Agricultural Policy Monitoring and Evaluation 2019



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Foreword

This report *Agricultural Policy Monitoring and Evaluation 2019* is the 32nd in the series of OECD reports that monitor and evaluate agricultural policies across countries, and the seventh report to include both OECD countries and a set of emerging and developing economies. The present report includes countries from all six continents, including the 36 OECD countries and the five non-OECD EU Member States, as well as twelve emerging economies: Argentina, Brazil, People's Republic of China, Colombia, Costa Rica, India, Kazakhstan, the Philippines, the Russian Federation, South Africa, Ukraine and Viet Nam.

The OECD uses a comprehensive system for measuring and classifying support to agriculture — the Producer and Consumer Support Estimates (PSEs and CSEs) and related indicators. They provide insights into the increasingly complex nature of agricultural policy and serve as a basis for OECD's agricultural policy monitoring and evaluation.

The Executive Summary synthesises the key findings of the report. Chapter 1 provides an overview of recent developments in agricultural policies and analyses the longer-term development of the level and structure of support to agriculture across countries included in the report. The Chapter also assesses the environmental performance of agriculture and discusses the impact of agricultural policies on that performance. The following chapters include short Country Snapshots which briefly summarise the developments in agricultural policies and support to farms in each individual country covered by this report (the European Union which has a Common Agricultural Policy is presented as a single Country Snapshot). Comprehensive Country Chapters and the Statistical Annex containing detailed background tables with indicators of agricultural support are available only in electronic form on the OECD publication website (https://doi.org/10.1787/39bfe6f3-en).

The Executive Summary and Chapter 1 are declassified under the responsibility of the OECD Committee for Agriculture. The remainder of the report is declassified under the responsibility of the Secretary-General of the OECD.

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Acronyms and Abbreviations

AAFC	Agriculture and Agri-Food Canada
ACCC	Australian Competition and Consumer Commission
AEIs	Agri-environmental Indicators
AgGVA	Agricultural Gross Value Added
ARC	Agriculture Risk Coverage (United States)
ASF	African Swine Fever
BBA	Bipartisan Budget Act (United States)
BRM	Business Risk Management (Canada)
CAP	Common Agricultural Policy (of the European Union)
CO2	Carbon dioxide
CPTPP	Comprehensive and Progressive Trans-Pacific Partnership
EAEU	Eurasian Economic Union (Kazakhstan, Russia)
EEA	European Economic Area
EFTA	European Free Trade Association
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FCIP	Federal Crop Insurance Program (United States)
FTA	Free Trade Agreement
GDP	Gross Domestic Product
GHG	Greenhouse Gases
MPP	Margin Protection Program (for dairy producers) (United States)
NAFTA	North American Free Trade Agreement
OECD	Organisation for Economic Co-operation and Development
PLC	Price Loss Coverage (United States)
R&D	Research and Development
SDG	UN Sustainable Development Goals
TRQ	Tariff Rate Quota
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
USDA	United States Department of Agriculture
WTO	World Trade Organization
AAFC	Agriculture and Agri-Food Canada

Executive Summary

In 2016-18, the agricultural policies of the 53 countries covered in this report provided a total of USD 705 billion (EUR 620 billion) per year to their agricultural sectors. About three-quarters of this support, USD 528 billion (EUR 465 billion) per year, was transferred to individual producers. At the same time, six countries, in particular Argentina and India, taxed their agricultural producers using measures that depressed the domestic price of some commodities. These implicit taxes amounted to USD 83 billion (EUR 73 billion) per year in 2016-18, which when deducted from the gross positive transfers, resulted in net transfers to agricultural producers of USD 445 billion (EUR 392 billion) per year. While lowering the level of aggregate support, these implicit taxes also increase overall market distortions. This report presents recent policy developments and support estimates across all OECD countries, the European Union and twelve emerging and developing economies, including, for the first time, Argentina and India, thus raising the report's coverage to almost three-quarters of global agricultural gross value-added.

Recent progress made by many OECD countries in reducing agricultural producer support and in shifting agricultural policies towards less distorting and sometimes more targeted measures has largely stalled. Moreover, support to producers remains unequal across countries and commodities. On average, more than 18% of gross farm receipts in OECD countries continue to originate from policies, compared to 9% on average across the emerging and developing countries covered in this report. However, these averages mask much higher dependence of farm revenues on support in some countries and negative support in several emerging economies, notably in Argentina and India.

Overall, close to 70% of all transfers to and from agricultural producers continues to originate from measures that distort farm business decisions particularly strongly. In many countries, a large part of support to producers still comes from measures that create a gap between domestic and world market prices. The differences in support across commodities within countries, and the co-existence of significant price support for some products with depressed prices for others, exacerbate distortions in the domestic market. Very little of the current policy mix targets agriculture productivity growth, the sustainable use of natural resources, and farm resilience.

While future growth in demand for high-quality food offers opportunities for agriculture and the food industry, challenges for meeting this demand sustainably continue to be significant. Productivity growth has fallen and remains below potential in many countries. While progress has been made in several dimensions of agricultural sustainability, such as nutrient balances and emission intensities of greenhouse gases, environmental pressures remain high and some of the positive trends have slowed down. Climate change, and weather-related production shocks, are expected to increase the challenge of improving productivity, sustainability, and resilience on farms. Increased public and private investment is needed in more responsive agricultural innovation systems, in robust inspection services, in rural infrastructure, and in other enabling services to the sector. While public expenditures on these general services have declined overall, relative to the

sectors' size in OECD and emerging economies, increased investments in research and innovation by many countries, and strengthened efforts to improve rural infrastructure in emerging economies, are positive developments.

The ambition of many countries to enter into new and deeper free trade agreements with key trading partners, also covering agro-food trade, in light of stalled negotiations at the multilateral level, is also a pragmatic step forward, but should not replace multilateral ambitions to facilitate reforms of agricultural policies.

Given these challenges, it is important to reinvigorate reform ambitions. Governments need to roll back distortive, inefficient and environmentally harmful support and put emphasis on high-return policy interventions and the enabling environment for a productive, sustainable and resilient agri-food sector.

Recommendations

- Gradually dismantle policies generating market price support, starting with the most protected markets and most opaque measures. Other production-linked and trade-distorting support should also be reduced and eventually eliminated. This will allow markets to function better, reduce intra-sectoral distortions as well as environmental pressures from over-use of inputs, and make public funds available for more efficient and better targeted investments.
- Increasingly integrate markets. This is key to taking advantage of relative advantages and managing increased risks and should be pursued within a rules-based international trading system. The resolution of on-going trade disputes would contribute in that regard.
- Redirect support to improvements in public services benefitting producers, consumers and society at large. These means investing in agricultural innovation systems focusing public funding in areas that complement private efforts and facilitate collaboration between innovation actors, in hard and soft infrastructure, and in science-based biosecurity systems to ensure human, animal and plant health, amongst others.
- Consider all available economic instruments in pursuit of environmental and climate change mitigation and adaptation goals. Existing albeit partial evidence of the environmental performance of agriculture shows that progress in many countries has slowed or even reversed since the mid-2000s. Countries should invest in filling their knowledge gaps, which could be facilitated by digital technologies. Information, education, regulations, payments and taxes provide the toolbox needed for cost-effectively improving the environmental performance of the sector.
- Improve the understanding of the financial and well-being situation of farm households. Governments often lack consistent data on the income and wealth status of farm households that would allow the identification of those in need. This would allow the design of more effective and targeted income support measures, including social and tax policies that are not unique to agriculture.
- Focus risk-related support only on managing catastrophic risks for which private solutions cannot be developed, working towards clear definitions of the limits of catastrophic risks requiring public engagement. This would enable well-defined public intervention while creating incentives for privately-organised on-farm and

market-based risk management tools. Care should be taken that public support does not crowd out private solutions based on market tools, and that programmes do not over compensate producers, or lead them to adopt risky and unsustainable practices. Governments should also be proactive in the collection and provision of data facilitating the development of market solutions, and in providing access to skills on risk management strategies, in order to facilitate the development of relevant private strategies and market tools.

- Work towards the coherence of policy packages. Farm households respond to all economic, market and policy factors at play. Governments should account for this by considering trade-offs among different policy objectives and interactions between policy areas, and evaluate the effects of policies ex ante and ex post. This can best be achieved through a well-integrated and comprehensive approach to policy development, within and across levels of government and both domestically and internationally.

Chapter 1. Developments in agricultural policy and support

The key economic and market developments which provide the framework for the implementation of agricultural policies are analysed in the first part of this chapter. The next part presents the main recent changes and new initiatives in agricultural policies 2018-19 in OECD countries and key Emerging Economies. Then the developments in the estimated support (using the OECD Producer Support Estimate methodology) are evaluated in terms of its level, composition and changes over time in the OECD countries and Emerging Economies included in this report. The chapter also focuses on the sustainability performance of agriculture.

Key economic and market developments

Conditions in agricultural markets are heavily influenced by macro-economic variables such as global gross domestic product (GDP) growth (which supports demand for agricultural commodities) and energy prices, especially for crude oil (which determines the price of inputs into agriculture, such as fuel, chemicals and fertiliser, and influences demand for cereals, sugar crops, and vegetable oils through the market for biofuels).

Global economic growth has slowed in the latter half of 2018 amidst persistent trade tensions and declines in business and consumer confidence (OECD, 2019[1]). World GDP growth reached 3.5% on average, but developments across countries have diverged (Table 1.1). GDP growth in the OECD economies averaged 2.3%, compared to 2.6% in 2017, with large differences within the area. On the one hand, GDP growth slowed down significantly in the Euro area, as both external and internal demand softened, and in Japan, where it fell from 1.9% in 2017 to 0.8% in 2018. High corporate profits, capacity constraints and severe labour shortages in Japan stimulated investment, but industrial production and exports have been very weak recently. On the other hand, US economic growth increased further to reach 2.9% in 2018, as fiscal easing due to tax reform, higher government spending, elevated confidence and the strong labour markets continued to support demand (OECD, 2018[2]).

Despite moderate output growth, labour market conditions are improving in most OECD economies. The OECD-wide unemployment rate fell further to 5.3% of the labour force, which is below pre-crisis levels, and labour shortages are biting in some countries. In many countries, inflation remains moderate, although higher than in previous years on average in the OECD area.

Growth in the emerging economies is on average higher than in the OECD area, but even more contrasted across countries. In both India and the People's Republic of China (hereafter, "China"), GDP growth, supported by domestic demand, remains strong. In India new infrastructure programmes and recent structural reforms boosted domestic demand growth, while in China growth slowed down due to lower growth in infrastructure investment and credit, the decline in working age population and trade tensions (OECD, 2018[2]). The economy in Brazil continued to grow at moderate rates in 2018. Some other emerging economies experienced temporary difficulties in 2018. In particular, the Argentinian economy plunged into recession in 2018 following a large depreciation of the peso, and the government sought support from the IMF tightening fiscal and monetary policies (OECD, 2019[1]).

Trade tensions have increased uncertainty and risk disrupting global value chains and investment, especially in regions tightly linked to the United States and China (OECD, 2018[2]). Global trade growth, which peaked at 5.5% in 2017, fell back to 3.9% in 2018, which is below the annual average in the period 2006-15. This slowdown is linked to increases in trade restrictions, in particular the higher tariffs on bilateral trade between China and the United States (Box 1.1 in OECD (2018[2])). Global investment, which had fuelled the expansion of emerging market economies, also slowed down as many of them are experiencing capital outflows and a weakening of their currency (OECD, 2018[2]). Higher (and more volatile) oil prices had a mild negative effect on global growth, and contributed to the higher inflation (OECD, 2019[1]).

Table 1.1. Key economic indicators

	Average 2006-15	2016	2017	2018
Real GDP growth (%)[1]				
World[2]	3.6	3.1	3.7	3.5
OECD[2]	1.5	1.8	2.6	2.3
United States	1.6	1.6	2.2	2.9
Euro area	0.8	1.9	2.5	1.8
Japan	0.6	0.6	1.9	0.8
Non-OECD[2]	5.8	4.3	4.6	4.5
Argentina	3.3	-2.1	2.7	-2.5
Brazil	2.8	-3.3	1.1	1.1
China	9.6	6.7	6.8	6.6
India	6.8	8.2	7.2	7.0
South Africa	2.7	0.4	1.4	0.8
		OECD area		
Unemployment rate (%)[3]	7.2	6.3	5.8	5.3
Inflation (%)[1,4]	1.8	1.1	2.0	2.3
World real trade growth (%)[1]	4.5	2.4	5.5	3.9

*Notes:*1. Percentage changes; last three columns show the increase over a year earlier.
2. Moving nominal GDP weights, using purchasing power parities.
3. Per cent of labour force.
4. Private consumption deflator.
Source: OECD (2019[1]), *OECD Economic Outlook, Volume 2019 Issue 1*, Preliminary version, https://doi.org/10.1787/b2e897b0-en. Last updated May 2019. OECD Economic Outlook 105 database.

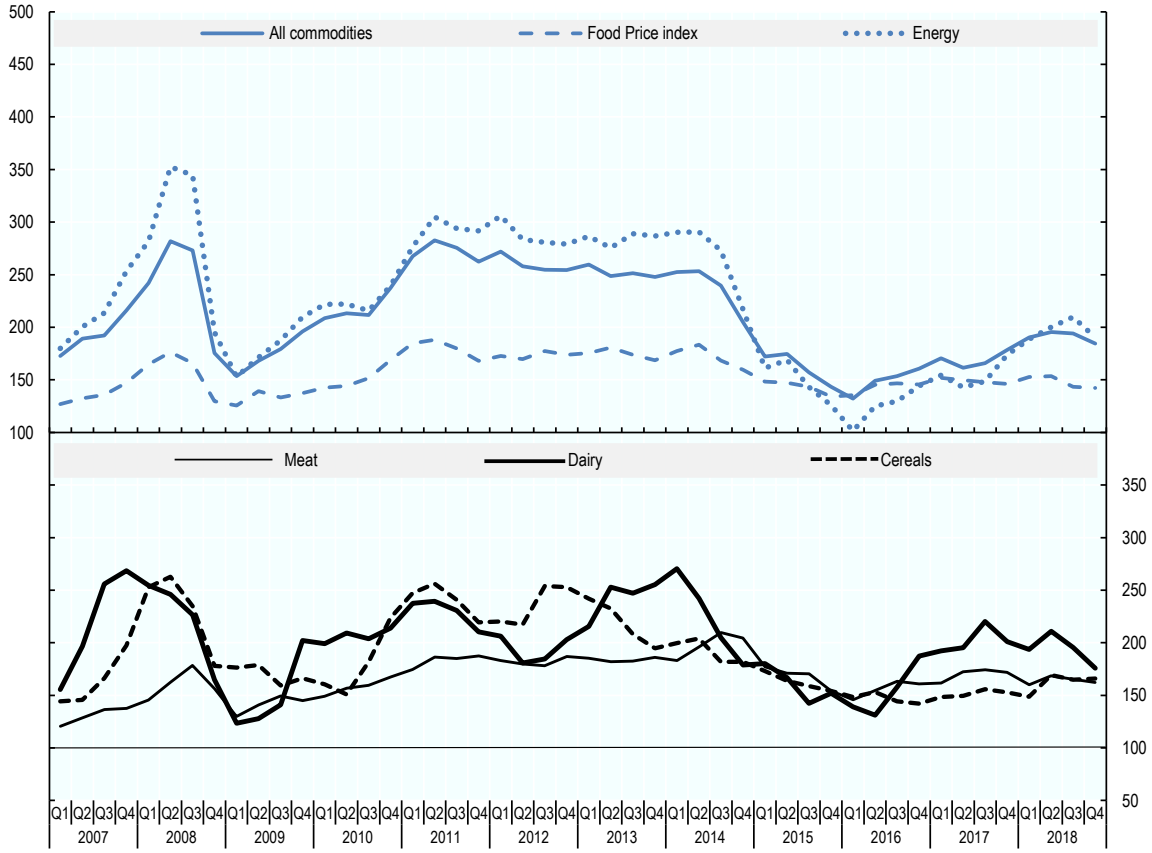
World prices for primary non-agricultural commodities continued to rise in 2018 (Figure 1.1). Crude oil prices increased by 27% on an annual basis between 2017 and 2018, but started to decline in the fourth quarter of 2018. The increase partly reflected strong industrial demand as well as geopolitical risks and supply constraints (OECD, 2018[2]). However, prices are still considerably below the historical peaks of 2011-13, and hence did not induce increases in agricultural commodity prices.

Food commodity prices declined by less than 1% between 2017 and 2018, but by 4% between January 2018 and January 2019 (Figure 1.1). This decline results from a combination of higher cereal prices and lower sugar, meat and dairy prices, but with different trends by commodity within these groups as discussed below (OECD/FAO, 2019[3]).

According to OECD/FAO estimates, wheat and barley world prices increased between 2017 and 2018 due to lower world cereal production estimated for 2018, mainly driven by large, weather-related, falls in wheat and barley production in the European Union, the Russian Federation and Australia. But world prices for maize remained stable, despite the decline in stocks. Higher demand pushed rice prices up to its highest level since 2014 (OECD/FAO, 2019[3]).

Figure 1.1. Commodity world price indices, 2007 to 2018

Index 2002-04=100



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 (2019[4]), Commodity Market Review, for all commodities, food and energy indices (base year: 2005), www.imf.org/external/np/res/commod/index.aspx; FAO (2019[5]), FAO Food Price Index dataset, for meat, dairy and cereal indices (base period: 2002-04), www.fao.org/worldfoodsituation/foodpricesindex/en.

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While soybean prices remained stable on a calendar year basis (World Bank Group, 2019[6]), the price for soybean seeds decreased in the second half of 2018 as world soybean production expanded in 2018, and feed demand declined (OECD/FAO, 2019[3]). The high levels of stocks among major exporters, coupled with market uncertainties related in part to trade talks between the United States and China, have influenced the price declines. Higher world production of sugar in 2017/18, combined with the long-term decline in consumption, have depressed world sugar prices in 2018. Cotton prices continued to increase in 2018, as world production fell in the 2018 marketing year. Limited water availability, pest problems and bad weather contributed this production decline, which mainly occurred in India, China and the United States (OECD/FAO, 2019[3]).

Average world meat prices, as measured by the FAO Meat Price Index (FAO, 2019[5]), decreased in 2018, reflecting the decline in pig and poultry meat prices, while the price of bovine meat remained stable, as higher supplies met strong demand. The spread of ASF and the consequent import restrictions weighed on international pig meat price quotations,

while generally sluggish import demand caused poultry prices to decline. The price of sheep meat increased on world markets (OECD/FAO, 2019[3]).

World dairy prices, as measured by the FAO Dairy Price Index (FAO, 2019[5]), decreased in 2018 because of the increase in milk production in three major dairy product exporters, the European Union, New Zealand and the United States. Butter prices declined compared to their 2017 record level, but a pronounced increase appeared from mid-year, as demand for milk fat products remains strong in North America and Europe. Skim milk powder prices started to recover from low levels towards the end of 2018 as the European Union considerably reduced its intervention stocks (OECD/FAO, 2019[3]).

Recent developments in countries' agricultural policies

Many policy developments announced or implemented in 2018 took place in the context of new multi-annual agricultural policy framework, changes in government, and re-orientation of policies. Others were in response to fluctuations in production and markets, market disruptions, natural disasters and pest and diseases. A number of countries introduced changes in food safety management, animal welfare requirements and labelling to improve information to domestic and foreign consumers. Actions were also taken to improve the functioning of the food chain, and to reinforce sustainability in food and agriculture, notably in the context of climate change mitigation. A number of countries also introduced institutional changes to consolidate organisations and clarify roles.

New multi-annual agricultural policy frameworks are generally in line with previous frameworks

In **Canada**, the new five-year framework for agricultural policy, the Canadian Agricultural Partnership (the Partnership) 2018-23, continues, with some changes to Business Risk Management (BRM) programmes and strategic initiatives introduced under the previous framework Growing Forward 2 (GF2) (AAFC, 2018[7]). In particular, support to research and innovation is split into two programmes, AgriScience and AgriInnovate, which support different elements of the innovation chain. In addition, the Partnership includes two new programmes: AgriAssurance aims to prevent and control risk to the animal and plant resource base, provide safe food and meet new market demands for assurance; AgriDiversity aims at increasing the capacity of youth, women, Indigenous Peoples and persons with disabilities to better participate in the agricultural sector. It supports skills, leadership, and entrepreneurial development, and facilitates knowledge sharing and best management practices. Provinces have started implementing new programmes within this framework.

In the **United States**, the Agriculture Improvement Act of 2018 (the 2018 Farm Bill) came into force in 2019 and will remain through 2023. The 2018 Farm Bill largely continues programmes under the 2014 Farm Bill, with few major changes to agricultural and food policies, but some adjustments that are noted in the following sub-sections. The 2018 Farm Bill continues significant changes to farm support programmes introduced by the Bipartisan Budget Act of 2018 (BBA) enacted in February 2018.

In **Korea**, the Agriculture and Rural Community and Food Industry Development Plan for 2018-22 foresees measures to strengthen the income safety-net via changes to direct payments, and the expansion of crop insurance programmes. The plan also includes support for young innovative farmers, the use of digital technologies along the value chain, and the

promotion of renewable energy production. A number of provisions aim to enhance food safety and quality in the supply chain, as described in the corresponding sub-sections.

In **Turkey**, the 2018-22 Strategic Plan of the Ministry of Food, Agriculture and Livestock (MoFAL) was finalised during 2018. The main agricultural policy framework in the **Russian Federation** — the State Programme for the Development of Agriculture — was edited in 2018 to cover the period up to 2025. The main policy changes in these frameworks are below.

Newly elected governments defined new policy objectives or measures

In **Chile**, **Colombia** and **Costa Rica**, the new governments that came into office in 2018 defined new policy objectives for the coming four or five-year period, or announced new policy measures. Common emphases include the modernisation of institutions, the provision of public goods, the organisation of farmers and their integration in markets, better management of sanitary, phytosanitary and food safety risks, rural development, and improved productivity and sustainability.

In **Mexico**, the new government that took office in December 2018 lowered the 2019 budget allocated to agriculture, and announced new agricultural policy measures, which target small family farms with a view to increasing food security. They include cheap credits for livestock producers with smaller operations, and changes to price support and payments for small-scale farmers as described below. A new National Fertilizer Program aims to increase the domestic production of phosphate and nitrogen fertilisers, and to distribute fertilisers to small producers located in poor areas.

In **Brazil**, the new Government that took office in January 2019 has made two important decisions on agricultural policies. First, the Ministry of Agriculture, Livestock and Food Supply has taken over the responsibilities for small-scale family farming (see section on institutional changes). Second, in line with the macroeconomic directions of the new government, a resolution from the Central Bank in January 2019 changed the conditions for the allocation of part of the rural credit programmes that will be provided at market interest rates rather than preferential rates (see below).

Some countries reduced intervention on markets, while others increased support to producer prices

Among measures that support domestic market prices, changes in 2018 concerned minimum and target prices, stock management, output-based payments to producers, including deficiency payments, and supply management.

In **China**, the reforms initiated in 2017, with respect to the minimum purchase price system for wheat and rice, were continued and deepened in 2018. The minimum purchase prices for both wheat and rice were further lowered. In addition, adjustments were made to the guidelines for quality requirements in grain procurement and to the market price conditions for activating minimum price procurement of wheat and rice. In the **European Union**, previous measures to ease market conditions in the dairy, pig, and fruit and vegetable sectors were scaled down, and tenders took place to discharge SMP stocks.

In contrast, the central government of **India** increased the Minimum Support Prices (MSPs) in 2018 for all crops covered by the system. It also introduced additional schemes (such as a Price Support Scheme and a Price Deficiency Payment Scheme) to encourage the procurement of crops other than grains and cotton, such as pulses or oilseeds. **Mexico** introduced minimum prices for small producers of maize, beans, wheat and milk, with a

cap on support by producer. **Norway** increased target prices from 1 July 2018 with a total budgetary effect of NOK 198 million (USD 24 million). In May 2018 the government of **Mexico** increased, by an average of 23%, the rates of payments based on output under the Objective Income programme.

Regarding supply management, the administratively allocated rice production quotas in **Japan** were abolished in 2018. Accompanying measures include support to farmers who shift from table rice to other crops (wheat, soybeans, and rice for feed and processing) using their paddy fields. The sugar quota regime in **Ukraine** was abolished in September 2018 with effect in the 2018/19 marketing year, and minimum prices for sugar beet within the sugar quota no longer exist. From 2018, agricultural producers no longer receive the price supplements previously paid to help them purchase farm inputs.

Some countries also changed measures supporting dairy markets. **Israel** signed an agreement with farmers to undertake a comprehensive reform of the dairy sector in October 2018. The outline of the reform includes a reduction of target prices, further reduction of customs tariffs and support for farmers leaving dairy production, and the introduction of subsidies for increasing the efficiency of dairy farms. The reform agreement requires a change in legislation to be implemented. In **Switzerland**, compulsory standard milk delivery contracts for all milk producers were extended for another four years, i.e. 2018-21. Since the abolition of the milk quota in 2009, these contracts set prices and quantities for different classes of milk, acting as another supply control mechanism but on a private basis.

Several countries introduced new direct payments, or extended existing ones

In **Kazakhstan**, area payments for crop production, and output and headage payments for livestock production were reduced, eliminating 20 out of 54 types of the payments. The remaining payments were simplified in order to shorten the application process for subsidies and to reduce corruption risks. The system of direct payments in **Switzerland** is maintained over the new programming period 2018-21. The main structural change is the gradual reduction of transitional payments, while the saved budgetary resources are shifted to finance payments to biodiversity. Following the abolition of export subsidies to processed food products from milk and wheat in 2019, budgetary savings will finance direct payments to milk and bread wheat to compensate the price reduction related to the elimination of export subsidies. In **Mexico**, payments based on area will target small and medium producers and include producers from indigenous communities from 2019. In addition, very small producers will receive payments per hectare. In **Norway**, support for areas with poor conditions for agricultural production and a new subsidy for small- and medium-sized dairy farms was introduced in 2019. In **China**, the programme encouraging crop shifting from maize to soybeans initiated in 2017 in the four Northeast provinces was extended to 2018-19.

As part of the Development Plan for 2018-23, **Korea** will introduce a new direct payment scheme combining the existing direct payments for rice, upland crops and less favoured areas. The government also aims to decouple payments further from production of a specific commodity, and to reinforce the cross-compliance of farmers. In February 2019, **India** introduced an unconditional income support payment to small-scale farmers, with landholdings of up to 2 hectares. Furthermore, several states announced significant packages for loan write-offs for small-scale farmers in 2017 and 2018 to reduce farm indebtedness. In **Kazakhstan**, a new seed subsidisation mechanism was introduced in 2018. The programme reimburses seed producers the full cost of producing the quality

seeds distributed to farmers. In return, the farmers are required to return 30% of the subsidies to the Seed Development Fund, which finances the acquisition and modernisation of machinery and equipment for certified seed producers at preferential interest rates.

Risk management instruments were adjusted, extended or introduced

Canadian and US farm programmes include both direct payment and insurance programmes to help reduce farm income variability. The **Canadian** BRM programmes continue in the 2018-23 agreement. The 2018 **US** Farm Bill makes only limited changes to the Federal Crop Insurance Program (FCIP). However, there are new provisions that address conservation issues. Also in the **United States**, a number of changes made to disaster assistance and farm programmes, such as the Agriculture Risk Coverage (ARC) and Price Loss Coverage (PLC) programmes, and the Margin Protection Program for Dairy (MPP-Dairy) under the BBA came into effect (OECD, 2018[2]). In particular, the BBA established seed cotton as a covered commodity under the ARC and PLC programmes.

Various **disaster payments** were available to affected farmers. In **New Zealand**, they ranged from safety net support to loss compensations, to support for clearing ground after major flooding. In **Norway**, several measures were launched to help farmers with the consequences of drought during the spring and summer of 2018. They include payments and grants; a dispensation from the requirement to gather feed from pastures; an exemption for harvesting area with catch crops; and an exemption to retain grants for organically fertilised areas even if the pasture is used for feed or grazing instead of crops. Moreover, the advance compensation payment for crop damage increased from 50% to 70% of the total; import duties on hay were removed; and Crop Insurance Compensation support increased. In the **United States**, the BBA made a number of changes in eligible losses and payment limits to Supplemental Disaster Assistance Programs – the standing disaster programmes for livestock and trees, bushes, vines. **EU** and national disaster support was also available for farmers affected by disasters (floods and droughts) in different EU Member States. Several natural disasters in 2017 and 2018 provoked exceptional aid assistance in **EU Member States**, including payments, adjustment aid, tax delays, and the easing of greening conditions provided that they notified the Commission.

Several countries extended the coverage of subsidised **agricultural insurance** programmes to additional commodities, risks and farmers. Some Provinces in **Canada** extended the coverage of insurance programmes or introduced new ones. **Chile** increased the coverage of public agricultural insurance (Agroseguros) in particular to reach small and medium-scale farmers. Agroseguros also developed and implemented a catastrophic parametric insurance and has reactivated the price hedging programme for wheat and maize. **Japan** launched the Revenue insurance programme, which provides farm revenue protection against losses due to natural disasters or market price fluctuations. **Korea** increased the commodity coverage of the insurance scheme and lowered the minimum age of farmers to extend participation. **Turkey** extended the coverage of the agricultural insurance programme to more products and risks (barley, rye, oat and triticale due to drought, frost, hot winds, heat waves, excess moisture and excessive precipitation in 2018, and chickpeas, red lentils and green lentils in the beginning of 2019).

Several **EU Member States** introduced new risk management tools, and changes to existing programmes co-financed by the Common Agricultural Policy (CAP). Some also provided incentives to promote uptake of available tools. In early 2019, **Austria** reduced the tax rate (0.02% instead of 11%) for some insurance policies covering natural hazards in order to incentivise farmers' uptake of insurance schemes. In **France**, changes were

made to precautionary savings tax provisions. From May 2018, the focus of risk management approaches with respect to hail in **Hungary** shifted towards more preventative approaches in lieu of *ex post* compensation. In Italy, new risk management tools were offered to farmers, including the establishment of producer mutual funds, and extended protections against natural disasters, pests, and diseases. In **Slovenia**, the insurance premium subsidisation rate was raised in 2018. The government of **Spain** increased by 46% authorised funding for use in agricultural insurance in response to increased demand from producers in 2018.

In **Viet Nam**, crop and livestock producers will receive subsidies for insurance premiums of up to 20%, and up to 90% for producers classified as being in or near poverty. Enterprises that apply high technologies in large-scale agricultural production are eligible for insurance premiums subsidies of up to 20%. The types of events supported by insurance include natural disasters, animal diseases and plant pests. The government of **Kazakhstan** started to consider the transformation of the mandatory crop insurance system to a voluntary insurance scheme with a view to expand crop insurance markets in Kazakhstan. The new subsidy would cover insurance premium instead of indemnity. The creation of an electronic platform is planned to monitor fields based on remote sensing data, and thus facilitate the development of insurance products.

Incentives to facilitate or guide agricultural investment

Support to investment is an important form of support to agriculture in many countries, and has increased in several countries. In **Brazil**, as market interest rates continued to decline during 2018, the preferential interest rate margins were reduced or abolished, depending on the type of rural credit. In **Canada**, under a new Accelerated Investment Incentive, manufacturers, food processors and farmers will be able to deduct a larger portion of the depreciation in the year an investment is made. **Kazakhstan** reintroduced interest rate subsidies for acquiring fixed assets and leasing agricultural equipment and livestock. In addition, the rate of the investment subsidy is standardised to 25% of the cost of investment, except for pastures watering, where the subsidy rate remains at 80%. **Korea** introduced incentives for crop diversification away from rice production, in the form of support to drainage, seeds and agricultural machines. In **Norway**, support for investments and development programme was increased.

In **Viet Nam**, a number of preferential support measures were introduced to encourage enterprises to invest in agriculture and rural areas. They include exemptions from or reductions in land or water surface rents; preferential credit; support for the transfer and the application of high-technology in agriculture, human resources training and market expansion; and support for investments in facilities and equipment for processing or preserving agricultural products. In addition, the Government amended the credit policy for agricultural and rural development, doubling the loan amount available to farming households and farm owners without collateral. Hi-tech agricultural enterprises can also access credit without providing collateral, up to 70% of the project value.

Measures affecting land transfer were introduced or are envisaged

Some measures aimed to facilitate land transactions. In **China**, the 2019 Policy Document No. 1 calls for strengthened transparency of rural land transactions and for speeding up the establishment of a unified land market between rural and urban areas. For rural development, the Document foresees enhanced actions for improving rural living environments and public services; as well as for improving rural infrastructure (roads,

electricity grids and logistics networks), enhancing pollution treatment and environmental protection. To facilitate the transition to a new generation of farmers, the **Korean** Plan for 2018-22 foresees enhanced direct payments for retirement, farmland pensions and basic pensions to encourage aged and low income farmers to retire, as well as support to young farmers.

In **South Africa**, following a series of policy changes aiming to enhance land redistribution, a 2017 Bill established a register of public and private agricultural land ownership. Under this Act, foreign persons cannot buy agricultural land and may only conclude long-term leases of agricultural land (30 to 50 years) and such leases must be registered in a Deeds Registry within 90 days. In March 2018, the Parliament voted a bill, which allows for the expropriation without compensation of the commercial farms (mostly owned by white farmers). In order to be applied in practice, this legislation requires a change in the Constitution.

New measures were implemented to enhanced sustainable management of pest and diseases

Measures to control pest and disease were taken in many countries. In response to the **African Swine Fever (ASF)** outbreak, in October 2018 **China** suspended the inter-province pig transport across 28 provinces, covering about 98% of China's live pig production. In the **European Union**, different Member States implemented measures to combat the spread of ASF, including animal culls, physical barriers, informational campaigns, and swine movement restrictions. At EU level, the European Food Safety Authority (EFSA) recommended intensive hunting and quick carcass removal, also the European Union increased funding for knowledge and information platforms, and began soliciting proposals for an ASF vaccine. Since March 2018, Agriculture and Agri-food **Canada** (AAFC) has helped build public trust in the sector by facilitating the development of industry led assurance systems to respond to a variety of issues, including biosecurity and animal welfare. In 2018, plant and animal health partners across **Canada** established separate co-ordinating councils to implement priority activities identified in the "Plant and Animal Health Strategy for Canada" launched in 2017.

In 2019, **Korea** converted the regulation on pesticides to a positive list system, which aims to prevent overuse or misuse of pesticides, and sets maximum residue limits of registered pesticides. The criteria for breeding facilities in animal farms were tightened to prevent animal disease and manage animal product safety, and a comprehensive quarantine policy plan was established, focusing on prevention of animal diseases and policy measures to block the spread of diseases after outbreak.

In May 2018, the **New Zealand** Government and agricultural sector leaders agreed to work towards the eradication of *Mycoplasma bovis*, which was first detected in 2017. The Government will meet 68% of the eradication costs, with the two industry groups DairyNZ and Beef+Lamb New Zealand to meet the remaining 32%. The cost estimation includes losses of production borne by farmers, and the cost of the biosecurity response (including compensation to farmers), and the funding for scientific research to support the eradication programme. In the meantime, affected farmers can apply for compensation from the Ministry for Primary Industries, under the Biosecurity Act 1993.

Plans to improve the sustainable management of natural resources and environmental performance of agriculture were introduced or extended

Argentina established two important strategic plans aiming to preserve natural resources used in agriculture in 2018. One is to promote the integration of irrigation projects throughout the national territory, and the other to promote the conservation, restoration and sustainable management of agricultural soils. Both plans involve structural actions between different agencies and levels of government and private and international stakeholders. In addition, several regulations, including on the applications of plant protection products, minimum environmental protection requirements for the management of empty containers of agrochemicals and the prohibition of certain agrochemicals, aim to reduce the negative impacts of agriculture on the environment. In **New Zealand**, federal funding of irrigation investment projects is winding down. As part of the Development Plan for 2018-22, **Korea** plans to strengthen cross-compliance in the Direct payment scheme and to provide support for environmentally-friendly livestock production to reduce pollution. The plan also includes improvements in pesticide registration and traceability management systems. It will also promote renewable energy generation, including solar photovoltaic, biomass and geothermal heat. Some of the farmland regulations, which hindered the establishment of solar power facilities on farmland, have been alleviated in 2018.

The 2018 **US** Farm Bill makes no major changes to the suite of conservation programmes operated by USDA. Mandatory funding for conservation programmes is increased by a total of roughly 2% during 2019-23, but working land programme funding as a share of total conservation funding continues at the same level as under the 2014 Farm Bill, ending the shift in conservation programme funding towards working lands programmes that has held for the last three Farm Bills. In August 2018, USDA released a three-year action plan that outlines its priorities and goals for using current and future Farm Bill conservation programmes to help agricultural producers improve the water quality and overall health of the Chesapeake Bay watershed, which has been the focus of ongoing efforts to improve water quality and natural resources.

In October 2018, the **European Union** launched an updated **bioeconomy** strategy action plan designed to accelerate activities in line with the Paris Agreement and the 2030 Sustainable Development Agenda. Member States also develop national plans to shift towards agricultural production systems that are based in either the bio- or the circular economy, including endeavours to reduce food loss and waste.

Various actions aim to mitigate climate change and its effects

In response to **Brazil**'s commitments under the Paris Climate Agreement**,** the regulation of the national biofuel policy RenovaBio, approved in March 2018, sets a target to reduce emissions from fossil fuels by 10% in 2028. In pursuit of the objective to increase the use of biofuels and reduce petroleum as a source of energy, the biodiesel blending mandate was increased from 8% to 10% in March 2018, and increases by one percentage point per year were proposed, starting from June 2019 to reach 15% by 2023. In **Brazil,** support for reforestation activities has been expanded and farmers can obtain financing for investments in reforestation, at interest rates below the market rate.

Efforts towards a lower **carbon** agriculture continue. In **Canada**, the agriculture and agri-food sector's contribution to the Pan-Canadian Framework (PCF) on Clean Growth and Climate Change will be primarily delivered through the Partnership. In addition, the 2018-21 Agricultural Clean Technology programme supports investments made by provincial and territorial governments in research, development and adoption of clean

technologies for the agriculture, agri-food and agri-based products sector, specifically precision agriculture and agri-based bioproducts; and the Low Carbon Economy Leadership Fund supports a number of agriculture and agri-food related provincial projects with a focus on energy efficiency, soil health and carbon sequestration, manure management, and waste treatment and processing. In **South Africa**, the Carbon tax bill is an integral part of the system for implementing government policy on climate change. South Africa implements the Carbon tax through a phase-in approach. Primary agriculture is exempted from the carbon tax during the first phase covering 2017-20, but this may be reassessed in a second phase. **Ukraine** made further steps towards implementing its commitments under the 2016 Paris Agreement of the UNFCCC. In December 2018, the Cabinet Ministers of Ukraine approved the Concept for the implementation of the state policy on climate change for the period up to 2030 and the Action Plan on the Concept implementation. The multi-sectoral Action Plan foresees constant monitoring, reporting and verification of greenhouse gas emissions, emissions trading, the application of financial instruments for emission reductions, and mechanisms towards public-private partnerships. Much of the **EU**-wide action on climate change in 2018 was not specific to the agricultural sector, but instead addressed emissions more broadly. At the same time, support to **fuel** use in agriculture continues in many countries, and several **EU Member States** extended the scope and level of fuel tax rebates in 2018.

In September 2018, the government of **Iceland** launched a new Climate Strategy aiming for the country to be carbon neutral before 2040. The strategy consists of 34 measures ranging from the phasing out of fossils fuels in transport to measures aiming to increase carbon sequestration in land use (including limiting deforestation). The government will also support efforts to reclaim drained wetlands, which in recent years have been shown to be a significant source of carbon emissions. A collaboration with sheep farmers is expected to be launched in 2019, with the goal of increasing carbon sequestration within the sector. In **Norway**, the revised National Environmental Programme gives higher priority to climate change challenges, while work continues on simplification and enhancement of goal-orientation of programmes.

Australia and Turkey made efforts to improve **drought resilience**. In 2018 the Government of **Australia** announced a range of initiatives that aim to increase the agricultural sector's resilience to drought. The Australian Government appointed a Coordinator General for Drought to provide advice on developing a long-term drought resilience and preparedness strategy, and a new National Drought Agreement was signed between the Commonwealth and the states and territories, continuing to shift the policy framework towards prioritising long-term preparedness, sustainability, and resilience and risk management. In **Turkey**, the 2018-22 Strategic Plan of the Ministry of Food, Agriculture and Livestock (MoFAL) gives particular attention to increasing efficiency of water use in agriculture. An Agricultural Drought Strategy and Action Plan covering 2018-22 was published. Activities in the Action Plan are grouped under five headings: 1) drought risk estimation and crisis management; 2) ensuring sustainable water supply; 3) effective management of agricultural water demand; 4) increasing support to R&D activities, and training and extension services; and 5) institutional capacity building.

Actions were taken to improve the functioning of the food chain

A mandatory code of conduct is being developed in **Australia** for the dairy sector, in response to a multi-year inquiry by the Australian Competition and Consumer Commission (ACCC) into the state of competition in the sector. The inquiry concluded that there are some market competition issues within the industry, particularly in relation to the dynamics

between producers and processors. The Government of **Canada** is currently developing a federal food strategy "A Food Policy of Canada", which is expected to address issues such as increasing access to safe, nutritious and culturally appropriate food; supporting food's contribution to human health; promoting environmental sustainability, resilience and conservation; and building a strong agriculture and food sector. AAFC (2018[8]) published the results of a consultation of stakeholders supporting the development of the food strategy. France enacted in November 2018 the Law to promote balanced commercial relationships in the agricultural and food sector and healthy sustainable food. In parallel to several provisions aiming to improve sanitary and environmental conditions in production, it reinforces the producers' negotiating stand with the distribution sector, on the basis of "indicators of reference" for production costs and market variables agreed among actors in each commodity sector. A committee was set up to monitor commercial transactions.

In **China**, the 2018 Foreign Investment Industrial Guidance Catalogue removes restrictions on foreign investment in the processing of maize, rice, flour, oilseeds and sugar. In **Viet Nam**, a decree provided for support for the organisation developing value chain linkages for the production and sale of agricultural products, including support to hire consultants. A given linkage project may also receive support for investments in machinery, equipment and infrastructural facilities serving the linkage, as well as subsidies for agricultural extension and training, and for plant varieties, livestock breeds, packaging and labels. The government also approved a scheme for developing 15 000 efficient co-operatives and unions of co-operatives. The scheme aims to improve the operating efficiency of existing agricultural co-operatives; establish an additional 5 200 co-operatives, and promote the application of high technology by co-operatives.

New regulations were developed, mainly to improve the efficiency of food safety procedures, and clarify the labelling of food characteristics

Regarding **food safety**, the **Canadian** Food Inspection Agency has developed the new Safe Food for Canadians Regulations (SFCR), which came into force on 15 January 2019. The SFCR focuses on prevention and allows for faster removal of unsafe food from the marketplace. During 2018, the State Service of **Ukraine** for Food Safety and Consumer Protection resumed its official controls and veterinary checks, following the entry into force of the "Law on State Control for Food, Feed, Animal Health and Animal Welfare" in April 2018.

On **food labelling**, several countries adopted regulations to clarify information for consumers. The **European** Parliament and Council endorsed a new regulation that will apply from 1 January 2021, aiming to harmonise rules on organic production across Member States, improve competition and prevent frauds. **Ukraine** adopted a Law "On Foodstuff Information", and a Law "On the Basic Principles and Requirements for Organic Production, Circulation and Labelling of Organic Products". The **Russian Federation** adopted its first law on organic products, which is to take effect on 1 January 2020. It will regulate manufacturing, storage, transportation, labelling, and marketing of organic products.

On 20 December 2018, the **US** Secretary of Agriculture announced the National Bioengineered Food Disclosure Standard for disclosing foods that are or may be bioengineered. The Standard defines bioengineered foods as those that contain detectable genetic material that has been modified through certain lab techniques and cannot be created through conventional breeding or found in nature. The implementation date of the

Standard is 1 January 2020, and one year later for small food manufacturers. The mandatory compliance date is 1 January 2022.

In **France**, an experimental programme that introduced **labelling of origin** of milk and meat in processed food has been renewed through March 2020. A similar regulation entered into force in **Spain** in January 2019, requiring food manufacturers to indicate the origin of milk, and milk products. Outside of the dairy and livestock sectors, **Italy** introduced mandatory country of origin labelling on rice in February 2018.

In 2018, substantial policy change was made with respect to the usage of **neonicotinoid** insecticides in **EU Member States**. On 27 April 2018, EU Member States voted on a total ban of three of these products for outdoor use beginning in December 2018. In May 2018, the European Court of Justice confirmed the Commission's discretion to regulate these pesticides under the precautionary principal given updated risk assessments and upheld earlier restrictions on the products that were first put in place in 2013. France went further, banning the use of five neonicotinoid pesticides for both indoor and outdoor use beginning in September 2018. At the same time, producers in several countries applied for emergency exemptions from the regulation, based on the current lack of commercially available alternative products.

The Cannabis Act, which came into force in **Canada** on 17 October 2018, provides a strict legal framework for the production, distribution, sale, and possession of cannabis in Canada. Producers of cannabis need to be federally licensed to operate. The cannabis industry is eligible to apply for federal programmes under the Partnership.

Several countries are strengthening animal welfare regulations

A number of large exporters reviewed their animal welfare regulations. The Government of **Australia** concluded a review into the Australian Standards for the Export of Livestock (ASEL). This review recommended mandatory animal welfare outcomes, better reporting and increased transparency of exporter performance, and the institution of penalties when ASEL requirements are not met on export voyages. Across **Canada**, animal welfare and public trust issues have become more important and have led some provinces to develop new programmes. For example, the Ag Action Manitoba Assurance programme supports the ethically sound treatment of animals by providing assistance for the adoption of monitoring, training, equipment and facility upgrades that support improved animal care. New Brunswick promotes agriculture awareness at trade shows, seminars and school events through the Agriculture Awareness programme. In **New Zealand**, since the Ministry for Primary Industries has the ability to make animal welfare regulations, the regulatory programme is being developed and implemented in three tranches. The set of regulations introduced in 2018 relate to stock transport, farm husbandry, companion and working animals, pigs, layer hens, rodeos, surgical or painful procedures, inspection of traps, and crustaceans. The final substantive package of regulations focuses on significant surgical procedures and is due to be completed in early 2020.

Importers are also making efforts to improve animal welfare. **Israel** is seeking ways to reduce its reliance on imports of live animals and improving the welfare of animals imported by sea. In particular, in 2018, the government implemented the extension of shelf life of chilled meat imports to 85 days, enabling imports of meat from distant origins. The **Korean** Development Plan for 2018-22 foresees the development of a comprehensive animal-welfare road-map to provide standards for facilities, maintenance and rearing density, and the development of a labelling system informing consumers about animal welfare and health in each livestock farm.

Efforts to strengthen agricultural innovation systems continue

In **Colombia**, at the beginning of 2018, twelve programmes were created directed mostly on land restructuring and extension services. **Chile**'s animal and plant health institution (SAG) developed a plan to modernise inspection process using a web/mobile platform that has a single repository of audits, with gradual change from the use of paper to mobile equipment kits. The Chilean Food Safety Agency (ACHIPIA) initiated information campaigns for consumers about associated risks with food, and developed methodologies that allow continuous education of the population on food risks and food safety. **Kazakhstan** restructured the agricultural R&D system in 2018, consolidating 23 Research Institutes (SRI) to twelve, and increasing the number of agricultural experimental stations. In addition, business associations have participated in making decisions on the financing of R&D projects with a view to introduce co-financing schemes in R&D projects.

In **Austria**, the Federal Institute for Agricultural Economics merged with the Federal Institute for Less-favoured and Mountainous Areas early in 2019. In October 2018, the **French** government announced the proposed merging of two agricultural research institutes, the *Institut national de la recherche agronomique* (INRA) and the *Institut national de recherche en sciences et technologies pour l'environnement et l'agriculture* (IRSTEA) into a single research organisation for agricultural, agronomic, and environmental issues. In March 2018, the European Commission's Joint Research Centre announced the future creation of a Knowledge Centre on Food Fraud and Quality in response to consumer concerns about food quality and fraudulent practices concerning food.

The digitalisation of rural areas received increasing attention

The **European Union** reaffirmed their commitment to the digitalisation of rural areas through the issuance of the Bled Declaration in April 2018 and work on digitalisation progressed in Member States. The Austrian Federal Ministry for Sustainability and Tourism prioritised farmer access to digitalisation and training for young farmers by setting up a digital model farm (the so-called "Innovation Farm") and establishing a new five-year study programme focused on agriculture and the digitalisation of secondary schools (beginning in the coming school year). In Spain, a revised Rural Development Plan provides funds to create and implement innovative projects in rural areas from 2018 and an Agenda for the digitalisation of the agro-food, forestry, and rural sectors is under preparation for 2019. In the **Russian Federation**, digital agriculture is a new component of the State Programme for the Development of Agriculture for 2018-25.

Institutional consolidation is taking place

In 2018-19, a few countries introduced changes in the governance of agricultural policy. In **Argentina**, the Ministry of Agroindustry became a Secretariat of Government under the Ministry of Production and Labour. In **Brazil**, the Ministry of Agriculture, Livestock and Food Supply has incorporated the responsibilities for small-scale family farming and related support. These had been under separate authorities reporting directly to the Presidency since 1999. In 2018, **Turkey** merged the Ministry of Food, Agriculture and Livestock (MoFAL), and the Ministry of Forestry and Water Affairs to form the Ministry of Agriculture and Forestry. In **Spain**, the management of water changed as follows: the management of water (supply) was shifted from the extinct Ministry of Agriculture Food and Environment to the new Ministry of Ecological Transition and the management of irrigation is a competence of the new Ministry of Agriculture, Fisheries and Food.

Institutional consolidation also took place in **China**. The Ministry of Agriculture and Rural Affairs (MARA) superseded the Ministry of Agriculture (MOA) and the Ministry of Ecology and Environment superseded the previous Ministry of Environmental Protection. In addition, the National Food and Strategic Reserves Administration (NFSRA), a vice-ministerial agency affiliated with the National Development and Reform Commission (NDRC), is now responsible for overseeing the strategic reserves of wheat, rice, maize, oilseeds, cotton, sugar, natural gas, and petroleum, previously under separate organisations. Similarly, the State Administration of Market Regulations (SAMR) consolidates in one agency the market regulation functions previously shared by three separate bodies.

In **Mexico**, the Secretariat of Agriculture has been renamed Secretariat of Agriculture and Rural Development, and the headquarters were decentralised. The new Secretariat is structurally smaller and for 2019 will operate with a budget 20% smaller than the previous year. In addition, a single agency, resulting from the merging of two organisations, will be in charge of administering the minimum price support programme and the distribution of fertiliser according to the National Fertilizer Program.

Import bans and changes in tariffs occurred outside trade agreements.

As of July 2018, **China** removed tariffs on soybeans (from 3%) and soybean cake (from 5%) imported from Bangladesh, India, Laos, Korea and Sri Lanka. In October 2018, China also allowed imports of rapeseed meal from India, subject to certain inspection and quarantine requirements. **China** restored market access for chilled and frozen beef for **France**, **Ireland,** and the **United Kingdom**, after banning such products in the 1990s due to the Bovine spongiform encephalopathy (BSE) outbreaks. During 2018, **China** implemented tariffs on **United States**-origin products, which included a large number of agricultural and food products, such as soybeans (25% tariff), wheat, sorghum, cotton, milk, pig meat and pig meat products, fresh and dried fruits, tree nuts, wine, ginseng, and denatured ethanol.

India increased the tariffs for wheat, chickpea and sugar in 2018, up to 30%, 60% and 100%, respectively. The **European Union** revised downward import tariffs for maize, sorghum and rye that had been introduced in August 2017 in response to lower prices, and set them to zero again on 3 March 2018 as prices for cereals rose. In September 2017, **South Africa** lowered wheat import tariffs and maintained them in 2018.

In 2018 existing imports bans or restrictions were extended, and new ones were introduced. For example, the **Russian Federation** ban on agro-food imports from the **European Union**, the **United States**, **Canada**, **Australia**, **Norway** and several other countries, initially introduced in 2014, was extended until 31 December 2019. Mutual trade restrictions between the **Russian Federation** and **Ukraine** continued. On 29 December 2018, the Russian government prohibited importation of certain agricultural goods from Ukraine and their transit through the territory of the Russian Federation. Ukraine continued prohibiting imports of a broad range of agro-food imports from the Russian Federation until 2020. In June 2018, the **European Union** suspended the application of import duty concessions under the GATT 1994 to the trade of the **United States** and imposed additional import duties of 25% to a list of 182 products of US origin defined at the CN 8 digit level, of which 21% are food and non-alcoholic beverages.

Changes in trade measures also affected exports, including support to mitigate the effect of tariffs

From 1 January 2019, **Switzerland** implemented the legislation abolishing export subsidies on processed food products. The **Argentinian** government established temporary (until end of 2020) taxes on all exports, including agricultural products, reverting the progressive elimination of all non-soya export taxes initiated in 2015. These export taxes are an emergency measure to raise government revenue and reduce the budget deficit following the economic crisis in 2018. In **Brazil**, the elimination of the tax on leather exports leaves most agro-food products free of export taxes.

In July 2018, the **US** Department of Agriculture announced a package of trade mitigation programmes to assist farmers affected by recently imposed tariffs that resulted in the loss of traditional export markets. The package included three programmes: the Market Facilitation Program (MFP), the Food Purchase and Distribution Program (FPDP), and the Agricultural Trade Promotion Program (ATP). The MFP provided payments to producers of eight commodities — soybeans, cotton, wheat, sorghum, hogs, milk, fresh sweet cherries, and shelled almonds — directly impacted by tariffs during the 2018 crop year, resulting in the loss of traditional export markets. The FPDP provides for purchases in other commodities affected by tariffs. The ATP will provide cost-share assistance to eligible US organisations to develop foreign markets for US agricultural products through activities such as consumer advertising, public relations, point-of-sale demonstrations, participation in trade fairs and exhibits, market research, and technical assistance.

A number of regional and bilateral trade agreements were signed

On 30 November 2018, the **United States**, **Mexico**, and **Canada** signed a new trade agreement, which will replace the North American Free Trade Agreement (NAFTA) once ratified by all three countries. The agreement creates new market access opportunities for United States exports of dairy, poultry, and eggs to Canada, and in exchange the United States will provide new access to Canada for dairy, peanuts, processed peanut products, and a limited amount of sugar and sugar containing products. All other tariffs on agricultural products traded between the United States and Mexico will remain at zero.

The Comprehensive and Progressive Agreement for a Trans-Pacific Partnership (CPTPP) came into force on 30 December 2018 among **Australia**, **Canada, Japan, Mexico, New Zealand**, and Singapore, followed by **Viet Nam** in January 2019. CPTPP will represent 13.5% of global GDP when fully implemented by the rest of member countries (Brunei, **Chile**, Malaysia, and Peru). This agreement contains a number of provisions on agriculture, with expanded market access for a range of products in the various member countries, including reduced Japanese beef tariffs; new access to dairy products into **Japan**, **Canada**, and **Mexico**; and the elimination of all tariffs on sheep meat, cotton, and wool. It covers nearly one-fourth of **New Zealand**'s good and services trade and almost a fourth of its exports of agro-food products. **Viet Nam** has committed to a schedule for tariff elimination and reduction for imports of some agricultural goods.

The Treaty on the Eurasian Economic Union (EAEU), which groups Belarus, **Kazakhstan**, Armenia, Kyrgyzstan and the **Russian Federation**, signed trade agreements with Iran and **China** during the Astana Economic Forum on 17 May 2018. The part related to agriculture of the interim agreement with Iran foresees a reduction from 25% to 100% of EAEU import duties on a broad range of products imported from Iran, notably, certain fish products, vegetables and fresh and dried fruits. The EAEU will enjoy from 20% to 75% tariff reductions on products such as beef and veal, butter, certain confectionery and chocolate,

mineral waters, oil and fat products. Articles of relevance to agricultural trade in the agreement on economic and trade cooperation between the EAEU and **China** include transparency, technical barriers to trade, sanitary and phyto-sanitary measures, trade facilitation, and sectoral cooperation including in agriculture.

In February 2018, the **EU-South African Development Community Economic Partnership (EU-SADC)** came into force. While the agreement is largely intended to provide improved access for SADC countries to the EU market, it also provides greater access for some EU products into SADC.

On 1 February 2019, the **EU-Japan** Economic Partnership Agreement (EPA) entered into force. The agreement substantially reduces tariffs and trade barriers for both partners. The European Union is scheduled to eliminate duties on 99% of imports from Japan. Tariffs on beef, tea, alcoholic beverages and other priority products are to be eliminated (most upon the agreement's entry into force). Once fully in place after 21 years, the agreement is set to liberalise tariffs on 85% of the EU's agro-food products exported to Japan, including the elimination of duties on 90% of agricultural products. Additionally, tariffs on hard cheeses and processed agricultural goods like chocolate, pasta, and tomato sauce are to be eliminated over time. For pork and beef, tariffs are reduced over time, but not fully eliminated. Finally, improved EU access to the Japanese market is also secured under the agreement through the establishment of country-specific TRQs for products including wheat and wheat flour, barley and barley flour, malt, butter, skimmed milk powder, and soft cheeses. Duties and trade restrictions on rice, however, were excluded from the negotiations. Aside from market access, the agreement establishes recognition of more than 200 EU Geographical Indications (GIs), as well as more than 50 GIs for Japanese wine, spirits and food products.

The **European Union** and **Viet Nam** reached an agreement on the final text for a bilateral free trade agreement in July 2018, with the agreement awaiting signatures and conclusion. The agreement includes the progressive elimination of duties on many major EU exports to Viet Nam, including for chicken, dairy, beef, wine, spirits, chocolate, pasta, apples, wheat, and olive oil. Protections for nearly 170 EU GIs are also included in the agreement.

Revisions to the European Economic Area (EEA) agreement, which links the **EU Member States** and three European Free Trade Association (EFTA) states (**Iceland**, Liechtenstein, and **Norway**) were finalised and entered into force in May and October 2018 for trade with Iceland and Norway respectively. The revised agreements improved agricultural market access for several commodities for all parties, including increased and new tariff rate quotas.

The **Korea-US** FTA negotiation amendment came into effect in 2019. **Israel** and **Ukraine** signed an FTA in January 2019, with pending ratification of the signatories. In 2018, **Israel** signed a FTA with EFTA, **Turkey** signed the Free Trade Agreements (FTA) with Venezuela and Qatar. In 2018, **Kazakhstan** and **China** signed a number of sanitary and phytosanitary protocols on the export of agricultural products, including beef, rapeseed and alfalfa. **Australia** concluded negotiations for three FTAs in 2018, with respectively Peru, Indonesia and Hong-Kong, but they have yet to enter into force. These agreements secure tariff reductions or new quotas for some of Australia's most important agricultural exports, including beef, sheep meat, dairy, and sugar.

The **European Union** and **Mexico** reached an "agreement in principle" in April 2018 to modernise their existing trade agreement (which had been in place since 2000), superseding it with the **EU-Mexico Global Agreement**. The revised agreement will further liberalise

agricultural trade between the two partners, including eliminating Mexican tariffs on many EU agricultural exports (including pasta, chocolate, apples and pork products), and creating duty-free TRQs for milk powder, other cheeses, and fresh and processed cheeses.

Trade negotiations continued or were launched

Major steps occurred in the negotiations on the **EU**-Mercosur Free Trade Agreement (FTA) between the European Union and the countries of Mercosur (**Argentina, Brazil**, Paraguay and Uruguay), which started 20 years ago. By the end of 2018, the parties had agreed on 12 of the 15 chapters in the agreement. Other countries like **Canada, Korea** and the European Free-Trade Association (EFTA) are also discussing trade agreements with Mercosur.

In June 2018, negotiations began for two bilateral free trade agreements between the **European Union** and **Australia** and between the **European Union** and **New Zealand**. On 16 October 2018, the **US** Trade Representative notified the US Congress that the Administration intended to initiate negotiation on trade agreements with the **European Union**, **Japan**, and the **United Kingdom**. In April 2019, **European Union countries** approved the conditions for negotiating a new and strictly limited trade deal with the **United States**, paving the way for talks to begin.

While trade agreements facilitate trade between signatories, countries covered in the report are parties to a number of on-going trade disputes, which affect trade flows.

Developments in agricultural support

This section provides a quantitative assessment of developments in policy support to agriculture in 2018, and compares policy support in recent years (2016-18) with support provided to the agricultural sector in the early 2000s (2000-02). It covers the 36 OECD countries as well as the five non-OECD EU Member States and twelve emerging and developing economies. In much of this report, the European Union is presented as one economic region.

Two additional emerging economies are included in the 2019 report: Argentina and India. Box 1.1 provides a brief overview of agricultural policies in the two countries, and the impact of their inclusion on aggregate indicators of support for countries covered in the report.

Box 1.1. The inclusion of Argentina and India improves significantly the coverage of agricultural support in the report

Argentina and India account respectively for 3.1% and 3.7% of world's agricultural land. The inclusion of the two countries increases agricultural land coverage in this report from 55% to 61% of world total.

Agriculture is an important sector in both countries, in India because of its high share in GDP and employment, and in Argentina because of its contribution to exports. Given the size of their agricultural sector, the inclusion of the two countries has significant impacts on aggregate support indicators.

The two countries have different emphasis for agricultural policies, but both tax farm producers. Argentina provides only few payments to farmers and hardly any highly distorting measures other than export taxes, which remain the major component of policy transfers from the agricultural sector

resulting in negative market price support. Budgetary support to agriculture focuses on the provision of general services and public goods such as the agricultural knowledge and innovation system and inspection control services. In India, the combination of complex domestic marketing regulations and trade policy measures targeting several commodities often leads to producer prices below comparable international market levels, generating negative market price support for such commodities. More specifically, the policies that govern the marketing of agricultural commodities in India influence pricing, procuring, stocking, moving, and trading commodities; the restrictions stemming from these regulations together with the differences in their implementation across states drive up transaction costs and contribute to depressing producer prices. In addition, over the course of the period studied, a variety of trade policy measures with a price depressing effect - such as export prohibitions, export quotas, export duties, and minimum export prices – have been applied to several key commodities. The largest share of budgetary transfers to agricultural producers in India are subsidies for variable input use, such as fertilisers, and electricity, including to pump irrigation water.

The negative market price support accounts for -16.9% of gross farm receipts in Argentina and -14.8% in India in 2016-18. As budgetary support to producers is lower than the implicit tax, overall support to producers is negative, accounting for -15.3% of gross farm receipts (%PSE) in Argentina and -5.7% in India in 2016-18. As a result, the addition of Argentina and India in the report reduces the %PSE for the total of countries covered from 15.4% to 12.4%, and the %PSE for the emerging economy aggregate from 13.2% to 9.0% for the period 2016-18.

Support to general services in Argentina was 34% higher than budgetary support to producers and accounts for 2% of agricultural value added in 2016-18. In contrast, India's support to general services was about half of budgetary support to producers, and accounted for almost 5% of agricultural value added.

Reflecting the implicit tax on producers, the share of total support to the sector in GDP is negative in Argentina (-1.1% in 2016-18), but positive in India (0.6%). Given the size of India, the inclusion of the two countries decreases the %TSE aggregates for all countries from 0.91% to 0.88%, and that for emerging economies from 1.64% to 1.43% in 2016-18.

Source: Chapters 3 and 13 of this report; OECD (2019[9]), *Agricultural Policies in Argentina*, https://doi.org/10.1787/9789264311695-en; OECD/ICRIER (2018[10]), *Agricultural Policies in India*, https://doi.org/10.1787/9789264302334-en.

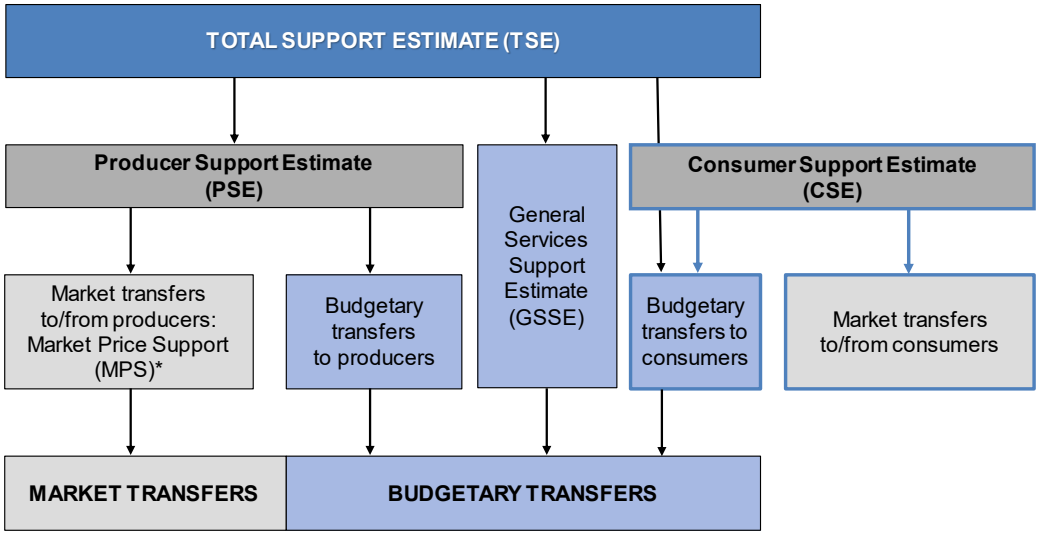
The assessment of policy developments is based on a set of OECD indicators that express the diversity of support measures applied in different countries in a few simple numbers that are comparable across countries and over time, where different indicators focus on different dimensions of countries' support policies. Annex 1.A provides definitions of the indicators used in the report, while Figure 1.2 illustrates the relationships between the different indicators and their components.

The Total Support Estimate (TSE) is the OECD's broadest indicator of agricultural support. The TSE combines three elements: 1) transfers to agricultural producers individually; 2) policy expenditures that have primary agriculture as the main beneficiary, but do not go to individual producers; and 3) budgetary support to consumers of agricultural commodities.

The transfers to agricultural producers individually are measured by the Producer Support Estimate (the PSE), which comprises Market Price Support (MPS), defined and explained in Box 1.2, and various categories of budgetary support defined in Box A A.1. Similarly, the Consumer Support Estimate (the CSE), measured at the farm gate level and net of the market price support element, includes market transfers that mirror MPS for consumers, as well as budgetary support to consumers, which are part of the TSE.

Policy expenditures that have primary agriculture as the main beneficiary, but do not go to individual producers are measured by the General Services Support Estimate (the GSSE). As the PSE and the CSE, the TSE includes both market transfers (MPS) and budgetary support from the PSE, the CSE and all of the GSSE.

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.

Box 1.2. Market price support – concept and interpretation

Market price support (MPS) is defined as 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" (OECD, 2016, p. 98[11]). It is calculated for individual commodities, as the gap between the domestic price paid to producers and the equivalent price at the border (market price differential, MPD), multiplied by the quantity produced, and aggregated to the national level.

This definition contains three key elements. First, it measures the transfers that arise from policy measures that create a price gap (e.g. import tariffs, minimum prices, export taxes, etc.). Second, it measures gross transfers (positive or negative) to agricultural producers from consumers and taxpayers, independent of whether these are generated through expenditures from or revenue to the public budget (e.g. public storage costs or export taxes revenue) or through altered consumer expenditures. Third, it is measured at the farm gate level to ensure that MPS values are consistent with the production and price data for the farming sector overall. In order to measure MPD, the domestic farm gate price needs to be compared to an equivalent border reference price representing the opportunity price (cost) for domestic market participants, at the given world market conditions.

The calculation of the MPD for individual commodities requires information not only on product prices, but also on differences in product qualities, processing and transportation margins, to compare like with like. Domestic handling and transportation margins may be particularly high (while at the same time particularly difficult to obtain) in countries with less well-developed physical and institutional infrastructure.

The price gap (MPD) is calculated only if policies exist that can cause the gap such as border measures that restrict or promote imports or exports, and government purchases, sales and

intervention prices in the domestic market (these policies are described later in the text). If countries do not implement such policies, the MPD is assumed to be zero. A non-zero MPD, whether positive or negative, originates from price-distorting policies. It is important to note that MPS measures the "policy effort" (or level of support to prices), not the policy effect (e.g. the impact on farm income) (Tangermann, 2005[12]). In addition to policy instruments that restrict price transmission (say, a target price), market developments (such as exchange rate movements affecting world prices expressed in local currencies) may influence the policy effort and, hence, the transfers implied.

When interpreting MPS values, it is important to bear in mind that it 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 (Diakosavvas, 2002[13]; Effland, 2011[14]; Brink, 2018[15]).

This section first discusses changes in producer support between 2017 and 2018 (Box 1.3). It then takes a longer term perspective on developments in producer support, and other agricultural support indicators since the early 2000s, starting from PSE levels and composition, including a focus on Market Price support (MPS), and related Nominal Protection Coefficient (NPC) and support to consumers (CSE). Developments in and composition of expenditures on general services to the sector (GSSE) are also considered, followed by an overview of the size of total support to agriculture (TSE) relative to the economy and the agricultural sector.

Box 1.3. Producer support in 2018 increased in most countries

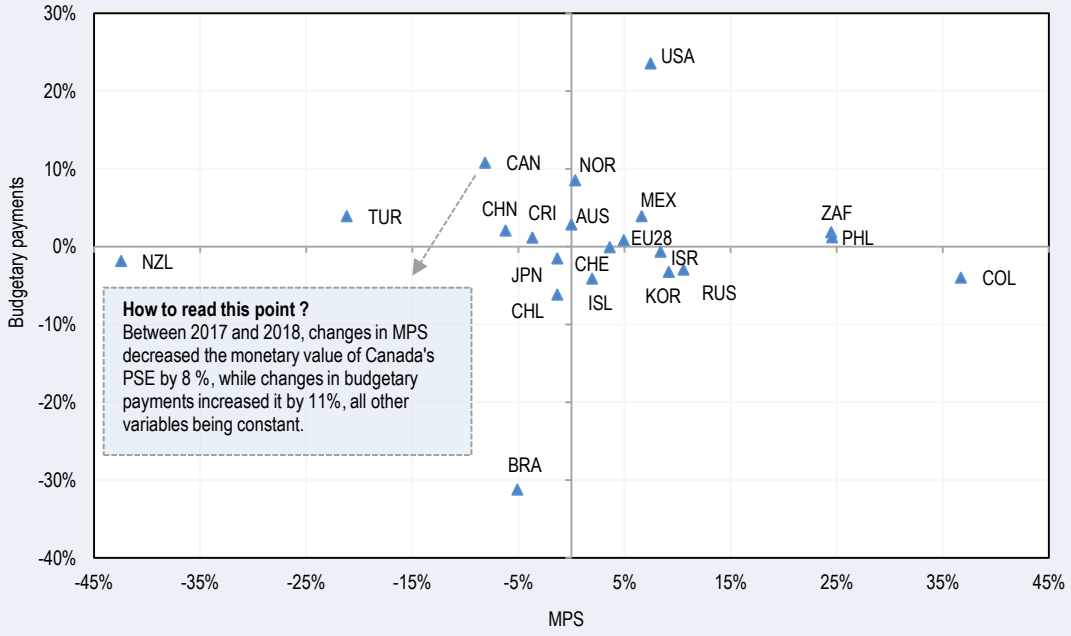
Increased producer support in 2018 was widespread among OECD countries, as only producers in New Zealand, Chile, Turkey, Japan and Iceland received lower support. On average, producer support in OECD countries increased from 17.7% of gross farm receipts in 2017 to 19.2% in 2018. Producer support in emerging and developing economies covered in this report decreased on average from 9.1% to 8.1% of gross farm receipts between 2017 and 2018, reflecting mainly the decline in China.

In the majority of countries, the observed change in the PSE was largely driven by the change in market price support (MPS) or counter-cyclical payments, reflecting the widening or narrowing of the gap between domestic and border prices. In fact, diverging trends in some countries could be explained by the importance in their agricultural production of specific commodities (e.g. rice in Japan, sheep in Turkey and Iceland) that experienced price increases in world markets. Exceptions include Brazil, where producer support fell due to a 30% decline in budgetary payments, originating mainly from lower credit subsidies. Changes in budgetary support were also important in some countries (Figure 1.3).

Lower MPS drove changes in the monetary value of support in Chile, Colombia, Japan, New Zealand,[1] and Turkey, with lower budgetary payments also contributing in Chile and Japan. Higher MPS increased producer support in the European Union, Israel, Korea, Mexico, Switzerland and the United States, as well as all emerging economies except Brazil, China and Costa Rica.

Lower budgetary payments reduced producer support in Brazil, and, to a lesser extent, in Chile, Iceland, Korea, the Russian Federation and Colombia. In contrast, budgetary payments were the main drivers of producer support increases in the United States (output payments), Canada (risk management payments), and Norway (Statistical Annex Table A.118).

Figure 1.3. Contribution of MPS and budgetary payments to the change in PSE, 2017 to 2018



Notes: The horizontal axis shows the contributions of market price support (MPS) and the vertical axis of budgetary payments to the annual change in the monetary value of support to farmers (PSE, expressed in local currencies) between 2017 and 2018, all other variables being constant. Country points farther from the vertical axis indicate a higher contribution of changes in MPS to the change in PSE. Points farther from the horizontal axis indicate a higher contribution of budgetary payments.
Argentina, India, Kazakhstan, Ukraine and Viet Nam are not shown due to negative MPS data.
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 (2019[16]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933935952

In most countries, year-on-year developments in MPS were driven by changes in price gaps, with changes in production quantities having a smaller effect, although significant in South Africa (Statistical Annex Table A.117).

As border prices increased on average for most countries, changes in the price gap depended on relative movements in domestic (producer) prices (Statistical Annex Table A.119). In the OECD countries on average, producer prices were relatively stable between 2017 and 2018, and the decline in border prices, enhanced by currency movements, contributed the most to the increase in MPS in 2018. But there is a wide diversity among OECD countries. For example domestic price decreased in many of them, but increased in the European Union, Japan, Norway and Turkey. Depreciation of national currencies against the US dollar played a dominant role in explaining the decrease in border prices in the European Union and Turkey. In contrast with OECD countries, producer prices decreased on average in the emerging and developing economies, but less than border prices resulting in a higher MPS between 2017 and 2018.

1. In New Zealand, price support is measured only for poultry and eggs and is due to non-tariff protection applied on sanitary and phytosanitary (SPS) grounds.

Support to producers in the OECD area and emerging economies has converged until 2015, but diverged since

On average, the level of support provided to individual producers in the countries covered by this report has followed a declining trend over time, although changes in the average %PSE have been marginal in recent years (Figure 1.4). In 2018, around 12% of gross farm receipts were due to policies that support producers, as in 2017. The monetary value of this support was USD 442 billion (EUR 375 billion) in 2018, up from USD 440 billion (EUR 390 billion) in 2017. This stability results from a decrease in MPS mainly due to market developments, including movements in world prices for agricultural commodities and exchange rates, combined with an increase in budgetary support.

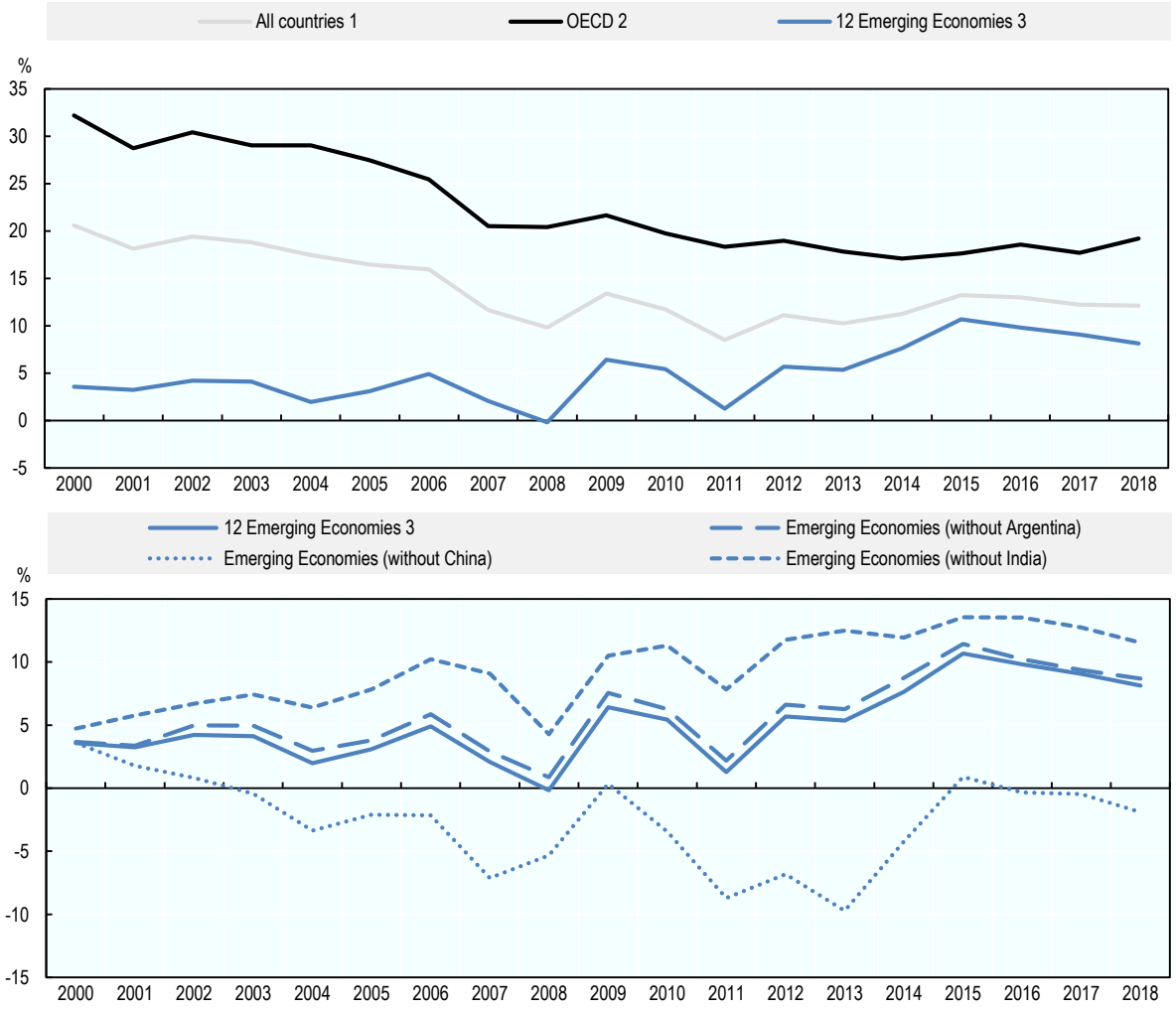
The trend in the average %PSE masks differences between the OECD countries and the emerging and developing economies (Figure 1.4). The average level of producer support in the OECD countries has followed a declining trend to fall below 20% of gross farm receipts in 2010, and it has fluctuated since around 17-19%. In the early 2000s the emerging and developing economies on average provided very low levels of support to agricultural producers. Since then, the level of producer support in the emerging and developing economies has increased from less than 4% to around 9% of gross farm receipts in 2016-18, with lower levels of support in 2008 and 2011 reflecting periods of higher world commodity prices. Since it peaked at 11% in 2015, the %PSE in the emerging and developing economies has fallen to reach 8% in 2018. In large part, the %PSE change in the emerging and developing economies is driven by producer support in China and India. The inclusion of China raises the %PSE in the emerging and developing economies, which would otherwise be negative, to 9% in 2016-18. The inclusion of India reduces the %PSE for emerging and developing economies by about 4 percentage points, and the inclusion of Argentina by 0.5 percentage points in 2016-18, as both countries have a negative PSE.[1]

These broad trends are also evident when looking at countries individually (Figure 1.5). In most countries, producer support has declined since the early-2000s, although the extent varies across countries. Levels of producer support have fallen by about two-thirds in Chile, Mexico and Kazakhstan, while producer support in Australia, Brazil, South Africa Canada, the United States, Colombia and the European Union fell by 40% or more. However, producer support has increased since the early-2000s in China, the Russian Federation, and to a lesser extent in the Philippines. In Ukraine and Viet Nam, support to producers became negative in recent years, and the implicit tax on producers from negative support increased in Argentina and India since the early 2000s.

Nevertheless, current levels of producer support continue to vary widely across countries (Figure 1.5). New Zealand, Australia, Chile, Brazil and South Africa provide very low levels of support to producers, with %PSEs below 3% in 2016-18. Argentina, Viet Nam, India and Ukraine even tax their producers, with negative %PSEs. In contrast, Japan, Korea, Switzerland, Iceland and Norway support their producers at levels from 45% to 60% of gross farm receipts, despite reductions in support since the early-2000s. Of the emerging and developing economies, only the Philippines provides support at higher levels than the OECD average (PSE of 25% in 2016-18 compared with the OECD average of 18%).

