for “creation” and “maintenance” options to improve the long-term incentives for farmers to create habitats and ensure they are rewarded for looking after habitats once they have created them.
- Premium payments for actions with the biggest environmental impact or combinations of actions that deliver benefits at scale.
- More grants for productivity and innovation including supporting farmers to test and trial new technology.
- Free advice and support for farmers to manage transition and access scheme and grant funding.

In February 2024 additional measures to support farming were announced. These include:

- Doubling the management payment for the Sustainable Farming Incentive so those with existing agreements receive up to an extra GBP 1 000 (USD 1 243) and extending it to Countryside Stewardship mid-tier for the first year of agreements starting by March 2025.
- A grant offer totalling GBP 427 million (USD 531 million), which invests GBP 220 million (USD 273 million) in productivity and innovation in farming, GBP 116 million (USD 144 million) in slurry infrastructure, and GBP 91 million (USD 113 million) in improving the health and welfare of farmed animals. The first of these schemes is an enhanced GBP 70 million (USD 87 million) round of the successful Farming Equipment and Technology Fund and an increase to the Improving Farming Productivity Fund from GBP 30 million (USD 37 million) to GBP 50 million (USD 62 million) – which covers robotics, automation, and rooftop solar to build on-farm energy security.

Scotland

The Agriculture and Rural Communities (Scotland) Bill was introduced to the Scottish Parliament on 28 September 2023. This legislation aims to deliver the key ambitions set out in the Scottish Government's Vision for Agriculture and will enable a payments framework that incentivises a drive towards low carbon approaches to improve the resilience, efficiency, and profitability of the sector. The bill has been designed to provide an adaptive support framework for farmers and crofters that can respond to future social, economic, and environmental changes. It enables tailored provisions to be produced and adapted as required. The future payments framework will be based around four tiers:

- Tier 1: "Base Level Direct Payment" – a universal, entry-level payment for undertaking agricultural activity while meeting minimum essential standards in relation to sustainable farming activities, protecting the environment, animal health and welfare, and ensuring Fair Work. These standards will help to make businesses more efficient. Existing cross-compliance conditions will be maintained as a minimum in the new support framework and will apply across all tiers but may be delivered differently.
- Tier 2: "Enhanced Level Direct Payment" – a universally accessible payment that supplements Tier 1. This is for applicants delivering Base requirements and undertaking further activity that delivers outcomes for nature and climate improvement, including recognition of wider land management.
- Tier 3: "Elective Payments" – a competitive or non-universal (criteria-dependent) range of payments for targeted actions and undertakings on particular habitats, and for defined species, to deliver nature and climate outcomes included in the Vision for Agriculture.
- Tier 4: "Complementary Support" – provision of support for continuing professional development, advice, knowledge exchange, and linkages to wider land management support from Scottish Government officials and/or public partners.

The existing framework of support will continue to provide stability to farmers and crofters in 2024, and there will be a phased transition approach to introduce new conditionality on the present Basic Payment Scheme (BPS) from 2025. The Tier 2 Enhanced Level Direct Payment will launch in the following years, followed by the Tier 3 Elective Payments and Tier 4 Complementary Support. This will allow the BPS to evolve into the future Tier 1 Base Level Direct Payment.

The Preparing for Sustainable Farming programme helps businesses prepare for future changes in the policy framework with support for conducting carbon audits and soil sampling, support for animal health and welfare interventions, and access to herd data for Suckler beef producers through MyHerdStats. Support is available for farmers to deliver a list of animal health and welfare interventions.

The Scottish Government established a Food Security Unit in 2023 following a report from the Short-life Food Security and Supply Taskforce, which was established to monitor supply chain disruptions in the immediate wake of the war in Ukraine. The Food Security Unit will oversee the legacy activities of the taskforce, monitor food system resilience, and engage widely with government and industry to improve responsiveness to potential future shocks and crises.

Wales

A set of transitional rural grant schemes are being implemented in 2024, providing capital to farmers to improve efficiency and environmental performance. These include:

- The Agricultural Diversification Scheme to encourage the establishment of new agricultural enterprises.
- Growing for the Environment, which provides financial support for growing and using crops that improve the environmental status of a farm business.

- The Habitat Wales Scheme, an area-based agri-environment scheme.
- The Horticulture Development Scheme, a capital grant scheme for existing commercial horticultural producers.
- The Nutrient Management Investment Scheme, providing financial support to improve the economic and environmental performance of farm holdings.
- Organic Support 2024, a payment for existing eligible organic agriculture producers who maintain full organic certification.
- Small Grants – Efficiency, a capital scheme helping farmers improve the technical, financial, and environmental performance of their business.
- Small Grants – Environment, a financial contribution towards capital investments on individual parcels of land.
- Small Grants – Horticulture Start Up, funding to encourage and support new commercial horticultural enterprises in Wales.
- Small Grants – Yard Coverings, a capital scheme to help farmers improve their business performance.

Northern Ireland

The Beef Carbon Reduction Scheme began in January 2024. The scheme aims to improve the efficiency of the beef sector and reduce livestock GHG emissions, thereby contributing to meeting the Climate Change Act (Northern Ireland) 2022 targets. The scheme will support progressive reductions in the maximum age at slaughter over a four-year period. Farmers slaughtering clean finished cattle at or below the target age for each year of the scheme will receive a payment of GBP 75 (USD 93) for each eligible animal slaughtered.

Several schemes and projects are being piloted or launched under the Farm Support and Development Programme in 2024. These include:

- The Carbon Footprinting Project, which will provide each farm business in Northern Ireland with a baseline whole farm carbon footprint. Data obtained from the project will be used to provide knowledge transfer to farmers to support them in reducing on-farm emissions, to inform future policy development on carbon mitigation strategies, and to update assumptions within the Northern Ireland part of the UK GHG inventory.
- A pilot of the Farming for the Generations programme, which will encourage longer term planning for farm businesses based on a three-phase approach including planning for succession, development of the successor, and maintaining support for both generations. The programme will also include knowledge skills development and explore the provision of appropriate incentives to facilitate generational change.
- A new suite of Knowledge Transfer and Innovation programmes to help farm businesses maximise the benefits of the new Farm Support and Development Programme and make informed development decisions in the management of their farm businesses.

Policies to facilitate climate change adaptation in agriculture

The third National Adaptation Programme (NAP3) was published in July 2023, and addresses all 61 risks and opportunities identified in the third UK Climate Change Risk Assessment. NAP3 includes dedicated responses to risks from climate change to domestic agricultural productivity and UK food availability, safety, and quality. Defra is currently delivering a range of measures to improve resilience and adaptation to climate change across the farming sector, including actions to improve soil health and water resources, increase tree planting on farms, and greater investment in innovation.

The consultation on the third Scottish National Adaptation Plan (SNAP3) ran until 24 April 2024. The draft SNAP3 sets out the Scottish Government's approach to delivering adaptation across Scotland and responds to the UK Climate Change Committee's Climate Change Risk Assessments. It includes a range of actions that can further build the agricultural sector's resilience to climate change, including financial support as well as the provision of guidance and advice on adaptation. Responses from the consultation will help to inform and develop the final Adaptation Plan, due in autumn 2024.

Trade policy developments in 2023-24

The Australia-United Kingdom Free Trade Agreement entered into force on 31 May 2023. The agreement provides enhanced market access for UK agricultural and food exports. It will also ease the movement of skilled workers between Australia and the United Kingdom, and establishes enhanced technical collaboration on biosecurity, animal welfare, and antimicrobial resistance.

The New Zealand-United Kingdom Free Trade Agreement entered into force on 31 May 2023. The agreement removes customs duties for a range of food products, such as wine, honey, onions, kiwifruit, and a range of dairy products. Dairy and horticultural products will be 100% tariff free within seven years of the agreement's entry into force. Trade in other products, such as beef and sheep meat, will be liberalised over a longer time frame of 10 years and 15 years respectively.

On 16 July 2023, the United Kingdom signed its accession protocol to join the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), a free trade agreement (FTA) including 11 members: Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Viet Nam. CPTPP membership will improve trade opportunities with all countries in the bloc, including those with whom the United Kingdom has an existing bilateral trade deal. The agreement is expected to enter into force in the United Kingdom in the latter half of 2024 once the UK and existing Parties have completed ratification.

The agreement provides the United Kingdom with tariff-free access for goods exports (including agricultural and food products) in several markets, as well as access to preferential tariffs for several protected products in certain CPTPP members. This includes increased cheese quotas in Canada, staged tariff liberalisation on dairy exports to Chile, access to tariff preferences for dairy and cereals exports to Japan, reduced tariffs for chocolate, sugar confectionery and whisky exports to Malaysia, access to preferential tariffs for dairy, chocolate and sugar confectionery, beef, pork and poultry in Mexico, staged tariff liberalisation on beef and poultry exports to Peru, and the elimination of tariffs on chocolate and pork exports to Viet Nam. Under the terms of the accession to CPTPP, tariff liberalisation for sensitive goods will be phased in over time and there will be permanent protections (small permanent quotas) for imports of beef, pork, chicken, and sugar to the United Kingdom from CPTPP members.

Under the Australia and New Zealand FTAs tariff liberalisation for sensitive goods will also be phased in over time, and the UK's most sensitive products such as beef and sheep meat will be subject to measures including tariff rate quotas (TRQs) and product-specific safeguards. These measures will limit the volume of duty-free imports permitted and in the case of beef and sheep meat will be in place for 15 years. An additional general bilateral safeguard mechanism will also be in place for all products, providing a temporary safety net for domestic producers if they face serious injury, or the threat of serious injury, from increased imports as a direct consequence of the Australia and New Zealand FTAs and CPTPP accession. This protection will last for a product's tariff liberalisation period plus five years to allow domestic producers time for readjustment.

In May 2022, an agreement in the form of an exchange of letters was reached between the United Kingdom and Ukraine, allowing for a temporary elimination of all customs duties on goods for a period of 12 months, which was subsequently renewed until March 2024 alongside the signature of the UK-Ukraine Digital Trade Agreement. In February 2024 the United Kingdom announced that it will extend tariff-free trade with

Ukraine until 2029, aiming to provide Ukrainian businesses and exporters with greater economic support and certainty. This latest agreement will see tariff-free trade extended on all goods for five years, except for eggs and poultry which will be extended for two years.

Policy context

Key economic and agricultural statistics

Agriculture accounts for a relatively small share of the United Kingdom's economy, representing less than 1% of GDP and total employment, which is significantly less than the OECD average. The share of livestock in total agricultural production is 58%, and the share of crop production is 42% (Table 27.2).

Table 27.2. United Kingdom: Contextual indicators

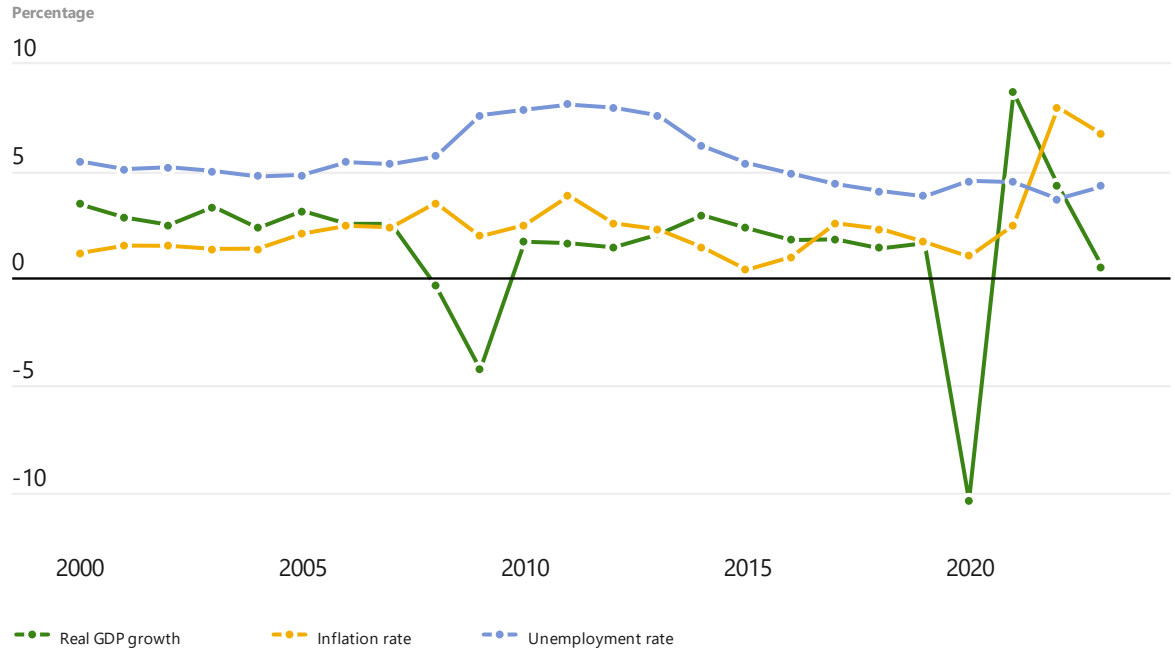
	United Kingdom		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	1 563	3 679	3.9%	2.7%
Population (million)	59	68	1.4%	1.3%
Land area (thousand km^2)	242	242	0.3%	0.3%
Agricultural area (AA) (thousand ha)	16 964	17 215	0.6%	0.6%
			All countries[1]	
Population density (inhabitants/km^2)	242	278	52	64
GDP per capita (USD in PPPs)	26 535	54 266	9 363	25 965
Trade as % of GDP	20.0	21.1	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	0.9	0.9	2.9	3.8
Agriculture share in employment (%)	1.5	0.8	-	-
Agro-food exports (% of total exports)	5.2	6.2	6.4	8.0
Agro-food imports (% of total imports)	7.8	9.1	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	41	42	-	-
Livestock in total agricultural production (%)	59	58	-	-
Share of arable land in AA (%)	35	35	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

Real GDP growth has ranged between 1.4% and 3.5% since the turn of the century, with the exception of the recession following the global financial crisis in 2008-09, and the significant contraction linked to the COVID-19 pandemic which started in 2020 (Figure 27.4). The easing of health measures and high level of pent-up consumer demand resulted in a sharp rebound with real GDP growth reaching 8.7% in 2021 and falling to 0.5% in 2023.

The unemployment rate was steady at around 5% in the early 2000s and increased to more than 8% in the aftermath of the global financial crisis. Unemployment has been declining steadily since 2011 and reached a low point of 3.7% in 2022. In contrast, inflation rose to a multi-decade high of 6.7% in 2023, driven by rising energy and food prices, supply chain bottlenecks, and strong consumer demand.

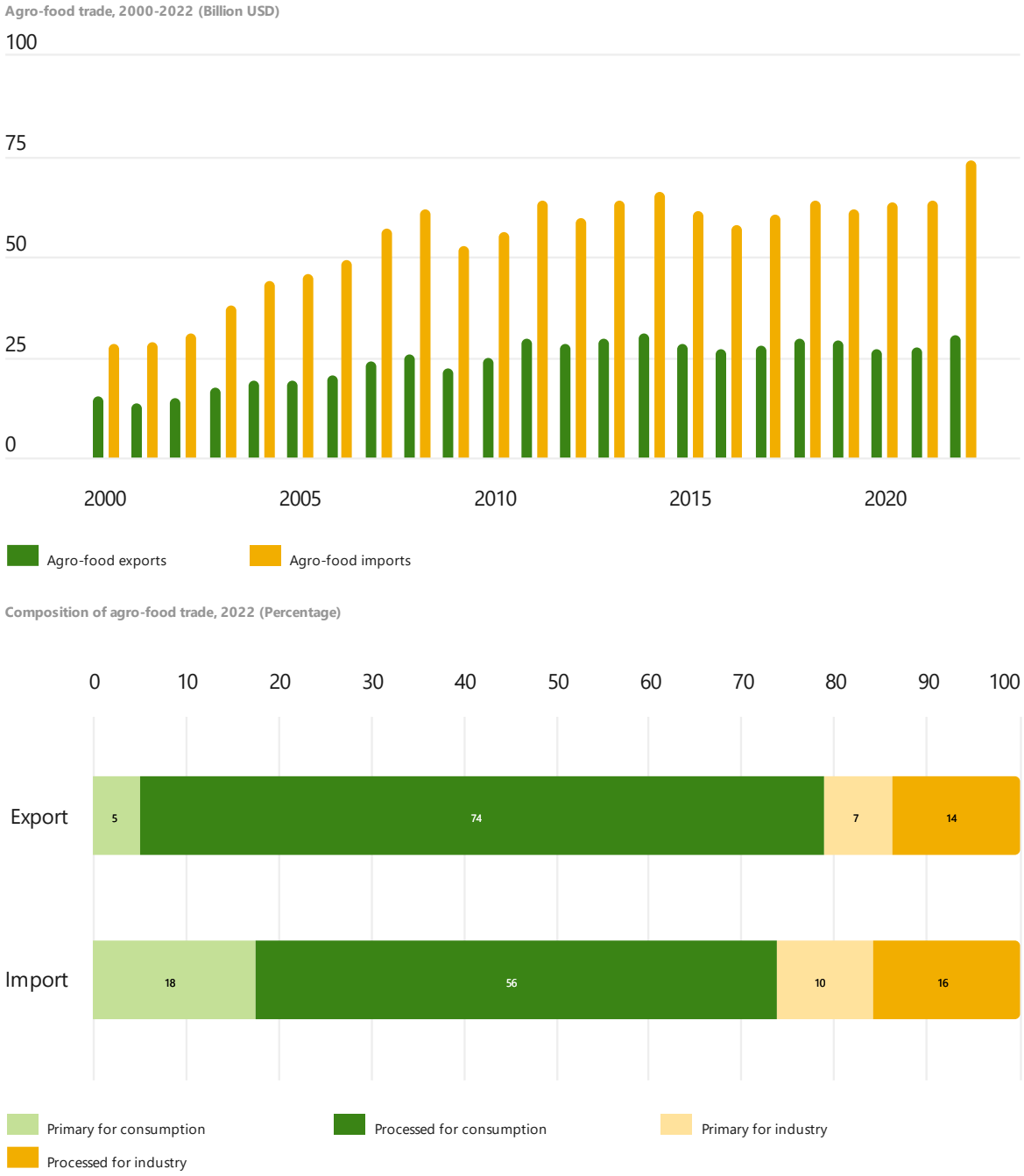
Figure 27.4. United Kingdom: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

The United Kingdom is a net importer of agricultural and food products (Figure 27.5). Over the last two decades, the share of agro-food exports in total exports has increased to 6.2%, while agro-food imports now account for 9.1% of total imports. The composition of agro-food trade in 2022 shows that the majority (74%) of exports are processed goods for consumption, while 14% of goods exported are processed for industry. In terms of imports, the majority (56%) are processed goods for consumption, followed by primary goods for consumption which account for 18% of imports.

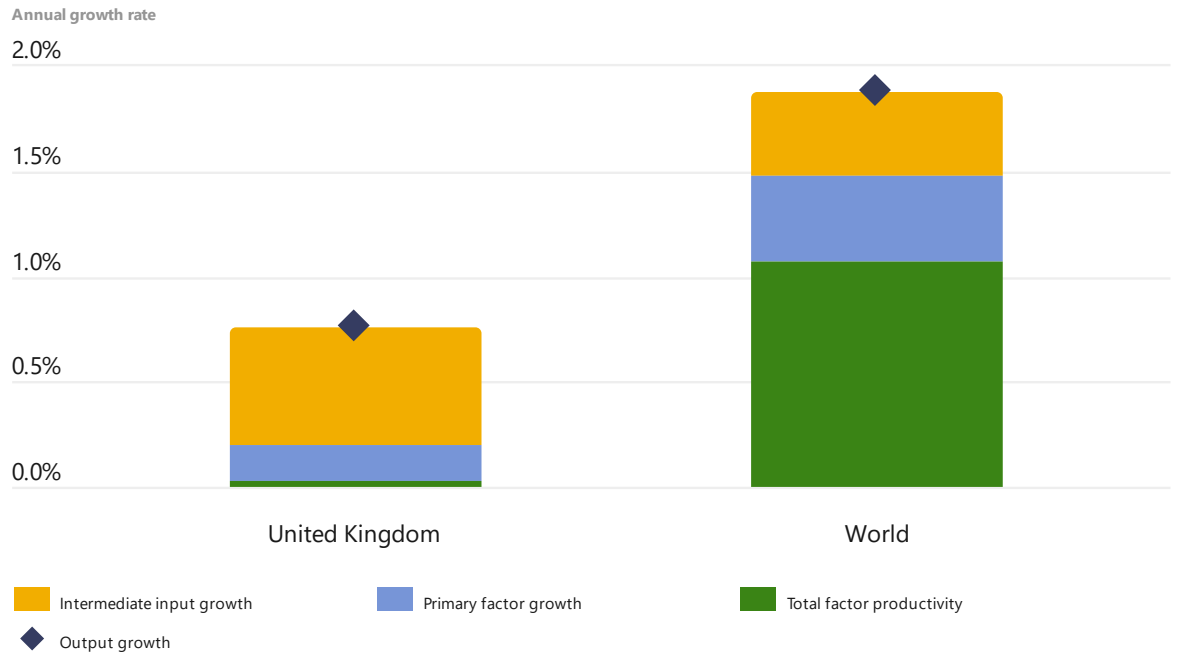
Figure 27.5. United Kingdom: Agro-food trade



Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

Agricultural output growth averaged 0.8% per year between 2012-21, less than half of the global average (Figure 27.6). Total factor productivity (TFP) growth has been zero over the past decade, and production growth was almost entirely driven by increased use of both primary factors and intermediate inputs.