Figure 1.4. Evolution of the Producer Support Estimate, 2000 to 2018

Percentage of gross farm receipts

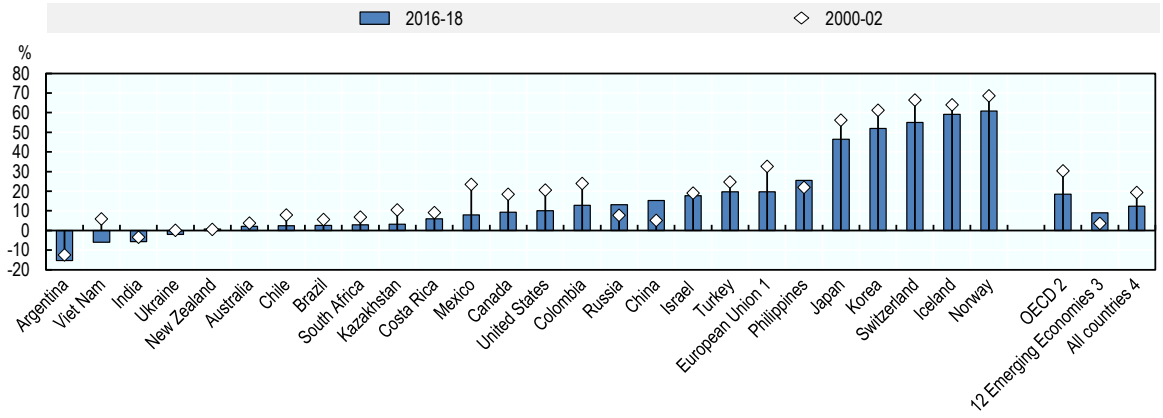


Notes: 1. The All countries total includes all OECD countries, non-OECD EU Member States, and the 12 Emerging Economies.
2. The OECD total does not include the non-OECD EU Member States. Latvia and Lithuania are included only from 2004.
3. The 12 Emerging Economies include Argentina, Brazil, China, Colombia, Costa Rica, India, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam.
Source: OECD (2019[16]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Figure 1.5. Producer Support Estimate by country, 2000-02 and 2016-18

Percentage of gross farm receipts



Notes: Countries are ranked according to the 2016-18 levels.
1. EU15 for 2000-02 and EU28 for 2016-18.
2. The OECD total does not include the non-OECD EU Member States. The Czech Republic, Estonia, Hungary, Poland, the Slovak Republic and Slovenia are included in the OECD total for both periods and in the European Union for 2016-18. Latvia and Lithuania are included in the OECD and in the European Union only for 2016-18.
3. The 12 Emerging Economies include Argentina, Brazil, China, Colombia, Costa Rica, India, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam.
4. The All countries total includes all OECD countries, non-OECD EU Member States, and the Emerging Economies.
Source: OECD (2019[16]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Market price support remains the main component of producer support on average, but varies across countries and commodities

A number of domestic and border policy measures, described in the next section, can create a gap between the domestic market prices and border prices of agricultural commodities (Box 1.2), which generate MPS. In most cases where such policies exist, domestic prices are higher than border prices and the price gap generates transfers from consumers to producers. But this is not always the case. In six of the economies reviewed by this report, agricultural policies depressed domestic prices for a number of commodities. As a result, MPS calculated for these commodities is negative and producers are effectively taxed. Negative MPS is particularly important in India and Argentina, where during the last three-year period these policies reduced producers' average gross receipts by 13% and 16% relative to their value at world market conditions. Export taxes are to a large extent responsible for negative MPS (see next section).

On average across the OECD, MPS accounted for almost half of all support received from the government or more than 8% of farmers' gross farm receipts in 2016-18. These shares have generally declined but continue to differ significantly across countries. In the five countries with the highest levels of support, the share of market price support in gross farm receipts represented between 25% and 50%, while it amounted to less than 5% in eight other countries.

Price distortions remain important – both across and within countries: the average shares of MPS in gross farm receipts in one country often hide significant variation across commodities. In many countries, price support remains particularly important for a subset of commodities. For instance, in seven national commodity markets (poultry and eggs in

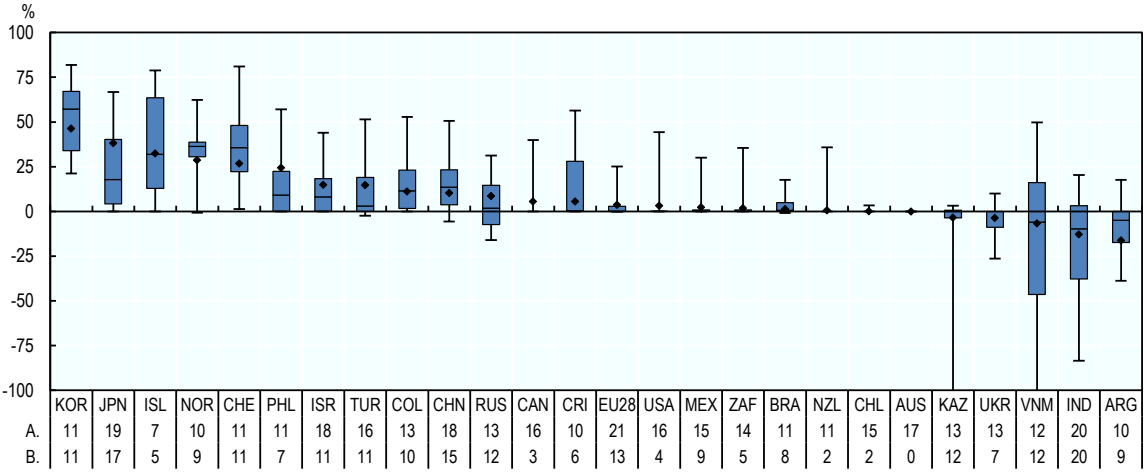
both Switzerland and Iceland, soybeans, red pepper and barley in Korea), revenues were inflated by more than 70% due to MPS during 2016-18. Put differently, for these commodities farm revenues are more than three times what they would be if valued using the border reference price. Even in countries with high average price support, there are commodities with substantially lower or even zero price support. Figure 1.6 shows, for each country covered by this report, the distribution of relative MPS shares across the commodities for which MPS is estimated. In addition to the country average, the whiskers also show the lowest and highest MPS share as well as their respective first, median and third quartiles.

Significant variations across commodities also exist for countries with negative average MPS. In Argentina, which taxes its average producer through depressed domestic prices, negative price support is maintained only for a subset of exporting commodities, notably soybeans where the negative MPS accounts for almost half gross farm receipts. In India, negative price support affects a larger set of commodities and reaches up to 90% of commodity receipts. In other words, MPS cuts gross farm receipts for these commodities by almost half.

Several other countries with small total MPS rates like Kazakhstan, the Russian Federation, Ukraine and Viet Nam, maintain both positive MPS for some commodities and negative for others. The low average MPS estimates hide significant positive and negative rates of support across commodities. A meaningful interpretation of average rates of MPS (and indeed of other aggregate indicators such as the percentage PSE or the percentage TSE) needs to account for these hidden distortions. These average indicators hence need to be read as indicators of net transfers to or from the sector because they may aggregate both positive and negative components.

Figure 1.6. Relative magnitude of product-specific market price support by country, 2016-18

Simple average of MPS as a percentage of gross farm receipts



Notes: A. Number of 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 mean values for total agriculture.
Source: OECD (2019[16]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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The level of price distortions is generally falling, although there are large gaps between domestic and world prices in some countries

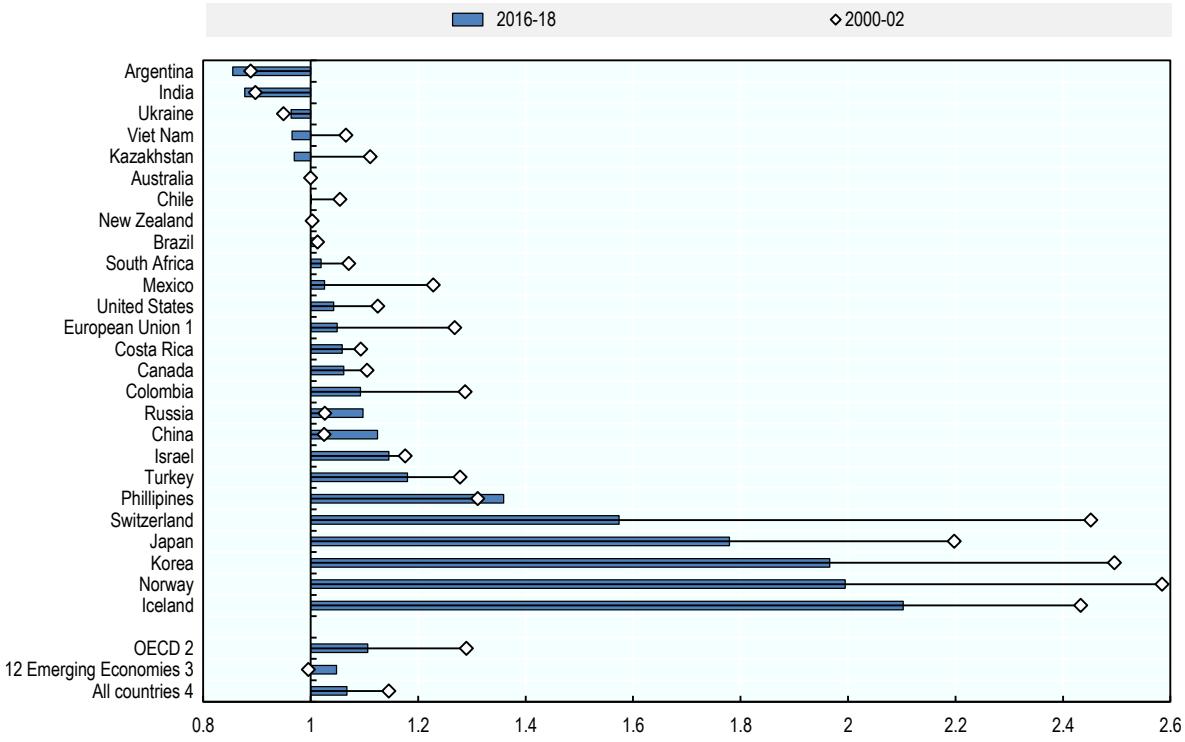
Prices received by producers have become more closely aligned with those prevailing on world markets, as countries provide a larger share of support through less distorting measures. The Nominal Protection Coefficient (NPC) in Figure 1.7 compares effective prices received by producers – including per unit output payments – with world market prices. In a number of countries, the gap between domestic and world market prices has narrowed considerably, meaning that market signals are becoming more important for producers' decisions. For the OECD countries, effective producer prices were, on average, 11% higher than world market prices in 2016-18, compared with around 30% higher in the early 2000s. Countries that have made substantial progress (reduction of NPC of 5% or more) in aligning effective producer prices with world market prices since the early 2000s include Chile, Colombia, the European Union, Iceland, Japan, Kazakhstan, Korea, Mexico, Norway, South Africa, Switzerland, Turkey, the United States and Viet Nam.

As with the other indicators of producer support, there are significant differences between countries. Effective prices received by producers are closely aligned with international levels only in Australia, Brazil, Chile and New Zealand. Effective producer prices are less than 4% above world market prices in Mexico, South Africa and the United States, while are less than 4% below world market prices in Kazakhstan, Ukraine and Viet Nam. In 2016-18, effective prices received by producers were 15% and 12% below world market prices in Argentina and India respectively.

In almost all other countries, effective prices received by producers are, on average, higher than world prices. Effective producer prices in Iceland, Japan, Korea, Norway and Switzerland are 50% to 110% higher than world prices, suggesting that producer support plays an important role in guiding producers' decisions. Nevertheless, gaps between domestic and world price have narrowed also in those countries since the early 2000s.

A number of the emerging and developing economies have increased their price support, widening the gap between domestic and world market prices. Effective producer prices in China were, on average, close to world price levels in the early-2000s, but 12% higher than world market prices in 2016-18. Effective producer prices have also increased in the Philippines.

Figure 1.7. Producer Nominal Protection Coefficient by country, 2000-02 and 2016-18



Notes: Countries are ranked according to 2016-18 levels.
1. EU15 for 2000-02 and EU28 for 2016-18.
2. The OECD total does not include the non-OECD EU Member States. The Czech Republic, Estonia, Hungary, Poland, the Slovak Republic and Slovenia are included in the OECD total for both periods and in the European Union for 2016-18. Latvia and Lithuania are included in the OECD and in the European Union only for 2016-18.
3. The 12 Emerging Economies include Argentina, Brazil, China, Colombia, Costa Rica, India, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam.
4. The All countries total includes all OECD countries, non-OECD EU Member States, and the Emerging Economies.
Source: OECD (2019[16]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933936028

A wide range of policies contribute to raise or depress farm prices

MPS and NPCs are useful indicators for discussing the implied distortions, but do not provide information about the underlying policies that create the price gap. Many countries implement several policy measures simultaneously, often combining domestic market regulations and public marketing agencies with trade policies targeting imports or exports (Table 1.2). This diversity of measures may result in transfers differing in magnitude and even in sign across commodities. While it is not possible to attribute shares of the transfers to individual policies – and hence identify the most relevant policy in a given market – it is useful to look at the policies in place to provide more tangible recommendations on possible policy changes. The policy measures and country examples in this section are based on background information available from the PSE database, but they are not intended to be an exhaustive list of existing measures.

Table 1.2. Selected policy measures affecting agricultural prices and trade

	Domestic measures					Import protection				Export enhancement	Export restriction			
	Minimum prices	Public stockholding	Support to private stockholding	Production quotas	Marketing agencies	Tariffs	Tariff Rate Quotas	Bans, quotas, other quantitative restrictions	Seasonal restrictions	Export subsidies (1)	Export taxes	Bans, quotas	Minimum export prices	MoU on export limits
Argentina						x					x	x		
Australia						x	x			1999				
Brazil						x								
Canada				x		x	x			2015				
Chile					x	x								
China	x	x				x	x							
Colombia					x	x	x			1998				
Costa Rica	x					x	x							
EU28	x	x	x			x	x		x	2013				
India	x	x			x	x	x						x	
Iceland				x		x	x			1997				
Israel	x					x	x			2016				
Japan						x	x							
Kazakhstan						x								
Korea						x	x							
Mexico	x					x	x			1999				
Norway				x		x	x			2016				
New Zealand						x								
Philippines						x	x	x						
Russia						x	x	x			x			
Switzerland						x	x			2016				
South Africa						x	x			2000				
Turkey	x					x	x			2000				
Ukraine						x								x
United States		x				x	x			2008				
Viet Nam	x					x	x						x	

Note: MoU: Memorandum of Understanding. This table identifies the type of measures applied by countries, but ignores the scale and significance of such measures.
1. Latest year of reported non-zero export subsidy outlays: WTO, 2018, G/AG/W/125/Rev.9, https://docs.wto.org/dol2fe/Pages/FE_Search/ExportFile.aspx?id=247031&filename=q/G/AG/W125R9.pdf.

Domestic price support policies and marketing agencies

Domestic price support policies are regulations and operations by public agencies in the domestic market. They may be key to raising farm gate prices for agricultural products, even if they generally require measures at the border to be effective.

For instance, Israel, Costa Rica, Turkey and recently Mexico, have minimum prices for some commodities, while the European Union applies minimum prices for public intervention and for triggering support to private storage for several products. In Viet Nam, farm gate target prices for rice may result in implicit taxation of rice producers in some years while creating support to farmers in others.

Production quotas limit the supply on domestic markets and may help to maintain prices above world market levels. Production quotas used to be common in sugar and dairy, but

have often been dismantled like those for milk in Switzerland (since 2009), for milk and sugar in the European Union (since 2015/16 and 2017/18 respectively) and for sugar in Ukraine (since 2018/19). Milk production continues to be controlled by the quota system in Canada.

More generally, domestic market regulations may affect pricing and other activities within a number of markets. This is particularly the case in India where the Essential Commodities Act and other state-level Acts obliges producers of some commodities to sell in regulated markets. In many cases, market regulations and minimum prices are enforced through government marketing agencies like the state level agencies and the Food Corporation in India.

Policies that restrict commodity imports

Imports face tariffs in all countries analysed in this report, and nearly for all commodities (UNCTAD, 2019[17]). Across these countries, applied tariffs in *ad valorem* equivalents are either zero or less than 10% for more than a third of the commodities for which MPS is calculated. On the other hand, tariffs exceed 100% for almost 9% of these commodities and can be above 300% in some cases. Markets with high price support tend to be protected by high import tariffs even if this correlation is weak due to the complexity of policies that combine different measures. Import tariffs also exist in markets with little or even negative price support.

In some cases, variable import tariff rates apply. These tariffs depend on the level of international prices relative to levels defined by policies, or change seasonally like for many fruits and vegetables in the European Union. Furthermore countries sometimes impose additional duties as safeguard measures when imports grow very rapidly.

Another key measure restricting imports is the tariff-rate quota (TRQ), allowing for a limited amount of imports at zero or low tariff rates, whereas imports exceeding the quota are subject to a higher tariff. TRQs became a market access tool after the Uruguay Round Agreement on Agriculture to open markets at least for minimum import volumes even in sensitive products. Domestic markets for bovine products (dairy, beef), pig meat and poultry products, and major grains and sugar are often protected by TRQs. TRQs apply to one or several markets in practically all countries covered by this report. TRQs are frequently linked to high levels of price support but their impact on domestic prices may be small in specific circumstances.

Imports in many countries also face sanitary and phytosanitary (SPS) non-tariff measures (NTMs). These measures may be implemented to protect the country from biotic or abiotic threats (WTO, 1995[18]), such as pathogens or pesticide residues. SPS-related NTMs often increase trade costs, but they can possibly raise domestic demand for such products and even increase trade (Cadot, Gourdon and van Tongeren, 2018[19]). Trade costs may be particularly important if SPS measures differ between exporting and importing countries (von Lampe, Deconinck and Bastien, 2016[20]) and, in extreme cases, SPS measures may make imports impossible. NTMs may also respond to other societal concerns and circumstances beyond SPS. For instance, Israel requires imports of beef, poultry and sheep meat to be certified as kosher, thus potentially limiting import supplies.

Import quotas and bans may be related to factors other than agricultural or food safety policies. The Russian Federation has stopped imports of some agricultural products from Ukraine and other countries that impose sanctions on the Russian Federation. Ukraine in turn bans imports of many food products from the Russian Federation.

Countries may also require licences for imports that, if they are not automatic, may constrain import activity. For instance, many commodities including rice require specific permits to be imported to the Philippines. In some countries state-owned agencies control for all or significant parts of the countries' commodity imports, exports, or both. While such entities as the Canadian Dairy Commission or the China Grain Reserves Corporation need not automatically distort trade and prices, they have the potential to do so.

Policies that enhance exports

To maintain positive price gaps in exporting countries, other measures need to be in place to allow products to be shipped from a high-price domestic environment to the lower-price international market. Export subsidies have been relevant for poultry and eggs in Turkey. The European Union was for a long time the largest subsidiser of agricultural exports among WTO members, but no longer provides such support. In the Nairobi Ministerial Decision of 2015, WTO members committed to remove export subsidies for agricultural products. Support to export credits for agricultural commodities has also been provided by several countries like the United States, Turkey and Canada.

Sometimes competition rules allow state-owned companies and private co-operatives with large export shares to use pricing methods such as price pooling that allow to maintain domestic producer prices above world market levels. In Canada, supply management systems exist for dairy, poultry and eggs, which allow, for instance, paying higher prices for milk used to produce fresh dairy products which cannot be traded, while paying lower prices for tradable milk. In South Africa, agreements between sugar traders, processors and producers allow to charge domestic consumers higher prices, cross-subsidising exports.

Policies that restrict exports

Restricting exports increases supply to the domestic market, thus potentially depressing domestic prices and reducing prices paid by the consumers or first buyers of agricultural commodities. For producers, this generates negative price support.

For many years, Argentina has applied export taxes to specific agricultural products to raise fiscal revenue, support downstream industries and depress consumer prices for staple products. The Russian Federation also charges taxes for sunflower seed exports.

Over the last decade, India has applied on and off a variety of export restrictive measures on key commodities such including export bans, export quotas, export duties, and minimum export prices – which have contributed to depressed producer prices. Export restrictions and licences also apply for rice, corn and sugar in the Philippines. In the late 2000s Argentina often used export quotas, licences and bans for main staple food commodities like wheat and beef. An annual Memorandum of Understanding between the Government of Ukraine and the grain exporting industry defines limits to exports of certain types of cereals, even if actual exports have regularly exceeded those limits. State-owned companies in Viet Nam have considerable influence over exports of some products, such as rice, rubber and coffee.

Consumers continue to bear most of the costs of producer support in many countries

Producer support also affects consumers of agricultural commodities, namely food processors, livestock producers and final consumers. In most of the countries covered in this report, domestic prices are higher than world market prices, which increases costs for

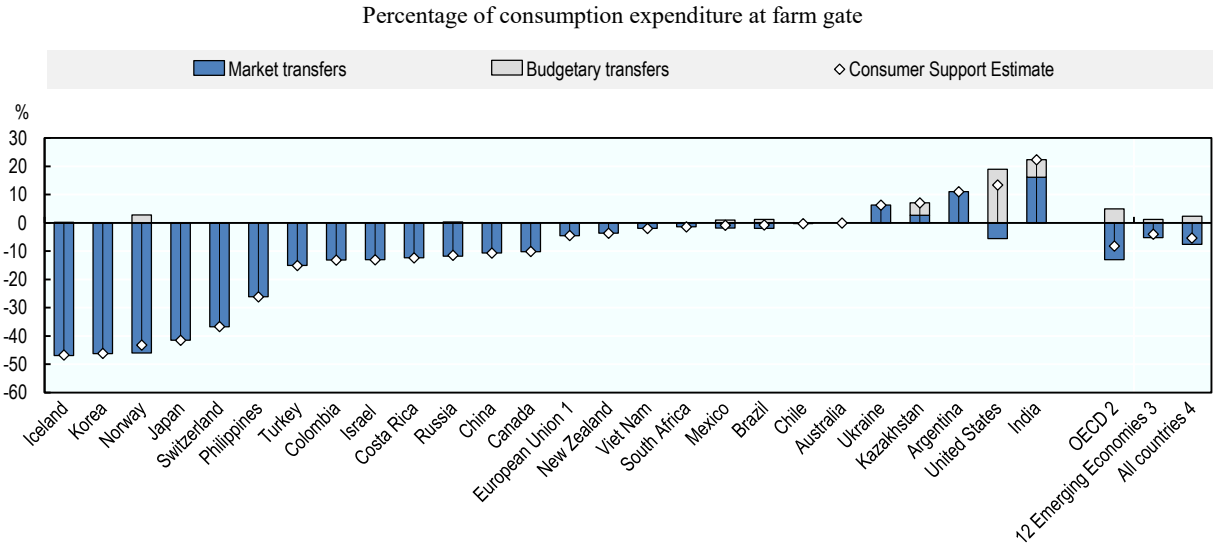
consumers. In some countries, other policies may provide compensation for some or all of these additional costs, for example, through budgetary subsidies to food processors or through domestic food assistance programmes. The percentage Consumer Support Estimate (%CSE) expresses the monetary value of the transfers to consumers as a percentage of consumption expenditures (measured at the farm gate). When domestic prices are higher than those on the world market, they contribute negatively to the %CSE, indicating an implicit tax imposed on consumers. Inversely, when domestic prices are lower than prices on the world market, consumers receive positive transfers from markets.

A negative CSE burdens poor consumers relatively more than rich ones, as the share of food expenditures in household budgets tends to fall with rising incomes. Moreover, small agricultural producers may be net buyers of agricultural products, meaning that price support is ineffective in helping those most in need – this is particularly the case in emerging and developing economies. It also disadvantages food processing industries, which have to pay higher prices for their material inputs, making them less competitive on international markets. Finally, such support often creates significant distortions to markets and economies, reducing economic welfare.

Consumers in most countries are harmed by agricultural policies, although to different degrees (Figure 1.8). In 2016-18, the implicit tax on consumers – as indicated by a negative %CSE – ranged from less than 1% in Brazil, Chile and Mexico, to more than 40% in Iceland, Japan, Korea and Norway. In all cases, this negative CSE is due to market price support, implying transfers from consumers to domestic producers and, for importing countries, to taxpayers. In some emerging and developing countries, increasing use of market price support has increased the implicit taxation of consumers, while in others positive CSEs have benefited consumers.

Five countries provide positive net-support to their consumers, specifically India (%CSE of 22% in 2016-18), the United States (13%), Argentina (11%), Kazakhstan (7%) and Ukraine (6%). However, they do so in very different ways. The United States has significant domestic food assistance programmes for specific groups of the population, more than offsetting the somewhat higher domestic prices. In other countries, consumers benefit from market prices, which are, on average, below prices on world markets, at the expense of agricultural producers.

Figure 1.8. Composition of the Consumer Support Estimate by country, 2016-18



Notes: Countries are ranked according to percentage CSE levels. A negative percentage CSE is an implicit tax on consumption.
1. EU28.
2. The OECD total does not include the non-OECD EU Member States.
3. The 12 Emerging Economies include Argentina, Brazil, China, Colombia, Costa Rica, India, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam.
4. The All countries total includes all OECD countries, non-OECD EU Member States, and the Emerging Economies.
Source: OECD (2019[16]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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In most countries, support is predominantly provided through measures that are most distorting to production and trade

The way in which countries provide support to producers is as important as the overall level of that support. Governments have a large portfolio of measures at their disposal. In addition to raising or reducing domestic prices by intervening directly in markets or at the border. They can also provide subsidies to reduce farmers' input costs; or they can provide payments to producers on the basis of farm output, area, animal numbers, or as a top-up to farmers' income. Payments may be conditional on specific production practices, for example, to achieve environmental protection objectives.

These distinctions are important. The measures listed above will affect agricultural production, incomes, trade and other outcomes differently. For example, MPS has negative impacts on world markets and distorts price signals faced by producers, reducing incentives to improve efficiency in agricultural production. Moreover, the way in which producer support is provided also influences the ability of agricultural producers to participate in agriculture and supply chains, and the benefits obtained from participation. Some measures may target specific policy objectives or beneficiaries more effectively than others. For example, unlike MPS, payments per hectare, per animal or based on farm incomes can be targeted to specific locations or groups of farms, and tailored to specific policy objectives. These considerations highlight the need for a more detailed analysis of the measures through which producer support is provided.

Most countries provide the majority of producer support through measures that are most distorting for production and trade (Figure 1.9). OECD analysis has shown that MPS, payments based on output, and payments based on unconstrained variable input use have a significantly higher potential to distort agricultural production and trade than payments based on other criteria (OECD, 2001[21]). Moreover, depending on the exact policy design, this type of support tends to have negative impacts on the environment as it gives additional incentives to expand and intensify land use (see Box 1.4 on recent findings). Note that while the share of potentially most distorting policies in overall %PSE is an important indicator, a country with a relatively low share of potentially most distorting support may actually spend more on those policies than a country with a relatively high share, depending on the total PSE.

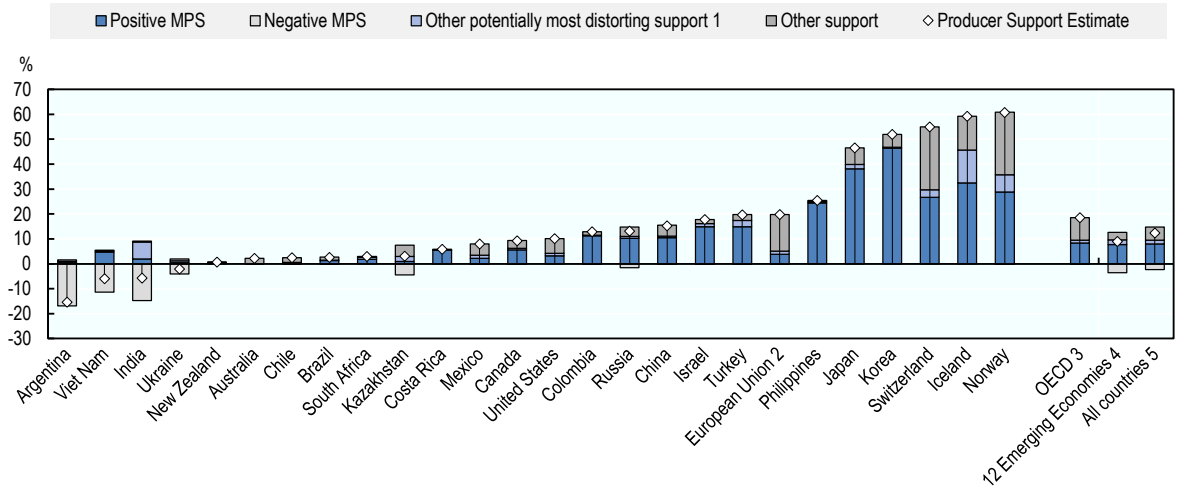
In addition to MPS discussed above, the other measures that are potentially most distorting for agricultural production and trade, payments based on output are provided to farmers in Iceland and Kazakhstan (21% and 22% of the PSE respectively in 2016-18) and account for 7% to 9% of the PSE in Norway, Turkey and the United States (Figure 1.9). Support for variable inputs without constraints (e.g. without conditions on how inputs are used or on any other farming practices) is provided to farmers in Kazakhstan and South Africa (20% or more of the PSE in 2016-18), as well as in Chile (17%), Mexico (15%), Canada (6%) and Israel (6%). In the European Union, around 6% of producer support is provided as support for variable inputs without constraints, where it is mostly provided within the national programmes of the Member States. While such measures reduce the impact on consumers relative to market price support (as they are transfers to producers from taxpayers), they also fail to target the market failures or policy objectives at the heart of government intervention in agricultural markets. For example, fertiliser subsidies lower costs to producers without considering their individual needs. Moreover, support for specific production inputs increases the risk of their over- or misuse, with potentially harmful consequences for farmers' and consumers' health and the environment.

Because both positive and negative MPS distorts market signals, this report introduces a new indicator that takes account of both positive and negative distortions, by summing the absolute value of negative MPS and support from positive MPS and budgetary support from payments based on output, and payments based on unconstrained variable input use. The "% potentially most distorting transfers" relates the sum of all most distorting transfers in absolute terms (i.e. using the absolute value of negative MPS) to the sum of all producer transfers in absolute terms (i.e. also using the absolute value of negative MPS). Commodities with negative MPS are concentrated in five emerging or developing economies: Argentina, Viet Nam, India, Ukraine and Kazakhstan. Thus, the consideration of negative MPS in absolute terms affects mainly these countries and the aggregates they enter in.

On average for all countries covered in the report, transfers provided through measures that are most distorting for production and trade (whether positive or negative, i.e. expressed in absolute terms) accounted for close to 70% of cumulated gross producer transfers, i.e. the sum of all producer transfers in absolute terms (using the absolute value of negative MPS) in 2016-18. In general, such measures are more important in the emerging and developing economies, where they account for over 80% of cumulated gross producer transfers, compared with 52% of these transfers in OECD countries. On the other hand, a larger share of producer support is provided through less-distorting measures in Australia, Brazil, Chile, the European Union, Kazakhstan and the United States.

Figure 1.9. Potentially most distorting transfers by country, 2016-18

Percentage of gross farm receipts

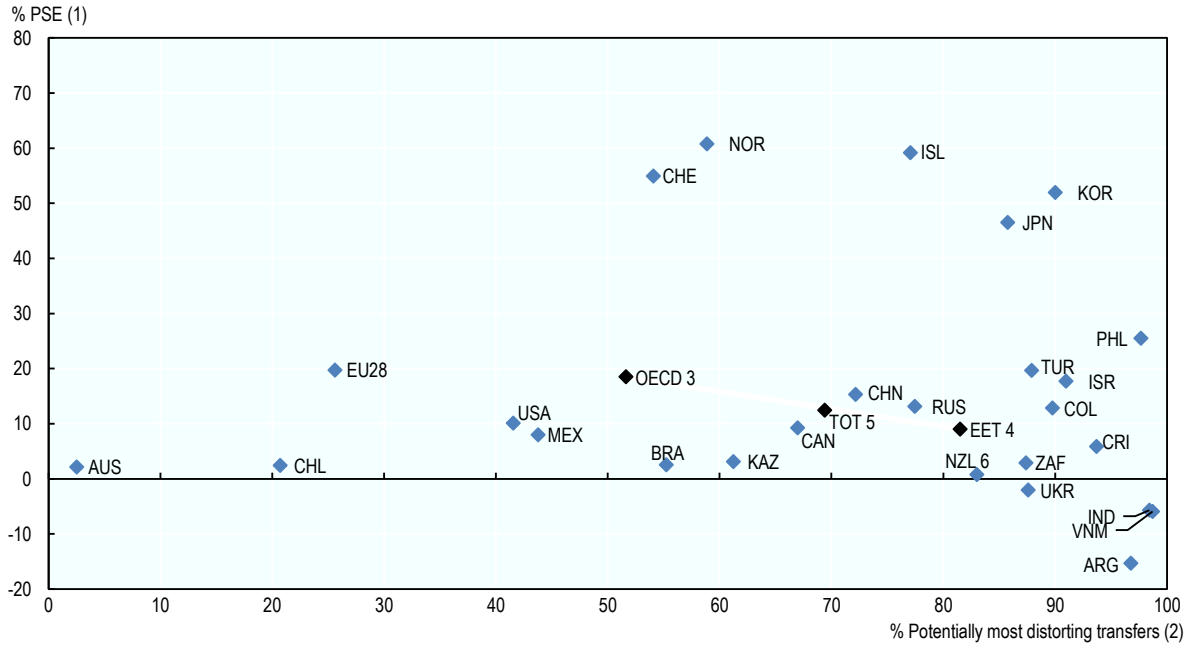


Notes: Countries are ranked according to the %PSE levels.
1. Support based on output payments and on the unconstrained use of variable inputs.
2. EU28.
3. The OECD total does not include the non-OECD EU Member States.
4. The 12 Emerging Economies include Argentina, Brazil, China, Colombia, Costa Rica, India, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam.
5. The All countries total includes all OECD countries, non-OECD EU Member States, and the Emerging Economies.
Source: OECD (2019[16]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Among countries with the highest share of producer support in gross farm receipts (%PSE), Japan and Korea provide more than 85% using potentially most distorting transfers, while Switzerland and Norway make large use of less distorting forms (40% or more) (Figure 1.10). Differences among low support countries are even larger from Australia, where producers receive minimal support, mainly from least distorting measures, to countries where support is low or negative, but potentially most distorting support accounts for over 85% of cumulated gross producer transfers (e.g. Argentina, Costa Rica, India, South Africa, Ukraine and Viet Nam). Among countries with producer support between 10-20%, the European Union uses the lowest share of potentially most distorting transfers (26%), while over 90% of cumulated producer transfers are of the most distorting type in Colombia and Israel. As a result, EU agricultural policies provide higher support levels but less potentially most distorting transfers than in China or the Russian Federation, with their lower support levels.

Figure 1.10. Producer Support Estimate level and composition by country, 2016-18



Notes: 1. Producer Support Estimate (PSE) as a share of the gross farm receipts.
2. Potentially most distorting transfers in cumulated gross producer transfers. Potentially most distorting transfers include transfers based on output (including positive and absolute value of negative market price support, and output payments) and on the unconstrained use of variable inputs.
3. The OECD total does not include the non-OECD EU Member States.
4. The 12 Emerging Economies include Argentina, Brazil, China, Colombia, Costa Rica, India, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam.
5. The All countries total includes all OECD countries, non-OECD EU Member States, and the Emerging Economies.
6. In New Zealand, price support is measured only for poultry and eggs and is due to non-tariff protection applied on SPS grounds.
Source: OECD (2019[16]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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There is a trend towards payments that are less coupled with production decisions

Less distorting forms of support, which have a lower impact on commodity production than potentially most distorting support, include two broad categories of (tax-financed) payments. First, payments based on other inputs (mostly support for on-farm investments) or on variable inputs with constraints (e.g. restrictions on specific farming practices allowed) are used in a number of countries. Such payments account for more than 70% of producer support in Chile and Kazakhstan, and also a significant share of producer support in Brazil (45%), Australia (41%) and Mexico (37%).

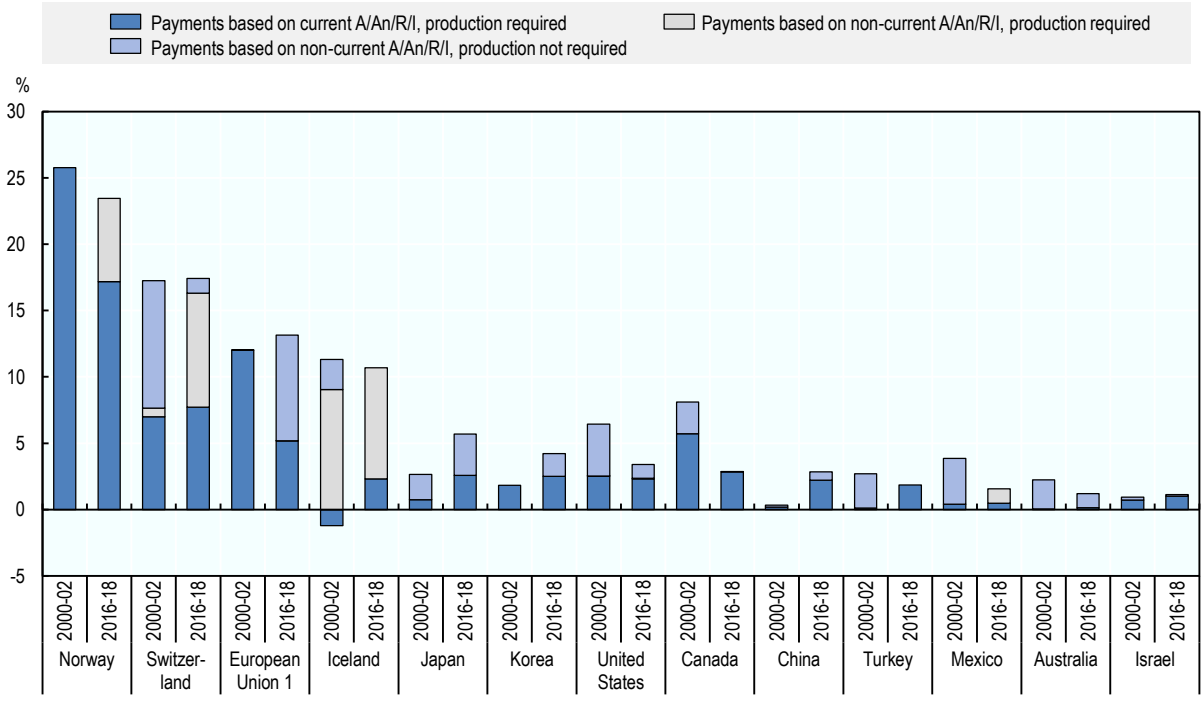
Second, payments based on area, animal numbers, farm receipts or farm income are increasing in the OECD countries (Figure 1.11). In 2016-18, such payments accounted for a large share of producer support in the European Union (67% of the PSE in 2016-18), Australia (52%), Switzerland (44%), Norway (38%), the United States (38%) and Canada (32%) among other countries. These types of payments are also increasing in China, where

they represented 20% of the PSE in 2016-18. However, they are less common in the other emerging and developing economies, accounting for less than 6% of the PSE.

Increasingly, payments are provided on the basis of historical criteria, in some cases without the need for recipient farmers to produce. In the European Union, Iceland, Norway and Switzerland, such payments accounted for between 6% and 10% of gross farm receipts in 2016-18. In the European Union, 61% of direct payments are based on non-current criteria without production requirements. Similar programmes also exist in Australia, Japan, Korea, Mexico and the United States, among others, although their importance as a share of producer support varies between those countries.

Figure 1.11. Use and composition of support based on area, animal numbers, receipts and income in selected countries, 2000-02 and 2016-18

Percentage of gross farm receipts



Notes: Figure presents countries having share of payments based on area, animal numbers, farm receipts or farm income above 1% for 2016-18 period. Countries are ranked according to the total share of payments for 2016-18.
1. EU15 for 2000-02 and EU28 for 2016-18.
Source: OECD (2019[16]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Payments are increasingly tied to specific production practices, reflecting the importance of objectives related to society at large

In some countries, payments are increasingly tied to specific production practices to encourage producers to adopt practices that may improve the environmental performance of farming or animal welfare. Input subsidies may be subject to mandatory constraints on their use, or receipt of payments may be conditional on the adoption of specific production

practices. Payments may also be linked to agri-environmental constraints or to programmes to which farmers can opt-in on a voluntary basis such as payments for reducing nutrient applications or creating buffer strips. The number of countries using these approaches and the levels of these payments has increased in recent decades, reflecting the growing importance of objectives for the sector that reflect societal concerns and the expectation that agriculture will provide various public goods, such as the maintenance of agricultural landscapes and biodiversity.

In addition to the European Union, ten countries have support conditional on the adoption of specific production practices accounting for more than 1% of gross farm receipts. In the European Union, most payments are conditional on the adoption of mandatory production practices and the 28 Member States have to spend a minimum share of Pillar 2 funds on voluntary climatic and agri-environmental measures. In Norway, half of direct payments are granted without constraints, while this share is small in Switzerland. In the United States, mandatory constraints were extended to crop insurance payments in the last Farm Bill. Most other countries not included in Figure 1.12, either provide low support levels and minimal payments to producers (for example Australia or New Zealand), or provide most support in the form of market price support and unconditional payments based on input use (emerging economies).

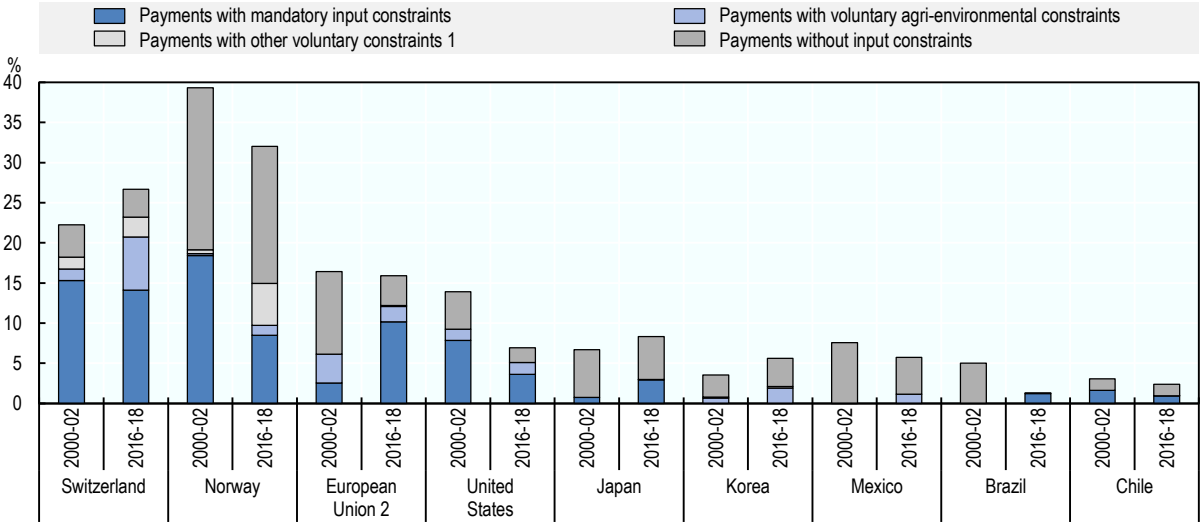
Payments linked to mandatory practices have become more important in Chile, the European Union, Switzerland and the United States (Figure 1.12). In these countries, up to half of the total support to producers is provided in the form of direct payments that are subject to "cross-compliance" with environmental conditions. Some support to fixed capital formation is also tied to investments in facilities for environmental and animal welfare friendly production. Brazil has made all its credit and insurance programmes subject to complying with an elaborate zoning scheme which determines planting times based on weather, soil and crop cycle related criteria; today these programmes make up over two-thirds of Brazil's support to producers.

Payments linked to the adoption of voluntary agri-environmental constraints are increasingly used in Switzerland, and to a lesser extent Korea, Mexico and Norway. In Norway and Switzerland, a significant share of these payments are to adopt animal welfare friendly practices. Other countries also use voluntary payments to promote environmental objectives, including Australia, the European Union, and the United States. The decline in the share of payments linked to voluntary agri-environmental constraints since the early 2000s in the European Union reflects the move from payments based on animal numbers, which were conditional on low livestock density, to payments with mandatory practices, which are not linked to current production parameters.

In some countries, support conditional on the adoption of specific production practices has become more important for farmers as well, including in countries with high levels of support overall. Over 23% of gross farm receipts derive from such conditional payments in Switzerland, 15% in Norway, and 12% in the European Union. In contrast, payments tied to specific production practices are not widely used in the emerging and developing economies.

Figure 1.12. Budgetary support conditional on the adoption of specific production practices in selected countries, 2000-02 and 2016-18

Percentage of gross farm receipts



Notes: Figure presents data for countries having share of budgetary support conditional on the adoption of specific production practices above 1% for one period or more. Countries are ranked according to 2016-18 levels of payments with input constraints.
1. Payments with other voluntary constraints include constraints related to animal welfare.
2. EU15 for 2000-02 and EU28 for 2016-18.
Source: OECD (2019[16]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Support to general services varies significantly across countries in both importance and priorities

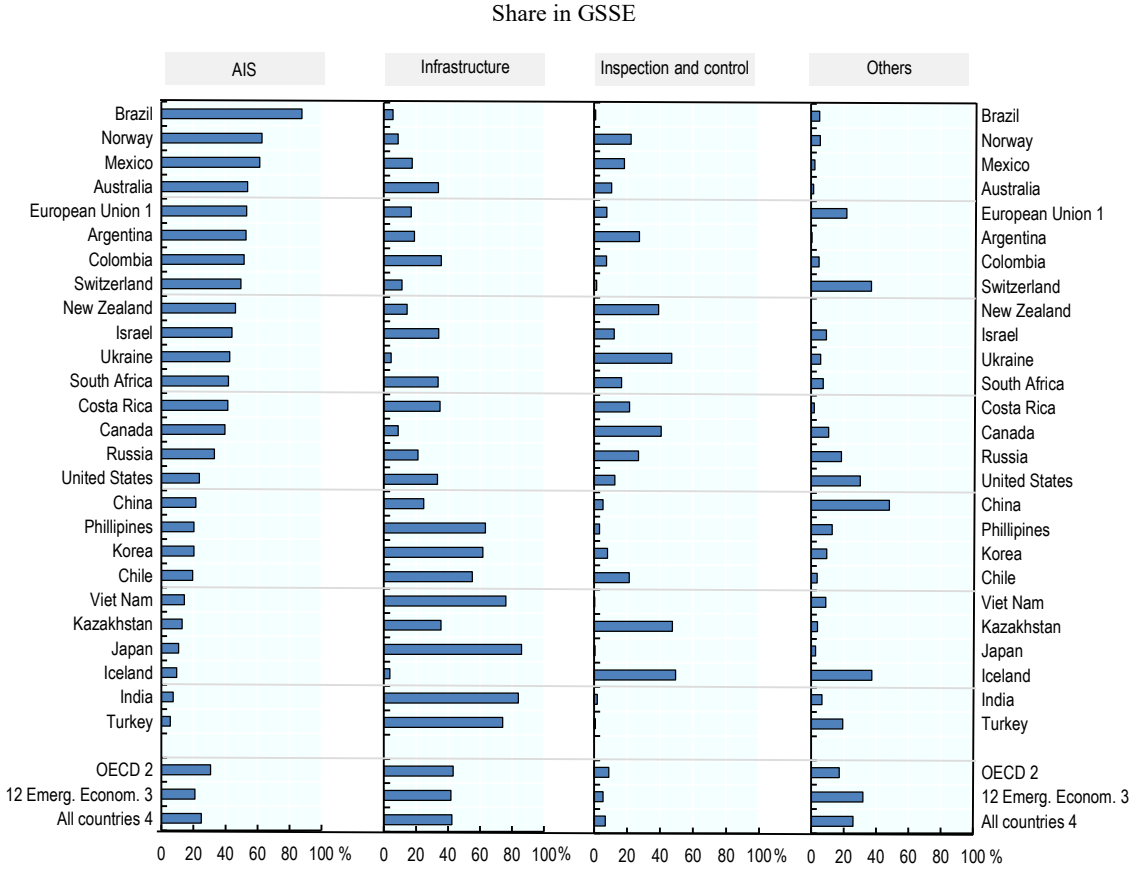
Beyond support provided to individual producers, governments also support agriculture through public financing of services that create enabling conditions for the agricultural sector, measured by the General Services Support Estimate (GSSE). On average, support for general services is much lower than support provided directly to producers.

Support for general services to the sector (GSSE) is often well below support to producers (PSE). About two-thirds of countries have a ratio of GSSE relative to the absolute value of the PSE below 30%. In contrast, the GSSE is 25% higher than the PSE in Australia, 12% higher in Chile, and almost three times the PSE in New Zealand. The GSSE relative to the absolute value of the PSE is over 50% in Kazakhstan, India, South Africa and Brazil.

Countries emphasise different elements of general services to the agricultural sector. Investments in agricultural infrastructure are prioritised in a number of countries. More than 70% of expenditure on general services is on infrastructure in India, Japan, Turkey and Viet Nam, and infrastructure represents more than half of general services expenditure in Chile, Korea and the Philippines – often to expand irrigation coverage (Figure 1.13). The agricultural innovation system (AIS) accounts for more than half of support to general services in Brazil, Norway, Mexico, Australia, the European Union, Argentina and Colombia. It is also prioritised in Switzerland, New Zealand, Israel, Ukraine, South Africa, Costa Rica, Canada and the Russian Federation, where it accounts for half to a third of all

support to general services. For the OECD countries on average, infrastructure (43% of the GSSE) and the AIS (31% of the GSSE) accounted for close to three-quarters of all expenditures on general services. Expenditures on inspection and control systems accounted for between 30% and 50% of general services expenditure in Canada, Iceland, Kazakhstan, New Zealand and Ukraine. Expenditures on public stockholding accounted for a significant share of the GSSE in China and Iceland.

Figure 1.13. Composition of General Services Support Estimate by country, 2016-18



Notes: AIS = Agricultural Innovation System. Aggregate "Others" includes Marketing and promotion, Public stockholding and Miscellaneous. Countries are ranked according to ASI share in the GSSE.
1. EU28.
2. The OECD total does not include the non-OECD EU Member States.
3. The 12 Emerging Economies include Argentina, Brazil, China, Colombia, Costa Rica, India, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam.
4. The All countries total includes all OECD countries, non-OECD EU Member States, and the Emerging Economies.
Source: OECD (2019[16]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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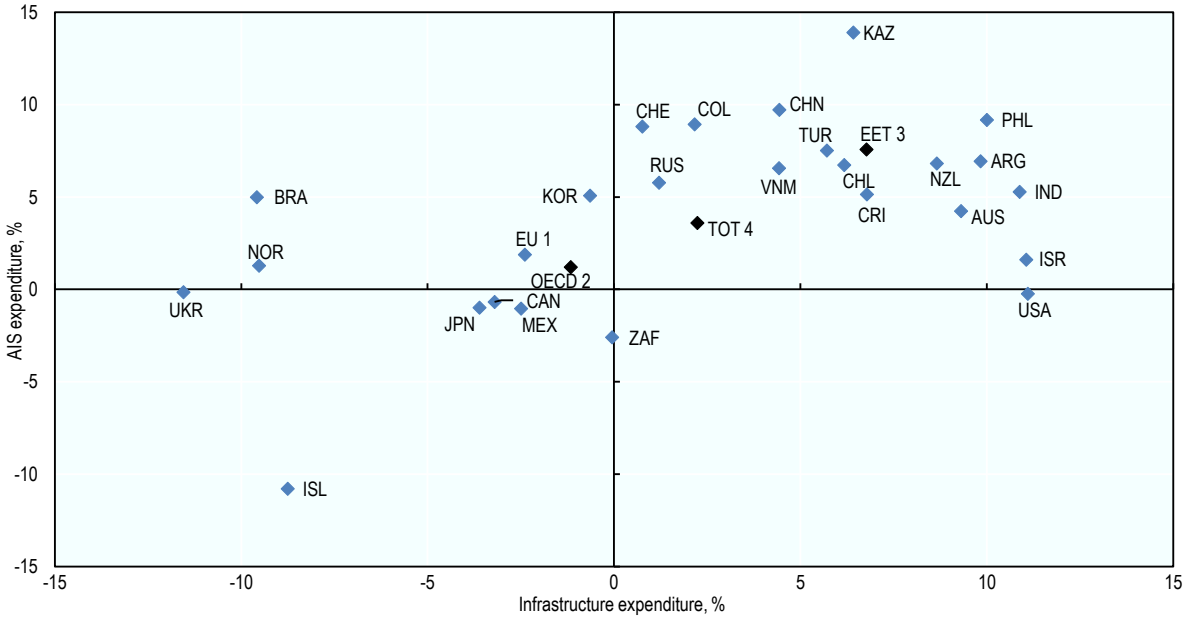
Support to general services generally increased in real terms in emerging and developing economies since the early 2000s, by around 6% per year on average, and up to 8% in India and 10% in the Philippines. Both expenditures on AIS and infrastructure increased on average (by 8% and 7% per year respectively), and in most countries between 2000-02 and

2016-18 (Figure 1.14). However, Brazil has reduced expenditures on infrastructure and South Africa has reduced support to agricultural innovation. Moreover, where support to general services have increased, they generally still have not kept pace with the growing size of the agricultural sectors.

In OECD countries, support to general services decreased in real terms between 2000-02 and 2016-18, by -1% per year on average. But support to agricultural innovation has generally increased on average and in most countries, while support to infrastructure investment has decreased on average, driven to a significant extent by a decline in the European Union.

Figure 1.14. Government expenditure on Agricultural Innovation Systems and Infrastructure by country

Average annual growth between 2000-02 and 2016-18



Notes: Growth rates are calculated based on expenditures in real 2000 USD, using United States GDP deflator.
1. EU15 for 2000-02 and EU28 for 2016-18.
2. The OECD total does not include the non-OECD EU Member States. The Czech Republic, Estonia, Hungary, Poland, the Slovak Republic and Slovenia are included in the OECD total for both periods and in the European Union for 2016-18. Latvia and Lithuania are included in the OECD and in the European Union only for 2016-18.
3. The 12 Emerging Economies include Argentina, Brazil, China, Colombia, Costa Rica, India, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam.
4. The All countries total includes all OECD countries, non-OECD EU Member States, and the Emerging Economies.
Source: OECD (2019[16]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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The burden of agricultural support on countries' economies has generally declined

The overall burden of agricultural support on the OECD countries' economies has declined since the early-2000s, as measured by total support as percentage of GDP (%TSE, Panel A of Figure 1.15). In the OECD countries on average, total support to agriculture declined

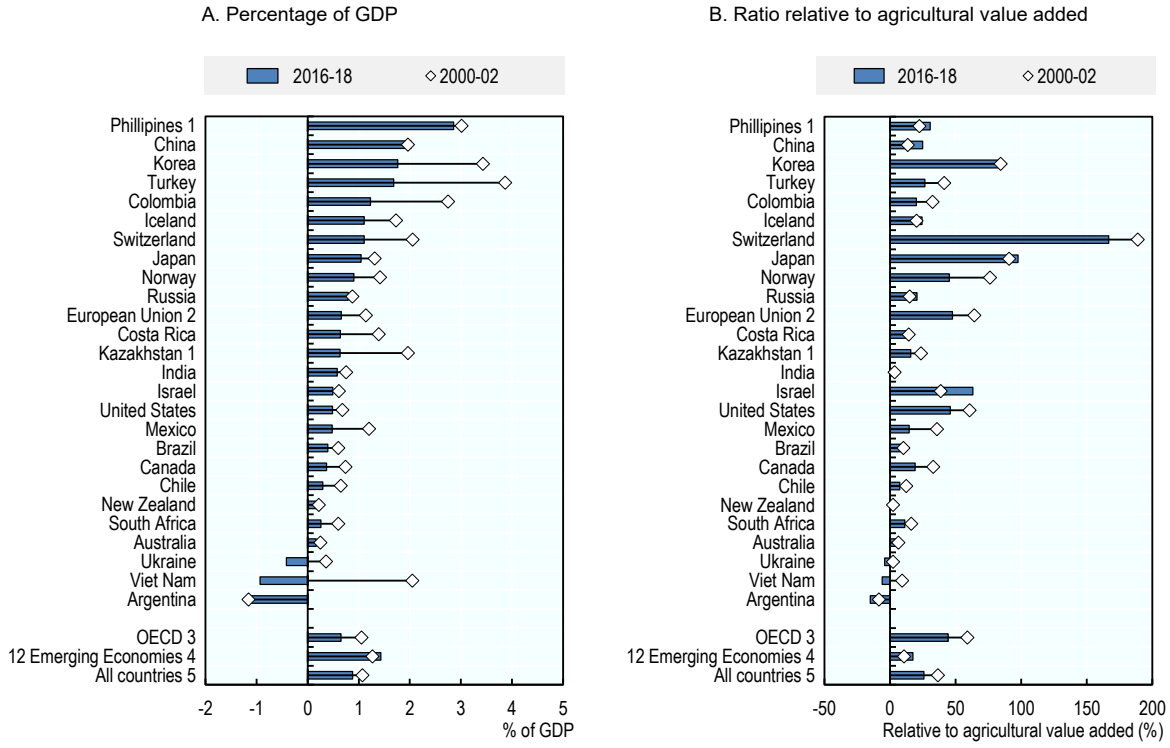
from 1.0% of OECD aggregate GDP in 2000-02 to 0.6% in 2016-18. Significant reductions have occurred in countries where the relative cost to the economy of agricultural support was highest, including Korea, Turkey, Iceland and Switzerland. Nevertheless, the %TSE is high in these countries – between 1.1% and 1.8% of GDP – despite the fact that agriculture is an important part of the economy only in Turkey.

There are contrasting trends in the overall burden of agricultural support on the emerging and developing economies covered in this report. The %TSE has declined significantly in Colombia, Costa Rica, and Viet Nam since the early-2000s. Viet Nam even effectively taxed their agricultural sectors on average in 2016-18, as do Ukraine and Argentina. When positive, total support as a percentage of GDP is the lowest (below 0.4%) in Australia, South Africa, New Zealand, Chile and Canada.

Public policy support continues to be important for the agricultural sector in some countries. In 2016-18, total support relative to the size of countries' agricultural sectors varied widely across the OECD countries, from 167% of agricultural value added[2] in Switzerland, 97% in Japan and 85% in Korea, to less than 8% of agricultural value added in Australia, Brazil, Chile, India and New Zealand (Panel B of Figure 1.15). In the European Union and Norway, TSE relative to agricultural value added was close to the OECD average of 44%, and it was higher in Israel (63%). In the emerging and developing countries, total support relative to the size of the agricultural sector ranges from negative numbers in Argentina, Ukraine and Viet Nam to 31% of agricultural value added in the Philippines. The total effective tax on agriculture relative to the size of the sector was the highest in Argentina (-15%) while it is around 5% in Ukraine and Viet Nam. For most countries, total support has declined relative to the size of the agricultural sector since the early-2000s.

Total support to agriculture averaged USD 622 billion (EUR 548 billion) a year in 2016-18 over all the countries covered in the report. The monetary value of agricultural support in OECD countries and in the emerging and developing economies covered by this report is roughly the same – in 2016-18 total support to agriculture in the OECD countries averaged USD 325 billion (EUR 286 billion) a year on average, compared with USD 292 billion (EUR 257 billion) a year on average in the emerging and developing countries.

Figure 1.15. Total Support Estimate by country, 2000-02 and 2016-18



Notes: Countries are ranked according to the %TSE in 2016-18.
1. For Kazakhstan and the Philippines, 2016-18 is replaced by 2016-17, due to missing GDP and agricultural value added for 2018.
2. EU15 for 2000-02 and EU28 for 2016-18.
3. The OECD total does not include the non-OECD EU Member States. The Czech Republic, Estonia, Hungary, Poland, the Slovak Republic and Slovenia are included in the OECD total for both periods and in the European Union for 2016-18. Latvia and Lithuania are included in the OECD and in the European Union only for 2016-18.
4. The 12 Emerging Economies include Argentina, Brazil, China, Colombia, Costa Rica, India, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam.
5. The All countries total includes all OECD countries, non-OECD EU Member States, and the Emerging Economies.
Source: OECD (2019[16]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Environmental performance of agriculture: policy impacts and developments

Agriculture can have significant environmental impacts, both negative and positive, and both on and off the farm. Negative impacts include pollution and degradation of soil, water and air. Agriculture can also provide ecosystem services, such as landscape amenities and habitats, trapping greenhouse gases within crops and soils, or mitigating flood risks through the adoption of certain farming practices.

Governments can influence the environmental sustainability of the agriculture sector in a variety of different ways, both intended and unintended. Most directly, governments can alter the incentives faced by producers and other actors, encouraging them to change their approaches and move towards more sustainable agriculture and food systems. In order to

understand how policies affect environmental performance of agriculture, several elements are needed:

- Understanding how policies affect the decision-making of farmers and other actors in the agriculture system, and how these decisions translate into environmental pressures, taking into account other non-policy factors which may shape policy impacts in different contexts.
- Understanding how the state of the environment (environmental outcomes) changes over time, and the roles of the agriculture sector in contributing to this change.

This section presents findings from recent OECD evaluating the role of specific policy types in improving (or diminishing) agriculture's environmental performance. It also provides an overview of how the environmental performance of agriculture is changing over time, using the OECD's agri-environmental indicators. Finally, it considers how countries' approaches to measuring the environmental sustainability of agriculture (including social and economic aspects) are changing as countries set up indicators to track progress towards UN Sustainable Development Goals (SDG), with a specific focus on indicators for SDG 2.4.

Recent findings on the environmental impacts of agricultural support policies

Recent OECD work shows that agricultural support policies tend to have negative environmental impacts, but not always (Henderson and Lankoski, 2019[22]). On the basis of these analytical frameworks, the selected environmental indicators, and the data used in this study (presented in Box 1.4), the findings suggest that market price support and payments based on output or unconstrained variable input use are found to be the most environmentally harmful among the various PSE measures. In contrast, fully decoupled support payments based on non-current crop area are the least harmful, even when considering their impacts on the behaviour of risk averse farmers. This suggests that in most cases, reforms to decouple support policies are likely to improve the environmental sustainability of the sector. Such reforms in OECD agricultural policies over the past couple of decades are therefore likely to have reduced the total negative environmental impact of support to agriculture (OECD, 2016[23]; OECD, 2014[24]; OECD, 2009[25]).

Interactions between different agricultural production activities with different environmental impacts (e.g. crop and livestock production) can complicate the relationship between agricultural support and environmental sustainability. This is particularly the case for support policies that clearly change the competitiveness of one production activity over another, such as payments based on current crop area or on animal numbers. These types of support can either increase or decrease environmental impacts depending whether they encourage the production of more or less environmentally harmful commodities. The results from the OECD study show that environmental impacts of current crop area payments are the most equivocal, in this respect, but their impacts are generally smaller than those of the other coupled support policies Similarly, results show that agri-environmental payments for complying with environmental constraints can improve environmental outcomes compared to coupled support without restrictions. However, they can also create unintended adverse environmental impacts, where they favour the conversion of more environmentally valuable land types such as from pastures to cereal production. Thus, despite the environmentally positive intentions of these policy measures, policy makers need to be aware of these potential pitfalls (Henderson and Lankoski, 2019[22]).

Box 1.4. Evaluating the environmental impacts of agricultural policies

A recent OECD study attempts to address the following questions:

- What are the relationships between agricultural support policies and environmental impacts?
- What conditions may alter the strength and direction of these relationships?

To address these questions, the study focuses on selected environmental impacts considered important by OECD countries: GHG emissions, water quality, biodiversity, and nitrogen (N) and phosphorus (P) balances. The relationship between these impacts and the following categories of agricultural support, adapted from the OECD Producer Support Estimate (PSE) classification, are analysed using farm level model and the Policy Evaluation Model (PEM): market price support; payments based on unconstrained variable input use; payments based on current crop area; payments based on non-current crop area; payments based on current animal numbers; and payments based on non-commodity criteria (Box A A.1). The two analytical frameworks used are applied to a diversity of cases, representing various EU countries' situations in the farm-level assessment, and representing eight countries or regions (Canada, China, Japan, Korea, Mexico, the United States, Switzerland and the European Union) in the PEM assessment. Some of the insights of this analysis are limited to the farming systems and regions that were considered in this study.

Source: Henderson and Lankoski (2019[22]), "Evaluating The Environmental Impact Of Agricultural Policies", *OECD Food, Agriculture and Fisheries Papers* No. 130.

Recent trends in the environmental performance of agriculture

Understanding the interactions between policies and the environmental performance of agriculture requires monitoring of the state of the environment (environmental outcomes) and changes over time. OECD, together with countries, has made significant progress in developing agri-environmental indicators (AEIs) to monitor these environmental impacts (OECD, 2018[26]). As well as providing valuable evidence of the state and trends in the environmental performance of agriculture, AEIs 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.

Recent trends in OECD countries show mixed results in the environmental performance of agriculture. Since 2000, agricultural production has expanded, and agricultural greenhouse gas emissions and agriculture-related biodiversity losses have increased. In contrast, certain environmental pressures associated with agriculture have declined, such as nutrient balances surpluses— a leading cause of water contamination in OECD countries —and agricultural water abstraction.

Agricultural nutrient surpluses have declined, deficits reduced, but pressures remain high in some countries

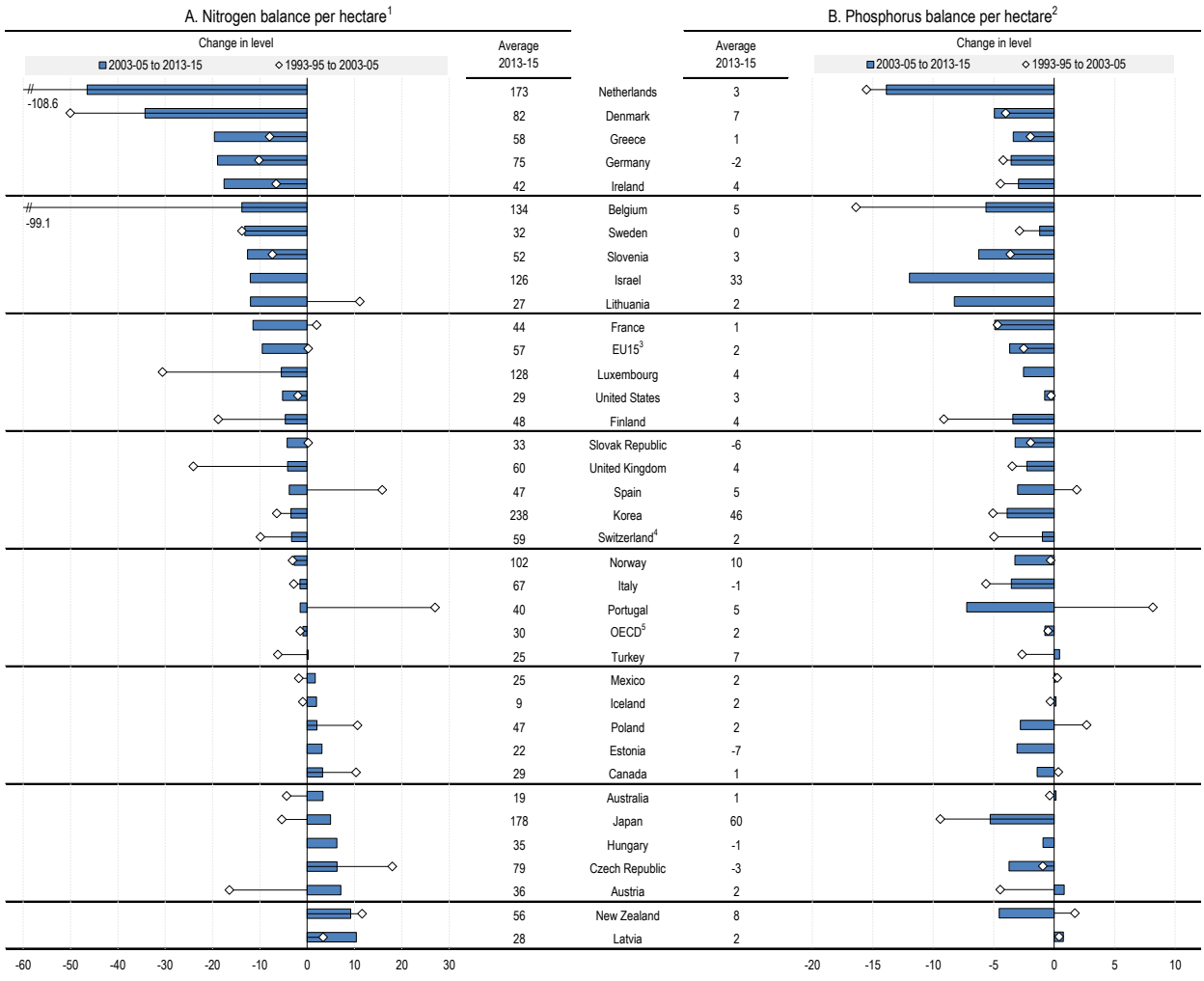
For the last two decades OECD countries have on average experienced **declining trends in nutrient surpluses** (Figure 1.16) (OECD, 2019[27]). From 1993 to 2015, the average nitrogen (N) surplus in OECD countries fell from 32.4 kg/ha to 30 kg/ha, while the average phosphorus (P) surplus fell from 3.3 kg/ha to 2 kg/ha. Almost all OECD countries are experiencing falling phosphorus surpluses, but the picture is more mixed in the case of nitrogen. Trends are more balanced for emerging economies; of the 12 included in this report, nitrogen balances fell for 7 countries and rose for 5, and phosphorous balances fell for 6 and rose for 6 countries (Figure 1.17).

Over the last decade, rates of decline have accelerated for phosphorus surpluses but have decelerated for nitrogen, raising concerns about the ability of OECD countries to continue to reduce nitrogen surpluses in the future. Australia, Austria, Iceland, Mexico and Turkey have reversed the reduction in P surpluses they made during the 1990s and have increased their surpluses per hectare since 2003. Nitrogen balances in Australia, Austria, Iceland, Japan, Mexico and Turkey reversed the declining trends seen in the period 1993-2005 and exhibited positive growth rates in the last decade.

The existing literature identifies three key drivers of nutrient balances: 1) livestock composition, crop mix and the adoption of improved cultivars; 2) agricultural policies; and 3) management practices. Key findings on drivers affecting nutrient balances in OECD countries are:

- **Reduced fertiliser application rates** seem to be the main driver of reduced P surpluses, although livestock and crop-mix changes as well as policy interventions are associated with reductions in both N and P nutrient balances. Phosphorus fertiliser application rates fell for most OECD countries, possibly as a result of improved farm practices.
- On average, **OECD countries slightly reduced N inputs**. While manure N inputs decreased, N fertiliser increased. In parallel, **crop uptake significantly increased**, mainly due to shifts in the crop mix towards **oil crops (**as on average they take up more N on a per kg basis compared to other crops), which further lowered the overall N surplus. A **decrease in cattle as a share of total livestock** also played a role on declining N manure inputs in some countries.
- Recent work studying the impacts of different possible policies suggests that potentially most **distortionary support policies, particularly those coupled with output and input use,** seem to be associated with larger surpluses, mainly because they incentivise the use of inputs and production, while countries that adopted **policies targeting nitrogen pollution**, in particular Nitrate Vulnerable Zones mandated in EU countries to reduce nitrate pollution, also reduced both N and P surpluses (OECD, 2019[27]; Henderson and Lankoski, 2019[22]).

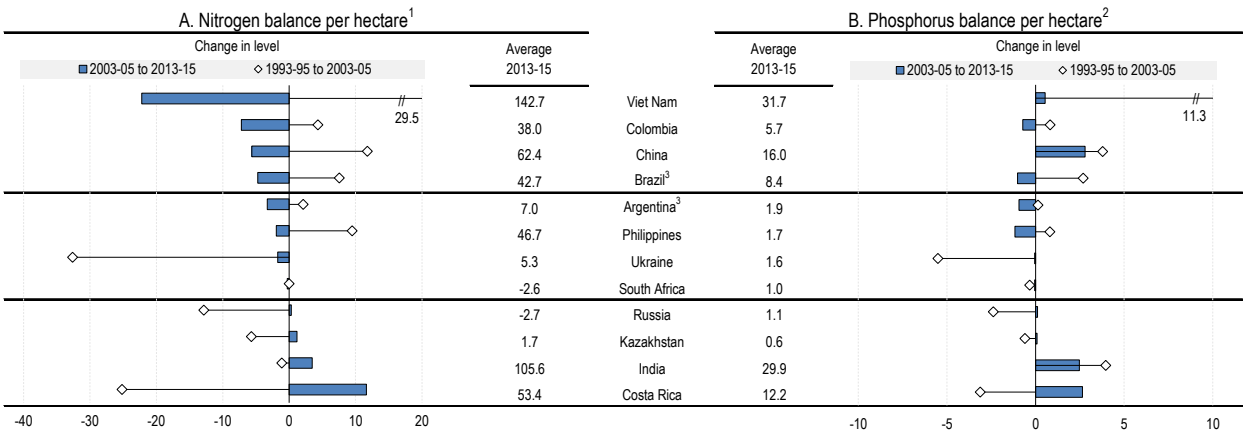
Figure 1.16. Nitrogen and phosphorus balance per hectare of agricultural land, OECD countries



Notes: Countries are ranked according to the nitrogen balance per hectare change between 2003-05 and 2013-15.
1. Balance (surplus or deficit) expressed as kg nitrogen per hectare of total agricultural land.
2. Balance (surplus or deficit) expressed as kg phosphorus per hectare of total agricultural land.
3. For phosphorus, EU15 does not include Luxembourg for 1993-95.
4. For Switzerland, total agricultural area includes summer grazing.
5. The OECD total does not include Chile and Israel for both periods. For nitrogen, the OECD total does not include Estonia and Hungary for 1993-95; for phosphorus, it does not include Estonia, Hungary, Lithuania and Luxembourg for 1993-95.
Source: OECD (2018[26]), Agri-environmental indicators (database), http://www.oecd.org/tad/sustainable-agriculture/agri-environmentalindicators.htm.

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Figure 1.17. Nitrogen and phosphorus balance per hectare of agricultural land, Emerging Economies



Notes: All data are preliminary. Countries are ranked according to the nitrogen balance per hectare change between 2003-05 and 2013-15.
1. Balance (surplus or deficit) expressed as kg nitrogen per hectare of total agricultural land.
2. Balance (surplus or deficit) expressed as kg phosphorus per hectare of total agricultural land.
3. For Argentina and Brazil, 2013-15 is replaced by 2012-14.
Source: OECD (2018[26]), Agri-environmental indicators (database), http://www.oecd.org/tad/sustainable-agriculture/agri-environmentalindicators.htm.

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Agricultural greenhouse gas emissions have increased and ammonia emissions have decreased

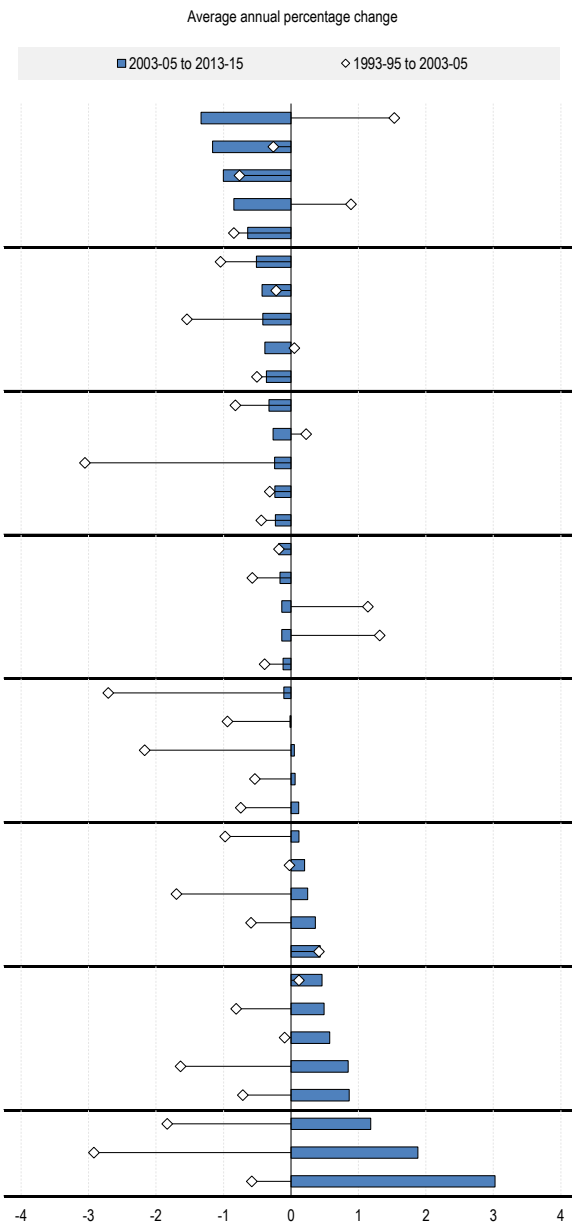
Agricultural activities affect air quality mainly via **greenhouse gas emissions** (methane and nitrous oxides) **and ammonia (NH_3) emissions**. Agriculture is the main emitter of methane (CH_4) and nitrous oxide (N_2O), two non- CO_2 greenhouse gases with more potential to warm the atmosphere than carbon dioxide (CO_2), but with a shorter lifespan (IPCC, 2014[28]). GHG emissions from agriculture represent 10-12% of total global GHG emissions (Smith et al., 2014[29]).

Trends in agricultural greenhouse gas (GHG) emissions (Figure 1.18) and ammonia emissions (Figure 1.19) indicate a deterioration of agriculture's performance in the OECD area. While GHG emissions were practically unchanged in the period 1993-2005, these emissions increased by 0.2% yearly on average in OECD countries from 2003 to 2015. Ammonia emissions in the OECD area decreased in the period 2003-15 but at a slower speed than they did in the period 1993-2005. Increasing emissions from agricultural soils, mainly from the use of synthetic fertilisers, explain most of the rise of agricultural GHG emissions during the period 2003-15.

Countries' capacities to maintain the value of produced agricultural goods while reducing GHG emissions have weakened. GHG emissions per dollar of agricultural production (emissions intensities) kept declining on average in OECD countries in the period 2003-15, but at lower speed than they did in the period 1993-2005 (Figure 1.20). In highly productive OECD countries, a recent analysis that estimates the relationship between labour productivity and agricultural greenhouse gas emissions in OECD countries suggests further labour productivity[3] improvements may not translate into a reduction of GHG emissions intensities (OECD, 2019, forthcoming[30]). Some OECD countries may be

reaching a productivity level at which further improvements may induce more GHG emissions per unit of output.

Figure 1.18. Agricultural greenhouse gas emissions, OECD countries



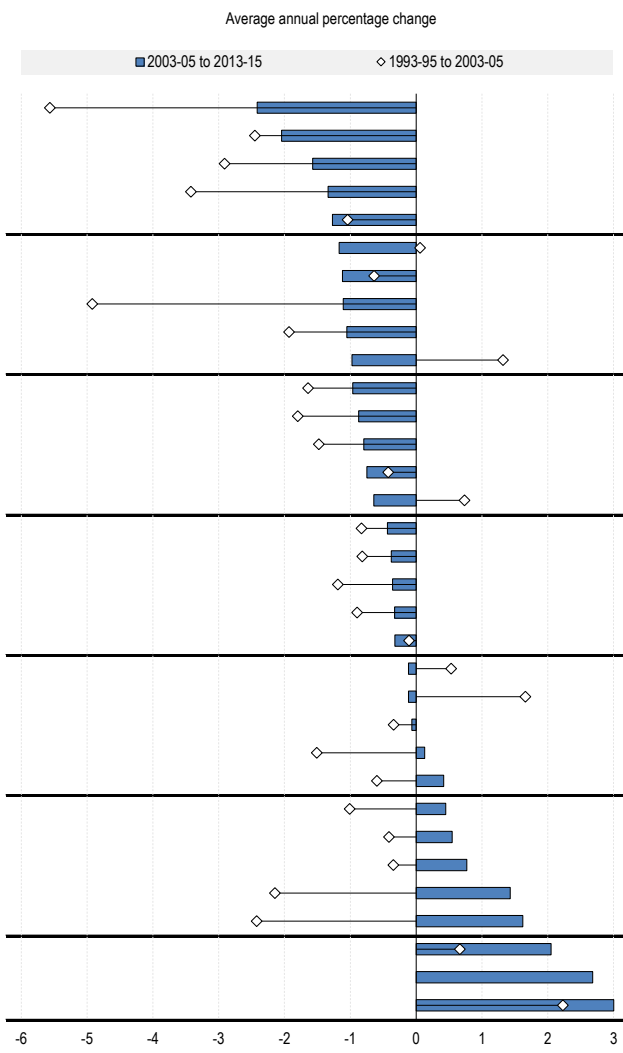
	Average 2013-15	
	Agricultural GHG emissions (Thousand tonnes of CO_2 equivalent)	Share of agriculture in national total GHG emissions (%)
Spain	33 523	10
Greece	8 080	8
Italy	29 475	7
Israel	2 079	3
United Kingdom	41 905	8
Denmark	10 457	20
Slovenia	1 712	10
Belgium	10 068	9
Australia	71 770	13
EU15	341 936	10
Sweden	6 909	13
Chile[1]	13 254	12
Slovak Republic	2 607	6
Norway	4 441	8
Ireland	18 585	32
France	77 560	16
Japan	34 190	3
New Zealand	39 312	49
Canada	58 684	8
Portugal	6 677	10
Netherlands	18 338	10
Austria	7 143	9
Czech Republic	7 961	6
Finland	6 499	11
Switzerland	6 005	12
Korea	20 944	3
OECD	1 354 162	9
Poland	30 147	8
Germany	65 994	7
United States	549 940	8
Hungary	6 483	11
Luxembourg	721	7
Mexico	99 971	15
Lithuania	4 518	23
Iceland	597	13
Latvia	2 609	23
Estonia	1 326	7
Turkey	53 673	12

Notes: Countries are ranked according to the average annual percentage change, between 2003-05 and 2013-15.
1. For Chile, 2013-15 is replaced by 2011-13.