Figure 27.6. United Kingdom: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Environmental indicators point to improvements over the past two decades (Table 27.3). The nitrogen balance fell by around 20%, the phosphorous balance declined by about 40%, and the share of agriculture in water abstractions (14%) is significantly below the OECD average (50%). However, the sector's share of total energy use and of GHG emissions grew over the same period and the nitrogen balance is more than three times the OECD average. Agricultural GHG emissions have not fallen as quickly as other sectors (in particular energy), and now equate to about 10% of total GHG emissions in the United Kingdom, slightly below the OECD average.

Table 27.3. United Kingdom: Productivity and environmental indicators

	United Kingdom		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	0.1%	0.0%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	107.0	86.1	32.1	28.2
Phosphorus balance, kg/ha	10.0	5.8	3.3	2.3
Agriculture share of total energy use (%)	0.8	1.0	1.7	2.0
Agriculture share of GHG emissions (%)	6.7	10.0	8.7	10.1
Share of irrigated land in AA (%)	0.8	0.4	-	-
Share of agriculture in water abstractions (%)	..	14.2	47.0	49.5
Water stress indicator	6.2	4.3	8.7	..

Note: * or closest available year.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

The United Kingdom joined the European Economic Community in 1973, and for several decades its agricultural policies were shaped by reforms to the European Union's Common Agricultural Policy (CAP). The 2009 CAP Health Check allowed Member States to adopt a selection of measures under their Pillar 2 funding. Subsequently, elective measures were also allowed under Pillar 1 of the CAP 2014-20. The United Kingdom nations' choices of elective measures were broadly aligned in this context, while specific payments were sometimes chosen, such as the redistributive payment in Wales and voluntary coupled support in Scotland. The United Kingdom opted to transfer 10.8% of its broad-based direct payments envelope to targeted longer-term expenditure under Pillar 2.

On 31 January 2020, the United Kingdom left the European Union. The CAP defined support to agriculture in the United Kingdom until the transition out of the European Union in 2020. In 2020 there were extensive negotiations with the European Union over future trade and co-operation relations, the preparation and adoption of laws to govern agriculture in the United Kingdom after the withdrawal from the European Union, and bilateral trade liberalisation negotiations with third countries.

In 2021 new agricultural support systems were introduced in England and the devolved governments of Scotland, Wales, and Northern Ireland. While the overall policy framework over the transition period is similar across the four countries, their proposed timing and approaches to implementing the new policies vary substantially.

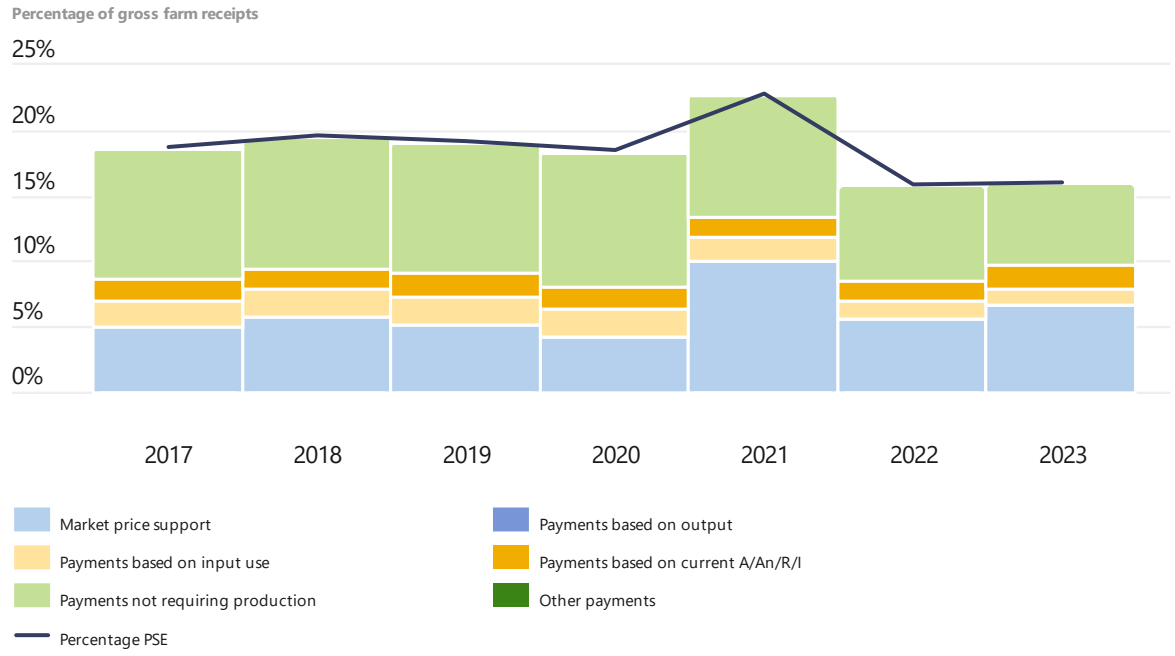
The three devolved governments and England are at various stages of development and implementation of their agricultural transition plans. Alongside the phasing out of the CAP measures, the devolved governments are taking a co-development approach with the sector and stakeholders to design and deliver their new domestic policy instruments.

Table 27.4. United Kingdom: Agricultural policy trends

Period	Broader framework	Changes in agricultural policies
1973-2020	European Union's Common Agricultural Policy (CAP)	Coupled support phase (pre-1992) MacSharry Reform (1992-1999) Agenda 2000 CAP Reform (2000-2002) Fischler Reform (2003-2008) Health Check (2009-2013) 2013 reform (2013-2020)
Since 2020	Transition to new agricultural support system	Phasing out of CAP-style direct payments: • Agriculture Act 2020 (England) • Agriculture (Retained EU Law and Data) (Scotland) Act 2020 • Agriculture (Wales) Bill 2022 • 54 policy decisions on Future Agricultural Policy for Northern Ireland New payments for farmers to provide environmental public goods

The PSE remained stable at around 19% from 2017 to 2020 before increasing sharply to 23% in 2021 and then contracting to 16% in 2022-24 (Figure 27.7). These fluctuations were mainly driven by changes in market price support (MPS) for livestock products, in particular beef and poultry which are subject to tariffs and tariff rate quotas.

Figure 27.7. United Kingdom: Development of the PSE and its composition, 2017 to 2023



Note: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

References

Climate Change Committee (2020), *The Sixth Carbon Budget: Agriculture and land use, land use change and forestry*, https://www.theccc.org.uk/wp-content/uploads/2020/12/Sector-summary-Agriculture-land-use-land-use-change-forestry.pdf. [2]

GOV.UK (2021), *Net Zero Strategy: Build Back Greener*, https://www.gov.uk/government/publications/net-zero-strategy. [1]

28. United States

Main findings

Support to agriculture

Producer support in the United States averaged 8% of gross receipts in 2021-23, well below the 20% of the mid-1980s and early 2000s, and below the OECD average. Policy reforms beginning in the 1980s progressively reduced the level of support and the prominence of price-based supports in the policy mix. The share of potentially most-distorting transfers was 9% in 2021-23, also below the OECD average and well below peak values. Prices received by farmers in 2021-23 were on average only 1% higher than in world markets, compared to 11% in 2000-02. This gap is mainly due to market price support (MPS) from border protections (including tariff rate quotas) for sugar. Producer prices of most commodities align with border prices, and the value of budgetary transfers directed at specific commodities is usually less than 10% of their gross farm receipts.

While MPS has declined, budgetary support to producers has increased, covering mainly risk-management, crop insurance, and more recently, emergency compensation payments. The counter-cyclical nature of budgetary support links it to market price developments such that periods of high commodity prices (as in 2012-13) see lower levels of support. Domestic commodity prices have been elevated in recent years, lowering overall support despite additional spending on disaster-relief programmes related to drought and other exceptional events.

US domestic food-assistance programmes that support consumers account for nearly half of total US support to agriculture. Expenditures for general services (General Service Support Estimate, GSSE) equalled 2.6% of the value of production in 2021-23, below the OECD average of 3.3%, with the largest component (32%) related to institutional infrastructure for crop insurance. Agricultural knowledge transfer and marketing and promotion are the next largest components.

Total support to agriculture was 0.5% of Gross Domestic Product (GDP).

Key recent policy changes

The 2018 US Farm Bill was extended through September 2024 while its replacement continues to be developed.

Ad hoc emergency assistance programmes were provided in 2023 in response to natural disasters, disaster-driven cost increases and market disruptions. This includes retroactive payments for consequences of COVID-19 and crop and forage losses experienced in 2022.

Relief to distressed borrowers with certain USDA loans and financial assistance to farmers, ranchers, and forest landowners who experienced discrimination in USDA farm lending programmes was provided through the Inflation Reduction Act (IRA) of 2022.

New crop insurance products were introduced in 2023, including a Tropical Storm Option for the Hurricane Insurance Protection-Wind Index (HIP-WI) Endorsement, new grapevine and kiwifruit insurance products, a weaned calf risk protection insurance option, and a Controlled Environment crop insurance product.

USDA ended temporary pandemic-related increases in Supplemental Nutrition Assistance Program (SNAP) benefits known as emergency allotments (EAs) for all states, resuming normal benefit levels as of March 2023.

The National School Lunch Program and School Breakfast Program, was amended to allow more schools operating in high poverty areas to offer free or reduced priced meals to all students.

Assessment and recommendations

- As US farm policy is evolving, greater attention to the policy design elements that best support sustainable productivity growth should be considered. The United States is already investing strongly in innovation and the environment, but large recent increases come from the Inflation Reduction Act. Putting these investments on a more secure long-term footing will ensure that farm policy supports SPG objectives.
- One way to secure long-term SPG investment is to make more use of capping or reduced payments to large farmers. Reducing the amount of support for those farms that are most able to manage their business risks can help ensure that more resources are available for SPG objectives such as investments in innovation, climate adaptation and environmental sustainability.
- A focus on disaster recovery and insurance is reflected both in expansion of coverage and retroactive compensation to fill gaps in support provided in past years (especially for market disruptions). As insurance programmes become more generous, the risk of adverse selection, moral hazard and fraud become greater. One way to reduce this risk is to make the government share of premiums contingent on the insured's history of claims. The system of control and enforcement also needs to be proportionate to the potential rewards from misusing the system.
- Support directed at underserved communities has helped to address the needs of relatively small and disadvantaged farmers.1 This approach should be mainstreamed into more USDA programmes to ensure that support reaches those small and non-traditional farmers most in need of assistance. This is especially needed for factors that improve competitiveness and profitability, including farm business development aids such as management training, business planning, improved access to capital and helping facilitate access to food chains.
- Sugar is the last major agricultural commodity receiving market price support. Reforming complex policies such as this is difficult, but making progress on market liberalisation is still worthwhile. Examples of successful reforms of similar programmes in the United States (for example tobacco and peanuts) in the past could serve as models for progress.

Development of support to agriculture

Figure 28.1. United States: Development of support to agriculture

Figure 28.1A. United States: Producer Support Estimate and its composition

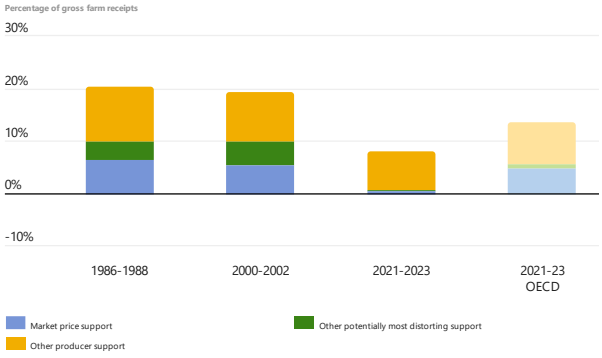


Figure 28.1B. United States: Ratio of producer to border price

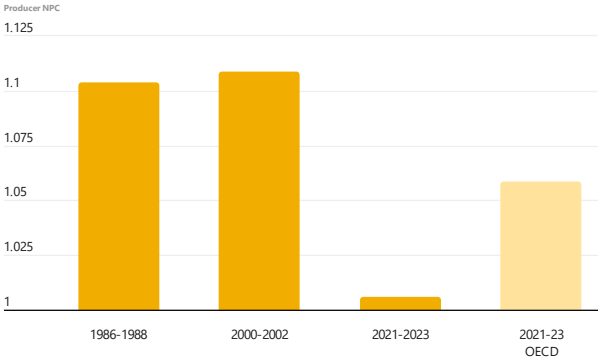


Figure 28.1C. United States: General Services Support Estimate and its composition

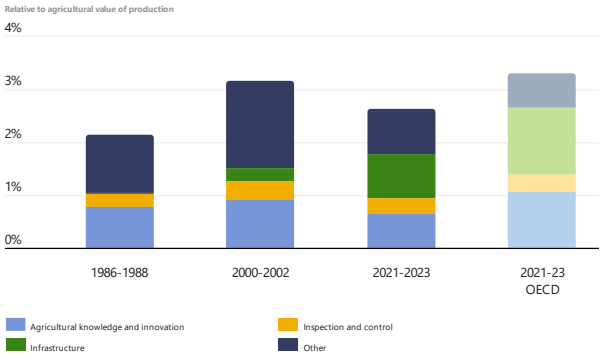
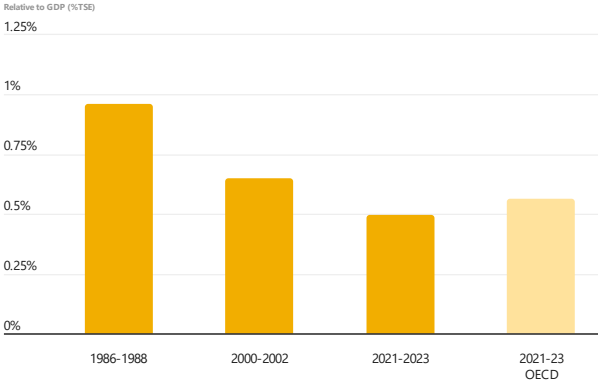
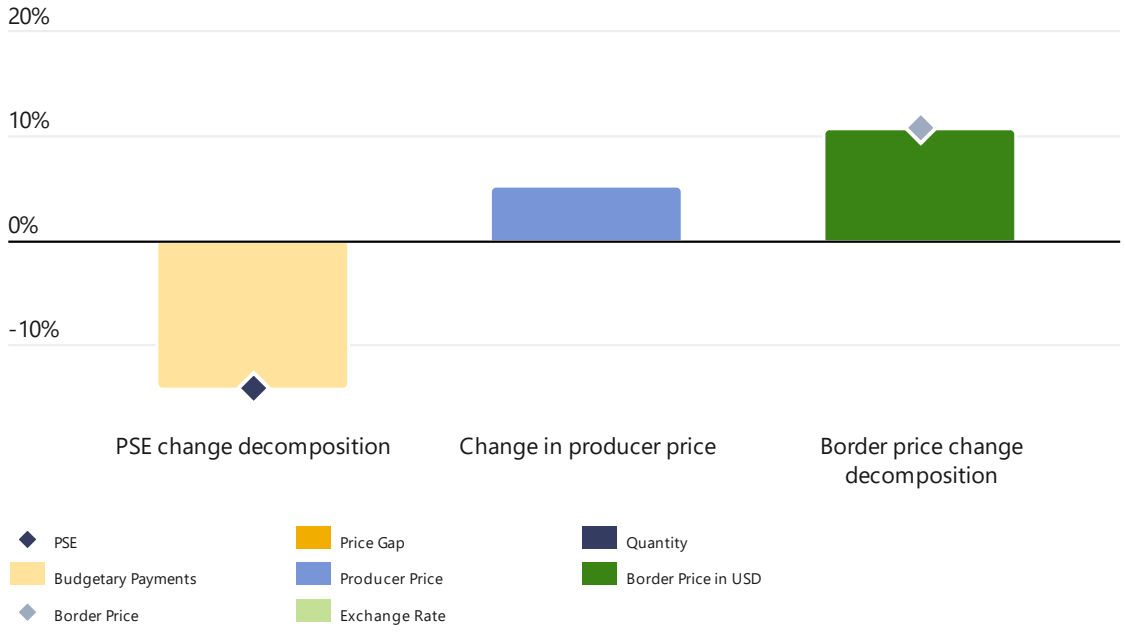


Figure 28.1D. United States: Total Support Estimate



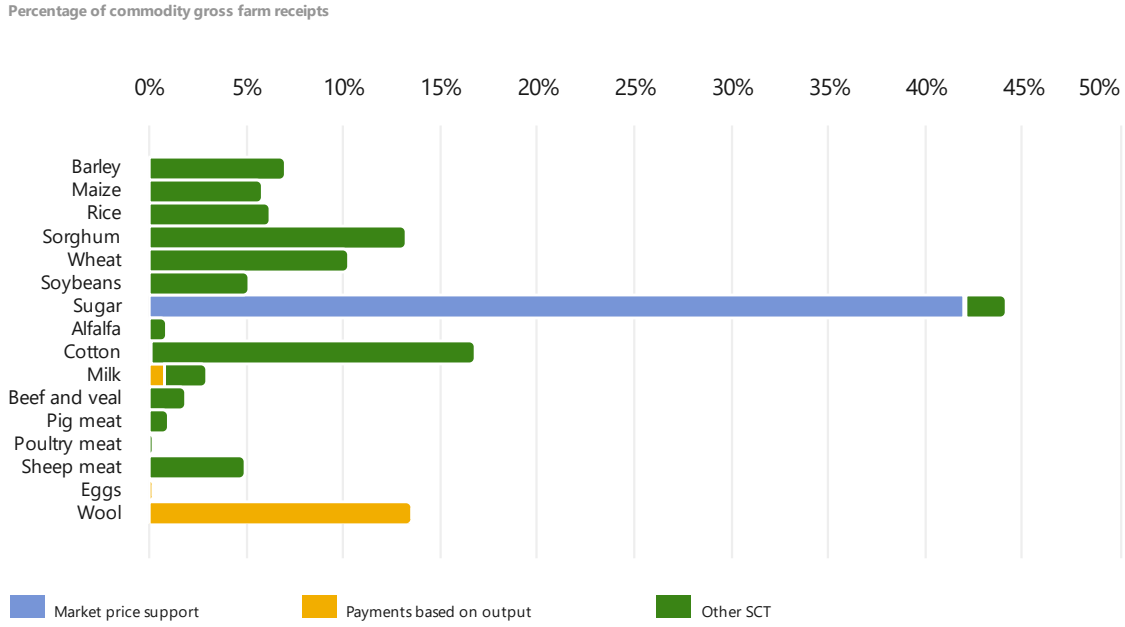
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 28.2. United States: Drivers of the change in PSE, 2022 to 2023



Note: % change of nominal Producer Support Estimate expressed in national currency.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 28.3. United States: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Table 28.1. United States: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**143 469**	**193 454**	**488 354**	**459 737**	**522 757**	**482 569**
of which: share of MPS commodities (%)	78.31	73.64	81.05	80.56	82.28	80.30
Total value of consumption (at farm gate)	**124 148**	**164 683**	**397 661**	**362 120**	**433 500**	**397 362**
Producer Support Estimate (PSE)	**33 947**	**43 724**	**42 889**	**53 017**	**40 713**	**34 937**
Support based on commodity output	13 725	19 648	2 896	3 676	2 525	2 489
Market price support[1]	10 616	12 467	2 379	2 219	2 438	2 479
Positive market price support	10 737	12 467	2 379	2 219	2 438	2 479
Negative market price support	-121	0	0	0	0	0
Payments based on output	3 108	7 181	518	1 457	87	9
Payments based on input use	7 061	7 572	11 519	9 526	11 382	13 650
Based on variable input use	3 697	3 091	2 674	1 894	3 117	3 010
with input constraints	791	403	1 811	1 030	2 252	2 151
Based on fixed capital formation	1 233	361	2 800	1 950	2 109	4 341
with input constraints	1 233	358	2 539	1 855	1 838	3 924
Based on on-farm services	2 131	4 120	6 046	5 683	6 155	6 299
with input constraints	349	677	1 938	1 811	1 936	2 067
Payments based on current A/An/R/I, production required	12 231	5 655	22 614	28 902	22 425	16 514
Based on Receipts / Income	912	2 055	3 266	3 087	2 773	3 939
Based on Area planted / Animal numbers	11 319	3 600	19 347	25 816	19 652	12 575
With input constraints	2 565	1 571	19 347	25 816	19 651	12 575
Payments based on non-current A/An/R/I, production required	0	0	1 009	2 703	324	0
Payments based on non-current A/An/R/I, production not required	338	8 789	2 951	6 295	2 204	355
With variable payment rates	0	3 969	2 951	6 295	2 204	355
with commodity exceptions	0	3 969	2 951	6 295	2 204	355
With fixed payment rates	338	4 819	0	0	0	0
with commodity exceptions	0	4 819	0	0	0	0
Payments based on non-commodity criteria	592	2 061	1 900	1 915	1 854	1 931
Based on long-term resource retirement	592	2 050	1 885	1 892	1 842	1 920
Based on a specific non-commodity output	0	0	0	0	0	0
Based on other non-commodity criteria	0	11	15	23	12	11
Miscellaneous payments	0	0	0	0	0	0
Percentage PSE (%)	**20.35**	**19.46**	**8.11**	**10.38**	**7.26**	**6.78**
Producer NPC (coeff.)	**1.10**	**1.11**	**1.01**	**1.01**	**1.01**	**1.01**
Producer NAC (coeff.)	**1.26**	**1.24**	**1.09**	**1.12**	**1.08**	**1.07**
General Services Support Estimate (GSSE)	**3 108**	**6 164**	**12 981**	**11 935**	**13 508**	**13 500**
Agricultural knowledge and innovation system	1 129	1 805	3 300	3 035	3 102	3 762
Inspection and control	372	685	1 395	1 300	1 391	1 493
Development and maintenance of infrastructure	13	461	4 111	3 463	5 002	3 868
Marketing and promotion	495	957	2 373	2 231	2 260	2 628
Cost of public stockholding	0	107	2	2	4	0
Miscellaneous	1 100	2 149	1 801	1 903	1 750	1 750
Percentage GSSE (% of TSE)	**6.59**	**8.89**	**10.16**	**9.14**	**10.03**	**11.44**
Consumer Support Estimate (CSE)	**-1 314**	**5 191**	**66 845**	**60 969**	**75 286**	**64 280**
Transfers to producers from consumers	-10 074	-12 173	-2 379	-2 219	-2 438	-2 479
Other transfers from consumers	-1 624	-2 061	-2 659	-2 382	-2 794	-2 802
Transfers to consumers from taxpayers	10 089	19 425	71 883	65 570	80 518	69 561
Excess feed cost	294	0	0	0	0	0
Percentage CSE (%)	**-1.15**	**3.57**	**20.52**	**20.56**	**21.33**	**19.61**
Consumer NPC (coeff.)	**1.10**	**1.09**	**1.01**	**1.01**	**1.01**	**1.01**
Consumer NAC (coeff.)	**1.01**	**0.97**	**0.83**	**0.83**	**0.82**	**0.84**
Total Support Estimate (TSE)	**47 144**	**69 314**	**127 753**	**130 522**	**134 739**	**117 999**
Transfers from consumers	11 698	14 234	5 038	4 601	5 232	5 281
Transfers from taxpayers	37 071	57 141	125 375	128 303	132 301	115 520
Budget revenues	-1 624	-2 061	-2 659	-2 382	-2 794	-2 802
Percentage TSE (% of GDP)	**0.96**	**0.65**	**0.50**	**0.56**	**0.52**	**0.43**
Total Budgetary Support Estimate (TBSE)	**36 528**	**56 847**	**125 375**	**128 303**	**132 301**	**115 520**
Percentage TBSE (% of GDP)	**0.75**	**0.54**	**0.49**	**0.55**	**0.51**	**0.42**
GDP deflator (1986-88 = 100)	**100**	**139**	**219**	**207**	**221**	**230**
Exchange rate (national currency per USD)	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for the United States are: wheat, maize, barley, sorghum, alfalfa, cotton, rice, soybean, sugar, milk, beef and veal, sheep meat, wool, pig meat, poultry and eggs.

Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

The Agricultural Improvement Act of 2018 (the 2018 Farm Bill) provides the basic legislation governing farm programmes for 2019 to 2023 (the legislation was extended in late 2023 to cover through September 2024). The 12 titles of the 2018 Farm Bill authorise policies for commodity programmes, conservation on agricultural land, agricultural trade promotion, international food aid, nutrition programmes, farm credit, rural development, agricultural research, forestry on private lands, energy, horticulture and organic agriculture, and crop insurance. About 75% of budgetary spending under the 2018 Farm Bill is for programmes in the Nutrition title – primarily the *Supplemental Nutrition Assistance Programme* (SNAP) – with farm programmes accounting for the remainder. Of the farm programmes, crop insurance is the largest at around 9% of total expenditures, followed by commodities and conservation at 7% each.

The primary crop commodity programmes under the 2018 Farm Bill include programmes that make payments to producers with historical base acres[2] of programme crops (wheat, feed grains, rice, oilseeds, peanuts, pulses and seed cotton) when prices fall below minimums set out in the legislation or when crop revenue is low relative to recent levels. Producers are not required to produce the covered commodity to receive payments on their historical base. Price Loss Coverage (PLC), a counter-cyclical price programme, makes a payment when market prices for covered crops fall below effective reference prices.[3] Agriculture Risk Coverage (ARC), a revenue-based programme, makes a payment when actual revenue at the county level falls below rolling average benchmark revenues. For both programmes, payments are made on 85% of base acres. Participating producers were required to choose between the PLC and ARC programmes[4] on a commodity-by-commodity basis for 2019 and 2020, then annually for each year for 2021-23.

The crop insurance programme offers coverage options for both yield and revenue losses. Traditional crop insurance offers subsidised crop insurance to producers who purchase a policy to protect against losses in yield, crop revenue, or whole farm revenue. In addition, the Supplementary Coverage Option (SCO) and Stacked Income Protection Plan (STAX) offer area-based insurance coverage, SCO in combination with traditional crop insurance policies and STAX for upland cotton producers.

Marketing assistance loans are available for wheat, feed grains, upland cotton, rice, oilseeds, pulses, wool, mohair and honey. These loans provide cash flow at harvest when prices are typically lower, allowing farmers to delay sales until market conditions improve. These are non-recourse loans that can be repaid at market prices when those fall below the loan rate, although market prices for most commodities have been above loan rates in recent years.

For dairy producers, the Dairy Margin Coverage (DMC) programme, insures a producer-elected margin-level between a nationally defined milk price and feed costs for a premium, with payments made on enrolled historical milk production. Producers may participate in both DMC and dairy livestock insurance programmes. Under the Milk Donation Reimbursement Programme (MDP) fluid milk producers with pre-approved plans may be reimbursed for costs incurred in donating fluid beverage milk to low-income groups.

Sugar is supported by a tariff rate quota (TRQ), together with provisions for non-recourse loans (which are not eligible for the repayment provisions discussed above) and marketing allotments. TRQs are in place for dairy, beef and some other products. However, US agricultural tariffs are generally low, at 4.5% on average in 2021.

Federal agri-environmental programmes focus on land retirement, easements restricting land use options and measures to encourage crop and livestock producers to adopt practices that reduce environmental pressures on working land (cropland and grazing land in production). Working land programmes include the Environmental Quality Incentives Programme (EQIP) and the Conservation Stewardship Programme (CSP). Land retirement and easement programmes include the Agricultural Conservation Easement

Programme (ACEP) and the Conservation Reserve Programme (CRP). The Regional Conservation Partnership Programme offers options for regional or watershed-based conservation efforts that may combine both land retirement, easements, and working lands programmes. Production of ethanol and other biofuels is supported mainly in the form of mandated blending for fuel use, and loan and grant programmes. Eligibility for most federal commodity programme payments, including crop insurance premium subsidies, is subject to recipients having established an individual farm-based conservation plan to protect highly erodible cropland and wetlands.

Other farm programmes include direct and guaranteed loans (including microloans) for farmland purchase and for operating credit, designed to assist producers who face difficulty obtaining credit in the private market, particularly beginning, military veteran and socially disadvantaged farmers. Farm Bill programmes also support public agricultural research and technical assistance, including programmes targeted to specialty crops; organic production; pest and disease prevention; the promotion of sustainable farming practices; and standing disaster programmes for livestock, forage, and trees, bushes and vines to help producers cope with production, financial and physical losses related to or caused by natural disasters.

Innovation for sustainable productivity growth

The United States promotes a holistic approach to SPG in which potential negative externalities of productivity growth are identified and addressed, with the objective of supporting the transition to more sustainable, resilient, and inclusive food systems. USDA's working definition of sustainable agricultural productivity growth is "agricultural productivity growth that advances social, environmental, and economic development objectives to meet the food and nutrition needs of current and future generations."

USDA's SPG policies and programmes can be grouped into three broad areas: public research, development, and dissemination of innovative technologies and approaches; incentivisation of private-sector innovation; and fostering an enabling environment.

Public research, development, and dissemination of innovative technologies and approaches

The United States funds a wide variety of R&D and dissemination programmes aimed at improving sustainable agricultural productivity growth. This includes support for global platforms to share information about innovative new technologies and approaches, best practices, and lessons learned. Examples of USDA agencies/programmes that spearhead this research and its dissemination include:

- **USDA, Agricultural Research Service (ARS).** As the Department's principal in-house research agency, USDA, ARS has 2 000 scientists and post docs; over 90 research locations including overseas laboratories; and an annual budget of about USD 1.7 billion. The National Program on Sustainable Agricultural Systems is the lead programme area in ARS covering SPG. The goal of this programme is "diversified agricultural systems that sustain and improve productivity, profitability, ecosystem health, and human well-being." The programme is built around three components: building agroecosystems for intensive, resilient production via GxExM (the interaction of genetics with environment and management); increasing the efficiency of agroecosystems; and achieving agroecosystem potential. USDA, ARS is currently supporting 660 research projects.
- **USDA, National Institute of Food and Agriculture (NIFA)** provides leadership and funding for programmes that advance agriculture-related sciences. The agency invests in and supports initiatives that ensure the long-term viability of agriculture. USDA, NIFA collaborates with leading scientists, policymakers, experts, and educators in organisations throughout the world to find innovative solutions to the most pressing local and global problems. Through its research area on sustainable agricultural production systems, USDA, NIFA invests in science and technology

development to improve the nation's ability to achieve food security through increased production efficiencies and profitability while enhancing environmental stewardship in a changing climate.

- **Cooperative Extension System (CES)** is operated through the nation's Land-Grant University System in partnership with the federal, state, and local governments. As the federal partner, USDA, NIFA develops methods to address national priorities (including SPG), funds and awards grants, and provides programme leadership to the CES. CES maintains offices in or near most of the nation's approximately 3 000 counties, ensuring that technical assistance is available to all producers and is carried out in the context of local conditions.
- **Conservation Technical Assistance (CTA) and USDA Conservation Programmes** provide farmers, ranchers and forestland owners with the knowledge and tools they need to conserve, maintain, and restore the natural resources on their lands and improve the health of their operations for the future. USDA, NRCS provides personalised advice and information to help producers make informed decisions regarding the implementation of conservation practices. CTA advisors also help producers to develop a conservation plan, outlining suggested conservation practices that can help producers to reach their production and conservation goals. Producers can also apply for financial assistance to implement or maintain conservation practices through the portfolio of USDA conservation programmes. USDA conservation programmes (such as the Agricultural Conservation Easement Program, Conservation Reserve Program, Conservation Stewardship Program, Environmental Quality Incentives Program, and Regional Conservation Partnership Program) include their own technical assistance components to ensure that producers can successfully implement conservation practices in line with individual farm conditions and best practices.
- **USDA Climate Hubs**. Ten regional Climate Hubs are led and hosted by USDA, ARS and the USDA Forest Service (FS), with contributions from many agencies including the Natural Resources Conservation Service (NRCS), Farm Service Agency (FSA), and the Risk Management Agency (RMA). The Climate Hubs link USDA research and programme agencies in their regional delivery of timely and authoritative tools and information to agricultural producers and professionals.
- **USDA's International Climate Hub** is a platform to share research, tools, collaborative efforts, and best practices on a global scale to improve the world's ability to adapt to climate change and mitigate its impacts. Sharing best practices and research, including those from international coalitions and research consortia, strengthens efforts to find solutions to global climate challenges, improve forest conservation, management, and restoration, and make agricultural production more efficient and productive everywhere.

Incentivising private sector actors to innovate and invest in sustainable productivity growth

To directly incentivise private sector investment in SPG, USDA has pursued a number of approaches, including targeted challenges, competitions, and grants. The use of prizes and challenges is a recent and growing complement to grants to stimulate private R&D. Legislation over the past few decades has promoted the use of prize competitions in the United States and USDA has employed innovation challenges to pursue goals related to sustainable agriculture.

- **Partnerships for Climate-Smart Commodities**. Through this grant programme, USDA is investing more than USD 3.1 billion for 141 projects. Selected projects will provide technical and financial assistance to producers to implement climate-smart production practices on a voluntary basis on working lands; pilot innovative and cost-effective methods for quantification, monitoring, reporting and verification of greenhouse gas benefits; and develop markets and promote the resulting climate-smart commodities. The initiative is expected to reach more than 60 000 farms affecting more than 25 million acres (10.1 million ha) of working land and eventually sequestering more than 60 million metric tonnes of CO_2.

- **USDA, NRCS's Conservation Innovation Grants (CIG)** programme is a competition programme that supports the development of new tools, approaches, practices, and technologies to further natural resource conservation on private lands. CIG partners aim to address the country's water quality, air quality, soil health, and wildlife habitat challenges, all while improving agricultural operations. CIG offers three funding opportunities annually, one focused on national priorities, one focused on individual state priorities, and one specifically targeted to on-farm innovation trials to support more widespread adoption and evaluation of innovative conservation approaches in partnership with agricultural producers.
- **Next Gen Fertilizer Challenges**. USDA, along with the US Environmental Protection Agency and private sector partners, recently hosted two challenges focused on stimulating innovation in enhanced efficiency fertilisers (EEF) and other next generation product technology innovations to reduce the impacts from row crop agriculture on the environment while maintaining or increasing agricultural productivity and profitability. The first challenge, the "EEFs: Environmental and Agronomic Challenge" focused on identifying existing EEFs currently on or near-market that meet or exceed certain environmental and agro-economic criteria. The second, the "Next Gen Fertilizer Innovations Challenge," focused on identifying concepts for novel technologies for fertilisers and other product technology innovations that can reduce the environmental effects from agriculture while maintaining or increasing crop yields.
- **Sustainable Agriculture Research and Education Program (SARE)** funds farmer-driven grants and grassroots education programmes resulting in climate-smart solutions for farms and ranches in every state and island protectorate. In the last 35 years, with funding from USDA, NIFA, SARE has provided USD 380 million in grant funding for nearly 8 400 projects serving farmers, growers, and rural communities.
- **Foundation for Food & Agricultural Research (FFAR)** builds collaborative public-private partnerships connecting funders, researchers, and farmers. FFAR's work focuses on six "Challenge Areas" (Soil Health, Sustainable Water Management, Next Generation Crops, Advanced Animal Systems, Urban Food Systems, and Health-Agriculture Nexus), with "Forging the Innovation Pathway to Sustainability" highlighted as a key theme across all Challenge Areas.

Fostering an enabling environment

An enabling environment ensures that producers and policy makers have the information, tools and opportunities to innovate for sustainable productivity growth. Examples of actions to foster an enabling environment include:

- **GHG Measurement, Monitoring, Reporting and Verification (MMRV) for Agriculture and Forestry**. USDA invests USD 300 million over eight years (funded through the Inflation Reduction Act) to support GHG MMRV efforts. These funds support a comprehensive strategy to improve data, models, and tools needed for quantifying the impact of conservation practices on GHG emissions and carbon sequestration.
- **USDA, Economic Research Service's (ERS) International Agricultural Productivity data series** provides globally comparable data that can be used to support policy decisions related to sustainable productivity growth. First published in 2013 and updated annually, the current series covers the period from 1961 to 2021. The series provides national and regional indices of total agricultural outputs, inputs, and total factor productivity (TFP). Output includes the production volume of 200 crop, animal, and aquaculture commodities; inputs include land, labour, capital, and materials.
- **Support for broadband infrastructure**, including through ReConnect. USDA's ReConnect Program offers loans, grants, and loan-grant combinations to facilitate broadband deployment in areas of rural America that currently do not have sufficient access to broadband. The 2021

Infrastructure Investment and Jobs Act allocated nearly USD 2 billion in additional funding for ReConnect.

- **The Working Lands Climate Corps** provides technical skills training, education awards, and career pathway opportunities for young people. They conduct outreach and education around the availability of climate-smart agriculture assistance and support conservation technical assistance and resilient planning activities for working farms and ranches. The Working Lands Climate Corps is part of the American Climate Corps, a workforce training and service initiative that gives young people access to the skills-based training needed for careers in the clean energy and climate resilience economy.
- **USDA Rural Development's Agriculture Innovation Centers** programme establishes and operates centres that provide technical and business development assistance to agricultural producers seeking to engage in developing and marketing of value-added agricultural products. The Agriculture Innovation Centers offer a variety of services, including feasibility studies and business plans, engineering services, scale production assessments, systems development concept testing, feasibility and cost analysis, product taste-testing, demographic and other types of consumer analysis, production analysis, and evaluation of packaging and labelling options.

Recent policy developments

Domestic policy developments in 2023-24

Disaster assistance and direct income payments

In 2023, USDA announced several emergency relief programmes, including several that make payments retroactively based on losses experienced in 2022:

- The Emergency Relief Program 2022 (ERP 2022) provides compensation to eligible crop producers for crop or tree losses experienced in 2022. All producers receiving ERP 2022 payments must purchase crop insurance or NAP coverage where crop insurance is not available for the next two available crop years.
- The Emergency Livestock Relief Program 2022 provides payments to producers who faced increased supplemental feed costs because of forage losses due to a qualifying drought or wildfire in calendar year 2022, using data already submitted to USDA, FSA through the Livestock Forage Program.
- The Emergency Grain Storage Facility Assistance Program provided financial assistance to grain producers to assist with marketing disruptions and limited storage capacity caused by eligible disaster events that damaged or destroyed local commercial grain facilities in affected counties between 1 December 2021 and 1 August 2022. The assistance could be used to build temporary or permanent on-farm grain storage for a producer's own use or a common facility for shared use among a group of producers; to restore existing storage; or to purchase drying and handling equipment needed for grain storage.
- The Rice Production Program provided financial assistance to rice producers affected by higher production costs during the 2022 crop year and was based on 2022 acreage (both planted and prevent plant).
- The Milk Loss Program provided financial assistance to eligible dairy operations for milk that was dumped or removed without compensation from the commercial milk market due to qualifying weather events, such as power outages or impassable roads, that inhibited the delivery of milk or the storage of milk, for the 2020, 2021, and 2022 calendar years.

USDA launched several programmes in 2023 aimed at financial impacts that producers experienced during the COVID-19 pandemic and made additional payments under existing pandemic-related programmes.

- The launch of the Pandemic Assistance Revenue Program, which provided support for eligible producers of agricultural commodities who suffered at least a 15% decrease in allowable gross revenue for the 2020 calendar year compared to either the 2018 or 2019 calendar year due to the COVID-19 pandemic.
- Revisions to the Coronavirus Food Assistance Program (CFAP) – most prominently, USDA issued an additional CFAP 2 payment to underserved farmers and ranchers, equal to 15% of a producer's previous CFAP 2 payment.
- A second round of assistance under the Pandemic Market Volatility Assistance Program, offering nearly USD 100 million in additional resources to expand eligibility to dairy farmers with between 5 million and 9 million pounds (2.3-4.1 million kg) of fluid milk sales from July through December 2020.

Finance and farm credit

Assistance in 2023 under Section 22006 of the Inflation Reduction Act (IRA) included the availability of cash flow-based assistance, opportunities for FSA direct loan borrowers to receive assistance if they took extraordinary measures to keep their loans current, the provision of automatic financial assistance to qualifying distressed guaranteed loan borrowers and assistance for borrowers of Emergency Loans.

In August 2023, a pilot programme was launched to expedite the processing of direct Operating Loans (OL) and Farm Ownership Loans (FO) to qualified farmers and ranchers, called the Application Fast Track (AFT) Program. The programme provides an accelerated underwriting process using financial data to benchmark and identify applicants least likely to default and is expected to result in significant time savings in loan approvals. AFT will expand to all USDA service centre locations nationwide from January 2024 through September 2024.