Source: UNFCCC (2018[31]), Greenhouse Gas Inventory Database, http://ghg.unfccc.int/; OECD (2018[26]), Agri-environmental indicators (database), http://www.oecd.org/tad/sustainable-agriculture/agri-environmentalindicators.htm.

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Figure 1.19. Ammonia emissions from agriculture, OECD countries

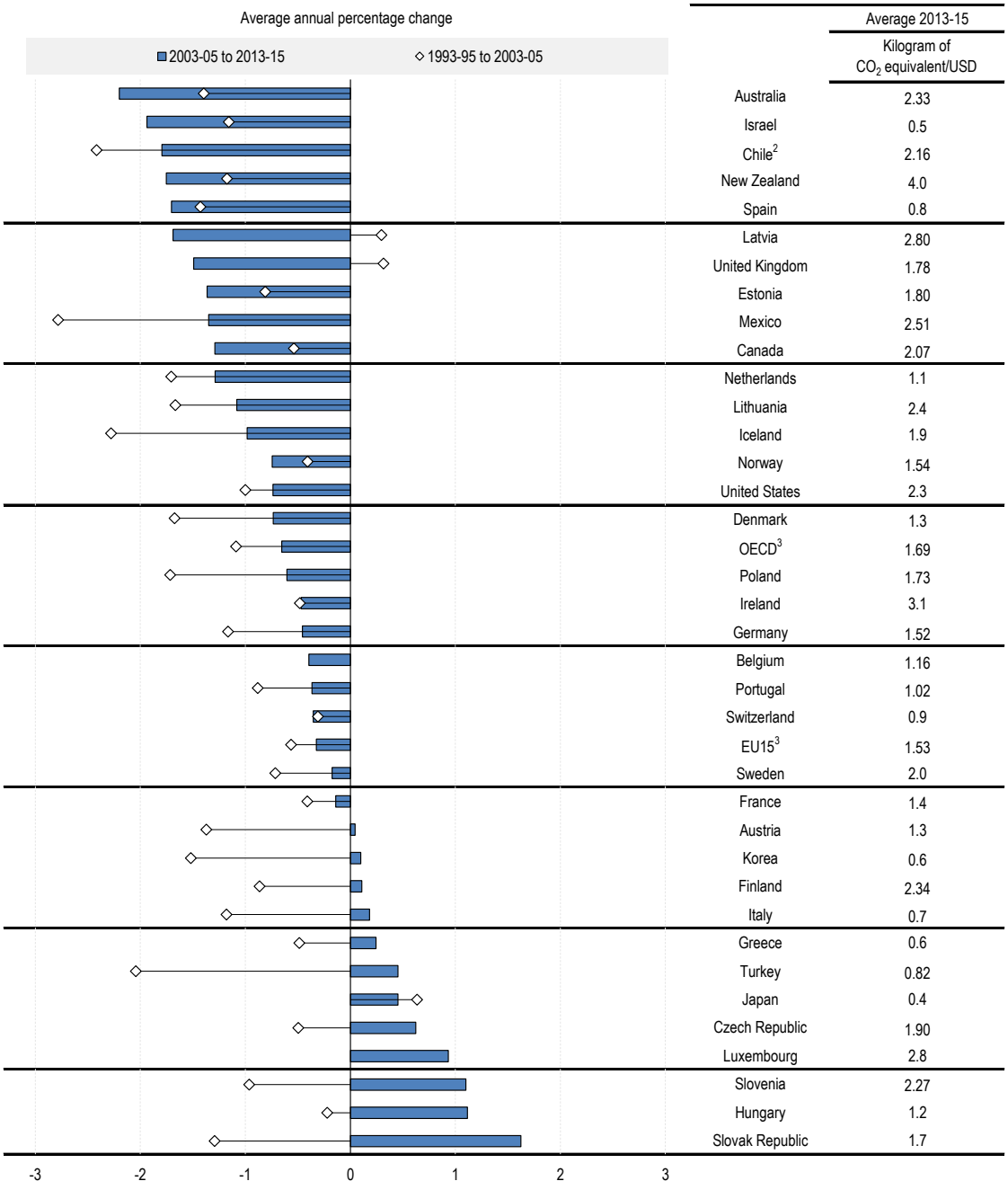


	Average 2013-15	
	Ammonia emissions from agriculture (Thousand tonnes)	Share of agriculture in national total ammonia emissions (%)
Netherlands	107	86
Denmark	70	94
Slovak Republic	30	96
Czech Republic	65	90
Italy	346	93
Hungary	75	89
Greece	55	91
Belgium	65	94
Lithuania	31	90
Spain	425	91
Portugal	44	80
Poland	262	97
United States[1]	2 833	90
Slovenia	16	90
Finland	29	90
EU15	2 816	92
Sweden	48	88
United Kingdom	236	86
OECD[2]	7 525	91
Ireland	108	99
Norway	26	93
Canada	462	94
France	586	94
Switzerland	53	93
Austria	63	94
Luxembourg	6	95
Iceland	5	98
Germany	630	95
Estonia	11	89
Latvia	14	84
Turkey	593	90
Israel	17	n.a.
Korea[3]	233	79

Notes: Countries are ranked according to the average annual percentage change, between 2003-05 and 2013-15.
1. For the United States, data for agricultural ammonia emissions have been estimated based on the ratio agricultural ammonia/total ammonia emissions, using the share 90% as recommended by USEPA.
2. The OECD total does not include Australia, Chile, Japan, Mexico and New Zealand for both periods, and does not include Israel for 1993-95.
3. For agricultural ammonia emissions, for Korea, 2013-15 is replaced by 2012-14.
Sources: EMEP (2018[32]), Co-operative Programme for Monitoring and Evaluation of the Long-Range Transmission of Air Pollutants in Europe; OECD (2018[26]), Agri-environmental indicators (database), http://www.oecd.org/tad/sustainable-agriculture/agri-environmentalindicators.htm.

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Figure 1.20. Agricultural greenhouse gas emissions intensity,[1] OECD countries



Notes: Countries are ranked according to the average annual percentage change, between 2003-05 and 2013-15.
1. Greenhouse gas emissions per gross production value (in constant 2004-06 USD)
2. For Chile, 2013-15 is replaced by 2011-13.
3. The OECD total and EU15 do not include Belgium and Luxembourg for 1993-95.
Source: UNFCCC (2018[31]), Greenhouse Gas Inventory Database, http://ghg.unfccc.int/; OECD (2018[26]), Agri-environmental indicators (database), http://www.oecd.org/tad/sustainable-agriculture/agri-environmentalindicators.htm; FAO (2018[33]), Value of Agricultural Production, http://www.fao.org/faostat/en/#data/QV.

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The trend towards lower agricultural water abstraction continues

Agricultural water abstraction decreased in most OECD countries since 2005, continuing a trend observed since the early 2000s (Figure 1.21). This trend is particularly evident in countries where the irrigation sector is large relative to the agriculture sector. For some countries, the decrease is significant, and it is often associated with deep policy reforms (agricultural policies, water regulation policies), farmers' capacities to adapt to new climate, the use of more pressurised irrigation systems and policy environments. Decrease of water use for irrigation explains most of the decreasing trends of agricultural water use in OECD countries. Reductions in agricultural water use[4] have contributed to the observed decrease in water stress[5] in a majority of OECD countries, especially in countries with high initial levels of water stress (OECD, 2018[34]).

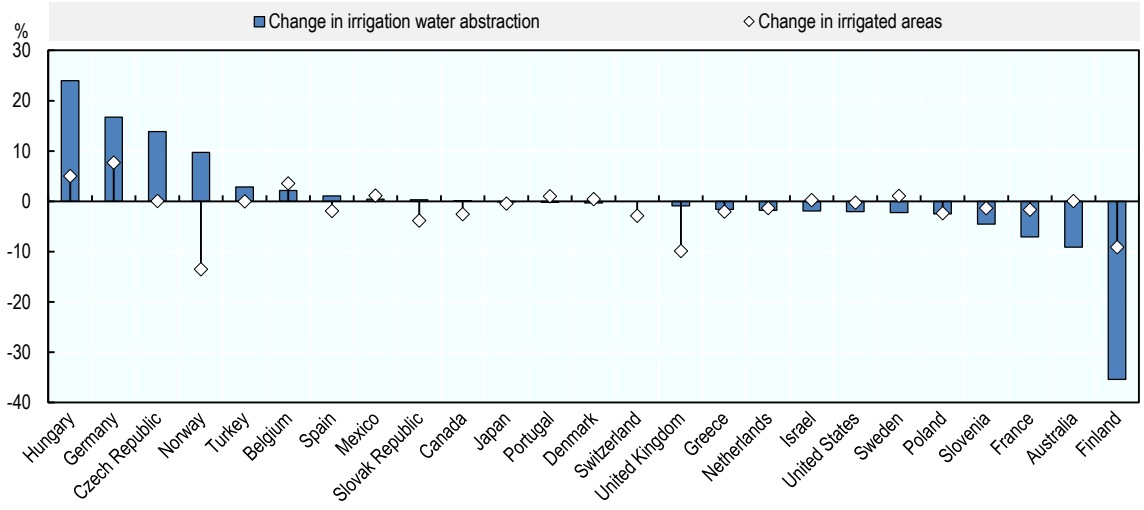
Water application rates (e.g. quantity of irrigation water) have decreased in OECD countries with large irrigation sectors, suggesting significant gains in water use efficiency and changes in crop mixes towards less water-intensive crops. When expansion of irrigation areas is coupled with more efficient irrigation techniques, water use efficiency improves, however, expansion of irrigation may have led to the observed increase in water stress in Mexico and Turkey, the only OECD countries that expanded irrigation (OECD, 2018[34]).

Although, on average, agricultural water use trended downward in OECD countries, several countries increasingly rely on groundwater for agriculture use, continuing a trend observed since the mid-1990s. Increasing agriculture reliance on groundwater can raise serious sustainability issues in regions where groundwater withdrawals exceed recharge rates, leading to a drop in water tables, with potentially negative impacts on the environment as well as on the future resilience of such production systems (OECD, 2015[35]). Further, compared to surface water, the negative environmental impacts of groundwater irrigation can be generally more long lasting, if not irremediable (e.g. water pollution) (Ibid.).

Trends observed at the national level may mask important within-country variability of water use and water stress in OECD countries (OECD, 2017[36]). Recent severe droughts, with serious implications for regional and global agriculture in some OECD countries such as Chile, France, the United States (California) or in irrigated regions of Australia, illustrate this issue.

Figure 1.21. Change in irrigation water abstraction and irrigated areas, in selected countries

Average annual percentage change, from 2004-06 to 2012-14



Note: Average annual % change is calculated as geometric average growth rates between the two three-year averages.
Source: OECD (2016), Agri-environmental indicators (database), http://www.oecd.org/tad/sustainable-agriculture/agri-environmentalindicators.htm.

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The loss of crop diversity, landscape heterogeneity and increased pesticides use have strong impacts on farmland biodiversity

Changes in land and pesticide use are key drivers of change in farmland biodiversity, particularly farmland birds (Stanton, Morrissey and Clark, 2018[37]). Excess nutrient applications can negatively impact biodiversity due to increased toxicity in the environment and nutrient enrichment, oxygen depletion in aquatic ecosystems, soil or water acidification or intensifying the impact of other stressors such as pathogens, invasive species and climate change (OECD, 2019[27]). Declines in agricultural land area, the loss of crop diversity, landscape heterogeneity (the combination of different land uses and features such as shrubs, trees, cropland in a given space), and greater use of chemical inputs – all symptoms of the intensification of agriculture – are some of the main pressures faced by farmland birds in most OECD countries (Firbank et al., 2008[38]; Tilman et al., 2001[39]). The habitat quality for biodiversity in farmland also depends on the type of crops grown (Jerrentrup et al., 2017[40]; Turley, 2006[41]).

The area of land used for agriculture has continued to decline in the majority of OECD countries, particularly in Western Europe, over the period 2002-14. The rate of decline has accelerated during this period compared to the previous decade. Despite this, agricultural output has increased 0.5% per year in the OECD region on average over the same period, signalling an increase in land productivity. Variation in the area of permanent pasture land drove most of the changes in the use of agricultural land in OECD countries during the period 2002-14.

Farmland bird populations, an indicator for biodiversity in farmland, continued to decline over the most recent period of analysis (2002-14) in almost all OECD countries that

monitor them. Moreover, the rate at which farmland bird populations declined has accelerated in the most recent decade.

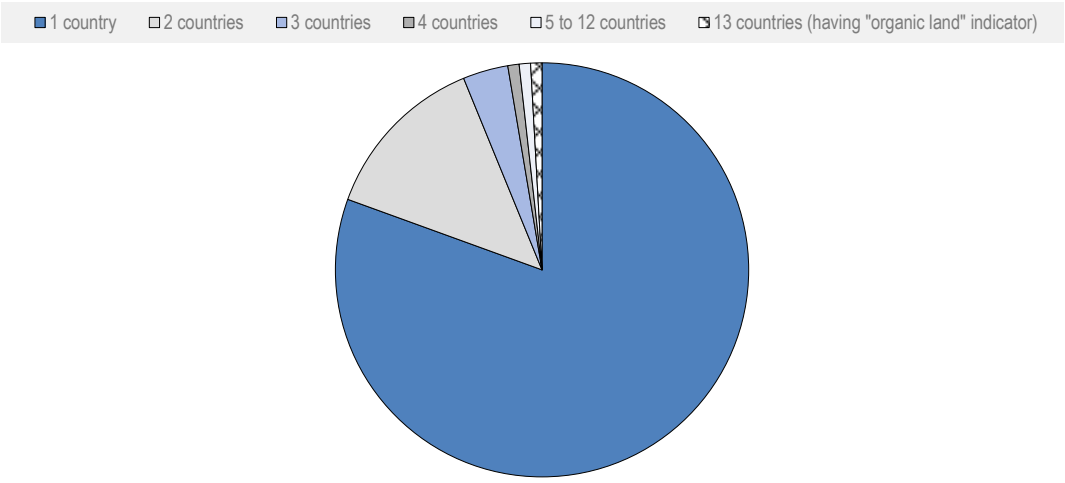
Recent advances in indicators for monitoring progress towards international commitments on sustainability: Measuring progress on SDG 2.4

To sustain increasing food demand from a growing population and the economic development of lagging regions, the agricultural sector will need to be able to expand supply, while minimising its environmental impacts. Moreover, these goals need to be met under changing climatic conditions and a shrinking and aging labour force in the sector. These ambitions and challenges are embodied in Sustainable Development Goal 2 ("End hunger, achieve food security and improved nutrition and promote sustainable agriculture") of the 2030 Agenda for Sustainable Development. Target 2.4 focuses particularly on sustainable agriculture and states that "[b]y 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".

The OECD surveyed all countries covered in this report on their progress in establishing indicators and sub-indicators in relation to Target 2.4. Responses were obtained from 37 countries. Surveyed countries have started tracking progress towards sustainable agriculture targets: 18 surveyed countries have developed sub-indicators needed to track progress, 12 are in the process of developing them and only 7 countries have not yet started the process.

However, information provided by countries raises concerns that current efforts are unlikely to yield information that is comparable across countries and which enables countries to meaningfully track global progress on SDG 2.4. First, 12 out of the 30 countries that have developed or started the process for developing indicators use or plan to use sub-indicators that cover the economic, environmental and social dimensions of sustainable agriculture. Second, 3 countries have defined the share of organic cultivated land in total agricultural land as the main SDG 2.4 indicator, which oversimplifies the Target and raises the risk that these countries will focus only on this aspect of sustainability, rather than the more holistic conception referred to in SDG 2.4. Lastly and perhaps most importantly, there is surprisingly little harmonisation in sub-indicators used by countries. Figure 1.22 shows the number of sub-indicators that are shared among one or more countries. Most sub-indicators (80%) are only used by a single country and the most commonly used indicator (share of organic land in cultivated land) is shared by only 13 countries.

Figure 1.22. Share of sub-indicators used by a group of countries



Note: In total, there were 155 sub-indicators recorded.
Source: OECD questionnaire.

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The FAO's recent methodological guidelines for constructing indicators is a useful first step towards harmonising indicators (Box 1.5). Of the countries surveyed by the OECD, only two are currently using or planning to use FAO-recommended sub-indicators and out of those recommended, water use and availability, pesticide risk management and land productivity are the most commonly adopted (Table 1.3). Also, the three most commonly-used indicators across surveyed countries (organic cultivated land, GHG and ammonia emissions) are not sub-indicators recommended by the FAO.

Beyond this, it is worth noting that the FAO's proposed environmental sub-indicators are mostly response-based, meaning they capture policy action and farmers' responses, rather than drawing on the most commonly used agri-environmental indicators to track environmental pressures and the state of the environment (e.g. those captured in the OECD AEIs database). Given that many surveyed countries are adopting their own pressure- or state-based indicators for tracking progress towards Target 2.4, agri-environmental indicators tracked by international organisations such as the OECD, FAO and EUROSTAT can be a useful source for harmonising such indicators.

Table 1.3. Commonly used and proposed sub-indicators for tracking SDG 2.4

Dimension	Indicators shared by 2 or more countries	Number of countries sharing the indicator	FAO sub-indicators
Economic	Agriculture factor income	3	
Economic	Farm output value per hectare	2	X
Economic	Net farm income	2	X
Economic	Public expenditures in Agricultural R&D	2	
Economic	Total Factor Productivity	2	
Economic	Wage rate in agriculture	2	X
Environmental	Organic land	13	
Environmental	Greenhouse gas emissions	5	
Environmental	Ammonia emissions	4	
Environmental	Management of pesticides	3	X
Environmental	Prevalence of soil degradation	3	X
Environmental	Management of fertilizers	2	X
Environmental	Pesticides use	2	
Environmental	Risk mitigation mechanisms	2	X
Environmental	Soil erosion	2	
Environmental	Use of biodiversity-friendly practices	2	X
Environmental	Variation in water availability	2	X
Social	Food insecurity experience scale (FIES)	2	X
Social	Secure tenure rights to land	2	X
Social	Training	2	
Economic, Environmental, Social	Sustainable agriculture land	3	

Note: This table reports indicators that are shared by *more than one* surveyed country.
Source: OECD questionnaire.

Box 1.5. FAO guidance on indicators for tracking progress towards SDG 2.4

The indicator to measure progress to achieve Target 2.4 has been defined by the FAO as the "Percentage of agricultural area under productive and sustainable agriculture". The most recent methodological note released by the FAO, the custodian of this indicator, by the end of 2018, establishes that its construction should:

1. Consider issues related to resilience, productivity, ecosystem maintenance, adaptation to climate change and extreme events, and soils.
2. Use farm surveys as preferred data source.
3. Distinguish between sustainable and unsustainable areas, using a definition of sustainability that encompasses economic, environmental and social dimensions.

The FAO has defined 11 sub-indicators for measuring sustainable agriculture considering economic, environmental and social dimensions: 1) Farm output value per hectare; 2) Net farm income; 3) Risk mitigation mechanisms; 4) Prevalence of soil degradation; 5) Variation in water availability; 6) Management of fertilisers; 7) Management of pesticides; 8) Use of biodiversity-friendly practices; 9) Wage rate in agriculture; 10) Food insecurity experience scale (FIES); and 11) Secure tenure rights to land.

Source: FAO (2018[42]), "SDG Indicator 2.4.1: Proportion of Agricultural Area Under Productive and Sustainable Agriculture - Methodological Note, approved by the Inter-Agency and Expert Group on SDG indicators", http://www.fao.org/3/CA2639EN/ca2639en.pdf.

Assessing support and reforms

In 2016-18, agricultural policies in the 53 countries covered in this report provided a total of USD 705 billion (EUR 620 billion) per year on average to their agricultural sectors. About three-quarters of this support, USD 528 billion (EUR 465 billion) per year, was transferred to individual producers. At the same time, six countries, in particular Argentina and India, taxed their agricultural producers using measures that depressed the domestic price of some commodities. These implicit taxes amounted to USD 83 billion (EUR 73 billion) per year in 2016-18, which when deducted from the gross positive transfers, resulted in net transfers to agricultural producers of USD 445 billion (EUR 392 billion) and to the sector overall of USD 623 billion (EUR 548 billion) per year. While lowering the level of aggregate support, these implicit taxes also increase overall market distortions.

While there has been considerable movement towards more effective and less distorting policies, progress has stalled over the last decade and support remains unequal across countries and commodities

Many OECD countries made significant progress in reducing agricultural producer support and in shifting agricultural policies towards less distorting and sometimes better targeted measures in the 2000s. On average, the share of producer support in gross farm receipts in OECD countries declined from 30% in 2000-02 to less than 20% during the 2010s, while the share of most distorting support in gross farm receipts fell below 10%.

This progress has largely stalled in the early 2010s in OECD countries, and support has increased in some emerging economies. In 2016-18, support to producers remained unequal across countries and commodities, with some agricultural sectors relying mainly on strongly production and trade distorting measures. On average, more than 18% of gross farm receipts in OECD countries continue to originate from policies, compared to 9% on average across the emerging and developing countries covered in this report. However, these averages mask much higher dependence of farm revenues on support in some countries (up to around 50% of farm receipts originate from agricultural policies in some countries), and significant negative support in several emerging economies, notably in Argentina and India.

Overall close to 70% of all transfers to and from agricultural producers continues to originate from measures that distort farm business decisions particularly strongly. In many countries, a large part of support to producers still comes from measures that create a gap between domestic and world market prices, and potentially distort world markets. The differences in support across commodities within countries, and the co-existence of significant price support for some products with depressed prices for others, exacerbate distortions in the domestic market. Very little of the current policy mix targets agriculture productivity growth, the sustainable use of natural resources and farm resilience.

Recent policy developments are often in response to trade and market developments

In several countries, changes to agricultural policies reflect recent market developments. Some countries continued using trade and market distorting measures, notably tariffs and minimum prices, in response to fluctuations in production and market disruptions, while many countries granted payments to producers affected by price declines, natural disasters and pest and diseases, on an ad hoc basis or as part of programmes with pre-conditions for

compensation. Positive developments include changes in food safety, animal welfare, and labelling regulations to improve information to domestic and foreign consumers, as well as actions to improve the functioning of the food chain, and to reinforce sustainability in food and agriculture, notably in the context of climate change mitigation. A number of countries also introduced institutional changes to consolidate organisations and clarify roles, which should help improve the efficiency of the policy-making process and contribute to reducing policy inconsistencies. Recently concluded new and deeper free-trade agreements among key trading partners are a pragmatic step forward in a context of stalled negotiations at the multilateral level and on-going trade tensions.

Significant opportunities for the sector come with challenges to meeting them sustainably

Future growth in demand for diverse and high-quality food offers significant opportunities for agriculture and the food sector. These opportunities come, however, with a number of challenges in meeting this demand sustainably in the context of limited natural resources and the uncertain impacts of climate change. Key to meeting these challenges will be increased productivity growth, enhanced environmental performance, and improved resilience of farm households and the sector overall. For instance, while global growth in total productivity has been largely stable between the 1990s and the 2000s, it has fallen in some large exporting countries. While aggregate indicators suggest progress on several elements in the environmental footprint of the sector, including reduced nutrient balances and GHG emission intensities, environmental performance remains highly uneven across countries and, in many cases, across regions within countries. Some of the positive trends in environmental performance have slowed down, and major pressures remain at national and sub-national levels.

While the precise impacts of climate change remain uncertain, the frequency and magnitude of weather-related events are expected to increase, making greater resilience of farm households increasingly important.

Improving policy coherence and transparency is crucial to meeting future challenges and opportunities

Agricultural policies continue to provide inconsistent signals to producers. Policy incoherencies remain among policy goals, across policy domains, and between policy approaches. For example, support encouraging intensive input use and increased output may co-exist with payments for the adoption of more sustainable practices. In other cases, effective environmental regulations may simply be lacking, while some countries support renewable energy and yet provide tax concessions for fossil fuels.

Comprehensive food and agricultural strategies, giving full consideration to the mix of policies that can influence behaviour across the food value chain, are needed to improve the long-term productivity, sustainability and resilience of the sector and its capacity to respond to future challenges and opportunities.

Most distorting support undermining future productivity and sustainability improvement needs to be phased out

A key element for meeting future challenges is to remove most distorting forms of support that undermine efforts to improve agricultural productivity and sustainability, including barriers to trade that contribute to maintaining a gap between domestic and world market

prices. The importance of market price support (MPS) has declined in many countries over the past decades. Nonetheless, average MPS continues to account for a large share of gross farm receipts in several OECD countries, and has gained in importance in some Emerging Economies (EEs). The continued reliance of many countries on market price support and other potentially most distortive forms of transfers, prevents producers from responding to market signal and hence from employing natural resources, investments and other production inputs in the most efficient and sustainable way. Even within countries, highly distorting support and notably MPS differs significantly across commodities, creating additional intra-sectoral distortions by providing signals to producers that are not consistent with market requirements.

Several countries effectively tax agricultural producers by lowering domestic prices relative to world markets. Such negative MPS distorts markets and production decisions as does positive MPS. The primary objectives of taxing producers – raising fiscal revenues, supporting downstream industries and increasing the purchasing power of poor consumers – would be more efficiently achieved using less distortive and more targeted policies, including non-agricultural ones.

Policies inducing MPS suffer from being inefficient tools for reaching given policy objectives such as transferring income to producers (OECD, 2002[43]), and from having negative environmental implications (Henderson and Lankoski, 2019[22]). MPS policies may also prevent other policies to develop their full potential in achieving their objectives as they reduce incentives for agricultural producers to take up risk-reducing or environmentally beneficial production methods, and discourage the development of market-based risk management tools.

Market price support is generated by a variety of policy measures both at the domestic and border levels. While the measured transfers are useful to track differences in support across time and space, it is important to recognise that the multiplicity of policies, in addition to creating the measured price gaps, often also reduces market responsiveness and transparency on the way they impact on markets.

As a first step towards targeting policy measures to specific objectives and reducing negative externalities, both positive and negative market price support as well as other potentially most distorting forms of support need to be reduced and eventually eliminated. Governments should give priority to reducing price policy measures for those commodities where MPS is particularly important, be it strongly positive or strongly negative, in particular the most opaque measures.

Governments should prioritise investment in general services that enable productivity and sustainable agricultural development

Public intervention is particularly important in areas where markets fail to provide socially optimal incentives. A key area is the provision of fundamental services to the agricultural sector, as these tend to be undersupplied by private agents.

Innovation is key to productivity and sustainability improvements in agriculture, but public support to R&D and innovation accounts for a small share of total support to the sector — about 4% on average. Governments should provide stable and sufficient funding for agricultural innovation systems, notably in areas under-supplied by the private sector. Improved governance and funding mechanisms should make agricultural innovation systems more responsive to needs and generate outcomes more widely taken up by the industry. Government strategies should also focus public funding in areas that complement

rather than substitute private efforts and facilitate collaboration between private and public actors in the fields of research and development, and strengthen linkages between innovation actors, including researchers, advisors, and farmers. International co-operation in research allows national specialisation and benefits from knowledge spillovers, and improves capacity to respond to global or regional challenges.

Another area where public investments are important is physical and knowledge infrastructure, ranging from rural, national and international transportation systems to the provision of information and communication, in particular digital, technologies. Infrastructure is vital to the delivery of, and access to, other services, too, and are important for connecting producers to markets and knowledge. Investments in biosecurity, animal and plant health that create and maintain incentives for producers' own prevention measures are also key. Sufficiently funded systems adapted to national needs, and efficient inspection services, can reduce the risk of pest and disease outbreaks that could damage agricultural industries, and open and maintain access to valuable export markets.

While public expenditures for general services to agriculture have generally increased in real terms in emerging and developing economies since the early 2000s, support generally has not kept pace with the growing size of agricultural sectors, and has decreased in real terms across the OECD area. However, expenditures on agricultural innovation systems have increased on average and in most countries both in the OECD and beyond. Expenditures on infrastructure have significantly increased across most emerging and developing economies, but have declined in several OECD countries and the OECD overall.

Public efforts in the provision of general services should be adapted to national conditions. Continued and increased infrastructure investments may be required particularly in some of the exporting emerging economies where the connections to international markets have not kept pace with growth in exportable production. Digital infrastructure, together with biosecurity efforts, are likely to become more important still in the context of changing climates and related threats and uncertainties. Countries should therefore shift the focus of agricultural support towards key general services where there is a net benefit for the society from doing so.

There is ample scope to improve policy efficiency by targeting producer support to sector goals

As a general principle, policy interventions are most effective and efficient if they target a specific problem at hand. There is significant scope to improve the targeting of producer support, and to reorient budget efforts towards payments that target well defined and measurable objectives for the sector, as well as broader societal objectives. In a small number of OECD countries, payments tied to specific production practices, or associated with mandatory or voluntary agri-environmental constraints, account for a significant share of gross farm receipts. In further countries, they are increasing as a share of producer support, albeit from a low base. Their use reflects the growing importance of societal concerns about the environmental performance of farming or animal welfare, and the expectation that agriculture will provide various public goods, such as the maintenance of agricultural landscapes and biodiversity. Such payments are a more effective instrument for achieving policy objectives if they target the intended beneficiaries and specific investments where market failures prevent an efficient allocation of resources (such as those addressing agriculture's environmental externalities and public goods). A limited number of countries use support associated with mandatory or voluntary constraints to a

significant extent. On average, this support accounted for 20% of producer support in 2016-18, while support with voluntary constraints accounted for only 4% of producer support.

Progress towards improved targeting has been limited and most tax-financed support to producers remains largely provided via payments that are untargeted to beneficiaries or outcomes, without consideration of specific needs or objectives. To the extent some of this support ends up in areas where it is not needed, its effectiveness is reduced. This includes direct payments based on area, animal numbers, farm receipts or farm income, which are increasing in the OECD countries, as well as payments based on outputs and on variable inputs without constraints.

These payments are often used to support farm incomes. However, farm income support often privileges large farms if linked to historical production data. Governments should therefore **identify and target the market failures that lead to persistent low incomes** in agriculture. A better understanding of the financial situation of farm households is essential in order to design appropriate policy responses, depending on the scope of the problem. For example, a territorial, bottom-up approach to rural development may be more effective than a sectoral policy. The general social security system in OECD countries can be adapted to provide an income safety net for farm households. The specific needs of small, semi-subsistence farmers require using a wider range of policy approaches than agricultural policy.

In the area of risk management, **government support should focus only on managing catastrophic risks for which private solutions cannot be developed**. Care should be taken that public support does not crowd out private solutions based on market tools. Disaster assistance criteria should adapt to changing temperatures and precipitation patterns that may characterise the new "normal" due to climate change, keeping farmers' incentives to increase self-reliance and improve preparedness. Care should also be taken that programmes do not over compensate producers, or lead them to adopt risky and unsustainable practices. Current support systems for risk management tools involve a large range of insurance and stabilisation schemes, as well as ad hoc assistance in response to extreme weather events. This can blur the borders between the normal business risks, medium-size marketable risks and those of catastrophic nature, reducing incentives for on-farm or market-based risk management options.

The **provision of non-market goods and services sought by society** often require government action. Payments to producers should target for instance the adoption of technologies and practices able to improve environmental performance and animal welfare, or to address other societal concerns. Tailoring the payments requires information on both the size of the problem at hand and the marginal costs of reducing it. Such information may not always be readily available or prohibitively costly to obtain. However, both appropriate proxies (often already applied for objectives related to natural resources) and the improvements in data availability that come with modern information technology should help to overcome such shortcomings. **Payments should also be conditional on delivery of the outcomes and public goods demanded** by society. Current cross-compliance requirements could be made mandatory, to provide a baseline for delivering new and more ambitious public good and environmental outcomes linked to support payments.

More efforts are needed to monitor and evaluate the environmental implications of agricultural support policies

Agricultural support policies often have multiple objectives, and may in fact not be primarily directed at improving the environmental impact of agriculture. Nevertheless, the

evidence shows that they can affect the environmental performance of agriculture, for example by influencing farmers' decisions about use of inputs, choice of outputs, or whether to remain in farming.

Recent OECD work evaluating the environmental impacts of agricultural policies allows understanding how different kinds of support differ in their environmental impacts. The OECD agri-environmental indicators also monitor key environmental pressures from agriculture and related internationally-comparable data and analysis, there are several opportunities to deepen the analysis; particularly to take into account variations at the sub-national level, and to assess the impacts of specific policy packages implemented by different countries. However, to achieve such deeper analysis, several data and knowledge gaps remain.

Further efforts are needed to close data gaps and improve data resolution and quality. Some existing OECD AEIs have poor coverage, which impedes comparability across countries and also efforts to link specific policies to environmental outcomes; particularly important gaps are observed in biodiversity, soil erosion and water-related indicators. The quality of some existing AEIs, such as nutrient balances and pesticides, needs to be improved to better assess environmental pressures and outcomes of agricultural activities. Some currently developed indicators on biodiversity, such as the Biodiversity Habitat Index, are too complex to be used for policy monitoring. The development of indicators needs to be **co-ordinated between researchers and policy makers** to potentiate their use and impact.

Developing analysis that accounts for heterogeneity and linkages between environmental and other impacts would help design more effective policies. There is a need more generally for **more granular data and analysis** of how environmental impacts of agricultural policies differ across different contexts. Examples include greater spatial resolution, more data at the farm- or even field-level, data identifying specific agricultural policy instruments, etc. Developing consistent datasets (including agri-environmental indicators) at the regional level can help to identify 'hot spots' of environmental pressures from agriculture. There is a need for **more studies to consider both economic and environmental impacts at once**, in order to gain more evidence on the potential for complementarities or trade-offs between productivity and sustainability objectives. To improve understanding of how agricultural policies affect agricultural sustainability holistically (i.e. taking into account environmental, economic and social aspects of sustainability), there is a **need to develop holistic indicators** and related analysis. The OECD commenced work on developing holistic green growth indicators for agriculture (OECD, 2014[44]), but more work is needed. The OECD and others are working towards establishing agreed methodologies for environmentally-adjusted total factor productivity and sustainable productivity indicators. In order to **isolate the influence of policies** vis-à-vis other factors, there is a need for an improved understanding of biological and economic processes which determine how farmer decision-making affects, and is affected by, environmental outcomes.

In conclusion, while progress is evident is some areas, greater efforts are needed to align agricultural policies with emerging needs of the sector. There is scope for improvement through improved policy coherence, reduced distortions and stronger focus on general services that facilitate a more productive and sustainable development of the sector ensuring long-temps competitiveness.

Notes

[1] Kazakhstan, Ukraine, and Viet Nam also have negative PSE, but small enough not to significantly affect %PSE for emerging and developing countries.

[2] Value added is the value of the gross output of producers less the value of intermediate goods and services consumed in production, before accounting for consumption of fixed capital in production (World Bank, 2019[45]).

[3] Labour productivity is defined as the value of output per farm worker.

[4] Water use refers to water abstraction. Water consumption is the fraction of water used that is not returned to the water system. Some technologies such as pressurised irrigation systems can decrease water use but increase water consumption by the plants (OECD, 2016[46]).

[5] Water stress is defined as the fraction of total freshwater abstractions to total renewable water resources in a country.

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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 Annex 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.

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 farm 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 cumulated 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 phyto-sanitary 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.

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 the *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 (http://www.oecd.org/tad/agricultural-policies/psemanual.htm).

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
PEM	Policy Evaluation Model
PSE	Producer Support Estimate
SCT	Single Commodity Transfers
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
INR	Indian rupee
ILS	Israeli shekel
ISK	Icelandic krona
JPY	Japanese yen
KRW	Korean wong
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

Part I. Developments in Agricultural Policy and Support by Country

This part contains an overview of the developments of support in the OECD area and selected Emerging Economies overall, followed by 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 and related assessments and recommendations; information on the context in which agricultural policies are implemented; and a description of the main policy developments in 2018-19.

Chapter 2. Overall trends in agricultural support

OECD Countries

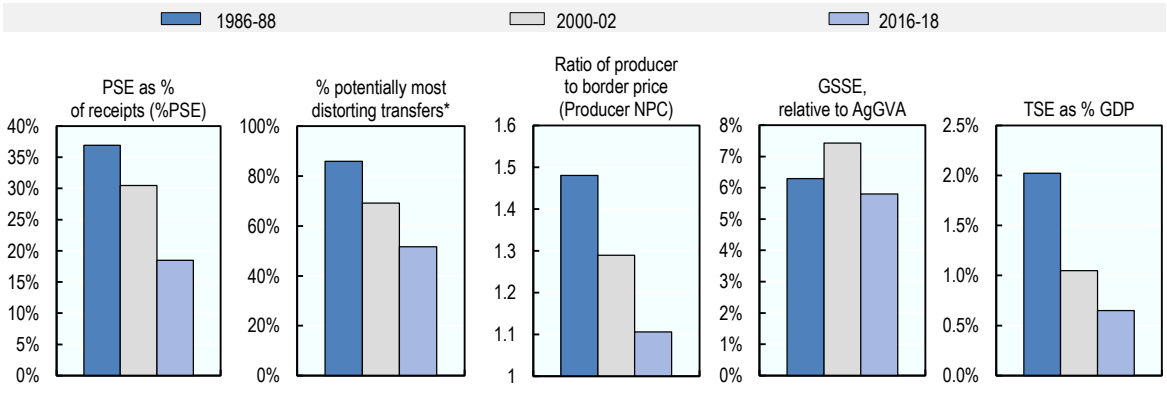
The total support to agriculture (TSE) provided in OECD countries represented USD 325 billion (EUR 286 billion) per year on average in 2016-18 of which 72%, or USD 235 billion (EUR 207 billion), was provided as support to producers individually (PSE). Producer support represented 18.5% of gross farm receipts (%PSE) in 2016-18 across the OECD area, a decline from around 30% in 2000-02 (Table 2.1).

The way support is delivered to producers has also evolved. In particular, the development in support to agriculture in the OECD area is characterised by the long-term decline of support based on commodity output (including market price support and output payments). OECD work has identified this form of support as having the strongest potential to distort agricultural production and trade, together with the payments based on the unconstrained use of variable inputs, which has slightly increased across OECD countries compared to the beginning of the millennium.

At the other end of the spectrum in the PSE classification, some countries also apply less distorting forms of support, such as payments based on parameters that are not linked to current production or based on non-commodity criteria such as land set aside or payments for specific environmental or animal welfare outcomes. Most notably, payments based on historical entitlements (generally crop area or livestock numbers of a given reference year in the past) have increased significantly in many OECD countries in the last two decades, representing close to 4% of gross farm receipts and more than a fifth of the PSE during 2016-18. Payments based on current crop area and animal numbers remain almost unchanged compared to 2000-02 and represent currently around 18% of total producer support (Table 2.1).

The expenditures financing general services to the sector (GSSE) increased (in nominal terms) in the OECD area from USD 36 billion per year in 2000-02 to USD 43 billion in 2016-18. Most of these expenditures in 2016-18 go to the financing of infrastructure (USD 18.4 billion), recording a slight increase compared to 2000-02, while the expenditures for agricultural knowledge and innovation (USD 13 billion) have increased by 60%. Expenditures for inspection and control services almost doubled, while spending for marketing and promotion activities and public stockholding declined over the same period (the reduction of spending on public stockholding being more substantial that on marketing and promotion), but all of these represented smaller shares of the GSSE expenditure (Table 2.1).

Figure 2.1. OECD: Development of support to agriculture

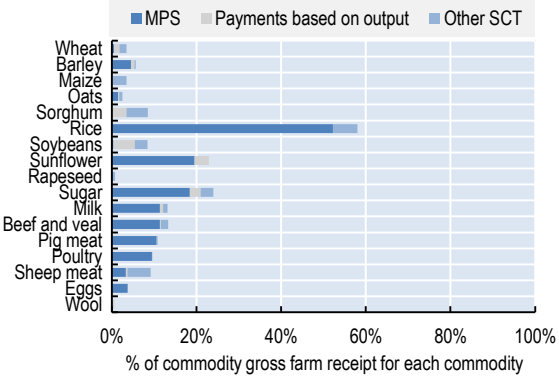


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933936332

Support to producers in the OECD area as a share of gross farm receipts **(%PSE)** has declined gradually over the long term. In 2016-18, support has been around 18% of gross farm receipts. The share of potentially **most distorting support** has decreased over time mainly due to a reduction in market price support (MPS) (Figure 2.1 and Table 2.1). Effective prices received by producers, on average, were 11% higher than world prices; large differences between commodities persist with domestic prices for rice being more than a double of the world price, prices for sunflower 30%, sugar 28%, milk 14% and beef 13% above world prices in 2016-18. In 2018, the level of producer support has increased due mainly to higher budgetary payments and, to a lesser extent, increased MPS. Overall, in the OECD area, Single Commodity Transfers (SCT) represented 54% of the total PSE during 2016-18. Rice, sugar, sunflower, milk, beef and veal had the highest share of SCT in commodity gross farm receipts, with MPS representing the main component of SCTs for most commodities (Figure 2.2). The relative expenditures for **general services** (GSSE), mainly on knowledge and infrastructure, have declined steadily as agriculture value added has grown more rapidly. **Total support to agriculture** as a share of GDP has declined significantly over time. About 70% of this support is provided to individual producers (PSE).

Figure 2.2. OECD: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933936351

Table 2.1. OECD: Estimates of support to agriculture (USD)

Million USD

	1986-88	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**594 049**	**660 886**	**1 143 394**	**1 116 966**	**1 166 052**	**1 147 164**
***of which:** share of MPS commodities (%)*	71.9	68.6	68.0	67.9	68.3	67.9
Total value of consumption (at farm gate)	**549 077**	**641 649**	**1 012 329**	**974 630**	**1 014 257**	**1 048 099**
Producer Support Estimate (PSE)	**239 900**	**229 804**	**235 395**	**231 010**	**228 488**	**246 687**
Support based on commodity output	196 954	151 024	112 151	107 675	107 134	121 643
Market Price Support[1]	184 356	136 071	105 896	103 918	103 440	110 330
Positive Market Price Support	188 327	136 659	106 169	104 266	103 762	110 477
Negative Market Price Support	-3 972	-588	-273	-349	-323	-147
Payments based on output	12 599	14 953	6 255	3 757	3 694	11 313
Payments based on input use	19 578	19 428	27 532	26 412	26 601	29 582
Based on variable input use	9 153	7 955	9 840	9 440	9 694	10 384
with input constraints	1 146	305	687	707	688	667
Based on fixed capital formation	6 882	5 063	9 748	9 134	9 290	10 819
with input constraints	1 638	625	2 673	2 653	2 536	2 830
Based on on-farm services	3 543	6 410	7 945	7 838	7 617	8 379
with input constraints	439	959	1 543	1 483	1 497	1 649
Payments based on current A/An/R/I, production required	19 377	42 516	42 092	40 244	43 323	42 708
Based on Receipts / Income	2 052	3 173	3 782	3 686	3 512	4 148
Based on Area planted / Animal numbers	17 325	39 343	38 310	36 558	39 811	38 560
with input constraints	4 093	18 032	30 062	28 208	30 931	31 047
Payments based on non-current A/An/R/I, production required	533	71	2 323	2 582	2 014	2 372
Payments based on non-current A/An/R/I, production not required	2 080	13 721	47 107	49 688	45 592	46 041
With variable payment rates	181	4 318	4 473	7 376	3 034	3 009
with commodity exceptions	0	4 079	4 319	7 224	2 880	2 852
With fixed payment rates	1 899	9 403	42 634	42 312	42 558	43 032
with commodity exceptions	1 561	6 081	2 601	2 672	2 574	2 557
Payments based on non-commodity criteria	1 078	3 205	3 664	3 581	3 483	3 928
Based on long-term resource retirement	1 076	2 900	2 346	2 385	2 204	2 449
Based on a specific non-commodity output	2	237	1 245	1 123	1 208	1 405
Based on other non-commodity criteria	0	68	73	74	72	74
Miscellaneous payments	300	-160	527	828	340	412
Percentage PSE (%)	**36.9**	**30.5**	**18.5**	**18.6**	**17.7**	**19.2**
Producer NPC (coeff.)	**1.48**	**1.29**	**1.11**	**1.11**	**1.10**	**1.12**
Producer NAC (coeff.)	**1.59**	**1.44**	**1.23**	**1.23**	**1.22**	**1.24**
General Services Support Estimate (GSSE)	**25 594**	**36 399**	**42 583**	**42 611**	**43 598**	**41 540**
Agricultural knowledge and innovation system	4 872	7 959	13 058	12 722	12 951	13 501
Inspection and control	1 076	1 919	3 822	3 747	3 896	3 823
Development and maintenance of infrastructure	10 223	16 297	18 366	18 866	19 354	16 880
Marketing and promotion	2 156	5 570	4 795	4 843	4 743	4 801
Cost of public stockholding	5 872	2 282	575	466	687	572
Miscellaneous	1 395	2 371	1 966	1 968	1 968	1 963
Percentage GSSE (% of TSE)	**9.0**	**12.6**	**13.1**	**13.3**	**13.7**	**12.4**
Consumer Support Estimate (CSE)	**-160 067**	**-129 166**	**-78 330**	**-73 988**	**-75 221**	**-85 779**
Transfers to producers from consumers	-169 134	-134 346	-99 984	-97 603	-97 540	-104 811
Other transfers from consumers	-22 308	-18 987	-26 574	-25 151	-25 952	-28 620
Transfers to consumers from taxpayers	19 956	23 580	47 230	47 598	47 140	46 952
Excess feed cost	11 420	586	999	1 168	1 130	699
Percentage CSE (%)	**-30.3**	**-20.9**	**-8.1**	**-8.0**	**-7.8**	**-8.6**
Consumer NPC (coeff.)	**1.54**	**1.31**	**1.14**	**1.14**	**1.14**	**1.15**
Consumer NAC (coeff.)	**1.43**	**1.26**	**1.09**	**1.09**	**1.08**	**1.09**
Total Support Estimate (TSE)	**285 450**	**289 783**	**325 208**	**321 219**	**319 227**	**335 179**
Transfers from consumers	191 442	153 333	126 559	122 754	123 491	133 431
Transfers from taxpayers	116 316	155 437	225 224	223 616	221 687	230 368
Budget revenues	-22 308	-18 987	-26 574	-25 151	-25 952	-28 620
Percentage TSE (% of GDP)	**2.0**	**1.0**	**0.6**	**0.7**	**0.6**	**0.6**
Total Budgetary Support Estimate (TBSE)	**101 095**	**153 712**	**219 312**	**217 301**	**215 787**	**224 849**
Percentage TBSE (% of GDP)	**0.7**	**0.6**	**0.4**	**0.5**	**0.4**	**0.4**

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 countries except Chile, Israel, Latvia, Lithuania and Slovenia, for which data are not available. The OECD total for 2000-02 includes all 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 (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Emerging Economies

The total support to agriculture (TSE) provided in the Emerging Economies[1] represented USD 292 billion (EUR 257 billion) per year on average in 2016-18 of which 70% or USD 205 billion (EUR 180 billion) were provided as support to producers (PSE). Expressed as a share of gross farm receipts (%PSE), aggregate support to producers represented 9% in 2016-18 on average across the Emerging Economies, a substantial increase from 3.7% in 2002-02 (Table 2.2). While the aggregate %PSE remains well below that of the OECD area, this is partly related to the large negative MPS in a few countries, worth USD 83 billion (EUR 72 billion) per year. This means that support to producers and the sector in other countries has been correspondingly higher than suggested by aggregate indicators.

The share of transfers based on output (accounting for both positive and negative MPS and output-based payments) and input use in total producer support has increased. The transfers based on output have been identified as having the strongest potential to distort agricultural production and trade, together with the payments based on the unconstrained use of variable inputs. The average share of gross producer transfers (whether positive or negative, in absolute terms) arising from those potentially most production and trade distorting measures has slightly declined in the Emerging Economies, but at around 80% stays well above the OECD average.

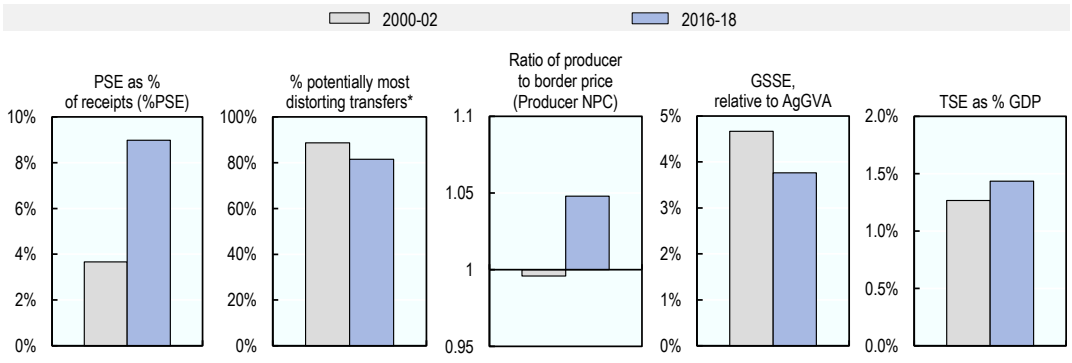
Among the remaining forms of producer support, the most important are payments based on other input use (mainly fixed capital formation) and payments to areas planted and animal numbers. Across the Emerging Economies, the payments based on areas and animal numbers were almost non-existent in 2000-02 but reached close to 16% of aggregate support to producers in 2016-18. All other forms of support to producers remain marginal (Table 2.2).

The expenditures financing general services to the sector (GSSE) in the Emerging Economies reached an annual average of USD 63 billion (EUR 55 billion) in 2016-18. Most of these expenditures went to the financing of infrastructure projects (USD 26 billion) and public stockholding (USD 19 billion), the remaining expenditures went to finance mainly agricultural knowledge and innovation (USD 13 billion) (Table 2.2).

Note

[1] The Emerging Economies included in this report include Argentina, Brazil, the People's Republic of China, Colombia, Costa Rica, India, Kazakhstan, Philippines, Russian Federation, South Africa, Ukraine and Viet Nam. The addition of Argentina and India to this report has a major impact on the aggregate support estimates compared to those reported in the 2018 edition: given the negative support found for these two countries, current aggregate estimates for the Emerging Economies and All Countries covered in this report are significantly smaller than those reported in the 2018 report. For more details, see Boxes 2.1 and 2.2.

Figure 2.3. Emerging Economies: Development of support to agriculture

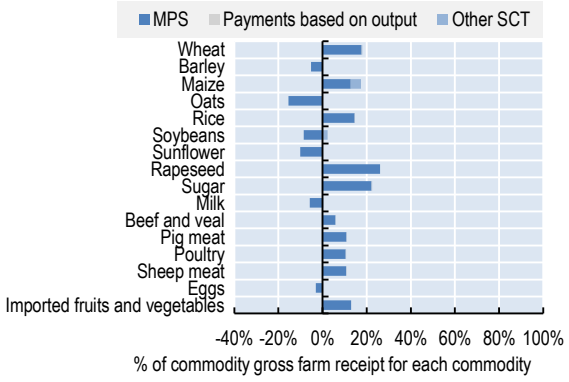


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933936370

In contrast to the OECD area, the **support to producers** in Emerging Economies has increased over the long term. In 2016-18, aggregate producer support has been around 9% of gross farm receipts, still well below the OECD average, but including both implicit taxes on producers through negative MPS, worth -3.6% of gross farm receipts, and transfers to producers worth 12.6% of gross farm receipts. The share of gross producer transfers (whether positive or negative, i.e. expressed in absolute terms) arising from potentially **most distorting** measures (support based on output and variable input use – without input constraints) has gone down only slightly and stays around 80% on average in 2016-18 (Figure 2.3). Effective prices received by producers, on average, were 5% higher than world prices. This average figure hides large differences across countries and commodities as domestic prices stand below world market levels in a range of markets. In 2018, the level of support has increased mainly due to higher MPS as budgetary payments were almost unchanged. Overall, Single Commodity Transfers (SCT) on average represented above 60% of the total PSE during 2016-18. Rapeseed, sugar, wheat maize and rice, had the highest share of SCT in commodity gross farm receipts, while SCTs were negative for barley, oats, oilseeds and milk. Aggregate MPS is the main component of the SCTs in most cases (Figure 2.4). On average, the expenditures for **general services** (GSSE), relative to agriculture value added were below the OECD average. Aggregate **total support to agriculture** as a share of GDP has increased over time, mainly driven by the increase of producer support, which was about 84% of the total support.

Figure 2.4. Emerging Economies: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933936389

Table 2.2. Emerging Economies: Estimates of support to agriculture (USD)

Million USD

	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**513 586**	**2 168 874**	**2 123 417**	**2 167 476**	**2 215 729**
***of which:** share of MPS commodities (%)*	73.1	77.0	78.4	76.6	75.9
Total value of consumption (at farm gate)	**509 085**	**2 092 861**	**2 007 234**	**2 113 333**	**2 158 016**
Producer Support Estimate (PSE)	**19 571**	**204 710**	**217 935**	**206 653**	**189 543**
Support based on commodity output	232	99 999	123 363	99 132	77 502
Market Price Support[1]	-184	94 738	118 204	93 914	72 097
Positive Market Price Support	24 451	177 416	190 485	174 310	167 454
Negative Market Price Support	-24 635	-82 678	-72 281	-80 396	-95 357
Payments based on output	416	5 260	5 158	5 218	5 405
Payments based on input use	17 406	60 258	56 493	64 001	60 281
Based on variable input use	11 589	37 330	32 356	41 274	38 362
with input constraints	37	1 052	1 668	1 119	370
Based on fixed capital formation	4 423	19 515	20 425	19 462	18 659
with input constraints	4	1 007	1 337	1 063	623
Based on on-farm services	1 393	3 413	3 713	3 265	3 261
with input constraints	8	16	21	18	8
Payments based on current A/An/R/I, production required	802	31 804	29 475	30 868	35 068
Based on Receipts / Income	802	5 049	3 878	5 732	5 536
Based on Area planted / Animal numbers	0	26 755	25 597	25 136	29 532
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	9 709	5 576	9 642	13 910
With variable payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
With fixed payment rates	370	9 709	5 576	9 642	13 910
with commodity exceptions	0	0	0	0	0
Payments based on non-commodity criteria	459	2 405	2 673	2 351	2 191
Based on long-term resource retirement	459	2 405	2 673	2 351	2 191
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	302	535	355	659	591
Percentage PSE (%)	**3.7**	**9.0**	**9.8**	**9.1**	**8.1**
Producer NPC (coeff.)	**1.00**	**1.05**	**1.06**	**1.05**	**1.04**
Producer NAC (coeff.)	**1.04**	**1.10**	**1.11**	**1.10**	**1.09**
General Services Support Estimate (GSSE)	**18 533**	**62 616**	**60 091**	**64 016**	**63 739**
Agricultural knowledge and innovation system	2 996	13 059	12 817	13 297	13 063
Inspection and control	786	3 397	3 238	3 487	3 466
Development and maintenance of infrastructure	6 748	26 167	24 559	26 139	27 803
Marketing and promotion	29	719	776	720	662
Cost of public stockholding	7 870	19 010	18 368	20 122	18 539
Miscellaneous	104	263	332	252	206
Percentage GSSE (% of TSE)	**43.6**	**21.4**	**20.2**	**21.6**	**22.6**
Consumer Support Estimate (CSE)	**3 323**	**-82 893**	**-106 670**	**-80 595**	**-61 413**
Transfers to producers from consumers	109	-94 346	-115 361	-92 616	-75 060
Other transfers from consumers	-2 764	-21 001	-19 890	-20 486	-22 627
Transfers to consumers from taxpayers	4 432	24 685	20 033	25 450	28 573
Excess feed cost	1 546	7 769	8 548	7 057	7 702
Percentage CSE (%)	**0.7**	**-4.0**	**-5.4**	**-3.9**	**-2.9**
Consumer NPC (coeff.)	**1.01**	**1.06**	**1.07**	**1.06**	**1.05**
Consumer NAC (coeff.)	**0.99**	**1.04**	**1.06**	**1.04**	**1.03**
Total Support Estimate (TSE)	**42 537**	**292 011**	**298 060**	**296 119**	**281 855**
Transfers from consumers	2 655	115 347	135 251	113 102	97 687
Transfers from taxpayers	42 646	197 665	182 699	203 503	206 795
Budget revenues	-2 764	-21 001	-19 890	-20 486	-22 627
Percentage TSE (% of GDP)	**1.3**	**1.4**	**1.6**	**1.4**	**1.3**
Total Budgetary Support Estimate (TBSE)	**42 720**	**197 273**	**179 856**	**202 205**	**209 758**
Percentage TBSE (% of GDP)	**1.3**	**1.0**	**1.0**	**1.0**	**1.0**

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, Colombia, Costa Rica, India, 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.

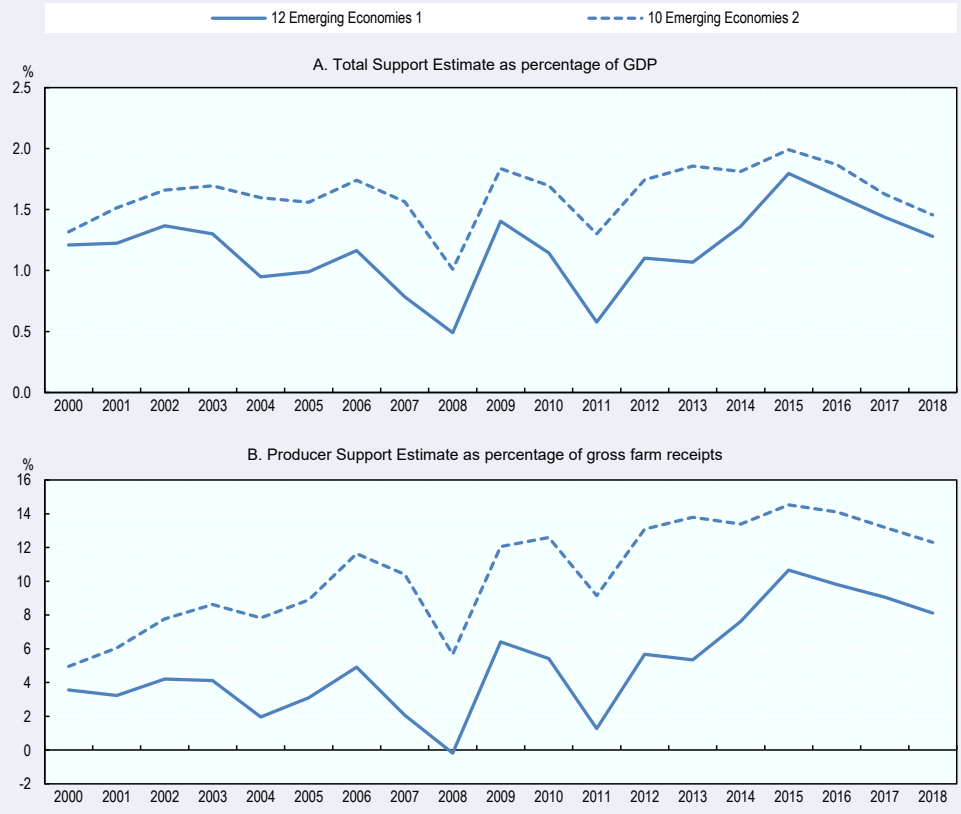
Source: OECD (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Box 2.1. The effect of adding Argentina and India in the Emerging Economies aggregate

This edition of the OECD Agricultural Policy Monitoring and Evaluation has expanded its coverage by adding Argentina and India. Country coverage has been extended frequently in the past, but the addition of Argentina and India is particular as both countries implicitly tax their producers through significant levels of negative market price support, in contrast to most of the other countries covered. This particularity is amplified by the fact that these countries are large agricultural producers, and their estimated levels of support therefore has an important weight in the aggregate indicators.

Adding Argentina and India reduces the aggregate Total Support Estimate (relative to GDP: %TSE) for the Emerging Economies by some 0.5 percentage points on average between 2000 and 2018, with a smaller effect of about 0.2 percentage points for the 2016-18 period. In 2016-18, the TSE for the Emerging Economies is estimated at 1.4% of the combined GDP of these 12 countries; without Argentina and India, it would account for more than 1.6% of the remaining Emerging Economies' GDP (Figure 2.5). The effect is even more visible for the aggregate Producer Support Estimate (relative to gross farm receipts: %PSE), which, for the Emerging Economies is reduced by more than 4.5 percentage points on average since 2000. During 2016-18, the percentage PSE, now estimated at 9.0% of gross farm receipts, would stand at 13.2% without these two countries.

Figure 2.5. The impact of adding Argentina and India to this report: Main indicators for the Emerging Economies aggregate, 2000 to 2018



Notes: 1. The 12 Emerging Economies include Argentina, Brazil, China, Colombia, Costa Rica, India, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam.
2. The 10 Emerging Economies include Brazil, China, Colombia, Costa Rica, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam.
Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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All countries

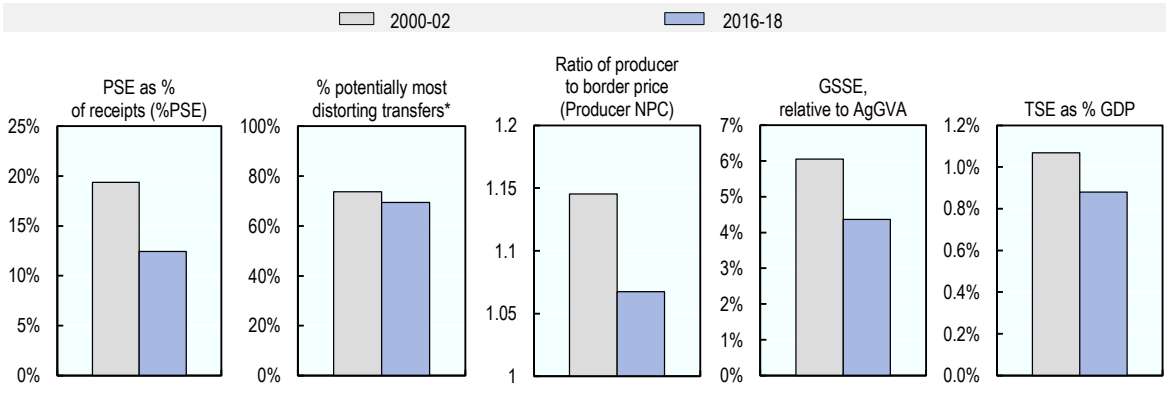
The total support to agriculture (TSE) provided in all countries covered in this report represented USD 623 billion (EUR 548 billion) per year on average in 2016-18 of which around 70% or USD 445 billion (EUR 392 billion) were provided as support to producers (PSE). Given the significant negative elements in market price support that are estimated for some of the emerging economies, gross transfers are significantly larger than that. Expressed as a share on gross farm receipts (%PSE), aggregate support to producers represented 12.4% in 2016-18 on average for all countries covered, a reduction from 19.4% in 2000-02 (Table 2.3).

The changes of the structure of support related to all countries in the report, in the period from 2000-02 to 2016-18, were relatively moderate. The share of the potentially most distorting forms of transfers (based on output or based on unconstrained use of variable inputs) has declined slightly, but these policies continue to represent around 70% of gross producer transfers across all countries (whether positive or negative, in absolute terms). Transfers based on output are shrinking but those based on unconstrained input use have increased.

Among the remaining forms of support to producers, the most important are payments based on areas planted and animal numbers (17% of all producer support), and payments based on historical parameters not requiring production. The importance of these latter payments, which are decoupled from current production and hence much less production and trade distorting, has increased significantly and today represents 13% of all producer support (Table 2.3).

Across all countries covered in this report, the expenditures financing general services to the sector (GSSE) reached an annual average of USD 105 billion (EUR 92 billion) in 2016-18. Most of these expenditures went to the financing of infrastructure projects (USD 45 billion), agricultural knowledge and innovation (USD 26 billion) and public stockholding (USD 20 billion) (Table 2.3).

Figure 2.6. All countries: Development of support to agriculture

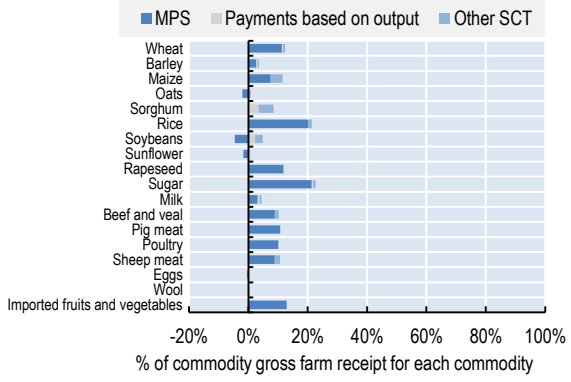


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Support to producers (%PSE), when measured for all countries in the report, has declined between 2000-02 and 2016-18 and is currently around 12% of gross farm receipts. The share of gross producer transfers (whether positive or negative, i.e. expressed in absolute terms) arising from potentially **most distorting** measures (support based on output and variable input use – without input constraints) remains almost unchanged and stays around 70% in 2016-18 (Figure 2.6). Effective prices received by producers, on average, were 7% higher than world prices; larger price gaps are recorded for rice and sugar. In 2018, the level of support has increased mainly due to higher MPS, and to a lesser extent to a rise of total budgetary payments. Overall, Single Commodity Transfers (SCT) represented above 60% of the total PSE during 2016-18. Rice and sugar had the highest share of SCT in commodity gross farm receipts (Figure 2.7). MPS is the main component of the SCTs in most cases. On average, the relative expenditures for **general services** (GSSE), mainly on infrastructure, knowledge and public stockholding, have declined as agriculture value added has grown more rapidly. **Total support to agriculture** as a share of GDP has declined slightly over time, mainly driven by the smaller relative size of the sector within the overall economies.

Figure 2.7. All countries: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933936446

Table 2.3. All countries: Estimates of support to agriculture (USD)

Million USD

	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**1 174 471**	**3 337 490**	**3 262 461**	**3 358 394**	**3 391 616**
***of which:** share of MPS commodities (%)*	69.3	74.2	75.2	74.0	73.3
Total value of consumption (at farm gate)	**1 150 733**	**3 154 248**	**3 024 488**	**3 175 379**	**3 262 876**
Producer Support Estimate (PSE)	**249 376**	**445 401**	**453 749**	**440 285**	**442 170**
Support based on commodity output	151 256	212 973	231 789	207 022	200 108
Market Price Support[1]	135 887	201 186	222 608	197 841	183 108
Positive Market Price Support	161 111	284 156	295 249	278 596	278 625
Negative Market Price Support	-25 224	-82 971	-72 641	-80 755	-95 517
Payments based on output	15 369	11 787	9 181	9 181	17 000
Payments based on input use	36 834	88 143	83 199	90 921	90 309
Based on variable input use	19 544	47 216	41 848	50 997	48 804
with input constraints	342	1 741	2 376	1 809	1 038
Based on fixed capital formation	9 486	29 501	29 744	28 982	29 777
with input constraints	629	3 681	3 990	3 599	3 453
Based on on-farm services	7 803	11 426	11 607	10 942	11 728
with input constraints	967	1 559	1 504	1 515	1 658
Payments based on current A/An/R/I, production required	43 318	75 586	71 201	75 896	79 660
Based on Receipts / Income	3 975	8 839	7 568	9 256	9 694
Based on Area planted / Animal numbers	39 343	66 746	63 633	66 640	69 966
with input constraints	18 032	31 188	29 143	32 064	32 357
Payments based on non-current A/An/R/I, production required	71	2 327	2 587	2 017	2 375
Payments based on non-current A/An/R/I, production not required	14 091	59 194	57 476	57 563	62 544
With variable payment rates	4 318	4 473	7 376	3 034	3 009
with commodity exceptions	4 079	4 319	7 224	2 880	2 852
With fixed payment rates	9 773	54 721	50 100	54 529	59 535
with commodity exceptions	6 081	2 601	2 672	2 574	2 557
Payments based on non-commodity criteria	3 664	6 099	6 278	5 859	6 159
Based on long-term resource retirement	3 358	4 753	5 063	4 556	4 640
Based on a specific non-commodity output	237	1 272	1 141	1 232	1 444
Based on other non-commodity criteria	69	73	74	72	74
Miscellaneous payments	142	1 081	1 219	1 007	1 016
Percentage PSE (%)	**19.4**	**12.4**	**13.0**	**12.2**	**12.1**
Producer NPC (coeff.)	**1.15**	**1.07**	**1.08**	**1.06**	**1.06**
Producer NAC (coeff.)	**1.24**	**1.14**	**1.15**	**1.14**	**1.14**
General Services Support Estimate (GSSE)	**54 932**	**105 160**	**102 619**	**107 604**	**105 257**
Agricultural knowledge and innovation system	10 955	26 148	25 565	26 277	26 601
Inspection and control	2 705	7 219	6 985	7 383	7 288
Development and maintenance of infrastructure	23 046	44 584	43 494	45 530	44 729
Marketing and promotion	5 599	5 388	5 432	5 374	5 358
Cost of public stockholding	10 152	19 592	18 842	20 821	19 112
Miscellaneous	2 475	2 230	2 300	2 220	2 169
Percentage GSSE (% of TSE)	**16.5**	**16.9**	**16.4**	**17.3**	**16.9**
Consumer Support Estimate (CSE)	**-125 843**	**-162 848**	**-182 122**	**-157 227**	**-149 196**
Transfers to producers from consumers	-134 236	-195 999	-214 460	-191 616	-181 921
Other transfers from consumers	-21 751	-47 588	-45 067	-46 445	-51 252
Transfers to consumers from taxpayers	28 013	71 953	67 666	72 627	75 565
Excess feed cost	2 132	8 786	9 738	8 207	8 412
Percentage CSE (%)	**-11.2**	**-5.3**	**-6.2**	**-5.1**	**-4.7**
Consumer NPC (coeff.)	**1.16**	**1.08**	**1.09**	**1.08**	**1.08**
Consumer NAC (coeff.)	**1.13**	**1.06**	**1.07**	**1.05**	**1.05**
Total Support Estimate (TSE)	**332 320**	**622 514**	**624 035**	**620 516**	**622 993**
Transfers from consumers	155 987	243 587	259 527	238 061	233 173
Transfers from taxpayers	198 084	426 516	409 575	428 900	441 072
Budget revenues	-21 751	-47 588	-45 067	-46 445	-51 252
Percentage TSE (% of GDP)	**1.1**	**0.9**	**0.9**	**0.9**	**0.8**
Total Budgetary Support Estimate (TBSE)	**196 432**	**421 329**	**401 427**	**422 675**	**439 884**
Percentage TBSE (% of GDP)	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**

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, Colombia, Costa Rica, India, 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.

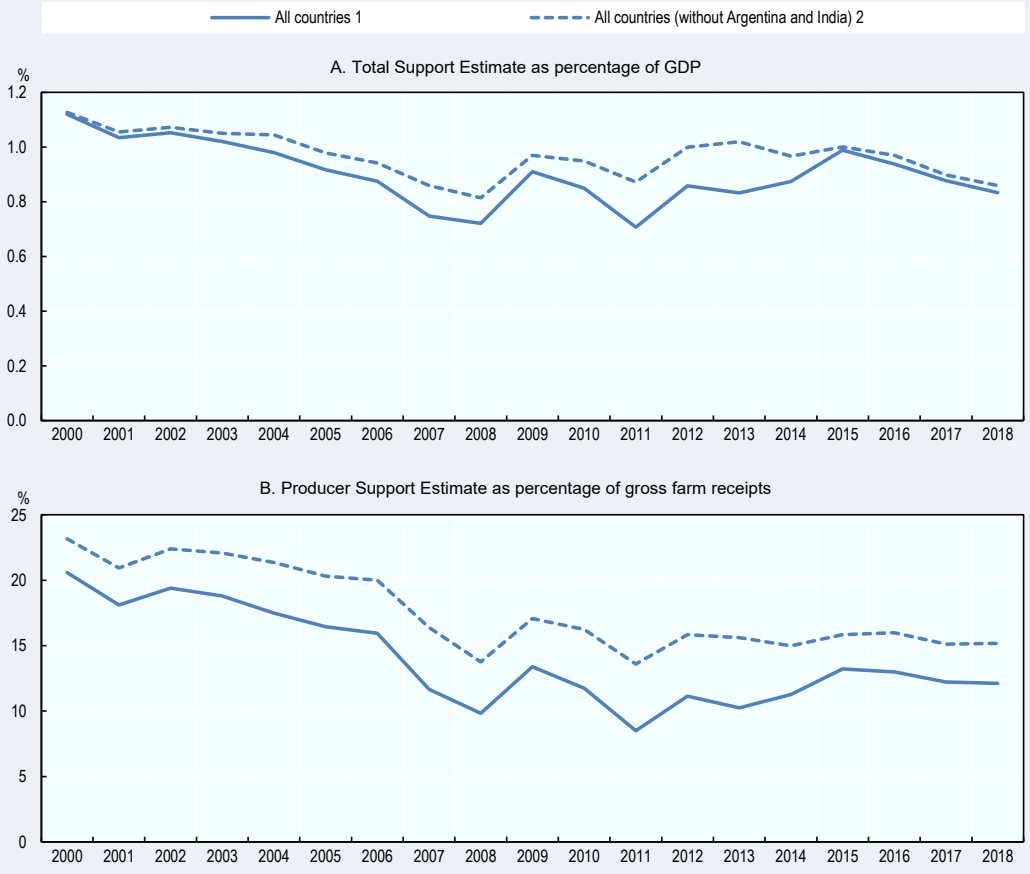
Source: OECD (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Box 2.2. The effect of adding Argentina and India in the All Countries aggregate

The addition of Argentina and India also affects the aggregate indicators across all countries in the report, albeit by less than the aggregates for the Emerging Economies. The percentage TSE is affected by less than 0.1 percentage point on average since 2000, and by a mere 0.03 percentage points during 2016-18 (0.88% for the 12 Emerging Economies covered, compared to 0.91% for the group excluding these two countries) (Figure 2.8).

The effect is, however, more noticeable for the percentage PSE which, on average for the 2000-18 period, would be almost 4 percentage points higher without Argentina and India. While the average percent PSE for All Countries covered is estimated at 12.4% of gross farm receipts during 2016-18, without these two countries it would be at 15.4% instead (Figure 2.8).

Figure 2.8. The impact of adding Argentina and India to this report: Main indicators for the All countries aggregate, 2000 to 2018



Notes: 1. The All countries total includes all OECD countries, non-OECD EU Member States, and the 12 Emerging Economies.
2. The All countries (without Argentina and India) total includes all OECD countries, non-OECD EU Member States, and the 10 Emerging Economies.
Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Chapter 3. Argentina

Support to agriculture

Argentina provides negative support to its agricultural sector mainly due to export taxes that depress domestic producer prices. Estimated producer support was negative at -15.3% of gross farm receipts in 2016-18. Budgetary payments to producers are limited and focused on input support, provided mainly in the form of credits at preferential rates.

Despite the tax burden, agricultural production and exports in Argentina have been growing due to a very dynamic and innovative private sector, and to public services, particularly for knowledge, research, extension and sanitary inspection. Most of Argentina's budgetary support to the sector goes to these general services (GSSE). However, the total budgetary support to producers and the sector overall was only 0.2% of GDP, well below the absolute value of negative market price support, making the total support estimate to agriculture (TSE) also negative representing -1.1% of GDP.

Main policy changes

Following a large depreciation of the peso, the Argentinian economy plunged into recession in 2018 and the government sought support from the International Monetary Fund (IMF). In order to achieve primary balance budget in 2019, the authorities announced a substantial fiscal consolidation. A temporary tax on all exports was established (until 31 December 2020), reversing the progressive elimination of all export taxes (other than soya) initiated in 2015. The tax will apply to all exports, not only specific agricultural products, with a rate of up to 12%. This new tax adds to the product-specific export tax rate on soybeans, which was reduced from 26% to 18%.

Among the fiscal expenditure measures, the government decided to reduce and restructure the number of its departments, and the Ministry of Agroindustry became a Secretariat of Government under the Ministry of Production and Labour. Two important strategic plans were established in 2018: the 2018-30 National Irrigation Plan to promote the integration of irrigation projects throughout the national territory, and the National Plan of Soil to promote the conservation, restoration and sustainable management of agricultural soils.

Several measures of the Secretariat of Agroindustry, together with other government departments, focused on the promotion of good sustainable agricultural practices, including on the application of plant protection products, minimum environmental protection requirements for the management of empty containers of agrochemicals and the prohibition of certain agrochemicals.

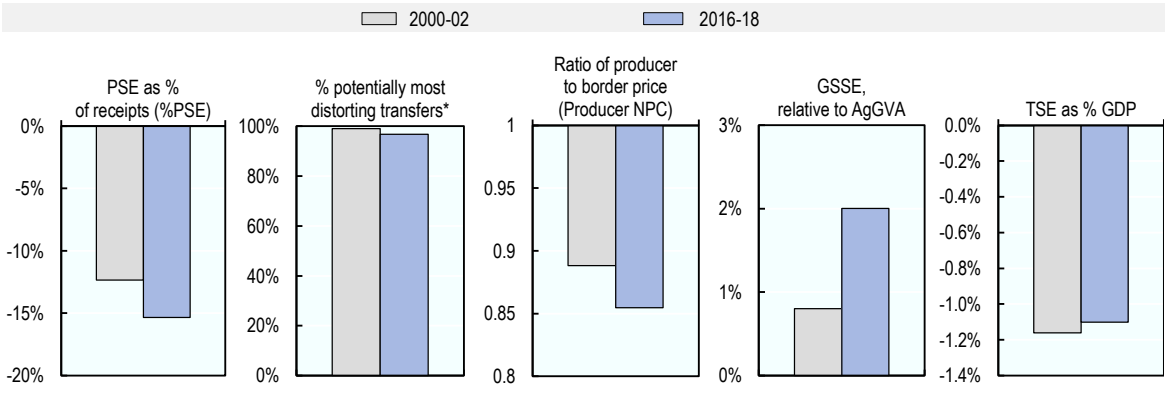
Assessment and recommendations

- Export taxes create distortions and uncertainty and their reduction since 2015 was a movement in the right direction. However, in response to the macroeconomic situation in September 2018, a new tax was established on all exports. Even if less distortive, this new tax should be phased out as foreseen in the current government

plan, integrating the sector into a reformed economy wide tax system, enhancing policy certainty with alternative sources of fiscal revenue. In the current environment, it will be crucial to find the right balance between the long-term objective of phasing out export taxes and the short term need to raise fiscal revenues.

- Agricultural policy could be better anchored in broad legislation, such as a specific framework law and an economy-wide reform of the tax system. Historically, Argentinian policies have been unpredictable and systematically biased against agriculture. The government should keep its long-term direction of gradually reversing this bias, moving towards a more neutral, stable, predictable and targeted policy package.
- Recent measures to promote and improve good and sustainable agricultural practices head in the right direction. Moving forward, in particular on pesticide use reduction, crop rotation and forest conservation, will require improving monitoring and information systems for better policy design, such as on location-specific negative externalities and hotspots from pesticide use. An independent evaluation of the Native Forest Law should analyse its effectiveness in stemming deforestation and provide guidance on how to strengthen its enforcement and contribution to climate change mitigation.
- In order to deliver the research, extension and other public goods required for future agricultural innovations, the Argentinian agricultural innovation system needs to develop systematic monitoring of efforts and results in R&D and innovation, and to define and implement strategic priorities. In this context, the role of the National Institute of Agricultural Technology (INTA) in delivering knowledge requires an in-depth evaluation of its different lines of action: research, extension and rural development. Public policies on innovation should focus on the provision of public goods in areas where the private sector has difficulties to deliver, such as related to sustainability and less developed value chains, or for regional economies outside the Pampas region.
- The Special Tobacco Fund (FET), with a budget similar to that of INTA, should be reformed. The output payments to tobacco producers should be phased out and resources used to finance a programme for the development of poor tobacco producing areas through investment on human and physical capital. The reform should include a monitoring and evaluation system of all the initiatives implemented by the provinces.

Figure 3.1. Argentina: Development of support to agriculture

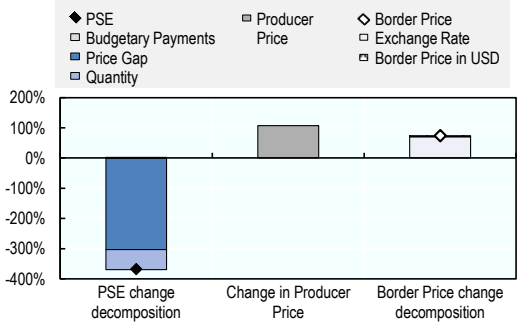


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933936484

Support to producers (%PSE) has remained negative in the last two decades at -12.3% of gross farm receipts in 2000-02 and -15.3% in 2016-18, with the most extreme negative levels occurring in 2008, reaching -51%. Negative MPS amounted to –16.9% of gross farm receipts, while the share of positive MPS and budgetary farm support remained small. As a result, 97% of the policy transfers was most distorting in 2016-18. The ratio of producer to border prices (NPC) is as low as 0.85, that is, producers prices are on average 15% below world market prices. The support to general services (GSSE) relative to agricultural value added has increased from 0.8% in 2000-02 to 2%, not enough to avoid a negative Total Support Estimates (TSE) corresponding to 1.1% of GDP in 2016-18. The %PSE changed from -9.0% in 2017 to -21.2% in 2018 due to an increase in the size of the negative price gap, mainly driven by the strong depreciation of the currency. The negative support to producers is dominated by soybeans, its main export commodity, and transfers from soybean producers to consumers and taxpayers corresponded to 38% of the commodity gross farm receipts.

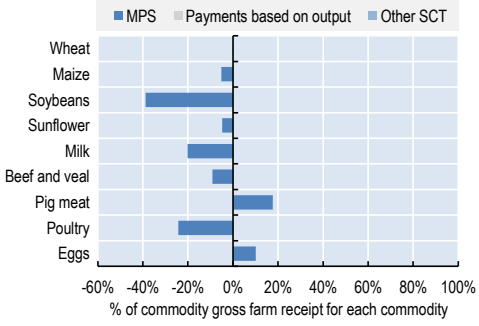
Figure 3.2. Argentina: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933936503

Figure 3.3. Argentina: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933936522

Table 3.1. Argentina: Estimates of support to agriculture

Million USD

	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**17 508**	**41 327**	**43 383**	**37 068**	**43 530**
***of which:** share of MPS commodities (%)*	83.3	88.1	86.2	88.3	89.9
Total value of consumption (at farm gate)	**8 871**	**23 408**	**23 722**	**23 632**	**22 871**
Producer Support Estimate (PSE)	**-1 120**	**-5 726**	**-4 535**	**-3 368**	**-9 275**
Support based on commodity output	-1 154	-6 002	-4 810	-3 699	-9 497
Market Price Support[1]	-1 216	-6 099	-4 919	-3 805	-9 572
Positive Market Price Support	150	316	347	389	211
Negative Market Price Support	-1 366	-6 414	-5 266	-4 194	-9 783
Payments based on output	62	97	109	106	75
Payments based on input use	34	268	265	321	217
Based on variable input use	2	17	19	21	10
with input constraints	0	0	0	0	0
Based on fixed capital formation	23	184	182	219	152
with input constraints	0	0	0	0	0
Based on on-farm services	8	67	64	81	55
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	0	9	11	10	6
Based on Receipts / Income	0	0	0	0	0
Based on Area planted / Animal numbers	0	9	11	10	6
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 (%)	**-12.3**	**-15.3**	**-10.4**	**-9.0**	**-21.2**
Producer NPC (coeff.)	**0.89**	**0.85**	**0.90**	**0.90**	**0.81**
Producer NAC (coeff.)	**0.89**	**0.87**	**0.91**	**0.92**	**0.83**
General Services Support Estimate (GSSE)	**116**	**505**	**535**	**606**	**374**
Agricultural knowledge and innovation system	66	264	276	305	210
Inspection and control	33	136	124	171	114
Development and maintenance of infrastructure	17	103	134	125	48
Marketing and promotion	0	2	1	5	2
Cost of public stockholding	0	0	0	0	0
Miscellaneous	0	0	0	0	0
Percentage GSSE (% of TSE)	**..**	**..**	**..**	**..**	**..**
Consumer Support Estimate (CSE)	**531**	**2 144**	**1 038**	**1 200**	**4 193**
Transfers to producers from consumers	558	2 445	1 286	1 485	4 564
Other transfers from consumers	-7	-5	-3	-6	-4
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	-21	-297	-244	-278	-367
Percentage CSE (%)	**13.0**	**11.1**	**4.4**	**5.1**	**18.3**
Consumer NPC (coeff.)	**0.88**	**0.89**	**0.95**	**0.94**	**0.83**
Consumer NAC (coeff.)	**0.88**	**0.90**	**0.96**	**0.95**	**0.85**
Total Support Estimate (TSE)	**-1 004**	**-5 221**	**-4 000**	**-2 762**	**-8 901**
Transfers from consumers	-552	-2 440	-1 282	-1 478	-4 560
Transfers from taxpayers	-446	-2 776	-2 714	-1 277	-4 337
Budget revenues	-7	-5	-3	-6	-4
Percentage TSE (% of GDP)	**-1.2**	**-1.1**	**-0.7**	**-0.4**	**-1.9**
Total Budgetary Support Estimate (TBSE)	**212**	**878**	**919**	**1 043**	**671**
Percentage TBSE (% of GDP)	**0.1**	**0.2**	**0.2**	**0.2**	**0.1**
GDP deflator (2000-02=100)	**100**	**2 141**	**1 648**	**2 065**	**2 711**
Exchange rate (national currency per USD)	**1.70**	**19.81**	**14.77**	**16.56**	**28.11**

.. 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 (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

Well-endowed with human capital and natural resources, Argentina is a high income country with a per capita GDP over USD 20 000. Agriculture contributes to more than 5% of GDP, but only 0.5% of employment, reflecting the high degree of mechanisation of the production of crops in the Pampas region. The country is one of the world's largest agricultural exporters, and agro-food exports have been significantly growing in the last decades, representing 48.7% of total exports in 1995, and 57.7% in 2017, almost eight times the average share across all countries in the report. In contrast, agro-food imports represent only 4.3% of total imports.

Argentina has abundant agricultural land representing 5% of the total agricultural area of all countries covered in this report, although a big share constitutes pasture land. The share of livestock in the total value of production has increased from 38% in 1995 to 46% in 2017.

Table 3.2. Argentina: Contextual indicators

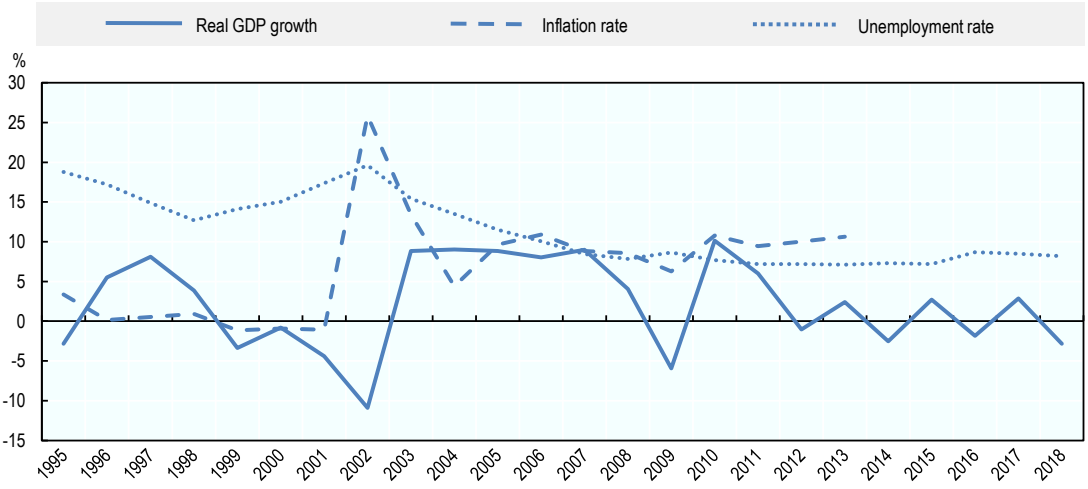
	Argentina		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	354	920	1.2%	0.9%
Population (million)	35	44	0.9%	0.9%
Land area (thousand km^2)	2 737	2 737	3.4%	3.4%
Agricultural area (AA) (thousand ha)	128 045	148 700	4.3%	5.0%
			All countries[1]	
Population density (inhabitants/km^2)	13	16	48	60
GDP per capita (USD in PPPs)	10 130	20 787	7 642	21 231
Trade as % of GDP	8	10	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	5.4	5.6	3.3	3.5
Agriculture share in employment (%)	0.6	0.5	-	-
Agro-food exports (% of total exports)	48.7	57.7	8.1	7.5
Agro-food imports (% of total imports)	5.9	4.3	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	62	54	-	-
Livestock in total agricultural production (%)	38	46	-	-
Share of arable land in AA (%)	21	26	33	34

Notes: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

After seven consecutive months of positive growth, the Argentinian economy began to stall when the peso came under pressure in April 2018. Over a period of four months the value of the peso vis-à-vis the USD was halved, plunging the economy into recession in 2018. The national statistical institute INDEC was reformed in 2016 and the quality of statistics has significantly improved, including on inflation whose series was discontinued after the IMF found Argentina in breach of its minimum reporting requirements in 2011.

The agro-food surplus was above USD 30 billion in 2017. Almost four-fifths of agro-food exports were inputs used in downstream industries abroad, whereas the much smaller bundle of agro-food imports was more equally shared between intermediary and final products.

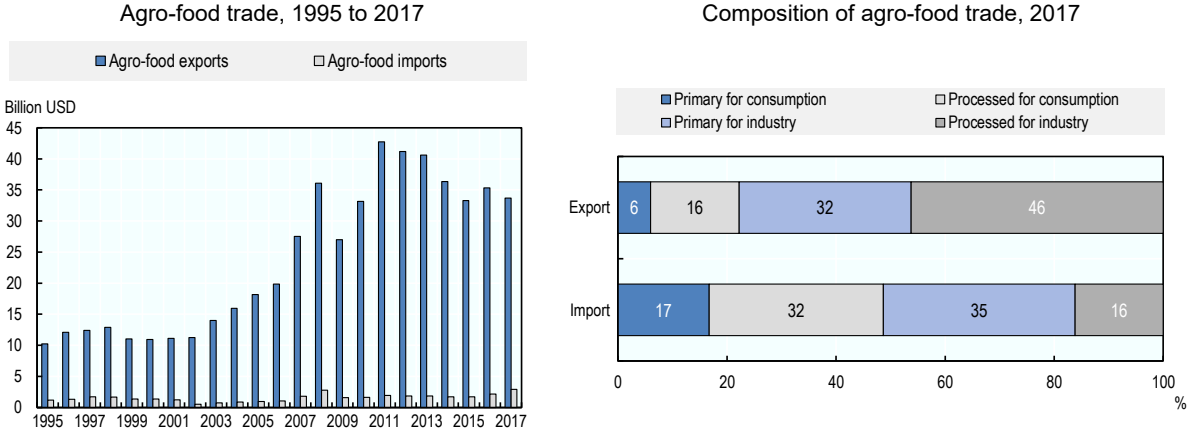
Figure 3.4. Argentina: Main economic indicators, 1995 to 2018



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

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Figure 3.5. Argentina: Agro-food trade



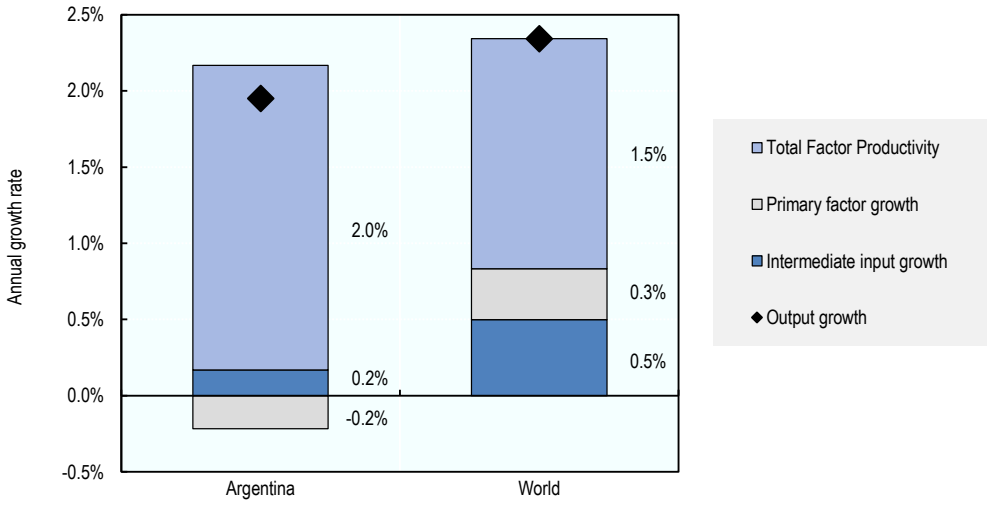
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

StatLink https://doi.org/10.1787/888933936560

Argentinian agricultural production has increased at an annual rate of 2% between 2006 and 2015, slightly below the world average. This growth was due to increases in Total Factor Productivity (TFP), that is, innovations and technical improvements in the way resources are used in production. Limited growth in the use of additional intermediate inputs was compensated by equal-sized reductions in the use of primary factors. The contribution of TFP to production growth is well above the world average.

Agricultural nutrient balances in Argentina are below the OECD average. The shares of agriculture in energy use and in GHG emissions are, with 6.4% and 30.6% respectively, well above the OECD average, related to the importance of the sector in GDP and the large numbers of ruminants.

Figure 3.6. Argentina: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service, Agricultural Productivity database.

StatLink https://doi.org/10.1787/888933936579

Table 3.3. Argentina: Productivity and environmental indicators

	Argentina		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	1.1%	2.0%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha[1]	8.0	6.1	33.2	30.0
Phosphorus balance, kg/ha[1]	2.7	1.8	3.7	2.3
Agriculture share of total energy use (%)	6.2	6.4	1.9	2.0
Agriculture share of GHG emissions (%)	43.2	30.6	8.5	8.9
Share of irrigated land in AA (%)	..	1.6	-	-
Share of agriculture in water abstractions (%)	..	..	45.4	42.5
Water stress indicator	..	..	9.7	9.7

Notes: *or closest available year. 1. Preliminary data.
Source: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Description of policy developments

Main policy instruments

In addition to the Secretariat (former Ministry) of Agroindustry, other government agencies also implement policy measure providing support to agriculture in Argentina, such as the Ministry of Finance that designs and implements export taxes. In contrast to most other countries covered by this report, producers of main agricultural products in Argentina are implicitly taxed through negative price support. Export restrictions have had and continue to have a major impact in depressing producers' prices below the international references and creating negative transfers to producers. The government made efforts to reduce export

taxes since 2015 until September 2018, but, particularly after the introduction of the new tax on all exports oriented to raising fiscal revenue, they are still the major component of policy transfers from the agricultural sector. Argentina provides only few payments to farmers. Highly distorting measures are limited to the mentioned export taxes and specific output payments to tobacco producers. The recent review of *Agricultural Policies in Argentina* (OECD, 2019[2]) provides additional policy details.

Budgetary programmes are concentrated on financing the provision of general services such as the agricultural knowledge and innovation system or inspection control services, which represent the majority of budgetary support in Argentina. Research and development and extension services are mainly provided by the National Institute for Agricultural Technology INTA, while animal and plant health and input control services are provided mainly by the plant and animal health agency SENASA.

The Special Tobacco Fund (*Fondo Especial del Tabaco* - FET) provides a supplementary payment to market prices as part of a broader policy arrangement. Created in 1972, the FET (Decree Law 19.800) provides this additional revenue to tobacco producers located in the northern provinces of Jujuy, Salta, Misiones, Tucuman, Corrientes, Chaco and Catamarca. These provinces are dominated by small producers with economic and social difficulties and, apart from the support from the FET, they also benefit from the ambitious regional development programme Belgrano. The fund is financed by a tax of 7% on tobacco consumption, and is directly managed by the Secretariat of Agroindustry, but separated from the regular budget. The federal government transfers 80% of the funds to the tobacco producing provinces proportionally to their share in national production. Historically, the provinces used them to supplement prices to producers. However, after the signature of the WTO agreement in 1994, Argentina committed to reduce this support as part of its Aggregate Measurement of Support (AMS) commitment, constraining FET output payments expenditure to about 20% of the provincial funds, with the rest being spent on programmes to support producers' fixed and working capital, to provide technical assistance, to invest in local infrastructure and even to provide social and health assistance.

Argentina provides very limited input subsidies, mostly in the form of implicit interest rate subsidies through preferential credit provided by a set of programmes under FINAGRO. These credits are targeted to a range of products to finance investment and working capital. A new fund, FONDAGRO, was created in 2017 to finance investment in the sector at preferential interest rates, but its current scope is limited.

There are almost no other direct payments to producers in Argentina. Limited amounts are provided as disaster assistance in response to extreme weather events, mainly droughts. There are no national direct payments for agri-environmental services, and few at provincial level. Among these, since 2017, area payments have been provided in the province of Cordoba subject to the application of good agricultural practices applied by farmers on a voluntary basis.

The Agricultural Provincial Services Programme (PROSAP), financed by the Inter-American Development Bank (IADB) and managed by the Secretariat of Agroindustry, invests mainly in large agricultural irrigation infrastructure.

Argentina submitted its Intended Nationally Determined Contributions (INDCs) under the Paris Agreement on Climate Change in October 2015. Argentina's goal is to reduce GHG emissions by 15% in 2030 with respect to projected emissions for that year. Among the main measures affecting the agricultural sector in response to the commitments made in

the Argentine INDCs are the Native Forest Law (Law 26.331), the improvement of soils through practices such as no-tillage and the substitution of fossil fuels by biofuels.

Argentina is a large exporter of biodiesel produced from soya and has an active biofuel policy. The Biofuel Law 26.093, approved in 2006, established compulsory blend mandates since 2010, starting at 5% but then progressively increased to 10% for diesel and 12% for gasoline. The Law also assures the purchase of biofuels at a calculated price up to the end-term of the Law in 2021. Biofuel production can also benefit from some fiscal measures. First, exports of biofuels have historically been taxed less than the export of crops, in particular soybeans. Second, the Law establishes that domestic consumption of biofuels benefits from a VAT rebate under certain conditions.

Domestic policy developments in 2018-19

In early September 2018, the government put in place several policy measures in response to the economic turmoil triggered by a large depreciation of the peso. After seven consecutive quarters of positive growth, the economy began to stall as the Argentinian peso came under pressure in April 2018. Over a period of four months, the value of the currency vis-à-vis the US dollar (USD) was reduced to half, risk premiums and credit default swap (CDS) spreads spiked and inflation rose sharply. These events plunged the economy back into recession during 2018 and the prospects of a significant deterioration in access to foreign financing led the government to seek support from the IMF.

The authorities front-loaded fiscal adjustment plans and committed to a primary budget balance as early as 2019, with primary surpluses thereafter. This implied a substantial fiscal consolidation relative to previous plans, based on both revenue and expenditure measures. Among the fiscal revenue measures announced by the government, a temporary tax on all exports was established, reverting the elimination of all export taxes other than those for the soybean complex (see sections on *Trade Policy Development*). Among the fiscal expenditure measures, the government decided to reduce and restructure the number of its departments. The Ministry of Agroindustry was dismantled and integrated as a Secretariat of Government under the Ministry of Production and Labour. Current expenditures were also cut, for instance through an accelerated phasing out schedule for economy-wide subsides on energy and public transport.

Since its reform in 2016, the National Statistics Institute INDEC has been investing on improving the quality and methods of Argentina's statistics. In 2018, INDEC conducted a new National Agricultural Census (CNA), the first reliable census since 2002. This major investment on agricultural statistics will improve a systemic lack of national information on farm structures. The 2018 CNA has collected information on the basic characteristics of all the crops, livestock, forestry and bio-industry activities, covering the entire country. It is estimated that nearly 190 million hectares and more than 300 000 farms are covered. The final results are expected to be available in June 2019.

Several government measures in 2018 targeted the improvement of farming practices. The Joint Resolution 5/2018 of the State Secretariats of Agroindustry and Health incorporates good agricultural practices for the production of fruits and vegetables in the Argentine Food Code (CAA). Following a broad discussion within the framework of the National Food Commission (CONAL), the implementation and compliance deadline was set at two years for fruits and three years for horticulture. To facilitate this implementation, Resolution 174/2018 created the National Program of Good Sustainable Agricultural Practices for fruit and vegetable products to "promote the quality and safety" of these foods.

The Joint Resolution 1/2018 creates the Inter-ministerial Working Group on the Application of Plant Protection Products, with representatives from different government agencies such as agro-industry, environment, health, science and technology, INTA, SENASA and the federal councils on environment and agriculture. The application of plant protection products is to be performed according to good agricultural practices and subject to proper monitoring and control systems, following the guiding principles already prepared by the working group. Additionally, the Regulatory Decree 134/2018 for Law No. 27,279 establishes minimum environmental protection requirements for the management of empty containers of plant protection products, based on their toxicity. It establishes mandatory technical parameters to be applied in the provinces in the management of containers at the different stages. Both agriculture and environmental authorities will work together in enforcing this decree.

The regulatory and inspection agency SENASA enacted several resolutions to prohibit the use of certain agrochemicals. Resolution 263/2018 prohibits the manufacture, import and fractionation of the active substances carbofuran, carbosulfan, diazinon, aldicarb and dicofol, and their formulated products. With Resolution 149/2018, SENASA prohibits the import, marketing and use of the active ingredients dichlorvos (DDVP) and trichlorfon and their formulated products for use in grains and tobacco, in the stages of production, post-harvest, transport, handling, packaging and storage.

A Joint Resolution by several Ministries created - within the frameworks of the National Insurance Authority - the Program of Environmental Sustainability and Insurance, in order to promote the investments from insurance companies on reforestation. These investments are promoted by Law No. 25,080 (as amended by Law No. 27,487 of 2018) with tax advantages and non-refundable financial support available for reforestation projects. The Government is working on an amendment of this law before it expires at the end of 2019.

The resolution 108/2018 establishes the 2018-30 National Irrigation Plan (NIP), intended as the framework to promote the integration of irrigation projects throughout the national territory. The plan has joined several regional cooperation initiatives to ensure that it is implemented in line with updated knowledge and experience. In particular, the NIP joined the project NEXO promoted by the United Nations Economic Commission for Latin America and the Caribbean (ECLAC) and the German Agency for International Cooperation, and is committed to an interdisciplinary approach. The NIP engages experts from the water, energy and agri-food sectors and representatives from the Secretariat for Infrastructure and Water Policy, the National Water Institute and the Ministry of Energy. The Plan also joined the technical co-operation project “Platform for efficient water management in agriculture 2030-50”, a network led by Chile, Argentina and Spain that is part of the international co-operation mechanism FONTAGRO.

The Resolution 232/2018 created the National Plan of Soil to “promote the conservation, restoration and sustainable management of agricultural soils, maximizing productivity and ensuring the maintenance of its ecosystem services, in a global context of climate change”. The Secretariat of Agroindustry is working together with the Secretariat for the Environment and Sustainable Development and the provincial governments through the Agricultural and Livestock Federal Councils, and with the private sector through agreements with farmers’ organisations like the Argentinian association of no-till producers (AAPRESID), and the Consortium of regional agriculture experimentation (CREA). The National Observatory of agricultural soils was created by Resolution 169/2017, to monitor soil health and provide information for public policy

design at all levels. A national Carbon map is already under development by taking samples of soils and making analysis on the ground.

Trade policy developments in 2018-19

Since 2015, the Government has enacted several tax reforms. The reform of export taxes was decided through separate successive decrees implying the elimination of agricultural export taxes except for soybeans, which were subject to a gradual reduction, initially planned for 2018 and 2019 (Decrees 133/2015, 1343/2016 and 486/2018). These measures were part of the effort to diminish distortions while at the same time meeting tight fiscal deficit objectives.

However, in response to recent macroeconomic developments, the government put in place exceptional revenue measures in September 2018. These included the establishment of a temporary export tax of up to 12% applied to all exported goods and services, including all agriculture products (Decree 793/2018). The tax cannot exceed a maximum of ARS 4 per USD of export value of primary agricultural goods and ARS 3 per USD of exports for other products. For soybeans, the new tax is added on top of the tax specifically applied to this commodity, whose rate was reduced from 26% to 18% in the same decree. These export taxes have been introduced as a temporary emergency revenue collection measure, with a sunset clause of 31 December 2020. On the other hand, the strong ARS devaluation of 50% vis-à-vis USD has significantly increased the capacity of exporters to compete in global markets and generated additional gains to agricultural exporters.

Further progress was achieved in the negotiations of the free trade agreement between the European Union and Mercosur members (Argentina, Brazil, Paraguay and Uruguay), which started 20 years ago. By the end of 2018, the parties had agreed on 12 of the 15 chapters in the negotiating text of the agreement.

References

OECD (2019), *"Producer and Consumer Support Estimates", OECD Agriculture statistics (database)*, http://dx.doi.org/10.1787/agr-pcse-data-en. [1]

OECD (2019), *Agricultural Policies in Argentina*, OECD Food and Agricultural Reviews, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264311695-en. [2]

Chapter 4. Australia

Support to agriculture

Australia's support to agricultural producers continues to be amongst the lowest in the OECD, estimated around 2% of gross farm receipts for the period 2016-18, with total support to agriculture (TSE) representing around 0.2% of GDP. Typically, total support to Australian agriculture is roughly split between support directly to producers (PSE) and general services support (GSSE).

Australia no longer uses any policy measures that convey market price support to its producers, meaning that domestic prices for its main agricultural outputs are at parity with world prices. Of the support that is provided directly to producers, around 44% was provided in the form of subsidies to input use in 2018. Much of this relates to measures that provide subsidies for upgrading on-farm water infrastructure to help reduce environmental externalities, and payments that seek to help producers deal better with droughts and other natural adverse events through loans offered at concessional interest rates. The bulk of the remaining producer support is directed towards risk and environmental management, with programmes like income tax averaging arrangements, farm management deposits and other environmental programmes accounting for 51% of the PSE.

Australia has developed an extensive agricultural knowledge and innovation system. In fact, knowledge and innovation services accounts for 60% of GSSE expenditure – support to develop and upgrade infrastructure (28%) represents the bulk of the remainder. Over time, coupled with the move away from producer support, the share of general services in total support has increased from 6% in 1986-88 to 52% in 2018.

Main policy changes

In 2018, the Government announced a range of initiatives that aim to increase the agricultural sector's resilience to drought. The Australian Government appointed a Coordinator-General for Drought to provide advice on developing a long-term drought resilience and preparedness strategy, and a new National Drought Agreement was signed between the Commonwealth and the states and territories, continuing to shift the policy framework towards prioritising long-term preparedness, sustainability, and resilience and risk management.

The Government also concluded a review into the Australian Standards for the Export of Livestock (ASEL). This review recommended mandatory animal welfare outcomes, better reporting and increased transparency of exporter performance, and the institution of penalties when requirements for shipping live animals are not met on export voyages.

A mandatory code of conduct is being developed for the dairy sector, in response to a multi-year inquiry by the Australian Competition and Consumer Commission (ACCC) into the state of competition in the sector. The inquiry concluded that there are some market

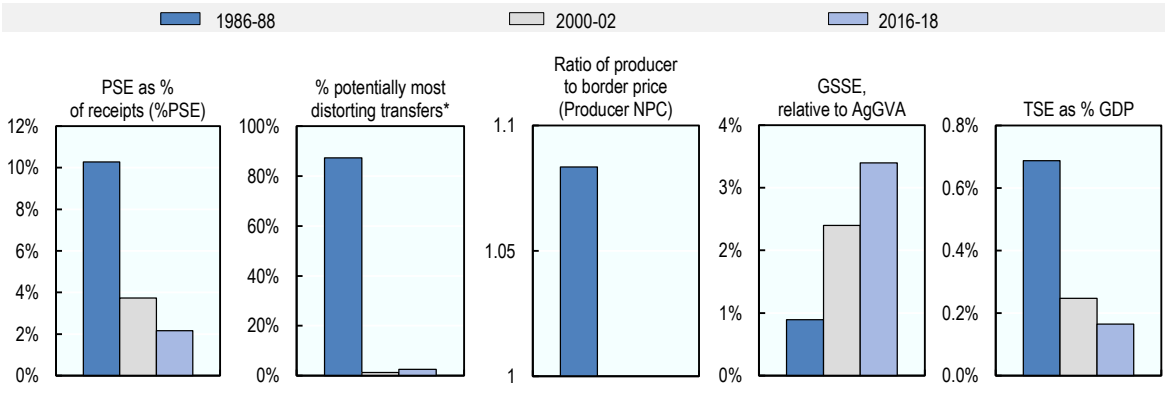
competition issues within the industry, particularly in relation to the dynamics between producers and processors.

Australia continued to strengthen its international trade linkages in 2018 through the implementation or signing of various trade agreements. The largest of these was the Comprehensive and Progressive Trans-Pacific Partnership (CPTPP) – an agreement between Australia and 10 other countries, which entered into force on 30 December 2018.

Assessment and recommendations

- Following continuous and significant progress on policy reform since the mid-1980s, Australia provides low levels of support to its agricultural sector, including negligible use of policy measures that provide the most distorting forms of support. The remaining support programmes target risk management, environmental conservation and provision of general services.
- Drought policy continues to evolve, as the country's drought situation continued to intensify in 2018. The new National Drought Agreement signed in December 2018 prioritises long-term preparedness, sustainability, and resilience and risk management. However, at least through 2018, some state and territory governments continued to employ measures that may encourage risk-taking by producers, including the provision of fodder transport subsidies, water transport subsidies, and other ad hoc payments. The more unified approach embodied in the National Drought Agreement is a welcome development to end the sometimes contradictory incentives and better achieve long-term sustainability in the sector.
- Ensuring farm economic viability in the face of resource constraints – particularly with respect to water – remains the greatest challenge to Australia's agricultural sector going forward. Recent water reforms have helped to ensure that the scarcity of water is conveyed to producers through pricing mechanisms, and current investments are targeting better water use efficiency at both the farm level and in wider water management basins. Nevertheless, policymakers should continue to evaluate future projects cautiously to ensure that they take into account longer-term climatic projections and do not incentivise maladaptive behaviour that may worsen conditions for the sector's future.
- Although there is wide acknowledgement that a changing climate affects Australia's farmers, the sector's role in contributing to climate change through emissions remains relatively overlooked in terms of policy response. Some abatements have been purchased through the Emissions Reduction Fund, but a more systematic approach may be needed in future.

Figure 4.1. Australia: Development of support to agriculture

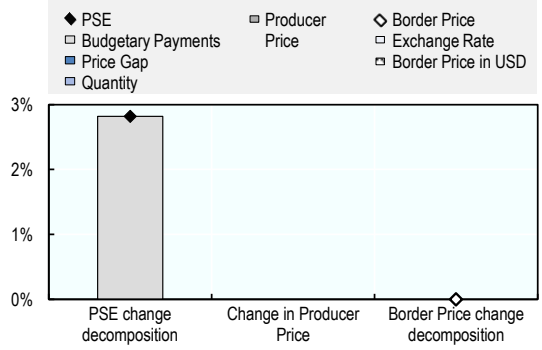


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933936598

Support to producers (%PSE) has declined gradually over the long term. During 2016-18, support is estimated at 2.2% of gross farm receipts, well below the OECD average (Figure 4.1). The share of potentially **most distorting support** is low, and now represents a very small share of the already low PSE. Prices received by Australian farmers are on par with international prices, with only sugar producers receiving single commodity transfers (SCT) related to capital subsidies to reduce environmentally detrimental run-off (Figure 4.3). Overall, the value of farm support increased by 3% in 2018, largely due to an increase in spending on higher-efficiency on-farm water infrastructure (Figure 4.2). This limited change in the overall spending level, coupled with a decline in farm receipts between 2017 and 2018, resulted in a slight increase in the %PSE (Table 4.1). Expenditures for **general services** (GSSE) have generally increased over time, but they fell slightly between 2017 and 2018. **Total support to agriculture** as a share of GDP has declined significantly over time, with GSSE expenditure representing the majority of support (around 55% from 2016-18).

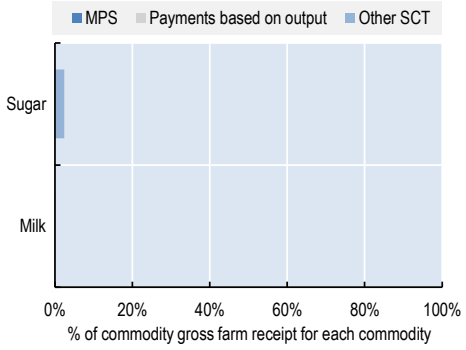
Figure 4.2. Australia: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933936617

Figure 4.3. Australia: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Table 4.1. Australia: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**14 358**	**19 605**	**45 303**	**47 138**	**45 317**	**43 455**
***of which:** share of MPS commodities (%)*	81.7	74.0	66.5	68.0	66.4	65.0
Total value of consumption (at farm gate)	**5 142**	**7 376**	**20 852**	**19 145**	**20 622**	**22 789**
Producer Support Estimate (PSE)	**1 506**	**761**	**1 001**	**816**	**1 093**	**1 095**
Support based on commodity output	1 095	0	0	0	0	0
Market Price Support[1]	1 095	0	0	0	0	0
Positive Market Price Support	1 097	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	432	382	435	481
Based on variable input use	217	14	52	51	51	54
with input constraints	0	4	27	20	31	30
Based on fixed capital formation	4	145	213	211	185	245
with input constraints	0	0	72	104	57	54
Based on on-farm services	9	150	167	120	199	181
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	0	11	61	55	77	52
Based on Receipts / Income	0	11	58	46	77	52
Based on Area planted / Animal numbers	0	0	3	9	0	0
with input constraints	0	0	3	9	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	500	360	579	562
With variable payment rates	181	343	498	356	575	561
with commodity exceptions	0	110	353	212	429	418
With fixed payment rates	0	99	3	4	4	1
with commodity exceptions	0	0	0	0	0	0
Payments based on non-commodity criteria	0	0	7	20	1	1
Based on long-term resource retirement	0	0	0	0	0	0
Based on a specific non-commodity output	0	0	6	17	1	1
Based on other non-commodity criteria	0	0	1	3	0	0
Miscellaneous payments	0	0	0	0	0	0
Percentage PSE (%)	**10.3**	**3.7**	**2.2**	**1.7**	**2.4**	**2.5**
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**	**1 239**	**1 239**	**1 292**	**1 187**
Agricultural knowledge and innovation system	95	252	667	587	696	718
Inspection and control	3	39	133	138	131	129
Development and maintenance of infrastructure	0	75	421	486	448	330
Marketing and promotion	0	4	15	24	13	7
Cost of public stockholding	0	0	0	0	0	0
Miscellaneous	0	0	4	4	3	3
Percentage GSSE (% of TSE)	**6.1**	**36.4**	**55.3**	**60.3**	**54.2**	**52.0**
Consumer Support Estimate (CSE)	**-600**	**-116**	**0**	**0**	**0**	**0**
Transfers to producers from consumers	-600	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 (%)	**-11.7**	**-1.5**	**0.0**	**0.0**	**0.0**	**0.0**
Consumer NPC (coeff.)	**1.13**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**
Consumer NAC (coeff.)	**1.13**	**1.02**	**1.00**	**1.00**	**1.00**	**1.00**
Total Support Estimate (TSE)	**1 604**	**1 015**	**2 240**	**2 055**	**2 384**	**2 282**
Transfers from consumers	600	0	0	0	0	0
Transfers from taxpayers	1 004	1 015	2 240	2 055	2 384	2 282
Budget revenues	0	0	0	0	0	0
Percentage TSE (% of GDP)	**0.7**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
Total Budgetary Support Estimate (TBSE)	**509**	**1 015**	**2 240**	**2 055**	**2 384**	**2 282**
Percentage TBSE (% of GDP)	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
GDP deflator (1986-88=100)	**100**	**149**	**232**	**226**	**233**	**237**
Exchange rate (national currency per USD)	**1.40**	**1.83**	**1.33**	**1.35**	**1.30**	**1.34**

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 (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

Australia is the world's 14th largest economy (in 2018) and the sixth largest country by land area, accounting for 10% of all land in the countries included in this report. While ancient and low fertility soils characterise a large share of the total landmass, Australia nevertheless is an important producer and exporter of agricultural products. Agriculture's share of the economy, both in GDP and in employment, has been falling over time, a trend that has continued in recent years. However, overall, agricultural exports remain significant and accounted for around 16% of total exports in 2017 (Table 4.2).

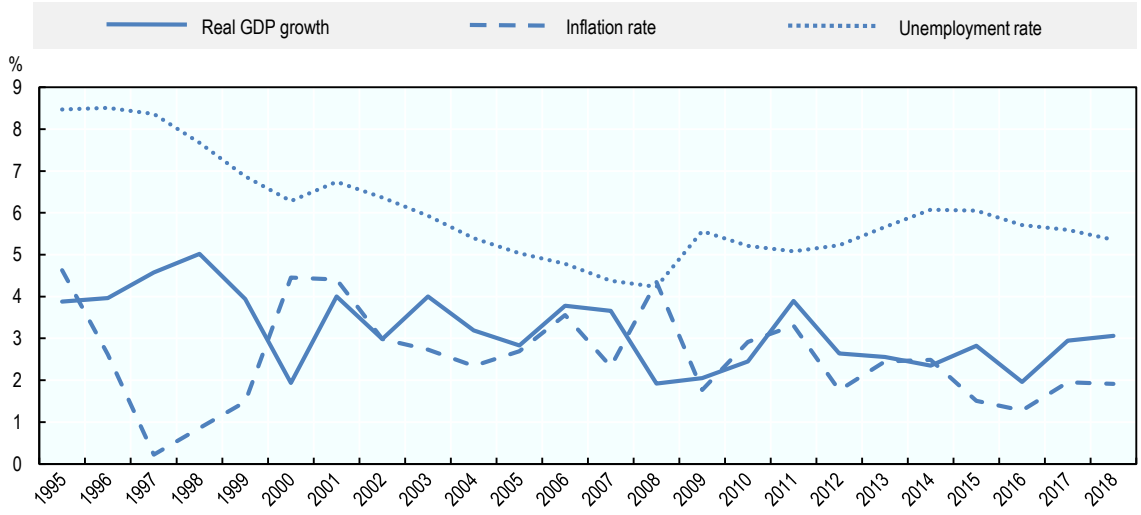
Table 4.2. Australia: Contextual indicators

	Australia		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	403	1 272	1.4%	1.2%
Population (million)	18	25	0.5%	0.5%
Land area (thousand km^2)	7 682	7 692	9.6%	9.5%
Agricultural area (AA) (thousand ha)	463 348	371 078	15.4%	12.4%
			All countries[1]	
Population density (inhabitants/km^2)	2	3	48	60
GDP per capita (USD in PPPs)	22 099	50 588	7 642	21 231
Trade as % of GDP	14	17	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	3.7	2.8	3.3	3.5
Agriculture share in employment (%)	4.8	2.6	-	-
Agro-food exports (% of total exports)	25.7	16.0	8.1	7.5
Agro-food imports (% of total imports)	4.7	6.1	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	48	53	-	-
Livestock in total agricultural production (%)	52	47	-	-
Share of arable land in AA (%)	9	12	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

Australia has enjoyed positive economic growth for the past 27 years. In addition, the country has a GDP per capita nearly double the average level of the countries covered in this report (Table 4.2), relatively low unemployment levels and low and stable inflation (Figure 4.4). Australia maintains a positive and growing agro-food trade balance. Around half of Australia's agro-food exports target final consumption (around 54%) – that is, they are delivered directly to foreign consumers – with the other half exported as intermediate goods that are further processed in overseas markets (Figure 4.5). Australia imports primarily final goods for domestic consumption (around 78% of all agro-food imports). This indicates that domestic food processors are not reliant on imported intermediates for their own production activities, largely due to the ability to source competitively-produced domestic inputs.

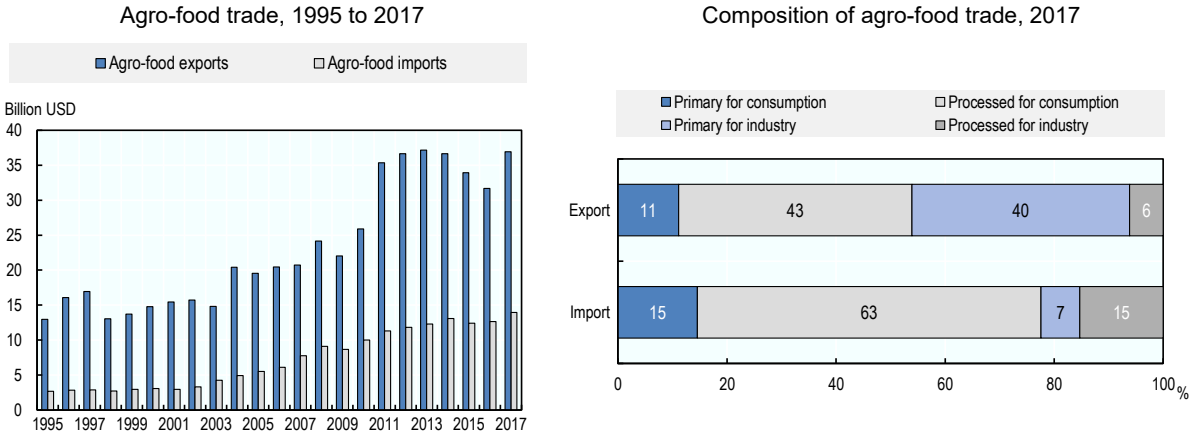
Figure 4.4. Australia: Main economic indicators, 1995 to 2018



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

StatLink https://doi.org/10.1787/888933936655

Figure 4.5. Australia: Agro-food trade

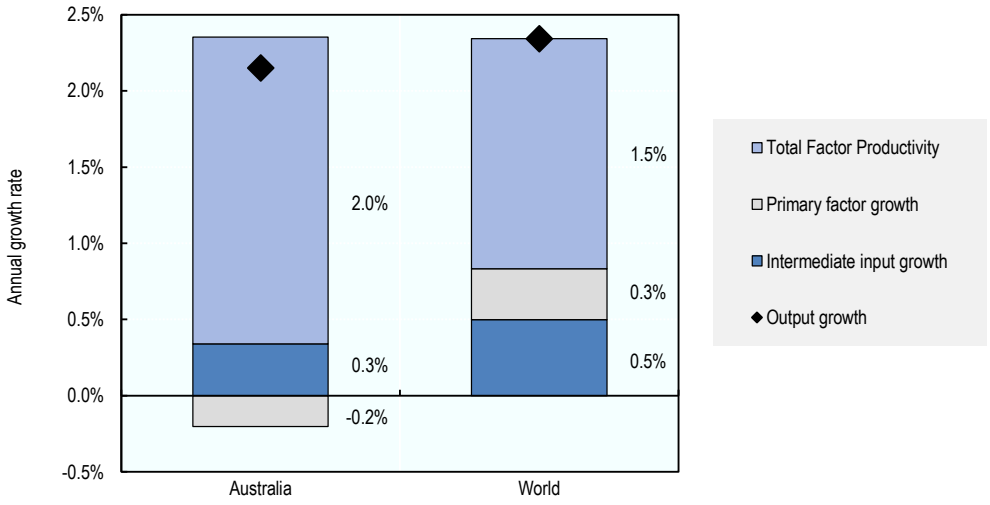


Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

StatLink https://doi.org/10.1787/888933936674

Over the 2006-15 period, total factor productivity (TFP) growth in Australia (2.0% per year) outpaced the world average (1.5%), driven by continued structural adjustment and the uptake of innovative technologies and practices in the sector (Figure 4.6). Nevertheless, average TFP growth slowed compared to 1991-2000, partly due to the increasing impact of climate change on the sector (Table 4.3). Water availability is a particularly limiting factor (agriculture is responsible for 27% of all water abstractions), which may be exacerbated by climate change.

Figure 4.6. Australia: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

StatLink https://doi.org/10.1787/888933936693

Table 4.3. Australia: Productivity and environmental indicators

	Australia		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	3.4%	2.0%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha	19.4	19.9	33.2	30.0
Phosphorus balance, kg/ha	1.1	1.1	3.7	2.3
Agriculture share of total energy use (%)	2.3	3.1	1.9	2.0
Agriculture share of GHG emissions (%)	16.7	12.6	8.5	8.9
Share of irrigated land in AA (%)	0.4	0.6	-	-
Share of agriculture in water abstractions (%)[1]	70.0	27.0	45.4	42.5
Water stress indicator	6.2	4.3	9.7	9.7

Note: * or closest available year. 1. Data are not comparable between time periods due to change in methodology.
Source: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Description of policy developments

Main policy instruments

Australia's agriculture sector remains strongly market oriented with domestic and international prices aligned for all of its major production activities. Support to agriculture is provided through a mix of direct budgetary outlays and taxation concessions. Budget-financed programmes are used to incentivise investments to improve preparedness in the face of risk (weather and market) through concessional loan schemes along with farm household income support during periods of hardship. Direct support is also provided to

upgrade on-farm infrastructure with the aim of improving natural resource use and environmental management. Tax concessions form part of the policy approach aimed at helping producers manage production and market risk through allowing them to smooth their incomes and also provide further incentives for on-farm preparedness-related investments.

With a low level of direct government support to producers and no permanent farm subsidy scheme, research and development (R&D) programmes are a major component of Australian support to agriculture. Rural research and development corporations (RDCs) are the Australian Government's primary vehicle for supporting rural innovation and drive agricultural productivity growth. RDCs are a partnership between the government and industry created to share the funding and strategic direction setting for primary industry R&D, investment in R&D and the subsequent adoption of R&D outputs. A levy system provides for the collection of contributions from farmers to finance RDCs, and the Australian Government provides matching funding for the levies, up to legislated caps.

Australia has negligible tariff protection on imports of agriculture and food products; however, it has in place a number of sanitary and phyto-sanitary (SPS) arrangements to manage pest and disease risks that could harm the sector. These SPS arrangements mean that a number of import restrictions are in place for agricultural products from certain regions across the globe. Australia's agricultural trade policy is directed towards seeking further market opening in multilateral, bilateral and regional trade agreements.

Australia has eleven comprehensive free trade agreements in force, both regional and bilateral, with New Zealand (ANZCERTA 1983), Singapore (SAFTA 2003), Thailand (TAFTA 2005), the United States (AUSFTA 2005), Chile (AClFTA 2009), the ASEAN-Australia-New Zealand Free Trade Area (AANZFTA 2010), Malaysia (MAFTA 2013), Republic of Korea (KAFTA 2014), Japan (JAEPA 2015), the People's Republic of China (ChAFTA 2015), and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP 2018).

While no specific policy instruments for agriculture have been developed in response to the 2016 Paris Agreement on Climate Change, Australia has in place a number of policies that include agriculture and will contribute to it meeting its commitment to reduce GHG emissions – including from land-based sectors such as agriculture – by 26-28% by 2030 compared to the 2005 levels, as defined in the Australian Nationally Determined Contribution (NDC). In Australia, the Department of the Environment and Energy leads the development of domestic climate change policy issues across the Australian Government. Australian policy directed towards agriculture seeks to address both adaptation and mitigation, and to develop policy responses that maintain or enhance productivity, profitability and food security.

Australia's approach to cut emissions across the economy includes the Emissions Reduction Fund (ERF). Under this plan, the government purchases emission reductions from actors in the economy across a range of sectors. For large non-agricultural emitters, a 'safeguard mechanism' exists to keep a facility's emissions within baseline levels which is enforceable by the Clean Energy Regulator under a range of graduated enforcement options ranging from advice to fines to forced corrective actions (Australian Government, 2016[4]). For agriculture, the ERF builds on the Carbon Farming Initiative, a scheme where farmers and land owners were able to earn carbon credits by storing carbon or reducing greenhouse gas emissions on their land. Once registered under the Carbon Farming Initiative, the credits could be sold to those wishing to offset their emissions (Australian Government, 2014[5]).

The ERF is a voluntary scheme that is open to farmers, land managers and other sectors, and allows stakeholders to seek funds (incentives) to undertake emission reductions, avoidance and carbon sequestration (capture and storage of carbon) projects. The methods approved under the ERF must meet strict integrity requirements including in relation to additionality. Under the scheme, landowners and businesses (including farmers) who adopt approved ERF methods can generate Australian Carbon Credit Units, which can be sold, either to the government through a competitive reverse auction, in which sellers engage in price bidding, or to third parties, to provide alternative or additional income streams, while benefitting the environment. The scheme does not set limits on agriculture and is entirely voluntary for the sector.

So far, eight ERF auctions have been held. From these auctions, the Australian Government has contracted a total of 193 million tonnes of abatement compared to estimated annual emissions of 536 million tonnes in the year ending in September 2018. Roughly 9% of these abatements (18.1 million tonnes) was contracted specifically in the agricultural sector, relative to the sector's annual emissions of 70.3 million tonnes in the year prior to September 2018 (Australian Government Clean Energy Regulator, 2019[4]).

However, despite the integrity requirements in place, a number of studies have questioned the ability of the scheme to deliver additional carbon abatement relative to what may have occurred anyway (Burke, 2016[5]; Freebairn, 2016[6]) and for the funded projects to deliver on their intended reductions. Nevertheless, of the 193 million tonnes contracted in all sectors to date, about 38 million tonnes has been delivered, exceeding scheduled amounts. Much of this rests on the issues around the asymmetric information that exists between the government and private actors. The approach also shifts the burden of emission reduction costs to the government and away from the sectors which generate the emissions themselves.

In 2017, the Australian Government reviewed its climate change policies to ensure that they remain effective in achieving Australia's international obligations – including the Paris Agreement on Climate Change. As a result of this review, the government plans to develop a long-term emissions reduction strategy by 2020. The strategy will explore the emissions reduction opportunities and implications across all major sectors of the economy (Department of the Environment and Energy, 2017[7]). Because agriculture is a major source of both direct emissions (due to enteric fermentation, emissions from soils, and field burning of agricultural residues) and indirect emissions (conversion of forested land to other uses) (Department of the Environment and Energy, 2018[8]), future climate policies may impact the sector to a greater extent than in the past.

Domestic policy developments in 2018-19

With the country's drought situation intensifying in 2018, the Australian Government announced a range of initiatives that aim to increase the agricultural sector's resilience to drought. In December 2018, a new National Drought Agreement was signed between the federal government and the states and territories. The agreement replaced the earlier 2013 Intergovernmental Agreement on National Drought Program Reform, with the intent of continuing to shift the policy framework towards prioritising long-term preparedness, sustainability, and resilience and risk management (DAWR, 2018[9]). In addition, in August 2018, a Coordinator-General for Drought, supported by the Joint Agency Drought Taskforce, was appointed to provide advice to the Australian Government on developing a long-term drought resilience and preparedness strategy (among other tasks). With an eye toward improving preparedness for future events, in November 2018, the government

introduced the Future Drought Fund Bill 2018 to Parliament (the bill will need to be reintroduced in the new Parliament in 2019). The Future Drought Fund is a long-term investment fund that will provide a sustainable source of funding for drought resilience projects, including infrastructure development and initiatives that promote the adoption of new technology and improve environmental and natural resource management on farms.

An independent review of the Farm Household Allowance (FHA) was undertaken in the second half of 2018. The panel provided its final report to Government in February 2019. The review examined the effectiveness of the programme in supporting farm families confronting hardship (including as a result of drought), and gave recommendations for improvements. The report was publicly released on 1 May 2019.

Support for 15 rural Australian communities impacted by water recovery in the Murray-Darling Basin was made available through the Murray-Darling Basin Economic Development Program – one component of the new "Basin Plan Commitments Package". Launched in January 2018, the programme provides up to AUD 20 million over four years to fund economic development projects in the eligible communities. The eligible communities are highly dependent upon agriculture for their economic livelihoods. As such, changes to water availability as a consequence of the Murray-Darling Basin Plan have had non-trivial knock-on effects for these communities in terms of farm sector employment.[1] In response, funded projects under the programme will create employment opportunities and enhance community resilience by improving their ability to manage current and future economic challenges (DAWR, 2019[10]).

In April 2018, a final report on the state of competition in the Australian dairy industry was released by the Australian Competition and Consumer Commission (ACCC – an independent statutory authority responsible for the promotion of competition and fair trade in markets in Australia), ending a multi-year inquiry (ACCC, 2018[11]). The report's major findings included:

- Processors have significant bargaining power over farmers, and as a consequence, processors have a disproportionate level of discretion to pass on risk to farmers.
- Contracting arrangements between processors and farmers are favourable to processors, including by limiting the ability of farmers to switch between processors and hampering transparency in milk pricing.
- Most regional markets for the acquisition of raw milk are concentrated or highly concentrated, such that further consolidation is likely to exacerbate the poor bargaining position of farmers.
- Supermarkets in turn have a strong bargaining power over processors, enabling them to negotiate low wholesale prices and reduce the profit margins of processors – as a result, even if retail milk prices were to rise, it is unlikely that farmers would benefit.

Given their findings on the state of competition, price transparency and contracting practices in the industry, the ACCC made various recommendations to promote improved supply chain dynamics that would foster more efficient production and supply of dairy products in Australia. Many of these recommendations stressed the importance of simpler and more transparent contracting agreements between farmers and processors.

In anticipation of the report's release, the dairy sector developed a voluntary code of conduct that came into effect in June 2017 (OECD, 2018[12]). This code was an industry-based attempt to resolve issues around contracting and pricing between dairy farmers and processors, and was adopted by most major processors and a number of farmer

representative organisations. However, the ACCC determined that a voluntary code was not sufficient to address the identified market issues, and instead recommended the institution of a mandatory code of conduct. The government is currently developing this mandatory dairy code of conduct, and it is expected to come into force in 2020.

In January 2019, the Australian Government unveiled the Rural Intelligence Platform – a new software designed to integrate data from multiple sources to facilitate the comprehensive assessment and monitoring of rural land for improved decision-making. For example, the platform can inform calculations of the risks associated with certain investments or management decisions. The platform will bring together information from the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Bureau of Meteorology (among others) to track land changes in farming regions, incorporating machine learning and artificial intelligence in its assessments and forecasting tools. The system is designed to give farmers better access to data and technologies for long-term decision-making purposes.

There is also ongoing work in the areas of livestock welfare and traceability. In 2017, the Department of Agriculture and Water Resources commissioned a review of the Australian Standards for the Export of Livestock (ASEL), with the goal of ensuring that animal welfare standards for livestock are both up-to-date and adequate to manage risks to animal health and welfare during live animal export by sea and air. The review was undertaken in stages. First, an independent scientific review was completed in May 2018, which recommended that mandatory mortality reporting requirements, voyage success and risk parameters for livestock export should be based on a range of welfare measures, rather than mortality rates as is currently the case. In response to the independent scientific review, the government is reviewing current methods for Heat Stress Risk Assessment (HSRA), with the goal of providing improved guidance on how to move from a risk assessment framework based on mortality to one based on the risk of the animal becoming affected by heat. In the second stage of the process, a review of the Australian Standards for the Export of Livestock was released in September 2018. This review recommended that ASEL mandate animal welfare outcomes – not merely processes – and increase transparency to improve enforcement of said outcomes. Moreover, the review recommended that exporters should pay penalties when welfare outcomes are not achieved, or when the exporters otherwise do not comply with ASEL requirements (ASEL Review Technical Advisory Committee, 2018[13]). Implementation of the review's recommendations will be carried out in consultation with industry (DAWR, 2018[14]).

The government is currently developing a National Traceability Framework. Beginning in November 2017, an assessment of the current state of traceability systems for the primary agricultural commodities was carried out, along with a review of global drivers for the future of traceability. The findings of the initial assessment will inform the development of the Framework, with the goal of enhancing the integrity of government and industry systems that enable tracing of agricultural production and products both backward and forward along entire supply chains. The final National Traceability Framework and Action plan are expected to be released in mid-2019 (DAWR, 2019[15]).

Trade policy developments in 2018-19

In December 2017, a new export regulation, the Export Control Bill 2017, was introduced into the Australian parliament. This legislation was drafted in response to a 2015 review of the country's export framework, which concluded that the existing export legislation could lead to inefficient export procedures, increase transaction costs, and delay the clearance of

agricultural goods for export, potentially reducing the competitiveness of Australia's agricultural export sector. The proposed legislation seeks to consolidate existing export rules defined in 17 different Acts into one Bill, thereby streamlining regulations, reducing the potential for redundant procedures, and lowering the cost of complying with export controls. The Department of Agriculture and Water Resources is currently drafting updated rules and reviewing its export systems to identify improvements to operational controls in line with the new Act. Subject to the Bill being passed, the government plans to implement the new law by April 2020.

Australia concluded negotiations for various FTAs in 2018, with the largest of these being the Comprehensive and Progressive Trans-Pacific Partnership (CPTPP). Australia signed the agreement – along with the 10 additional member countries – in March 2018. The CPTPP then entered into force on 30 December 2018 for Australia, Canada, Japan, Mexico, New Zealand and Singapore. It subsequently entered into force for Viet Nam on 14 January 2019, and will enter into force for the remaining member countries 60 days after they ratify the agreement. This agreement contains a number of provisions on agriculture, with expanded market access for a range of products in the various member countries, including reduced Japanese beef tariffs; new access to dairy products into Japan, Canada, and Mexico; and the elimination of all tariffs on sheep meat, cotton, and wool (DFAT, 2019[16]).

Australia also concluded negotiations for several other agreements in 2018, but which have yet to enter into force. These include the Peru-Australia Free Trade Agreement (PAFTA), the Indonesia-Australia Comprehensive Economic Partnership Agreement (IA-CEPA), and the Australia-Hong Kong Free Trade Agreement. These agreements are expected to advance economic integration between the signatory countries in addition to improving market access. The agreements secure tariff reductions or new quotas for some of Australia's most important agricultural exports, including beef, sheep meat, dairy, and sugar (DFAT, 2018[17]; DFAT, 2018[18]; DFAT, 2018[19]).

Australia is currently engaged in a further seven FTA negotiations. These include two individual bilateral FTA negotiations with India and the European Union. In addition, there are five plurilateral FTA negotiations underway – the Gulf Cooperation Council (GCC), the Environmental Goods Negotiations (undertaken in conjunction with 45 other WTO member countries), the Pacific Alliance Free Trade Agreement, the Regional Comprehensive Economic Partnership Agreement (RCEP) and the Trade in Services Agreement (TiSA) (DFAT, 2018[20]).

Note

[1] For example, published profiles for the Southern Basin communities estimate that Basin Plan factors led to a 10-25% contraction in farm employment for most communities between 2001-16 (Murray-Darling Basin Authority, 2018[21]).

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Chapter 5. Brazil

Support to agriculture

Brazil provides a low level of support and protection to agriculture, reflecting its position as a competitive exporter. Producer support as a share of gross farm receipts fell from 5.7% to just 2.6% between 2000-02 and 2016-18. Most of the low producer support is provided through market price support and input payments, including concessional credit and crop insurance subsidies. Concessional credit is available for farm marketing and working capital but also for investment fixed capital. Since 2008 all support based on input use is conditional to environmental criteria and on farming practices. While domestic prices were below world prices in the mid-1990s, generating negative market price support (MPS), prices are now almost aligned with the international markets.

Support to general services (GSSE), mainly on research and development and innovation, represented 30% of the Total support Estimate (TSE), but has fallen since 2000-02 as a percentage of agricultural gross value added. As a percentage of GDP, the TSE has also fallen from 0.6% in 2000-02 to 0.4% in 2016-18.

Main policy changes

The Agricultural and Livestock Plan 2018/19 (PAP) increased by 1.4% the maximum rural credit allocation — which represents more than 95% of the plan — to BRL 191.1 billion (USD 52.3 billion); 80% of this total is provided at preferential interest rates. The reference market interest rate (SELIC) continued to decline from 7% in 2017 to 6.5% at the end of 2018 and the preferential interest rate margins have been reduced by the government. While inflation slightly increased in 2018 to 3.7%, regional minimum guaranteed prices for main crops (soybean, bean, rice, coffee, milk) increased by less than 3% in nominal terms.

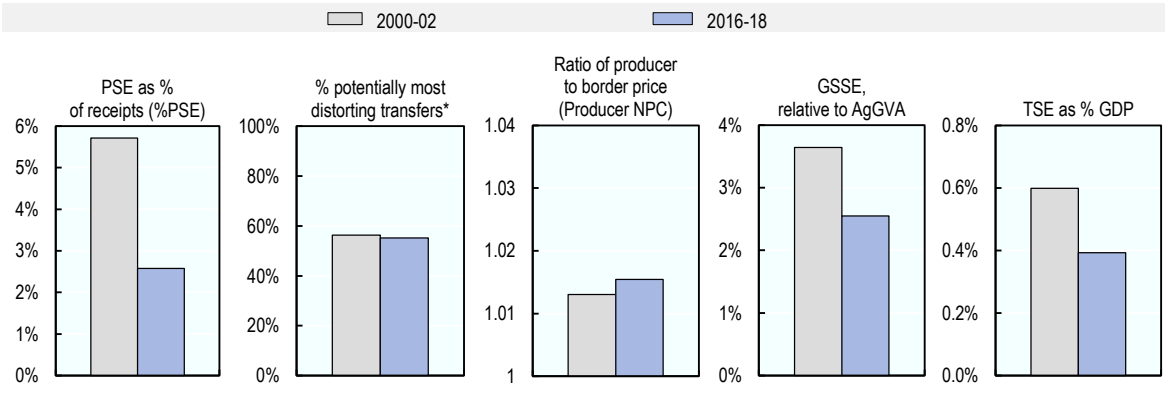
In early 2019, the Ministry of Agriculture, Livestock and Food Supply (MAPA) incorporated the responsibilities for small-scale family farming, previously under the Special Secretariat for Family Farm and Agrarian Development (SEAD) that reported directly to the Presidency. Other Secretariats have also been created under MAPA on land tenure, aquaculture and fishery, forestry, irrigation, rural development and innovation.

The regulation of the national biofuel policy RenovaBio was approved in March 2018 responding to Brazil's Intended Nationally Determined Contribution (INDC) commitments under the Paris Climate Agreement. A target was set by the National Energy Policy Council of Brazil (CNPE) to reduce emissions from fossil fuels by 10% in 2028 through an increased use of biofuels in substitution of petroleum. The biodiesel blending mandate B10 increased from 8% to 10% in March 2018 and is set to further increase by one percentage point per year from June 2019 up to 15% by 2023.

Assessment and recommendations

- Agricultural policies in Brazil provide low levels of support and protection to producers, and progress continues on improving programme effectiveness and general services to strengthen the sector's productivity and sustainability performance.
- Despite the variety of regional price support programmes, prices received by agricultural producers in Brazil are mostly aligned with international levels. In 2018, domestic prices increased less than inflation for most commodities, while the decline in border prices in USD was attenuated by the depreciation of the BRL. Overall, differences in support levels by commodity should be removed as they create distortions within the sector and lead to suboptimal allocation of resources.
- Before any increase of funding to insurance subsidies, it is essential to continue strengthening the information base for insurance products while using public funds efficiently, monitoring the impacts of insurance subsidies and ensuring they are not crowding out market solutions.
- Agricultural credit at preferential interest rates represents an important share of agricultural policy's budget expenditures. The availability of funds for rural loans is incentivised by the obligation for banks to reserve a certain portion of their deposits for agricultural credit. A reform of the concessional credit system could consider a gradual downsizing of concessional loans for working capital to commercial producers. Now that market interest rates have fallen, access to credit by rural borrowers could be facilitated through the simplification of regulations and procedures. Agricultural credit support could be re-focused to support those on-farm investments that explicitly incorporate innovations, advanced farm management and environmental practices.
- Several programmes have been introduced to encourage environmental improvements. For instance, insurance and credit support is conditional to environmental criteria and zoning rules, and credit is available to modernise production systems and preserve natural resources through programmes like the ABC credit programme. Specific long-term sustainability and environmental outcomes should be assessed in order to improve their policy design and to inform the strategies to achieve Brazil's INDC commitments.
- Access to export markets is crucial for Brazilian agriculture. In this respect, efforts continue to improve animal health. The restructuring of the sanitary and phytosanitary inspection system with a view to improve its efficiency and reliability is an important contribution to gain or re-gain foreign markets, complemented by bilateral and multilateral trade discussions.
- Expenditure on general services to agriculture constituted about a third of total support to the agricultural sector in 2016-18, with research and development and innovation transfer accounting for most of it. The agricultural innovation system has succeeded in maintaining relatively high productivity growth in the commercial sector. It is important to maintain the research capacity and increase the diffusion of innovations to a wider range of farmers.

Figure 5.1. Brazil: Development of support to agriculture

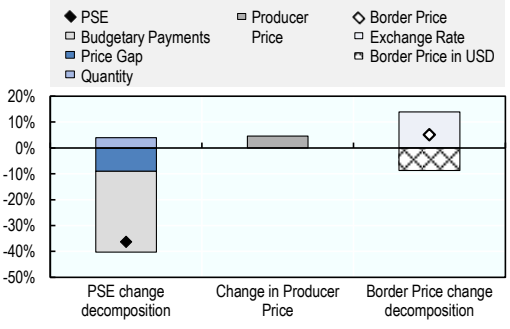


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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The level of **support to producers (%PSE)** in Brazil was 2.6% of gross farm receipts in 2016-18 (Figure 5.1), well below the OECD average. The **share of potentially most distorting transfers** is 55%, very similar to the share in 2000-03 when input payments were the main category of support. Nowadays input payments are provided with environmental constraints. Producer prices for most products are very much aligned with world markets and farmers receive prices that on average are 1.5% higher than border prices. The expenditure on **general services** (GSSE) reached 2.6% of agricultural value added, down from 3.6% in 2000-02. Almost 90% of these services are on knowledge and innovation. **Total support to agriculture** (TSE), including producer support and general services, was also reduced to 0.4% of GDP. The producers support estimate (PSE) of Brazil fell in 2018 by 36% compared with 2017 (Figure 5.2.), mainly driven by lower preferences in the interest subsidies of rural credit. Price gaps also diminished mainly driven by a depreciation of the exchange rate. The products with a highest share of specific commodity transfers (SCT) were rice, wheat and cotton with, respectively 18%, 9% and 7% (Figure 5.3).

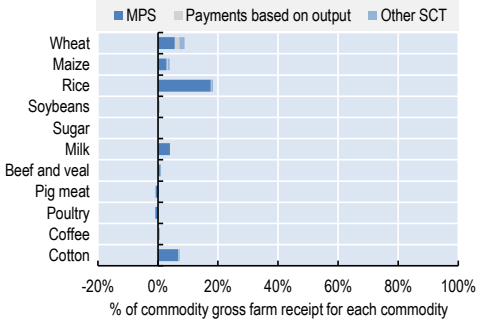
Figure 5.2. Brazil: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Figure 5.3. Brazil: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933936750

Table 5.1. Brazil: Estimates of support to agriculture

Million USD

	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**35 538**	**157 232**	**150 057**	**168 893**	**152 746**
***of which:** share of MPS commodities (%)*	77.5	84.6	81.7	84.5	87.6
Total value of consumption (at farm gate)	**36 019**	**91 523**	**102 006**	**101 278**	**71 286**
Producer Support Estimate (PSE)	**2 184**	**4 121**	**5 948**	**4 122**	**2 292**
Support based on commodity output	328	2 134	2 930	2 048	1 422
Market Price Support[1]	288	1 994	2 725	1 836	1 420
Positive Market Price Support	435	2 143	3 174	1 836	1 420
Negative Market Price Support	-146	-150	-449	0	0
Payments based on output	40	140	205	212	2
Payments based on input use	1 856	1 896	2 891	1 959	837
Based on variable input use	825	880	1 478	928	234
with input constraints	0	880	1 478	928	234
Based on fixed capital formation	955	940	1 270	992	557
with input constraints	0	940	1 270	992	557
Based on on-farm services	76	76	143	39	46
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	0	91	127	115	32
Based on Receipts / Income	0	91	127	115	32
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 (%)	**5.7**	**2.6**	**3.9**	**2.4**	**1.5**
Producer NPC (coeff.)	**1.01**	**1.02**	**1.03**	**1.01**	**1.01**
Producer NAC (coeff.)	**1.06**	**1.03**	**1.04**	**1.02**	**1.02**
General Services Support Estimate (GSSE)	**1 242**	**2 239**	**2 227**	**2 271**	**2 221**
Agricultural knowledge and innovation system	663	1 969	1 797	2 099	2 012
Inspection and control	51	25	35	21	20
Development and maintenance of infrastructure	471	127	218	59	104
Marketing and promotion	5	4	3	3	7
Cost of public stockholding	53	113	173	90	77
Miscellaneous	0	0	0	0	0
Percentage GSSE (% of TSE)	**35.9**	**30.0**	**24.3**	**29.7**	**39.0**
Consumer Support Estimate (CSE)	**-341**	**-637**	**-1 568**	**-381**	**37**
Transfers to producers from consumers	-487	-1 830	-2 968	-1 484	-1 037
Other transfers from consumers	-66	-177	-277	-153	-101
Transfers to consumers from taxpayers	31	1 139	985	1 256	1 175
Excess feed cost	180	231	692	0	0
Percentage CSE (%)	**-0.8**	**-0.7**	**-1.6**	**-0.4**	**0.1**
Consumer NPC (coeff.)	**1.01**	**1.02**	**1.03**	**1.02**	**1.02**
Consumer NAC (coeff.)	**1.01**	**1.01**	**1.02**	**1.00**	**1.00**
Total Support Estimate (TSE)	**3 457**	**7 499**	**9 160**	**7 650**	**5 688**
Transfers from consumers	552	2 007	3 245	1 637	1 138
Transfers from taxpayers	2 971	5 669	6 192	6 165	4 651
Budget revenues	-66	-177	-277	-153	-101
Percentage TSE (% of GDP)	**0.6**	**0.4**	**0.5**	**0.4**	**0.3**
Total Budgetary Support Estimate (TBSE)	**3 169**	**5 506**	**6 435**	**5 814**	**4 268**
Percentage TBSE (% of GDP)	**0.6**	**0.3**	**0.4**	**0.3**	**0.2**
GDP deflator (2000-02=100)	**100**	**338**	**327**	**339**	**350**
Exchange rate (national currency per USD)	**2.37**	**3.44**	**3.49**	**3.19**	**3.65**

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 (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

Brazil is the largest country in the Latin American and one of the world's largest countries in area and population, has abundant land and water and is a major agricultural producer and exporter. It was the seventh biggest economy in 2017, with a GDP around USD 3 238 billion and a per capita GDP over USD 15 000. The share of agriculture in Brazil's GDP and employment has been falling, but remains higher than in most other countries covered in this report. Agro-food exports have grown, representing more than 37% of total exports. Brazilian agricultural land represents 10.3% of total in all countries and 29% of this is arable land.

The country is an important player in global agro-food trade, since it is the third biggest exporter after the European Union and the United States. The country is among the world's leaders in the production of soybeans, poultry, beef, cotton, corn, and orange juice. The main product in Brazilian exports is soybean (grain, meal, and oil), which represented almost 50% of the agricultural exports' total value in 2018.[1] Besides soybean, other important exports products were meat (17.3%), sugar and ethanol (8.7%), coffee (5.8%) and cereals (5.6%).

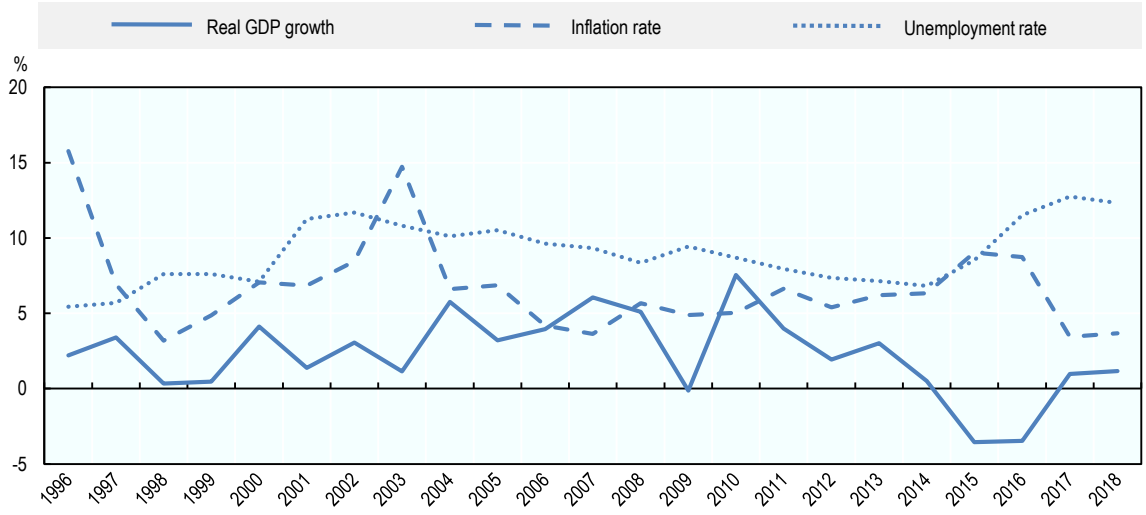
Table 5.2. Brazil: Contextual indicators

	Brazil		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	1 310	3 238	4.4%	3.2%
Population (million)	162	209	4.2%	4.3%
Land area (thousand km²)	8 358	8 358	10.5%	10.3%
Agricultural area (AA) (thousand ha)	258 472	283 546	8.6%	9.5%
			All countries[1]	
Population density (inhabitants/km²)	19	25	48	60
GDP per capita (USD in PPPs)	8 073	15 484	7 642	21 231
Trade as % of GDP	6	9	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	5.8	4.6	3.3	3.5
Agriculture share in employment (%)	26.1	10.3	-	-
Agro-food exports (% of total exports)	29.3	37.3	8.1	7.5
Agro-food imports (% of total imports)	12.4	6.8	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	72	67	-	-
Livestock in total agricultural production (%)	28	33	-	-
Share of arable land in AA (%)	22	29	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

After two years of recession on 2015-16, Brazilian GDP is growing again since 2017. In 2018 the growth rate was 1.2%, compared to the previous year, while inflation increased from 3.4% in 2017 to 3.7%. Moreover, the unemployment rate decreased from to 12.7% to 12.3% in 2018. Agro-food exports in Brazil reached more than USD 80 billion in 2017, generating an agro-food trade surplus of USD 70 billion. While almost half of Brazilian agro-food exports are primary products for industry (49%), more that 60% of the country's imports are processed products.

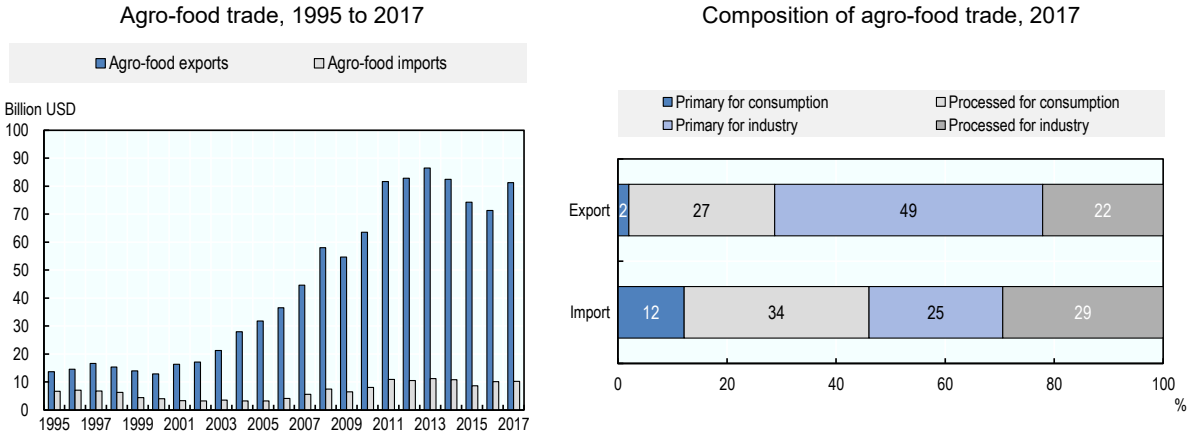
Figure 5.4. Brazil: Main economic indicators, 1996 to 2018



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

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Figure 5.5. Brazil: Agro-food trade



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

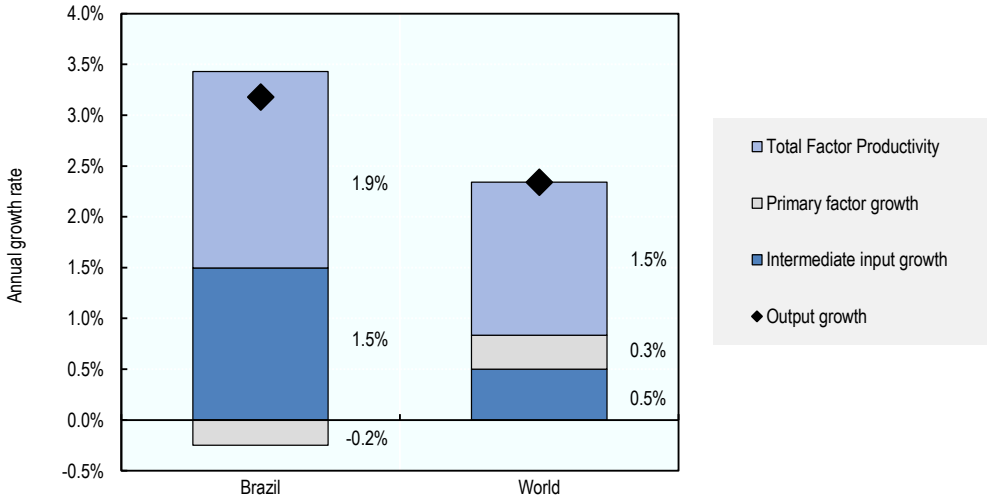
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Between 2006 and 2015, Brazilian agricultural production increased at an annual rate of 3.2%, well above the world's output growth. Increases in production in Brazil were driven by an above-average growth in Total Factor Productivity (TFP) of 1.9% per year, but also by an increased use of intermediary inputs.

Regarding agri-environmental indicators, agriculture accounted for 43% of GHG emissions and 5% of energy use in 2017, which is below the levels in 1995 but above the OECD average, mainly due to the larger share of the agricultural sector in the Brazilian economy

and the importance of pasture-based livestock. Even if the share of agriculture in water abstractions remained high at 62%, the water stress indicator (1.0 in 2016 and 2017) is much lower than the OECD average. Nutrient balances in Brazil have increased since 1995 and are higher than the OECD average.

Figure 5.6. Brazil: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

StatLink https://doi.org/10.1787/888933936807

Table 5.3. Brazil: Productivity and environmental indicators

	Brazil		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	2.3%	1.9%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha[1]	39.4	42.5	33.2	30.0
Phosphorus balance, kg/ha[1]	6.3	8.5	3.7	2.3
Agriculture share of total energy use (%)	5.5	4.6	1.9	2.0
Agriculture share of GHG emissions (%)	50.9	43.4	8.5	8.9
Share of irrigated land in AA (%)	..	2.0	-	-
Share of agriculture in water abstractions (%)	50.5	61.7	45.4	42.5
Water stress indicator	0.6	1.0	9.7	9.7

Note: * or closest available year. 1. Preliminary data.
Source: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Description of policy developments

Main policy instruments

The main areas of agricultural policy in Brazil are rural credit and market price support, implemented and developed since the 1960s, and risk management (insurance subsidies) that was introduced in 2005. Other policy instruments include agricultural land zoning and promotion of biofuels. Agricultural policy is defined in the annual Agricultural and Livestock Plan administered by the Ministry of Agriculture, Livestock and Food Supply (MAPA). Until the end of 2018, the Special Secretariat for Family Farm and Agrarian Development (SEAD), which reported directly to the Presidency, was responsible for the small-scale family agriculture, through the Family Agriculture Plan 2017/20.

The basic element of market price support policy consists of regionally set **minimum guaranteed prices**, which cover a broad range of crops and a few livestock products like cow and goat milk, and honey. Given these minimum guaranteed prices, the government implements several price support mechanisms, including direct government purchases (AGF programme); premiums to commercial buyers who pay minimum prices to producers; and public and private options contracts backed by a private risk premium option. In addition to these programmes, producers receive reduced-interest marketing loans, which enable them to withhold the sale of a product in anticipation of a higher market price. The National Food Supply Agency (CONAB) is in charge of operating these programmes on behalf of MAPA and, until the end of 2018, SEAD. 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).

Agricultural credit is the major policy instrument for both commercial and small-scale family farms. Most of the rural credit under the National Rural Credit System (SNCR) is provided at preferential interest rates with differentiated conditions for small and medium size farmers compared to commercial ones. The main sources of preferential rural credit are "Compulsory Resources", equivalent to 30% of sight deposits in commercial banks and 60% of "Rural Saving" deposits, "Constitutional Funds" and loans from the National Bank for Economic and Social Development (BNDES). Other sources are the Coffee Fund (FUNCAFÉ) and the Agribusiness Credit Notes called LCAs (*Letras de Crédito do Agronegócio*), which are fixed income securities backed by credit transactions linked to agribusiness, out of which 35% are compulsorily allocated to rural credit. Major agricultural **debt rescheduling** occurred during the late 1990s and early 2000s for both commercial and family producers, and since then, support is provided through debt rescheduling arrangements.

Four main agricultural **insurance** programmes provide support either in the form of insurance premium subsidies or by compensating farmers for production losses due to natural disasters. Two of them target commercial farmers: the rural insurance premium programme (PSR) which grants insurance premium subsidies to commercial producers who establish contracts with insurance companies listed by the government; and the general agriculture insurance programme (PROAGRO) which offers partial compensation for bank debts on working capital loans indemnifying losses of own resources invested in production. Most of the resources from this programme are allocated to the southern region for grain crops, mainly soybeans. Small-scale family farms can also benefit from two different programmes: the PROAGRO-Mais or family agriculture insurance (SEAF); and the crop guarantee programme (*Garantía Safra*, GS).

In some programmes, support is conditioned by environmental criteria. **Agricultural zoning** of climatic risks (Agricultural Risk Zoning ZARC) is an important instrument that links agricultural support to farming practices and activities that are adapted for the environmental sustainability of each geographical zone. Compliance with zoning is required to access concessional rural credit, subsidised insurance programmes and PROAGRO. Since 2008, access to subsidised credit for agricultural production in the Amazon biome requires compliance with environmental regulations, in particular land use regulations set out in the Forestry Code. 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 in the whole country since 2012. Since January 2019, the access to rural credit additionally requires compliancy with the Environmental Rural Registry (CAR), a mandatory digital registration.

Brazil has specific credit programmes, mainly the Low Carbon Agricultural Programme (ABC), to promote **sustainable agricultural practices**. These include credit for the recovery of degraded areas and pasture land, the implementation of organic Agriculture and Livestock production systems, the implementation and improvement of no-till farming systems, plantings on unproductive and degraded soils, forest planting, improve production systems and preservation of natural resources.