Crop insurance and risk management

New crop insurance products were launched in 2023, including:

- A new Tropical Storm Option expands coverage under the Hurricane Insurance Protection-Wind Index (HIP-WI) Endorsement to certain strong weather systems not categorised as hurricanes. The HIP-WI endorsement normally covers a portion of the deductible of an underlying insurance policy when a producer's county or an adjacent county is hit with hurricane-force winds from a named hurricane. The tropical storm option is available in selected counties in 21 eastern and southern US states.
- The new Grapevine insurance programme will provide coverage for loss of grafted vines caused by natural perils and complement the Grape crop insurance programme that covers fruit growing on the vine. The new insurance programme is classified as a "mortality policy", paying losses when the vine is dead or so badly damaged that it will not recover in the following 12 months. The programme covers freeze, fire, hail, flood, and failure of the irrigation water supply caused by an unavoidable, naturally occurring event, and will be available in selected counties in California, Idaho, Michigan, New York, Ohio, Oregon, Pennsylvania, Texas, and Washington for the 2024 crop year.
- A new kiwifruit insurance product will provide coverage against yield losses for fresh varieties of commercially grown kiwifruit under irrigated practices. The new policy is available in 12 counties in California beginning in the 2024 crop year.

- A new Weaned Calf Risk Protection insurance option for livestock producers was made available beginning in 2024. This policy offers Actual Production History coverage for beef cow-calf producers to insure revenue from their spring calving operations. The product provides coverage for a decline in price and loss of yield due to a decrease of overall weaning weight like revenue coverage offered for crops. The product will be available in Colorado, Nebraska, South Dakota, and Texas.
- A new crop insurance product was launched for producers who use controlled environments in their operations, which will provide coverage against plant diseases subject to federal or state destruction orders. The product offers coverage for all controlled environment plants, including cuttings, seedlings, and tissue culture, and is available in select counties in 25 states beginning in the 2024 crop year.

The Margin Protection insurance plan for corn and soybean producers was expanded to more than 1 000 additional counties for the 2024 crop year. Margin protection plans protect against decreases in margin caused by reduced county yields, reduced commodity prices or any combination of these issues.

Organic agriculture

In 2023, there was new rulemaking related to organic agriculture, and new initiatives were provided to support organic agriculture and producers transitioning to organic production. In January, the Strengthening Organic Enforcement Final Rule was published, which amends the USDA organic regulations to reduce fraud in the organic marketplace. The amendments strengthen oversight of organic producers, handlers, and certifiers, improving farm to market traceability, and clarifying USDA's authority to enforce organic trade. Then in October, the Organic Livestock and Poultry Standards (OLPS) final rule was published, which amends the USDA organic regulations related to livestock and poultry production by adding new provisions for livestock handling and transport, slaughter, and avian (poultry) living conditions; and expands and clarifies existing requirements covering livestock care and production practices and non-avian living conditions. The new rule is effective as of 2 January 2024, and all operations (with some exceptions) must comply with the requirements of the rule by 2 January 2025.

In May 2023, USDA launched the Organic Market Development Grants programme, which made available up to USD 75 million in competitive grants to support the development of new and expanded organic markets, with awards ranging from USD 10 000 to USD 3 million. The programme focuses on building and expanding capacity for certified organic production, aggregation, processing, manufacturing, storing, transporting, wholesaling, distribution and development of consumer markets.

The Organic Dairy Marketing Assistance Program was also launched in May to assist small organic dairy operations with projected marketing costs for 2023. Up to USD 104 million from the Commodity Credit Corporation (CCC) was made available for the programme. Operations that produce organic milk from dairy cows, dairy goats, or dairy sheep were eligible for payment on up to 5 million pounds (2.27 million kg) of organic milk.

Food systems

In May 2023, USDA announced the launch of the Resilient Food Systems Infrastructure (RFSI) Program, which will be carried out through cooperative agreements with each US State and Territory to develop and administer co-ordinated initiatives to build resilience across the middle-of-the-food-supply-chain in their state. Funds will support expanded capacity for aggregation, processing, manufacturing, storing, transporting, wholesaling, and distribution of locally- and regionally-produced food products.

The Farmer Seed Liaison initiative was established in July 2023 in line with the recommendations of a report on fair competition and innovation in seed and other agricultural input markets. This initiative includes establishing a point of contact within USDA to help those who work with seeds to navigate this

system, launching a new web resource to simplify access to US Patent and Trademark Office (USPTO) pending docket of plant patents and plant breeding-related utility patents and creating a new senior-level Chief Competition Officer position in the AMS Administrator's office.

A final rule on Transparency in Poultry Grower Contracting and Tournaments was published in November 2023. This rule revises the regulations under the 1921 Packers and Stockyards Act to promote transparency in poultry production contracting. The rule requires live poultry dealers to disclose information to broiler chicken growers, including an estimated range of financial returns growers in the same area received in recent years, by housing type, so that growers can understand what to expect from their business relationship with live poultry dealers. The rule took effect on 12 February 2024.

USDA opened 17 new Urban Service Centers and 10 new urban county committees in 2023 as part of the department's efforts to support urban agriculture. The Urban Service Centers will help to better serve urban farmers and will be staffed by USDA, Farm Service Agency (FSA) and USDA, Natural Resources Conservation Service (NRCS) employees. The centres will offer farm loans, conservation assistance, disaster assistance, and risk management programmes. The new county committees join the 17 established urban county committees in working to encourage and promote urban, indoor, and other emerging agricultural production practices and provide farmer input on USDA, FSA programmes.

The Indigenous Animals Harvesting and Meat Processing Grant Program (IAG) was launched in April 2023. Grants under the programme support traditional harvesting methods and community animal protein processing operations. Up to USD 50 million in grants is available, with no minimum or maximum funding limit on grants, and no cost share or matching funds required. Eligible indigenous species include bison, reindeer, game meat, or seafood, and applicants can also propose activities related to meat, poultry, or fish regulated by USDA, Food Safety and Inspection Service (FSIS).

April also saw the launch of the Local Meat Capacity Grant (Local MCap) programme. This programme provides up to USD 75 million in grants to fund projects that build resilience in the meat and poultry supply chain, targeting support to meat and poultry processors and rendering facilities with smaller-scale projects.

Nutrition

A pilot Nutrition Hub was launched under the ASCEND for Better Health Initiative, in partnership with Southern University (a Historically Black, 1890 Land-Grant University in Louisiana) to provide science-based, nutrition-related information at the community level, particularly in underserved communities disproportionately impacted by diet-related chronic diseases. The Hub's objectives include developing and sharing science-based nutrition information and connecting communities with relevant programmes; developing relationships and partnerships with organisations serving African American communities and defining community food and nutrition needs and opportunities; fostering research and training opportunities in human nutrition, particularly in underserved and underrepresented communities; and building current and future workforce capacity to enhance collaborations between researchers and those on the front lines of community nutrition and health.

Several activities also took place throughout 2023 as part of the Healthy Meals Incentive Initiative, including grants to showcase schools implementing successful strategies for serving healthy, appealing meals; School Food System Transformation Challenge Sub-grants to support partnerships between school districts and food producers, suppliers, distributors, or other community partners; and new sub-grants launched in co-operation with Action for Healthy Kids for small or rural school food authorities to improve the nutritional quality of their meals and modernise their operations.

Temporary pandemic-related increases in Supplemental Nutrition Assistance Program (SNAP) benefits known as emergency allotments (EAs) ended for all states at the end of February 2023, with normal benefit levels resuming in March 2023. EAs began in March 2020 to boost benefits to all SNAP households in response to the financial hardships of the pandemic.

In August 2023, USDA, Food and Nutrition Service (FNS) published its final Child Nutrition Program Integrity Rule. This strengthened administrative oversight and operational performance of the Child Nutrition Programs, including for fines, prohibitions on participation of any terminated entity or individual in any Child Nutrition Program, reviews of Child and Adult Care Food Program (CACFP) institutions and additional State agency funding for audits of CACFP institutions.

In September 2023, Community Eligibility Provision (CEP) regulations for schools participating in the National School Lunch Program and School Breakfast Program were revised. CEP allows schools operating in high poverty areas to offer free or reduced priced meals to all students without collecting household income eligibility applications. The minimum percentage of enrolled students who are certified for free school meals without submitting a household application was lowered from 40% to 25%. This expansion allows an estimated 3 000 more school districts in high-need areas the option to serve breakfast and lunch to all students at no cost.

Resources and environmental measures

In January 2023, the Emergency Conservation Program (ECP) was amended to allow land owned or controlled by the United States or individual States to be eligible for cost share assistance under ECP. This will allow producers who lease Federal or State land the opportunity to participate in ECP.

The Regional Conservation Partnership Program (RCPP) and the Agricultural Conservation Easement Program (ACEP) were simplified. Changes to RCPP included:

- simplifying and reducing the number of agreements
- reducing lengthy RCPP easement transactions
- improving the RCPP portal
- offering consistent guidance and training for employees and partners
- simplifying the Technical Assistance Structure
- improving the conservation desktop
- simplifying the partner reimbursement process.

Changes to ACEP included updating processes around appraisals, land surveys, and certifying eligible entities who help USDA, NRCS and producers enrol land into easements.

In June 2023, the Working Lands for Wildlife (WLFW) conservation effort was expanded. The Conservation Reserve Program was incorporated into three of the existing WLFW frameworks, four new frameworks were developed to be released in 2024-25, and funding was increased for WLFW science and co-ordination capacity through partnerships.

In February 2023, three new priority areas were added to the joint USDA, NRCS-Department of the Interior WaterSMART Initiative. New priority areas include California's Madera Irrigation District Area, Hawaii's Kohala Watershed Partnership Area, and Washington's Quincy Columbia Basin Irrigation District West Canal Area. The initiative helps farmers and ranchers to conserve water and build drought resilience in their communities. These investments complement projects led by irrigation districts, water suppliers and other organisations receiving WaterSMART programme funds from the Department of Interior's Bureau of Reclamation.

Policies to facilitate climate change mitigation or adaptation in agriculture

In conjunction with the release of the Federal Strategy to Advance Greenhouse Gas Measurement and Monitoring for the Agriculture and Forest Sectors, USD 300 million over eight years was budgeted to improve measurement (including modelling strategies), monitoring, reporting, and verification of

greenhouse gas emissions and carbon sequestration in climate-smart agriculture and forestry. Funding for this initiative comes from the 2022 IRA.

The USDA International Climate Hub website was launched in May 2023 at the US-hosted AIM for Climate Summit. The International Climate Hub is a platform to share research, tools, collaborative efforts, and best practices on a global scale to improve the world's ability to adapt to climate change and mitigate its impacts. The website includes tools such as the COMET-Planner Global Assessment Tool, which will enable land managers around the world to estimate the current and potential greenhouse gas mitigation and carbon sequestration benefits of common agricultural conservation practices.

Other polices

The Discrimination Financial Assistance Program (DFAP) opened for applications in July 2023 with a USD 2.2 billion budget. DFAP provides financial assistance to farmers, ranchers, and forest landowners who experienced discrimination in USDA farm lending programmes prior to 2021.[5] Both farmers who experienced discrimination in USDA farm loan programmes prior to 2021 or those who are currently debtors with USDA farm loan debt that was the subject of USDA discrimination that occurred prior to 1 January 2021, are eligible for assistance.

In May 2023, USDA opened a new National Bio and Agro-Defense Facility in Manhattan, Kansas. The facility will allow scientists to study and diagnose critical animal diseases. Activities to be carried out at the facility include research on emerging high-consequence animal diseases; development of countermeasures such as vaccines and antivirals; animal disease prevention, surveillance, diagnosis and response; management of two vaccine banks; and training of state and federal veterinarians to recognise livestock diseases.

Trade policy developments in 2023-24

In January 2023, the United States and the European Union signed the US-EU Tariff Rate Quota (TRQ) Agreement. The agreement is an update of an existing agreement following the United Kingdom's exit from the European Union in 2021. The new TRQ allocations are based on the historic pattern of agricultural exports to the 27 EU Member States.

In June 2023 the United States and India agreed to terminate six outstanding disputes at the WTO, and India agreed to remove retaliatory tariffs on certain US products, including chickpeas, lentils, almonds, walnuts, and apples. In September 2023, the United States and India agreed to resolve their last outstanding WTO dispute, and India agreed to reduce MFN tariffs on certain agricultural products – specifically fresh, frozen, dried, and processed cranberries and blueberries, and frozen turkey.

In November 2023 the Agricultural Trade Promotion (ATP) Program regulation was amended to implement the new Regional Agricultural Trade Promotion Program (RAPP). RAPP will use funds from the Commodity Credit Corporation to provide cost share assistance to eligible organisations that conduct market promotion activities (either generic or brand promotion), including activities to address existing or potential non-tariff barriers to trade, or to promote US agricultural commodities in certain foreign markets, with a focus on emerging markets in Africa, Latin America, and Asia.

A second dispute settlement panel was established under the United States-Mexico-Canada Agreement (USMCA) regarding Canada's dairy TRQ allocation measures in 2023. The United States challenged Canada's revised dairy TRQ allocation measures. This second request followed a December 2021 USMCA dispute panel report, which found Canada's dairy TRQ allocation measure to be inconsistent with Canada's USMCA obligations. While Canada introduced changes to its TRQ allocation measures to comply with the 2021 ruling, the United States challenged Canada's revised TRQ allocation measures as

inconsistent with Canada's obligations under the USMCA. In November, the second panel ruled in a 2-1 decision that Canada's measures do not breach USMCA commitments that were cited in the US challenge.

The United States also requested the establishment of a USMCA dispute settlement panel to examine certain Mexican measures concerning products of agricultural biotechnology. The dispute concerns Mexico's decree banning the use of biotech corn in tortillas or dough, and the instruction to Mexican government agencies to gradually substitute the use of biotech corn in all products for human consumption and for animal feed.

Policy context

Key economic and agricultural statistics

The United States is the world's second largest economy by GDP in PPPs and the third largest country by land area and population. US GDP per capita is among the highest in the world, more than three times the average of the countries included in this report (Table 28.2). Primary agriculture accounts for a small part of the economy – around 1% of GDP and 1.5% of employment – but agro-food accounts for almost 12% of total exports. The US agricultural sector benefits from a large domestic consumer market, as well as abundant arable and pasture land and diverse climatic conditions that support the production of a wide range of commodities. Crops represent 67% of the value of total agricultural production. Key industries include grains (maize and wheat), oilseeds (soybeans), cotton, cattle, dairy, poultry and fruits and vegetables.

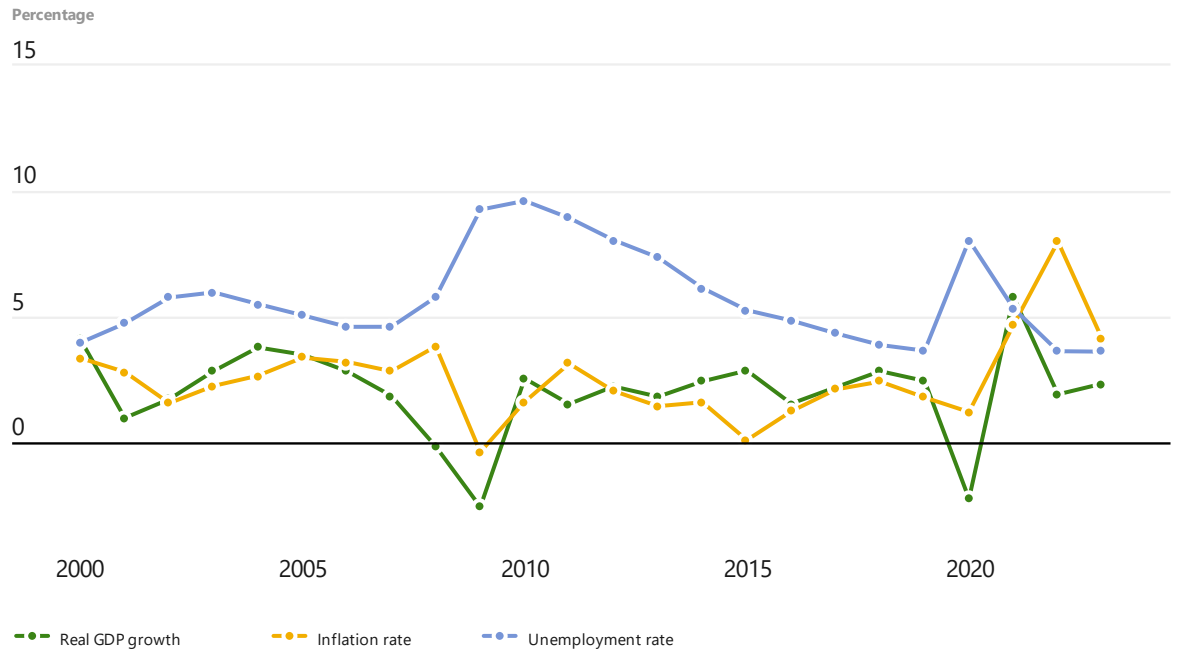
Table 28.2. United States: Contextual indicators

	United States		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	10 251	25 440	25.6%	18.6%
Population (million)	282	333	6.6%	6.3%
Land area (thousand km^2)	9 162	9 147	11.2%	11.1%
Agricultural area (AA) (thousand ha)	414 399	405 810	13.9%	13.9%
			All countries[1]	
Population density (inhabitants/km^2)	31	36	52	64
GDP per capita (USD in PPPs)	36 300	76 291	9 363	25 965
Trade as % of GDP	9.4	9.9	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	1.2	1.0	2.9	3.8
Agriculture share in employment (%)	1.8	1.4	-	-
Agro-food exports (% of total exports)	7.8	11.1	6.4	8.0
Agro-food imports (% of total imports)	3.5	6.1	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	55	67	-	-
Livestock in total agricultural production (%)	45	33	-	-
Share of arable land in AA (%)	42	39	32	34

Note: *or closest available year.
1. Average of all countries covered in this report.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

The pace of GDP growth was faster than expected in 2023, reflecting both strong household and government consumption growth, and stronger-than-expected capital formation. Estimates of consumer spending thus far in the first quarter of 2024 point to continued momentum. Core inflation steadily moderated after peaking in 2022 and was near 2% in the second half of 2023, though it has increased at an annualised rate above 3% in the first quarter of 2024. The unemployment rate remains at historic lows as the pace of job creation has been strong since the end of the pandemic era (Figure 28.4).

Figure 28.4. United States: Main economic indicators, 2000 to 2023



Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

The United States is the world's second largest agricultural trader, after the European Union. US agricultural exports and imports increased significantly over the last 25 years (Figure 28.5, top panel). The leading US agricultural exports are grains and feeds, soybeans, livestock products, tree nuts, fruits, vegetables, and other horticultural products. The leading US imports are horticultural and tropical products. Canada, Mexico, the European Union, and East Asia are major US trade partners.[6]

The commodities with the highest export share (whose export shares account for 40% or more of their total market value) include fruits and tree nuts, oilseeds, and food grains such as rice and wheat. The United States tends to export a higher share of primary products than processed products. Primary products include food grains such as rice and wheat, oilseeds, and tree nuts such as almonds. The United States exports a lower share of processed products, such as sweeteners, bakery products, and dairy products (Figure 28.5, bottom panel). The US share of agricultural consumption sourced from imports tends to be higher for higher-value agricultural product groups. Sweeteners, and processed sugar, and confections are groups of products where the United States is reliant on imports. Fruits, nuts, and vegetables are also frequently imported. The United States tends to have a lower reliance on imports for unprocessed commodities such as feed grains, livestock, and oilseeds.

Figure 28.5. United States: Agro-food trade

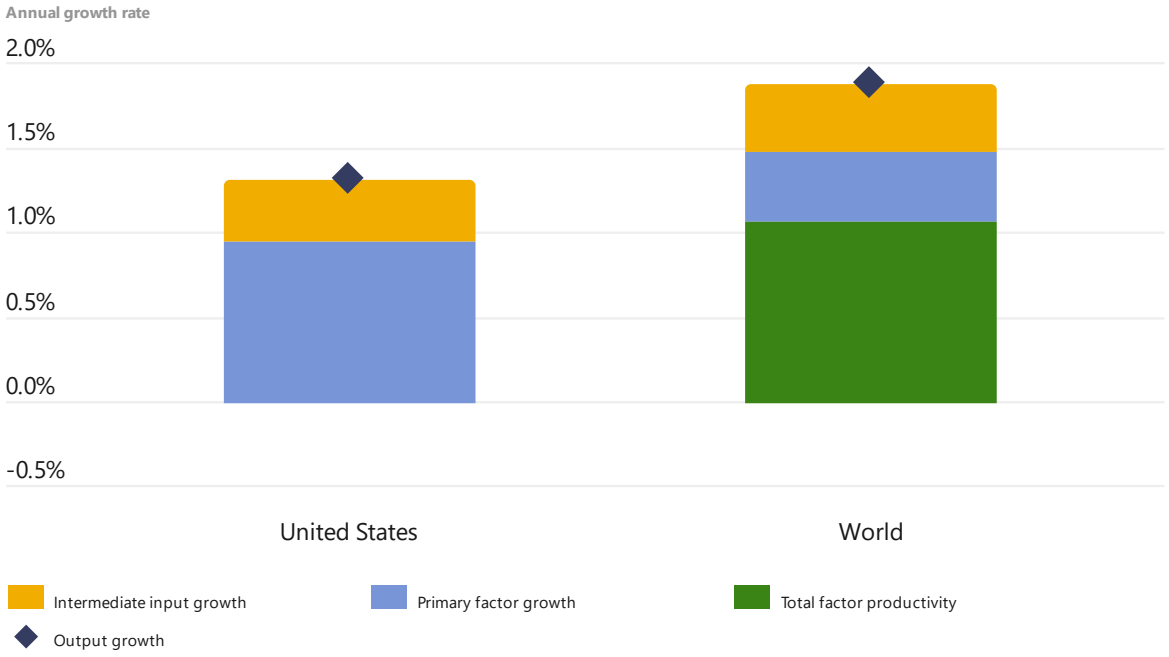
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

TFP growth has been a robust driver of productivity increases in the modern era, averaging 1.5% per year since 1948, a rate that was maintained through the 1991-2000 decade. However, TFP growth has slowed and is now essentially zero in the most recently estimated period of 2012-21 (Table 28.3). The slowdown

may stem from agriculture-specific factors, such as stagnating levels of public research and development expenditure. It may also be influenced by broader factors, such as slowing technological progress in other domains and a general tendency for innovation to get harder. However, slowing progress in agriculture may simply be following a slowdown in innovation across the wider non-farm economy (Clancy, 2023[1]). Despite the slowdown in TFP, growth in primary factors (land, labour, capital) and other farm inputs has kept output growth relatively robust, at about 1.3% over the last decade (Figure 28.6).