Biofuels production has been supported since the launch of the National Alcohol Program (Pró-Álcool) and the Plan of Production of Vegetable Oils for Energy Purposes (Pró-Óleo) in 1975. The National Program for the Production and Use of Biodiesel (PNPB) was launched in 2004 to improve environmental performance and energy independence. In 2017, the national policy initiative RenovaBio was launched to foster the implementation of the GHG emission reduction commitments under the Paris Agreement on Climate Change, by increasing the supply of alternatives to fossil fuels.

Domestic policy developments in 2018-19

In July 2018, the Ministry of Agriculture, Livestock and Food Supply **released the Agricultural and Livestock plan 2018/19** (PAP). The plan defines the maximum budgetary resources for rural credit (BRL 191.1 billion or USD 51.5 billion), support in marketing programmes (BRL 2.6 billion or USD 716 million), and insurance subsidies (BRL 600 million or USD 165 million). The main changes compared to the previous plan include the adoption of a new methodology for the setting of rural credit interest rates and the reduction of compulsory resources dedicated to rural credit: from 74% of Rural Saving deposits to 60% in November 2017, and from 34% of sight deposits in commercial banks to 30% in June 2018. The new PAP created a working capital credit line for milk production by co-operatives, as well as the possibility of using compulsory resources to finance the acquisition of cattle and buffaloes for breeding, previously financed under another medium-size producer investment programme, PRONAMP. The possibility of financing investments in "Legal Reserve" areas and "Permanent Preservation Areas" at a lower interest rate of 5.25% was introduced in the Low Carbon Agriculture Programme, in line with the Brazilian Forest Code. Other programmes that continue in the new PAP include the following: the Warehouse Construction and Expansion Programme (PCA) with BRL 2.15 billion (USD 588 million); the Program for Reducing Greenhouse Gases Emissions in Agriculture (ABC) with BRL 2.0 billion (USD 547 million); the Incentive Program for Technological Innovation in Agricultural Production (Inovagro) with BRL 1.15 billion (USD 315 million); and the National Support Program to the Medium Rural Producer (PRONAMP) with BRL 20.03 billion (USD 5.5 billion).[2] Funding for ABC

and Inovagro programmes decreased by 6% and 9% when compared to the 2017/2018 plan, while PCA and PRONAMP programmes increased their funding by 34% and 11%, respectively. Priority continued to be given to investments on the expansion of storage capacity, mainly grains, innovation, and sound environmental agricultural production. Small and medium size producers continued to have access to special and differentiated rural credit lines.

Rural credit resources in the 2018/19 plan are 1.4% higher than in the previous plan, more than 80% of which will be available at preferential interest rates and 20% at market rates. Nominal credit interest rates were set between 5.25% and 9.5%, lower than the rates in the previous season. The interest rates for medium-sized producers under PRONAMP were reduced from 7.5% to 6.0%. In 2017/18 and 2018/19 (until February) rural credit financing investments has increased more than that for working capital, and in the crop year 2018/19 these increases were 24% and 9%, respectively. Growth rates of financing under priority investment programmes were even higher: 44% on technological production innovation (Inovagro programme) and 114% on low carbon agriculture (ABC programme). In line with the macroeconomic directions of the new government, in January 2019 a resolution from the Central Bank changed the conditions for the allocation of 35% from Agribusiness Credit Notes (LCA) to rural credit: part of these credits used to be provided at preferential rates, but all credit is now provided at market rates.

In 2017, agricultural producers (especially grains and fruits producers) have taken out more than 67 000 **insurance policies**, covering a production area of almost 4.9 million hectares, about 6% of total crop area. In 2018, to improve transparency in insurance programmes like the Rural Insurance Premium Grant Program (PSR), the Government released information about the annual compensation in the last 10 years and published the Triennial Rural Insurance Plan (PTSR) for 2019-21. The PTSR includes general guidelines on the implementation of the PSR in the period such as types of coverage, technical and financial criteria, percentage of insurance premium support and budget estimates. Zoning methodology (ZARC) continued to be updated for several products, allowing risk identification by shorter periods of ten days, which facilitates the adjustment of farmers' practices.

While inflation increased from 3.4% in 2017 to 3.7%, the **regional minimum guaranteed prices** for main crops (soybean, bean, rice, coffee, milk) were increased by less than 3% in nominal terms in the 2018/19 plan compared to the previous one. For instance, soybean nominal prices increased by 2.4% while wheat prices decreased by 2.9%, the price for arabica coffee rose by 2.5% while Conilon coffee prices were reduced by 9.6%. Prices for paddy rice, rubber and grapes remained constant in nominal terms.

In early 2019, the Ministry of Agriculture, Livestock and Food Supply has taken over the responsibilities for small-scale family farming, and the Special Secretariat for Family Farm and Agrarian Development (SEAD) has been extinguished.[3]

The Ministry of Mines and Energy (MME) introduced a new regulation on the national biofuel policy, RenovaBio (decree 9308 of 15 March 2018). The National Energy Policy Council of Brazil set a target to reduce fossil fuel emissions by 10% in 2028, corresponding to a reduction of 600 million tonnes of carbon equivalent.[4] To increase the use of biofuels and reduce petroleum as a source of energy, the government foresees an increase in the production of ethanol (from 30 billion litres to about 50 billion litres) and biodiesel (from 4 billion litres to 13 billion litres) by 2030. In March 2018, the Brazilian government increased the biodiesel blending mandate (known as "B10") from 8% to 10%. In November 2018, the National Council for Energy Policies in Brazil proposed to increase the 10%

biodiesel blending mandate by one percentage point per year, starting from June 2019. The increase would continue for the next five years, reaching 15% by 2023, conditional on satisfactory results in ongoing engine tests.[5]

Trade policy developments in 2018-19

The European Union and the countries of Mercosur (Argentina, Brazil, Paraguay and Uruguay) continue negotiating on the EU-Mercosur Free Trade Agreement (FTA) after almost 20 years. By the end of 2018, they had agreed on 12 of the 15 chapters in the agreement.[6]

In August 2018, the Brazilian Council of the Foreign Trade Chamber (CAMEX) approved the removal of the 9% export tax on wet blue leather and salt leather. These export taxes have been in place for 18 and 26 years, respectively.[7] The tax was created aiming to add value to the leather chain, through exports of footwear. However, between 1997 and 2017, exports of Brazilian leather shoes decreased in value by 71.8%.[8] This was one of the last remaining agricultural export taxes in Brazil.

Brazil requested consultations at the World Trade Organization (WTO) in October 2018 regarding restrictions on Chinese sugar imports. The requirement concerns a safeguard measure, the People's Republic of China's (hereafter "China") administration of its tariff-rate quota and China's licensing system for out-of-quota imports.[9] The European Union, Thailand and Guatemala have also requested to join the consultations. In February 2019, Brazil also requested consultations with India at the WTO about domestic support measures that the country would provide to cane producers and export subsidy measures to sugar exporters;[10] Australia has also joined these consultations. In 2018, Brazil initiated reviews of its long-standing anti-dumping measures on garlic imports from China and on milk from New Zealand and the European Union.

In 2018, Brazil continued to have positive developments in the management of animal diseases. After eleven years without any incidence, in May 2018, the World Organization for Animal Health (OIE) officially declared Brazil free from FMD with vaccination.[11] The strategic plan for eradication and prevention of FMD aims to have the entire country recognised as free of FMD without vaccination by 2023. Until now, Santa Catarina is the only state in Brazil with this status, which it obtained in 2007.

The Brazilian government has been proactive regarding sanitary and phyto-sanitary impediments for market access. Some Brazilian products, such as pork meat, obtained access to certain markets such as South Korea and India, in recent years.[12]

In January 2019, the government announced a plan (Radar II Operation) to modernise and expand the logistics and transportation **infrastructure** on the BR-163 highway, which is the main route of transport for agricultural products, especially grains, towards seaborne international trade.[13] The plan aims to ensure the road traffic during the harvest with an investment of BRL 4 million or USD 1.1 million in logistical support to be implemented in five months (from December 2018 until May 2019).[14]

Notes

[1] AgroStat Brasil, http://agrostat.agricultura.gov.br.

[2] http://www.agricultura.gov.br/assuntos/sustentabilidade/plano-agricola-e-pecuario/arquivos-pap/copy_of_PlanoAgricolaePecurio20182019.pdf.

[3] In 2016, this Secretariat replaced the ministry created in 1999 to promote family farming support and land reform.

[4] http://www.mme.gov.br/web/guest/pagina-inicial/outras-noticas/-/asset_publisher/32hLrOzMKwWb/content/cnpe-delibera-sobre-metas-do-renovabio-e-rodadas-de-licitacoes.

[5] AMIS, March and November 2018, http://www.in.gov.br/materia/-/asset_publisher/Kujrw0TZC2Mb/content/id/49229059/do1-2018-11-08-despachos-do-presidente-da-republica-49228860.

[6] https://economia.estadao.com.br/noticias/geral,as-negociacoes-mercosul-uniao-europeia,70002659725.

[7] http://www.agricultura.gov.br/noticias/comite-executivo-da-camex-aprova-fim-do-imposto-de-exportacao-do-couro-wet-blue.

[8] Source: AgroStat Brasil. http://agrostat.agricultura.gov.br.

[9] https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds568_e.htm.

[10] https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds579_e.htm.

[11] http://www.agricultura.gov.br/noticias/ha-11-anos-sem-registro-de-aftosa-pais-e-considerado-livre-da-doenca-com-vacinacao.

[12] http://www.agricultura.gov.br/noticias/foram-abertos-mercados-para-24-produtos-do-agro-em-mais-12-paises

[13] http://www.agricultura.gov.br/noticias/forca-tarefa-vai-garantir-escoamento-de-graos-pela-br-163.

[14] https://www.aviacaocivil.gov.br/o-que-e-rss/17-ultimas-noticias/8285-%E2%80%9Copera%C3%A7%C3%A3o-radar-segue-com-tranquilidade%E2%80%9D,-diz-ministro-da-infraestrutura.html.

Chapter 6. Canada

Support to agriculture

Canada has significantly reduced its agricultural support since the late 1980s. Producer support as a share of gross farm receipts (%PSE) was halved between 1986-88 and 2000-02, in large part because market price support (MPS) to the grains industry was discontinued in 1995. The decline in the level of support since then has been more gradual because the dairy, poultry, and egg sectors continue to be under supply management. Given the importance of business risk management programmes, payment levels vary annually. Lower levels of disaster payments in recent years and a shift of budgetary expenditures towards general service support to the sector have resulted in lower farm income support.

Canada's PSE accounted for 9% of gross farm receipts in 2016-18, compared to 36% in 1986-88 and 18% in 2000-02. Canada's %PSE has been consistently below the OECD average over the period. However, the share of potentially most distorting support (based on output and variable input use – without input constraints) was 52% in 2016-18, above the OECD average, but lower than in 1986-88. MPS for milk accounts for the largest share of potentially most distorting support. On average, prices received by farmers were 6% higher in 2016-18 than those observed in world markets. The share of the General Services Support Estimate (GSSE) in the Total Support Estimate to agriculture (TSE) has almost doubled since 1986-88 and reached 28% in 2016-18. Support to the agricultural innovation system and the inspection system each account for about 40% of the GSSE.

Main policy changes

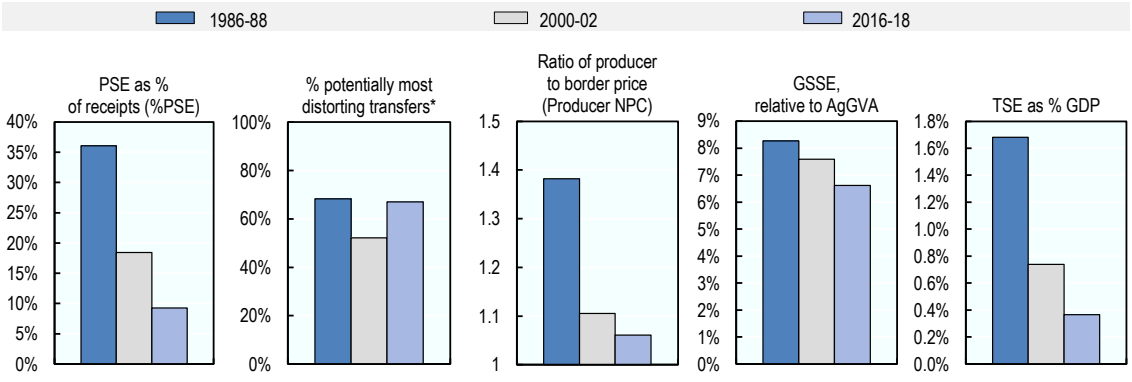
In Canada, a new five-year policy framework, the Canadian Agricultural Partnership (the Partnership) 2018-23 replaced on 1 April 2018 the previous framework Growing Forward 2 (GF2), which framed the main agricultural programmes and services for the period 2013-18 (AAFC, 2018a). The Partnership continues to cover cost-shared Business Risk Management (BRM) programmes; federally-delivered Strategic Initiatives; and cost-shared programmes delivered by Provinces and Territories. BRM programmes and strategic initiatives introduced with GF2 continue, with some changes. Support to research and innovation is split between into AgriScience and AgriInnovate, which support different elements of the innovation chain; and two new programmes are introduced. AgriAssurance aims to prevent and control risk to the animal and plant resource base, provide safe food and meet new market demands for assurance. AgriDiversity aims at increasing the capacity of youth, women, Indigenous Peoples and persons with disabilities to better participate in the agricultural sector. Provinces have started implementing new programmes within this framework.

On 30 November 2018, Canada, the United States and Mexico signed a new trade agreement, the Canada-United States-Mexico Agreement (called CUSMA in Canada), which will replace the North American Free Trade Agreement (NAFTA) once ratified by all three countries.

Assessment and recommendations

- Over time, there has been an increasing emphasis on general service support to the sector through programmes that target industry-led research and development, adoption of innovation in food and agriculture, and marketing initiatives. The new framework agreement for 2018-22 continues this trend.
- Support to producers, which is mainly to help farmers manage risk, has been well below the OECD average in recent years.
- For most commodities, domestic market prices are fully aligned with world prices, but the dairy, poultry and egg sectors continue to be protected from international competition and to receive market price support, which distorts production and trade. In recent years, the price distortion has been particularly high for dairy products. Market price support also acts as a barrier to entry into those supply-managed sectors, because high rents are capitalised in the value of quotas required to produce under the supply-management system.
- As a step towards phasing out the supply management, the available quotas should be increased in size and price support for the dairy, poultry and egg sectors should be reduced. This would encourage greater market responsiveness, stimulate innovation (to increase efficiency and diversify towards higher value products), and reduce quota rents.
- The 2018-22 Partnership renews programmes that provide budgetary support to mitigate farm income fluctuations, and adds a new element to facilitate safety management along the food chain, thus accompanying market demand. Stricter protocols and disciplines should be in place to reduce potential pressure for additional support in situations where existing programmes suffice, stimulate the development of market-based tools, and encourage farmers to find better ways to manage risk at farm level.
- The agreement also fosters inclusiveness, by helping youth, women, Indigenous Peoples and persons with disabilities to better participate in the agricultural sector. This also contributes to attracting and renewing labour much needed in the sector.
- The Pan-Canadian Framework (PCF) on Clean Growth and Climate Change covers the food and agriculture sector. Funding is available through the Partnership, and from economy-wide sources such as the Low Carbon Economy Leadership Fund, which has supported a number of agriculture and agri-food related projects with a focus on energy efficiency, soil health and carbon sequestration, manure management, and waste treatment and processing.
- In the future, the policy focus should continue to shift towards facilitating the adoption of innovation by targeting industry-led research and development, and marketing initiatives. This would contribute to the long-term objectives of improving the competitiveness and sustainability of the sector.

Figure 6.1. Canada: Development of support to agriculture

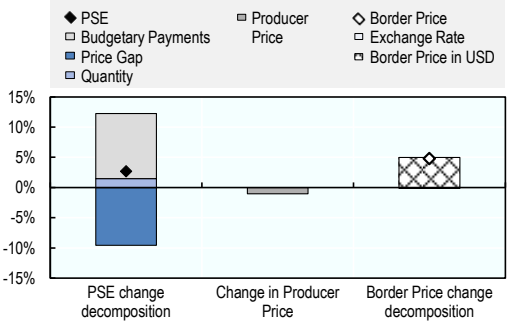


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933936826

Support to producers (%PSE) has declined gradually since the late 1980s, accounting for less than 10% of gross farm receipts in the period 2016-18, about half the OECD average. The potentially **most distorting support** remains the largest share of producer support, due to market price support (MPS) to the dairy, poultry and egg sectors (Figure 6.1). The level of support hardly changed between 2017 and 2018, as the decline in MPS offset the increase in budgetary payments. The decrease in MPS results from a smaller price gap as domestic prices remained stable while world prices increased (Figure 6.2). Prices received by farmers, on average, were about 6% higher than world prices, but large differences between commodities persist. While most commodity prices are aligned with world levels, the domestic price for milk is 40% higher. MPS is the main component of Single Commodity Transfers (SCT): milk has the highest share of SCT in commodity gross farm receipts (Figure 6.3). Overall, SCT represent three-quarters of the total PSE. The expenditures for **general services** (GSSE) measured relative to agriculture value added were above the OECD average. **Total support to agriculture** as a share of GDP has declined significantly over time and is lower than the OECD average. More than 70% of the total support is provided to individual farmers (PSE).

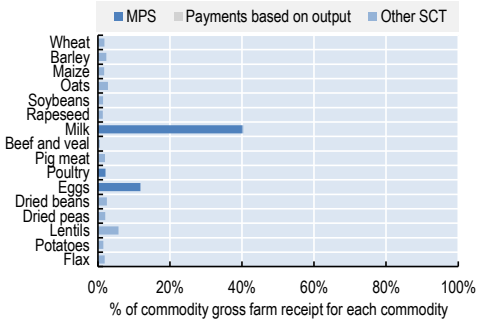
Figure 6.2. Canada: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933936845

Figure 6.3. Canada: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933936864

Table 6.1. Canada: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**14 083**	**20 696**	**45 065**	**43 834**	**45 714**	**45 648**
***of which:** share of MPS commodities (%)*	85.6	82.0	84.4	84.7	84.5	84.0
Total value of consumption (at farm gate)	**12 688**	**15 538**	**29 255**	**28 640**	**29 280**	**29 846**
Producer Support Estimate (PSE)	**6 136**	**4 241**	**4 326**	**4 697**	**4 083**	**4 199**
Support based on commodity output	3 488	1 973	2 598	2 923	2 599	2 271
Market Price Support[1]	3 125	1 952	2 594	2 913	2 599	2 271
Positive Market Price Support	3 271	1 952	2 626	2 913	2 599	2 368
Negative Market Price Support	-146	0	-32	0	0	-97
Payments based on output	364	20	3	10	0	0
Payments based on input use	1 098	368	383	381	396	373
Based on variable input use	629	242	278	279	295	262
with input constraints	0	0	0	0	0	0
Based on fixed capital formation	448	108	89	67	91	109
with input constraints	0	0	0	0	0	0
Based on on-farm services	20	18	16	35	10	2
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	1 336	1 307	1 327	1 386	1 076	1 520
Based on Receipts / Income	467	586	596	648	498	641
Based on Area planted / Animal numbers	869	721	732	738	578	879
with input constraints	0	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	0	8	0	0	23
Payments based on non-current A/An/R/I, production not required	0	553	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	553	0	0	0	0
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	10	7	12	11
Percentage PSE (%)	**36.1**	**18.4**	**9.3**	**10.3**	**8.7**	**8.8**
Producer NPC (coeff.)	**1.38**	**1.11**	**1.06**	**1.07**	**1.06**	**1.05**
Producer NAC (coeff.)	**1.56**	**1.23**	**1.10**	**1.11**	**1.09**	**1.10**
General Services Support Estimate (GSSE)	**1 153**	**1 260**	**1 642**	**1 702**	**1 701**	**1 522**
Agricultural knowledge and innovation system	483	536	652	656	660	639
Inspection and control	283	348	668	708	714	583
Development and maintenance of infrastructure	268	182	146	165	145	128
Marketing and promotion	85	179	156	156	156	156
Cost of public stockholding	0	0	0	0	0	0
Miscellaneous	34	15	20	17	27	15
Percentage GSSE (% of TSE)	**15.7**	**22.9**	**27.5**	**26.6**	**29.4**	**26.5**
Consumer Support Estimate (CSE)	**-2 860**	**-2 089**	**-2 961**	**-3 444**	**-2 904**	**-2 535**
Transfers to producers from consumers	-3 089	-1 947	-2 592	-2 913	-2 598	-2 266
Other transfers from consumers	-36	-143	-380	-532	-314	-293
Transfers to consumers from taxpayers	31	0	11	0	9	24
Excess feed cost	234	0	0	0	0	0
Percentage CSE (%)	**-22.7**	**-13.4**	**-10.1**	**-12.0**	**-9.9**	**-8.5**
Consumer NPC (coeff.)	**1.33**	**1.16**	**1.11**	**1.14**	**1.11**	**1.09**
Consumer NAC (coeff.)	**1.29**	**1.16**	**1.11**	**1.14**	**1.11**	**1.09**
Total Support Estimate (TSE)	**7 320**	**5 501**	**5 979**	**6 399**	**5 793**	**5 745**
Transfers from consumers	3 125	2 089	2 972	3 444	2 913	2 559
Transfers from taxpayers	4 231	3 555	3 387	3 487	3 195	3 479
Budget revenues	-36	-143	-380	-532	-314	-293
Percentage TSE (% of GDP)	**1.7**	**0.7**	**0.4**	**0.4**	**0.4**	**0.3**
Total Budgetary Support Estimate (TBSE)	**4 195**	**3 549**	**3 385**	**3 487**	**3 194**	**3 474**
Percentage TBSE (% of GDP)	**1.0**	**0.5**	**0.2**	**0.2**	**0.2**	**0.2**
GDP deflator (1986-88=100)	**100**	**138**	**189**	**184**	**189**	**192**
Exchange rate (national currency per USD)	**1.32**	**1.53**	**1.31**	**1.33**	**1.30**	**1.30**

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, dry beans, dry peas, milk, beef and veal, pig meat, poultry and eggs.

Source: OECD (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

Canada is a large, wealthy country with a small population relative to its land area. Primary agriculture accounts for l.5% of GDP, but is important in some of its regions. Canada is a large net exporter of agro-food products, which account for about 12% of total exports, and access to export markets is a significant issue for the sector. More than half of Canada's agro-food exports are destined to the United States. Crop production is concentrated in the western prairies, where the typical farm is twice as large as the national average, highly productive, and produces largely for export. Most milk production is located in Eastern Canada, which has relatively smaller farms and a larger variety of crops. Red meat industries (hogs and beef cattle) are present across Canada, especially in Western Canada.

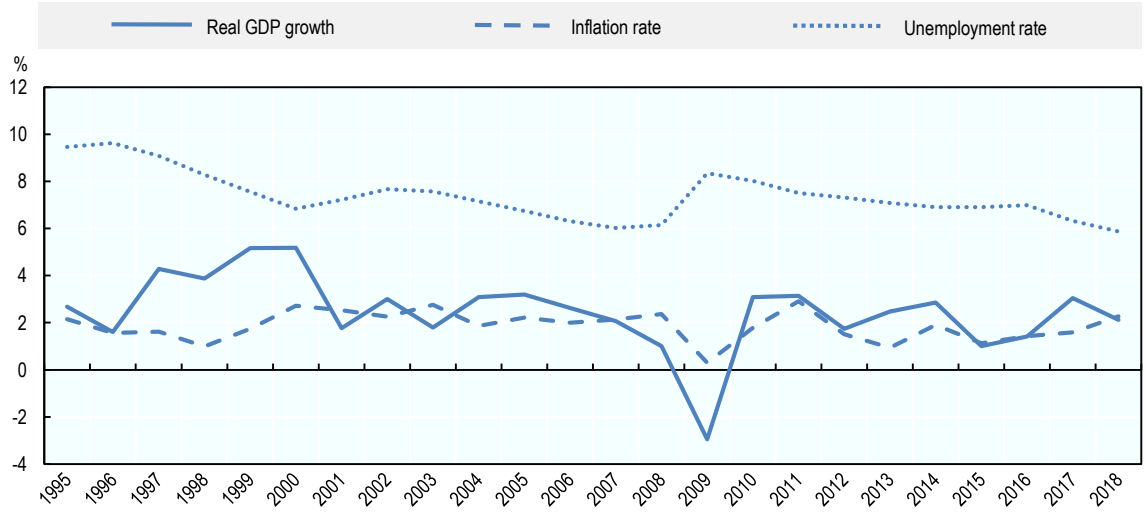
Table 6.2. Canada: Contextual indicators

	Canada		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	686	1 707	2.3%	1.7%
Population (million)	29	37	0.8%	0.8%
Land area (thousand km²)	9 094	9 094	11.4%	11.2%
Agricultural area (AA) (thousand ha)	67 994	62 671	2.3%	2.1%
			All countries[1]	
Population density (inhabitants/km²)	3	4	48	60
GDP per capita (USD in PPPs)	23 395	46 705	7 642	21 231
Trade as % of GDP	29	25	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	2.9	1.5	3.3	3.5
Agriculture share in employment (%)	4.1	1.9	-	-
Agro-food exports (% of total exports)	6.8	11.5	8.1	7.5
Agro-food imports (% of total imports)	5.5	8.1	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	51	58	-	-
Livestock in total agricultural production (%)	49	42	-	-
Share of arable land in AA (%)	67	70	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

Canada enjoys a stable macroeconomic environment, with rapid recovery from the 2007-08 economic crisis and steady GDP growth since. Inflation rates have been below 2% between 2012 and 2017, but rose to 2.3% in 2018. Unemployment rates have been declining regularly since the peak of 2009, to less than 6% in 2018. Exports of agro-food products are well above imports, with recent changes in values mainly reflecting commodity price fluctuations. Most of Canada's agro-food exports are primary products for processing (around 37%), forming part of other country's production system, and processed products for consumption (about 35%). Agro-food imports are largely processed products for consumption.

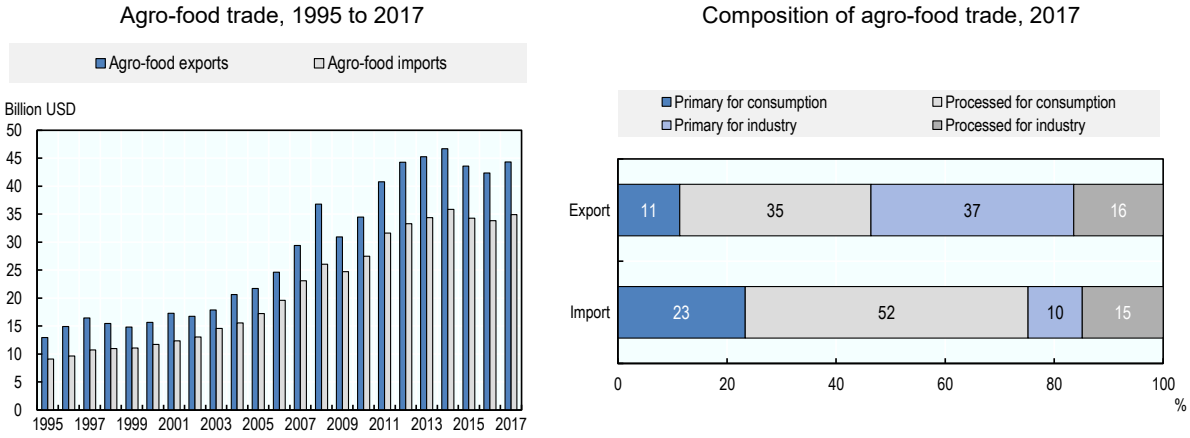
Figure 6.4. Canada: Main economic indicators, 1995 to 2018



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

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Figure 6.5. Canada: Agro-food trade



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

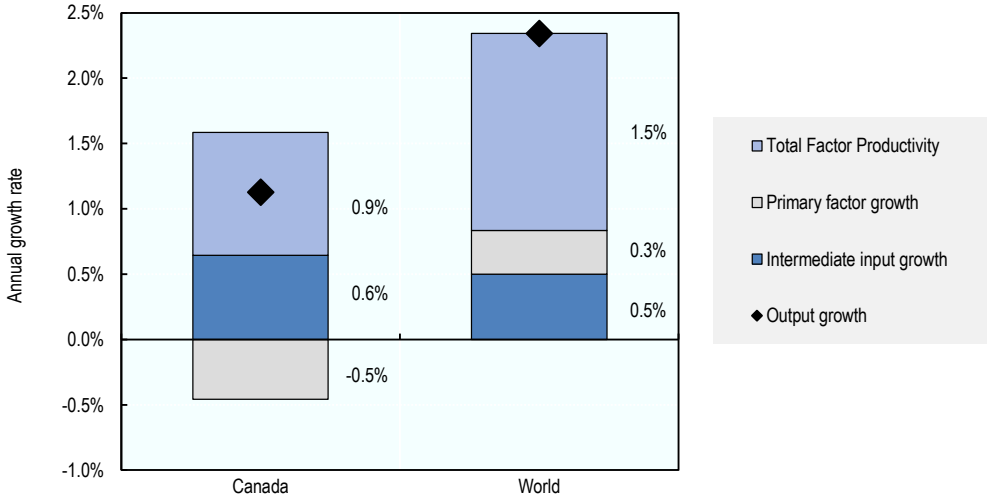
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Total factor productivity (TFP) growth is driving agricultural output growth in Canada. TFP growth averaged 0.9% per year between 2006 and 2015, below the world average. At 1.1% per year, output growth was also below the world average, achieved with declining use of primary production factors, notably labour, but higher use of intermediate inputs.

Canadian agriculture benefits from relatively abundant resources (e.g. land and water), and agricultural output growth has been achieved with reduced or minimal increased pressure on natural resources in most cases. Nitrogen surplus intensities have, however, risen

significantly at the national level and are now close to the average for OECD countries, as are greenhouse gas (GHG) emissions, but the national phosphorus surplus intensity is well below the average for OECD countries.

Figure 6.6. Canada: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

StatLink https://doi.org/10.1787/888933936921

Table 6.3. Canada: Productivity and environmental indicators

	Canada		International comparison	
	1991-2000	2006-15	1991-2000	2006-15
			World	
TFP annual growth rate (%)	2.7%	0.9%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha	18.0	28.0	33.2	30.0
Phosphorus balance, kg/ha	2.0	1.3	3.7	2.3
Agriculture share of total energy use (%)	2.2	3.6	1.9	2.0
Agriculture share of GHG emissions (%)	8.3	8.5	8.5	8.9
Share of irrigated land in AA (%)	1.2	1.2	-	-
Share of agriculture in water abstractions (%)	8.7	5.6	45.4	42.5
Water stress indicator	1.3	1.0	9.7	9.7

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

Description of policy developments

Main policy instruments

Canada's agricultural policy framework prioritises risk management and investments to enhance the sector's sustainable growth, competitiveness, marketing and trade, food safety, and research and innovation capacity. Under the Canadian Constitution, federal and provincial governments share the responsibility for agriculture. Since 2003, joint five-year funding agreements between federal, provincial, and territorial (FPT) governments frame the main programmes and services. The FPT framework agreements provide flexibility for provinces and territories to design and deliver programmes that respond to their regional priorities. In addition, provinces and territories can develop and fund their own agriculture programmes outside of this framework.

The current framework is the Canadian Agricultural Partnership (the Partnership) covering 2018-23 (AAFC, 2018[2]). On 1 April 2018, it replaced the previous FPT multilateral policy framework called Growing Forward 2 (GF2), which had been in place since 2013.

As the previous one, the current framework has three elements: 1) a suite of cost-shared Business Risk Management (BRM) programmes, which help farmers manage risks related to severe market volatility and disaster situations; 2) federally-delivered Strategic Initiatives; and 3) cost-shared programmes delivered by Provinces and Territories. Government spending for BRM programmes is around CAD 1.5 billion (USD 1.2 billion) per year, comprising about 70% of total spending under the Partnership.

There are five BRM programmes, cost-shared between the federal and provincial governments. AgriStability is a whole-farm margin programme providing support in years of significant income declines. AgriInvest provides matching contributions to producers, who make annual deposits to a savings account, to help manage moderate declines in income or make investments in farming operations to mitigate risk. AgriInsurance provides cost-shared insurance to reduce the financial impact of production or assets losses due to natural perils. AgriRecovery is a FPT co-ordinated disaster relief framework. These four programmes provide protection against different types of losses, as well as cash flow options. The fifth programme introduced in GF2, AgriRisk Initiatives, supports the industry to investigate risk, develop and implement new tools, as well as to engage the support and participation of the private sector.

Canada's agricultural support policies differentiate between the supply-managed sectors, which are protected by high custom tariffs and are oriented towards the domestic market, and other commodity sectors, which operate within an open market environment and are export oriented. A supply management system provides market price support to the dairy, poultry and eggs sectors through tariffs and production quotas that are tradable only within provinces, combined with a system of domestic price-setting according to production costs. The successive frameworks recognise supply management as a risk management instrument.

Strategic Initiatives that are federally-funded focus on three key areas. Under the growing trade and expanding markets area, AgriMarketing supports industry-led market development activities aimed at assisting the sector in identifying and seizing domestic and international opportunities; and AgriCompetitiveness helps the sector adapt to changing commercial and regulatory environments, share best practices, and provide mentorship opportunities. Under the innovative and sustainable growth areas, AgriScience supports innovation driven by industry research priorities, including pre-commercialisation

activities and investments in cutting-edge research to benefit the agricultural and agri-food sector; and AgriInnovate supports projects that aim to accelerate the demonstration, commercialisation or adoption of innovative products, technologies, processes or services that increase sector's competitiveness and sustainability. They replace GF2 AgriInnovation. The area supporting the diversity and a dynamic sector includes two new programmes. AgriAssurance aims to prevent and control risk to the animal and plant resource base, provide safe food and meet new market demands for assurance. In addition, AgriDiversity is a new programme that aims at increasing the capacity of youth, women, Indigenous Peoples and persons with disabilities to better participate in the agricultural sector.

Strategic initiatives that are cost-shared prioritise investment in six areas: 1) science, research and innovation; 2) markets and trade; 3) environmental sustainability and climate change; 4) value-added agriculture and agro-food processing; 5) risk management; and 6) public trust.

Provincial governments design and administer most farm-level environmental programmes. Two programmes (cost-shared between federal and provincial governments) aim to advance environmentally sustainable agriculture: the Environmental Farm Plans (EFP) programmes and the Environmental Stewardship Incentive programmes. The EFP consists of an assessment of on-farm environmental risks, and the development of an action plan to mitigate those risks. The Environmental Stewardship Incentive programmes provide cost-shared financial assistance to farms with an EFP to adopt specific Beneficial Management Practices (BMP), such as nutrient management, manure storage and soil erosion controls.

Over the period 2018-23, the Canadian agriculture and agri-food sector's contribution to the Pan-Canadian Framework (PCF) on Clean Growth and Climate Change will be primarily delivered through the Partnership. Federal-only programmes will support actions that help support resiliency and sustainability of the sector through science, research and adoption of innovative practices and technologies (e.g. AgriInnovate and AgriScience). The PCF has been adopted, following Canada's ratification of the Paris Agreement in 2016, to reduce GHG emissions across all sectors in Canada, including agriculture. It identifies three agriculture-related actions: increasing stored carbon in agricultural soils to partially offset emissions from the sector; generating bioenergy and bioproducts to displace emissions in other economic sectors; and, advancing innovation in GHG-efficient management practices to reduce agricultural emissions and emission intensity.

Domestic policy developments in 2018-19

Risk management

As part of provincial implementation of BRM programmes, Saskatchewan enhanced its crop insurance programme in 2018 by including insurance for pasture and fires, more crops to be insured under the Contract Price Option, and increased compensation rates for cattle lost due to predators. The Hazelnut Renewal Program in British Columbia provides funding to remove infected trees to mitigate the spread of Eastern Filbert Blight and to incentivise the planting of new disease-resistant hazelnut trees.

Alberta introduced three new risk management programmes. 1) The Emergency Preparedness Program aims to improve the capacity and readiness of industry to prepare for and respond effectively to an emergency that has the potential to negatively impact the livestock and crop sectors. 2) The Risk Mitigation Program is designed to protect animal

and plant resources, farm families and workers, food supply, and irrigation conveyance work. 3) The Surveillance Program aims to increase the early detection of existing and emerging livestock diseases, crop pests, bee pests, foodborne hazards, and other risks affecting plant, animal, and public health.

In the **hog** industry, Manitoba implemented the High Traffic Facility Swine Disease Surveillance to monitor cleaning and disinfection of common contact points to ensure biocontainment. Audits and assessments also ensure industry biosecurity standards are met. Specific programmes targeted the **bee** sector in British Columbia (Bee BC Program) and Nova Scotia (Bee Biosecurity Program) and Manitoba (Ag Action Manitoba Assurance) to maintain and improve bee health.

Business and market development

In addition to supporting business and market development through the Partnership AgriCompetitiveness and AgriMarketing programmes, in November 2018 Canada's federal government announced a number of new measures in support of the agricultural sector in its Fall Economic Statement. For example, under a new Accelerated Investment Incentive, manufacturers, food processors and farmers will be able to deduct a larger portion of the depreciation in the year an investment is made. Moreover, additional funding was made available to implement an Export Diversification Strategy, and to improve transportation data, which will support the movement of all goods, including agricultural products.

At the provincial level, the Land Matching Program in British Columbia provides land matching and business support services to new farmers looking for land to farm as well as landowners interested in finding someone to farm their land. The Small Farm Accelerator Program in Nova Scotia is open to new farming entrants and provides financial assistance for completing a farm business plan, a loan interest rebate, funding to address a barrier to growth, and assistance for contracting professional advisors. The Market Expansion and Export Readiness programme in Nova Scotia provides assistance to farmers willing to expand their market penetration.

Inclusiveness

The Partnership includes new activities targeting inclusive growth by reducing barriers for people with disabilities, women, Indigenous Peoples, youth and young farmers. The new AgriDiversity Programme is a five-year, CAD 5 million (USD 3.9 million) initiative developed to support diverse groups — Indigenous peoples, marketing boards, non-profit organisations and associations, including co-operatives — to respond to new and emerging issues and opportunities in the agricultural and agro-food sector. It supports skills, leadership, and entrepreneurial development; facilitates knowledge sharing and best management practices.

The Indigenous Agriculture and Food Systems Initiative (2018-23) aims to increase economic development opportunities for Indigenous peoples and communities in Canada by supporting Indigenous participation in the Canadian agriculture and agri-food sector, and encouraging partnerships between federal, provincial/territorial governments, and non-government collaborators. The initiative supports Indigenous communities and entrepreneurs who are ready to launch agriculture and food systems projects and others who want to build their capacity to participate in the agriculture and agri-food sector. The Indigenous Agriculture Development Program in British Columbia provides support for

the development of agriculture and agro-food opportunities within Indigenous communities.

Environment and climate change

Additional programmes and initiatives outside of the Partnership will contribute to progress on agriculture-related actions identified under the PCF. The 2018-21 Agricultural Clean Technology programme supports investments made by provincial and territorial governments in research, development and adoption of clean technologies for the agriculture, agri-food and agri-based products sector, specifically precision agriculture and agri-based bioproducts. The new Living Laboratories Initiative will facilitate knowledge transfer on sustainable farming practices using an integrated approach to agricultural research that brings farmers, scientists and other stakeholders together to co-develop, test and monitor new practices and technologies on farms.

The Low Carbon Economy Leadership Fund has supported a number of agriculture and agri-food related projects being implemented in several provincial jurisdictions with a focus on energy efficiency, soil health and carbon sequestration, manure management, and waste treatment and processing. The Clean Fuel Standard (CFS) aims to achieve reductions of 30 mega-tonnes (Mt) CO_2-eq. per year of GHG emissions by 2030. The CFS presents potential opportunities for the agriculture sector as providers of agricultural biomass for use in the manufacture of low-carbon fuels. The CFS will provide opportunities for agricultural feedstocks for fuels, and for the fuels themselves, including ethanol, renewable natural gas, or solid agricultural biomass.

At the provincial level, the Manitoba Climate and Green Plan Implementation Act supports the reduction of greenhouse gas emissions and adaptation to climate change. Through the newly established Conservation Trust, Manitoba will provide financial support to meet the Made in Manitoba Climate and Green Plan objectives, which include conserving and enhancing grasslands, wetlands and woodlands. Manitoba is building on the past success of the Environmental Farm Planning (EFP) initiative. Further EFP development includes additional modules (e.g. on-farm climate change assessment). Two new programmes have implementation criteria requiring an EFP Statement of Completion — Ag Action Manitoba Watershed Ecological Goods and Services, and Ag Action Manitoba Beneficial Management Practices.

The Farm Adaptation Innovator Program in British Columbia and the Environmental Sustainability and Climate Change Program in Alberta support demonstration and knowledge sharing to improve producer understanding of key environmental practices and to enable farm-level adaptation to climate change. The Environmental Sustainability and Climate Change programme in Alberta also supports producers in reducing negative impacts on the environment by providing financial assistance for activities such as watering systems, riparian fencing, livestock facility management, improved manure storage facilities, manure application and shelterbelts.

In Alberta, the Farm Water Supply Program provides support to producers to enhance their water supply security, and the Irrigation Efficiency Program aims to increase water savings and reduce energy use in irrigated agriculture by assisting producers with the purchase of more efficient irrigation equipment and systems. The Soil and Water Sustainability Program in Nova Scotia assists farms in mitigating on-farm environmental risks for soil and water.

Public trust and animal welfare

The Partnership is the first framework to highlight that maintaining public confidence and trust is critical to the sustainable growth of the sector. Since 1 April 2018, Agriculture and Agri-food Canada (AAFC) has helped build public trust in the sector by facilitating the development of industry led assurance systems to respond to a variety of issues, including biosecurity and animal welfare.

Across Canada, animal welfare and public trust issues have become more important and have led some provinces to develop new programmes. The Ag Action Manitoba Assurance programme supports the ethically sound treatment of animals by providing assistance for the adoption of monitoring, training, equipment and facility upgrades that support improved animal care. New Brunswick promotes agriculture awareness at trade shows, seminars and school events through the Agriculture Awareness programme.

Alberta supports trust-building initiatives through three specific programmes. The Agriculture and Food Sustainability Assurance Initiatives Literacy Program provides support to develop and enhance sustainability certification or assurance systems to demonstrate to the public the quality, safety and sustainability of agricultural and food products. The Public Agriculture Literacy Program supports initiatives that build industry communication capacity to increase public and consumers' awareness and understanding of agriculture and the food production system. The Youth Agriculture Education Program helps students to engage in meaningful and informed conversations about issues that affect public trust in agriculture.

Plant and animal health

In 2018, plant and animal health partners across Canada established separate coordinating councils to implement priority activities identified in the Plant and Animal Health Strategy for Canada launched in 2017. The Canadian Plant Health Council began developing its work plan and reached consensus on priority activities, with biosecurity, surveillance and emergency response management as focus areas.

Food safety

Under the Partnership, a new programme, AgriAssurance, aims to prevent and control risk to the animal and plant resource base, provide safe food and meet new market demands for assurance.

The Canadian Food Inspection Agency has developed the new Safe Food for Canadians Regulations (SFCR), which came into force on 15 January 2019. The SFCR focuses on prevention and allows for faster removal of unsafe food from the marketplace. The SFCR is based on international standards and will reduce unnecessary administrative burden on businesses by replacing 14 sets of regulations with one.

At the provincial level, food safety is being enhanced by the introduction of new programmes to promote traceability practices and the monitoring, detection and elimination of food borne pathogens. In British Columbia, the Livestock Tag Reader Rebate Program supports livestock operators who implement approved livestock tag readers, and the Traceability Value Chain Program provides funding to implement sector-wide or value-chain traceability practices, systems, infrastructure and technologies. Ag Action Manitoba Assurance supports the development of food safety plans, programmes and training, as well as the purchase of identified food safety equipment and instruments, both for detection and testing.

Food policy

The Government of Canada is currently developing a food strategy "A Food Policy for Canada". It is expected to be a federal, whole-of-government initiative that should address issues such as increasing access to safe, nutritious and culturally appropriate food; supporting food's contribution to human health; promoting environmental sustainability, resilience and conservation; and building a strong agriculture and food sector. AAFC (2018[3]) published the results of a consultation of stakeholders supporting the development of the food strategy.

In the meantime, Quebec launched its "*Politique bioalimentaire 2018-2015 — Alimenter notre monde*" in April 2018. This policy, based on a shared responsibility between governments and partners of the food value-chain, aims to better meet consumer needs with more viable, sustainable, responsible and innovative firms in dynamic regions for the development of biofood.

Innovation and knowledge transfer

The GF2 AgriInnovation programme addressed all the stages of the innovation continuum using three streams of innovation initiatives: 1) Research Acceleration Innovation; 2) Research and Development (R&D); and 3) Commercialisation and Adaption (Box 6.1 in OECD (2015[4])). In the Partnership, two programmes supporting two different segments of research and innovation replace AgriInnovation. AgriScience invests in leading-edge R&D and support pre-commercialisation activities (as AgriInnovation streams 2 and 1, respectively) and AgriInnovate supports adoption (as AgriInnovation stream 3).

The Canadian Agricultural Strategic Priorities Program (CASPP) is a CAD 50.3 million (USD 38.8 million), five-year investment that was introduced in February 2019. Replacing the Canadian Agricultural Adaptation Programme (CAAP), it focuses on four priority areas: adoption of new technology; environmental sustainability; strategic development and capacity building; and, emerging issues. The programme also builds on other Government of Canada initiatives to support competitiveness and sustainability in the agricultural sector.

Innovation and knowledge transfer remains a priority for provincial governments. For example, Nova Scotia supports research and innovation through the Industry Driven Research and Innovation programme, which supports industry-led research and development projects; the Advancing Innovative Technologies programme, which supports the adoption of new technologies, processes or specialised equipment within the agriculture sector. The Technologies for Value-Added Agriculture programme supports agricultural producers and processors who seek to advance their operations through innovation, efficiency and quality improvements; and the Wild Blueberry Harvest Efficiency Program supports the adoption of efficient harvester technology in order to increase crop yield.

Alberta supports agricultural innovation through various activities. Some demonstrate the feasibility and potential for real world application of innovations that are new to Alberta or new to the agriculture sector (Accelerating the Advancement of Agricultural Innovation); others adapt to the Alberta agriculture sector innovations that have proven to work outside of Alberta or in non-agriculture industries.

Manitoba has created the Manitoba Agriculture Research and Innovation Committee, which is responsible for advising on research and innovation projects, which are eligible to Partnership funding.

New product

The Cannabis Act, which came into force on 17 October 2018, provides a strict legal framework for the production, distribution, sale, and possession of cannabis in Canada. Producers of cannabis need to be federally licensed to operate. The cannabis industry is eligible to apply for federal programmes under the Partnership. However, provinces and territories have the discretion to determine eligibility of cannabis for cost-shared strategic initiative programmes.

For BRM programmes, income from cannabis (including both medicinal and recreational) is not eligible for support under AgriStability and AgriInvest. Federal and provincial/territorial governments will monitor this once the cannabis industry matures and stabilises.

Trade policy developments in 2018-19

On 30 November 2018, Canada, Mexico and the United States signed a new trade agreement (called CUSMA in Canada), which will replace the North American Free Trade Agreement (NAFTA) once it is ratified by all three countries and enters into force. The new agreement will preserve the existing agriculture commitments from NAFTA, and will eliminate tariffs for certain additional products between Canada and the United States (e.g. margarine, whey). It will provide new market access opportunities for Canada's exports of refined sugar and sugar-containing products, as well as certain dairy products (including cheese, cream, milk beverages, butter) in the form of US tariff rate quotas. It will also create new market access opportunities for US exports of dairy, poultry, and eggs to Canada, by establishing new Canadian tariff rate quotas.

The agriculture chapter in the new agreement includes new obligations for agricultural biotechnology, aiming to provide further transparency and predictability in the trade of products derived from current and future technologies. The new agreement also requires Canada to eliminate milk classes 6 and 7; establish a mechanism to monitor exports of skim milk powder, milk protein concentrate, and infant formula; and allows US grown wheat of varieties registered in Canada to receive an official Canadian grain grade.

On 20 July 2018, the United States requested the establishment of a panel to examine Canadian measures governing the sale of wine in grocery stores. On 30 November 2018, the United States and Canada signed a side letter as part of the new agreement to modify the measures identified in the US panel request by 1 November 2019. The United States agreed to pause the WTO dispute until 1 November 2019 (WTO, 2019[5]).

The Comprehensive and Progressive Agreement for a Trans-Pacific Partnership (CPTPP) came into force. Negotiations began with MERCOSUR (Argentina, Brazil, Paraguay, and Uruguay) to establish a free trade agreement. Israel and Canada signed an agreement modernising the existing Canada-Israel Free Trade Agreement. Negotiations for Canada to become an Associated State of the Pacific Alliance (Chile, Colombia, Mexico, and Peru) continued, and ASEAN member states (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam) and Canada advanced exploratory discussions and agreed to move to technical level discussions.

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Chapter 7. Chile

Support to agriculture

Chile's agricultural policies create limited distortions to agricultural markets, as due to the absence of policies supporting prices, there is almost no market price support (MPS) provided to farmers. The support to producers is one of the lowest amongst OECD countries at 2.5% of gross farm receipts (%PSE) in 2016-18. Support to producers is mostly provided to small-scale farmers, mainly in the form of input subsidies, in particular support to fixed capital formation such as farm level irrigation investments, and the provision of public goods. More than a half of public expenditure is financing general services to the sector, being the development and maintenance of infrastructure (particularly off-farm irrigation works); inspection and control; and agricultural knowledge and innovation system the areas that accounted for 96% of these public investments in the period 2016-18.

Main policy changes

Policy measures continue to target a number of areas: the expansion and more efficient irrigation systems; sanitary and phyto-sanitary control; policy instruments that promote the development of smallholders and indigenous farmers, in particular, through marketing associations; promoting innovation; and sustainable use of resources, in particular prevent degradation of soils.

In 2018, the Agriculture and Livestock Service (SAG) has made progress in modernising inspection processes with the aim of facilitating trade. The Institute for Agricultural Development (INDAP) has focused on facilitating market access through the use of marketing association and cooperatives, which helped to increase the number of vertically integrated smallholders into value chains.

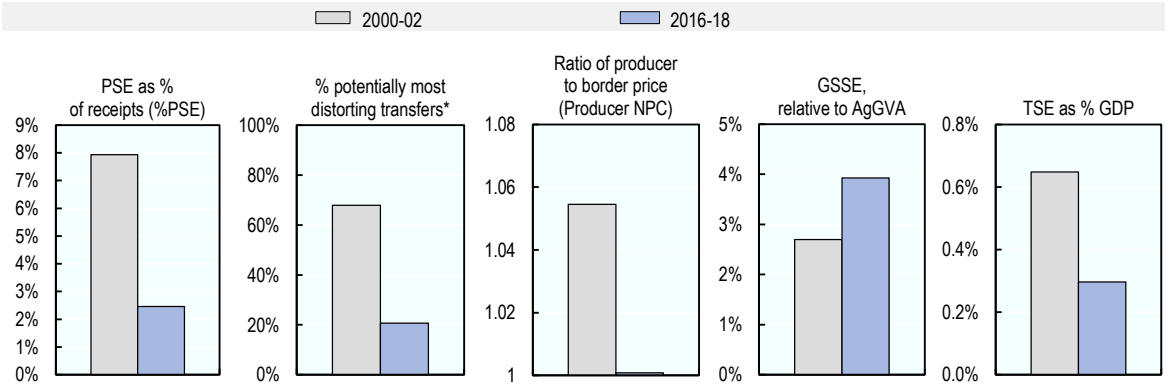
In 2018, a new national government came into power. This government has defined seven agricultural policy objectives for the 2018-22 period: 1) Strengthen territorial rural development; 2) Strengthen small and medium farmers' development; 3) Improve information systems as well as protecting phyto-sanitary and zoo-sanitary conditions; 4) Increase investments on innovation at national level; 5) Modernise the management of the Ministry of Agriculture and related specialised agencies; 6) Optimise the use, and protect, natural resources, particularly water and soil; and 7) Promote sustainable forestry and agricultural production and adaptation to climate change. These seven objectives are framed under four main policy guidelines: 1) Institutional modernisation; 2) Associativity, focusing on ways to organise farmers; 3) Sustainability, to conserve and protect natural resources; and 4) Strengthen rural development.

Chile continues renegotiation of its association agreement with the European Union, with an agenda that goes beyond the liberalisation of tariffs, with issues like intellectual property rights and environmental provisions. In November 2018, Chile signed a Free Trade Agreement (FTA) with Brazil.

Assessment and recommendations

- Agricultural policies in Chile provide low and declining levels of support to producers, mostly in the form of targeted payments or investment support. They do not interfere with market functioning, and domestic prices are aligned with world levels. Government expenditures increasingly focus on ensuring the long-term competitiveness of the sector, through the provision of general services.
- Direct payments are mostly provided to small-scale farmers and aim to improve their productivity and competeveness, payments are also provided for recovery of degraded soils for both smallholders and medium/large farmers, and on-farm irrigation systems. Most of the expenditures on general services are allocated on irrigation infrastructure inspection and control, and agricultural knowledge and innovation systems.
- While a large part of payments to farmers are targeted towards small-scale agriculture and indigenous farmers, careful attention should be paid to assessing their effectiveness systematically.
- As an increasing number of projects and programmes related to agriculture are developed by agencies outside the Ministry of Agriculture, the need for co-ordination across ministries and agencies becomes more important.

Figure 7.1. Chile: Development of support to agriculture

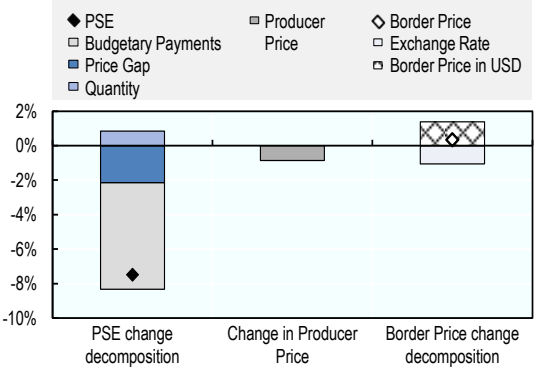


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Support to producers (%PSE): Support to producers as a share on gross farm receipts (%PSE) declined from 6% in 1995-97 to 2.5% in 2016-18. This support is amongst the lowest in the OECD area and it is provided mainly in the form of direct payments to smallholders. Chile has reduced the potentially most production and trade-distorting forms of support and MPS is particularly low. Most of the support to producers is to input subsidies, in particular to fixed capital formation and input use. Producer prices are practically aligned with world prices (Figure 7.1). Expenditures for general services were equivalent to 4% of the agricultural value added in 2016-18. Total agricultural support was 0.3% of GDP in 2016-18. Support to General services (GSSE) accounted for more than a half of the total support (TSE) in 2016-18. Main drivers of change in the PSE was an increase in production (Figure 7.2). Transfers to single commodities are almost zero and only observed on maize and sugar for 2016-18 (Figure 7.3).

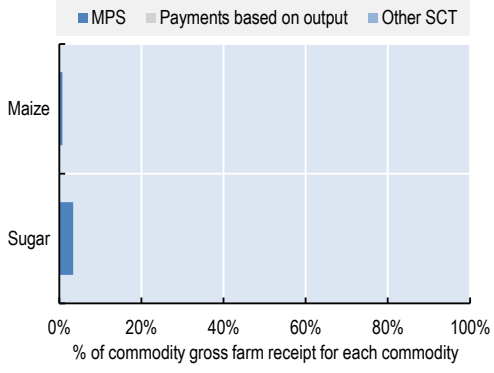
Figure 7.2. Chile: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Figure 7.3. Chile: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Table 7.1. Chile: Estimates of support to agriculture

Million USD

	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**4 532**	**15 266**	**14 411**	**15 272**	**16 114**
***of which:** share of MPS commodities (%)*	67.9	65.5	69.2	63.3	64.2
Total value of consumption (at farm gate)	**3 997**	**10 899**	**9 842**	**11 286**	**11 568**
Producer Support Estimate (PSE)	**376**	**385**	**358**	**412**	**385**
Support based on commodity output	234	13	8	18	12
Market Price Support[1]	234	13	8	18	12
Positive Market Price Support	238	13	8	18	12
Negative Market Price Support	-4	0	0	0	0
Payments based on output	0	0	0	0	0
Payments based on input use	140	356	343	360	364
Based on variable input use	21	67	67	66	68
with input constraints	0	0	0	0	0
Based on fixed capital formation	85	194	180	199	201
with input constraints	66	98	91	103	99
Based on on-farm services	35	95	96	94	95
with input constraints	7	35	35	36	35
Payments based on current A/An/R/I, production required	1	17	7	35	9
Based on Receipts / Income	0	0	0	0	0
Based on Area planted / Animal numbers	1	17	7	35	9
with input constraints	1	17	7	35	9
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 (%)	**7.9**	**2.5**	**2.4**	**2.6**	**2.3**
Producer NPC (coeff.)	**1.05**	**1.00**	**1.00**	**1.00**	**1.00**
Producer NAC (coeff.)	**1.09**	**1.03**	**1.02**	**1.03**	**1.02**
General Services Support Estimate (GSSE)	**103**	**431**	**403**	**432**	**459**
Agricultural knowledge and innovation system	22	84	77	84	91
Inspection and control	3	93	85	92	101
Development and maintenance of infrastructure	67	238	225	239	251
Marketing and promotion	10	16	16	16	15
Cost of public stockholding	0	0	0	0	0
Miscellaneous	1	0	0	0	0
Percentage GSSE (% of TSE)	**21.6**	**52.8**	**52.9**	**51.2**	**54.3**
Consumer Support Estimate (CSE)	**-327**	**-29**	**-25**	**-37**	**-24**
Transfers to producers from consumers	-237	-13	-8	-18	-12
Other transfers from consumers	-94	-17	-17	-24	-12
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	4	2	0	5	0
Percentage CSE (%)	**-8.0**	**-0.3**	**-0.3**	**-0.3**	**-0.2**
Consumer NPC (coeff.)	**1.09**	**1.00**	**1.00**	**1.00**	**1.00**
Consumer NAC (coeff.)	**1.09**	**1.00**	**1.00**	**1.00**	**1.00**
Total Support Estimate (TSE)	**478**	**816**	**761**	**844**	**844**
Transfers from consumers	331	30	25	42	24
Transfers from taxpayers	242	804	753	827	832
Budget revenues	-94	-17	-17	-24	-12
Percentage TSE (% of GDP)	**0.6**	**0.3**	**0.3**	**0.3**	**0.3**
Total Budgetary Support Estimate (TBSE)	**244**	**804**	**753**	**827**	**832**
Percentage TBSE (% of GDP)	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**
GDP deflator (2000-02=100)	**100**	**218**	**210**	**219**	**225**
Exchange rate (national currency per USD)	**621.08**	**655.70**	**676.54**	**648.68**	**641.90**

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 Chile are: wheat, maize, apples, grapes, sugar, tomatoes, milk, beef and veal, pig meat, poultry, blueberries, cherries and peaches.

Source: OECD (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

Chile is a dynamic growing economy in Latin America, experiencing annual growth in GDP of around 4.3% over the period 1995-2018. This relatively stable growth has helped Chile improve the well-being of its population, has reduced overall poverty, and has made it an upper middle-income country with a GDP per capita of USD 24 013. However, inequality continues to be high. Agriculture contributed with 4.2% to GDP, but accounted for 9.3% of employment, reflecting the duality of its structure, where small-scale labour intensive farms coexist alongside a large-scale commercial farm sector. The agricultural sector makes an important contribution to exports, with agro-food exports accounting for 16.4% of total exports of the economy. Chile is a net exporter of agro-food products with a net trade surplus of USD 5 billion in 2017 (Table 7.2).

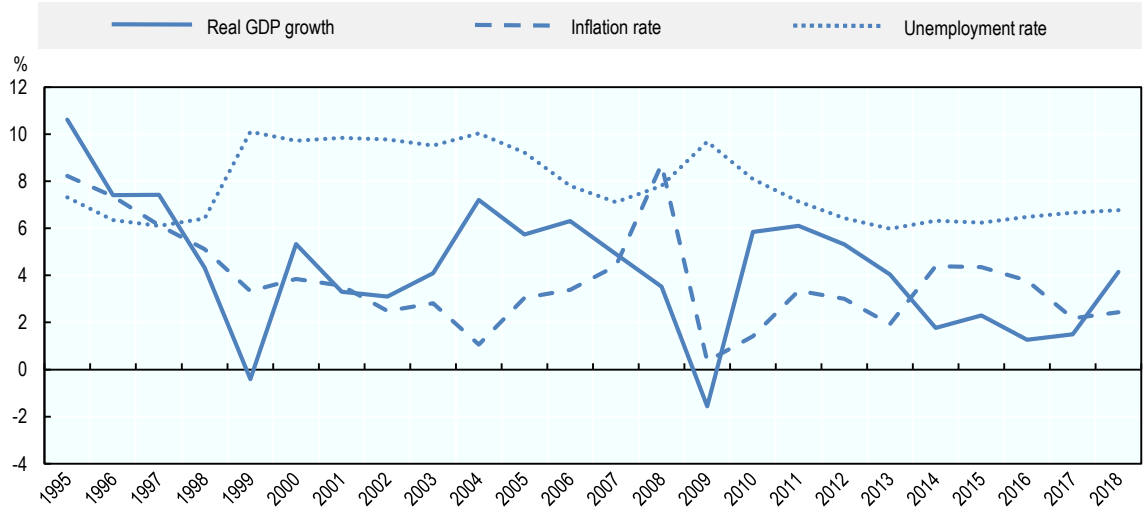
Table 7.2. Chile: Contextual indicators

	Chile		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	107	447	0.4%	0.4%
Population (million)	14	18	0.4%	0.4%
Land area (thousand km^2)	744	744	0.9%	0.9%
Agricultural area (AA) (thousand ha)	15 330	15 742	0.5%	0.5%
			All countries[1]	
Population density (inhabitants/km^2)	19	25	48	60
GDP per capita (USD in PPPs)	7 393	24 013	7 642	21 231
Trade as % of GDP	21	24	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	6.0	4.2	3.3	3.5
Agriculture share in employment (%)	15.8	9.3	-	-
Agro-food exports (% of total exports)	18.0	16.4	8.1	7.5
Agro-food imports (% of total imports)	7.2	10.0	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	63	71	-	-
Livestock in total agricultural production (%)	37	29	-	-
Share of arable land in AA (%)	14	8	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

Chile is a net exporter of agro-food products (excluding fish and forestry) with a surplus of USD 5 billion in 2017. Chile's agricultural and agro-food sector has been successful in adding value to the production of primary commodities, and processed products such as wine and fruits. In 2017, 39% of exports were in processed products for consumption and 9% were processed products for further industrial processing in other countries. Agro-food imports are mostly processed products, where 54% are for consumption and 26% for further processing in industry (Figures 7.4. and 7.5).

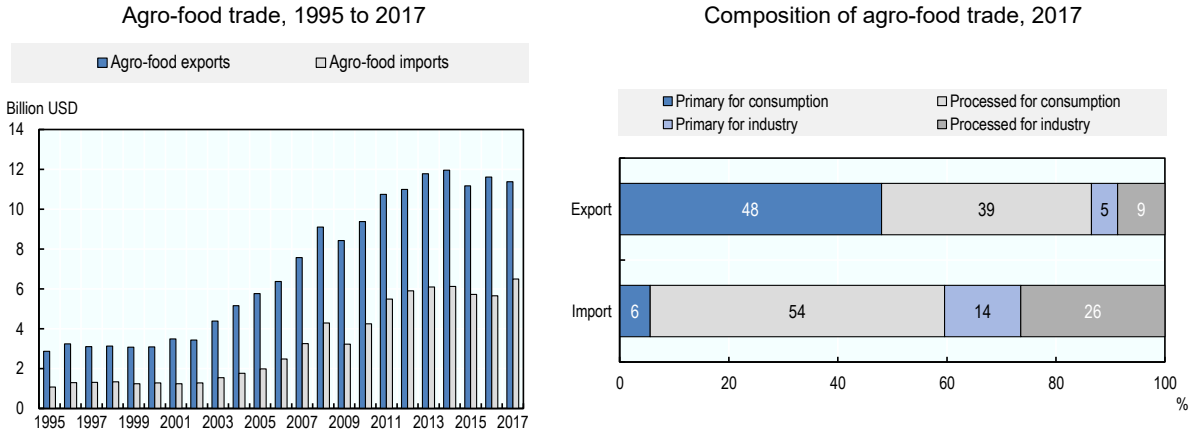
Figure 7.4. Chile: Main economic indicators, 1995 to 2018



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

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Figure 7.5. Chile: Agro-food trade



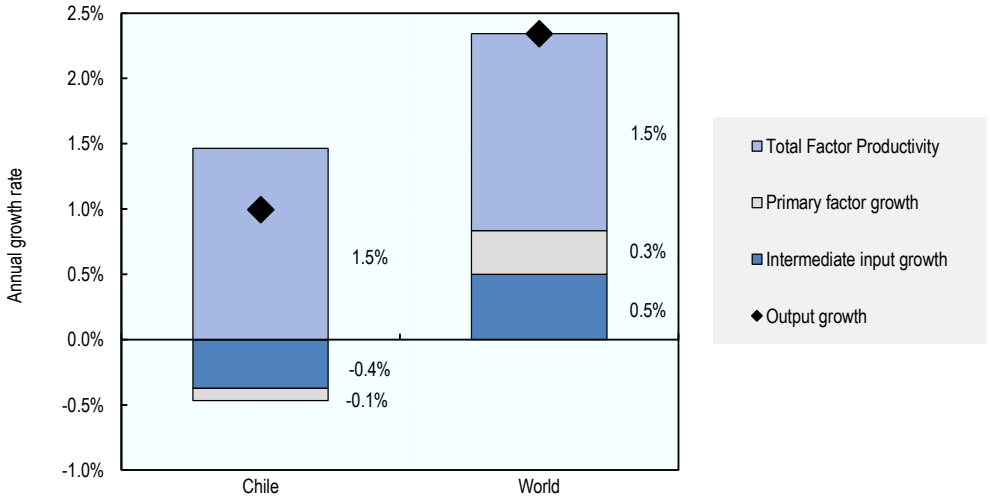
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

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The agricultural sector has contributed to Chile's economic success, both benefiting from stability and reforms, and making an important contribution via rapid output and export growth. Productivity growth has been central to Chile's agriculture. With a slight reduction in the use of primary and intermediate inputs into production, growth in output has been achieved by significant improvements in total factor productivity (TFP), with an average of 1.5% per year over the period 2006 to 2015 (Figure 7.6 and Table 7.3). Chile's agricultural and agro-industrial sector has been very successful in high value primary products (e.g. grapes, tomatoes, apples, berries, etc.) and in value added products or

processed products such as wine. Agriculture's share of GHG emissions decreased from 22.3% in 1995 to 12.5% in 2017 but remains well above the OECD average.

Figure 7.6. Chile: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

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Table 7.3. Chile: Productivity and environmental indicators

	Chile		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	1.7%	1.5%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha	..	..	33.2	30.0
Phosphorus balance, kg/ha	..	..	3.7	2.3
Agriculture share of total energy use (%)	..	..	1.9	2.0
Agriculture share of GHG emissions (%)	22.3	12.5	8.5	8.9
Share of irrigated land in AA (%)	7.0	7.0	-	-
Share of agriculture in water abstractions (%)	..	..	45.4	42.5
Water stress indicator	..	..	9.7	9.7

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

Description of policy developments

Main policy instruments

Policy measures applied in Chile target a number of areas and uses a range of policy instruments: the expansion and more efficient irrigation systems; land restructuring; maintaining Chile's sanitary and phytosanitary conditions; investments in agricultural R&D; enhancing policy instruments that promote the development of smallholders and

indigenous farmers, in particular, through associativity and with a focus on market integration; promoting innovation; and improving the sustainability of resources, in particular degraded soils.

In 2018, agricultural policy continued to emphasise agricultural competitiveness, social inclusion and sustainability through emphasising technological innovation, technology transfer, access to credit for smallholders and improving market information. Efforts continued to be made public-private partnerships to create more value added along the food value chains for small-scale farmers.

Domestic policy developments in 2018-19

In 2018, the Agriculture and Livestock Service (SAG) developed a plan to modernise inspection process using a web/mobile platform that has a single repository of audits, with gradual change from the use of paper to mobile equipment kits. SAG has also focused on improving co-ordination with the private sector in order to facilitate inspection and export procedures, all this with the aim to facilitate trade, reducing administrative burden and procedures time.

The Institute for Agricultural Development (INDAP), the agency promoting smallholders´ agriculture, has promoted associativity and market seeking to increase the number of small farmers participating in high value internal markets as well as export markets, and improving commercialisation of small-scale agriculture products. In March 2019, 67 productive associations were implemented, which include 45 companies and 2 630 smallholders engaged in different industries and marketing activities. In 2018, public agricultural insurance (*Agroseguros*) extended its reach to smallholders and medium-scale farmers. *Agroseguros* also developed and implemented a catastrophic parametric insurance[1] and has reactivated the price-hedging programme for wheat and maize. During 2018, the value of insured production was more than USD 450 million.

Risk communication was one of the main works developed by the Chilean Food Safety Agency (ACHIPIA), where informative campaigns for consumers about associated risks with food were created, as well as methodologies that allow continuous education of the population on food risks and food safety. Furthermore, at the beginning of 2018, a collaboration agreement was signed between the Ministry of Health, the Ministry of Agriculture and the Service of Aquaculture and Fishery. This agreement aims at developing activities to minimise antimicrobial resistance associated with food consumption.

During 2018, a Sustainability Standard for berries' production was developed, based on the principles established in the Sustainable Agriculture Protocol, in order to provide guidance to farmers on sustainable production. Additionally, a capacity building programme on sustainable agriculture for technicians providing advice to family farmers was developed. Finally, the project "Sustainability Program for the Chilean Agrifood Exporting Sector" started in January 2019, with the aim of creating a tool kit for developing sectorial sustainability standards, as well as a digital platform supported by the Trade for Sustainability programme of the International Trade Center.

In 2018, the implementation of the National Policy on Rural Development began, with the main objective of improving the quality of life and opportunities of the rural population. An inter-ministerial committee was created to co-ordinate the implementation of this policy, led by the Bureau of Agricultural Studies and Policies (ODEPA) of the Ministry of Agriculture. Furthermore, a pilot programme was established to implement this policy at a local scale (MINAGRI, 2019[2]).

In 2018, a new national government came into power. This government has defined seven agricultural policy objectives for the 2018-22 period:

1. Strengthen territorial rural development, by improving the quality of rural life, promoting a reduction in existing gaps in accessing basic services and promoting new economic opportunities in rural areas.
2. Strengthen small and medium farmers, through the promotion of associativity, technical support, financing and connection with dynamic marketing channels.
3. Improve information systems, management and transparency of markets, curbing unfair competition and promoting a country image that enhances the integration of Chile to the world, protecting and valuing the phyto-sanitary and zoo-sanitary patrimony.
4. Increase investments on innovation at national level, through effective co-ordination of public and private research centres converge, with a clear orientation towards the generation and adoption of new technologies and productivity.
5. Modernise the management of the Ministry of Agriculture and related specialised agencies, aimed at greater government effectiveness, together with the design, implementation, evaluation, control and transparency mechanisms for its operation.
6. Recognise natural resources, particularly water and soil, as fundamental pillars for the sustainable development of the sector, promoting the generation and adoption of new technologies for the optimisation of their use.
7. Promote sustainable forestry and agricultural production (social, economic and environmental), promoting strategies of adaptation to climate change as an opportunity for the sector.

These seven objectives are framed under four main policy guidelines:

1. Institutional modernisation, with a Ministry focusing on its main constituencies (farmers), with an efficient structure and high impact.
2. Associativity, focusing on ways to organise farmers, for generating economies of scale and mutual support, to be able to face the new challenges of modern agriculture.
3. Sustainability, to conserve and protect landscapes and natural resources, and at the same time generate a differentiating element for Chilean agriculture to the world.
4. Strengthening rural development, as a fundamental factor in overcoming poverty and improve agriculture.

Trade policy developments in 2018-19

Chile has signed 32 Free Trade Agreements (FTAs), of which 27 are in force. Chile continues the renegotiation of its association agreement with the European Union, with an agenda that goes beyond the liberalisation of tariffs, with issues like intellectual property rights and environmental provisions. In November 2018, Chile signed a FTA with Brazil.

Note

[1] Parametric insurance is based on an index, rather than the actual loss. When a certain value is exceeded on the index, that triggers coverage and claims are paid out to the policyholder.

References

MINAGRI (2019), *"OECD Annual Country Report of Chile", Government Report, Santiago, Chile*. [2]

OECD (2019), *"Producer and Consumer Support Estimates", OECD Agriculture statistics (database)*, http://dx.doi.org/10.1787/agr-pcse-data-en. [1]

Chapter 8. China

Support to agriculture

After two decades of gradual growth, the level of support to agricultural producers in the People's Republic of China (hereafter "China") has stabilised in recent years with the share of support in gross farm receipts (%PSE) fluctuating in a range of 14-16% in 2016-18. This reflects policy reforms undertaken with respect to the market intervention systems for soybeans, rapeseed, cotton, and maize, as well as to the minimum purchase price system for wheat and rice. The nominal depreciation of the CNY vis-à-vis USD between 2014 and 2017 after a long period of gradual appreciation has been another factor influencing the evolution of price gaps and thus contributing to stabilising levels of Market Price Support (MPS) in recent years. Payments based on area planted have been consistently increasing since 2014 as a result of the recent reforms, but MPS remains the dominant part of total support, generated through both domestic price support policy and various border measures on imports. MPS levels differ across imported commodities, while prices of exported commodities are not supported.

Within the General Services Support Estimate (GSSE), three categories attract the largest financial support: public stockholding, development and maintenance of infrastructure, and agricultural knowledge and innovation system. The GSSE corresponds however to only one-fifth of the support to individual producers in 2016-18.

Main policy changes

Several reforms, initiated in 2017 with respect to the minimum purchase price system for wheat and rice, were continued and deepened in 2018. The minimum purchase prices for both wheat and rice were further lowered. In addition, several parameters in the implementation of the price support system were adjusted. This specifically concerns the guidelines for quality requirements in grain procurement, as well as the market price conditions for activating minimum price procurement of wheat and rice.

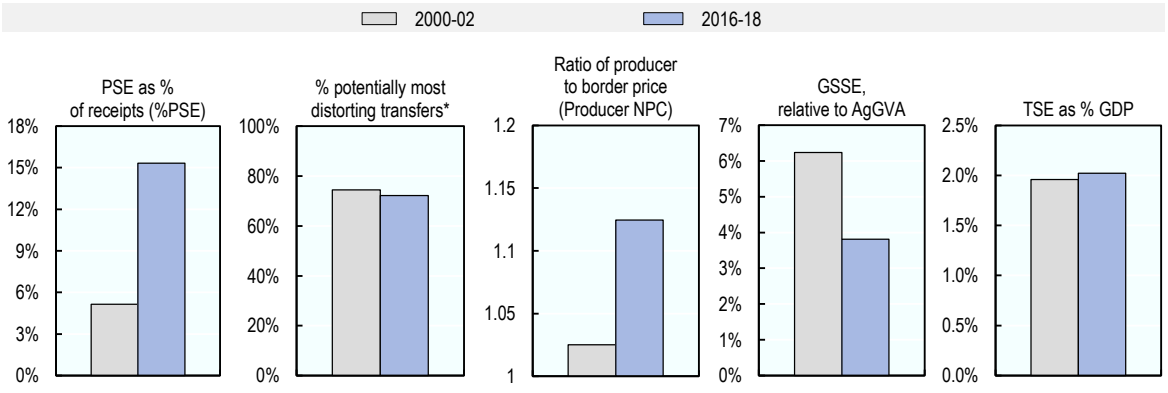
The programme encouraging crop shifting from maize to soybeans initiated in 2017 in China's four Northeast provinces was extended to 2018-19. Several provincial governments have also introduced additional subsidies per area cultivated on top of national subsidies provided to farmers for switching from maize to soybeans or for planting more soybeans in a traditional soybean area.

The disposal of accumulated maize stocks continued to be a priority during 2018. Auctions from state reserves started one month sooner than in previous marketing years and state reserves releases are estimated to have increased by 75% relative to 2017. China National Cereals, Oils and Foodstuffs Corporation (COFCO) – the largest state-owned food processor – continued the expansion of maize processing, including ethanol operations, in several Northeast provinces.

Assessment and recommendations

- Recent reforms to replace intervention prices for key crops by direct payments based on area planted are a step in the right direction of rebalancing the portfolio of agricultural support and reflect China's policy orientation towards long-term productivity growth and sustainability. The most recent reform of the maize purchasing and storage system has had a direct impact on diminishing both feed costs for livestock producers and storage costs. Such reforms could be extended to gradually include rice and wheat, and they should be time-limited. But should they be maintained in the longer-term, the link between direct payments and production decisions should be further loosened by providing payments on a historical area basis, for instance, and by making them conditional on environmentally-friendly production practices.
- Public expenditure on general services has been increasing, but at a slower pace than support to individual producers. Further efforts are thus needed to restructure agricultural support towards public investment in research and development, and infrastructure. This can be supported by scaling down input subsidies such as the subsidy to purchase farm machinery, and by ensuring that support through direct payments only has a transitory role in backing farmers' adjustment to a new market environment. Continued reforms to the grain purchasing and storage system will also ease the burden on the cost of public stockholding that still represents the largest expenditure share in general services support.
- Recent reforms in land transfer rules have contributed to the emergence of "new-style" farms, including large family farms, co-operative farms and farms run by agribusiness companies. For the reforms in land regulations to continue delivering expected outcomes, these need to be complemented by further investments in education and training and improved access to financial services.
- Improving the environmental performance of agriculture has recently become one of the central objectives of China's agricultural policy, as environmental pressures linked to farming are looming large. To establish a solid framework for agri-environmental policies, China should further clarify reference levels for environmental quality as well as define environmental targets well adapted to local ecological conditions. This would also support better monitoring mechanisms for the enforcement of environmental regulations. A comprehensive review of water governance could help to better define responsibilities, remove conflicts and ensure effective and efficient policy implementation. In addition, an evaluation of the performance of the subsidy to the agricultural insurance premium would allow assessing the cost-efficiency of the programme.
- Several broad work plans have recently been put forward across institutions in view of strengthening policies addressing agricultural greenhouse gas (GHG) emissions and supporting the sector's adaptation to climate change. In this sense, the restructured Ministry of Ecology and Environment could help mainstream adaptation policy objectives across current and planned programmes, including a better targeting of extension services for farmers.

Figure 8.1. China: Development of support to agriculture

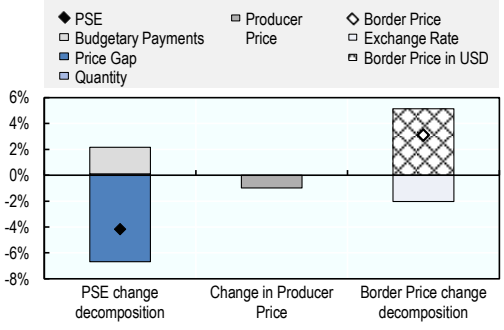


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933937054

Support to producers (%PSE) has steadily increased since 2000-02 and represented around 15.3% of gross farm receipts in 2016-18, slightly below the OECD average. More than two-thirds of support to producers are in the form of potentially most distorting transfers, a consistent pattern since 2000-02. Prices received by farmers were on average 12% higher than world prices in 2016-18 (Figure 8.1). The level of support declined year-on-year largely due to a diminishing price gap, driven by continued reforms of the market intervention system for key commodities in conjunction with higher border reference prices on average. The increase in budgetary payments is led by higher allocations towards payments based on area planted for soybeans, maize and cotton (Figure 8.2). With the exception of eggs, peanuts and exported fruit and vegetables, producers are benefiting from high transfers accounting for between 11% and 51% of commodity receipts in 2016-18 (Figure 8.3). At 3.8% in 2016-18, expenditure for general services (GSSE) relative to agriculture value added was close to the OECD average. Total support to agriculture as a share of GDP (%TSE) has remained relatively stable since 2000-02. At 2% in 2016-18, %TSE is nevertheless one of the highest among the countries covered, almost three times higher than the OECD average.

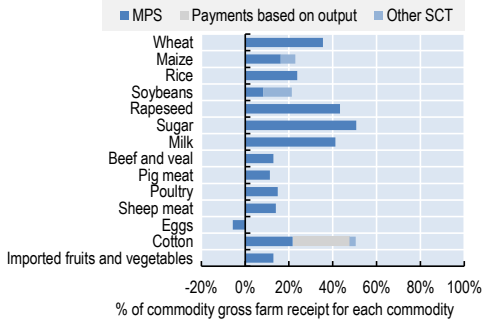
Figure 8.2. China: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933937073

Figure 8.3. China: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933937092

Table 8.1. China: Estimates of support to agriculture

Million USD

	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**270 118**	**1 318 899**	**1 296 080**	**1 293 043**	**1 367 574**
***of which:** share of MPS commodities (%)*	75.8	79.3	80.9	79.0	77.9
Total value of consumption (at farm gate)	**281 585**	**1 377 240**	**1 329 763**	**1 358 173**	**1 443 783**
Producer Support Estimate (PSE)	**14 278**	**212 739**	**220 908**	**210 835**	**206 474**
Support based on commodity output	7 253	148 113	160 844	146 686	136 810
Market Price Support[1]	7 253	143 536	156 529	142 175	131 906
Positive Market Price Support	11 086	145 343	158 328	143 892	133 808
Negative Market Price Support	-3 833	-1 807	-1 800	-1 718	-1 902
Payments based on output	0	4 577	4 315	4 511	4 904
Payments based on input use	5 684	22 724	23 375	22 336	22 460
Based on variable input use	1 414	4 390	3 952	4 350	4 869
with input constraints	0	0	0	0	0
Based on fixed capital formation	3 026	15 254	16 076	15 011	14 675
with input constraints	0	0	0	0	0
Based on on-farm services	1 244	3 079	3 347	2 975	2 916
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	533	30 764	28 441	29 821	34 028
Based on Receipts / Income	533	4 755	3 566	5 403	5 295
Based on Area planted / Animal numbers	0	26 009	24 875	24 418	28 733
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	8 735	5 576	9 642	10 986
With variable payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
With fixed payment rates	370	8 735	5 576	9 642	10 986
with commodity exceptions	0	0	0	0	0
Payments based on non-commodity criteria	438	2 404	2 672	2 350	2 189
Based on long-term resource retirement	438	2 404	2 672	2 350	2 189
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 (%)	**5.2**	**15.3**	**16.2**	**15.5**	**14.3**
Producer NPC (coeff.)	**1.03**	**1.12**	**1.14**	**1.13**	**1.11**
Producer NAC (coeff.)	**1.05**	**1.18**	**1.19**	**1.18**	**1.17**
General Services Support Estimate (GSSE)	**11 861**	**37 464**	**37 738**	**38 282**	**36 372**
Agricultural knowledge and innovation system	1 347	8 059	8 372	7 952	7 852
Inspection and control	349	2 035	1 978	2 085	2 042
Development and maintenance of infrastructure	3 424	9 285	9 949	9 060	8 847
Marketing and promotion	0	436	457	429	421
Cost of public stockholding	6 741	17 649	16 981	18 755	17 210
Miscellaneous	0	0	0	0	0
Percentage GSSE (% of TSE)	**45.2**	**15.0**	**14.6**	**15.4**	**15.0**
Consumer Support Estimate (CSE)	**-5 873**	**-146 151**	**-154 780**	**-144 738**	**-138 934**
Transfers to producers from consumers	-6 580	-135 648	-144 495	-135 529	-126 919
Other transfers from consumers	-1 136	-18 163	-18 116	-16 693	-19 680
Transfers to consumers from taxpayers	128	0	0	0	0
Excess feed cost	1 716	7 660	7 832	7 484	7 666
Percentage CSE (%)	**-2.1**	**-10.6**	**-11.6**	**-10.7**	**-9.6**
Consumer NPC (coeff.)	**1.03**	**1.13**	**1.14**	**1.13**	**1.11**
Consumer NAC (coeff.)	**1.02**	**1.12**	**1.13**	**1.12**	**1.11**
Total Support Estimate (TSE)	**26 267**	**250 203**	**258 646**	**249 117**	**242 846**
Transfers from consumers	7 717	153 811	162 611	152 222	146 599
Transfers from taxpayers	19 687	114 555	114 151	113 588	115 927
Budget revenues	-1 136	-18 163	-18 116	-16 693	-19 680
Percentage TSE (% of GDP)	**2.0**	**2.0**	**2.3**	**2.0**	**1.8**
Total Budgetary Support Estimate (TBSE)	**19 014**	**106 667**	**102 117**	**106 943**	**110 940**
Percentage TBSE (% of GDP)	**1.4**	**0.9**	**0.9**	**0.9**	**0.8**
GDP deflator (2000-02=100)	**100**	**178**	**172**	**179**	**184**
Exchange rate (national currency per USD)	**8.28**	**6.67**	**6.64**	**6.76**	**6.62**

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, peanuts, exported fruit and vegetables, and imported fruit and vegetables.

Source: OECD (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

China has the world's 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 79% of the average of countries covered by this report (Table 8.2). However, while feeding almost 20% 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 still accounts for 27% of employment, but its 8.2% share in 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 66% 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 average farm size is still less than one hectare, large-scale production has been developing rapidly, including co-operative and corporate farms. North and Northeast provinces have seen more rapid farm consolidation than other regions, as increased labour mobility and transfer of land among farmers over the past three decades have led to gradual adjustments in the farm structure. Livestock production originates mostly from larger-scale commercial units (OECD, 2018[2]).

Table 8.2. China: Contextual indicators

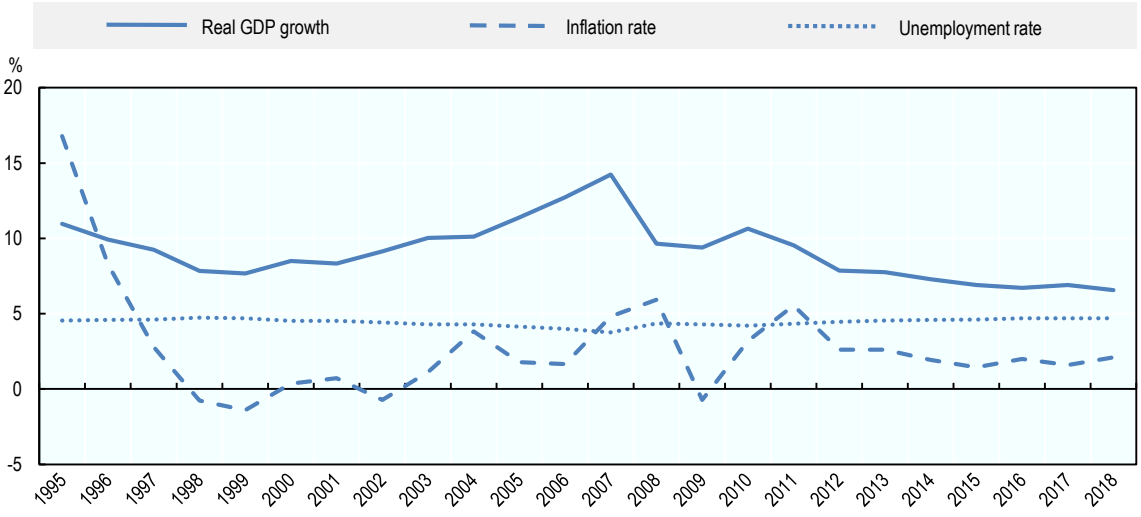
	China		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	2 252	23 301	7.6%	22.7%
Population (million)	1 211	1 390	31.4%	28.8%
Land area (thousand km²)	9 425	9 425	11.8%	11.6%
Agricultural area (AA) (thousand ha)	523 714	528 532	17.4%	17.7%
			All countries[1]	
Population density (inhabitants/km²)	132	150	48	60
GDP per capita (USD in PPPs)	1 860	16 762	7 642	21 231
Trade as % of GDP	19	16	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	19.8	8.2	3.3	3.5
Agriculture share in employment (%)	52.2	27.0	-	-
Agro-food exports (% of total exports)	7.7	2.4	8.1	7.5
Agro-food imports (% of total imports)	8.7	6.8	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	64	66	-	-
Livestock in total agricultural production (%)	36	34	-	-
Share of arable land in AA (%)	23	23	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

With real GDP growth averaging 6.7% in 2016-18, China has been experiencing a gradual slowdown in economic growth. Its growth trajectory is increasingly dependent on the pace and nature of structural reforms. China's overall macroeconomic environment remains competitive, with an inflation rate of 2.1% and unemployment of 4.7% over the same period (Figure 8.4).

China has consistently been a net agro-food importer since 2003, but agro-food exports have been steadily growing over the last two decades. China's agro-food imports are dominated by primary products used as inputs in the domestic food industry, which represented more than half of total agro-food imports in 2017. In turn, primary and processed products for final consumption are key export categories, accounting for 72% of total agro-food exports (Figure 8.5).

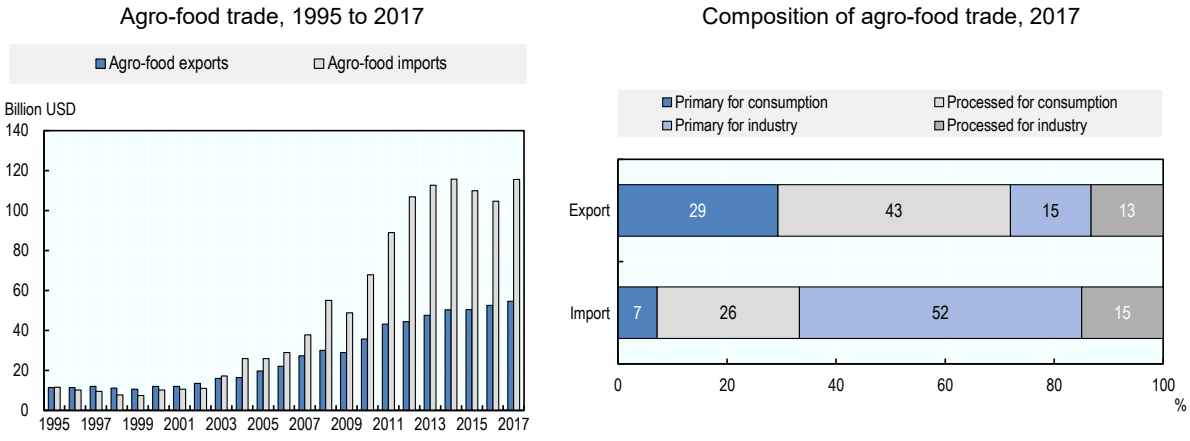
Figure 8.4. China: Main economic indicators, 1995 to 2018



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

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Figure 8.5. China: Agro-food trade



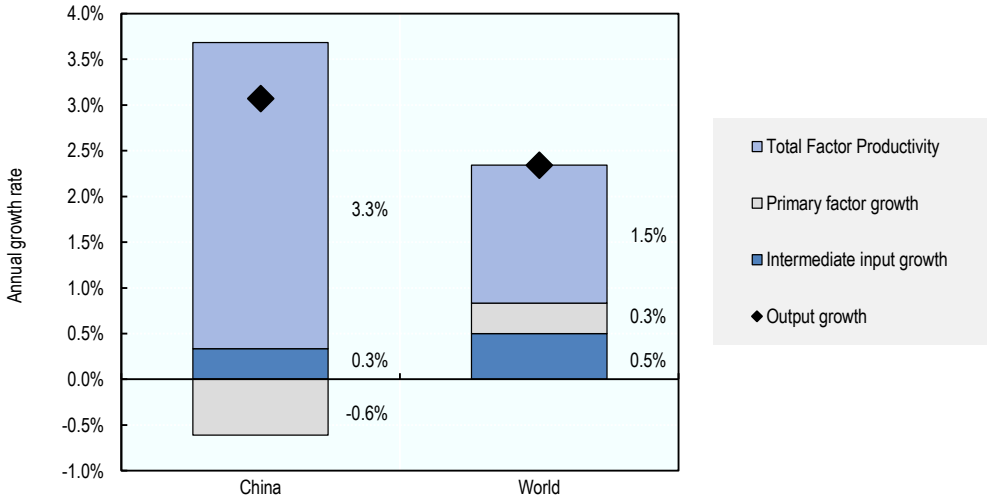
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

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Agricultural output growth in China averaged 3.1% in 2006-15, about one-third above the world average (Figure 8.6). This has been driven by strong growth in total factor productivity (TFP) at 3.4% per year, more than twice the global average. TFP trends can be largely attributed to farm consolidation and increased mechanisation of production.

However, the rapid and sustained growth in agricultural output has been exerting mounting pressures on natural resources, including land and water. Agriculture remains the key user of water, accounting for 62% of total water consumption, well above the OECD average (Table 8.3). Water stress is twice as high as the OECD average.

Figure 8.6. China: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

StatLink https://doi.org/10.1787/888933937149

Table 8.3. China: Productivity and environmental indicators

	China		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	4.2%	3.3%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha[1]	63.5	62.5	33.2	30.0
Phosphorus balance, kg/ha[1]	11.2	15.9	3.7	2.3
Agriculture share of total energy use (%)	4.3	2.2	1.9	2.0
Agriculture share of GHG emissions (%)	14.9	7.9	8.5	8.9
Share of irrigated land in AA (%)	9.4	12.8	-	-
Share of agriculture in water abstractions (%)	70.0	62.3	45.4	42.5
Water stress indicator	19.4	21.3	9.7	9.7

Note: * or closest available year. 1. Preliminary data.
Source: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Description of policy developments

Main policy instruments

The 13th Five-Year Plan sets out the key orientations of agricultural policy for 2016-20. The 2016-20 Plan focuses on "agricultural modernisation" across several dimensions, including: improving the quality and safety of agricultural products; supporting the development of new types of agribusiness; and strengthening the adoption and use of information technologies. Policy frameworks and specific areas for action are further developed in the annual "Policy Document No. 1", which for the last 16 years has set agriculture and rural development as top priority.

Self-sufficiency for key grains has been an important driver behind China's agricultural policies over the past two decades. However, the scope of grains covered has evolved since the mid-1990s. The 2019 "Policy Document No. 1" stresses the importance of developing a competitive and sustainable agricultural sector and of continuing supply-side reforms, while it reiterates the importance of guaranteeing the necessary grains production for food security purposes (mainly wheat and rice).

Market price support is the main channel for providing support to Chinese farmers. It is provided through both domestic policies – such as the minimum purchase prices for rice and wheat – and trade policies, including tariffs, tariff rate quotas (TRQ) and state trading.

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. They differ by type of grain, are announced before sowing seasons, and only apply for a fixed period limited to several months after the harvest. The central government mandates the state-owned China Grain Reserves Corporation (Sinograin) and other state-owned companies to undertake intervention purchases in the case market prices fall below the respective minimum prices (for three days in a row as of 2018).

The government-led temporary purchase and storage policy at pre-determined prices – mostly intended to stabilise market prices and to ensure adequate supplies – was discontinued in 2014-15 for cotton, soybeans, and rapeseed, and in 2016 for maize. For cotton, this was replaced in 2014-15 by **compensation payments** covering the difference between pre-determined target prices and actual market prices. For soybeans and maize, it was replaced with **direct payments** based on area planted since 2016-17.

Budgetary transfers to producers have increased consistently since the end of the 1990s. Most of them are provided through four key programmes: 1) the "agricultural support and protection subsidy", combining direct payments for grain producers, subsidies for agricultural inputs, and subsidies for improved seed variety, all paid on per unit of land basis; 2) subsidies for purchases of agricultural machinery; 3) subsidies for land consolidation; and 4) subsidies for farmland irrigation construction. Subsidised agricultural insurance schemes have also grown in importance in recent years. The geographic coverage of payments destined to return farmland to forests and to exclude degraded grassland from grazing has been gradually extended, reflecting increasing environmental concerns.

Public stockholding of grains and programmes supporting the development of agricultural infrastructure – including irrigation and drainage facilities – represent the most important categories of **general services**. Expenditures related to agricultural knowledge and innovation are also sizable.

In the Adjusted Scenario of the Outline of the National Overall Planning on Land Use 2006-20, issued in 2016, a "red line" on **arable land** was set at no less than 124.3 million hectares. The conversion of farmland for non-agricultural use is strictly controlled. With about 40% of land suffering from various forms of degradation, the Outline calls for the prevention of land degradation and for the treatment of affected land.

China ratified the **Paris Agreement on Climate Change** on 3 September 2016. Its Nationally Determined Contribution (NDC) includes several commitments, such as: to peak CO2 emissions by 2030 at the latest; to lower the carbon intensity of GDP by 60–65% below 2005 levels by 2030; to increase the share of non-fossil energy carriers of the total primary energy supply to around 20% by that time, and to increase its forest stock volume by 4.5 billion m^3 compared to 2005 levels. While the NDC explicitly mentions agriculture, land-use change and forestry, among other sectors, no specific net-emission target has yet been set for the agricultural sector. The only specific quantitative target set for agriculture relates to achieving zero growth in fertiliser and pesticide utilisation by 2020. Other broad objectives concern controlling methane emissions from rice fields and nitrous oxide emissions from farmland, promoting comprehensive utilisation of straw or reutilisation of agricultural waste (UNFCC, 2015[3]; Climate Action Tracker, 2018[4]).

The National Agricultural Sustainable Development Plan (2015-30) sets the goals and paths for China's sustainable agricultural development in terms of natural resources protection, improved farming practices that are protective of the environment, and a focus on quality and efficiency of production. It sets targeted priorities for different areas by taking into account the capacity of agricultural production, resource endowment, ecological characteristics and other factors (MOA, 2015[5]).

The State Council released its **13th Five-Year Work Plan to Control GHG Emissions** in October 2016, looking to strengthen policies controlling for GHG emissions beyond CO2, such as methane and hydrofluorocarbons (HFCs). The plan includes mentions of reducing methane emissions in the agricultural sector and in municipal waste and sewage treatment (NDRC, 2017[6]).

Domestic policy developments in 2018-19

Developments in the legal framework

In September 2018, the Central Committee of the Communist Party of China (CPC) and the State Council released the **National Strategic Plan for Rural Revitalisation 2018-22** for the implementation of the "rural revitalisation strategy". The Plan's 37 sections outline key tasks over 2018-22 towards the overall goals of fostering agri-businesses, delivering agricultural modernisation, and creating vertically integrated rural industries. Specific priorities and steps are to be defined for different provinces by 2020 (China Policy, 2018[7]; Xinhuanet, 2018[8]).

The **2019 Policy Document No. 1**[1] — issued in February 2019 — continues to prioritise agricultural and rural development and proposes several key areas for action. These include deepening agricultural supply-side structural reform; optimising agricultural structure; boosting production of green agricultural products or of those in short supply; rolling out plans to increase soybean planting and to support the dairy industry; developing rural industries; as well as promoting innovation in biological breeding, heavy agricultural machinery, smart agriculture, green agricultural inputs and other areas. The Document calls for strengthened transparency of rural land transactions and for speeding up the establishment of a unified land market between rural and urban areas. In terms of agro-food

trade, the document targets an enhanced co-operation with countries along the Belt and Road, an active expansion of imports of agricultural products in short supply at home, the diversification of importing channels, and the development of multinational agricultural corporations. For rural development, the Document foresees enhanced actions for improving rural living environments and public services such as education, health care or social security; as well as for improving rural infrastructure (roads, electricity grids and logistics networks), enhancing pollution treatment and environmental protection (SCIO, 2019[9]; Xinhuanet, 2019[10]).

Institutional rearrangements

The 13th National People's Congress (NPC) pushed forward in March 2018 a major **institutional restructuring**, including in the areas of agriculture and environment. The **Ministry of Agriculture and Rural Affairs** (MARA) superseded the Ministry of Agriculture (MOA). In addition to most of the former ministry's functions, it also took charge of: agricultural investment projects from the National Development and Reform Commission (NDRC); comprehensive agriculture development projects from the Ministry of Finance (MOF); farmland rehabilitation from the Ministry of Land and Resources; and farmland and water conservancy construction projects from the Ministry of Water Resources. Responsibility for fishing vessel inspection and supervision, previously under the MOA, was transferred to the Ministry of Transport. The Office of the Central Leading Group for Rural Work, a high-level advisory body holding a key role in the implementation of the "rural revitalisation strategy", was also placed within MARA. The **Ministry of Ecology and Environment** superseded the previous Ministry of Environmental Protection, while also assuming several responsibilities previously assigned to the NDRC, the Ministry of Water Resources, the MOA, and the Ministry of Land and Resources.

As part of the 2018 **institutional restructuring**, the State Administration of Grain (SAG) became the National Food and Strategic Reserves Administration (NFSRA), a vice-ministerial agency affiliated with the NDRC. NFSRA consolidates the functions and responsibilities for overseeing the strategic reserves of wheat, rice, maize, oilseeds, cotton, sugar, natural gas, and petroleum from SAG, NDRC, the National Administration of Energy (NEA), the Bureau of Commodity Reserves, the Ministry of Commerce (MOFCOM), and Sinograin (China Grain, 2018[11]; GAIN-CH18071, 2018[12]; NDRC, 2018[13]; NDRC, 2018[14]). The reorganisation also established the State Administration of Market Regulation (SAMR), consolidating into one agency the market regulation functions previously shared by three separate bodies, the General Administration of Quality Supervision, Inspection and Quarantine (GAQSIQ), the China Food and Drug Administration (CFDA), and the State Administration of Industry and Commerce (SAIC) (GAIN-CH18069, 2018[15]).

Domestic price support policies

As outlined in the 13th Five-Year Plan for Agriculture 2016-20 and reinforced by the NDRC, the "improvement" of the minimum purchase price system for wheat and rice continues to be a priority, while "effectively protecting the interests of farmers". Several reforms initiated in 2017 with respect to the minimum purchase price system for wheat and rice were continued and deepened in 2018. First, the NDRC announced further decreases in the minimum purchase prices. On 9 February 2018, **minimum purchase prices for rice** varieties were reduced: 1) by 8.3% to CNY 2 400 (USD 381) per tonne for early season indica rice; 2) by 7.9% to CNY 2 520 (USD 399) per tonne for mid-to-late season rice; and 3) by 15.4% to CNY 2 600 (USD 412) per tonne for japonica rice (AMIS, 2018[16]). On

16 November 2018, the NDRC also announced a further reduction in the **minimum purchase price for wheat** for the 2019 crop by 2.7% to CNY 2 240 (USD 333) per tonne (Cheng, Mande and Xinyi, 2019[17]; NDRC, 2018[18]).

Second, several **parameters of the minimum purchase price system implementation** were adjusted in May 2018. This concerns the guidelines for quality requirements in procurement, as well as the conditions for activating minimum price procurement of wheat and rice. Only grain of national grade 3 or higher[2] will be purchased at minimum prices. Notwithstanding, in cases where there are large volumes of grain below grade 3 due to a weather event or other reason, provincial authorities are urged to pursue their own "temporary reserve" grain purchases. In addition, minimum price procurement can begin only when the market price has fallen below the minimum price announced by the government for three days in a row and must be suspended when the market price rises above the minimum for three days. The minimum price procurement for wheat can start on 1 June, which is about a week later than in previous years, and must end by 30 September. The national programme covers the same provinces as in past years,[3] while other provinces can launch at their discretion their own procurement at minimum prices (MOF, 2018[19]; GAIN-CH18039, 2018[20]).

Pilot programmes have been initiated in 2018 across selected provinces to test the replacement of the price support system for farmers with more market-oriented mechanisms. For instance, Xinjiang province is testing the replacement of the price support system for wheat with a market pricing mechanisms and additional direct payments for farmers. In this sense, Xinjiang will no longer carry out the 1.5 million tonnes "temporary reserve" purchase plan initiated in 2009. The "cultivated land fertility protection" subsidy is thus increased in this province by CNY 30 per acre (USD 12 per ha) for winter wheat and CNY 15 per acre (USD 6 per ha) for spring wheat. Pilot programmes are also promoting selenium-enriched wheat, organic wheat, and strong gluten wheat in various areas of the province (Grain News, 2018[21]). Another example is the "2018 Rice Target Price Subsidy Implementation Plan" in Guangxi province, which defines a target price for high-quality rice and introduces compensatory payments (i.e. based on the difference between target and market price) for farmers (Grain News, 2018[22]).

Payments to producers

The programme encouraging **cropland shifting from maize to soybeans** initiated in 2017 in China's four Northeast provinces was extended to 2018-19. In the effort to stimulate domestic soybean planting, a subsidy of CNY 150 per mu (USD 355 per ha) is now provided to farmers in these four provinces for planting soybeans. Along with this subsidy, farmers in the largest soybean-producing province, Heilongjiang, receive an additional government subsidy of CNY 350 per mu (USD 833 per ha) for switching from maize to soybeans, and a subsidy of CNY 200 per mu (USD 476 per ha) for planting soybeans in a traditional soybean area. This is a result of the "emergency soybean area expansion plan" issued by Heilongjiang provincial authorities in April 2018. Additional subsidies provided by the Jilin provincial government lead to an overall subsidy ranging between CNY 200 and CNY 580 per mu (USD 476 to USD 1 380 per ha) in 2018 (AMIS, 2018[23]; GAIN-CH18035, 2018[24]; GAIN-CH18048, 2018[25]).

Stockholding policies

The **disposal of maize stocks** continued to be a priority during 2018. Auctions from state reserves started in April 2018, one month sooner than in previous marketing years. Existing

estimates report that between 90 and 100 million tonnes of reserve maize were traded in 28 weeks of auctions from April to October, which represents about 43 million tonnes more than in 2017 (China Grain, 2018[26]; GAIN-CH18060, 2018[27]).

China National Cereals, Oils and Foodstuffs Corporation (COFCO) – China's largest state-owned food processor – is to expand its maize processing and ethanol operations in Jilin and Liaoning provinces from 2018 to 2020 by aiming to procure around 12 million tonnes of maize overall (GAIN-CH18039, 2018[20]).

Following significant state purchases of cotton during 2011-14, the **reduction of cotton stocks** was another key priority in 2018. Through auctions in 2018, cotton total stocks are estimated to have fallen from 10.5 million tonnes at the beginning of 2017 to 7.4 million tonnes at the end of 2018 (GAIN-CH18051, 2018[28]). The Chinese government also organised important **sales of soybeans from state reserves** through 19 auctions accounting for accumulated sales of 1.9 million tonnes by the end of October 2018 (GAIN-CH18068, 2018[29]).

China's State Council announced in July 2018 a **national inspection programme of grain reserves** to be launched in April 2019, 10 years after the last national inspection programme of 2009. This will include an in-depth review of the quantity and quality of state-owned grain reserves managed by the new NFSRA, Sinograin, and COFCO. The government already conducted 20 pilot checks in 10 provinces between July 2018 and January 2019. In addition, corporations typically holding state-owned inventories must submit by April 2019 reports about the status of their reserves (GAIN-CH18060, 2018[27]).

Changes in the regulatory environment

The feed industry has been actively promoting reduced protein content in feed in order to diminish soybean consumption. The China Feed Industry Association (CFIA) approved in October 2018 new **recommended feed standards** (including the "Compound Feed Standard for Swine" and the "Compound Feed Standard for Broilers and Layers"). They are not mandatory, but CFIA guidelines have been followed closely by feed mills in recent years. The new standards set lower minimum requirements for crude protein levels and establish as well maximum protein levels in pig and poultry feed. The lower protein level is to be compensated through the addition of alternative amino acids and enzymes (GAIN-CH18068, 2018[29]).

In June 2018, the NDRC and MOFCOM released the 2018 Foreign Investment Industrial Guidance Catalogue, which **removes restrictions on foreign investment** in the processing of maize, rice, flour, oilseeds, and sugar. This extends a pilot programme initiated in 2016 across several Free Trade Zones (FTZs) (GAIN-CH18060, 2018[27]).

In response to the **African Swine Fever** (ASF) outbreak, MARA suspended in October 2018 inter-province pig transportation across 28 provinces, covering about 98% of China's live pig production. The disease has affected swine herd replenishment and expansion in 2018, as well as feed demand (GAIN-CH18048, 2018[25]).

Agri-environmental linkages

In April 2018, MARA reported that China achieved **zero growth in chemical fertiliser and pesticide use** in 2017, reaching its target three years in advance of the objective set in China's NDC. The Ministry also noted that more than 60% of livestock excrement, straw and agricultural plastic film are currently utilised or recycled, while 800 000 hectares (i.e. 0.7% of total arable land) have been covered by pilot programmes to rotate crops or leave

the land fallow for ecological conservation and sustainable production. The pilot area is to be expanded to 2 million hectares in 2018-19 (China Daily, 2018[30]).

Trade policy developments in 2018-19

Changes to import tariffs and other taxes on imports

On 31 May 2018, China's State Council Tariff Committee (SCTC) issued a notice reducing by 56%, on average, **most-favoured-nation (MFN) tariffs** on 1 499 consumer goods, including 388 agricultural and seafood items (such as prepared cereals or cereal products, processed meat, processed vegetables, or sauces), effective 1 July (SCPC, 2018[31]; GAIN-CH18039, 2018[20]).

As of July 2018, China removed **tariffs** on soybeans (from 3%) and soybean cake (from 5%) imported from Bangladesh, India, Laos, South Korea and Sri Lanka (AMIS, 2018[32]). In October 2018, China also allowed imports of rapeseed meal from India, subject to certain inspection and quarantine requirements (AMIS, 2018[33]).

During 2018, China implemented four rounds of retaliatory **tariffs** on United States-origin products, which included agricultural and food products. First, on 2 April 2018, SCTC announced that additional tariffs (ranging 15-25%) on 128 United States-origin products would be implemented, effective immediately.[4] The round of tariffs concerned primarily agricultural and food products (84 products), such as fruit (fresh and dried), tree nuts (shelled and in-shell), wine, ginseng, denatured ethanol, and pig meat and pig meat products (MOF, 2018[34]). Second, on 6 July, MOFCOM enacted additional tariffs on selected United States products, including soybeans (at 25%) (MOFCOM, 2018[35]). Third, on 23 August, MOFCOM implemented Schedule II of a round of tariffs on USD 16 billion of trade, first announced on 16 June, which covered only a few agricultural and agricultural-related products (MOFCOM, 2018[36]). Last, on 18 September, the SCTC enacted a supplemental set of tariffs – of 5% or 10% – first announced on 3 August on USD 60 billion of trade; these covered a number of agricultural, food and agricultural-related products across four schedules (MOF, 2018[37]).

On 23 June 2018, China's Ministry of Finance (MOF) increased the out-of-quota **tariff** rates from 5% to 50% for glutinous rice imports from Association of South East Asian Nation (ASEAN) economies, effective 1 July 2018 (GAIN-CH18060, 2018[27]).

On 16 July 2018, China announced it would remove the exemptions to the **sugar safeguard measure** introduced in 2017, and that it would apply the increased out-of-quota tariff on all imports, effective 1 August 2018. The sugar safeguard measure introduced in May 2017 initially covered only major supplying countries, such as Brazil or Thailand, while most other countries were exempted from the safeguard measure as long as their respective market share was below 3%. As there was a sharp increase in the number of such smaller suppliers shipping sugar to China, an increased out-of-quota tariff of 90% was applied to all suppliers as of July 2018, effective until 21 May 2019. This will drop to 85%, effective from 22 May 2019 to 21 May 21 2020 (GAIN-CH186028, 2018[38]).

On 8 June 2018, MOFCOM announced its preliminary **anti-dumping** findings against imported Brazilian white meat broiler products and imposed an 18.8% to 38.4% anti-dumping tariff on almost all Brazil-origin poultry. The anti-dumping tariffs are to be applied until MOFCOM issues a final ruling on whether these will be removed or become permanent (MOFCOM, 2018[39]).

On 27 February 2018, MOFCOM withdrew **anti-dumping and countervailing duties** on United States-origin broiler chicken that had been in place since 2010 (GAIN-CH18011, 2018[40]). On 18 January 2018, a WTO panel had determined that the measures were not WTO-compliant[5] (WTO, 2018[41]).

On 18 May 2018, MOFCOM published Notice No. 44, announcing that it will terminate its **anti-dumping** investigation into United States sorghum imports, which had been initiated on 4 February 2018. Previously, on 17 April, MOFCOM announced a preliminary finding that United States' sorghum exports harmed domestic producers and imposed in response a temporary 178.6% anti-dumping duty beginning on 18 April, which required a cash deposit. MOFCOM's announcement in May considered that the preliminary anti-dumping duties harmed livestock producers as well as the downstream industry, imposing additional costs on consumers. The Notice stated that cash deposits collected after the 17 April preliminary anti-dumping finding against United States' sorghum would be refunded. It also terminated China's countervailing duties investigation on United States sorghum imports (MOFCOM, 2018[42]; GAIN-CH18039, 2018[20]).

On 1 May 2018, China lowered the **value-added tax (VAT) rate** applied to sales of agricultural products (of both domestic and import origins; including grains) from 11% to 10%. In addition, the VAT rate for processed agricultural products (including food) was lowered from 17% to 16% (MOF, 2018[43]; AMIS, 2018[23]).

Import quotas

In June 2018, the NDRC published Notice No. 7 of 2018 on "Issues Related to Application for Cotton Import Quota Subject to Sliding Duty" to meet the demand of the textile industry. It provides for an additional **cotton import quota** of 800 000 tonnes subject to a sliding duty. The additional import quota was allocated to non-state owned enterprises (GAIN-CH18033, 2018[44]). China has not issued additional cotton import quotas outside of its WTO TRQ (of 894 000 tonnes) since 2015. In October 2018, China announced that the 2019 **import quota for wheat and maize** would be maintained at 9.6 million tonnes and 7.2 million tonnes, respectively (AMIS, 2018[33]).

Measures relating to sanitary and phytosanitary aspects

On 9 June 2018, China and India signed a new Memorandum of Understanding amending a 2006 Protocol on Phytosanitary Requirements by extending market access for **non-basmati rice** from India to China. India could already export basmati rice to China (AMIS, 2018[32]).

China restored market access for chilled and frozen **beef** for Ireland, the United Kingdom and France, after banning such products in the 1990s due to the BSE (*Bovine spongiform encephalopathy*) outbreaks (GAIN-CH18049, 2018[45]; IEG Policy, 2018[46]).

In September 2018, China's General Administration of Customs (GACC) approved and published the "Plant Quarantine Requirements for Imported British Seed Potatoes", granting market access to British **seed potatoes**. The United Kingdom joined the United States (Alaska only), Canada, and the Netherlands in having access to the China seed potato market (GAIN-CH18066, 2018[47]).

Following the modification of inspection and quarantine requirements, on 31 December 2018, China approved imports of **milled rice** from the United States, potentially for use in food processing, chemicals and alcohol (AMIS, 2019[48]).

On 26 February 2018, China's General Administration for Quality Supervision and Inspection and Quarantine (GAQSIQ) lifted a ban that was imposed in 2016 on **wheat** imports from six regions of the Russia Federation (AMIS, 2018[16]).

Other trade-related developments

On 8 January 2019, MARA announced the approval of five genetically modified (GM) crop varieties for importation, including one maize and two soybean varieties. These represent the first new approvals of GM crop varieties in 18 months (AMIS, 2019[48]).

A WTO dispute panel circulated its report on 28 February 2019 in response to the request for consultations initiated by the United States on 13 September 2016 regarding certain measures of China's support in favour of producers of wheat, indica rice, japonica rice and maize during 2012-15. The panel report did not make an assessment for maize, as the price support system for maize was eliminated in 2016. The panel determined that in each of the years 2012-15, China exceeded its 8.5% *de minimis* level of support for rice and wheat. On that basis, the panel recommended for China to bring such measures into conformity with its obligations under the Agreement on Agriculture (WTO, 2019[49]). A second WTO dispute panel circulated its report on 18 April 2019 in responses to the request for consultations initiated by the United States on 15 December 2016 concerning China's administration of its TRQs, including those for wheat, short- and medium- grain rice, long grain rice, and maize. The panel report concluded, "on the basis of individual findings", that "China's TRQ administration as a whole is inconsistent with the obligations to administer TRQs on a transparent, predictable, and fair basis, to administer TRQs using clearly specified requirements and administrative procedures, and to administer TRQs in a manner that would not inhibit the filling of each TRQ". Among its other key findings, the panel rejected the claim concerning the potential inconsistency covering public notice obligation under the General Agreement on Tariffs and Trade (GATT) in respect to TRQs (WTO, 2019[50]).

Notes

[1] The full title of the No. 1 Policy Document is "Several Opinions of the CPC Central Committee and the State Council on Prioritizing the Development of Agriculture and Rural Areas to Address the Issues Relating to Agriculture, Rural Areas and Rural People".

[2] The quality grade standard is divided into five grades plus a sub-standard category.

[3] This includes: six wheat provinces, five early rice provinces, eight middle and late indica rice provinces, and four North-eastern japonica rice provinces.

[4] These tariffs had been initially proposed by MOFCOM on 23 March 2018 in response to the United States 232 Trade Action.

[5] On 20 September 2011, the United States requested consultations with China concerning China's measures imposing anti-dumping and countervailing duties on broiler products from the United States.

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Chapter 9. Colombia

Support to agriculture

Colombia's level of support to producers expressed as a share of gross farm revenues (%PSE) averaged 12.8% over the period 2016-18, below the OECD average. Market price support (MPS) is the main component of the PSE – accounting for more than 87% of the PSE over the period 2016-18. MPS is mostly determined by the use of border measures in the form of flexible tariffs within the Andean Price Band System. These are implemented for several agricultural products including rice, maize, poultry, milk, sugar, and pig meat. Budgetary transfers accounted for the remaining 13% of the producer support estimate during 2016-18 and have been dominated by payments based on variable input use. Budgetary payments to general services directed at the sector as a whole (GSSE), have been relatively small, accounting on average for only 13% of the total support estimate (TSE) and 2.8% of agricultural value added. Expenditures on general services include mainly agricultural research and knowledge transfer; infrastructure, particularly in irrigation; and farm restructuring.

Main policy changes

Budgetary allocations remained mostly unchanged from 2017 to 2018. Eight minor programmes for input subsidies received no financial resources in 2018. At the beginning of 2018, twelve programmes were created directed on general services to the sector (GSSE), mostly on land restructuring and extension services. Expenditures for these new programmes were limited and did not significantly change the overall GSSE allocation.

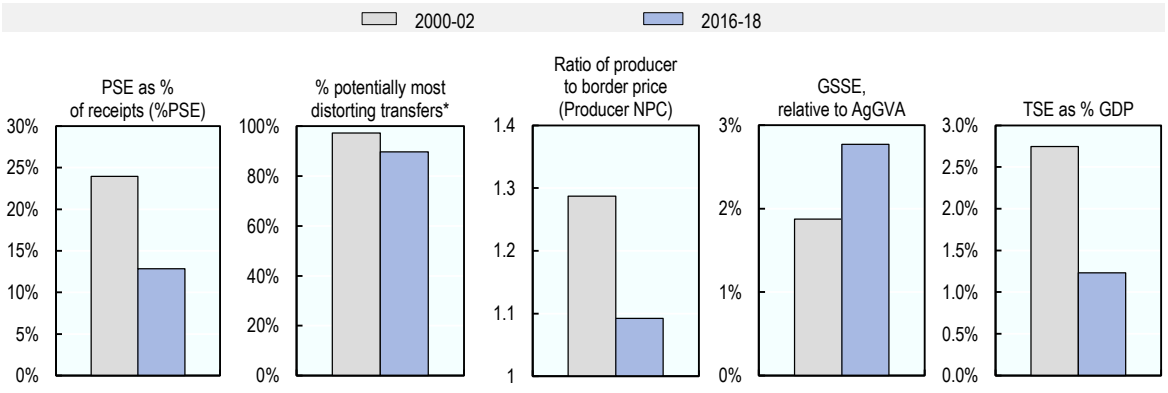
In 2018, a new national government took office, which has defined the new National Development Plan 2018-22. This Plan contains the initiative "Pact for the Agricultural Productivity 2018-22" (*El Pacto por la Productividad del Campo 2018-22*). The objective of this new policy direction is to promote agricultural competitiveness and rural development by creating conditions that encourage the provision of public goods and services, investment, innovation, entrepreneurship and agro-industrial development, to generate opportunities for growth and well-being of the rural population.

The Pact has three action plans: 1) promoting a comprehensive rural development through land rights and land management improvements; a better provision of public goods and services; and non-agricultural income generation by promoting entrepreneurship creating employment; 2) improving the sector's competitiveness (productivity and profitability), through the transformation of agricultural production and improved farm management; better management of sanitary, phyto-sanitary and food safety risks; and investment, access to financing and integral risk management; 3) modernisation, digitalisation and consolidation of sectoral institutions, by restructuring the institutional architecture to strengthen the governance and co-ordination of policies.

Assessment and recommendations

- Underinvestment in public goods and services, unsuccessful land tenure reforms (more than 40% of land ownership continues to be informal) and a long-running internal conflict closely linked to drug trafficking, have deeply affected the performance of the Colombian agricultural sector. These structural and institutional challenges hinder the sector's competitiveness.
- Investments in general services to agriculture have been low during the last two decades, while the Colombian agricultural sector continues to faces numerous structural challenges. Short-term responses to the problems faced by agricultural producers, including the use of input subsidies, have diverted scarce economic resources from developing the enabling environment for the sector to grow. Policy efforts should focus on strategic investments like investments in irrigation and improvement of regulatory oversight on water supply, usage and storage; investments in transport infrastructure, strong research and development (R&D) and innovation capacity of the sector; animal and plant health protection and control services; promotion of sustainable use of natural resources, investments in a national and functional extension/training and technical assistance system that fosters technology adoption. Without adequate investment in these areas it will be very difficult to improve productivity, competitiveness and ensure the sustainable development of the sector. A re-orientation of support from input subsidies to general services would help foster a more inclusive and sustainable agricultural growth.
- As new programmes are being created more clarity is needed. Currently, the majority of programmes cover very broad and different areas and thus, are implemented through a bundle of policy instruments, the impact of which can be difficult to measure and evaluate. For example, programmes that cover variable inputs subsidies can partly deal with funding of general services. The efficiency of allocating budgetary resources is therefore also hard to assess. A systematic review and impact assessment of the wide array of policy instruments, and programmes to support agriculture would be important. This review would allow the redefinition and reorganisation of policy instruments based on evidence of costs and benefits.
- A comprehensive policy framework on land ownership and access to resources is necessary to stabilise the country and to promote rural development. Provide property rights on land will contribute to long-term growth in the agriculture sector and contribute as well to promote rural development. Colombia faces the twin challenges of high concentration of land ownership and the under-exploitation of arable land. Upgrading of the cadastre system and accelerating the registration of land rights are crucial for the sector.
- Improving strategic information collection on the agricultural sector is crucial for the good design of policies. Institutional co-ordination should be improved and information better disseminated to farmers.

Figure 9.1. Colombia: Development of support to agriculture

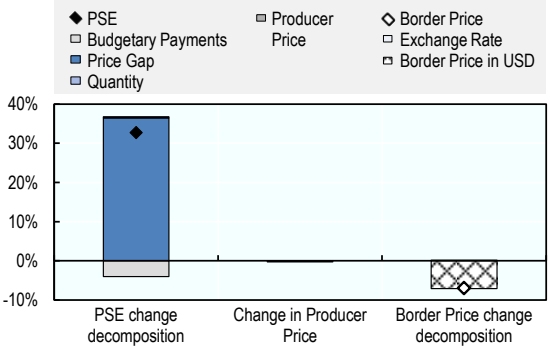


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Support to producers (%PSE) has fallen significantly since the early 2000s. The PSE for 2016-18 was 12.8% of gross farm receipts. The share of potentially most distorting transfers has slightly decreased over time, but around 87% of transfers are still linked to market price support alone (Figure 9.1). Prices received by farmers, on average, are estimated to be 9% higher than those observed in the world markets. Expenditures for general services were equivalent to 2.8% of the agricultural value added in 2016-18, larger than the 1.9% previously seen in 2000-02. Products with particularly high levels of Single Commodities Transfers (SCTs) included rice (54% of commodity gross farm receipts), maize (43%), milk (28%) and pig meat (23%). Main drivers of the change in PSE from 21017 to 2018 were observed in the MPS, more particularly in the price gap. (Figures 9.2 and 9.3).

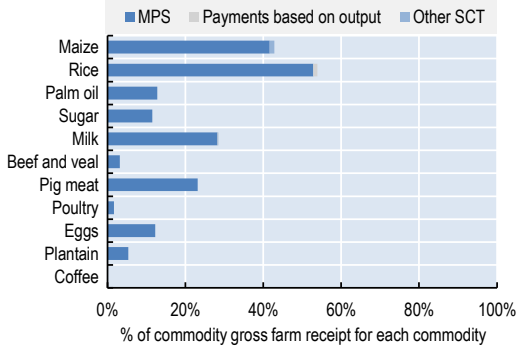
Figure 9.2. Colombia: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Figure 9.3. Colombia: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Table 9.1. Colombia: Estimates of support to agriculture

Million USD

	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**10 565**	**25 164**	**23 937**	**25 590**	**25 965**
***of which:** share of MPS commodities (%)*	80.7	77.9	80.5	77.7	75.6
Total value of consumption (at farm gate)	**8 062**	**22 169**	**21 604**	**22 517**	**22 386**
Producer Support Estimate (PSE)	**2 535**	**3 281**	**3 436**	**2 756**	**3 651**
Support based on commodity output	2 449	2 887	3 017	2 316	3 328
Market Price Support[1]	2 449	2 861	2 988	2 294	3 300
Positive Market Price Support	2 455	2 867	2 993	2 309	3 300
Negative Market Price Support	-6	-6	-5	-15	0
Payments based on output	0	27	29	22	29
Payments based on input use	86	394	418	441	323
Based on variable input use	53	220	244	245	170
with input constraints	36	163	187	180	123
Based on fixed capital formation	16	118	112	132	110
with input constraints	3	64	63	67	63
Based on on-farm services	17	56	62	65	43
with input constraints	5	16	21	18	8
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	0	0	0	0
Percentage PSE (%)	**24.0**	**12.8**	**14.1**	**10.6**	**13.9**
Producer NPC (coeff.)	**1.29**	**1.09**	**1.12**	**1.07**	**1.09**
Producer NAC (coeff.)	**1.32**	**1.15**	**1.16**	**1.12**	**1.16**
General Services Support Estimate (GSSE)	**154**	**509**	**421**	**539**	**566**
Agricultural knowledge and innovation system	49	263	213	315	262
Inspection and control	9	39	25	40	52
Development and maintenance of infrastructure	95	182	153	164	230
Marketing and promotion	0	24	30	21	22
Cost of public stockholding	0	0	0	0	0
Miscellaneous	1	0	0	0	0
Percentage GSSE (% of TSE)	**5.7**	**13.4**	**10.9**	**16.4**	**13.4**
Consumer Support Estimate (CSE)	**-2 236**	**-2 907**	**-3 487**	**-2 404**	**-2 831**
Transfers to producers from consumers	-2 016	-2 057	-2 599	-1 626	-1 945
Other transfers from consumers	-236	-890	-933	-815	-922
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	16	40	46	37	36
Percentage CSE (%)	**-27.9**	**-13.1**	**-16.1**	**-10.7**	**-12.6**
Consumer NPC (coeff.)	**1.39**	**1.15**	**1.20**	**1.12**	**1.15**
Consumer NAC (coeff.)	**1.39**	**1.15**	**1.19**	**1.12**	**1.14**
Total Support Estimate (TSE)	**2 689**	**3 790**	**3 857**	**3 296**	**4 217**
Transfers from consumers	2 252	2 947	3 532	2 441	2 867
Transfers from taxpayers	673	1 733	1 258	1 670	2 272
Budget revenues	-236	-890	-933	-815	-922
Percentage TSE (% of GDP)	**2.7**	**1.2**	**1.4**	**1.1**	**1.3**
Total Budgetary Support Estimate (TBSE)	**240**	**929**	**869**	**1 002**	**917**
Percentage TBSE (% of GDP)	**0.2**	**0.3**	**0.3**	**0.3**	**0.3**
GDP deflator (2000-02=100)	**100**	**217**	**206**	**218**	**226**
Exchange rate (national currency per USD)	**2 297.17**	**2 987.36**	**3 053.88**	**2 951.29**	**2 956.90**

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 Colombia are: maize, rice, sugar, milk, beef and veal, pig meat, poultry, eggs, bananas, plantains, coffee, palm oil and flowers.

Source: OECD (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

Colombia is the fifth largest country in Latin America, with a surface of 1.1 million km^2; it is the only South American country that borders both the Atlantic and Pacific Oceans. Colombia has abundant agricultural land and fresh water, is very biodiverse and is rich in natural minerals and fossil fuels. The country has become an upper-middle-income country with an average income per-capita of USD 14 552, however, inequality continues to be high. Agriculture continues to be an important sector for the economy – accounting for 16.1% of employment and 6.5% of GDP in 2017. 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 national exports, with agro-food exports accounting for 19% of all exports in 2017 (Table 9.2).

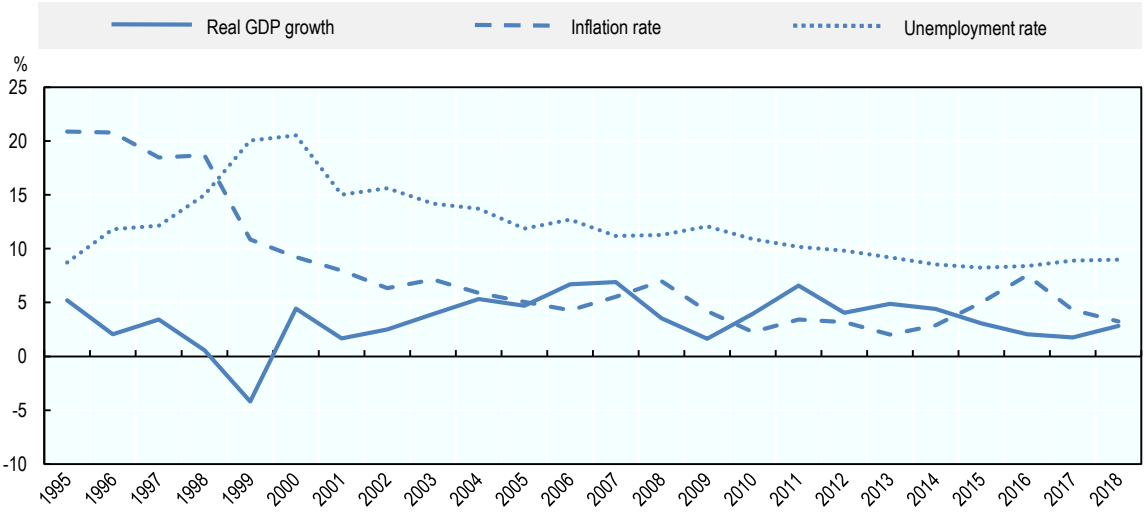
Table 9.2. Colombia: Contextual indicators

	Colombia		International comparison	
	1995*	2017*	1995*	2017*
Economic context			**Share in total of all countries**	
GDP (billion USD in PPPs)	230	714	0.8%	0.7%
Population (million)	37	49	1.0%	1.0%
Land area (thousand km^2)	1 110	1 110	1.4%	1.4%
Agricultural area (AA) (thousand ha)	44 513	44 666	1.5%	1.5%
			All countries[1]	
Population density (inhabitants/km^2)	34	44	48	60
GDP per capita (USD in PPPs)	6 156	14 552	7 642	21 231
Trade as % of GDP	11	14	9.9	14.7
Agriculture in the economy			**All countries[1]**	
Agriculture in GDP (%)	14.0	6.5	3.3	3.5
Agriculture share in employment (%)	24.6	16.1	-	-
Agro-food exports (% of total exports)	33.8	19.2	8.1	7.5
Agro-food imports (% of total imports)	9.9	12.6	7.4	6.6
Characteristics of the agricultural sector			**All countries[1]**	
Crop in total agricultural production (%)	58	64	-	-
Livestock in total agricultural production (%)	42	36	-	-
Share of arable land in AA (%)	5	4	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

Colombia has had a real GDP growth of 3.5% over the last decade (2008-18) with a declining unemployment trend. Colombia is consistently a net exporter of agricultural and food products with a net surplus of USD 1.5 billion in 2017. Colombia's agro-food exports are almost equally split between those destined for final consumption (52%) and those that are sold as intermediate inputs (48%) for use in manufacturing sectors in foreign markets. In either case, these are dominated by primary products. In contrast, 61% of agro-food imports are in the form of intermediates for further processing in the country.

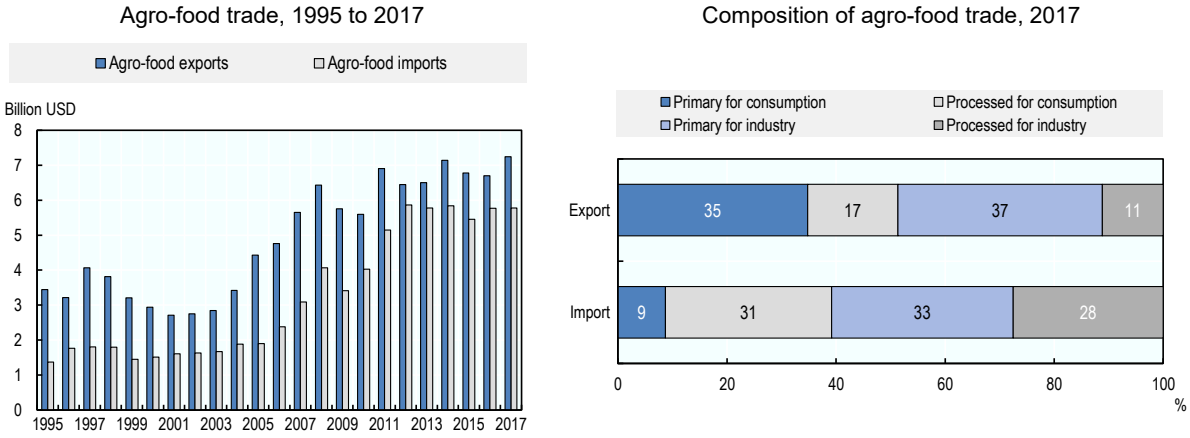
Figure 9.4. Colombia: Main economic indicators, 1995 to 2018



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

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Figure 9.5. Colombia: Agro-food trade

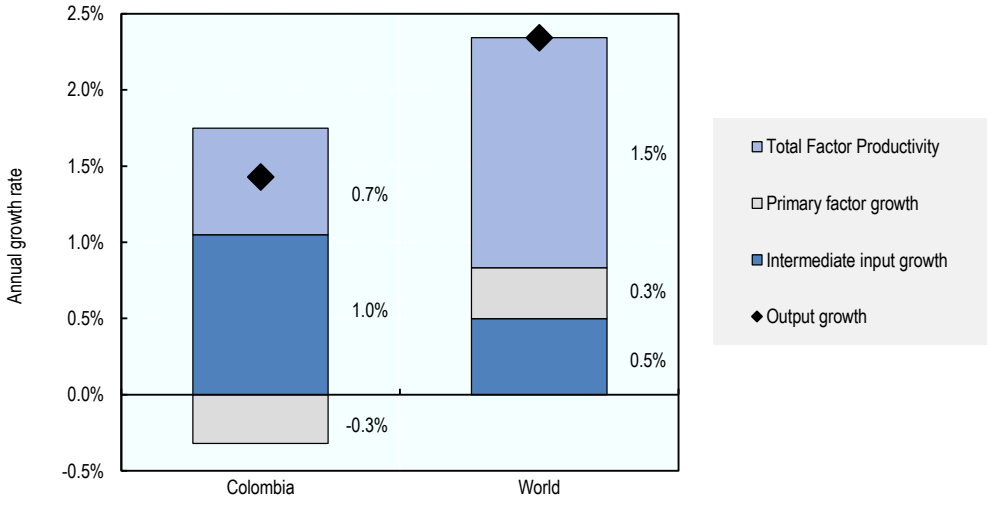


Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

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Colombia has, in agriculture, low levels of Total Factor Productivity (TFP) which was only 0.7% over the period 2006-15, half the world average (1.5%), this situation undermines the sector's competitiveness, largely driven by infrastructure deficiencies, unequal access to land and land use conflicts, as well as weak supply chains. Agriculture is the main water user with a share of almost 60% of total national water use, and responsible for close to 30% of all greenhouse gas (GHG) emissions – both well above the OECD averages.

Figure 9.6. Colombia: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

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Table 9.3. Colombia: Productivity and environmental indicators

	Colombia		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	1.6%	0.7%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha[1]	41.1	39.4	33.2	30.0
Phosphorus balance, kg/ha[1]	5.8	5.9	3.7	2.3
Agriculture share of total energy use (%)[2]	6.6	1.6	1.9	2.0
Agriculture share of GHG emissions (%)	34.0	28.7	8.5	8.9
Share of irrigated land in AA (%)	..	2.6	-	-
Share of agriculture in water abstractions (%)	..	59.6	45.4	42.5
Water stress indicator	..	..	9.7	9.7

Note: * or closest available year. 1. For Emerging Economies, nitrogen and phosphorus balance data are preliminary. 2. For Agriculture share of total energy use (%), data are not directly comparable between time periods due to change in methodology in 2013.
Source: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Description of policy developments

Main policy instruments

Market price support (MPS) continues to be the dominant form of support in the sector. MPS is provided through border protection with the use of the Andean Price Band System (SAFP). The SAFP aims to stabilise import prices for 13 commodities and their related first-stage processed products: rice, barley, yellow maize, white maize, soya beans, wheat, unrefined soya bean oil, unrefined palm oil, unrefined sugar, refined sugar, milk, chicken

cuts and pig meat. The system establishes a floor price (lower band) and a ceiling price (higher band). 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.

Producer associations finance and administer the commodity Price Stabilisation Funds (FEPs). Six commodities are covered by a fund: cotton, cocoa, palm oil, sugar, beef and milk. FEPs make payments (covered by farmers' contribution, there is no government component) 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. The ceiling and floor prices are established by a Council formed by stakeholders and government, based on selected international prices for each product. FEPs are funded through producer levies and function as price-setting mechanisms that make domestic producer prices higher than international prices.

Input subsidies are another important policy measure, and dominate the budgetary transfers to producers. Several programmes provide different types of input support. Key measures include subsidies for the purchase of variable inputs such as of seed or fertilisers to investment subsidies for drainage and irrigation infrastructure, the renovation of crop plantations and subsidies for individual technical assistance.

Colombia also has some financing instruments related to the access to credit (including subsidised credit interest rates), debt rescheduling and insurance programmes. The Financing Fund for the Agricultural Sector (FINAGRO) is a second-tier bank. Specific credit lines are available for: i) working capital and marketing; ii) investment; and iii) the debt rescheduling as well as sporadic write-offs (OECD, 2015[2]).

Expenditures on general services include investments in agricultural research and transfer and extension services, such as investments in Colombia's agricultural innovation institution (former CORPOICA and now called AGROSAVIA), educational rural centres, and extension services, around 52% of total GSSE was spent in these items in 2016-18. Infrastructure (including off-farm irrigation works, rural roads and farm restructuring) is another GSSE area with large investments, around 36% of total GSSE goes here. Inspection and control accounted for 8% of total expenditures on GSSE in the same period.

Domestic policy developments in 2018-19

Budgetary allocations mostly remained unchanged from 2017 to 2018. Eight minor programmes for input subsidies received no financial resources in 2018. At the beginning of 2018, twelve programmes were created directed on general services, mostly on land restructuring and extension services. Expenditures for these new programmes were limited, however.

In 2018, a new national government took office, which has defined the new "National Development Plan 2018-22". Within this Plan, there is the initiative "Pact for the Agricultural Productivity 2018-22" (*El Pacto por la Productividad del Campo 2018-22*). The objective of this new policy is to promote agricultural competitiveness and rural development by creating conditions that encourage the provision of public goods and services, investment, innovation, entrepreneurship and agro-industrial development, to generate opportunities for growth and well-being of the rural population.

The Pact has three action plans: 1) Promoting a comprehensive rural development through land rights and land management improvements; a better provision of public goods and services; and non-agricultural income generation by employment and entrepreneurship.

2) Improving the sector's competitiveness (productivity and profitability), through the transformation and management of agricultural production; better management of sanitary, phyto-sanitary and food safety risks; and investment, financing and integral risk management. 3) Modernisation, digitalisation and consolidation of sectoral institutions, by restructuring the institutional architecture to strengthen the governance and coordination of policies (MARD, 2019[3]).

Trade policy developments in 2018-19

There have been no important developments on agricultural trade in 2018. Colombia is considered a relatively open economy and one of the most open markets in Latin America. The country has 13 free trade agreements (FTAs) in force worldwide. These FTAs are quite important for the country, as around 72% (average 2015-17) of total exports were shipped to FTA's partners. This number increased up to 87% for total agro-food exports during the same period (UN Comtrade, 2019[4]).

Negotiations continue with Japan and Turkey for the establishment of new trade agreements. Negotiations also continue between the bloc of the Pacific Alliance (Mexico, Chile, Peru and Colombia) and Singapore, Canada, New Zealand and Australia, in order to deepen the current conditions, these negotiations comprise deeper provisions on terms of market access, sanitary and phytosanitary measures, and trade facilitation, among others (WTO, 2019[5]).

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Chapter 10. Costa Rica

Support to agriculture

Costa Rica's policies to support agricultural producers generated an average of just 6% of gross farm receipts (%PSE) in 2016-18. This support is almost entirely (94%) based on Market Price Support (MPS), generated through border measures (tariffs) and minimum reference price. Products most supported through the MPS policies include rice, poultry, pig meat and sugar. The remaining support is provided through input subsidies for fixed capital formation and payments for environmental services. Support to producers (PSE) was the largest component of the Total Support Estimate (TSE) to agriculture in 2016-18 accounting for 80% of the total; the remaining 20% was based on financing general services to the sector (GSSE). Expenditures on GSSE accounted for 80% of total budgetary allocations to agriculture in 2016-18; of which 98% was allocated in three main areas: agricultural knowledge and innovation system, particularly extension services; development and maintenance of infrastructure; and inspection and control.

Main policy changes

In 2018, a new Costa Rica government approved the "Policy Guideline 2019-22 of the Agricultural, Rural, and Fisheries Sector". The guideline is under the umbrella of the long-term strategy, created in 2010, for the agricultural sector 2010-21 "State Policy for the Agrifood Sector and Rural Development 2010-21", that aims to achieve a mechanised, competitive, inclusive and sustainable agriculture with responsive, modern and co-ordinated public institutions. The new guideline 2019-22 has four areas of action: 1) Trade integration, 2) Strengthening the internal market, 3) Resilient agribusiness management, and 4) Institutional modernisation and inter-sectorial co-ordination; and three transversal axes: 1) Rural Youth, 2) Gender, and 3) Climate action and risk management. In spite of the new guideline, agricultural policies remained unchanged in 2018 and ongoing programmes were implemented in the same way as in 2017.

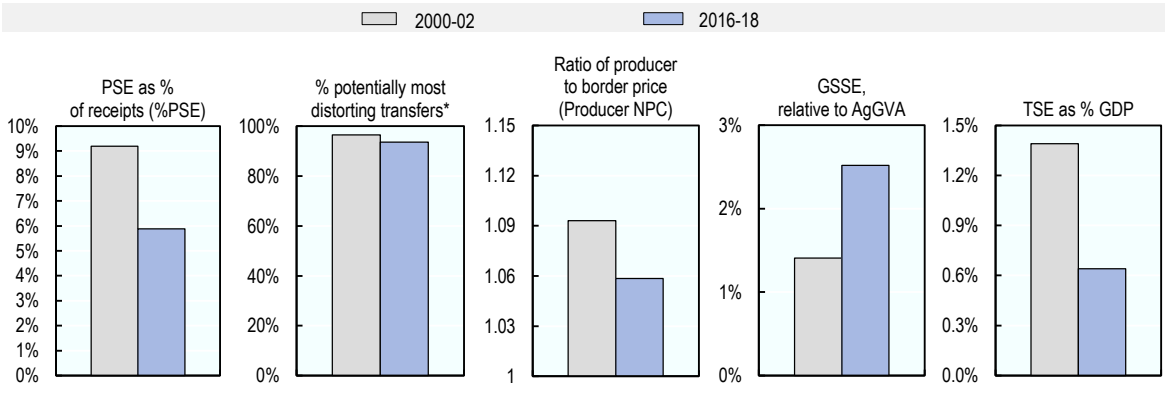
Assessment and recommendations

- Costa Rica's producer support is relatively modest, but concentrates on a few products, namely rice, poultry, pig meat, milk and sugar, which receive high border protection. This support continues to distort both domestic markets and trade, constrains competition and, hence, productivity and competitiveness, and is known to be inefficient for addressing declared policy objectives. In the light of market liberalisation under Costa Rica's Free Trade Agreements (FTAs), the government should develop and communicate a credible strategy to phase out market price support to ensure an orderly adjustment.
- Low capacity and resource misallocations are major constraints to the effectiveness and efficiency of Costa Rica's extension services, where 80% of public allocations to the sector go. Given the importance of these services as a key function for the

agricultural sector, major efforts are needed to ensure that funding is used in an efficient manner.

- Agricultural infrastructure represents another key bottleneck, preventing the sector from becoming more efficient and more responsive to market signals. Major investments are required both to enhance productivity (e.g. through irrigation and drainage) and to facilitate the access to markets (e.g. through transportation, distribution, cold-chain facilities etc.).
- Small-scale farmers suffer from poor access to credit and financial tools. In addition, stringent requirements impede them from taking advantage of available credit sources, as private commercial banks lack incentives to provide loans to small-scale farmers. While care needs to be taken to avoid moral hazard, existing credit programmes provided by the national development bank and agricultural organisations could be expanded as a first step to improve the financial infrastructure for small-scale farmers in particular.
- Complex responsibilities and weak co-ordination among the institutions challenge the implementation of public measures and impede effective service provision to the agricultural sector. Reducing bureaucracy and improving institutional coordination is therefore important to ensure that support programmes are implemented in a more efficient manner.
- Costa Rica has a long history of environmental protection, sustainable development and action on climate change mitigation. In spite of these important efforts, opportunities for further improvements remain. In particular, the country should better align adaptation and other agricultural objectives to prepare for climate change. Farmers' awareness could also be enhanced through strengthened co-ordination between research and developments (R&D) and technical assistance.

Figure 10.1. Costa Rica: Development of support to agriculture

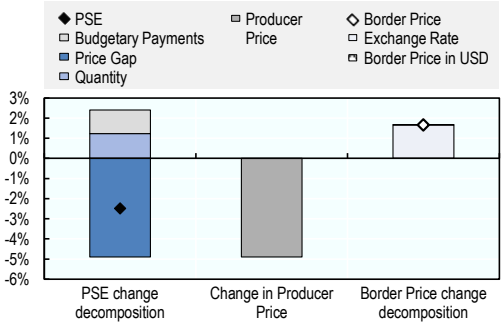


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Support to producers (%PSE) was 6% in 2016-18, well below the OECD average. Potentially most production and trade distorting support, in the form of market price support (MPS), continues to dominate and represented 94% of the PSE in 2016-18. Border protection and price interventions resulted in producer prices that were, on average, 6% higher than international prices in 2016-18. Around 80% of budgetary spending is on general services to the sector (GSSE), corresponding to 2.5% of agricultural value-added, well below rates in most other countries in this report. Total support (TSE) was 0.6% of GDP in 2016-18 (Figure 10.1). The level of price gap has been reduced recently. This decrease was due to a weaker local currency and a small reduction in domestic prices for some products (Figure 10.2). Single Commodity Transfers (SCT) represented, on average, 97% of the total PSE and are particularly important for rice (56% of commodity-specific gross farm receipts), poultry (30%), sugar (22%) and pig meat (31%) (Figure 10.3).

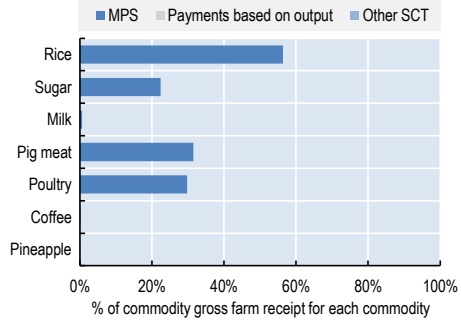
Figure 10.2. Costa Rica: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Figure 10.3. Costa Rica: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Table 10.1. Costa Rica: Estimates of support to agriculture

Million USD

	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**2 155**	**5 039**	**5 045**	**5 049**	**5 023**
***of which:** share of MPS commodities (%)*	78.1	88.2	86.6	89.9	88.1
Total value of consumption (at farm gate)	**1 182**	**2 485**	**2 566**	**2 498**	**2 391**
Producer Support Estimate (PSE)	**198**	**299**	**386**	**261**	**250**
Support based on commodity output	188	280	373	240	227
Market Price Support[1]	188	280	373	240	227
Positive Market Price Support	188	280	373	240	227
Negative Market Price Support	0	0	0	0	0
Payments based on output	0	0	0	0	0
Payments based on input use	9	17	11	20	22
Based on variable input use	4	10	4	12	14
with input constraints	1	9	3	11	14
Based on fixed capital formation	1	6	6	6	6
with input constraints	0	3	4	4	3
Based on on-farm services	4	1	2	1	1
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	1	2	2
Based on long-term resource retirement	0	2	1	2	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 (%)	**9.2**	**5.9**	**7.6**	**5.1**	**5.0**
Producer NPC (coeff.)	**1.09**	**1.06**	**1.08**	**1.05**	**1.05**
Producer NAC (coeff.)	**1.10**	**1.06**	**1.08**	**1.05**	**1.05**
General Services Support Estimate (GSSE)	**21**	**75**	**80**	**74**	**72**
Agricultural knowledge and innovation system	10	31	34	30	30
Inspection and control	4	16	16	16	16
Development and maintenance of infrastructure	7	26	29	26	24
Marketing and promotion	0	1	1	1	2
Cost of public stockholding	0	0	0	0	0
Miscellaneous	0	0	0	0	0
Percentage GSSE (% of TSE)	**9.7**	**20.2**	**17.1**	**22.0**	**22.4**
Consumer Support Estimate (CSE)	**-178**	**-309**	**-392**	**-280**	**-255**
Transfers to producers from consumers	-173	-269	-359	-233	-217
Other transfers from consumers	-5	-39	-33	-47	-38
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	0	0	0	0	0
Percentage CSE (%)	**-15.1**	**-12.4**	**-15.3**	**-11.2**	**-10.7**
Consumer NPC (coeff.)	**1.18**	**1.14**	**1.18**	**1.13**	**1.12**
Consumer NAC (coeff.)	**1.18**	**1.14**	**1.18**	**1.13**	**1.12**
Total Support Estimate (TSE)	**220**	**374**	**466**	**335**	**322**
Transfers from consumers	178	309	392	280	255
Transfers from taxpayers	47	105	107	102	106
Budget revenues	-5	-39	-33	-47	-38
Percentage TSE (% of GDP)	**1.4**	**0.6**	**0.8**	**0.6**	**0.5**
Total Budgetary Support Estimate (TBSE)	**31**	**94**	**92**	**95**	**96**
Percentage TBSE (% of GDP)	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
GDP deflator (2000-02=100)	**100**	**330**	**322**	**330**	**338**
Exchange rate (national currency per USD)	**331.77**	**562.98**	**543.96**	**567.78**	**577.19**

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 (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

In Costa Rica agriculture still plays a relatively strong role in the economy, contributing 5.2% to the country's GDP and employing 12% of its work force. Costa Rica has a dualism in its agricultural sector where export oriented farms coexist with subsistence smallholders. The country has achieved higher standards of living and lower poverty rates than other countries in the re gion, with a per capita income of USD 17 044 (PPP) in 2017. However, inequality continues to be high. A structural transformation in terms of production took place in the late 1990s, when land originally destined to pastures changed its use to crops such as pineapples. Costa Rica is the world's largest exporter of pineapples and remains a successful supplier of traditional products, such as bananas, coffee and sugar.

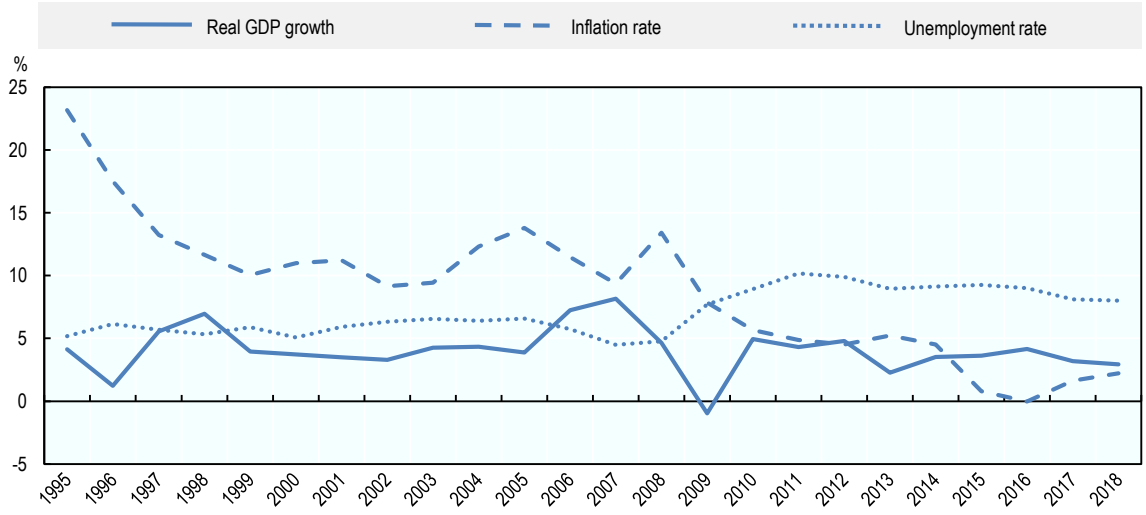
Table 10.2. Costa Rica: Contextual indicators

	Costa Rica		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	23	84	0.08%	0.08%
Population (million)	3	5	0.09%	0.10%
Land area (thousand km²)	51	51	0.06%	0.06%
Agricultural area (AA) (thousand ha)	2 048	1 760	0.07%	0.06%
			All countries[1]	
Population density (inhabitants/km²)	69	96	48	60
GDP per capita (USD in PPPs)	6 533	17 044	7 642	21 231
Trade as % of GDP	26	22	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	14.0	5.2	3.3	3.5
Agriculture share in employment (%)	21.8	12.0	-	-
Agro-food exports (% of total exports)	64.3	43.7	8.1	7.5
Agro-food imports (% of total imports)	10.5	12.7	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	82	74	-	-
Livestock in total agricultural production (%)	18	26	-	-
Share of arable land in AA (%)	11	14	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

The economy has grown by around 4% per year since 1995, exceeding the average growth of a number of other economies in the region. Inflation has significantly declined since 1995, and unemployment was around 8% in 2018 (Figure 10.4). Costa Rica has developed a successful and dynamic agricultural export sector in recent decades. The country is a net exporter agro-food, with a share of agro-food exports in total exports of 44% in 2018. Almost half of Costa Rica's agricultural exports are primary crops for final consumption, such as bananas, coffee and pineapples. The country is also an important exporter of processed products for final consumption, such as pineapple juice. Half of agro-food imports are processed products for final consumption.

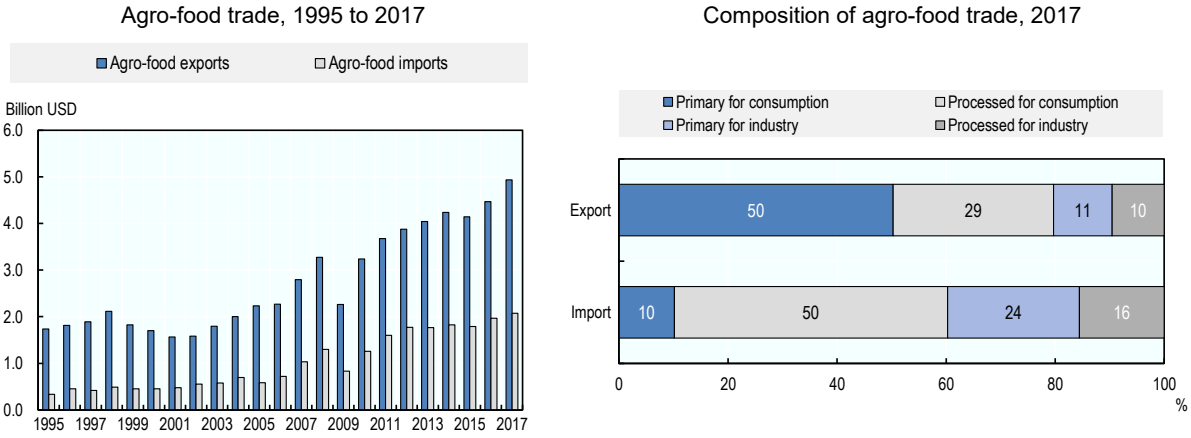
Figure 10.4. Costa Rica: Main economic indicators, 1995 to 2018



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

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Figure 10.5. Costa Rica: Agro-food trade



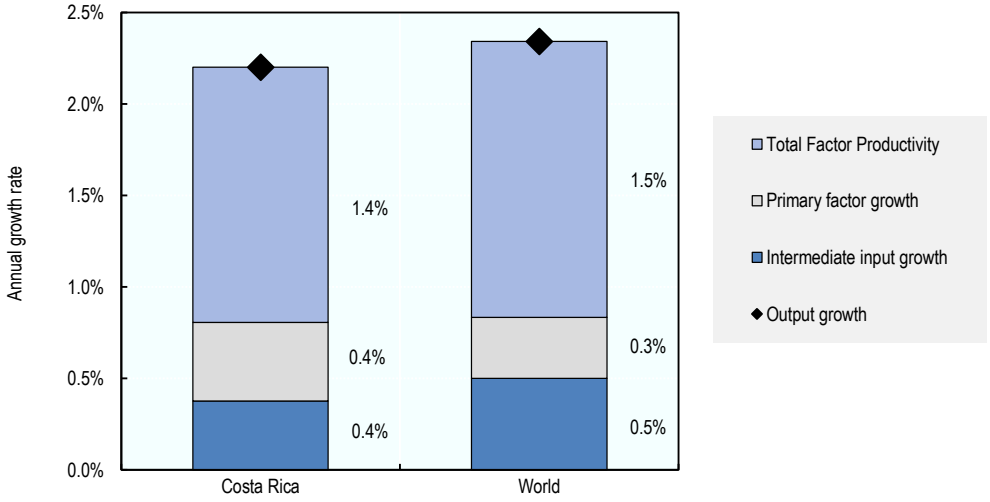
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

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During the 1980s and 1990s, structural change in the agricultural sector induced rapid growth in Total Factor Productivity (TFP). However, TFP growth has decreased and has been below the world average over the last decade. Area expansion into less productive land, ongoing farm fragmentation and limited financial and physical infrastructure were among the key contributing factors to this decline. Agriculture is the main user of water resources with a share of 80% of water abstractions. Environmental regulations have led to

the reforestation of large parts of the country, and 25% of Costa Rican territory is now under some form of environmental protection (Table 10.3).

Figure 10.6. Costa Rica: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

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Table 10.3. Costa Rica: Productivity and environmental indicators

	Costa Rica		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	3.2%	1.4%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha[1]	61.3	60.1	33.2	30.0
Phosphorus balance, kg/ha[1]	11.1	11.3	3.7	2.3
Agriculture share of total energy use (%)	3.9	2.1	1.9	2.0
Agriculture share of GHG emissions (%)	..	24.1	8.5	8.9
Share of irrigated land in AA (%)	..	9.0	-	-
Share of agriculture in water abstractions (%)	..	80.2	45.4	42.5
Water stress indicator	0.3	1.9	9.7	9.7

Notes: * or closest available year. 1. Preliminary data.
Source: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Description of policy developments

Main policy instruments

Up to mid-2018, Costa Rica's agricultural policy had two overarching objectives for the agricultural sector: to reduce poverty and to increase productivity growth. To achieve these objectives, the short-term strategy prioritised five policy guidelines (or "pillars"): 1) food

security and sovereignty; 2) the creation of opportunities for rural youth; 3) rural territorial development; 4) adaptation to and mitigation of climate change; and 5) the strengthening of the export-oriented sector. Several specific goals for increasing productivity through yield-targets were set for some staple crops, such as rice, beans, potatoes, and milk (OECD, 2017[2]).

The agricultural sector benefits from a government commitment to the provision of a range of general services for agriculture, including extension services, R&D, and plant and animal health services, with emphasis on environmental protection. Around 80% of total expenditures allocated to agriculture are provided through general services. However, Costa Rica maintains important border measures, in particular tariffs to several agricultural products (rice, poultry, pig meat, milk, sugar, etc.), and maintains a minimum reference price for rice. This protection generates market price support, which is by far the largest component of support to farms in Costa Rica. The country also provides minor subsidies through credit to farmers at preferential interest rates, payments for environmental services, and subsidies for fixed capital formation mostly directed to smallholders.

Domestic policy developments in 2018-19

In 2018, Costa Rica changed national government. The new government has developed and approved a new overarching policy guideline: "Policy Guidelines 2019-22 of the Agricultural, Rural, and Fisheries Sector". The guideline is under the umbrella of the long-term strategy, created in 2010, for the agricultural sector 2010-21 "State Policy for the Agrifood Sector and Rural Development 2010-21", that aims to achieve a mechanised, competitive, inclusive and sustainable agriculture with responsive, modern and coordinated public institutions. In spite of the policy guideline, agricultural policies remained unchanged in 2018 and programmes were implemented in the same way as in 2017. The new guideline 2019-22 has four areas of action and three transversal axes:

- Trade integration: seize market opportunities generated from free trade agreements, through the promotion of exportable agricultural supply, while protecting domestic incipient production.
- Strengthening the internal market: improve internal market conditions, promoting the development of local markets, product diversification, and the optimisation and transparency of institutional offers.
- Resilient agribusiness management: promote agribusiness capacity for sustainable and competitive production, through innovation, access to technology, use of good agricultural and manufacturing practices, increase value added and associativity.
- Institutional modernisation and inter-sectorial articulation: create an effective management of public institutions, to deliver products and services timely to the needs of the productive sector, through greater sectoral co-ordination and simplification of procedures.

Transversal axes:

- Rural Youth: inclusion of young people in the economic, social and cultural areas, through the provision of innovative, differentiated and articulated services aimed at strengthening agricultural business skills.
- Gender: mainstreaming gender equality in the actions of the sector, through advocacy, guidance and processes aimed at providing services.

- Climate action and risk management: incorporation of the climatic variable and risk reduction in the production of goods and services by strengthening the capacities of institutions and producers (SEPSA, 2019[3]).