The US environmental situation is largely similar to the OECD as a whole, as measured by main environmental indicators (Table 28.3). Nutrient balances of nitrogen and phosphorus have improved since 2000, with phosphorus now nearly in balance. Water stress is reducing as well, though some regions are vulnerable to shortages. Conversely, agricultural GHG emissions reductions have lagged that of the overall economy, resulting in the agriculture share of emissions increasing from 7.7% of the total in 2000 to 9.4% in 2022.

Figure 28.6. United States: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

Table 28.3. United States: Productivity and environmental indicators

	United States		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	1.5%	0.0%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	34.4	24.5	32.1	28.2
Phosphorus balance, kg/ha	2.8	0.9	3.3	2.3
Agriculture share of total energy use (%)	0.9	1.2	1.7	2.0
Agriculture share of GHG emissions (%)	7.7	9.4	8.7	10.1
Share of irrigated land in AA (%)	5.3	5.6	-	-
Share of agriculture in water abstractions (%)	39.7	45.6	47.0	49.5
Water stress indicator	19.5	15.6	8.7	..

Note: * or closest available year.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

The US Congress passes legislation that sets national agriculture, nutrition, conservation, and forestry policy, commonly referred to as the "Farm Bill". The Farm Bill is an omnibus bill that is renewed on a regular basis, about every five years. Since 1933, the United States has passed 18 farm bills, the most recent being the Agricultural Improvement Act of 2018.

Historically, the commodity support component of Farm Bills focused on stabilising and boosting farm income to aid economic recovery and development during the Depression and post-war eras through price and income support for a specified set of commodities, including but not limited to corn, soybeans, wheat, cotton, rice, peanuts, dairy, and sugar (OECD, 2011[2]). Over time, Farm Bills expanded in scope: the 1973 Farm Bill first included a nutrition title while subsequent farm bills added titles on policy areas such as agricultural trade, farm credit, rural development and crop insurance. The 1985 Farm Bill added conservation provisions; the 1990 Farm Bill, organic agriculture; the 1996 Farm Bill, agricultural research; the 2002 Farm Bill, bioenergy; and the 2008 Farm Bill, horticulture and local food systems (Congressional Research Service, 2019[3]).

Agricultural policy reform in the United States has been characterised by a significant shift towards less production- and trade-distorting forms of support. Commodity programmes originally supported farm incomes through a combination of taxpayer-funded production payments and supply management in the form of acreage limits and commodity storage programmes. The Food Security Act of 1985 introduced changes that moved farmers towards more market orientation by reducing price supports in favour of direct payments, introducing greater planting flexibility and giving more attention to export opportunities for US farm products (OECD, 2011[2]).

Reforms continued with subsequent Farm Bills. The 1996 Farm Bill[7] re-designed income support programmes by replacing target prices, price-based deficiency payments and acreage controls with historically based direct payments independent of current production. A series of ad hoc emergency top-up payments supplemented the historically based payments implemented under the 1996 Farm Bill to provide additional assistance in the face of low commodity prices. These ad hoc payments were institutionalised under the 2002 Farm Bill[8] as counter-cyclical payments linked to the historically based direct payments, and continued under the 2008 Farm Bill[9] (OECD, 2011[2]). The 2014 Farm Bill ended these direct and counter-cyclical payments but continued direct income support based on historical production with programmes triggering payments based on either reference prices or revenue

benchmarks. It also ended the dairy price support programme, replacing it with a premium-based milk-to-feed margin protection programme. The 2018 Farm Bill continued these programmes with only small adjustments (Table 28.4).

The largest of the farm programmes in the Farm Bill, the Federal Crop Insurance Programme (FCIP), was established in the 1930s to cover yield losses from most natural causes.[10] The programme's current form was authorised by the Federal Crop Insurance Act of 1980 and modified by subsequent Farm Bills and other legislation. The 1980 Act introduced federal premium subsidies and brought in private insurance companies (Approved Insurance Providers, or AIPs) to deliver crop insurance policies. The catastrophic (CAT) coverage level was created in 1994, under which 100% of the premium is subsidised and producers pay a fee for coverage of yield loss greater than 50% at 55% of the base commodity price.[11] The Agricultural Risk Protection Act of 2000 expanded the geographic availability of insurance, increased premium subsidy levels, and removed restrictions on livestock insurance products.

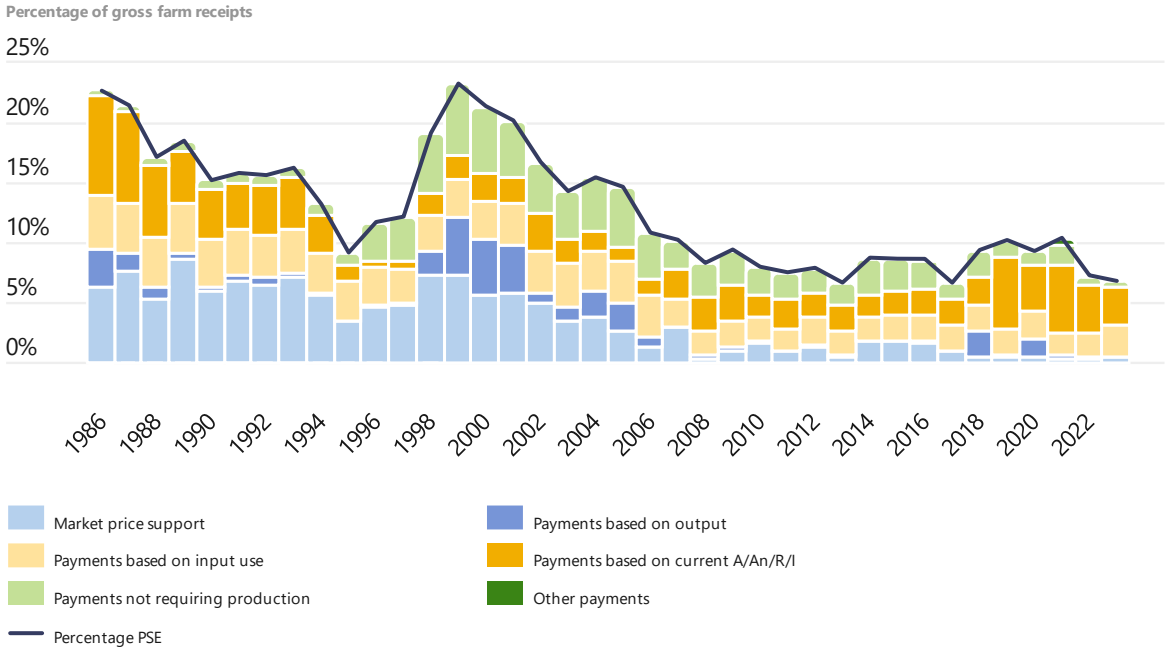
Table 28.4. United States: Agricultural policy trends

Period	Framework	Changes in agricultural policies
1980	Federal Crop Insurance Act of 1980[1]	Introduced federal premium subsidies for crop insurance (30% at the 65% coverage level) Created a public-private partnership with private insurance companies (Approved Insurance Providers), which became responsible for delivering crop insurance policies
1985	Food Security Act of 1985	Established marketing loans for cotton and rice, removing market price support element of cotton and rice commodity loans Set up the Export Enhancement Programme and the Dairy Export Incentive Programme. Established the Conservation Reserve Programme (CRP) Established conservation cross-compliance requirements (highly erodible land and wetland conservation provisions)
1990	Food, Agriculture, Conservation, and Trade Act of 1990	Introduced 15% "normal flex acres" and 10% "optional flex acres" Extended marketing loan provisions to oilseeds in 1991, and to wheat and feed grains in 1993 Allowed oilseeds and alternative crops to be planted on land in a 0/85-92 programme without loss of payments.
1994	Federal Crop Insurance Reform and Department of Agriculture Reorganization Act of 1994[1]	Catastrophic (CAT) crop insurance coverage level created Increased premium subsidies for higher coverage levels (buy-up coverage)
1996	Federal Agriculture Improvement and Reform Act of 1996	Replaced crop deficiency payments and target prices with fixed direct payments decoupled from current prices and production levels to be reduced over time Eliminated most planting restrictions Extended marketing loan provisions to most other covered crops and created alternative direct Loan Deficiency Payments (LDP) Phased-out the dairy support price (although interim legislation modified this provision) Consolidated cost share and technical assistance programmes for crop and livestock producers into the Environmental Quality Incentives Programme (EQIP) Extended CRP authorisation and capped enrolment Lifted conservation cross-compliance requirements for crop insurance participation
2000	Agricultural Risk Protection Act of 2000[1]	Expanded the geographic availability of crop insurance, increased premium subsidy levels, and removed restrictions on development of livestock insurance products
2002	Farm Security and Rural Investment Act of 2002	Annually decreasing Production Flexibility Contract payments replaced by fixed Direct Payments programme Created the Counter-Cyclical Payments programme triggering supplemental direct income support payments when prices fell below targets Added soybeans and peanuts as covered commodities under the fixed Direct Payment and Counter-Cyclical Payments programme Increased payments for environmental conservation and protection Eliminated peanut price support quota system, buying out peanut quota rights

Period	Framework	Changes in agricultural policies
2008	Food, Conservation, and Energy Act of 2008	Retained Direct Payment, Counter-Cyclical Payment and Marketing Assistance Loan programmes Created the Average Crop Revenue Election (ACRE) as a revenue-based alternative to the Counter-Cyclical Payment programme Changed the dairy price support programme basis from milk price to prices of dairy products Increased marketing assistance loan rates and Counter-Cyclical Payment programme target prices for a number of programme crops and sugar Introduced a permanent disaster assistance programme (Supplemental Agricultural Disaster Assistance) to end the need for ad hoc programmes Significantly increased funding for domestic food assistance programmes Ended the Export Enhancement Programme
2014	Agricultural Act of 2014	Repealed Direct Payment, Counter-Cyclical Payment, and ACRE programmes; created the Price Loss Coverage (PLC) and Agriculture Risk Coverage (ARC), which used the historical payment base established for the repealed programmes Added new crop insurance options: Supplemental Coverage Option (SCO), Stacked Income Protection Plan (STAX) for upland cotton; Expanded the Noninsured Crop Assistance Programme (NAP) to allow for higher premium-based coverage Re-established conservation cross-compliance requirement to receive crop insurance premium subsidies Expanded programmes for specialty crops, organic farmers, bioenergy, rural development, and beginning farmers and ranchers, continuing orientation to technical assistance, research, and development loans.
2018	Agriculture Improvement Act of 2018	Continued 2014 Farm Bill programmes with only minor changes, with some additions to programmes for specialty crops, organic farmers, local and regional markets, and beginning, military veteran and minority farmers. Extended to 2024.

Average producer support has declined as emergency payments (related to COVID-19, drought, and supply chain issues) continue to be phased out. Support now approaches historical lows and the overall pattern and level of support is stable. In 2023, most budgetary support was based on payments that require production and were based on either area planted or animal numbers, including the Federal Crop Insurance Program and certain disaster programmes. Sugar is the only commodity with MPS (Figure 28.7).

Figure 28.7. United States: Development of the PSE and its composition, 1986 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

References

Clancy, M. (2023), "Is technological progress in US agriculture slowing?", in *Artificial Intelligence in Science: Challenges, Opportunities and the Future of Research*, OECD Publishing, Paris. [1]

Congressional Research Service (2019), *What is the Farm Bill?*, CRS Report RS22131, Congressional Research Service, https://crsreports.congress.gov/product/pdf/RS/RS22131. [3]

OECD (2011), *Evaluation of Agricultural Policy Reforms in the United States*, OECD Publishing, Paris, https://doi.org/10.1787/9789264096721-en. [2]

Notes

[1] The term "underserved communities" refers to populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life.

[2] Base acres are a farm's crop-specific historical acreage of wheat, feed grains, seed cotton, rice, oilseeds, pulse crops or peanuts eligible to participate in the ARC and PLC commodity programmes. Base acres are not linked to current plantings.

[3] The effective reference price is the lesser of 115% of the reference price specified in the law or an amount equal to the greater of the reference price or 85% of the average prices from the 5 preceding years, excluding the highest and lowest price. This method of calculating the payment rates allows the effective reference price to be greater than the statutory reference price if historic average prices are greater than the statutory reference price.

[4] For ARC-IC, all base acres had to be enrolled in ARC-IC.

[5] A claim of discrimination may be based on differential treatment because of race, national origin or ethnicity (including status as a member of a Native American Tribe), sex, sexual orientation, gender identity, religion, age, marital status, disability, or in reprisal/retaliation for prior civil rights activity.

[6] See https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/agricultural-trade/.

[7] Federal Agriculture Improvement and Reform Act of 1996 (P.L. 104-127).

[8] Farm Security and Rural Investment Act of 2002 (P.L. 107-171).

[9] Food, Conservation, and Energy Act of 2008 (P.L. 110-246).

[10] Agricultural Adjustment Act of 1938 (7 U.S.C. 1281).

[11] Federal Crop Insurance Reform and Department of Agriculture Reorganization Act of 1994. The Food, Conservation, and Energy Act of 2008 ("2008 Farm Bill") continued the 100% premium subsidy for CAT but increased CAT fees from USD 50 to USD 300/crop/county.

29. Viet Nam

Main findings

Support to agriculture

Viet Nam's Producer Support Estimate (PSE) is negative and increasingly so since 2019, with an average of -12.4% in 2021-23. The PSE is largely driven by negative Market Price Support (MPS), most significantly for producers of rubber, tea and poultry meat, and to a lesser extent to producers of rice and coffee. In contrast, producers of maize, sugarcane and beef benefit from tariff protection. Overall, the positive MPS for these products is outweighed significantly by negative MPS, such that farmgate prices were on average over 10% below international reference values.

Budgetary transfers to producers are relatively small and come entirely in the form of the most production- and trade-distorting measures. These include payments based on variable inputs use, namely an exemption from the payment of irrigation service fees and input subsidies under the Sustainable Poverty Alleviation Programme, which targets producer support to communes in remote and mountainous areas. The government also supports the production of rice by guaranteeing an average profit margin of 30% for rice growers, which is maintained through rice purchases for the national strategic reserve and the use of minimum and maximum price brackets.

Support for general services for agriculture (General Services Support Estimate, GSSE) as a percentage of the value of production fell from 2.2% in 2000-02 to 1.7% in 2021-23. General service expenditures predominantly go to the development and maintenance of infrastructure, one-third of which goes to hydrological infrastructure for irrigation and the maintenance of 3.8 million ha of land in paddy. Expenditures under the Sustainable Poverty Alleviation Programme support the development of infrastructure, including roads and small irrigation schemes, as well as agricultural knowledge systems, via training targeted to ethnic minorities.

Total support accounted for negative 1.3% of Global Domestic Product in 2021-23, down from +2.4% in 2000-02.

Key recent policy changes

In response to a finding of high rates of contamination of Vietnamese vegetables by pathogens and pesticide residues, the government issued several decisions concerning food safety. A decision was issued to advance the Plan to Ensure Food Safety and Improve the Quality of Agricultural, Forestry and Fishery Products, which specifies objectives for monitoring and the certification of food processing facilities. A decision issued by the Ministry of Agriculture and Rural Development defines the development of "safe, concentrated vegetable production areas," which will be subject to routine testing of soil and water quality, limitations on livestock farming, and monitoring of pesticide residues.

New limits were specified on greenhouse gas (GHG) emissions from agriculture, forestry and other land use (AFOLU). The Plan to Reduce Greenhouse Gas Emissions in the Agriculture and Rural Development Sector seeks to reduce emission from agriculture by 13.1% relative to the Business as Usual (BAU)

projection for 2025 and by 38.2% relative to the BAU projection for 3030. In addition, forestry and land use measures are to achieve reductions of 39.3 million tonnes of CO_2-equivalents by 2025 and 79.1 million tonnes by 2030. These targets represent 5.4% and 8.5% of total BAU emissions for the country.

A Free Trade Agreement between Viet Nam and Israel (VIFTA) was signed after more than seven years of negotiations and will enter into force in 2024. The agreement, which marks a first between a southeast Asian country and Israel involves removing duties on at least 86% of Vietnamese products and 93% of Israeli products. It is expected to increase the bilateral trade turnover by over 36%, in part by opening up opportunities for Vietnamese seafood to enter and penetrate more deeply into middle eastern markets.

Assessment and recommendations

- Supporting green growth is a key objective of Viet Nam's agricultural policy, which is broadly aligned with sustainable productivity growth, as manifest in national plans and strategies, including the National Strategy on Green Growth that articulates a vision forward to 2050. However, the key elements of the strategy are not targeted to mitigate the environmental degradation caused by current production systems. The impact on the environment of some of the measures, like expanding irrigation and converting land in rice to other crops is uncertain. For example, expanding the irrigated land base will increase pressure on water resources and could worsen air and water pollution. The likely environmental consequences of planned measures deserve to be assessed, with particular attention paid to the long-term implications for the sustainability of the sector.
- The government has recently undertaken efforts to improve research and innovation in plant breeding and emerging technologies to strengthen analysis and forecasting tools. However, the country remains reliant on private sector investments in R&D. Support to general services predominantly focuses on infrastructure development, with relatively few resources allocated agricultural knowledge generation and transfer. Shifting budgetary support towards these activities may better serve ambitions for sustainable productivity growth and resilience in the agricultural sector.
- Market price support is negative and increasing in magnitude for key export commodities, including tea, rubber and poultry meat. This harms farmer revenue and benefits state-owned enterprises (SOEs) that play a dominant role in the production, wholesale and international trade of these commodities. SOEs benefit from preferential access to credit and land granted from the government. These policies discourage entry and reduce farmgate prices below international reference levels and should be reconsidered. Increased effort should be made to phase out preferential treatment of these firms and to encourage increased competition.
- Food safety and quality remain significant challenges for Viet Nam. This is particularly true in the context of efforts to integrate into the global economy via free trade agreements, including that with Israel. Attention to these issues has recently increased and plans have been introduced in response. Investments in monitoring and evaluating these measures will be needed in the near term to allay phytosanitary concerns that may arise with key trading partners and to increase the competitiveness of Viet Nam in international markets.