Trade policy developments in 2018-19

There were no major developments on agricultural trade in 2018-19. In 2015, Costa Rica decided to ban imports of fresh avocados from Mexico, with the aim to protect itself against the sunblotch disease (G/SPS/N/CRI/160 and G/SPS/N/CRI/162) (COMEX, 2019[4]). The two parties continue their consultations under the WTO Dispute Settlement Mechanism. On 18 December 2018, a panel was established by the Dispute Settlement Body, but the panellists have not yet been chosen. Canada, the People's Republic of China, the European Union, El Salvador, Honduras, India, Panama, the Russian Federation and the United States reserved their third-party rights (WTO, 2018[5]).

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Chapter 11. European Union

Support to agriculture

The European Union has gradually reduced its support to agriculture since the mid-1990s and support to producers as a share of gross farm receipts (%PSE) has stabilised at around 19% since 2010. While price distortions have been significantly reduced, trade protection measures are in place in a number of commodity sectors, including import and export licensing, Tariff Rate Quotas (TRQs) and special safeguards, that lead to higher support when world prices decline. Support linked to production increased in 2018 to its highest level in the past five years, mainly driven by a rise in market price support due to a price gap between domestic and world prices, emphasised by exchange rate movements.

Production distortions from payments have also declined since the early 2000s and most payments today do not require production. Payments not requiring production account for 41% of support on average in 2016-18. At the same time, more payments are contingent upon environmental compliance – nearly 50% of support to producers is conditional on mandatory environmental constraints, and an additional 10% of support to producers goes to voluntary agri-environmental schemes with conditions that go beyond the mandatory requirements.

The greatest share of overall support to the agricultural sector (TSE) goes to producers (about 89%). Public expenditure for general services to the sector at large (GSSE) has increased from 8% of the TSE on average in 2000-02 to an average of 10% in 2016-18, and its composition has evolved in recent years as well. Agricultural knowledge and innovation accounts for more than half of the GSSE. Expenditure for the marketing and promotion of agricultural products has become more prominent and represented more than 20% of the GSSE on average in 2016-18, whereas infrastructure expenditure has declined from about one fourth of the GSSE in 2000-02 to 17% in recent years.

Main policy changes

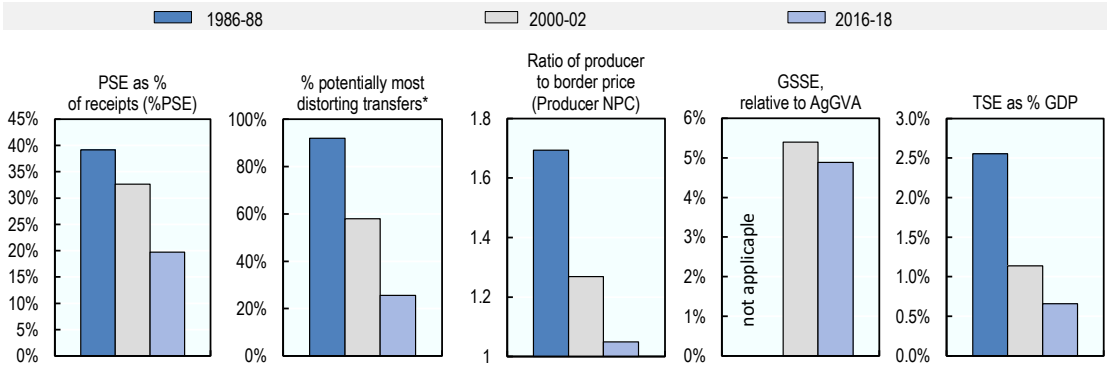
In 2018, the main policy developments related to the simplification of Common Agricultural Policy (CAP) implementation, and responses to adverse market and weather conditions. As part of the simplification process, farm-payment eligibility rules were relaxed in some Member States as were some of the conditions associated with the greening payment.

Member States affected by adverse weather events offered support and were permitted to ease greening conditions, provided that they notified the Commission of the specifics. Previous measures to ease market conditions in the dairy, pig and fruit and vegetable sectors were scaled down, and tenders took place to discharge skimmed milk powder (SMP) stocks.

Assessment and recommendations

- Over the past three decades, policy reforms have considerably reduced the level of support and shifted the composition of that support toward less production and trade-distorting measures. Producers have more flexibility to respond to market signals and to make their production choices independently from government intervention, but support still accounts for a significant share of gross farm receipts.
- In some sectors, however, prices paid to producers remain disconnected from world market prices. Potentially most distorting forms of support represent a quarter of support to producers, suggesting that further improvements towards market orientation are possible. While market access for agricultural products has improved through bilateral agreements and the reduction of applied tariffs, import and export licensing, Tariff Rate Quotas and special safeguards continue to apply to a number of products. These measures lead to higher support when world prices decline.
- Climate change adaptation and mitigation in agriculture are addressed with compulsory measures intended to improve the sector's environmental performance: cross-compliance and greening under Pillar 1 of the CAP, and voluntary agri-environmental and climatic measures under Pillar 2. At the same time, although energy prices could be used as a strong lever to reduce carbon emissions, fossil fuel use is encouraged in some Member States through fuel tax rebates for agricultural use. Aside from being contrary to sustainability goals, these tax concessions also create an uneven playing field for producers. Policy coherence would require a unified phase-out of these types of measures.
- A more consistent approach in relevant regulatory areas is recommended to provide uniform incentives and market signals to all EU producers. In one example, after the Member States voted to ban some neonicotinoids, exemptions were granted for producers in certain countries. This creates uneven internal conditions of competition, and also undermines the position that the products are sufficiently dangerous to warrant banning.
- Payments for risk management measures under Pillar 2 more than quadrupled from 2017 to 2018. Support overwhelmingly goes to insurance subsidies – other risk management instruments (such as mutual funds or income stabilisation tools) remain largely overlooked. Additionally, while support for risk management is increasing, a large number of Member States continue to rely on ad hoc measures funded from EU and national budgets, including payments or tax provisions. Although these instruments may sometimes be necessary, they undermine a greater shift toward *ex ante* approaches (including on-farm measures and market-based tools) that are more likely to incentivise investments in long-term farm resiliency. The ambiguity is exacerbated when emergency measures exclude farmers who take up on-farm risk management.

Figure 11.1. European Union: Development of support to agriculture

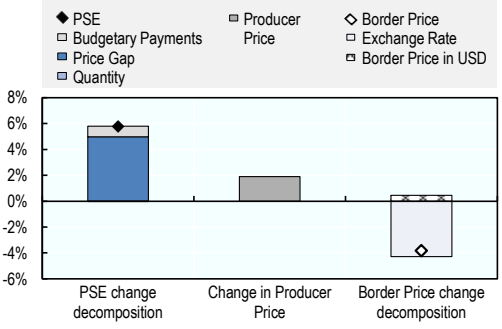


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Support to producers (%PSE) in the European Union has declined in the long-term and has stabilised at around 19% since 2010, although it fluctuates from year to year due to commodity market conditions. In 2016-18, support was close to 20% of gross farm receipts, slightly above the OECD average. The share of potentially **most distorting support** has decreased significantly over time, due largely to a decline in market price support (MPS), and is now below the OECD average (Figure 11.1). In 2018, support increased due to both higher MPS and slightly increased budgetary payments. The rise in MPS indicates that the gap between prices received by EU farmers and world reference prices widened, largely the result of exchange rate movements, as both producer prices and, to a lesser extent border prices denominated in USD, increased (Figure 11.2). For the period 2016-18, MPS was the dominant component of single commodity transfers (SCT) for products that received the highest levels of support relative to gross farm receipts (beef and veal, poultry meat and rice), whereas commodity payments accounted for more than half the SCT for sheep meat and sugar (Figure 11.3). In all, individual farmers capture about 90% of total support, with the remainder designated for **general services** (GSSE) to the sector (Table 11.1). In 2016-18, GSSE relative to agriculture value-added was just 4.9% – slightly below the overall OECD average. The majority of GSSE spending is dedicated to knowledge and innovation systems. **Total support to agriculture** as a share of GDP has declined significantly over time, as has the share of the sector in the economy.

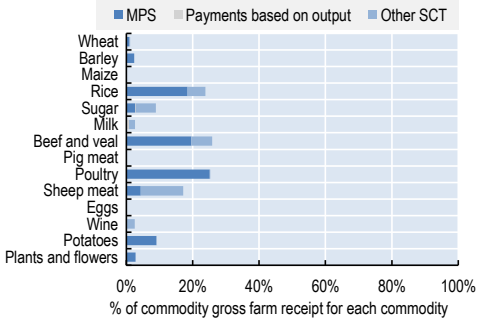
Figure 11.2. European Union: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Figure 11.3. European Union: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933937434

Table 11.1. European Union: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**233 558**	**225 093**	**435 942**	**405 089**	**438 815**	**463 922**
***of which:** share of MPS commodities (%)*	75.0	73.3	73.9	73.1	73.9	74.5
Total value of consumption (at farm gate)	**208 051**	**220 253**	**412 616**	**385 566**	**411 268**	**441 013**
Producer Support Estimate (PSE)	**97 319**	**87 822**	**102 473**	**97 483**	**99 623**	**110 314**
Support based on commodity output	88 243	47 898	20 088	18 261	17 997	24 007
Market Price Support[1]	82 606	43 967	19 553	17 695	17 488	23 478
Positive Market Price Support	83 718	43 967	19 697	17 889	17 673	23 528
Negative Market Price Support	-1 112	0	-144	-195	-186	-50
Payments based on output	5 637	3 930	535	567	509	529
Payments based on input use	5 056	6 833	13 008	11 682	12 250	15 094
Based on variable input use	960	3 047	6 026	5 570	5 839	6 671
with input constraints	0	0	32	42	22	31
Based on fixed capital formation	2 986	2 259	5 071	4 378	4 779	6 057
with input constraints	0	94	91	79	85	108
Based on on-farm services	1 109	1 527	1 911	1 734	1 632	2 366
with input constraints	90	274	52	35	21	99
Payments based on current A/An/R/I, production required	3 587	32 331	26 835	25 209	27 248	28 047
Based on Receipts / Income	147	99	286	212	346	298
Based on Area planted / Animal numbers	3 440	32 231	26 549	24 996	26 902	27 748
with input constraints	940	15 087	21 804	20 368	21 864	23 180
Payments based on non-current A/An/R/I, production required	0	0	17	45	4	3
Payments based on non-current A/An/R/I, production not required	0	10	41 270	40 699	41 184	41 927
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	41 270	40 699	41 184	41 927
with commodity exceptions	0	0	6	11	8	0
Payments based on non-commodity criteria	478	1 078	907	913	794	1 015
Based on long-term resource retirement	476	846	304	441	230	239
Based on a specific non-commodity output	2	176	553	422	513	723
Based on other non-commodity criteria	0	57	51	49	51	53
Miscellaneous payments	-43	-328	347	674	147	221
Percentage PSE (%)	**39.2**	**32.6**	**19.7**	**20.1**	**19.1**	**20.0**
Producer NPC (coeff.)	**1.69**	**1.27**	**1.05**	**1.05**	**1.04**	**1.05**
Producer NAC (coeff.)	**1.64**	**1.48**	**1.25**	**1.25**	**1.24**	**1.25**
General Services Support Estimate (GSSE)	**9 144**	**8 353**	**12 010**	**11 692**	**11 750**	**12 588**
Agricultural knowledge and innovation system	1 814	3 492	6 391	6 089	6 259	6 824
Inspection and control	194	281	934	870	976	957
Development and maintenance of infrastructure	1 331	2 222	2 045	2 030	1 982	2 122
Marketing and promotion	1 210	994	2 526	2 637	2 296	2 646
Cost of public stockholding	4 571	1 294	96	46	219	22
Miscellaneous	24	69	18	20	17	18
Percentage GSSE (% of TSE)	**8.2**	**8.4**	**10.5**	**10.7**	**10.5**	**10.2**
Consumer Support Estimate (CSE)	**-72 475**	**-39 823**	**-18 491**	**-16 967**	**-16 251**	**-22 255**
Transfers to producers from consumers	-83 403	-42 852	-19 040	-17 474	-16 896	-22 751
Other transfers from consumers	-1 631	-773	-148	-305	-88	-51
Transfers to consumers from taxpayers	4 992	3 537	449	432	453	463
Excess feed cost	7 567	264	248	380	280	84
Percentage CSE (%)	**-35.7**	**-18.3**	**-4.5**	**-4.4**	**-4.0**	**-5.1**
Consumer NPC (coeff.)	**1.69**	**1.25**	**1.05**	**1.05**	**1.04**	**1.05**
Consumer NAC (coeff.)	**1.55**	**1.22**	**1.05**	**1.05**	**1.04**	**1.05**
Total Support Estimate (TSE)	**111 455**	**99 711**	**114 932**	**109 606**	**111 825**	**123 365**
Transfers from consumers	85 034	43 625	19 188	17 780	16 984	22 802
Transfers from taxpayers	28 052	56 860	95 892	92 132	94 929	100 614
Budget revenues	-1 631	-773	-148	-305	-88	-51
Percentage TSE (% of GDP)	**2.6**	**1.1**	**0.7**	**0.7**	**0.6**	**0.7**
Total Budgetary Support Estimate (TBSE)	**28 849**	**55 744**	**95 379**	**91 912**	**94 337**	**99 887**
Percentage TBSE (% of GDP)	**0.7**	**0.6**	**0.5**	**0.6**	**0.5**	**0.5**
GDP deflator (1986-88=100)	**100**	**152**	**186**	**185**	**186**	**..**
Exchange rate (national currency per USD)	**0.91**	**1.09**	**0.88**	**0.90**	**0.89**	**0.85**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
EU12 for 1986-88; EU15 for 2000-02; and EU28 from 2016 when available.
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 (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

The European Union is the largest economic region covered in this report. Its average GDP per capita is slightly below the OECD average but well above the average of all countries covered in the report. The share of agriculture in the economy has declined over time, now accounting for just 1.5% of GDP and 4.2% of employment (Table 11.2). At the same time, economic conditions, farm structures and production systems are very diverse across and within the 28 Member States. Across the European Union, agriculture occupies almost half of the total land area, with nearly 60% of the agricultural area categorised as arable. Crops, including cereals, oilseeds, fresh fruit and vegetables, and plants and flowers, account for 56% of overall agricultural production. The remainder are livestock products, including dairy, beef and veal, pig meat, sheep meat, poultry and eggs.

Table 11.2. European Union: Contextual indicators

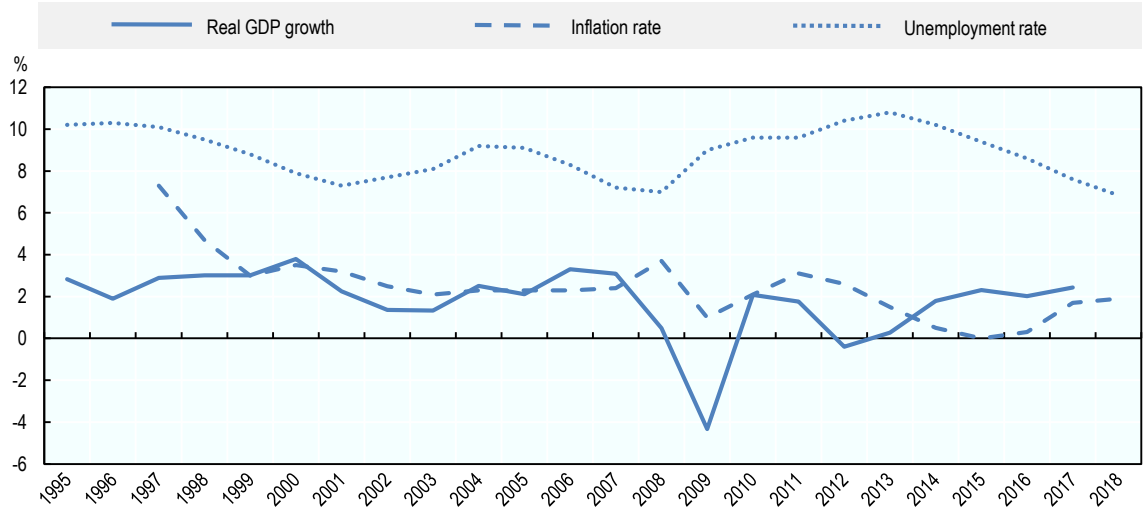
	European Union		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	7 848	21 786	26.6%	21.2%
Population (million)	371	512	9.6%	10.6%
Land area (thousand km^2)	3 128	4 239	3.9%	5.2%
Agricultural area (AA) (thousand ha)	142 078	181 508	4.7%	6.1%
			All countries[1]	
Population density (inhabitants/km^2)	112	116	48	60
GDP per capita (USD in PPPs)	21 052	41 119	7 642	21 231
Trade as % of GDP	9	13	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	2.2	1.5	3.3	3.5
Agriculture share in employment (%)	5.1	4.2	-	-
Agro-food exports (% of total exports)	7.2	7.1	8.1	7.5
Agro-food imports (% of total imports)	8.6	6.2	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	53	56	-	-
Livestock in total agricultural production (%)	47	44	-	-
Share of arable land in AA (%)	53	58	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

The European Union is the world's largest importer of agro-food products and, since 2013, also the largest exporter (Figure 11.5). Since that year, the European Union has been a net agro-food exporter as well. In 2017, agro-food products accounted for 7.1% of all EU exports and 6.2% of all EU imports. The region's agro-food exports (62%) mainly consisted of processed goods for final consumption. Agro-food imports include primary and processed goods for consumption and industry in nearly equal proportions.

After having dipped into recession in 2009 and 2012, GDP growth in the area recovered since 2013 (Figure 11.4). Unemployment is down to less than 8% from its record high of 11% in 2013, but large differences persist across Member States. Inflation remains relatively low, rising slightly to 1.9% in 2018.

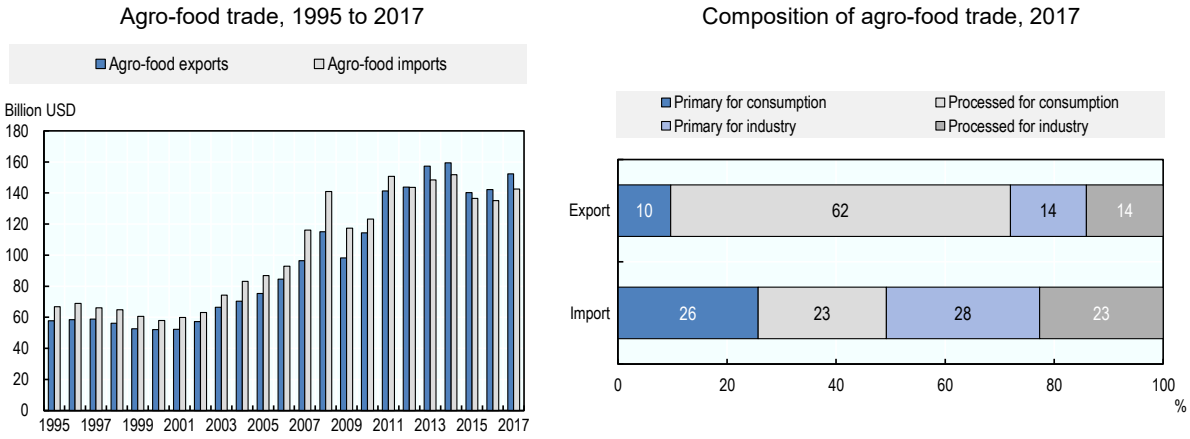
Figure 11.4. European Union: Main economic indicators, 1995 to 2018



Note: EU28.
Sources: OECD statistical databases; World Bank, WDI and ILO estimates and projections.

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Figure 11.5. European Union: Agro-food trade



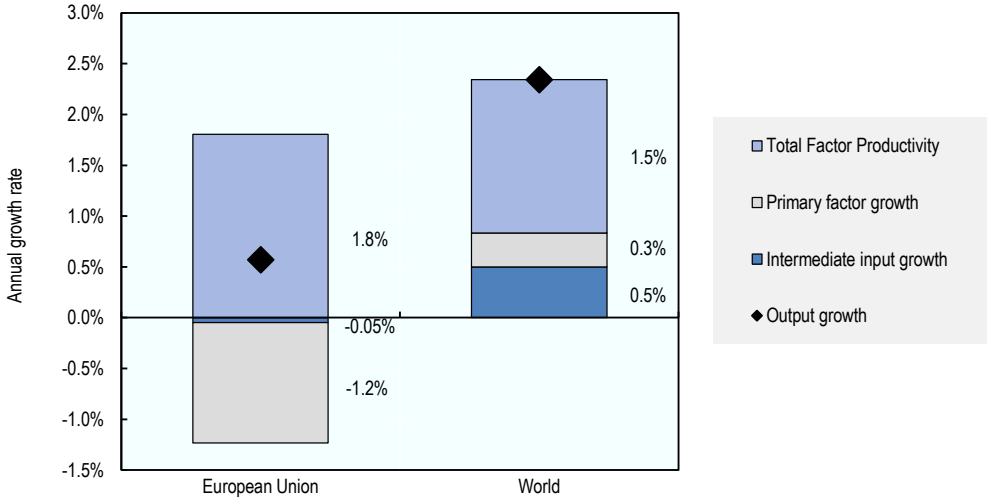
Note: Numbers may not add up to 100 due to rounding. Extra-EU trade: EU15 for 1995-2003; EU25 for 2004-06; EU27 for 2007-13 and EU28 from 2014.
Source: UN Comtrade Database.

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Over the 2006-15 period, the annual agricultural output growth of the European Union averaged 0.6%, well below the world's average of 2.3%. Total Factor Productivity (TFP) grew by 1.8% per year on average, to some extent driven by the reduction of intermediate inputs and primary factors (Figure 11.6). This increase in TFP makes up for the reduction of primary factors and intermediate inputs and drives output growth. The sector's share in water use has declined and nutrient balances have improved since the 1990s (Table 11.3).

Additionally, agriculture accounts for 2.6% of total energy use, slightly more than in the 1990s, and above the OECD average. The share of greenhouse gas (GHG) emissions remained at 10% in 2017 – about 1 percentage point higher than the OECD average.

Figure 11.6. European Union: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery. EU28.
Source: USDA Economic Research Service Agricultural Productivity database.

StatLink https://doi.org/10.1787/888933937491

Table 11.3. European Union: Productivity and environmental indicators

	European Union		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	1.1%	1.8%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha	73.4	52.1	33.2	30.0
Phosphorus balance, kg/ha	9.1	1.0	3.7	2.3
Agriculture share of total energy use (%)	2.3	2.6	1.9	2.0
Agriculture share of GHG emissions (%)	8.9	10.0	8.5	8.9
Share of irrigated land in AA (%)	..	..	-	-
Share of agriculture in water abstractions (%)	33.8	23.8	45.4	42.5
Water stress indicator	..	..	9.7	9.7

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

Description of policy developments

Main policy instruments

The Common Agricultural Policy (CAP) is the main agricultural policy framework of the European Union. In addition to the CAP, Member States may implement measures funded from national budgets that target specific sectors (including agriculture) or objectives, as long as they comply with the European Union's state aid rules and do not distort competition within the common market (OECD, 2017[2]).

The CAP typically covers a seven-year period, currently 2014-20. It is composed of two pillars: the European Agricultural Guarantee Fund (EAGF) finances Pillar 1, and measures under Pillar 2 are based on Rural Development Programmes (RDP) co-financed by the European Agricultural Fund for Rural Development (EAFRD) and EU Member States.[1] Member State RDPs are deployed over the seven year CAP programming period. The CAP 2014-20, while in many ways the continuation of the CAP 2007-13, offers a number of novel features (OECD, 2017[2]).

The implementation of the CAP 2014-20 started in 2014 with the first measures under Pillar 1, followed in 2016 by the implementation of 118 national and regional Pillar 2 Rural Development Programmes (RDP)[2] in the Member States. Later in 2018, the CAP simplification took place within the revision of the EU financial rules, also known as the Omnibus regulation (OECD, 2018[3]). Furthermore, the CAP had provided for opportunities at set times during implementation when Member States could review and notify adjusted decisions with regards to several choice measures.

The overall budget for the CAP over the 2014-20 period was set at EUR 408 billion (USD 453 billion), of which initially 76% were allocated to Pillar 1 (covering market related expenditure and direct payments), and the remaining 24% to Pillar 2. The CAP 2014-20 allows Member States to transfer up to 15% of each envelope[3] between the two pillars. Over the period, thirteen Member States transferred funds from Pillar 1 to Pillar 2, while five Member States transferred funds from Pillar 2 to Pillar 1; with a net overall result of EUR 4.74 billion (USD 5.59 billion) transferred from Pillar 1 to Pillar 2 (EC, 2019[4]).[4]

Pillar 1 defines and funds **market measures** under the common market organisation, as well as **direct payments** – mostly per hectare payments that do not require production. To this end, entitlements to direct payments were assessed and allocated for the entire period of the CAP 2014-20 to those deemed to be active farmers through the exclusion of a number of activities and businesses, known as the negative list. More flexibility was introduced in the active farmer condition in 2018. Most Member States abandoned the negative list, while some country specific alternative criteria were used to prove one's farming activity in those that continue to apply it.

The Basic Payment Scheme (**BPS**) and the Single Area Payment Scheme (**SAPS**) – the BPS equivalent that offers a uniform per hectare payment rate in all but three Member States which joined the European Union after 2000[5] – make up 43% of the EU direct payments envelope on average in 2018 and 2019 (Table 11.4). Wide variations across Member States are observed that reflect Member States' spending choices on optional measures under Pillar 1. Both the BPS and the SAPS are conditional to cross-compliance requirements, although exceptions apply. Additional conditions are attached to the per-hectare **Greening** payment that accounts for 29% of the Pillar 1 direct payments budget (Table 11.4). As of 2017, farmers who do not comply with all the requirements of greening

may be subject to new greening administrative penalties (equivalent to 20% of the farmer's greening payment in 2017, and raised to 25% from 2018 onward) in addition to forfeiting a share of the greening payment on the non-compliant area.

Table 11.4 Direct payments budget under Pillar 1, 2018

	Budget 2019 (EUR million)	Share in direct payments	Share in decoupled direct payments
Direct payments; of which:	40 545		
Decoupled direct payments; of which:	34 388	85%	
Basic Payment Scheme (BPS)	16 211	40%	47%
Single Area Payment Scheme (SAPS)	4 333	11%	13%
Greening	11 754	29%	34%
Voluntary Coupled Support	4 033	10%	

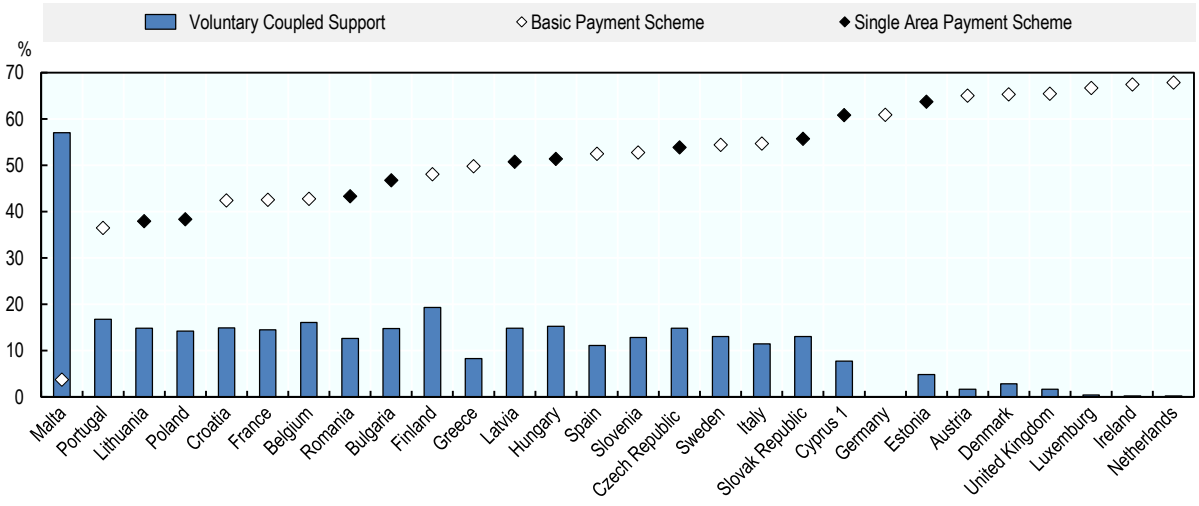
Note: Other decoupled payments represent about 6% of direct payments under Pillar 1. The 2019 EU fiscal year (November to October) is attributed to year 2018 in PSE system.
Source: OECD calculations based on European Commission, EUR-Lex budget 2019.

In the ten Member States that apply the SAPS, commodity-specific payments may be granted from national budgets within limited envelopes. The **Transitional National Aid** (TNA) can be disbursed as decoupled payments while a fixed share may be spent on current production. They may apply on a per area basis to arable land, hop and starch potatoes; on a volume basis to milk; and on a headage basis to other livestock. Member States may review TNA budgets and supported commodities on an annual basis. The maximum TNA payments allowed decreases gradually from 75% of the 2013-level of SAPS aid in 2015 to 50% in 2020.

As the CAP 2014-20 is implemented, the gap in per-hectare payment rates of the BPS and the SAPS is set to narrow, both between countries (**external convergence**) and between regions within countries (**internal convergence**[6]). Internal convergence applies to the regionalised BPS while, under the SAPS, a uniform payment rate at national level already applies to each hectare.

In the CAP 2014-20, Member States may choose to allocate part of their direct payments envelope to commodity specific payments within defined ceilings. The **voluntary coupled support** (VCS) expands the coupled support scheme under Article 68 of the previous CAP 2007-13 and offers Member States the choice to allocate a larger envelope to more sectors or regions and under a wider set of specific conditions. Such support may be granted to create an incentive to maintain current levels of production in the sectors or regions concerned. Choices of Member States on the take-up of the VCS vary greatly, both in terms of the level of support and the commodities supported (Figure 11.7). On several occasions, Member States have reviewed VCS budgets and commodity attributions, making some minor adjustments. All Member States, except Germany, have chosen to offer VCS, using 10% of the EU direct payments budget on average. This compares to the 3% that was spent previously under Article 68 coupled support, as reported in the European Union's general budgets.

Figure 11.7. The Basic Payment Scheme, the Single Area Payment Scheme and the Voluntary Coupled Support as a share of direct payments (Pillar 1), 2018



1. *Note by Turkey*: The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the "Cyprus issue".
Note by all the European Union Member States of the OECD and the European Union: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.
Source: European Commission, Budget on-line 2019.

StatLink https://doi.org/10.1787/888933937510

A top-up payment to **young farmers**, in addition to the BPS and SAPS, applies in all Member States. In 2018, this payment accounts for 0.9% of the European Union's direct payments envelope, as reported in the general budget. Member States have chosen to implement this measure in different ways. Some offer recipients a flat payment rate on a limited number of hectares, while others apply a payment proportional to the BPS or SAPS received. In addition to this compulsory scheme, 25 Member States have chosen to attribute a portion of their rural development expenditure, 4% on average, to support young farmers. The bulk of the latter goes to business development and investments.

Fifteen Member States have chosen to offer small farms simplified payment attribution conditions – the **small farmers scheme** – that waives the requirements attached to the greening payment and cross-compliance. The payment cannot exceed EUR 1 250 (USD 1 475) per farm and, depending on the method chosen by the Member State, the overall envelope may be limited to 10% of national direct payments.

Denmark and Slovenia implement the Pillar 1 direct payment to **Areas with Natural Constraints** (ANC). Under this payment, the ANC are defined based on eight biophysical criteria.[7] Currently, Denmark uses 0.3% and Slovenia 1.6% of their national direct payments envelope for ANC payments. A payment targeted to areas with natural or other specific constraints can also be budgeted under the RDP, labelled as the Less Favoured Areas payment in the previous CAP. It is implemented in 25 Member States using 29% and 21% of Pillar 2 public expenditure funds (including Member States contributions from national budgets) in 2017 and 2018, respectively. Until now, Member States have used up

to 140 different criteria for assessing ANC status for Pillar 2 payments. These are being replaced by the same set of eight biophysical criteria that applies to Pillar 1 ANC payment. Initially scheduled for 2018, the deadline for reassessment of eligible areas by Member States was deferred to 2019.

Ten Member States or regions have chosen to grant higher payments to the first hectares[8] under the so-called **redistributive payment**, using 4.1% of the European Union's direct payments envelope as reported in European Union's general budget.

Member States that implement the redistributive payment may choose to opt-out from so-called "degressivity" and six Member States and regions have chosen to do so.[9] Under **degressivity**, BPS amounts above EUR 150 000 (USD 177 028) per recipient are reduced by a minimum of 5%. Funds deducted under this provision are transferred to Pillar 2 and used to fund the Member State's RDPs. Fourteen Member States[10] have chosen to apply the minimum reduction. Ten Member States have used the possibility to increase the amount that is exempt from the 5% reduction by the value of salaries paid. Ten Member States have chosen to apply a full cap on the BPS at levels varying from EUR 150 000 (USD 177 028) to EUR 600 000 (USD 708 111).[11]

A **Crisis reserve** is earmarked to be used in case of emergency situations. It is funded from the Pillar 1 direct payments budget. If it is not used in the current year, the envelope is reverted for distribution as Pillar 1 direct payments in the same year. The crisis reserve is renewed each year and has not been used up to now as an emergency fund.

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, and also the development of local agricultural production with a little more than 1% of the direct payments envelope in 2018.

Pillar 1 also funds measures that support **commodity markets**, representing 6.1% of the overall agriculture and rural development budget in 2018. Prices paid to EU domestic producers averaged 5% above world market prices in 2016-18, and the support they generated (Market Price Support) represented 19% of total estimated support to agricultural producers.

While the possibility exists for public intervention for cereals (namely common and durum wheat, barley and maize), it has not been applied in recent years. Purchase at the cereal intervention price is limited to 3 million tonnes of common wheat, beyond which purchase is by tender. Public intervention for durum wheat, barley and maize can be opened under special circumstances by means of tendering. Public intervention also applies to paddy rice. Until 30 September 2017, sugar was supported through production quotas, coupled with a minimum price for sugar beets. After the end of the sugar quota regime, existing provisions for agreements between sugar factories and growers have been maintained, and white sugar remained eligible for private storage aid. The support regime for cereals and sugar also includes trade protection through tariffs and tariff rate quotas (TRQs). No export refunds have been granted since July 2013. Furthermore, since the WTO Ministerial conference in Nairobi in December 2015, the European Union has committed not to resort to export subsidies.

Fruits and vegetables are eligible for voluntary coupled support and commodity specific payments; they are also supported through various market measures. These include crisis intervention measures that may be managed by producer organisations, an entry price system (minimum import price) for some products, and ad valorem duties, but no export

subsidies. Support co-financed by Member States also applies to the fruit and vegetables sector as well as the olive oil and table olives sectors. These support 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 to the sector at large. Private storage may also be activated as an optional scheme for olive oil and flax fibre. In the CAP 2014-20 the rules on recognition of producer organisations and inter-branch organisations are expanded beyond fruits and vegetables. Compensation may be greater when producers claim support via producer groups, as was the case with compensation payments related to the Russian Federation's embargo on imports.

Also targeting the fruit and vegetables sector, a consumer support system directed toward schoolchildren covers the consumption of fresh fruits and vegetables, processed fruits and vegetables, and banana products. The scheme's budget has grown rapidly from EUR 29 million (USD 32 million) when it was first implemented in 2010 to EUR 117 million (USD 129 million) in 2016. A similar scheme supports milk consumption for schoolchildren, with a budget of EUR 64 million (USD 72 million) in 2017. In August 2017 both schemes were merged under the title "School Schemes" and the budgets combined into EUR 188 million (USD 212 million).

In the dairy sector, intervention prices are used for butter and skimmed milk powder, together with import protection. Intervention purchases cannot exceed 50 000 tonnes for butter, and 109 000 tonnes for skimmed milk powder (SMP), representing are 2% and 7% of production, respectively, in 2018. Above those limits, purchase is made by tender.

The beef market is supported by floor prices, tariffs and TRQs. Support for pig meat is provided by import protection. For sheep meat, the market support regime is comprised of tariffs and TRQs, with most country-specific TRQs subject to a zero customs duty. TRQs also support the poultry and eggs markets. Private storage may be activated as an optional scheme for butter, SMP, certain cheeses, beef, pig meat, sheep meat and goat meat. Furthermore, specific provisions are made for milk and milk products.

The wine sector is supported through a system of authorisations for new vine planting. Since January 2016, new vine planting is authorised, but is limited to 1% of the planted vine areas per year. Authorisations would be automatically granted to producers to replace grubbing of an existing vine area. Member States have up to 31 December 2020 to transition to the new system. The sector is also supported through promotional measures, both in the European Union and in third countries, restructuring and conversion of vineyards, compensation for green harvesting, setting up mutual funds, investment in tangible and intangible capital, income insurance, development of new products, processes and technologies, and distillation of by-products.

Rural Development is part of the EU-level Common Strategic Framework covering all support from European Structural and Investment (ESI) funds (the EAFRD, ERDF, Cohesion Fund, ESF and EMFF) in Member States through partnership agreements. The EAFRD uses Pillar 2 of the CAP 2014-20 to serve six priority areas: 1) fostering knowledge transfer and innovation; 2) enhancing competitiveness of all types of agriculture and the sustainable management of forests; 3) promoting food chain organisation, including processing and marketing, and risk management; 4) restoring, preserving and enhancing ecosystems; 5) promoting resource efficiency and the transition to a low-carbon economy; and 6) promoting social inclusion, poverty reduction and economic development in rural areas (Table 11.5). Pillar 2 funds are implemented through national (or regional) Rural Development Programmes (**RDP**). RDPs also support projects that use the

"**LEADER** approach" (*Liaison Entre Actions de Développement de l'Économie Rurale*) – i.e. relying on a multi-sectoral approach and local partnerships to address specific local problems; and technical assistance for the implementation of Pillar 2 measures.

Table 11.5. CAP expenditure by source and use (estimated 2018)

CAP expenditure (EU funding), of which:	Share in EU funding:
Administrative expenditure	0.2%
Interventions in agricultural markets CMO	4.3%
Direct Payments	71.6%
Rural Development - EU funding	23.2%
Research and innovation - Horizon 2020	0.4%
Rural Development (total public expenditure) of which:	Share in total public expenditure:
Rural Development EU funding	*66%*
Rural Development national funding	*34%*
Priority 1: knowledge	*Allocated through other priorities*
Priority 2: competitiveness	*20.0%*
Priority 3: food chain organisations	*11.5%*
Priority 4: ecosystems	*51.3%*
Priority 5: resource efficiency	*4.9%*
Priority 6: social inclusion	*12.3%*

Source: OECD calculations based on European Commission, EUR-Lex budget 2019 (for EU funding) and EAFRD financial execution (for Rural Development and allocation to priorities). Total public expenditure comprises EU funding and Member States national funding of Rural Development.

The implementation of RDP 2014-20 had a delayed start and by 2018, most payments for programmes within the RDP 2007-13 had been terminated. At the same time, payments for farm restructuring under CAP 2007-13 were prolonged, including early retirement, conversion of arable land into grassland, and afforestation of agricultural land.

Member States participate in the funding of Pillar 2 payments (also called co-financing) in accordance with the RDPs that cover the entire duration of the CAP cycle. In their plans, Member States can choose from a menu of 19 measures to meet the six priority areas of Pillar 2. Two conditions apply: a minimum 30% of rural development funding from the EU budget must be spent on measures related to the environment and climate change adaptation, including forestry and investments in physical assets; and another 5% must be spent on the LEADER approach.

On average and at EU28 level, the greatest share of the new RDP budget is allocated to three measures: Investments, Agri-environment and Climate and Areas with Natural Constraints. While Member States' choices may vary, Investment is one of the three measures receiving the highest shares of expenditure for the period 2014-18 in most Member States.

The launch of the European Innovation Partnership for Agricultural productivity and Sustainability (EIP-AGRI) in 2012 was followed by integrating the Horizon 2020 programmes specific to research and innovation in agriculture into the CAP 2014-20. The focus of the Horizon 2020 programmes relevant to agriculture is on securing sufficient supplies of safe and high quality food and other bio-based products. The Horizon 2020 budget under the agriculture and rural development title has increased substantially since it was initiated in 2013 from EUR 1 million (USD 1.11 million) to EUR 211 million (USD 249 million) in 2018. A total of EUR 3.8 billion is available for the period.

Programming for CAP 2014-20 is set to conclude next year. However, preparations for the next iteration of the CAP are well underway (Box 11.1).

Box 11.1. Development of CAP 2021-27

The European Commission presented its proposal on CAP for 2021-27 beginning in June 2018 (EC, 2018[5]). The proposal preserves the existing CAP structure, with support divided between Pillar 1 and Pillar 2 activities, which respectively fund direct support for farmers and rural development. At the same time, proposed funding levels are reduced by about 5% — anticipating a decline in contributions with a smaller number of Member States.

The Commission proposal emphasises a simplification of the CAP, shifting from a compliance-based approach to a results-based framework. The proposal also increases country flexibility to choose the most appropriate policy mix from an extensive toolbox of available policy options. These policies are intended to help achieve nine identified core objectives: 1) ensure fair income, 2) increase competitiveness, 3) rebalance power in the food chain, 4) climate change action, 5) environmental care, 6) preserve landscapes and biodiversity, 7) support generational renewal, 8) vibrant rural areas, and 9) protect food and healthy quality. The proposal requires that Member States submit "Strategic Plans" detailing their goals and the measures that they intend to employ in order to achieve them. Furthermore, the proposal calls for results in these areas to be monitored and assessed according to standardised, pre-defined indicators.

Aside from the nine core objectives, the proposal also identifies the need to better target assistance (including towards small or young farmers), achieve higher ambitions on environmental and climate action, and acknowledge the key role that farmers play in the viability of rural communities. New, simplified administrative procedures are also foreseen, as well as increasing support for research and innovation through a designated EUR 10 billion investment in the Horizon Europe programme, which succeeds Horizon 2020, subject to the adoption of the EU Multiannual Financial Framework.

Some revisions to the initial proposal have been made. For example, members of the Agriculture Committee of the European Parliament supported a delayed implementation of the "Strategic Plan" requirement in the version of the rules on direct payments and rural development programmes that they approved in April 2019. The text as revised by the Agriculture Committee is set to be presented to Parliament after the May 2019 European Parliament elections.

Domestic policy developments in 2018-19

Overall support

After two years of minor nominal decreases in 2016 (-2%) and 2017 (-1%), the EU budget for agriculture and rural development under Title 05 Agriculture and Rural Development increased by 2% to EUR 57 billion (USD 67 billion) in 2018. About 4% went to market intervention measures, 72% to direct payments under Pillar 1 and 23% to rural development measures under Pillar 2. The higher share for Pillar 2 results from Member States' decisions to increase transfers to their RDP.

CAP Direct payments

Member States' decisions on commodity-specific payments granted under the CAP 2014-20's **Transitional National Aid (TNA)** varied in 2018. The TNA was reinstated in *Estonia* at the end of 2016 and discontinued in *Latvia*, while in the *Czech Republic* it was reduced

and limited to crops and cattle, in *Poland*, transitional support was provided only to tobacco.

Markets and sector support

In January 2018, automatic intervention purchases of **skimmed milk powder** were temporarily suspended and tenders were held throughout 2018 and early 2019 that reduced the 380 000 tonne SMP stockpile down to just over 1 000 tonnes.

Sectoral plans were developed in some Member States in 2018. In July 2018, the sheep sector development plan 2018-23 was signed in *Estonia*. The plan aims to increase the sustainability of the sector, and increase the added value of production by examining the current market situation with respect to production, consumption, breeding, trade and other market characteristics, and then identify relevant measures to be taken in order to fulfil the established objectives.

In February 2019, the European Commission announced the new Market Observatory for wine and fresh produce. As with established market observatories for crops, sugar, meat, and milk, the observatory will publish data on tomatoes, apples, citrus fruit, peaches and nectarines with a view toward increased **transparency** and improving the ability of stakeholders to cope with market **volatility**. In November 2018, *France* enacted the Law to promote balanced commercial relationships in the agricultural and food sector, and healthy sustainable food. In parallel to several provisions aiming to improve sanitary and environmental conditions in production, it reinforces the producers' negotiating stand with the distribution sector, on the basis of 'indicators of reference' for production costs and market variables agreed among actors in each commodity sector. A committee was set up to monitor commercial transactions. *Spain* moved to improve **market transparency** in the olive and olive oil sectors. A new decree updated the existing system of compulsory declarations for the sectors, and upgraded the sectors' market information systems in order to comply with European Commission obligations.

The European Parliament and Council endorsed a new regulation governing **organic production** and trade that is set to go into effect from 1 January 2021. It aims to modernise the sector and harmonise rules on organic production across Member States, including by guaranteeing fair competition amongst European farmers, as well as preventing fraud and increasing consumer confidence in the sector. Some components of the regulation include more frequent farm inspections; broadening the application of organic standards to products like salt, cork, and essential oils; precautionary measures to avoid accidental contamination by unauthorised pesticides; and the possibility of group certification for small farmers. Additional support to organic farming was also prioritised by several Member States in 2018. *Estonia*'s 2018 plan for an eco-economy aims to establish eligibility for the organic designation for 51% of the country's land area by 2021 and to increase organic exports. Also in 2018, *Italy* passed legislation to harmonise controls on organic food production. From the consumer side, in December 2018 as part of a larger regulation on food and agriculture, *France* mandated that public catering companies must source at least 50% of their products from organic, local, or other quality schemes by 2022 as a measure to improve the overall quality of food on offer.

In *France*, an experimental programme that introduced **labelling of origin** of milk and meat in processed food has been renewed through March 2020. A similar regulation entered into force in *Spain* in January 2019, requiring food manufacturers to indicate the origin of milk and milk products. Outside of the dairy and livestock sectors, *Italy* introduced mandatory country of origin labelling on rice in February 2018.

Latvia introduced measures in 2018 for **improved genetics** in the animal sector, providing funding of EUR 3.7 million (USD 4.4 million) for the plan. An estimated 57% of this support was to be channelled to improved breeding and genetics of dairy animals.

Agri-environment and climate

While various actions were taken in 2018 with a view toward **improving the environment**, most could be categorised as actions on the bioeconomy, actions designed to reduce air pollution, and actions targeting climate change adaptation and mitigation. With regards to the **bioeconomy**, in October 2018, the European Union launched an updated bioeconomy strategy action plan (EC, 2018[6]). Designed to accelerate activities in line with the Paris Agreement and the 2030 Sustainable Development Agenda, the updated action plan includes three tiers: strengthen and scale up the bio-based sectors while also unlocking investments and markets; deploy local bioeconomies rapidly across the whole of Europe; and understand the ecological boundaries of the bioeconomy. Member States are also ramping up individual efforts to shift towards agricultural production systems that are based in either the bio- or the circular economy, including endeavours to reduce food loss and waste. In this regard, most countries have set up food recovery frameworks and household food waste reduction campaigns. *Austria* pledged to use bioeconomic measures to meet part of its commitments under the Paris Agreement, and intended to draft a strategy plan in early 2019. *Austria* also implemented measures to divert food from waste to feed. In *Belgium (Flanders)*, work began in 2018 on a bioeconomy platform to assist stakeholders in formulating solutions to problems encountered in the strengthening of the bioeconomy sector and investments were targeted to research on reducing food waste. The REGAL initiative in *Belgium (Wallonia)* aims to reduce food waste with better measurement and increased knowledge. In *the Netherlands*, the Minister of Agriculture released a new vision statement that advocates for a shift to a circular economy approach in the Dutch agricultural sector, titled, "Agriculture, nature and food: valuable and connected". The plan seeks to prevent depletion of soils, halt the decline in biodiversity, close mineral cycles, prevent waste, and ensure that farmers receive a fair price, with outcomes to be achieved by 2030. The Programme for the *Estonian* eco-economy 2018-21 was approved in May 2018. Goals contained within the plan for the agricultural sector include increased production and export of organics, and higher production of value-added goods.

Air pollution control regulations were advanced in a few Member States in 2018, taking steps to implement the EU Directive on the reduction of emissions from certain atmospheric pollutants. *Greece* is developing an advisory code of good agricultural practices for the reduction of ammonia emissions from agriculture. In *Spain,* actions outlined include aid to renovate slurry cisterns.

Much of the EU-wide action on **climate change** in 2018 was not specific to the agricultural sector, but instead addressed emissions more broadly (Box 11.2). Concurrently, Member States have developed their own complementary policies in the area of climate change and sustainability, focused on reducing emissions and adaptation. *Austria* has committed to join a "High Ambition Coalition" of countries to accelerate actions to confront climate change. The country also approved 404 environmental projects in 2018 (including efficient energy use and building renovation), with estimated savings of 70 000 tonnes of CO_2 per year. Austria also launched the "Klimafit" project for breeding new plant varieties that have a high tolerance to climate extremes. In October 2018, *Hungary* adopted their Second National Climate Change Strategy (NCCS-2), focusing on decarbonisation, adaptation, and awareness raising. The government of *Luxembourg* updated its climate change adaptation

strategy in 2018, to include intensifying research activities to forecast extreme weather, develop surveillance for invasive pests, and test options to increase crop rotation.

Box 11.2. The three pillars of the EU's emissions reductions strategy

The European Union and its Member States are committed to a binding target of at least a 40% reduction in greenhouse gas emissions by 2030 compared to 1990, to be fulfilled jointly, as set out in the conclusions by the European Council of October 2014. The EU's emissions reduction strategy – as outlined in the 2030 climate and energy framework – contains three pillars: the Emissions Trading System, the Effort Sharing Regulation and the land use, land-use change and forestry Regulation.

Legislation covering the **Emissions Trading System** (ETS) – the European Union's cap and trade scheme – was revised early in 2018 [Directive (EU) 2018/410]. The new system applies a single, EU-wide emissions cap, covers new sectors, and functions on an auctioning mechanism instead of a system of free allocations. The Commission estimates that 45% of the EU's emissions are covered under the ETS, including sectors like power and heat generation, steel production, and commercial aviation. Agriculture, however, is not covered under the ETS.

The **Effort Sharing Regulation** [Regulation (EU) 2018/842] was adopted in May 2018. It outlines binding annual emissions targets for each Member State through 2030, differentiating targets based on individual Member State capacity. The regulation also allows for some flexibility in terms of ensuring that countries can achieve their targets in a fair and cost-effective manner. While agriculture is one of the sectors covered by the Effort Sharing Regulation, there is no sector specific target.

Also in May 2018, a new regulation on the reporting and accounting of emissions and removals from land use, land-use change and forestry (**LULUCF**) was adopted [Regulation (EU) 2018/841]. The regulation stipulates that for the period 2021-30, any emissions from land use change must be offset by an equivalent removal of CO_2 from the atmosphere. With respect to agriculture, this regulation is intended to incentivise the adoption of more climate-friendly land use.

Fuel tax relief

The *Czech Republic* saw a large increase in spending on fuel tax relief in 2017 and 2018, as fuel tax exemptions were extended to the livestock sector. *Estonia* continued to provide fuel excise tax exemptions for producers in 2018, setting the tax level at 73% lower than the normal rate. *Latvia is* gradually raising the excise rate on diesel fuel used for agricultural purposes while maintaining the 85% discount compared to the standard tax rate. In January 2019, the *Slovak Republic* reinstituted a regime of fuel tax reimbursements for farmers – the programme had previously been abolished in 2011.

Investment

Financial support for **investment** in the sector also increased in 2018, with the European Investment Bank launching a new financing initiative of nearly EUR 1 billion (USD 1.2 billion) for investments in agriculture and the bioeconomy. The financing is made available under an extension of the European Fund for Strategic Investments (EFSI), whose rules changed in 2018 to accommodate a specific focus on investments in the sector. In addition, some Member States made substantial changes in investment incentives and funding under Pillar 2 over the year. In *Ireland*, funding for the country's Targeted Agricultural Modernisation Scheme (which funds improvements in farm buildings and equipment) more than doubled from EUR 31.3 million (USD 35.3 million) in 2017 to

EUR 66.8 million (USD 79 million) in 2018 after the scheme was made available to all farming sectors. *Italy* reintroduced tax credits for certain types of investments, including investments in digital or technological transformation processes. In *Poland*, the assistance limit was raised 67% to PLN 500 000 (USD 138 451) for producer investments in physical assets for the processing of agricultural products.

Risk management

Policy developments for 2018 in the area of **risk management** included the introduction of new risk management tools, changes to existing programmes under Pillar 2, and the provision of incentives to promote uptake of available tools. Early in 2019, *Austria* reduced the tax rate on some insurance policies covering natural hazards from 11% to 0.02% in order to incentivise farmers' uptake of insurance schemes. In *France*, a new precautionary savings programme was introduced, allowing producers to put aside EUR 150 000 (USD 177 000) into a tax deductible savings account to be used in the event of a climatic or economic crisis event. This new precautionary savings vehicle replaces two previous measures – the Deduction for Hazards and the Investment Deduction. Beginning in May 2018, *Hungary* extended their set of tools used in agricultural risk management with the implementation of their national hail damage prevention system. The system relies on cloud seeding to prevent the formation of hail, reducing damage and limiting the need for *ex post* compensation. In *Italy*, new risk management tools were offered to farmers, including the establishment of producer mutual funds, and extended protections against natural disasters, pests, and diseases. Crop insurance premiums in *Poland* were subsidised at a rate of 65% in 2018, with policies typically covering risks of damage by strong winds, flood, torrential rain, drought, and other natural threats. In *Slovenia*, the insurance premium subsidisation rate in 2018 was raised from 40% to 50% for most fruits, and from 20% to 40% for other crops. Further increases in the subsidy rate are to be implemented in 2019. The government of *Spain* also authorised an additional EUR 97 million (USD 114.5 million) for use in agricultural insurance in 2018 (a 46% percent increase over 2017), as a result of increased demand from producers in 2017 and 2018. The system now provides around 420 000 policies, insuring around EUR 14 billion (USD 16 billion) in assets.

Responses to animal disease & plant pests

Measures were either continued or enacted in 2018 to compensate farms affected by various **animal diseases**. Farmers in *France* received the balance of compensation for 2017's outbreak of **avian influenza**, bringing total compensation under the programme from both the French state and the European Union to EUR 77 million (USD 91 million). An additional EUR 20 million (USD 23.6 million) was made available to affected downstream businesses. Various measures were deployed to compensate producers for both herd and income losses resulting from **African swine fever (ASF)**, in addition to efforts to stem further spread of the disease (see Box 11.3). *Latvia* paid out more than EUR 1.7 million (USD 2.0 million) to affected pig farms in 2018, and *Romania* allotted EUR 43 million (USD 51 million) to both affected farms and to preventing further spread of the disease. In *Poland*, farms affected by ASF could apply for support for income adjustment based on historical production, interest-free loans, or for reimbursement of expenses incurred for improvements in biosecurity in affected areas. In 2018, *Belgium* confronted an outbreak of **Newcastle disease** for the first time since 2010. The country implemented strict control measures at national level, including a ban on poultry collections, which helped to stop the spread of the disease, such that the country was able to regain its "Newcastle disease-free" status. In June 2018, the first EU case of **ovine rinderpest**[12] was reported in eastern

Bulgaria. Strict biosecurity measures were put in place and more than 4 000 animals were culled; affected farms were eligible for compensation. In addition to Member States' response measures, the European Food Safety Authority (EFSA) introduced a new animal diseases data collection system designed to harmonise reporting and to lead to more effective risk assessments. In conjunction, the Commission pledged EUR 141 million (USD 166 million) to **animal health improvements,** including disease surveillance, control, and eradication.

Also in 2018, EUR 13 million (USD 15 million) was committed to **plant health** surveillance. Another EUR 6.3 million (USD 7.4 million) was committed to control outbreaks of quarantine pests. Much of the funds were earmarked for fighting ***Anoplophora glabripennis***, ***Xylella fastidiosa*** and **Pine Wood Nematode**. The ***Xylella fastidiosa*** bacterium has been identified in several EU regions, where strict control measures are in place to eradicate the pest and prevent its further spread to the rest of the European Union. The largest effects to date have been seen in olive trees in Southern Italy. As a containment measure, in January 2019, the *Italian* government mandated that all affected trees be felled and farms assisted through the National Solidarity Fund as part of the implementation of the 2018 Stability Law. Elsewhere in plant health, the government of *Austria* provided emergency greening exceptions to sugar beet growers as a result of a massive **beet weevil** infestation, allowing farmers to grow more than 75% corn or to plant additional flower pastures on their land.

Box 11.3. African Swine Fever in the European Union

African Swine Fever (ASF) continued to spread across Europe in 2018. In domestic animal populations, there were more than 1 000 cases in *Romania* in 2018. The disease has also been identified in domestic pig populations in *Bulgaria* (August)[13], *Italy* (September, limited to Sardinia), *Latvia* (August), *Lithuania* (October), and *Poland* (September). Outside of the countries that had seen outbreaks in domestic swine herds, the disease has been found in wild board populations in *Belgium* (December), the *Czech Republic* (April), *Estonia* (December), and *Hungary* (December) (EC, 2019[7]; FAS, 2019[8]).

European efforts to stem the spread of the disease have included both individual country responses as well as centralised measures. *Belgium* has extended the protected zone buffers after diseased animals were found outside of the original buffer zone. In *Bulgaria*, a National Emergency Taskforce was established to coordinate interagency responses to ASF, including an intensive informational campaign for rural areas and inspections of small farms to ensure that animal records were up-to-date. In January 2019, *France* moved to eradicate wild boar populations close to their border with *Belgium*, including the construction of 78 km of fencing and the mobilisation of intensive hunting efforts. In *Denmark*, construction commenced on a wild boar fence along that country's border with Germany as a pre-emptive strategy against the disease's future spread. The Danish government also introduced new hunting times, fines for improper cleaning of animal transport, and awareness-raising initiatives about the risks of the disease's spread. *Lithuania* targeted measures to small pig farms (1 to 100 heads) with the compensation of culling (EUR 100 per head) and support up to 90% of the conversion cost to other livestock for a period of three years, limited to EUR 2 000 (USD 2 360). In addition, 90% of the compliance cost to biosecurity requirements was covered, limited to EUR 900 (USD 1 062) per applicant. In addition to the culling of an estimated 366 000 pigs through February 2019, *Romania* instituted restrictions on swine movements and prohibited the slaughter of non-traceable animals in commercial plants.

With the disease continuing to spread, renewed focus has been placed on prevention, control, and eradication. Prevention and control measures have been specified for cases where ASF is suspected

in either domestic swine or wild boar populations. An analysis of existing ASF control measures published by EFSA in November 2018 indicated that a combination of strategies is needed to contain the disease, including early detection, quick removal of carcasses, and intensive hunting in specifically designated areas (EFSA et al., 2018[9]). Furthermore, the recommended measures vary for different scenarios, with approaches differing for non-affected areas close to affected areas, for example. This approach has generated some success. In response to identification of the disease in wild boar populations in the Czech Republic in June 2017, targeted measures were applied. The measures were effective – the country was declared ASF-free in February 2019.

The Commission has also implemented and updated regionalisation measures to ensure that appropriate steps are taken to prevent further spread of the disease. Aside from these actions, the European Union is funding various research initiatives to improve ASF prevention and control, including Swinostics swine diseases field diagnostics toolbox, VetBioNet network of research facilities on zoonotic diseases, and ASF-STOP knowledge integration platform. Finally, beginning in October 2018, the Commission began soliciting proposals for steps to develop a vaccine against the disease.

Response to adverse weather conditions

Several **natural disasters** in 2017 and 2018 provoked exceptional aid assistance in 2018. A period of **heavy rains** in late 2017 that either flooded sown area or else prevented the sowing of winter crops in parts of Finland and the Baltic states led the European Commission to adopt emergency measures for those countries within the regulation on the common organisation of markets rather than the Direct payments' crisis reserve. Under these measures, *Estonia* received EUR 1.34 million (USD 1.6 million), *Finland* EUR 1.01 million (USD 1.2 million), *Latvia* EUR 3.46 million (USD 4.1 million), and *Lithuania* EUR 9.12 million (USD 10.8 million) to be attributed on a per hectare basis to affected farms who did not benefit for the same loss of any national and EU aid or insurance (EC, 2018[10]). In addition to EU funds, Member States could match the EU support payment with national payments. In *Estonia*, exceptional adjustment aid was granted for potatoes and vegetable producers to compensate for damage incurred in flooding events between August and October 2017. Compensation payments for crop loss of EUR 9 million (USD 11 million) were provided in *Lithuania*. In *Latvia*, EUR 4.4 million (USD 5.2 million) of state aid was paid for climatic events not covered under the EU emergency measures. Then in the summer of 2018, **drought** conditions developed throughout much of Northern and Central Europe, resulting in reduced output for many commodities in a number of countries. Rapeseed, soft wheat, maize, and vegetables were some of the most affected crops, in turn affecting feed input prices in the livestock sector. CAP direct payments were advanced by two months and greening EFA conditions were relaxed. Derogations on greening rules (for either fallow land requirements or catch crop/winter crop requirements) were granted to Belgium, Denmark, Estonia, Finland, France, Germany, Ireland, Latvia, Lithuania, the Netherlands, Poland, Portugal, Sweden, and the United Kingdom. Simultaneously, many Member States granted emergency compensation to farms affected by the drought using state aid – *Austria* designated EUR 20 million (USD 24 million) for direct assistance, while EUR 15 million (USD 18 million) and EUR 55 million (USD 65 million) were allocated respectively to drought damage in *Belgium (Wallonia)* and drought compensation in *Belgium (Flanders)*. The *Czech Republic* provided support for growers of the crops most affected by the drought, including spring wheat, sugar beet, hops, and vegetables. In *France*, the government introduced a range of measures, including reductions in land taxes, delays or reductions in social charges, and advance payments on insurance indemnities from drought

damage; *Ireland* launched several measures aimed at the livestock sector, including a EUR 4.25 million (USD 5.0 million) programme for importing fodder; *Poland* released EUR 350 million (USD 413 million) for farms affected by both droughts and floods in a mixed package that included both preferential loans and tax cuts; *Slovenia* provided EUR 12.7 million (USD 15 million) in temporary ad hoc support, of which EUR 6.9 million (USD 8.1 million) was for drought and EUR 5.8 million (USD 6.9 million) for frost assistance; *Sweden* made EUR 39 million (USD 46 million) available in 2018 and a further EUR 74 million (USD 87 million) in 2019.

As a means of providing improved flexibility in times of crisis, the European Commission revised **state aid rules** in February 2019. The maximum amount that could be dispersed without prior approval from the Commission was raised from EUR 15 000 per farm (USD 17 703) to EUR 20 000 (USD 23 604). In addition, the national ceiling was increased from 1% to 1.25% of countries' annual agricultural output.

Digitalisation

The EU commitment to the **digitalisation** of rural areas was re-affirmed with the issuance of the Bled Declaration in April 2018. Work on digitalisation also progressed in Member States. The *Austrian* Federal Ministry for Sustainability and Tourism prioritised farmer access to digitalisation and training for young farmers by setting up a digital model farm (the so-called "Innovation Farm") and establishing a new five-year study programme focused on agriculture and the digitalisation of secondary schools (beginning in the coming school year). In *Spain*, a new RDP provides EUR 57 million (USD 67 million) to create and implement innovative projects in rural areas from 2018 and an Agenda for the digitalisation of the agro-food, forestry, and rural sectors is under preparation for 2019.

Regulations

In 2018, substantial policy change was made with respect to the usage of **neonicotinoid insecticides**. On April 27, EU Member States voted on a total ban of three of these products (clothianidin, imidacloprid, and thiamethoxam[14]) for outdoor uses beginning in December 2018. The products are still permitted for greenhouse uses, however. Then in May 2018, the European Court of Justice confirmed the Commission's discretion to regulate these pesticides under the precautionary principle given updated risk assessments, and upheld earlier restrictions on the products that were first put in place in 2013. *France* went further, banning the use of five neonicotinoid pesticides (acetamiprid and thiacloprid, in addition to the three products banned EU-wide) for both indoor and outdoor uses beginning in September 2018. At the same time, producers in several countries applied for emergency exemptions from the regulation, based on the current lack of commercially available alternative products. Sugar beet growers in particular sought exemptions for seeds treated with thiamethoxam, but approvals of exemptions for this and other uses were uneven across the European Union. Petitions from growers for emergency authorisation to purchase neonicotinoid-treated seeds were rejected in *Bulgaria*, *the Netherlands* and the *UK*, while waivers were granted in *Belgium, Denmark*, and *Finland*.

Pollinators

In June, the Commission approved a Communication for a new EU **pollinators initiative**. The initiative focuses on three priority areas: improving knowledge of pollinator decline (including causes and consequences), tackling the causes of pollinator decline, and raising awareness through engaging society-at-large and promoting collaboration. The

Communication delineated action items for each of the proposed areas, with implementation targeted by 2020. Pollinator viability is visible in the policy agendas of Member States – several countries paid out compensation to beekeepers in 2018 (*France*, *Latvia*, and *Slovenia*) for bee mortalities due to weather and disease. In September 2018, France put in place an exceptional aid scheme of EUR 3 million (USD 3.5 million) to compensate beekeepers for high bee mortalities.

Tax

Several member countries introduced changes to their **tax and social security** policies with respect to food and agriculture over the past year. As part of the tax reform introduced in *France,* farm households can choose transitioning to the corporate tax system, with the option to return to individual income tax after a period of five years. The threshold value on the tax-free transfer of land leased on a long-term basis or leased outside the family was raised from roughly EUR 102 000 (USD 120 379) to EUR 300 000 (USD 354 056). Provisions for young farmers were also introduced, with the tax rebates refocused on the lowest profit years. Finally the taxes on flour, cereals, sugar used in wine making, wood and vine plants, and seafood were eliminated, amounting to roughly EUR 90 million (USD 106.2 million) in savings to the sector. In *Hungary*, the VAT rate for several staple foods (including various fish products and swine offal) was reduced from 27% to 5% in January 2018, and rates for extended shelf life and ultra-high temperature pasteurised milk were reduced in January 2019. Finally, *Italy's* 2018 Stability Law exempts farmers under the age of 40 from paying social security contributions.

Market promotion

Market promotion efforts expanded over the past year, both at the EU level and for the individual Member States. EU resources available for co-financing from the countries was raised from EUR 179 million (USD 211 million) in 2018 to EUR 191.6 million (USD 226.1 million) in 2019. EU-wide campaigns focused on the promotion of the different EU quality schemes.[15] Member States introduced new commodity-centred promotion efforts in 2018 with this funding. For example, *Estonia*'s food sector export development plan for the period 2019-22 aims to strengthen market power, improve the availability of market information, support R&D activities, develop the image of Estonia and Estonian food abroad, and support sales related activities. *Poland* implemented four new programmes targeting increased consumption of apples and turkey.

Institutional changes

New complete editions of the Common catalogues of varieties of Vegetable species[16] and of varieties of Agricultural plant species[17] were published. The Catalogues list all varieties, the seeds of which are not subject to marketing restrictions in the European Economic Area.

Several **institutional changes** also took place in the European Union in the past year, both at the EU-wide level and within Member States. In *Spain*, the Ministry of Agriculture Food and Environment was reorganised into a new Ministry of Agriculture, Fisheries and Food, and some responsibilities, including the management of water supply, transferred to the new Ministry of Ecological Transition. The management of irrigation, however, is a competence of the new Ministry of Agriculture, Fisheries and Food.

In March 2018, the Commission's Joint Research Centre announced that they would launch a Knowledge Centre on Food Fraud and Quality. The Centre was created in response to

consumer concerns about food quality and fraudulent practices concerning food. It is to be comprised of an expert network on both fraud and alleged dual quality products.

In *Austria*, the Federal Institute for Agricultural Economics merged with the Federal Institute for Less-favoured and Mountainous Areas early in 2019. In October 2018, the *French* government announced the proposed merging of INRA (the French acronym for the National Institute of Agronomic Research) and IRSTEA (the National Research Institute of Science and Technology for Environment and Agriculture) into a single research organisation for agricultural, agronomic, and environmental issues.

Trade policy developments in 2018-19

The European Union's simple average **MFN applied tariff rate** for agricultural products was 10.8% in 2017, down slightly from 2016 (WTO, 2019[11]). This level remains higher than the average applied tariff rate for non-agricultural products, calculated at 4.2%. Applied duties are above 15% for animal products, dairy products, sugars and confectionary, and beverages and tobacco. EU import duties for six cereal types are based on reference prices. Under this system, import duties on high quality wheat have been suspended since 2010. However, duties of EUR 5.16 per tonne were introduced for maize, sorghum and rye in August 2017 and subsequently revised downward as cereal prices rose, and on 3 March 2018 were again set at 0% (EC, 2018[12]).

Of the European Union's 64 **import tariff rate quotas** (TRQs), 31 were filled at 80-100% during the 2018 calendar year, including those for chicken and poultry cuts, potatoes, tomatoes, carrots, sweet peppers, almonds, lemons, grapes, apples, pears, maize, milled rice, grain sorghum and wine. Most of the remaining TRQs had a fill rate of less than 10% (WTO, 2019[13]). From 1 January 2018, results of import and export tariff quota allocation are published on the European Commission's website.[18]

After the European Union committed to eliminating export subsidies at the 2015 WTO Ministerial conference in Nairobi, 2017 marked the first year when no **export subsidies** were provided for agricultural products. (WTO, 2019[14]).

The price-based **special safeguard system** was operationalised in marketing year 2017/18 for some frozen poultry products, dried eggs not in shell, and some preparations of poultry meat. During the same period, the volume-based special safeguard action has not been invoked. However, the system has been made operational at the level of calculation of figures for the trigger volumes for some fruit and vegetable products, including tomatoes, cucumbers, artichokes, oranges, clementines, table grapes, apples, peaches, and cherries (WTO, 2018[15]).

On 19 October 2018, the EU Council approved the opening of discussions between the European Union and the United States for designating country-specific allocations within the European Union's existing 45 000 tonne hormone-free, **high-quality beef TRQ**.

In March 2019, and as foreseen in the EU import licences system for rice, EU imports of 264 000 tonnes of rice triggered the doubling of **import duties on husked rice** from EUR 30 to EUR 65 per tonne (USD 35 to USD 77 per tonne) until September 2019. The duties may be extended after that date. The tariff levels had not been revised since March 2012.

In January 2019, the European Union instated new **tariffs on Indica rice** imported from Cambodia and Myanmar. The measure followed a 2018 safeguard investigation that determined that duty-free rice imports from the two nations under the European Union's

Everything But Arms tariff preference regime caused economic damage to the rice sector in Europe.

Disputes

On 21 June 2018, the European Union suspended the application of import duty concessions under the GATT 1994 to the trade of the United States and imposed additional import duties of 25% to a list of 182 products of US origin defined at the CN 8 digit level, of which 21% are food and non-alcoholic beverages. These include all parboiled semi-milled rice, broken rice, a few categories of edible vegetables, categories of cereals-based prepared foods, raw and prepared sweetcorn, peanut butter and categories of orange and cranberry juices (EC, 2018[16]).

On 31 January 2019, the European Union circulated a request to WTO members for WTO dispute consultations with the United States concerning US anti-dumping and countervailing duties imposed on imported ripe olives from Spain. Since then, Australia has asked to join the consultation (WTO, 2019[17]).

Free Trade Agreements

In late 2018, the European Union released its second annual report on the **implementation of EU Free Trade Agreements** (EC, 2018[18]). The report noted that, in 2017, EU agro-food trade with FTA partner countries represented more than 40% of total agro-food imports, and one-third of total EU agro-food exports. The report also noted that FTAs had opened more than 600 preferential TRQs for EU agro-food products, and have increased the legal recognition of EU GIs in third countries. The bloc currently has more than 30 agreements in force, and continues to negotiate (and in some cases renegotiate) agreements with additional trading partners.

On 1 February 2019, the **European Union-Japan Economic Partnership Agreement** entered into force. The agreement substantially reduces tariffs and trade barriers for both partners. The European Union is scheduled eliminate duties on 99% of imports from Japan. Tariffs on beef, tea, alcoholic beverages and other priority products are to be eliminated (most upon the agreement's entry into force). Once fully in place after 21 years, the agreement is set to liberalise tariffs on 85% of the EU's agro-food products exported to Japan including the elimination of duties on 90% of agricultural products. Additionally, tariffs on hard cheeses and processed agricultural goods like chocolate, pasta, and tomato sauce are to be eliminated over time. For pork and beef, tariffs are reduced over time, but not fully eliminated. Finally, improved EU access to the Japanese market is also secured under the agreement through the establishment of country-specific TRQs for products including wheat and wheat flour, barley and barley flour, malt, butter, skimmed milk powder, and fresh cheeses. Duties and trade restrictions on rice, however, were excluded from the negotiations. Aside from market access, the agreement establishes recognition of more than 200 EU Geographical Indications (GIs), as well as more than 50 protected names for Japanese wine, spirits and food products.

In February 2018, the **European Union-South African Development Community Economic Partnership (EU-SADC)** came into force. While the agreement is largely intended to provide improved access for SADC countries to the European market, it also provides greater access for some EU products into SADC. For example, the agreement includes a 300 000 tonne duty-free wheat TRQ, a 10 000 tonne duty-free TRQ for barley, and a duty-free TRQ for cheese that increases in size annually. The agreement also included protection for more than 250 EU GIs.

The periodic review of trade in agricultural products foreseen in the European Economic Area (EEA) agreement with Iceland, Liechtenstein and Norway was completed and the revised European Union-**Iceland** agreement came into force on 1 May 2018, followed in October 2018 by the European Union-**Norway** agreement. As part of the EU-Iceland agreement, EU import quotas for agricultural products have increased (*skyr*, butter and sheep meat) or have been established (cheese, processed sheep, pig meat and poultry) while certain food preparations including flavoured yoghurts and ice cream are excluded from liberalisation. In return, Iceland granted duty-free access to a range of agricultural products (mostly processed products but also live animals, and some fresh fruits and vegetables), reduced tariffs on meat and some vegetables, expanded existing quotas for beef, pig meat, poultry, cheese, and certain meat products, and provided protection for EU GIs. Under the EU-Norway agreement, two tariff lines were fully liberalised and quotas for imports of several types of chicken meat, preserved meat and offal, dried milk albumin and whey products were opened. In return, Norway increased tariff rate quotas on several products, including meat, cheese, vegetables and certain products used in the food industry.

The European Union and **Viet Nam** reached an agreement on a bilateral free trade agreement in July 2018, with the agreement awaiting signatures and conclusion. The agreement includes improved market access for Vietnamese agricultural commodities with the progressive reduction of duties over a maximum period of seven years. The European Union is set to open duty-free Tariff Rate Quotas for 30 000 tonnes of milled rice; 20 000 tonnes of husked rice and 30 000 tonnes of fragrant rice, as well as quotas for sugar, baby corn, garlic, mushroom, manioc starch and eggs. The tariff on broken rice will be phased out over 5 years, starting with a 50% cut. European Union exports to Viet Nam will also enjoy the progressive elimination of duties over a period of ten years, including for chicken, dairy, beef, wine, spirits, chocolates, pastas, apples, wheat, and olive oil. Protection for nearly 170 EU GIs are also included in the agreement. At the end of the implementation period, an average tariff of 1.1% will apply to agricultural goods originating in Viet Nam and 2.1% to processed agricultural products while the average tariff for EU agricultural exports will be 2.6%.

In June 2018, negotiations began for two bilateral free trade agreements with Australia and New Zealand.

In addition to negotiating new agreements, the European Union and Mexico reached an "agreement in principal" in April 2018 to modernise their existing trade agreement (which had been in place since 2000), superseding it with the European Union-Mexico Global Agreement. The revised agreement further liberalises agricultural trade between the two partners, including eliminating Mexican tariffs on many EU agricultural exports (including pasta, chocolate, apples and pork products), and creating duty-free TRQs for milk powder, other cheeses, and fresh and processed cheeses.

The 37th round of negotiations of the Trade Part of the Association Agreement between the European Union and the four founding members of Mercosur (Argentina, Brazil, Paraguay and Uruguay) was held in Montevideo in December 2018. The negotiations started 20 years ago and by the end of 2018, the parties had agreed on 12 of the 15 chapters in the agreement. With regards to trade in goods, outstanding tariff lines remain on agricultural market access.

Five countries currently have candidate status to the European Union, including Turkey (since 1999), the Republic of North Macedonia (since 2005), Montenegro (since 2010), Serbia (since 2012) and Albania (since 2014).

Notes

[1] Cofinancing rates vary by measure and by Member State.

[2] Member States commonly have one RDP, while Belgium and Finland have 2, France has 30, Germany has 15, Italy has 33, Portugal has 3, Spain has 19 and the United Kingdom has 4.

[3] Member States with average direct payment per ha below 90% of the EU average can transfer up to 25% of rural development fund to direct payments.

[4] The following Member States have opted for transfers of funds from Pillar 1 to Pillar 2 throughout the CAP 2014-20 exercise: Belgium, the Czech Republic, Denmark, Estonia, France, Germany, Greece, Latvia, Lithuania, the Netherlands, Romania and the United Kingdom, Croatia, Malta, Hungary, Poland and the Slovak Republic chose to transfer funds from Pillar 2 to Pillar 1.

[5] The SAPS is applied all Member States joining since 2004 but Slovenia, Malta, and Croatia, which implement the BPS in addition to the EU15.

[6] The BPS is "regionalised" in six Member States [Germany (by Länder), Greece (3 regions), Spain (50 regions), France (2 regions), Finland (2 regions), United Kingdom (separate regions within Scotland and England)], meaning that a different payment rate per hectare applies depending on the region.

[7] These criteria are: low temperature, dryness, excess soil moisture, limited soil drainage, unfavourable texture and stoniness, shallow rooting depth, poor chemical properties and slope.

[8] Payments are granted on a maximum number hectares which varies by implementing country or region: Belgium (Wallonia): 30 ha; Bulgaria: 30 ha; Croatia: 20 ha; France: 52 ha; Germany: 46 ha with a higher per hectare payment rate for the first 30 ha; Lithuania: 30 ha; Poland: no payment below 3 ha, from 3 to 30 ha; Portugal (as from claim year 2017): 5 ha; Romania:30 ha with a smaller per hectare payment rate for the first 5 ha; and United Kingdom (Wales):54 ha.

[9] Belgium (Wallonia), Croatia, France, Germany, Portugal and Romania.

[10] The Czech Republic, Denmark, Cyprus, Estonia, Finland, Latvia, Luxemburg, Malta, the Netherlands, Slovenia, Slovakia, Spain, Sweden and the United Kingdom (England).

[11] Belgium (Flanders), Bulgaria, Ireland, Greece, Italy, Hungary, Austria, Poland, Portugal and the United Kingdom (Northern Ireland, Wales and Scotland).

[12] The **ovine rinderpest** is known by its French acronym PPR, for *Peste des Petits Ruminants*.

[13] Note that the dates indicated here come from EFSA's Animal Disease Notification System (ADNS) notifications, and represent the date of the last outbreak recorded.

[14] Commission Implementing Regulations EU (2018)783, 784 and 785.

[15] Including protected designation of origin (PDO), protected geographical indication (PGI), and traditional specialty guaranteed (TSG).

[16] The common catalogue of varieties of vegetable species was published for the first time on 29 June 1972 (Official Journal C 169, 29.6.1972, p. 1).

[17] The common catalogue of varieties of agricultural plant species was published for the first time on 21 July 1975 (Official Journal C 164, 21.7.1975, p. 1).

[18] The European Commission's page on Agriculture and rural development Tariff rate quotas can be found here: https://ec.europa.eu/agriculture/tariff-rate-quotas-trqs_en.

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WTO (2018), *Notification G/AG/N/EU/47 on European Union Use of Special Safeguard Provisions (Table MA:5) in Marketing Year 2017/2018*, World Trade Organization, https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S006.aspx?Query=(+%40Symbol%3d+g%2fag%2fn%2feec%2f*+or+g%2fag%2fn%2feu%2f*)&Language=ENGLISH&Context=FomerScriptedSearch&languageUIChanged=true#. [15]

Chapter 12. Iceland

Support to agriculture

In Iceland, reforms of agricultural policies have been limited and the level of support remains among the highest within the OECD. At 59% of gross farm receipts, the PSE was more than three times the OECD average in 2016-18. The total support to agriculture (TSE) has averaged 1.1% of the country's GDP in recent years, with support to producers (PSE) being the dominant component (96%). The remaining part of TSE is financing general services (GSSE), with almost half comprised of expenditures for inspection, and public stockholding expenditures responsible for much of the remainder.

Most agricultural support continues to be provided through market price support measures, principally through high tariffs that help to maintain high domestic prices relative to world prices, and therefore lead to a large transfer from consumers to agriculture producers. Market price support is complemented with a payment entitlements system, which is directly or indirectly coupled with production factors. Market price support accounted for 55% of the support to producers in 2016-18. Output payments for milk producers and the more decoupled payments to sheep meat producers represent most of the remaining support to producers. As a consequence, 77% of farm support is provided in a form that is potentially the most distorting to production and trade.

Main policy changes

Following the expiration of the previous agreements between the government and the Farmers' Association, new agreements were concluded for the ten-year period 2017-26, with extensive reviews scheduled in 2019 and 2023. The key changes in the agreements relate to the dairy and sheep sectors: i) the possibility of a gradual abolition of the milk quota system and reduction in support entitlements in dairy production, subject to the revision process in 2019; ii) a reduction in support entitlements in sheep production and increased support for quality control. In addition, there is more emphasis on support that is not linked to specific agricultural sectors.

On 1 May 2018, an agreement came into force between Iceland and the European Union concerning reduced or eliminated tariffs, and increased tariff quotas on unprocessed agricultural products.