Development of support to agriculture

Figure 29.1. Viet Nam: Development of support to agriculture

Figure 29.1A. Viet Nam: Producer Support Estimate and its composition

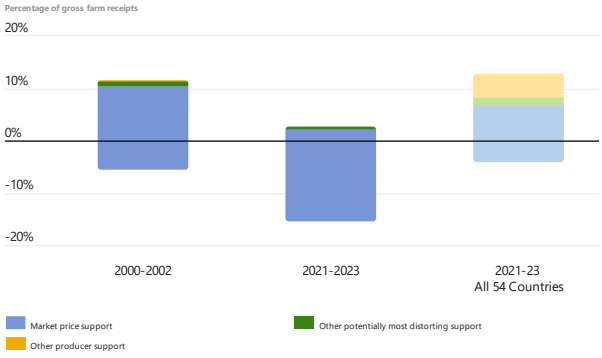


Figure 29.1B. Viet Nam: Ratio of producer to border price

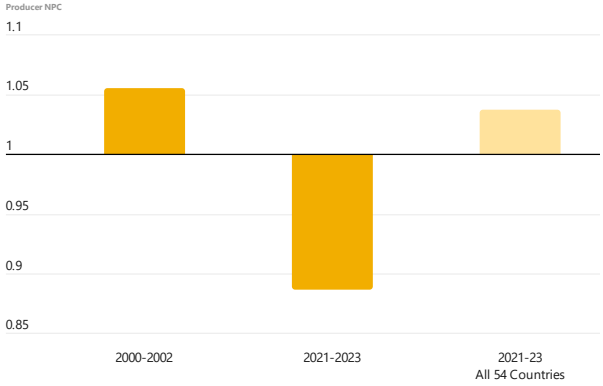


Figure 29.1C. Viet Nam: General Services Support Estimate and its composition

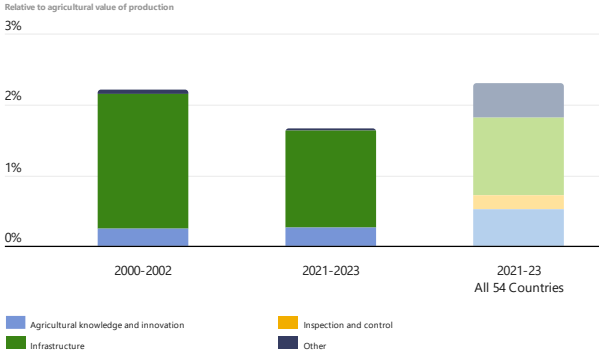
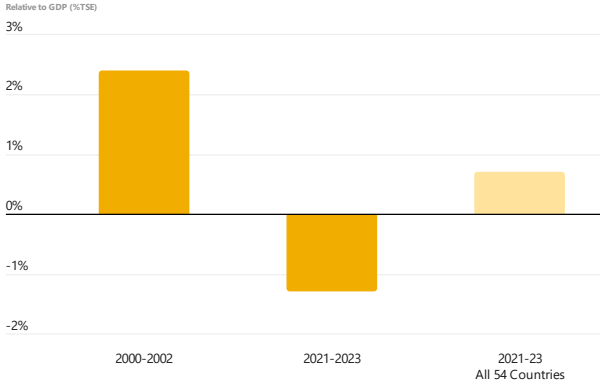
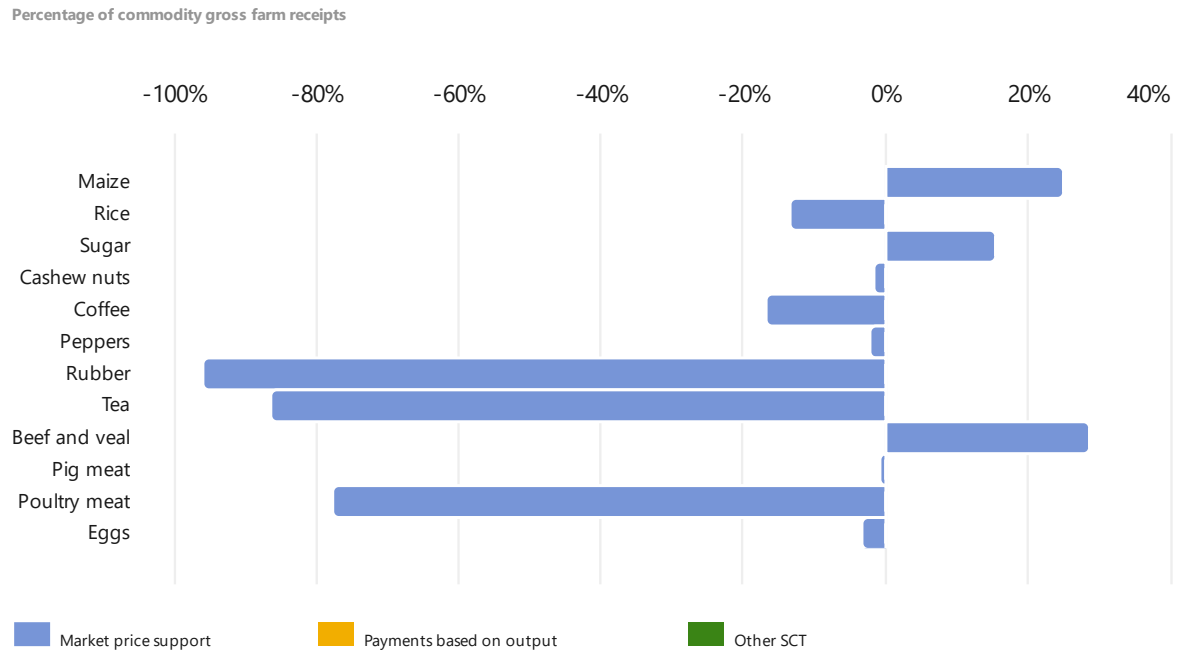


Figure 29.1D. Viet Nam: Total Support Estimate



Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

Figure 29.2. Viet Nam: Commodity-specific transfers (SCT), 2021-23



Note: Only commodities with non-zero transfers shown.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

Table 29.1. Viet Nam: Estimates of support to agriculture

Million USD

	2000-02	2021-23	2021	2022	2023p
Total value of production (at farm gate)	**9 013**	**47 903**	**46 985**	**47 886**	**48 838**
of which: share of MPS commodities (%)	77.05	77.99	74.92	78.92	80.13
Total value of consumption (at farm gate)	**7 808**	**47 419**	**49 238**	**46 188**	**46 831**
Producer Support Estimate (PSE)	**593**	**-5 965**	**-5 398**	**-5 545**	**-6 951**
Support based on commodity output	472	-6 230	-5 793	-5 744	-7 152
Market price support[1]	472	-6 230	-5 793	-5 744	-7 152
Positive market price support	963	1 115	1 465	659	1 220
Negative market price support	-491	-7 345	-7 258	-6 403	-8 372
Payments based on output	0	0	0	0	0
Payments based on input use	101	263	393	197	199
Based on variable input use	101	263	393	197	199
with input constraints	0	0	0	0	0
Based on fixed capital formation	0	0	0	0	0
with input constraints	0	0	0	0	0
Based on on-farm services	0	0	0	0	0
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	0	2	2	2	2
Based on Receipts / Income	0	2	2	2	2
Based on Area planted / Animal numbers	0	0	0	0	0
with input constraints	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	0	0	0	0	0
With variable payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
With fixed payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
Payments based on non-commodity criteria	21	0	0	0	0
Based on long-term resource retirement	21	0	0	0	0
Based on a specific non-commodity output	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0
Miscellaneous payments	0	0	0	0	0
Percentage PSE (%)	**6.38**	**-12.40**	**-11.39**	**-11.53**	**-14.17**
Producer NPC (coeff.)	**1.06**	**0.89**	**0.90**	**0.89**	**0.87**
Producer NAC (coeff.)	**1.07**	**0.89**	**0.90**	**0.90**	**0.88**
General Services Support Estimate (GSSE)	**201**	**809**	**978**	**723**	**724**
Agricultural knowledge and innovation system	23	134	132	133	138
Inspection and control	0	0	0	0	0
Development and maintenance of infrastructure	173	658	830	574	570
Marketing and promotion	0	0	0	0	0
Cost of public stockholding	5	16	16	16	16
Miscellaneous	0	0	0	0	0
Percentage GSSE (% of TSE)	**25.67**	**..**	**..**	**..**	**..**
Consumer Support Estimate (CSE)	**-697**	**3 741**	**2 688**	**3 978**	**4 558**
Transfers to producers from consumers	-696	4 761	4 342	4 094	5 848
Other transfers from consumers	-22	-1 249	-2 050	-97	-1 601
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	22	229	397	-19	311
Percentage CSE (%)	**-8.79**	**7.92**	**5.46**	**8.61**	**9.73**
Consumer NPC (coeff.)	**1.10**	**0.93**	**0.96**	**0.92**	**0.92**
Consumer NAC (coeff.)	**1.10**	**0.93**	**0.95**	**0.92**	**0.91**
Total Support Estimate (TSE)	**794**	**-5 156**	**-4 420**	**-4 822**	**-6 227**
Transfers from consumers	718	-3 512	-2 292	-3 997	-4 247
Transfers from taxpayers	98	-395	-78	-727	-379
Budget revenues	-22	-1 249	-2 050	-97	-1 601
Percentage TSE (% of GDP)	**2.42**	**-1.28**	**-1.19**	**-1.18**	**-1.45**
Total Budgetary Support Estimate (TBSE)	**323**	**1 074**	**1 373**	**922**	**925**
Percentage TBSE (% of GDP)	**1.00**	**0.27**	**0.37**	**0.23**	**0.22**
GDP deflator (2000-02 = 100)	**100**	**533**	**523**	**543**	**..**
Exchange rate (national currency per USD)	**149.67**	**23 391.81**	**22 935.62**	**23 402.71**	**23 837.11**

.. Not available

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for Viet Nam are: rice, rubber, coffee, maize, cashew nuts, sugar, pepper, tea, beef and veal, pig meat, poultry and eggs.

Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database),* https://data-explorer.oecd.org/.

Policy landscape

Main policy instruments

Domestic price support is the main form of support for Vietnamese producers, particularly in the form of border protection for import-competing commodities such as beef, veal and sugarcane. Following Viet Nam's accession to the WTO in 2007, the simple average Most Favoured Nation (MFN)-applied tariff on agricultural imports decreased from around 25% in the mid-2000s to 17.1% in 2022. Despite the decline, this is more than double the MFN-applied tariff for non-agricultural goods of 8.4% (WTO, 2022[1]). Applied tariffs are much lower on imports originating from countries or regions with which Viet Nam signed free trade agreements. For example, the simple average preferential tariff on agricultural imports is just 2.3% from ASEAN members and the People's Republic of China (hereafter "China"), and 4.5% from Australia and New Zealand.

Viet Nam is a member of the WTO, the Association of Southeast Asian Nations (ASEAN), and the Asia-Pacific Economic Cooperation (APEC) and supports trade liberalisation between ASEAN members and their major trading partners. Outside of ASEAN, Viet Nam has negotiated bilateral free trade agreements with Chile, Cuba, the Eurasian Economic Union, Japan, and Korea. Agreements with the European Union and the United Kingdom came into effect in 2020. Viet Nam, along with ten other countries, signed the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) on 8 March 2018 entering into force in January 2019. In 2022, the Regional Comprehensive Economic Partnership (RCEP) came into force for Viet Nam and 12 other countries, including ASEAN members and partner countries.[1]

State-owned enterprises (SOEs) have declined in importance following reform and privatisation efforts, though they continue to play a role in the production, wholesale, and international trade of export commodities such as rice, rubber, coffee and tea. SOEs have preferential access to capital, natural resources, land and human resources, which allows them to exert market power, discouraging entry and reducing farmgate prices below international reference prices (OECD, 2022[2]).[2] Key SOEs operating in the agricultural sector include the Vietnam Rubber Group (VRG), the Vietnam Southern Food Corporation (Vinafood II), the Vietnam National Coffee Corporation (Vinacafe) and the Vietnam National Tea Corporation (Vinatea).[3]

Rice farmers benefit from a guarantee by the government to earn 30% profit above estimated production costs. To reach this profit level when prices are low, the government provides concessional loans to rice purchasing enterprises for the temporary storage of rice during harvest. In addition, the government considers the 30% profit objective when it determines the volume and price of rice that it purchases each year to maintain the national reserve, managed by the General Department of State Reserves (GDRS) under the Ministry of Finance. In addition, MARD calculates price brackets (maximum and minimum levels) to ensure the desired profit margin after receiving information on costs for the season; companies are required to purchase rice within the prescribed bounds.[4] The government also seeks to maintain 3.8 million ha in paddy land by providing funding for local rice growers through support programmes at the provincial level. These programmes focus on the adoption of new rice varieties and investments in agricultural and rural infrastructure, among other measures.

Exporters of rice are regulated to promote stockholding to balance exports and domestic consumption, stabilise domestic rice prices, and fulfil international commitments in the event of natural disasters or crop failures. To obtain a certificate from Ministry of Industry and Trade (MOIT) to export rice, exporters must have at least one storage and one milling facility (either owned or leased) that meet national standards and maintain rice reserves equivalent to 5% of the volume they shipped in the preceding six months.[5] Exporters of organic rice are exempted from the need to obtain a certificate and from the storage and milling conditions.

An irrigation service fee (ISF) waiver exempts producers from payments to manage, maintain and protect irrigation works above the canal gate.[6] The budget allocated to support this subsidy to irrigators has declined in recent years, with a budget in 2023 equivalent to 27% of the budget allocated in 2020.

Other support based on input use includes central and local government support to subsidise certain varieties of rice seeds and seedlings. Support for producers is also provided through the Sustainable Poverty Alleviation Programme (previously known as “Program 135”), which allocates support to communes in remote and mountainous areas. The programme includes subsidies for agricultural inputs and services such as extension.

Expenditures on irrigation systems dominate general services for the agricultural sector, a strategy that is manifest in the Hydraulic Work Strategy that sets objectives related to the supply of water for paddy fields and total land area in irrigation. Expenditures are allocated through investments by the central government in developing and maintaining irrigation infrastructure and through funding provided under the Sustainable Poverty Alleviation Programme to support the construction of small irrigation schemes.

Private ownership of land is not permitted in Viet Nam, rather, all land is owned and administered by the state. The law allows ownership of a Land Use Right, under which title holders may conduct real estate transactions, including buying, selling, bequeathing, and leasing land, as well as using land as collateral for mortgages with financial institutions. There are different types of Land Use Rights with differing restrictions, limiting the duration of the right,[7] the choice of crops, the process for converting paddy land from rice to another crop, and land transfers and exchanges. Agricultural land use plans and support policies tend to favour rice production, and this is reflected in the Land Use Rights.

Since 2003, most farming households and organisations benefit from a reduction in the land-use tax or are exempt from paying it. The exemptions and reductions were initially provided for a seven-year period but have been extended twice and are currently valid until 31 December 2025.

Funding for extension activities is channelled through both national government agencies and provincial governments. The Science, Technology and Environment Department of MARD administers an open bidding process to allocate central government funding for agricultural extension to both public and non-public providers. Provincial People’s Committees play the same role for local level projects. Funded projects follow a top-down model that emphasises the introduction of new crop varieties or technologies (Gray and Jones, 2022[3]).

Viet Nam signed and ratified the Paris Agreement on Climate Change in 2016. In its updated Nationally Determined Contribution (NDC), submitted in July 2020, the country committed to reducing, by 2030, Business as Usual (BAU) greenhouse gas (GHG) emissions of 927.9 $MtCO_2eq$ by 9% using domestic resources and potentially up to 27% with international support. A reduction of 9% would represent an increase in total GHG emissions of 3.0 times the level of emissions in the historical base year of 2014 (284 million tonnes of CO_2eq); a reduction of 27% would represent an increase of 2.4 times relative to 2014. This goal represented a less stringent mitigation target than that set in the first NDC. However, in 2022, Viet Nam issued a decree on Mitigation of Greenhouse Gas Emissions and Protection of the Ozone Layer, under which the country strengthened its commitment to mitigation by pledging a 14% reduction from the 2030 BAU. Additionally, Viet Nam signed the Global Methane Pledge and committed to achieving net-zero carbon emissions by 2050 at the COP26.

These national-level targets have been translated into sector-specific goals for implementation via the National Action Plan on Green Growth for 2021-30, the National Strategy on Climate Change to 2050, the Action Plan to Reduce Methane Emissions by 2030, and the Scheme on Tasks and Solutions to Implement the Results of COP26. Notably, the latter sets the objective to reduce GHG emissions from agriculture, which accounts for almost one-third of the country’s total emissions, by 43% relative to the 2030 BAU. Adaptation-related activities are defined in the National Adaptation Plan in Agriculture (NAP-Ag), under which the Ministry of Agriculture and Rural Development (MARD) carries out vulnerability assessments,

stocktakes of climate-smart agricultural practices, and pilot projects related to early warning systems, disaster response and training of government officials.

Innovation for sustainable productivity growth

Strategic plans developed by Viet Nam prioritise long-term sustainable development as the focus of agricultural policy. The National Strategy on Green Growth for 2021-30, vision to 2050 sets guiding objectives to move towards a green, carbon-neutral economy. The accompanying National Green Growth Action Plan for 2021-30 sets out tasks to achieve growth in agricultural value added of 2.5-3% per year, while promoting efficient use of natural resources. Among specific targets for 2030, the country seeks to irrigate at least 30% of dryland cropping area using water-saving irrigation methods; convert 300 000 ha (approx. 4%) of rice land to more environmentally friendly and profitable crops; and increase organic cropland to 2% of total crop area and organic livestock products to 2-3% of total production.

Research and innovation is driven in large part by private sector activities in Viet Nam (Gray and Jones, 2022[3]). From 2013-18, 351 new crop varieties were formally registered, 46% of which were for rice. The vast majority of these were the product of private sector research. Research institutes and centres under the umbrella of the Vietnamese Academy of Agricultural Sciences (VAAS), the government-funded body leading agricultural research, released only 30 varieties over the same period. Foremost among private sector innovators are Thai Binh Seed (for rice and maize) and the Nafoods Group (for fruit and vegetables). Foreign donors and private companies play a pivotal role in fuelling innovation and diffusion, by supporting agricultural research and providing resources and aid in implementation of new technologies.

In 2020, the government approved the Research and Development Programme for Plant and Livestock Varieties Serving Agricultural Restructuring for the period 2021-30. The programme aims to improve research capacity and the development of agricultural plant and livestock varieties to support the modernisation of the agricultural sector, adaptation to climate change and the restructuring of agricultural production to improve competitiveness, increase value-added, and promote sustainable development. Total investment in the programme, including private funding, is VND 103 trillion (USD 4.4 billion) over the lifespan of the project.

A decree was issued in 2023 that strengthens the Law on Intellectual Property with respect to plant varieties, including procedures for establishing rights to plant varieties, including those that are produced via state-funded research, the rights and obligations of plant variety breeders, and the transfer of rights to protected plant varieties.

A large project was initiated in 2023 for the sustainable development of 1 million ha specialising in high-quality and low-emission rice cultivation to support green growth in the Mekong Delta. The project will be implemented in two phases, with phase 1 (2024-25) focused on the existing area of the Vietnam Sustainable Agriculture Transformation Project (VnSAT), totalling 180 000 ha, and phase 2 (2026-30) incorporating an additional 820 000 ha in other areas (to be specified). The decree specifies targets to be achieved over the two phases, namely:

- an increase in the area of high-quality, low-emission rice growing of 180 000 ha by 2025 and 1 million ha by 2030
- a reduction in inorganic fertiliser and pesticide use of 20% by 2025 and 30% by 2030
- the number of households applying sustainable farming practices reaches 200 000 by 2025 and 1 million by 2030
- straw collection and re-use reaches 70% by 2025 and 100% by 2030
- high-quality, low-emission rice accounts for at least 20% of the total rice export volume

The project Promoting Application of Information Technology to Collection of Information about and Forecasting of State Agricultural Product Markets was approved in 2022. The overall objective is to provide

timely information to support regulation and trade, and to enhance the competitiveness, value-added, and sustainable development of Vietnamese agricultural products. The decision approving the project includes a vision statement to 2030 that includes the application of big data, artificial intelligence and other information technologies to advance the collection of information, analysis and forecasting for agricultural product markets. The project likewise seeks to improve training, communication and international co-operation to strengthen the human resources needed to support the application of these technologies.

Recent policy developments

Domestic policy developments in 2023-24

A new action sets in motion the 2022 resolution on Agriculture, Farmers and Rural Areas by defining tasks to support broad goals related to scaling up commodity production, protecting the environment, adapting to climate change, and linking with foreign and domestic markets. A decision was also issued to advance the Plan to Ensure Food Safety and Improve the Quality of Agricultural, Forestry and Fishery Products, with targets for the percentage of samples monitored for food safety and the number of safety-certified processing facilities.

The National Action Plan to Transform a Transparent, Responsible and Sustainable Food System in Viet Nam by 2030 was issued in March 2023. It specifies 36 programmes and tasks. For agriculture, the plan specifies quantitative targets such as: organic production on 2.5% of the total agricultural land area; organic fertiliser use over 30% of the fertiliser supply on the market; post-harvest losses of key agricultural, forestry and fishery products to be reduced by at least 0.5% every year up to 2030; and GHG emissions from the food system should decrease by 10% relative to 2020. The plan specifies a set of tasks to achieve these goals but does not include specifics on measurement and monitoring of progress towards them.

A food safety report published by the Asian Development Bank in early 2023 found high rates of contamination of vegetables by pathogens and pesticide residues (Asian Development Bank, 2023[4]). In its wake, MARD issued a decision on 9 November 2023 to develop “safe, concentrated vegetable production areas” and ensure traceability by 2030. Following the decision, the government will undertake testing of soil and water quality, monitors pesticide residues and prohibits livestock farming that can lead to contamination. The decision seeks to increase national vegetable production to fully meet domestic needs; enforce strict adherence to safety standards; increase the proportion of land in safe, concentrated vegetable areas; and increase vegetable exports.

Efforts have been undertaken to encourage the development of agricultural co-operatives. The aforementioned decision to increase safe, concentrated vegetable production areas includes the promotion of new farmer co-operatives within these areas. Additionally, a July 2023 resolution seeks to hold up agricultural co-operatives as a model in rural areas to encourage sustainable development, including the application of science and technology and the digital transformation. The goal by 2030 is to have at least 300 new operating agricultural co-operatives with an average annual revenue of at least VND 5 billion (USD 211 362). Moreover, MARD has committed to training 30% of co-operative directors.

New limits on GHG emissions for AFOLU have been delineated as part of the Plan to Reduce Greenhouse Gas Emissions in the Agriculture and Rural Development Sector until 2030. In particular, the agricultural sector is to reduce emissions by 14.26 million tonnes of CO_2-equivalents by 2025, a reduction of 13.1% from the Business as Usual (BAU) projection, and by 42.85 million tonnes by 2030, a reduction of 38.2% from the BAU projection. Forestry and land-use emissions are to achieve reductions of 39.31 million tonnes by 2025 and 79.1 million tonnes by 2030. In line with commitments under the Global Methane Pledge, the plan also seeks to cap methane emissions at 59 million tonnes for 2025 and 45.9 million tonnes for 2030.

Following the “Glasgow Declaration on forests and land use” from the COP26, Viet Nam implemented a decision effective 24 August 2023 that specifies goals on managing natural forest area, restoring and upgrading forest quality, increasing the area of forests certified as sustainably managed, and developing policies to promote industry development towards a low-emissions, circular and green economy.

Trade policy developments in 2023-24

A free trade agreement between Viet Nam and Israel (VIFTA) was signed on 25 July 2023 after more than seven years of negotiations. The agreement, the first between a southeast Asian country and Israel, is expected to enter into force in 2024. It will involve removing duties on at least 86% of Vietnamese products and 93% of Israeli products (Vietnam Investment Review, 2023[5]). It is expected that bilateral trade turnover will increase from USD 2.2 billion (the level in 2022) to USD 3 billion, as Vietnamese tropical products are exported for processing in Israel (including for seafood) and as Israel gains access to ASEAN countries (Vietnam National Trade Repository, 2023[6]; Viet Nam Center for WTO and International Trade, 2023[7]).

Policy context

Key economic and agricultural statistics

Viet Nam is a mid-sized country in terms of land area, but its population of over 98 million makes it the 16th most populous country in the world. Almost two-thirds of the population live in rural areas. Since the reforms of Doi Moi in the mid-1980s, the country has seen strong and steady growth in GDP, in the order of 5-7% annually from 2000-19 (Figure 29.3). Growth in GDP slowed as a result of COVID-19, but rebounded to just over 8% in 2022.

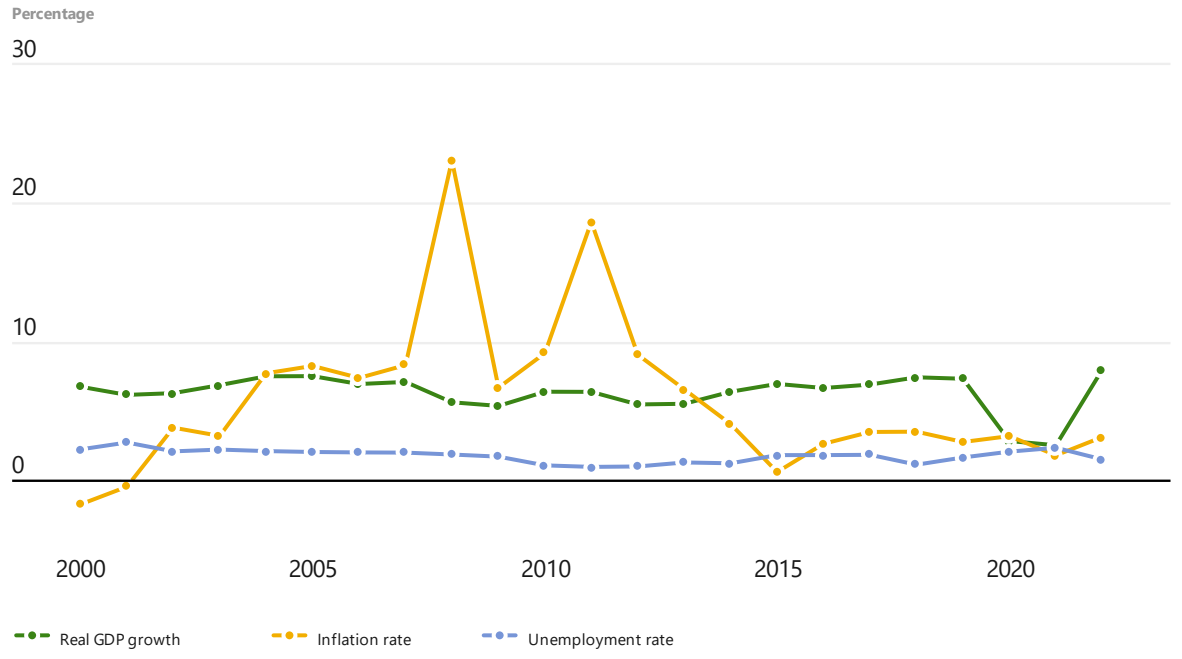
Agriculture contributes nearly 12% to Viet Nam’s GDP and employs over one-third of the labour force, although the relative importance of agriculture in the economy is declining. The sector has undergone significant structural changes in recent decades, reflecting a shift away from staple foods to export commodities, such as rubber and cashew nuts, and to livestock production, particularly pig meat. Crops dominate the agricultural landscape, accounting for 63% of total agricultural production in 2022 (Table 29.2). Rice alone plays a dominant role, accounting for around one-quarter of the value of agricultural production.

Table 29.2. Viet Nam: Contextual indicators

	Viet Nam		International comparison	
	2000*	2022*	2000*	2022*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	202	1 321	0.5%	1.0%
Population (million)	79	98	1.8%	1.9%
Land area (thousand km²)	310	313	0.4%	0.4%
Agricultural area (AA) (thousand ha)	8 780	12 360	0.3%	0.4%
			All countries[1]	
Population density (inhabitants/km²)	252	313	52	64
GDP per capita (USD in PPPs)	2 553	13 457	9 363	25 965
Trade as % of GDP	49.5	89.4	12.3	16.6
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	22.7	11.9	2.9	3.8
Agriculture share in employment (%)	65.3	33.6	-	-
Agro-food exports (% of total exports)	16.9	6.1	6.4	8.0
Agro-food imports (% of total imports)	6.1	9.7	5.8	6.9
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	78	63	-	-
Livestock in total agricultural production (%)	22	37	-	-
Share of arable land in AA (%)	71	55	32	34

Note: *or closest available year.
1. Average of all countries covered in this report. Agro-food trade includes natural rubber.
Sources: OECD statistical databases; International Labour Organization (ILO); UN Comtrade; World Bank, WDI; FAO database and national data.

Figure 29.3. Viet Nam: Main economic indicators, 2000 to 2023

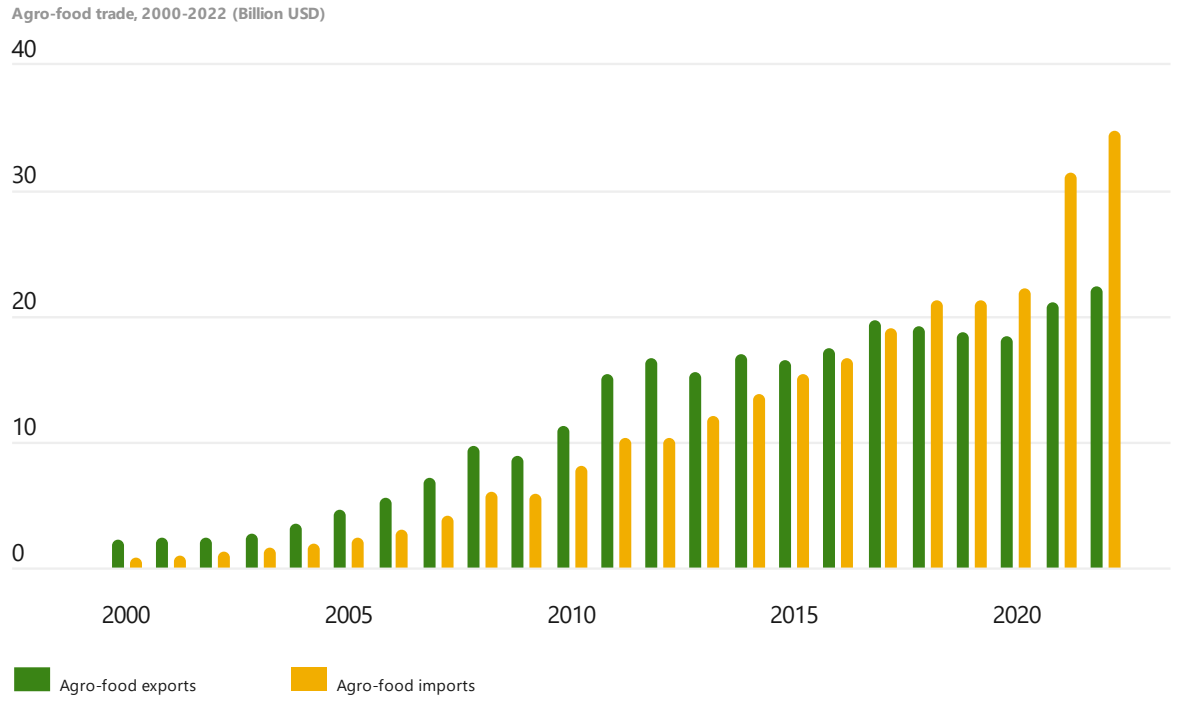


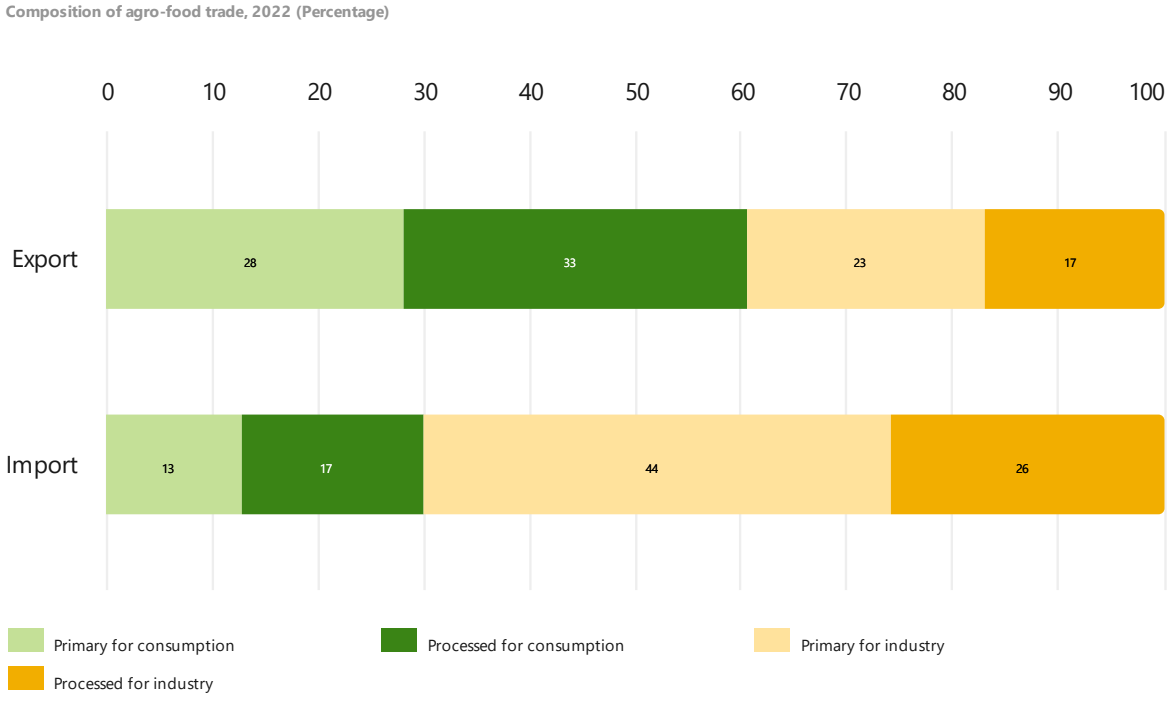
Sources: OECD statistical databases; World Bank, WDI; and ILO estimates and projections.

With the progressive liberalisation of trade, the value of imports and exports has increased substantially since the early 2000s (Figure 29.4). Imports, in particular, saw a sizeable jump in the last two years, increasing from USD 22.4 billion in 2020 to USD 34.9 billion in 2022. The value of exports has also steadily increased, reaching USD 22.6 billion in 2022. Viet Nam is one of the world's largest exporters of a range of agricultural commodities, including rice, coffee, tea, cashew nuts, coffee, black pepper, natural rubber and cassava. However, exports often sell at a discount compared to the same commodities from other leading exporters due to quality differences.

Over 60% of Viet Nam's agro-food exports are delivered as primary or processed goods for household consumption, where the share of the latter in exports increased in 2022 relative to 2021. In contrast, 70% agro-food imports are used as primary or processed inputs to production, rather than for household consumption. Key imports into production include livestock feedstuffs, such as oil cake and maize, and raw commodities for further processing and export, including cotton and cashew nuts. The remaining 30% are products to meet food demand from domestic consumers, including higher-value foods and beverages.

Figure 29.4. Viet Nam: Agro-food trade

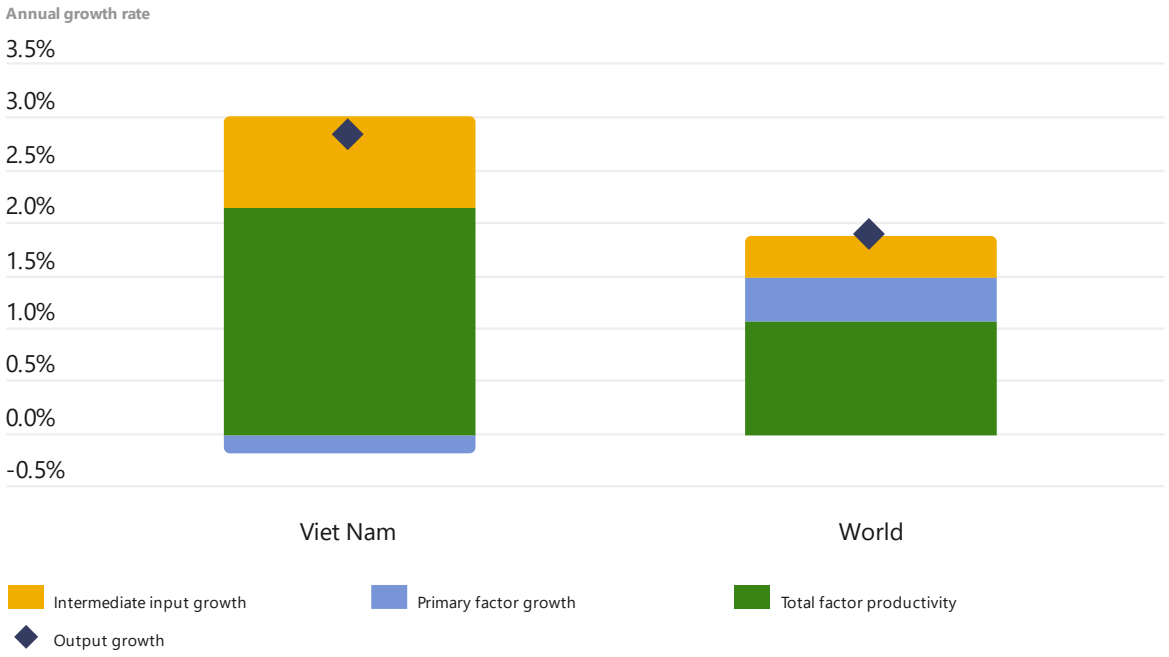




Note: Numbers may not add up to 100 due to rounding. Agro-food trade includes natural rubber.
Source: UN Comtrade Database.

Agricultural production increased by 2.8% from 2012-21 (Figure 29.5). This was largely driven by growth in total factor productivity, which outpaced the world average during the same period. Growth in intermediate inputs likewise outpace the world average and contributed to the country's relatively high level of growth in agricultural output.

Figure 29.5. Viet Nam: Composition of agricultural output growth, 2012-21



Note: Primary factors comprise labour, land and capital (livestock and machinery). Intermediate input comprises materials (feed and fertiliser).
Source: USDA Economic Research Service Agricultural Productivity database.

However, agricultural production gains have been accompanied by significant pressure on natural resources. The nitrogen and phosphorus balances for Viet Nam exceed the OECD average in for the period 2012-21 by a factor of 4.5 and 13.3, respectively. The country abstracts nearly double the amount of water for agriculture and the share of agriculture in total GHG emissions is three times greater than the OECD-wide average, although agriculture accounts for a larger share in the country's economy. The environmental degradation of production in Viet Nam poses a risk to agricultural production and the capacity of the sector to support sustainable productivity growth in the future.

Table 29.3. Viet Nam: Productivity and environmental indicators

	Viet Nam		International comparison	
	1991-2000	2012-2021	1991-2000	2012-2021
			World	
TFP annual growth rate (%)	2.5%	2.1%	1.7%	1.1%
			OECD average	
Environmental indicators	2000*	2022*	2000*	2022*
Nitrogen balance, kg/ha	164.1	126.7	32.1	28.2
Phosphorus balance, kg/ha	29.9	30.5	3.3	2.3
Agriculture share of total energy use (%)	1.7	5.0	1.7	2.0
Agriculture share of GHG emissions (%)	47.9	31.6	8.7	10.1
Share of irrigated land in AA (%)	..	..	-	-
Share of agriculture in water abstractions (%)	94.0	94.8	47.0	49.5
Water stress indicator	..	..	8.7	..

Note: * or closest available year.
Sources: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Historical trends in agricultural policies

Following its declaration of independence in 1945 and ensuing reunification into the Socialist Republic of Viet Nam in 1975, the Communist Party of Viet Nam initially structured the country according to the Soviet model, which was grounded in central planning and self-reliance. Within this context, agriculture's primary role was to support the development of heavy industry by providing food at low prices and achieving food self-sufficiency (OECD, 2015[8]). Production was organised around co-operatives and state farms, with SOEs providing inputs and controlling output markets. By the mid-1980s, food shortages and famine were pervasive, as was inflation.

A long series of reforms embedded within the economy-wide programme known as *Doi Moi* or "Renovation" progressively liberalised Viet Nam's economy and its agricultural sector starting in 1986 (OECD, 2015[8]). The paradigm evolved toward a "law-ruled socialist market economy," in which the development of agriculture, forestry, and fisheries became a priority for stabilising the economy. The model for agricultural management shifted from co-operatives to farm households, with farmland redistributed in the form of land-use rights, and farm households given the ability to make their own production decisions provided they met certain production quotas. By 1992, prices for most goods and services were determined by markets, though regulation remained for certain commodities, such as fertiliser, sugar, and rice.

From 1993-2000, Viet Nam underwent a period of expansion, in which the country increasingly opened to trade and integrated into the global economy. Reforms introduced more market-oriented policies with the aim of expanding food production for export. A number of these reforms aimed to improve investment and technological innovation, including the 1993 Land Law, the establishment of a national extension service, and credit access for rural households. The Price Stabilisation Fund (PSF) was established to regulate the prices of certain commodities, including urea, paddy and rice, coffee, and sugarcane.

During this period, Viet Nam entered into bilateral and regional trade agreements and partnerships to expand market opportunities, including its accession to the Association of Southeast Asian Nations (ASEAN) in 1995 and its admission to the Asia Pacific Economic Community (APEC) in 1998. Most importantly, the country relaxed restrictions on the export of rice as well as internal barriers to trade between the south and the north. The country saw strong and steady growth throughout the 1990s, in terms of real GDP (7.4% per year) and agricultural output (6% per year), with the relaxation of production quotas, price controls, collectivised agriculture, restrictions on trade and investment, and bans on private enterprises (OECD, 2015[8]; World Bank, 2016[9]). The budgetary expenditure for agriculture quadrupled

during this period, with several large-scale projects implemented, such as the Building Canals for All Rice Fields programme (Phan, 2014[10]; Ellis et al., 2010[11]).

From 2000-08, the policy framework aimed to stimulate agricultural and rural modernisation and industrialisation by improving yields, quality, and the value of production. Further international integration, including accession to the WTO in 2007, locked in previous reforms. The remaining few quantitative restrictions on agricultural imports and exports were progressively withdrawn but it was not until the late 2000s that private sector involvement in rice export was encouraged. Prior to this point, the right to export was limited to national and provincial SOEs.

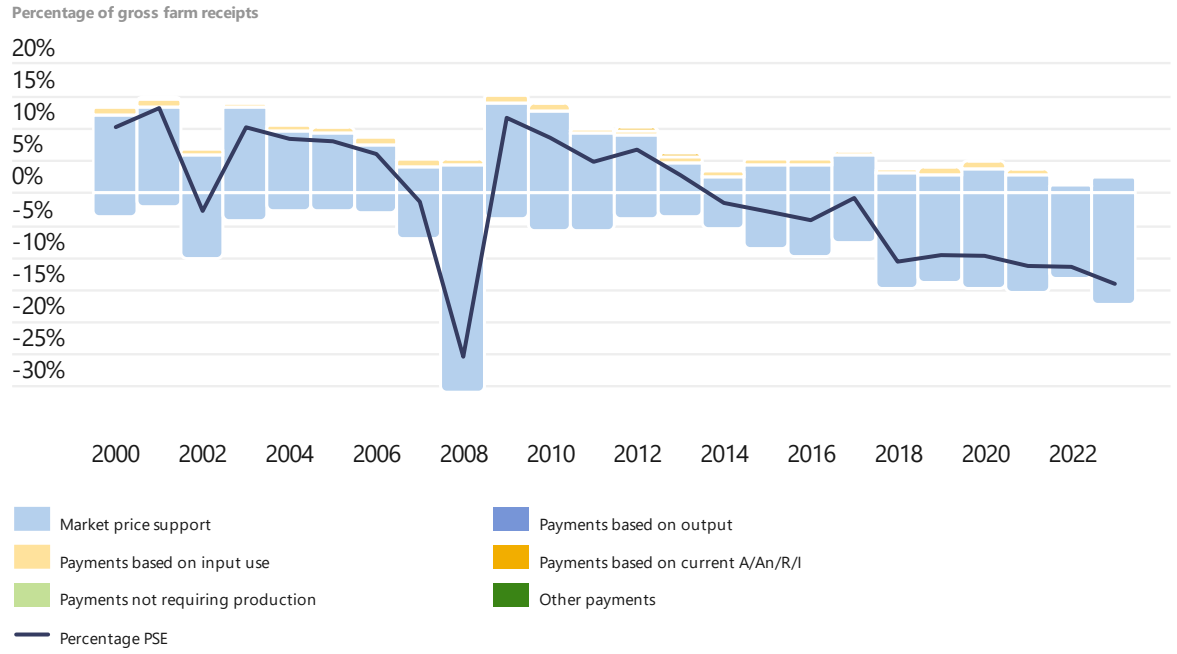
Since 2008, two major resolutions have guided and reoriented agricultural policy development in Viet Nam. The first, the Tam Nong Resolution, emphasises the advancement of agriculture, rural development, and farmer livelihoods based on a socialist market economy. Alongside this, a resolution to ensure national food security was issued in response to sharp increases in food prices from 2007-09. The resolution sought to ensure national food security by guaranteeing adequate food supplies, particularly for rice. It set specific targets to preserve land in the production of rice and to ensure a farm-gate price such that growers are guaranteed a certain profit margin above production costs. In March 2021, this resolution was updated through 2030 to stabilise 3.5 million ha of land in rice production and to ensure an average profit of 35% above estimated production costs.

Table 29.4. Viet Nam: Agricultural policy trends

Period	Framework	Changes in agricultural policies
1976-1986	Reunification: Socialist centrally planned system	Centrally planned economy, including the agricultural sector Agricultural production organised into co-operatives that also administered land Upstream and downstream sectors reorganised as state-owned enterprises
1986-1993	Renovation (*Doi Moi*): Launch of reforms to transition Viet Nam to a socialist-oriented market economy	Farm households replace co-operatives as focus of agricultural and rural development Role of co-operatives reduced: farmers allowed to make production decisions; co-operatives limited to trading and providing services (e.g. irrigation) Economy opened to trade Reduced government control over prices, although prices regulated for some products (including fertiliser, sugar and rice)
1993-2000	Expansion: Further reforms to expand food production and exports	Land Law 1993; land use rights extended to 20 years (annual crops) and 50 years (perennial crops) Land use tax replaces production quota and agricultural output tax Rural households allowed to borrow loans from commercial institutions Price Stabilisation Fund for essential commodities Restrictions on rice exports relaxed Increased budgetary expenditure for agriculture
2000-2008	Consolidation: Policies to promote agricultural and rural modernisation and industrialisation	Policies to encourage production of primary and processed commodities, quality improvement, domestic and international trade, and increase investments from various sources in physical and social infrastructure Regional and bilateral trade agreements WTO accession
2008-present	Reorientation: Shift in emphasis from extensive development of agriculture based on quantity to one focused on quality and efficiency improvements	Agricultural policy guided by two major resolutions: - Resolution No. 26/2008/NQ-TW on agriculture, farmers and rural areas (*Tam Nong*) - Resolution No. 63/2009/NQ-CP to ensure national food security Implemented through the master plan for agricultural development (2012) and the agricultural restructuring project (2013)

Over the past 20 years, the overall level of support provided to Viet Nam's agricultural sector fluctuated at low or negative levels, largely driven by changes in MPS (Figure 29.6). Since 2014, PSE has remained negative, dropping to around -10% in 2018 and remaining at that level since. Total support to agriculture (TSE) has also been negative over the same period, as budgetary transfers to producers and expenditure on general services do not compensate for overall negative MPS.

Figure 29.6. Viet Nam: Development of the PSE and its composition, 2000 to 2023



Notes: A/An/R/I:Area planted/Animal numbers/Receipts/Income.
Payments not requiring production include Payments based on non-current A/An/R/I (production not required) and Payment based on non-commodity criteria. Other payments include Payments based on non-current A/An/R/I (production required) and Miscellaneous payments.
Source: OECD (2024), "Producer and Consumer Support Estimates", *OECD Agricultural policy monitoring (database)*, https://data-explorer.oecd.org/.

References

Asian Development Bank (2023), *Imperatives for Improvement of Food Safety in Fruit and Vegetable Value Chains in Viet Nam*, Asian Development Bank, Manila, Philippines, https://doi.org/10.22617/tcs230009-2. [4]

Ellis, K. et al. (2010), *Assessing the Economic Impact of Competition: Findings from Vietnam*, Overseas Development Institute, London, https://odi.org/en/publications/assessing-the-economic-impact-of-competition-findings-from-vietnam/ (accessed on 29 March 2023). [11]

Gray, E. and D. Jones (2022), "Innovation, agricultural productivity and sustainability in Viet Nam", *OECD Food, Agriculture and Fisheries Papers*, No. 181, OECD Publishing, Paris, https://doi.org/10.1787/9cc1f47a-en. [3]

OECD (2022), *OECD Review of the Corporate Governance of State-Owned Enterprises in Viet Nam*, Corporate Governance, OECD Publishing, Paris, https://doi.org/10.1787/a22345d0-en. [2]

OECD (2015), *Agricultural Policies in Viet Nam 2015*, OECD Food and Agricultural Reviews, OECD Publishing, Paris, https://doi.org/10.1787/9789264235151-en. [8]

Phan, S. (2014), "A Qualitative Review of Vietnam's 2006-2010 Economic Plan and the Performance of the Agriculture Sector", *Asian Journal of Agriculture and Development*, Vol. 11/1, pp. 39-63, https://doi.org/10.37801/ajad2014.11.1.3. [10]

Viet Nam Center for WTO and International Trade (2023), *FTA opens up opportunities in Israeli market: experts*, https://wtocenter.vn/chuyen-de/22455-fta-opens-up-opportunities-in-israeli-market-experts (accessed on 19 March 2024). [7]

Vietnam Investment Review (2023), *Vietnam, Israel sign free trade agreement*, https://vir.com.vn/vietnam-israel-sign-free-trade-agreement-103846.html (accessed on 3 June 2024). [5]

Vietnam National Trade Repository (2023), *Vietnam signs Free Trade Agreement with Israel*, https://vntr.moit.gov.vn/news/vietnam-signs-free-trade-agreement-with-israel#:~:text=Vietnam%20has%20become%20the%20first,least%2086%25%20of%20Vietnamese%20products. (accessed on 19 March 2024). [6]

World Bank (2016), *Transforming Vietnamese Agriculture: Gaining More from Less. Vietnam Development Report.*, World Bank, Washington, DC. [9]

WTO (2022), *World Tariff Profiles 2022, WTO ITC UNCTAD*, https://www.wto.org/english/res_e/publications_e/world_tariff_profiles21_e.htm (accessed on 29 March 2023). [1]

Notes

[1] The RCEP countries are Australia, Brunei, Cambodia, China, Indonesia, Japan, Korea, Laos, Malaysia, Myanmar, New Zealand, the Philippines, Singapore, Thailand, and Viet Nam.

[2] Producers of these commodities are implicitly taxed in that they receive prices lower than world prices for their outputs, resulting in a negative MPS.

[3] The VRG, one of the top ten largest listed companies across all sectors, controls 40% of the land in rubber plantations nationally and 85% of total export production (state ownership ratio 97%). Vinafood II is the country's largest exporter of rice, with the capacity to process 3 million tonnes per year, and is an exporter also of cassava, maize, beans, cashew nuts, and coffee (state ownership ratio 51%). Vinacafe accounts for 20-25% of coffee bean exports, as well as exports of peppers and cashew nuts, and imports of fertilisers for coffee production (state ownership ratio 100%). Vinatea (converted to Vietnam Tea Corporation Joint Stock Company by decision of the Prime Minister) owns 4 300 ha of land in tea production (the largest concentrated area in the country) and produces up to 10 000 tonnes of dry tea per year, with exports to 15 countries. State ownership ratios from OECD (2022[2]).

[4] Decision 420/TTg-KTN of 12 March 2010.

[5] Export restrictions for rice provide a policy rationale for negative MPS values until 2017. After that point, formal export restrictions no longer legally apply, but some restrictions remain in terms of maintaining rice

reserves. The ongoing presence and role of SOEs in the trade of rice and other export commodities is the most likely explanation for negative MPS values since 2017.

[6] The exemption is codified in the Law on Irrigation of 207, No. 08/2017/QH14.

[7] For example, foreigners may retain a LUR for 50 years, while locals may hold one indefinitely.

Annex A. Sources and Definitions of Contextual Indicators

Table: Contextual indicators

Gross Domestic Product – GDP (USD billion in PPP): OECD National Accounts Statistics (database), Gross domestic product, USD, current prices, current PPPs. World Bank, World Development Indicators (WDI database) for Emerging Economies not available in the OECD database.

Population (million): OECD National Accounts Statistics (database), Population and employment by main activity. Calculation based on Eurostat database for the European Union. United Nations, World Population Prospects: 2023, Population, for Emerging Economies not available in the OECD database.

Land area (thousands km^2): FAOSTAT Land Use (database), Land area (1 000 ha) recalculated to thousands km^2. Land area excludes water areas.

Agricultural area (AA) (thousand ha): FAOSTAT Land Use (database), Agricultural area (1 000 ha).

Population density (inhabitants/km^2): OECD Regional and Cities (database), Regional demography, Population density and regional area. United Nations, World Population Prospects 2023, Population density, for economies not available in OECD database. Calculation based on the Eurostat population and area databases for the European Union.

GDP per capita (USD in PPP): OECD National Accounts Statistics (database), Gross domestic product (expenditure approach), per head, USD, current prices, current PPPs. World Bank, World Development Indicators (WDI database) for Emerging Economies not available in OECD database.

Trade as % of GDP: Calculation based on UN COMTRADE (database) for trade data, customs data, and GDP (local currency) indicator. Average trade calculated as (exports+imports)/2. The European Union aggregate does not account for intra-EU trade.

Agriculture share in GDP (%): OECD National Accounts Statistics (database), "National Accounts at a Glance", Gross value added, Agriculture, forestry and fishing, percentage of total activity. Eurostat database for the European Union. World Bank, World Development Indicators (WDI database) for Emerging Economies not available in OECD database.

Agriculture share in employment (%): Calculation based on OECD Labour Force Statistics (database), Employment by activities and status (ALFS), as a share of employment in agriculture, hunting, forestry and fishing in all activities (ISIC rev.3, A-B and A-X; ISIC rev.4, A and A-U). Calculation based on Eurostat, share of employed persons, aged 15 years and over, in agriculture, hunting, forestry and fishing in total NACE activities (Statistical classification of economic activities in the European Community), for the EU Member States. World Bank, World Development Indicators (WDI database), Employment in agriculture, hunting, forestry and fishing as a share of total employment; Data from the International Labour Organization, Employment in agriculture, hunting, forestry and fishing as a share of total employment (based on ILO modelled estimates) and national data for Emerging Economies not available in OECD or in other international database. The ILO modelled estimates series provides both nationally reported labour statistics observations and imputed data produced through a series of econometric models for countries

with missing data. Estimates for countries with limited labour market information have a high degree of uncertainty and are being regularly updated and revised by the ILO especially when a better source in terms of accuracy and international comparability has become available.

Agro-food exports in total exports (%): Calculation based on UN COMTRADE (database). Agro-food definition does not include fish and fish products. Agro-food codes in H0: 01, 02, 04 to 24 (excluding 1504, 1603, 1604 and 1605), 3301, 3501 to 3505, 4101 to 4103, 4301, 5001 to 5003, 5101 to 5103, 5201 to 5203, 5301, 5302, 290543/44, 380910, 382360.

Agro-food imports in total imports (%): Calculation based on UN COMTRADE (database). Agro-food definition does not include fish and fish products.

Crop in total agricultural production (%): National data, share of value of total crop production (including horticulture) in total agricultural production.

Livestock in total agricultural production (%): National data, share of value of total livestock production in total agricultural production.

Share of arable land in AA (%): Calculation based on FAOSTAT Land Use (database), arable land as a share of agricultural area.

Table: Productivity and environmental indicators

TFP annual growth (%): Agricultural Total Factor Productivity indices of the USDA Economic Research Service use primarily FAO data supplemented by national data. Agricultural TFP indices are estimates by country and for groups of countries aggregated by geographic region and income class. The presented growth rates are sensitive to the choice of the time period. Reported values have changed relative to previous releases following the International Agricultural Productivity database update that includes revisions of historical estimates to reflect newly available data and modifications to the estimation procedures. More information can be found in the section “Figure: Composition of agricultural output growth, 2012-21”.
USDA, Economic Research Service (2023), International Agricultural Productivity database, https://www.ers.usda.gov/data-products/international-agricultural-productivity/ (accessed January 2024).

Nitrogen balance (Kg/ha): Balance (surplus or deficit) expressed as kg nitrogen per hectare of total agricultural land calculated at the national level. OECD aggregate for nitrogen balance is calculated as the ratio between the total surplus and the total agricultural land area in the OECD area. European Union as a single area is calculated as the Gross Nitrogen Balance in the EU area over the utilised agricultural area of the EU.
OECD (2024), Agri-environmental indicators (database), http://data-explorer.oecd.org/s/io.

Phosphorus balance (Kg/ha): Balance (surplus or deficit) expressed as kg phosphorus per hectare of total agricultural land calculated at the national level. OECD aggregate for phosphorus balance is calculated as the ratio between the total surplus and the total agricultural land area in the OECD area. European Union as a single area is calculated as the Gross Phosphorous Balance in the EU area over the utilised agricultural area of the EU.
OECD (2024), Agri-environmental indicators (database), http://data-explorer.oecd.org/s/io.

Agriculture share of total energy use (%): Share of agricultural consumption in total final consumption (TFC).
International Energy Agency (2023), IEA World Energy Statistics and Balances (database), https://doi.org/10.1787/data-00512-en, and OECD Agri-environmental indicators (database), http://data-explorer.oecd.org/s/io,

Agriculture share in total GHG emissions (%): Greenhouse gas emissions by source, excluding land use, land-use change and forestry (LULUCF). European Union as a single area is calculated from UNFCCC data as Agriculture greenhouse gas emissions in the EU area over the total GHG emissions in EU area.
UNFCCC Greenhouse Gas Inventory Database (2023), https://unfccc.int, and OECD Agri-environmental indicators (database), http://data-explorer.oecd.org/s/io.

Share of irrigated area in Agricultural Area (AA) (%): Share of irrigated area in total agricultural area.
OECD (2024), Agri-environmental indicators (database), http://data-explorer.oecd.org/s/io and FAOSTAT database for Emerging Economies not available in OECD database.

Share of agriculture in water abstractions (%): Share of agriculture in total freshwater abstractions. European Union as a single area is calculated as the total abstractions for agriculture in the EU area over the total freshwater abstractions in the EU area.
OECD (2024), Agri-environmental indicators (database), http://data-explorer.oecd.org/s/io.

Water stress indicator: The indicator refers to the intensity of use of fresh water resources. It is expressed as gross abstraction of freshwater as percentage of total available renewable freshwater resources. European Union is treated as a single area.
OECD (2024), "Water: Freshwater abstractions", OECD Environment Statistics (database), http://dx.doi.org/10.1787/data-00602-en.

Figure: Main macro-economic indicators, 2000 to 2023

Real GDP growth (%): OECD Country Statistical Profiles, real GDP growth. OECD Economic Outlook: Statistics and Projections (database) as a benchmark for the latest year. World Bank, World Development Indicators (WDI database) for Emerging Economies not available in OECD database. Eurostat database for the European Union from 2020.

Inflation rate (%): OECD National Accounts Statistics (database), Prices and Purchasing Power Parities, Annual average rate of change in Harmonized Indices of Consumer Prices (HICPs). World Bank, World Development Indicators (WDI database) for Emerging Economies not available in OECD National Accounts Statistics.

Unemployment rate (%): OECD Economic Outlook: Statistics and Projections (database), Labour market statistics. Eurostat database for the European Union. International Labour Organization (ILO), Unemployment rate by sex and age (estimates and projections) for Emerging Economies not available in OECD database.

Figure: Agro-food trade

Agro-food exports (USD billion), 2000 to 2022: UN COMTRADE (database). Agro-food definition does not include fish and fish products.

Agro-food imports (USD billion), 2000 to 2022: UN COMTRADE (database). Agro-food definition does not include fish and fish products.

Composition of agro-food trade, 2022: UN COMTRADE (database). Agro-food definition in HS classification (see above) combined with the Classification by Broad Economic Categories (BEC) to generate breakdowns into type of commodities (Primary or Industrial commodities) and type of destination (Consumption or Industry).

Figure: Composition of agricultural output growth, 2012-21

TFP annual growth (%): Agricultural Total Factor Productivity indices of the USDA Economic Research Service use primarily FAO data supplemented by national data. Input growth is the weighted-average growth in quality-adjusted land, labour, capital and materials (synthetic NPK fertilisers, and animal feed), where weights are input (factor) cost shares. Special breakdown created to dissociate primary factors (land, labour and capital) from intermediate input: materials (feed and fertiliser) growth. Output growth corresponds to gross agricultural output for each country.

Agricultural TFP indices are estimates by country and for groups of countries aggregated by geographic region and income class. The European Union single area is recalculated from individual countries data and weights. The presented growth rates are sensitive to the choice of the time period.

The full documentation is available at: https://www.ers.usda.gov/data-products/international-agricultural-productivity/update-and-revision-history/.

USDA, Economic Research Service (2023), International Agricultural Productivity database, https://www.ers.usda.gov/data-products/international-agricultural-productivity/ (accessed January 2024).

Indicators used to calculate selected ratio and percentage indicators

GDP (local currency): OECD National Accounts Statistics (database), Gross domestic product, local currency, current prices. OECD Economic Outlook: Statistics and Projections (database) as a benchmark for the latest year. Calculation based on Eurostat database for the European Union. World Bank, World Development Indicators (WDI database) for Emerging Economies not available in the OECD database.

Agriculture Gross Value Added (local currency) (AgGVA): Calculation based on Agriculture share in GDP (%) and GDP (local currency) indicators.

Deflator: OECD Economic Outlook: Statistics and Projections (database), Gross domestic product, market prices, deflator. Eurostat database for the European Union. World Bank, World Development Indicators (WDI database) for Emerging Economies not available in the OECD database.

Exchange rate: OECD National Accounts Statistics (database), Prices and Purchasing Power Parities, Nominal Exchange Rate. Eurostat database for the European Union and EU Member States. World Bank, World Development Indicators (WDI database) and national data for Emerging Economies not available in the OECD database.

Agricultural Policy Monitoring and Evaluation 2024

INNOVATION FOR SUSTAINABLE PRODUCTIVITY GROWTH

This annual report monitors and evaluates agricultural policies in 54 countries, including the 38 OECD countries, the five non-OECD EU Member States, and 11 emerging economies. It finds that despite some modest declines in recent years, support to agriculture has remained close to recent historical highs. While changes in support have been limited, agricultural policies have been both reactive and proactive, boosting the sector's capacity to respond to current challenges while aiming to ensure that food systems are fit for purpose as future conditions evolve.

This year's report focuses on policies fostering sustainable productivity growth in agriculture. Governments are applying a large variety of approaches to improve productivity while preserving natural resources and reducing agricultural greenhouse gas emissions. The report notes, however, that clearly defined targets related to sustainable productivity growth and measurable indicators of progress are important to ensure that policies achieve their stated objectives. The report also notes that making more effective use of producer support to promote innovation and environmental sustainability on the farm, and refocusing overall support towards targeted R&D, can better leverage public spending to deliver public goods and sustainable productivity growth. In line with the 2022 OECD Agriculture Ministerial Declaration, the report identifies a seven-point policy agenda for making agriculture more sustainable, productive and resilient, and for improving the effectiveness and efficiency of agricultural support and markets.

PRINT ISBN 978-92-64-56436-7
PDF ISBN 978-92-64-79719-2

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