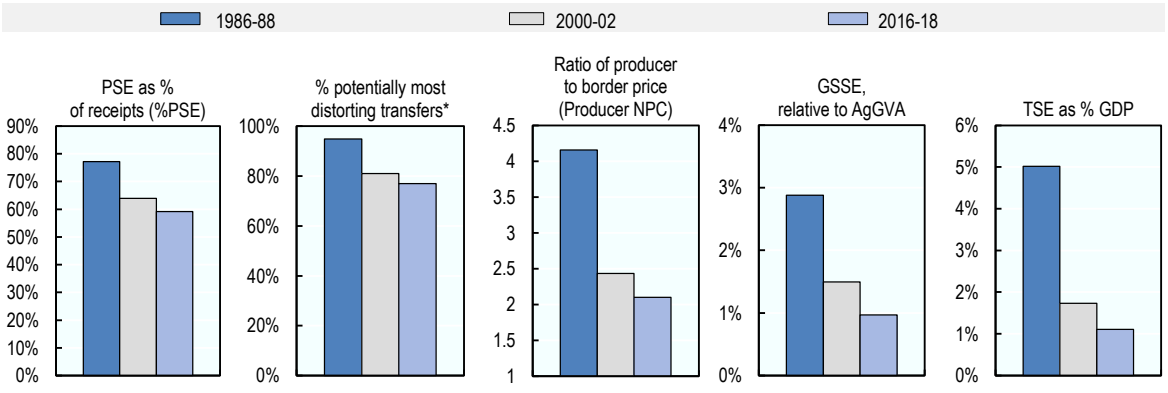
Assessment and recommendations

- Within the continued application of the multi-year agreements between the Government of Iceland and the Farmer's Association, changes to the agricultural policy are limited and Iceland's support to producers remains well above that of most other OECD countries. Moreover, most of the support to producers continues to be provided in forms that are potentially most production and trade distorting, thereby hindering agricultural producers from receiving market signals and responding to them. The new agreements between the Government and the

Farmer's Association (which provide the policy framework for the 2017-26 period) provide an opportunity for fostering the reform process to make Iceland's agricultural sector more responsive to market forces, including through phasing out support to the dairy and sheep sectors, and the scheduled 2019 review of the production quota system.

- Despite some progress in reducing border protection of some agricultural products, tariffs on several agricultural product groups – particularly meat, dairy, plants and flowers – remain high, and are often applied in the form of complex non-*ad valorem* duties.
- Further progress is needed in supporting innovation, including by encouraging a well-functioning agricultural knowledge and information system, for which public expenditures have been declining over the past decade.
- The effects of climate change could be favourable for agriculture, although pests such as invasive insects may become a greater threat, introducing new challenges to agriculture in Iceland.
- Measures advocated in the new Climate Change Strategy, such as phasing out fossils fuels in transport and increasing carbon sequestration in land use, are a welcome shift towards a low-carbon economy and could contribute to increased efficiency in the use of natural resources.

Figure 12.1. Iceland: Development of support to agriculture

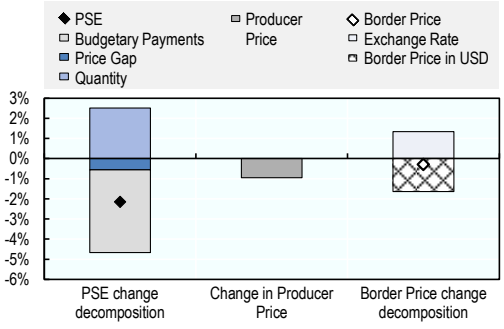


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933937529

Support to producers (%PSE) has declined by 18 percentage points between 1986-88 and 2016-18. However, at 59% of gross farm receipts, it is three times higher than the OECD average in 2016-18 period. Moreover, transfers considered as the potentially **most distorting support** represent 77% of the total PSE (Figure 12.1). The level of support decreased slightly in 2018 due to a decline in budgetary payments – mainly direct payments for dairy (Figure 12.2). Effective prices received by farmers, on average, have declined over time, but still remained twice as high as those in the world markets. The sectors with the largest divergence between domestic and world prices (NPC) in 2016-18 are poultry (4.7), eggs (3.8) and wool (3.3). MPS is also the main component of Single Commodity Transfers (SCT), for poultry, eggs and wool, roughly 70% or more of their gross farm receipts derived from SCT (Figure 12.3). Overall, SCT represent 97% of the total PSE. The expenditures for **general services** (GSSE) relative to agricultural value added decreased from around 3% in 1986-88 to 1% in 2016-18; half of these expenditures are for inspection and control. **Total support to agriculture** as a share of GDP has declined significantly over time. Around 95% of total support is provided to individual farmers (PSE).

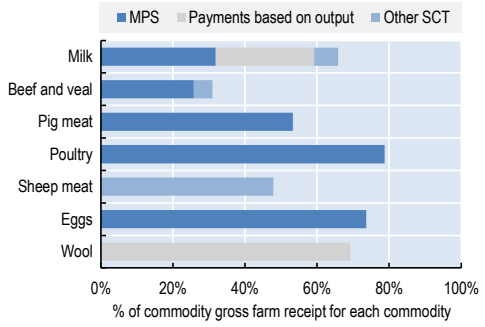
Figure 12.2. Iceland: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933937548

Figure 12.3. Iceland: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Table 12.1. Iceland: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**236**	**150**	**308**	**292**	**315**	**316**
***of which:** share of MPS commodities (%)*	80.3	82.1	84.0	84.4	83.6	83.9
Total value of consumption (at farm gate)	**205**	**136**	**274**	**255**	**283**	**283**
Producer Support Estimate (PSE)	**193**	**139**	**249**	**234**	**260**	**251**
Support based on commodity output	180	113	189	186	194	187
Market Price Support[1]	179	72	136	134	135	139
Positive Market Price Support	179	72	136	134	135	139
Negative Market Price Support	0	0	0	0	0	0
Payments based on output	2	40	53	52	58	48
Payments based on input use	13	4	15	11	17	16
Based on variable input use	3	0	3	3	3	3
with input constraints	0	0	0	0	0	0
Based on fixed capital formation	6	2	7	5	9	8
with input constraints	0	0	0	0	0	0
Based on on-farm services	4	2	5	4	6	5
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	-1	-3	10	5	12	13
Based on Receipts / Income	-1	-3	0	-1	0	0
Based on Area planted / Animal numbers	0	0	10	6	12	13
with input constraints	0	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	20	35	33	37	36
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 (%)	**77.2**	**64.0**	**59.2**	**59.8**	**59.2**	**58.6**
Producer NPC (coeff.)	**4.16**	**2.43**	**2.10**	**2.18**	**2.08**	**2.05**
Producer NAC (coeff.)	**4.38**	**2.78**	**2.45**	**2.49**	**2.45**	**2.41**
General Services Support Estimate (GSSE)	**18**	**11**	**11**	**11**	**11**	**11**
Agricultural knowledge and innovation system	5	5	1	1	1	1
Inspection and control	1	2	6	6	5	6
Development and maintenance of infrastructure	2	1	0	0	0	1
Marketing and promotion	1	1	0	0	1	0
Cost of public stockholding	9	2	4	3	4	4
Miscellaneous	0	0	0	0	0	0
Percentage GSSE (% of TSE)	**6.9**	**7.4**	**4.3**	**4.6**	**4.1**	**4.3**
Consumer Support Estimate (CSE)	**-112**	**-65**	**-128**	**-125**	**-128**	**-130**
Transfers to producers from consumers	-157	-66	-128	-125	-129	-130
Other transfers from consumers	-1	-2	0	0	0	0
Transfers to consumers from taxpayers	46	3	1	1	1	0
Excess feed cost	0	0	0	0	0	0
Percentage CSE (%)	**-70.4**	**-48.3**	**-46.8**	**-48.9**	**-45.4**	**-46.0**
Consumer NPC (coeff.)	**4.38**	**1.98**	**1.88**	**1.96**	**1.83**	**1.86**
Consumer NAC (coeff.)	**3.38**	**1.93**	**1.88**	**1.96**	**1.83**	**1.85**
Total Support Estimate (TSE)	**257**	**153**	**261**	**246**	**272**	**263**
Transfers from consumers	158	68	128	125	129	130
Transfers from taxpayers	100	87	133	121	144	133
Budget revenues	-1	-2	0	0	0	0
Percentage TSE (% of GDP)	**5.0**	**1.7**	**1.1**	**1.2**	**1.1**	**1.0**
Total Budgetary Support Estimate (TBSE)	**78**	**81**	**125**	**112**	**137**	**125**
Percentage TBSE (% of GDP)	**1.5**	**0.9**	**0.5**	**0.5**	**0.6**	**0.5**
GDP deflator (1986-88=100)	**100**	**264**	**547**	**541**	**544**	**555**
Exchange rate (national currency per USD)	**40.94**	**89.37**	**111.98**	**120.84**	**106.82**	**108.27**

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 (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

Iceland is a small, sparsely populated economy with a GDP per capita slightly above the OECD average. Agriculture (excluding fish) is a relatively small part of the economy, representing 1% of GDP and around 2% of employment in 2017, and it remains small compared to fishing and aquaculture (Table 12.2). Approximately one-fifth of the total land area of Iceland is agricultural land mostly suitable for fodder production and livestock raising and some left undeveloped. Only around 6% of this area is arable land.

Livestock-rearing is the main farm activity, with milk and sheep meat being the most important products. The main crops are hay, cereals for animal feed and vegetables – the latter of which are cultivated primarily in greenhouses heated with geothermal energy. The main agricultural exports are pure-bred horses for breeding, sheep meat products and fur skins. Iceland is a net importer of agricultural products (excluding fishery goods), mainly for final consumption (Figure 12.5). Imports are more diversified than exports, and have increased steadily in recent years.

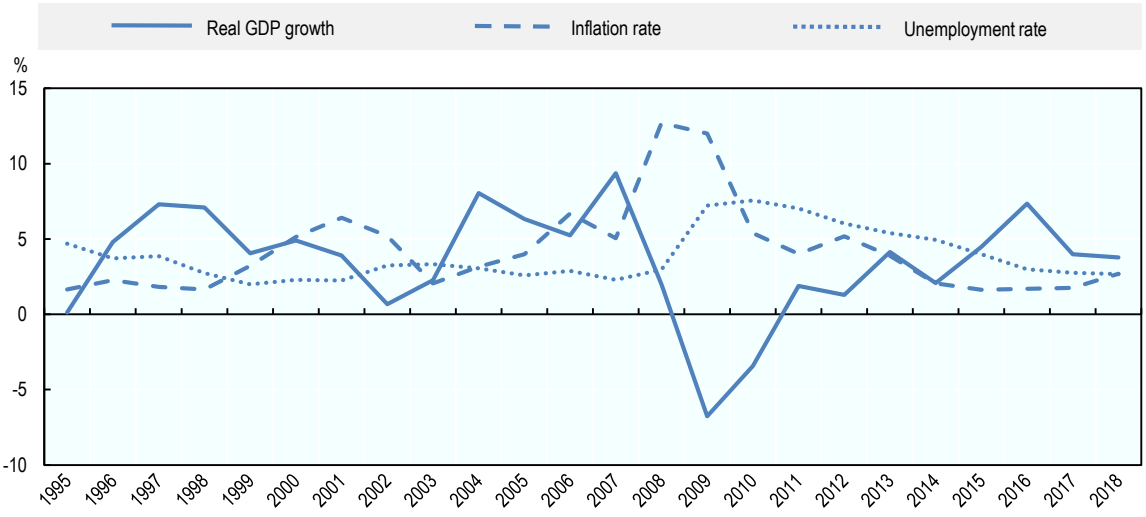
Table 12.2. Iceland: Contextual indicators

	Iceland		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	6	19	0.02%	0.02%
Population (million)	0.3	0.3	0.01%	0.01%
Land area (thousand km²)	100	100	0.13%	0.12%
Agricultural area (AA) (thousand ha)	1 899	1 872	0.06%	0.06%
			All countries[1]	
Population density (inhabitants/km²)	3	3	48	60
GDP per capita (USD in PPPs)	23 567	52 825	7 642	21 231
Trade as % of GDP	25	24	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	11.6	5.2	3.3	3.5
Agriculture share in employment (%)	9.5	3.8	-	-
Agro-food exports (% of total exports)	6.8	5.8	8.1	7.5
Agro-food imports (% of total imports)	10.0	8.6	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	22	15	-	-
Livestock in total agricultural production (%)	78	85	-	-
Share of arable land in AA (%)	7	6	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

Iceland's economy continues to grow and is one of the most egalitarian economies of the OECD area. It has high living standards and inclusiveness, the lowest poverty rate in the OECD area and life expectancy is among the highest in the world (Figure 12.4). Historically, 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). Exports of marine products were exceptionally high in 2018. The unemployment rate remains low, at around 3%, but inflation has risen slightly, mainly due to a weaker exchange rate and higher import prices.

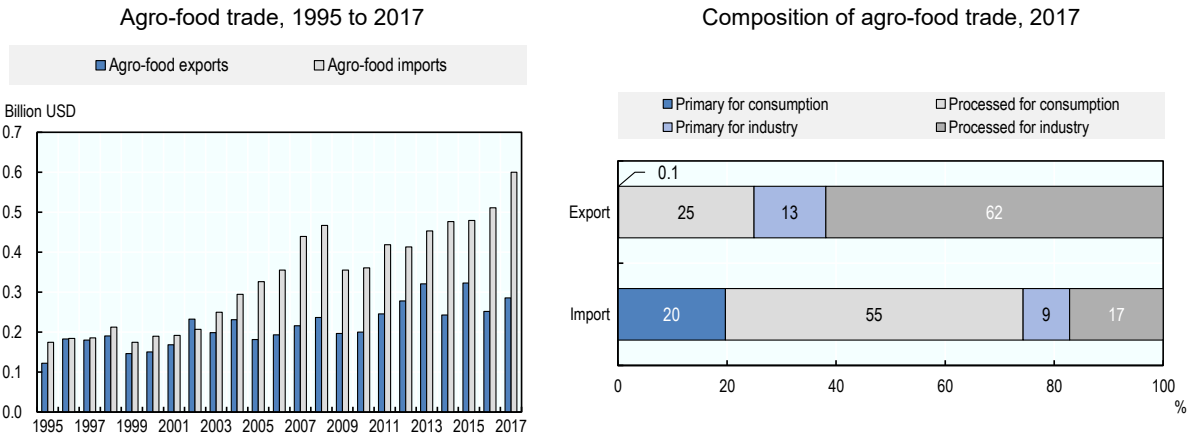
Figure 12.4. Iceland: Main economic indicators, 1995 to 2018



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

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Figure 12.5. Iceland: Agro-food trade



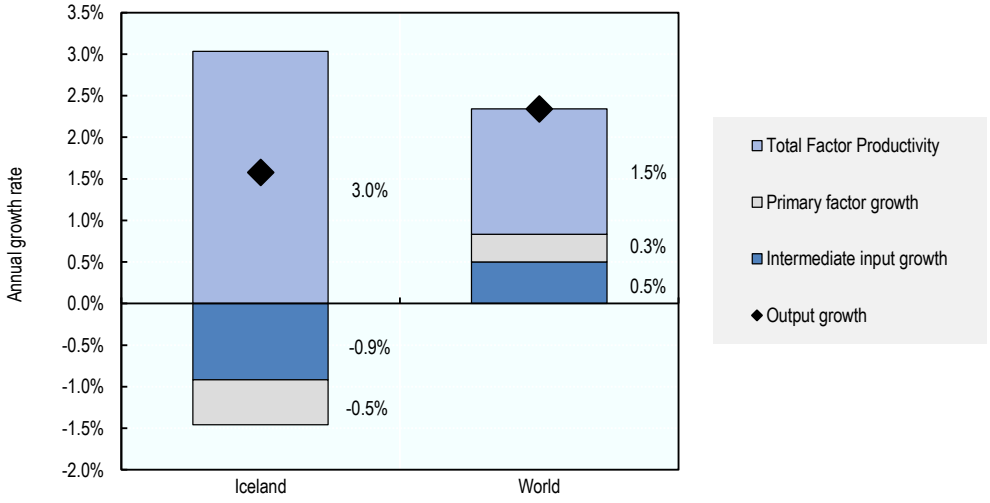
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

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While output growth in agriculture has been below the global average over the 2006-15 period, according to the estimates, agricultural total factor productivity has grown by 3% per year, almost double the global average rate (Figure 12.6). Harsh climate, lack of suitable land, small size of farms and the narrow genetic base for breeds of cows, sheep and horses present significant constraints to the sector. Due to the relatively low livestock densities, Iceland's nutrient balances show a comparatively low surplus of both nitrogen and phosphorous (Table 12.3). Iceland has the lowest pesticide sales per hectare in the OECD area and the sector's use of energy has fallen over time. Agriculture continues to represent a significant share in the country's total greenhouse gas (GHG) emissions – well

above that for the OECD average – mainly due to the importance of the livestock sector. The sector's share in water consumption has increased over the past twenty years and is higher than the OECD average. The water stress indicator has also increased, but is almost nine times lower than the OECD average.

Figure 12.6. Iceland: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

StatLink https://doi.org/10.1787/888933937624

Table 12.3. Iceland: Productivity and environmental indicators

	Iceland		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	0.4%	3.0%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha	7.6	7.2	33.2	30.0
Phosphorus balance, kg/ha	1.8	1.5	3.7	2.3
Agriculture share of total energy use (%)	2.3	1.3	1.9	2.0
Agriculture share of GHG emissions (%)	16.7	12.9	8.5	8.9
Share of irrigated land in AA (%)	0.0	0.0	-	-
Share of agriculture in water abstractions (%)	42.4	46.5	45.4	42.5
Water stress indicator	0.1	0.8	9.7	9.7

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

Description of policy developments

Main policy instruments

The strategic objective of Iceland's agricultural policy is to maintain and strengthen a diverse agricultural sector, to the extent that physical and marketing conditions allow. The key goals of policy are: to meet domestic demand where realistically possible; to maintain sustainable production of high quality and healthy products; to improve efficiency and competitiveness; to improve farmers' incomes; to improve creativity and create job opportunities; and to sustain livelihoods in rural areas.

Agricultural policies in Iceland are based on two main legal acts: i) Act No. 99/1993 on the Production, Pricing and Sale of Agricultural Products (known as the "Act on Agricultural Produce"), which lays down the policy framework as well as provisions for production control, provisions for slaughter and processing, market measures and producer support; and ii) Act No. 70/1998 on Agriculture, which provides the legal basis for development projects, extension services and livestock improvements.

Under these Acts, there are a number of **renewable multi-year agreements** between the government and the Farmer's Association, which provide the general framework for support and production control for farmers in the cattle, sheep and horticultural sectors. There is also an agreement on horizontal support, such as technical development and improved land cultivation, livestock improvement, extension services, organic farming and the Agricultural Productivity Fund.

Following the expiration in 2016, of the previous agreements between the government and the Farmers' Association, new agreements were concluded for the ten-year period from 2017 to 2026, with extensive reviews scheduled in 2019 and 2023. The key changes in the agreements, which came into force on 1 January 2017, relate to the dairy and sheep sectors: i) the gradual abolition of the milk quota system and reduction in support entitlements in dairy production, subject to the revision process in 2019; ii) a reduction in support entitlements in sheep production and increased support for quality control. In addition, there is more emphasis on support that is not linked to specific agricultural products.

In early 2018, the Minister of Fisheries and Agriculture appointed a consultation committee for the revision of the agriculture agreements. The reviewing process is expected to be completed in the first half of 2019. Subsequently, the government and the Farmer's Association will negotiate regarding possible changes to the agreements.

Iceland's agricultural support is provided through market price support, maintained by border measures, and through direct payments, which are based on payment entitlements that are coupled with production factors. Market 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.

For dairy, direct payments are based 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, with full payment for each of the first 50 dairy cows and 200 beef cows, then at a declining rate for each additional cow. There is a national dairy production quota, which is set each year by the Minister of Fisheries and Agriculture and is divided among producers based on their present quotas. Present quotas also determine the entitlements for direct payments. Production in excess of quotas is permitted, provided all such production will be exported. Wholesale prices are managed for approximately half of all dairy products. A government-chaired committee, representing both the Farmers' Association and – on

behalf of the consumer side – the labour union, annually determines guaranteed minimum prices for milk delivered within production quotas. Trade in support entitlements (basic payments to all active dairy and cattle farmers) between entitlement holders is not allowed. In 2017, the government began to redeem the milk quota and to redistribute it. Dairy producers also benefit from support for breeding, land cultivation and development programmes.

For sheep, direct payments are linked to payment entitlements that were originally based on historical production. Keeping a minimum of winter-fed sheep on the farm, in relation to the entitlements is, however, required for eligibility to receive full payments. Additional payments to sheep farmers are related to a quality control scheme for lamb meat, based on animal welfare, product quality and traceability, and sustainability criteria. Consumer subsidies are provided at the wholesale level for purchasers of wool and to farmers (co-operation between farmers) in order to increase added value for sheep products.

Imports of meat, dairy products, and some vegetables that compete with domestic production are subject to tariffs which are often compound duties with an *ad valorem* component of 30% and a specific duty component 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. In the new agreement for the cattle sector, the Minister of Fisheries and Agriculture will take action to amend the Customs Act so as to revert specific tariffs on milk and skimmed-milk powder and cheeses back to the real-price levels of June 1995. Export subsidies for agricultural products have not been provided since the early 1990s.

According to the legislation on protection against animal diseases, imports of uncooked animal products require the permission of the Food and Veterinary Authority. Imports of live animals are prohibited, with exceptions regarding pets and certain animals for breeding subject to strict quarantine measures.

Concerning Iceland's **climate change** commitments under the Paris Agreement on Climate Change, according to its National Determined Contributions (NDCs) submitted to the UNFCCC, Iceland aims to be part of a collective delivery by European countries to reach a target of 40% reduction in GHG emissions by 2030 compared to 1990 levels. A precise commitment for Iceland within this collective delivery is yet to be determined and is dependent upon an agreement with the European Union and other countries. Iceland's participation in the EU Emissions Trading System would be key in that regard, considering that almost half of Iceland's emissions are regulated through this scheme.

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 a number of processed agricultural products and encourages bilateral agreements on primary commodities.

As a member of EFTA, Iceland is also party to several additional free trade agreements, including with countries in South-East Europe, North Africa and the Middle East, Latin America, and Asia, as well as with the South African Customs Union. In addition to agreements under the FTA, Iceland has bilateral Free Trade Agreements with the Faroe Islands, Greenland and the People's Republic of China.

Domestic policy developments in 2018-19

The new 10-year (2017-26) agreement addresses key elements of the regulation on horizontal support for agriculture, including support relating to advisory services, breeding, animal welfare, environmental protection, sustainable land management, organic production, land cultivation, goat farming, and investment support for pig farming. Furthermore, the Agricultural Productivity Fund is set to allocate funds for development projects in the horticultural, cattle and sheep sectors, as well as for increasing employment in rural areas. For example, this agreement contains a scheme intended to stimulate recruitment of newcomers into the different sectors.

The regulation also includes sector-specific programmes for the pig and goat sectors, and forestry. These programmes are relatively small-scale compared to those for the dairy and sheep sectors, however. Support for the **goat sector** is divided among headage payments (up to 60% of the total), slaughter premiums (up to 17% of the total), goat-milk subsidies (up to 8% of the total), and support for breeding (up to 15% of the total). Support for the **pig sector** includes subsidies to improve pig housing, including investment support for new construction and the demolition of existing buildings.

The new Agreement on the operating environment for the cattle sector opens the possibility to abolish the production quotas which have been in place for over 25 years, phase out the system of "support entitlements" (basic payments to active dairy and cattle farmers), de-link output payments for milk from the support entitlements and change the milk pricing arrangements. These changes, together with a new system for supporting beef production, will be considered in the 2019 revision of the agreement and subject to agreement by producers.

Mainly in response to the increasing domestic consumption of dairy products, the milk production quota was increased from 144 million litres in 2017 to 145 million litres in 2018. Production in excess of the quota must be exported. Payments to farmers are made in equal monthly payments of one-twelfth of the annual quota. In 2018, the minimum price paid by dairies for milk delivered within the production quota was set at ISK 90.5 (USD 0.75) per litre.

For the **beef sector**, headage payments are allocated to owners of cows which are registered under the breeding records programme and which produce a calf at least every two years. Under the new Agreement, total headage payments are divided between the categories "dairy cows" and "beef cows". Initially, the total payment was divided between the two categories based on the headage counts of 25 000 dairy cows and 3 000 beef cows. This division is set to be revised annually by the Committee for the Implementation of National Agricultural Agreements. Support is also available for breeding, investment (up to 40% of the capital costs, but limited by a fixed total amount) and balancing of production and demand (improved marketing of cattle products, support for diversification, compensation for the slaughtering and temporary support). The measures for balancing production and demand are discretionary and are to be triggered only when there is a need to respond to changes in supply and demand.

Similar to the dairy sector, the support entitlements for the **sheep sector** are to be abolished over the duration of the Agreement and replaced by quality assurance premiums for farmers, subject to meeting requirements relating to quality, animal welfare and sustainable land use. These changes are subject to the revision expected to take place in 2019.

In response to over-supply related to declining exports – due to the appreciation of the Iceland Krona and rising stocks of sheep meat – the government applied the following

measures: 1) provided a one-time payment of ISK 400 million (USD 3.3 million) to farmers, which was divided by number of winter-fed sheep; 2) added ISK 150 million (USD 1.4 million) to the special regional support in 2018; and 3) allocated a total of ISK 115 million (USD 1.2 million) to various projects, such as carbon offsetting, environmental projects and an analysis of the meat processing center system.

Following the revision of the agreement reached by the government and Farmer's Association in January 2019, headage payment to sheep will not be introduced – as originally expected – in 2020.

Throughout the term of the agreement, additional support is foreseen for producers in certain regions which are particularly dependent on sheep farming. A complementing regulation sets out certain requirements that need to be met in order to receive this support, such as the number of sheep and distance to urban areas.

Support is paid for the production of wool during the term of the agreement. Payments should be based on the quantities produced, although part of the support may also be used to subsidise the cost of collecting the wool. Applying specific coefficients, different premiums may be paid for individual categories of wool.

Investment aid is also available to promote better living conditions for sheep and more cost-effective farming practices. To be eligible, each project must have a cost of at least ISK 1 million (USD 9 362). Contributions may cover up to 20% of capital costs, but no individual producer may receive contributions exceeding 10% of the total annual funds available for investment aid.

The agreement concerning the framework of support to **horticultural producers** remains unchanged and provides production-based payments to producers of cucumbers, tomatoes and bell peppers. Electricity subsidies are also granted for greenhouses (which are heated by geothermal energy) to cover up to 95% of the cost of the transfer and distribution of electricity. Support payments to each individual producer are capped. No single entity can receive more than 10% of annual total direct payments or 15% of total funds to electricity subsidies annually.

In September 2018, the government launched a new **Climate Strategy** aiming for the country to be carbon neutral before 2040. The strategy consists of 34 measures ranging from the phasing out of fossils fuels in transport to measures aiming to increase carbon sequestration in land use (including afforestation and revegetation). The government will also support efforts to reclaim drained wetlands, which in recent years have been shown to be a significant source of carbon emissions. A collaboration with sheep farmers is expected to be launched in 2019, with the goal of increasing carbon sequestration within the sector.

Trade policy developments in 2018-19

In 2017, Iceland eliminated tariffs of all non-agricultural products. Tariffs on cheese and powdered milk were updated by Act No. 102/2016, which resulted in increased specific duties. The tariff is updated in March each year based on developments in the exchange rate (SDR/ISK). The distribution of import quotas for cheese, which refers to designations of origin and geographical indication, is to be determined by drawing lots.

On 1 May 2018, the new EEA Agreement on trade in agricultural products and the protection of geographical indications (GIs), which was reached in September 2015, entered into force. Under the agreement, Iceland: i) granted duty-free access for a range of agricultural products (mostly processed products but also live animals, and some fresh

fruits and vegetables); ii) expanded existing tariff quotas for beef, pig meat, poultry, cheese, and certain meat products; iii) reduced tariffs on imports of meat, some vegetables, and some other products; and iv) provides protection for EU-listed GIs. In return, under the agreement, the European Union grants duty-free access for a range of products and opens or expands tariff quotas, including an expansion of the existing quota for *skyr* from 380 tonnes to 4 000 tonnes over four years.

Finally, as a member of EFTA, Iceland is currently engaged in negotiations with MERCOSUR and India on the Trade and Economic Partnership Agreement (TEPA).

Chapter 13. India

Support to agriculture

Support to producers in India is composed of budgetary spending corresponding to 7.2% of gross farm receipts and positive and negative market price support (MPS) of +2% and -14.9% of gross farm receipts. Overall, this leads to negative net support of -5.7% of gross farm receipts (%PSE) in 2016-18. The negative value of the PSE means that domestic producers were implicitly taxed, as budgetary payments to farmers do not offset the price-depressing effect of complex domestic regulations and trade policy measures, which often lead to producer prices that are below comparable international market levels. Budgetary transfers to agricultural producers are dominated by subsidies for variable input use, such as fertilisers, electricity, and irrigation water. In turn, public expenditures financing general services to the sector (GSSE) correspond to just half of the subsidies for variable input use. Total budgetary support (TBSE) is estimated at 2.9% of GDP.

Mirroring the farm price-depressing effect on producers, the policies provide implicit support to consumers. Policies that affect farm prices, along with food subsidies under the Targeted Public Distribution System, reduced consumption expenditure by 22.4% (%CSE) on average across all commodities in 2016-18.

Main policy changes

The central government increased the Minimum Support Prices (MSPs) for all crops covered by the system. It also introduced additional schemes (including a Price Support Scheme and a Price Deficiency Payment Scheme) to encourage the procurement of crops other than grains and cotton, such as pulses or oilseeds. In addition, tariffs for several key commodities were increased, including chickpeas, sugar and wheat.

The central government adopted an Agricultural Export Policy framework, which recommends avoiding the application of export restrictions on most organic and processed agricultural products.

To address farm indebtedness, several states announced in 2017 and 2018 support packages for farm loan waivers, reaching an estimated total of INR 1 846 billion (USD 26.8 billion). Existing estimates highlight, however, that overall concerned states had actually allocated only 40% of the announced amount by December 2018.

The 2019-20 Interim Budget introduced the Income Support Scheme, which is an unconditional cash transfer payment to small-scale farmers, with landholdings of up to 2 hectares.

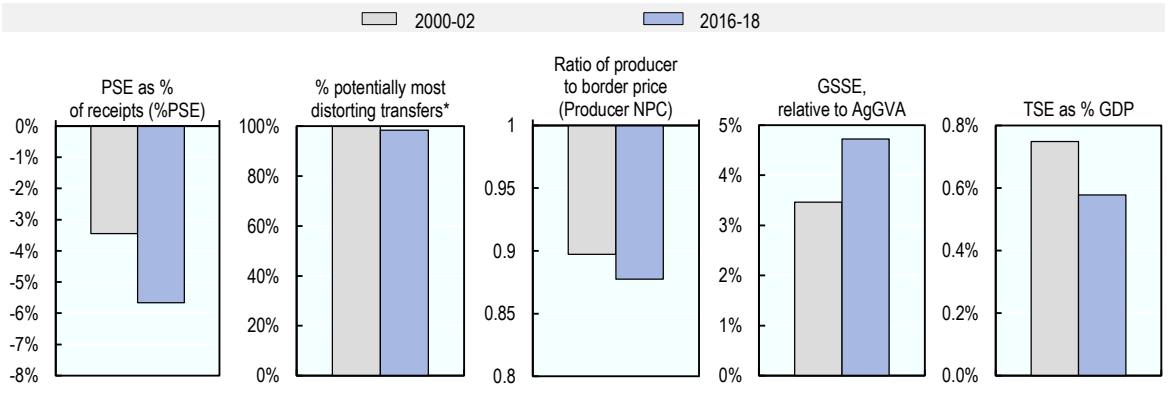
Assessment and recommendations

- The measurement of support related to agricultural policies (PSE) highlight one of the fundamental issues in Indian agriculture: that for many products and over most of the period reviewed Indian farmers have been receiving prices that are lower

than the prices prevailing on international markets. The central government should continue the initiatives to reduce domestic marketing inefficiencies and work closer with states and Union Territories (UTs) to thoroughly reform regulations and to foster more efficient and competitive markets. Marketing provisions should be adopted in a harmonised and consistent way across states (building on initiatives underway such as the model marketing act or the electronic national agricultural market portal) and should be synchronised with any Minimum Support Price (MSP) system reforms through coherent plans.

- India has become an important agro-food exporter in a number of commodities. The 2018 Agricultural Export Policy framework recommending to avoid the application of export restrictions for organic and processed agricultural products is an important step towards reducing uncertainty and transaction costs throughout supply chains. An extension to all agro-food products should be considered to create a stable and predictable market environment. Reducing tariffs and relaxing other import restrictions is also key for a predictable market environment and for tapping into the potential of imports to contribute to diversification of diets and to improving food security across all its dimensions. Together with domestic marketing reforms, moving away from export and import restrictions has the potential to provide farmers and private traders with the right incentives to invest in supply chains.
- The large share of employment in agriculture compared to its GDP contribution reflects the persistent productivity gap with other sectors, which translates into low farm incomes. In the short to medium-term, direct cash transfers targeting the incomes of poorest farmers can back their adjustment to changing market conditions. In the long term, significant structural adjustments need to occur in India involving the transition of farm labour to other activities and a process of consolidation towards farm operations sufficiently large to benefit from economies of scale. Continued reforms in land regulations need to be complemented by investments in key public services to the sector (such as education, training, infrastructure) and the broader enabling environment (including financial services).
- Environmental pressures are starting to loom large and risk jeopardising long-term productivity growth. Generating savings by scaling back variable input subsidies can be used to train farmers in an efficient and sustainable use of such inputs, by ensuring extension systems focus more on climate change, sustainability, and digital skills. Responding to challenges posed by climate change also calls for further investments in the agricultural knowledge system and in the institutional framework needed to ensure appropriate concertation and consistency among all stakeholders.
- India has also made significant progress in recent years in eliminating waste and inefficiencies in the food distribution system and these efforts should continue. The Government of India should continue the experimental replacement of physical grain distributions by direct cash transfers, and expand and adjust in light of experiences gained.

Figure 13.1. India: Development of support to agriculture

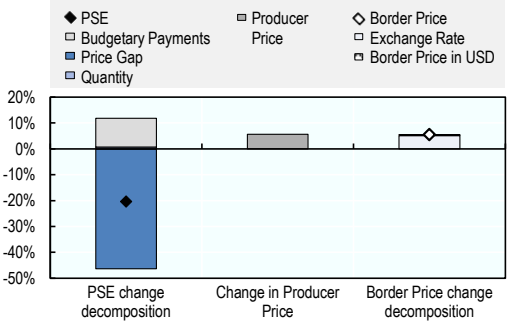


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933937643

Support to producers remained negative throughout 2000-18, but fluctuated markedly over this period. It averaged -5.7% in 2016-18. A positive MPS for maize, sugar, chickpea, other pulses and poultry, together with large input subsidies, only partly compensate the large negative MPS for the majority of exported products in 2016-18, worth -14.9% of gross farm receipts. Policies for these commodities over the period covered – whether impeding exports or depressing producer prices through domestic market regulations – led to prices received on average by farmers 12% lower than reference prices in 2016-18 (Figure 13.1). Virtually all gross producer transfers (whether positive or negative, i.e. expressed in absolute terms) are implemented in forms that are potentially most production and trade distorting, a consistent pattern since 2000-02. Producer support slightly decreased year-on-year (i.e. has become more negative), mainly due to depreciation of the Indian Rupee more than offsetting some increase in producer prices (Figure 13.2). Single commodity transfers (SCTs) mirror the MPS pattern, with most commodities being implicitly taxed in the range between 2% and 84% of commodity receipts (Figure 13.3). At 4.9% in 2016-18, expenditure for general services (GSSE) relative to agriculture value added increased compared to 2000-02, contributing to an overall positive total support estimate (TSE) of 0.6% of GDP.

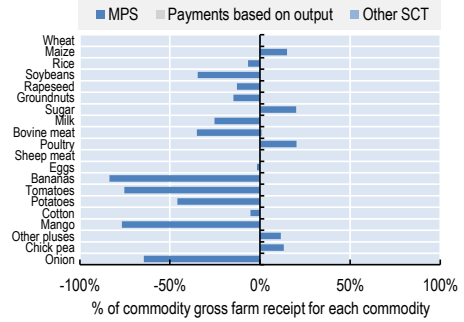
Figure 13.2. India: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933937662

Figure 13.3. India: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933937681

Table 13.1. India: Estimates of support to agriculture

Million USD

	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**113 183**	**416 183**	**413 938**	**427 443**	**407 169**
***of which:** share of MPS commodities (%)*	64.8	68.6	68.5	68.6	68.6
Total value of consumption (at farm gate)	**107 307**	**384 574**	**345 596**	**410 175**	**397 952**
Producer Support Estimate (PSE)	**-4 113**	**-25 377**	**-23 080**	**-24 720**	**-28 330**
Support based on commodity output	-12 720	-57 631	-48 488	-59 966	-64 440
Market Price Support[1]	-12 720	-57 651	-48 488	-59 966	-64 498
Positive Market Price Support	3 626	8 730	8 495	8 086	9 608
Negative Market Price Support	-16 346	-66 381	-56 983	-68 053	-74 106
Payments based on output	0	19	0	0	58
Payments based on input use	8 592	31 033	25 351	35 107	32 642
Based on variable input use	8 592	30 603	25 048	34 697	32 065
with input constraints	0	0	0	0	0
Based on fixed capital formation	0	384	302	382	468
with input constraints	0	0	0	0	0
Based on on-farm services	0	46	0	29	110
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	975	0	0	2 924
With variable payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
With fixed payment rates	0	975	0	0	2 924
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	247	57	139	544
Percentage PSE (%)	**-3.4**	**-5.7**	**-5.3**	**-5.3**	**-6.4**
Producer NPC (coeff.)	**0.90**	**0.88**	**0.89**	**0.87**	**0.86**
Producer NAC (coeff.)	**0.97**	**0.95**	**0.95**	**0.95**	**0.94**
General Services Support Estimate (GSSE)	**3 552**	**17 164**	**14 778**	**17 469**	**19 244**
Agricultural knowledge and innovation system	405	1 256	1 036	1 343	1 391
Inspection and control	25	354	375	343	344
Development and maintenance of infrastructure	2 035	14 414	12 140	14 625	16 478
Marketing and promotion	14	121	142	126	94
Cost of public stockholding	1 052	1 006	1 076	1 018	923
Miscellaneous	21	12	8	15	14
Percentage GSSE (% of TSE)	**97.6**	**..**	**..**	**..**	**..**
Consumer Support Estimate (CSE)	**16 315**	**80 987**	**68 680**	**82 577**	**91 704**
Transfers to producers from consumers	12 433	55 896	46 010	58 795	62 884
Other transfers from consumers	-201	2 787	4 894	1 113	2 356
Transfers to consumers from taxpayers	4 248	22 855	18 378	23 541	26 645
Excess feed cost	-164	-552	-602	-871	-181
Percentage CSE (%)	**15.9**	**22.4**	**21.0**	**21.4**	**24.7**
Consumer NPC (coeff.)	**0.90**	**0.87**	**0.87**	**0.87**	**0.86**
Consumer NAC (coeff.)	**0.86**	**0.82**	**0.83**	**0.82**	**0.80**
Total Support Estimate (TSE)	**3 687**	**14 641**	**10 075**	**16 289**	**17 560**
Transfers from consumers	-12 232	-58 684	-50 904	-59 907	-65 240
Transfers from taxpayers	16 120	70 538	56 086	75 084	80 444
Budget revenues	-201	2 787	4 894	1 113	2 356
Percentage TSE (% of GDP)	**0.7**	**0.6**	**0.4**	**0.6**	**0.6**
Total Budgetary Support Estimate (TBSE)	**16 407**	**72 292**	**58 564**	**76 256**	**82 058**
Percentage TBSE (% of GDP)	**3.4**	**2.9**	**2.6**	**3.0**	**3.0**
GDP deflator (2000-02=100)	**100**	**235**	**226**	**233**	**245**
Exchange rate (national currency per USD)	**46.90**	**66.91**	**67.19**	**65.12**	**68.41**

.. 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, beef and veal, sheep meat, poultry and eggs.

Source: OECD (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

India is the seventh largest country by land area (2.97 million km^2) and the second most populous after China with over 1.3 billion people (Table 13.2). While the share of urban population continued to increase over the past decade, more than two thirds of the population still live in rural areas. At just 0.15 ha per capita, agricultural land is very scarce.

Agriculture still accounts for 43% of employment, but its 16% share in GDP indicates that labour productivity remains significantly lower than in the rest of the economy. The productivity gap is also reflected in the evolution of farm incomes, which correspond to less than one-third of non-agricultural income. Value added has been gradually shifting away from agriculture, but mostly into services rather than manufacturing. Services led economic growth over the last 15 years, playing 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. Livestock output growth has been faster and less volatile than crop production. The sector continues to be dominated by a large number of small-scale farmers, as the national average operational holding size has been in steady decline.

Table 13.2. India: Contextual indicators

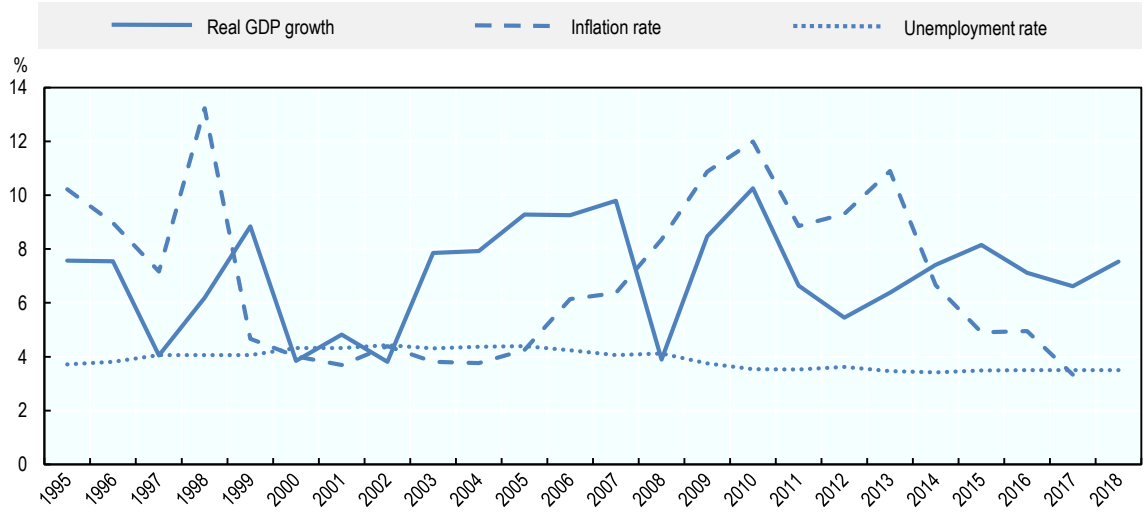
	India		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	1 426	9 449	4.8%	9.2%
Population (million)	960	1 339	24.9%	27.7%
Land area (thousand km^2)	2 973	2 973	3.7%	3.7%
Agricultural area (AA) (thousand ha)	180 945	179 721	6.0%	6.0%
			All countries[1]	
Population density (inhabitants/km^2)	323	450	48	60
GDP per capita (USD in PPPs)	1 485	7 056	7 642	21 231
Trade as % of GDP	9	14	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)[2]	27.2	15.5	3.3	3.5
Agriculture share in employment (%)	61.2	42.7	-	-
Agro-food exports (% of total exports)	16.9	10.7	8.1	7.5
Agro-food imports (% of total imports)	5.6	6.2	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	73	66	-	-
Livestock in total agricultural production (%)	27	34	-	-
Share of arable land in AA (%)	89	87	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one. 2. 1995 value is replaced by 1994.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

With real GDP growth averaging 7.1% in 2016-18, India is now among the fastest-growing G20 economies. Recent reforms such as the introduction of the Goods and Services Tax (GST), the inflation-targeting monetary policy framework, and the further liberalisation for foreign investments have improved the business environment. The low unemployment figures hide significant degrees of informal employment (Figure 13.4).

India has consistently been a net agro-food exporter over the last two decades, but agro-food imports have been steadily increasing since 2007, while exports have declined consistently between 2013 and 2016. Products for direct consumption dominate agro-food exports, representing 66% of the total in 2017. Processed products for further processing by domestic industry are the key import category, accounting for 55% of total agro-food imports (Figure 13.5).

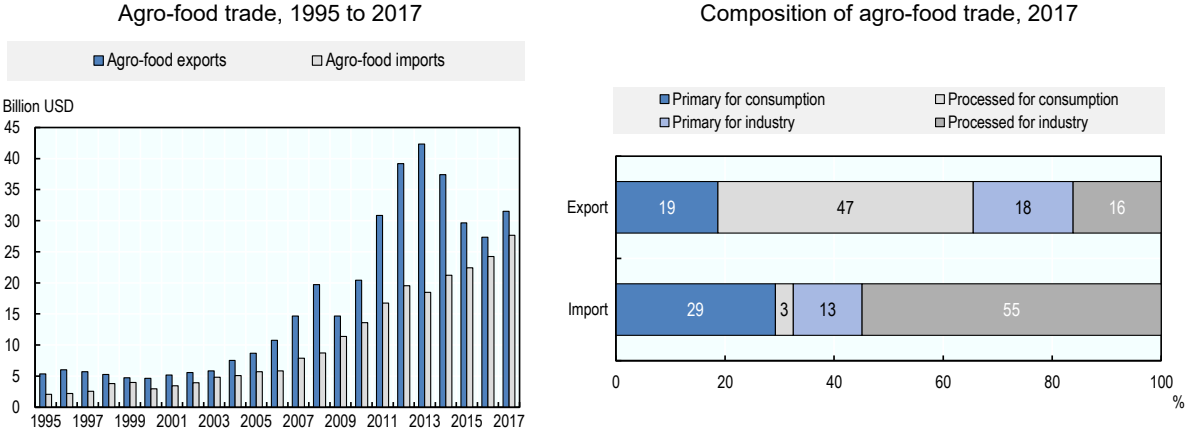
Figure 13.4. India: Main economic indicators, 1995 to 2018



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

StatLink https://doi.org/10.1787/888933937700

Figure 13.5. India: Agro-food trade



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

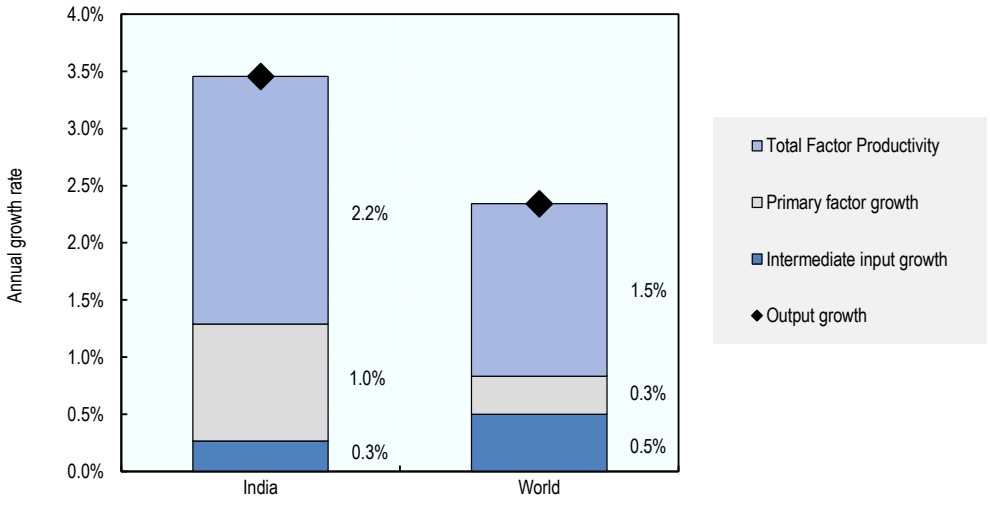
StatLink https://doi.org/10.1787/888933937719

Agricultural output growth in India averaged 3.5% in 2006-15, more than one-third above the world average (Figure 13.6). This has mainly been driven by an important increase in total factor productivity (TFP) at 2.2% 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 has been exerting mounting pressures on natural resources, particularly land and water. This is reflected in the nutrient surplus intensities at the national level and the share of agriculture in total greenhouse gas (GHG) emissions, which are much higher than the average for OECD countries. Livestock rearing is the main source of GHGs (Table 13.3).

Figure 13.6. India: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

StatLink https://doi.org/10.1787/888933937738

Table 13.3. India: Productivity and environmental indicators

	India		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	1.1%	2.2%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha[1]	103.8	95.1	33.2	30.0
Phosphorus balance, kg/ha[1]	23.4	31.8	3.7	2.3
Agriculture share of total energy use (%)	5.2	4.7	1.9	2.0
Agriculture share of GHG emissions (%)	28.4	18.6	8.5	8.9
Share of irrigated land in AA (%)	..	39.2	-	-
Share of agriculture in water abstractions (%)	..	..	45.4	42.5
Water stress indicator	..	..	9.7	9.7

Note: * or closest available year. 1. Preliminary data.
Source: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Description of policy developments

Main policy instruments

Over the past several decades, agricultural policies have sought to achieve food security, often interpreted in India as self-sufficiency: seeking to ensure that farmers receive "remunerative" prices, while at the same time safeguarding the interest of consumers by making food available at affordable prices. The set of policies directly relating to agriculture and food in India consist of five major categories: i) managing the prices and marketing channels for many farm products; ii) making variable farm inputs available at government-subsidised prices; iii) providing general services for the agriculture sector as a whole; iv) making certain food staples available to selected groups of the population at government-subsidised prices; and v) regulating border transactions through trade policy. In addition and more recently, environmental measures concerning agriculture have been gaining prominence, (OECD/ICRIER, 2018[2]) provides further information on the set of policies.

In India, **states** have **constitutional responsibility** for many aspects of agriculture, but the central government plays an important role by developing national approaches to policy and providing the necessary funds for implementation at the state level. The broad **policy guidelines** are currently set within a framework of three-year action agendas, prepared by the National Institution for Transforming India (NITI Aayog, a policy think tank of the Government of India).[1] The **central government** is responsible for some key policy areas, notably, for international trade policies and for overseeing the implementation of the National Food Security Act (NFSA) of 2013.

Policies that govern the **marketing of agricultural commodities** in India – from the producer level to downstream levels in the food chain – include the Essential Commodities Act (ECA) and the Agricultural Produce Market Committee (APMC) Acts. Through these acts, producer prices are affected by regulations influencing pricing, procuring, stocking, and trading of commodities. Differences exist among states in the status of their respective APMC Acts and in how these acts are implemented. The electronic portal (electronic national agricultural market, eNAM) initiated in 2016, and the 2017 model Agricultural Produce and Livestock Marketing (Promotion and Facilitation) Act – shared with state governments as a recommendation for adoption – aim to gradually encourage a single national agricultural market.

Based on the recommendations of the Commission for Agricultural Costs and Prices (CACP), the central government establishes a set of **Minimum Support Prices (MSP)** for 24 crops each year. It can also provide a bonus payable above and over the MSP for some crops, as can do state governments. The national and state-level agencies operating on behalf of the Food Corporation of India (FCI) buy wheat, rice and coarse grains through open-ended procurement at MSP. A number of other agencies can buy pulses, oilseeds and cotton at MSP, and some perishable agricultural and horticultural commodities without MSP are also procured. However, procurement under the price support scheme has been effectively operating mainly for wheat, rice and cotton and only in a few states.

On the input side, major policies enable agricultural producers to obtain farm inputs at low prices. The largest **input subsidies** are provided through policies governing the supply of fertilisers, electricity, and water. Other inputs are also supplied at subsidised prices, including seeds, machinery, credit, and crop insurance. In recent years, loan debt waivers have been implemented across several states.

In the area of **general services**, expenditures are dominated by the development and maintenance of infrastructure, particularly related to irrigation. Public expenditures for public stockholding and related to the agricultural knowledge and innovation system are also significant.

Public distribution of food grains operate under the joint responsibility of the central and state governments. The Targeted Public Distribution System (TPDS) operates under the NFSA in all states and Union Territories (UTs). A set of Other Welfare Schemes (OWS) also operate under the NFSA. The central government allocates food grains to the state governments and the FCI transports food grains from surplus states to deficit states. The state governments are then responsible for distributing the food grain entitlements, i.e. allocating supplies within the state, identifying eligible families, issuing ration cards, and distributing food grains mainly through Fair Price Shops.

India's **Foreign Trade Policy** – formulated and implemented by the Directorate General of Foreign Trade (DGFT) – is announced every five years, but it is reviewed and adjusted annually in consultation with relevant agencies. The current policy applies until 2020. India's Basic Customs Duty (BCD) (also known as the "statutory rate") is agreed at the time of approving the annual budget.

India has managed for several decades its agricultural exports through a combination of **export restrictions**, including export prohibitions, export licensing requirements, export quotas, export duties, minimum export prices, and state trading requirements. The application or elimination of such restrictions could be changed several times per year, taking into account concerns about domestic supplies and prices.

Regarding **export subsidisation** in agriculture, the Agricultural and Processed Food Products Export Development Authority (APEDA) – under the responsibility of the Ministry of Commerce & Industry (MOCI) – has provided in recent years financial assistance to exporters in the form of transport support.[2]

India ratified the **Paris Agreement on Climate Change** one year after the submission of its Intended Nationally Determined Contribution (INDC), on 2 October 2016. The INDC – which became its NDC – includes a commitment to reduce the emissions intensity of GDP by 33-35% by 2030 below 2005 levels, but specifies that this commitment does not bind India to any sector specific mitigation obligation or action (Climate Action Tracker, 2018[3]).

As concerns agriculture, India's NDC has a strong focus on **climate change adaptation**, as addressed in several of the central government's main programmes for agriculture (entitled "missions"). These include, among others, the National Mission for Sustainable Agriculture; the *Paramparagat Krishi Vikas Yojana* mission promoting organic farming practices; the *Pradhan Mantri Krishi Sinchayee Yojana* mission promoting efficient irrigation practices; or the National Mission on Agricultural Extension & Technology.

Domestic policy developments in 2018-19

Domestic price support policies

The central government **raised the Minimum Support Prices (MSPs)** throughout 2018 in its effort to achieve the 2017-stated goal of doubling farmers' incomes by 2022. On 1 February 2018, when presenting the 2018-19 Union Budget, the Ministry of Finance (MOF) first announced an MSP valued at 150% of the cost of production for all *kharif*[3] crops. In July 2018, the central government approved this MSP hike and clarified that the

cost of production considered represents the cost of all inputs plus the imputed cost of family labour. For instance, this implied a raise by 16% to INR 1 700 per quintal (USD 248 per tonne) for maize; by 13% to INR 1 750 per quintal (USD 255 per tonne) for non-basmati rice; and by 11% to INR 3 399 per quintal (USD 495 per tonne) for soybean (GOI, 2018[4]; AMIS, 2018[5]; GAIN-IN8086, 2018[6]).

On 3 October 2018, the central government also **raised the MSPs** for 2018-19 *rabi* crops that will be harvested and marketed during the marketing year 2019-20. This represents an increase by 6% for wheat to INR 1 840 per quintal (USD 248 per tonne); by 5% for chickpea to INR 4 620 per quintal (USD 670 per tonne); and by 5% for rapeseed and mustard to INR 4 200 per quintal (USD 610 per tonne) (GOI, 2018[7]).

In response to decreasing sugar prices between October 2017 and May 2018, the central government increased in July 2018 the **Fair and Remunerative Price for sugar** (i.e. the minimum price sugar mills pay to sugar cane farmers) by 8% to INR 275 per quintal (USD 39.9 per tonne) for the 2018-19 marketing year (GAIN-IN8115, 2018[8]). In recent years, sugar mills have often fallen short in how much of the full FRP they pay to sugar cane producers. As part of a 2018 support package for sugar producers and sugar mills, the central government aims to support mills address this shortfall (called cane price arrears) through direct payments to farmers, soft loans to mills through banks, or various border measures (see details in next sections).

Stockholding policies

In addition to the MSPs hikes, the central government introduced in September 2018 the *Pradhan Mantri Annadata Aay Sanrakshan Yojna* (PM-AASHA) programme. The programme has three sub-schemes: i) a Price Support Scheme (PSS); ii) a Price Deficiency Payment Scheme (PDPS); and iii) a Private Procurement & Stockist Scheme (PDPS). The three components are separate from any other existing schemes for the procurement of rice, wheat, coarse grains, cotton and jute. PM-AASHA aims at covering existing gaps in these **procurement schemes** by providing a menu of additional compensation mechanisms. Under the Price Support Scheme (PSS), state governments take a proactive role in the procurement of pulses, oilseeds and copra from farmers, which is led by central agencies and is fully funded by the central government. The Price Deficiency Payment Scheme (PDPS) covers all oilseeds for which an MSP is notified. A direct payment of the difference between the MSP and the selling/modal price is made to pre-registered farmers selling the produce in the notified market yard through an auction process. The payments are to be done directly into the registered bank accounts of farmers. The sub-scheme does not foresee actual physical procurement of crops as farmers would be paid the difference between the MSP price and sale/modal price on disposal in the notified market. Under the Private Procurement & Stockist Scheme (PDPS), states would also have the option to roll out private sector participation in procurement operations; no operational pilots are currently running under the PDPS (GOI, 2018[9]; NITI Aayog, 2018[10]).

An increased **procurement of pulses** was one of the key stated policy objectives during 2017-18. The procurement of pulses has been extended through the PM-AASHA programme at the end of 2018, aiming to reinforce the existing Market Intervention Scheme and Price Support Scheme (MIS-PSS). Existing estimates highlight that the National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED) purchased about 4.4 million tonnes of pulses in 2017-18 (about 18% of the estimated 24.5 million tonnes produced), primarily from large farmers with marketable surplus. Under the PSS scheme of the PM-AASHA, proposals for procurement have been approved at the end of 2018 in

Telangana, Andhra Pradesh, Uttar Pradesh, Rajasthan, Madhya Pradesh, Maharashtra, Karnataka and Tamil Nadu, but these have not yet been reported as operational (Economic Times, 2018[11]; Live Mint, 2018[12]).

In June 2018, the Cabinet Committee on Economic Affairs (CCEA) approved the creation of 3 million tonnes of **annual sugar buffer stock** starting 1 July 2018. Instead of buying sugar from mills, the government will finance the cost of storage at mill-owned warehouses. The buffer stock is subject to revision, depending on prevailing prices and sugar supply in the market (GAIN-IN8115, 2018[8]).

Subsidies for variable inputs use

Phase I of the Pan-India rollout of Direct Benefit Transfers (DBTs) for **fertiliser subsidy** payments – initiated in 2016 – was reported as completed at the end of March 2018. Under the fertiliser DBT system, the full fertiliser subsidy has started to be paid on a weekly basis to fertiliser companies through an automated system, based on the actual fertilisers sales made to farmers at the points of sale (GOI, 2018[13]).

To address farm indebtedness, in 2017 and 2018, several states announced support packages for **farm loans write-offs**, through which local governments reimburse the lending institutions the implementation of the debt waivers. The loan waiver announcements primarily concern the states of Maharashtra, Uttar Pradesh, Punjab, Karnataka, Rajasthan, Madhya Pradesh and Chhattisgarh, for an estimated total of INR 1 846 billion (USD 26.8 billion). The amounts allocated represent a significant burden on states' budgets, as they are between three to seven times their respective annual agricultural budgets. However, available estimates point to selected states having actually allocated by December 2018 approximately 40% of the overall announced amounts. The implementation of these programmes can vary across states, but waivers are usually conditional in most states. First, they are limited in terms of farms covered. For instance, Punjab and Uttar Pradesh granted waivers only for small-scale farmers, with landholdings of less than 5 acres (2 hectares). The waivers largely concern short-term credit, on which the banking sector has focused disproportionately. Small-scale farmers are particularly dependent on short-term credit, which enables them to procure seasonal inputs. Second, the waivers cover only specific periods of the production season. In this sense, state governments have been setting their own cut-off dates that define benefitting farmers according to the start date of the loan taken (Indian Express, 2018[14]; Times of India, 2018[15]; Times of India, 2018[16]; Live Mint, 2018[17]; Business Today, 2018[18]; ICRIER, 2019[19]).

Several inefficiencies exist with respect to the coverage and implementation of loan waivers. The documentation required to prove eligibility for the loan waiver has been proving burdensome for many small-scale farmers. In addition, non-institutional sources still account for as much as 36% of agricultural credit and thus de facto remain outside the scope of such schemes (OECD/ICRIER, 2018[2]; Hindustan Times, 2018[20]).

Based on the experience gained in 2016-17 in the implementation of the crop insurance scheme (*Pradhan Mantri Fasal Bima Yojana*, Prime Minister Crop Insurance Scheme) and with a view to ensure increased transparency, accountability and timely payment of claims to the farmers, the central government revised the PMFBY's Operational Guidelines from 1 October 2018. In this sense, the insurance companies that fail to clear crop insurance claims within two months and state governments that delay their contribution will both have to pay farmers a 12% interest. The Guidelines also provide insured farmers with an

additional day to file individual claims, directly through the programme's portal (GOI, 2018[21]).

Other payments to producers

To improve the liquidity position of sugar mills and enable them to clear cane price arrears they have towards farmers, the central government approved in May 2018 a **payment** of INR 5.5 per 100 kg (USD 0.8 per tonne) of **sugar cane** to farmers. The payment is to be provided directly to farmers and concerns output sold to mills during the marketing year 2017-18 (GAIN-IN8115, 2018[8]; GOI, 2018[22]; GOI, 2018[23]).

The Government of India presented the 2019-20 Interim Budget on 1 February 2019. The most important aspect concerning agriculture within the Interim Budget is the implementation of the **Income Support Scheme** (PM-KISAN). This programme will provide a direct income transfer to small-scale farmers (with landholdings of up to 2 hectares) amounting to INR 6 000 (USD 87) annually independent of the farm size, to be paid in three equal instalments. The unconditional payment does not require farmers to produce and targets farmers' broad needs, which can include everything from the purchase of inputs to any other non-farming related needs. The first instalment covers 1 December 2018 to 31 March 2019. Land records as on 1 February 2019 in the concerned states and UTs are used for identification of beneficiaries. However, in practice, given the remaining inefficiencies in the land recordkeeping system, the vast majority of land records reflect outdated information (GOI, 2019[24]). The Telangana state government had first introduced such type of income support of INR 4 000 per acre (USD 142.7 per ha) in May 2018, to be provided twice per year (the *Rythu Bandhu* Scheme) (Gulati and Saini, 2019[25]).

Domestic marketing regulations

The **Agriculture Export Policy** approved in December 2018 (see trade policy developments section) notes that it aims at using the Directorate General of Foreign Trade (DGFT) field offices, Export Promotion Councils, Commodity Boards and Industry Associations to act as 'advocacy forum' for **domestic marketing regulations** reform by all the states. Other areas of action include working with state governments to remove perishables from their respective APMC Acts as well as to rationalise and streamline *mandi* (government-regulated wholesale markets) taxes on export-oriented agricultural products (GOI, 2018[26]).

Changes to land regulations

Restrictive **land leasing laws** have largely contributed to making tenancy be informal, insecure and inefficient. There is also significant variation in the adoption and implementation of land and tenancy reforms across states and over time. The Union Budget 2018-19 put forward the **Model Land Cultivators License Act**, proposing to provide tenant cultivators with a licence, without compromising on the legal rights of the landholder. The licence would enable these farmers to avail the benefits of farm credit, crop insurance, and compensation in the event of a natural calamity (MOF, 2018[27]).

Policies relating to agri-environmental areas

Through the scheme for the Promotion of Agricultural Mechanization for In-situ Management of Crop Residue – introduced in March 2018 – payments support farmers in addressing **air pollution** caused by in-situ crop residue burning in the states of Punjab, Haryana, Uttar Pradesh and NCT of Delhi. The scheme foresees the establishment of

custom hiring centres that provide subsidised in-situ crop residue machinery and equipment to individual farmers. It also provides support by creating awareness through demonstration camps and capacity building activities for effective management and utilisation of crop residue. Financial assistance of 50% is provided to individual farmers for procurement of equipment and machinery. State governments, the Indian Council of Agricultural Research (ICAR), and *Krishi Vigyan Kendra* (KVKs, agricultural science centres) are also involved in supporting capacity building programs, trainings, communication and information activities for raising awareness on in-situ crop residue management and achieving zero straw burning (GOI, 2018[28]).

A dedicated **Micro Irrigation Fund** set up under the National Bank for Agriculture and Rural Development (NABARD) has been approved with an initial allocation of INR 20 billion (USD 289.8 million) for encouraging public and private investments in micro irrigation.[4] The main objective of the Fund is to support the states in mobilising the resources for expanding coverage of micro irrigation (MAFW, 2018[29]).

Support to processors

The central government has been introducing several measures that would encourage sugar mills to increase sugar processing for ethanol production. In June 2018, it approved soft loans (i.e. loans with a below-market rate of interest) to sugar mills of INR 44.4 billion (USD 640 million) through banks for setting up new distilleries or for expanding existing capacity. In September 2018, the CCEA then approved an increase to the ex-mill prices for ethanol by between 7% and 11% according to the feedstock used (whether derived from either B heavy molasses and partial sugarcane juice, from 100% sugarcane juice, or from C-molasses) (GAIN-IN8115, 2018[8]).

Food subsidy

The Ministry of Consumer Affairs, Food and Public Distribution released on 31 May 2018 the "Handbook for Implementation of Cash Transfer of **Food Subsidy**", developed jointly with the Department of Food and Public Distribution (DoFPD) and the World Food Programme (WFP). The Handbook aims to serve as a guide to all states and UTs that are implementing or planning to implement cash transfers for food subsidy. It details out the prerequisites, processes, and roles and responsibilities of all stakeholders involved in the cash transfer process. Pilots for food subsidy through direct cash transfers are currently being implemented in the UTs of Chandigarh, Puducherry and urban areas of Dadra & Nagar Haveli. The Handbook also highlights recent achievements in reducing leakages in the current food distribution system through automation of operations and biometric authentication of beneficiaries (GOI, 2018[30]).

Trade policy developments in 2018-19

Changes to tariff measures and other taxes on imports

The Government of India 2018-19 Union Budget replaced the 2% Education Cess and the 1% Secondary and Higher Education Cess[5] with a **Social Welfare Surcharge** (SWS) of 10% of the tariff on imported goods, including several food and processed food products. The SWS collected is to fund various social welfare schemes in education, health and social security. Specified goods, which were exempt from the levy of the Education Cess and the Secondary and Higher Education Cess, are also exempted from the SWS. These include

poultry cuts and offal (chilled and frozen), selected dairy products, selected fruits, dried peas, selected coffee products, and rice (MOF, 2018[31]; MOF, 2018[32]).

The **multi-favoured nation (MFN) tariff** for sugar was raised from 50% to 100% in February 2018 (GOI, 2018[22]; GOI, 2018[23]). On 23 May 2018, the MOF Central Board of Indirect Taxes and Customs (CBIC) also notified an increase in **MFN tariffs** on other imported agricultural products, including shelled almonds, in-shell walnuts, wheat, protein concentrate and textured protein substances. The tariff for wheat was raised from 20% to 30% (GAIN-IN8067, 2018[33]).

On 1 March 2018, MOF CBIC raised the **tariff** for chickpeas from 40% to 60%. On 16 May 2018, the Directorate General of Foreign Trade (DGFT) under MOCI issued a notification that restricted all peas imports for the period of 1 April to 30 June 2018. A subsequent DGFT notification of 2 July 2018 extended this quantitative restriction until 31 December 2018 and in January 2019 it was further prolonged to 31 March 2019 (CBIC, 2018[34]; GAIN-IN8110, 2018[35]; GOI, 2018[36]). On 29 March 2019, MOCI extended the quantitative restriction for peas and other selected pulses until 31 March 2020. Imports of pigeon peas will be subject to a quota of 200 000 tonnes and other pulses to a quota of 150 000 tonnes (GAIN-IN9028, 2019[37]).

On 20 June 2018, MOF announced **tariff** increases on various products imported from the United States, in retaliation to the duty increases introduced by the United States on steel and aluminium. The retaliatory tariffs cover several agricultural products, such as *kabuli chana* chickpeas, Bengal gram chickpeas, lentils, almonds and walnuts in shell, or apples. The increased tariffs were initially announced to take effect from 4 August 2018 but have been postponed repeatedly and as of 29 March they were deferred until 2 May 2019 (Global Trade Alert, 2019[38]).

Under the terms of the India-ASEAN Free Trade Agreement, on 31 December 2018, MOF notified a lower **tariff** effective 1 January 2019 for imports of Crude Palm Oil (CPO) and RBD (refined, bleached and deodorised) Palm olein from ASEAN countries to 40% and 50%, respectively (CBIC, 2018[39]; CBIC, 2018[40]).

Export measures

A MOCI notification of 2 February 2018 removed the **minimum export price**[6] for **onions** (of USD 700 FOB per tonne), applied since November 2017, until further notice (MOCI, 2018[41]).

Several export measures are also part of the 2018 support package for sugar producers and mills. In this sense, the **export tax** on sugar exports was withdrawn and Minimum Indicative **Export Quotas** (MIEQ) of 5 million tonnes were allocated mill-wise covering the 2017-18 marketing season (representing about 15% of 2018 production). A Duty Free Import Authorization (DFIA)[7] scheme for sugar mills was introduced to incentivise export of surplus sugar. Support for sugar exports also includes a **transport cost subsidy** by between INR 1 000 and INR 3 000 (USD 14.5 and USD 43.6) per tonne, depending on the distance to the port (GOI, 2018[22]; GOI, 2018[23]).

The DGFT introduced a 7% **export subsidy** for chickpeas (between April – June 2018) and a 5% **export subsidy** for non-basmati rice (between November 2018 – March 2019) – based on the FOB value of the products – under the 2015-20 Merchandise Exports from India Scheme (MEIS) (GAIN-IN8110, 2018[35]; Economic Times, 2018[42]).

In July 2018, the western states of Gujarat and Maharashtra, India's leading milk producers, provided a **subsidy** of INR 50 000 (USD 728) per tonne for exports of skim milled powder (SMP), while the central government approved a further subsidy of 10% of the export price (Reuters, 2018[43]).

In December 2018, the GOI approved the **Agriculture Export Policy** framework. Key objectives of the policy document include doubling agricultural exports by 2022 and boosting the value added of agricultural exports. Underlining that there is "an increasing need for the GOI to establish a stable and predictable Agriculture Export Policy, which aims at reinvigorating the entire value chain", the policy document proposes three main areas for action that could support the above objectives. First, ensuring that processed agricultural products and organic products will not be subject to export restrictions. Second, initiating consultations among stakeholders and Ministries in order to identify the "essential" food security commodities on which export restrictions could still be applied under specific market conditions. Third, reducing import barriers applied to agricultural products for processing and re-exporting. The central government also approved the proposal for establishing a monitoring mechanism to oversee the implementation of this policy framework, with MOCI as the coordinating department and with representation from various line Ministries/Departments and Agencies as well from state-level governments (GOI, 2018[26]; Hindu Business Line, 2018[44]).

Notes

[1] These replaced the former five-year plans prepared by the erstwhile Planning Commission of India (the 12th Five Year Plan 2012-17 was the last of these plans).

[2] A Ministerial Decision on Export Competition at the WTO Ministerial Conference held in Nairobi in 2015 has put an end to the subsidisation of agricultural exports, which for India would occur at the end of 2023 (https://www.wto.org/english/thewto_e/minist_e/mc10_e/l980_e.htm).

[3] The *kharif* cropping season is from July to October during the south-west monsoon (summer) and the *rabi* cropping season is from October to March (winter). The *kharif* crops include rice, maize, sorghum, pearl millet/bajra, arhar (pulses), soybean, groundnut, cotton. The *rabi* crops include wheat, barley, oats, chickpea/gram, linseed, mustard.

[4] Micro irrigation is an irrigation method with lower pressure and flow than a traditional sprinkler system. It encompasses several ways of water application: drip, spray, subsurface, or bubbler irrigation.

[5] These represented additional charges on imported products or basic income taxes to finance education programmes.

[6] This represents the price below which exporters are not allowed to export a specific commodity. It is set taking into consideration concerns about the domestic prices and supply of that specific commodity.

[7] A DFIA is issued to allow duty free import of inputs which are required for the production of the export-oriented product.

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Chapter 14. Israel

Support to agriculture

Despite continued efforts to introduce market-oriented reforms, total support to agriculture in Israel continued to increase, which reflects mostly the persistence of regulations, price controls and border protection targeting specific commodities.

The share of producer support in gross farm receipts (%PSE) reached 17.7% in 2016-18, which approached the OECD average. At the same time, the share of potentially most market-distorting forms of support in Israel (91%) is much higher than 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 and to selected fruits and vegetables. Although support to poultry and milk producers declined, these producers still benefit from the highest level of market price support, accounting for 37% of the total PSE in 2016-18. Total support for agriculture (TSE) remained stable at 0.5% of GDP, just below the OECD average.

The share of General Services Support Estimates (GSSE) in total support in 2016-18 represented 12% of TSE and 5% of agriculture value-added, both totals below the respective OECD averages. Public spending to finance general services increased 10% in 2018 due to additional expenditures for the agricultural knowledge and innovation system and the development and maintenance of water infrastructure.

Main policy changes

In October 2018, the government signed an agreement with farmers to undertake a comprehensive reform of the dairy sector. The outline of the reform includes a reduction of target prices, further reduction of customs tariffs, support for farmers leaving dairy production, and the introduction of subsidies for increasing the efficiency of dairy farms. The reform process aims to lead to structural change in the sector, with the expansion of the average size of dairy operations.

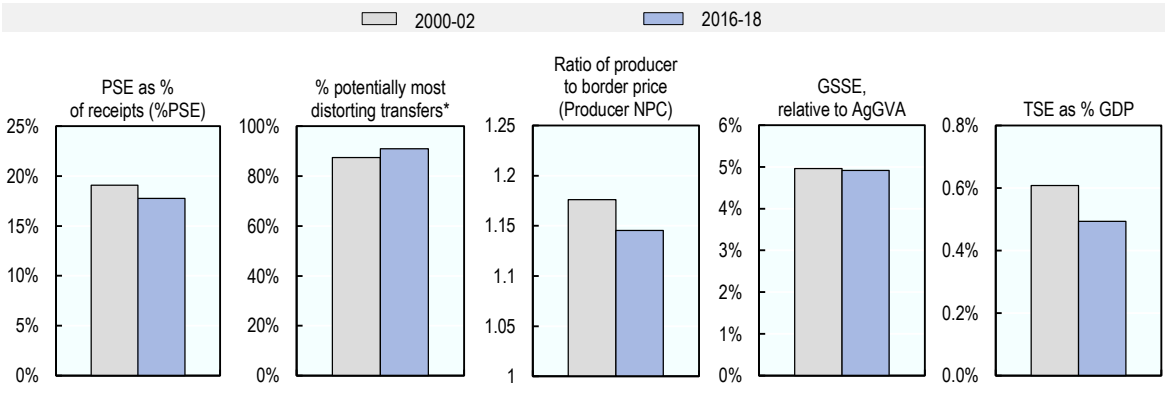
In the midst of a six-year long drought, the Water Authority imposed further cuts in agricultural water quotas throughout the country, by up to 41% for irrigators accessing the national water system. This quota restriction was applied in conjunction with the application of the 2017 water price reform, which aims towards convergence in freshwater prices for irrigators using the national water system and prices for producers accessing water from other sources.

Assessment and recommendations

- The level of support to agriculture in Israel has continued to increase from 2013 to 2018 reflecting the high border protection for selected agricultural commodities and various forms of support for farm inputs. The focus on price support effectively raises market distortions and taxes for consumers.

- While the agreed reform outline for the dairy sector, if approved by the next government, would be a significant step in the right direction and follows a gradual tariff reform of the beef sector, other commodities remain subject to high border protection. Israel maintains high tariffs for goods such as poultry meat, sheep meat, eggs and certain fruits and vegetables that could be gradually removed and, if necessary, replaced temporarily by direct payments. The tariff system for agriculture should also be simplified, avoiding non-ad-valorem tariffs.
- Israel should continue and intensify its ongoing efforts to diminish the regulatory burden and improve the transparency and competition in the agro-food chain. Progress made in these areas would not only reduce trade costs and encourage trade flows, but would also diminish costs for the processing industry and prices for the final consumers of agro-food products.
- Expenditures on agricultural knowledge and innovation systems have been continuously increasing, following with the trend of the OECD average, which should help the country remain at the cutting edge of new agriculture technologies.
- Israel's comprehensive water management system has enabled the country to sustain a productive agriculture sector under very intense water stress. Still, recent restrictions on water quotas amid an intense drought spell suggest that, despite continuous investments in water resources, the sector will continue to face increasing water scarcity pressure. The use of optional compensations for unused water quotas could be explored further. Facilitating further trading in water allocations among irrigating farmers or with other water users could help improve the system's flexibility and strengthen the farmers' resilience during intense droughts, while contributing to reinforce the sector's adaptation to climate change.
- The government should increase its efforts to reduce the sector's negative environmental impacts. Improvements should be sought to converge to OECD-levels for nutrient balances. Regional agri-environmental programmes should be bolstered and complemented by other targeted policies and regulations geared towards higher environmental performance.

Figure 14.1. Israel: Development of support to agriculture

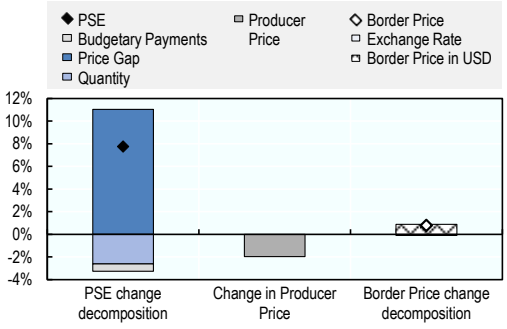


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933937757

Support to producers (%PSE) has moderately declined between 2000-02 and 2016-18. At the same time, the share of potentially most distorting transfers remains high in the last two decades due to a high of market price support (MPS) and continued border protection (Figure 14.1). From 2017 to 2018, the level of support rose by 8 percent, due to an increase in price distorting measures (Figure 14.2). Effective average prices received by farmers declined by 2% but remain 14% higher than world prices, with large differences between commodities. MPS is the main component of Single Commodity Transfers (SCT): bananas, milk, poultry and tomatoes have the highest share of SCT in commodity gross farm receipts (Figure 14.3). Overall, SCT represent 86% of the total PSE. The expenditures for general services (GSSE), mainly on knowledge and infrastructure, have slightly declined relative to agriculture value added between 2000-02 and 2016-18.

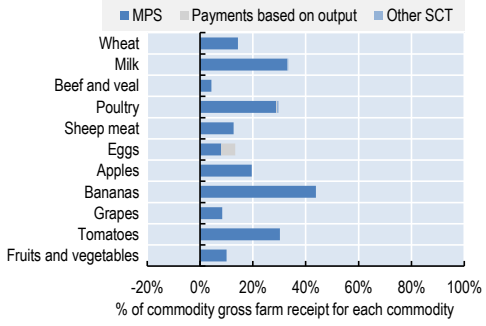
Figure 14.2. Israel: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Figure 14.3. Israel: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Table 14.1. Israel: Estimates of support to agriculture

Million USD

	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**3 337**	**8 234**	**7 765**	**8 301**	**8 636**
***of which:** share of MPS commodities (%)*	75.2	79.7	81.6	79.4	78.2
Total value of consumption (at farm gate)	**3 379**	**8 224**	**7 419**	**8 327**	**8 926**
Producer Support Estimate (PSE)	**682**	**1 504**	**1 409**	**1 493**	**1 611**
Support based on commodity output	487	1 276	1 191	1 255	1 383
Market Price Support[1]	477	1 260	1 175	1 239	1 366
Positive Market Price Support	491	1 261	1 175	1 240	1 368
Negative Market Price Support	-14	-1	0	-1	-1
Payments based on output	10	16	16	16	17
Payments based on input use	160	133	128	154	116
Based on variable input use	106	92	88	105	84
with input constraints	0	0	0	0	0
Based on fixed capital formation	42	23	26	26	17
with input constraints	0	0	0	0	0
Based on on-farm services	12	18	15	24	15
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	25	85	82	76	97
Based on Receipts / Income	21	67	62	60	77
Based on Area planted / Animal numbers	4	19	20	16	20
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	10	7	8	14
With variable payment rates	5	10	7	8	14
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 (%)	**19.1**	**17.7**	**17.6**	**17.5**	**18.1**
Producer NPC (coeff.)	**1.18**	**1.15**	**1.16**	**1.13**	**1.14**
Producer NAC (coeff.)	**1.24**	**1.22**	**1.21**	**1.21**	**1.22**
General Services Support Estimate (GSSE)	**100**	**203**	**179**	**206**	**226**
Agricultural knowledge and innovation system	51	89	81	88	99
Inspection and control	16	25	19	31	24
Development and maintenance of infrastructure	10	70	56	70	82
Marketing and promotion	11	1	1	1	1
Cost of public stockholding	12	12	12	12	11
Miscellaneous	0	7	9	3	8
Percentage GSSE (% of TSE)	**12.9**	**11.9**	**11.3**	**12.1**	**12.3**
Consumer Support Estimate (CSE)	**-512**	**-1 069**	**-1 037**	**-976**	**-1 194**
Transfers to producers from consumers	-451	-987	-993	-921	-1 045
Other transfers from consumers	-66	-86	-48	-57	-153
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	5	3	4	2	4
Percentage CSE (%)	**-14.9**	**-13.0**	**-14.0**	**-11.7**	**-13.4**
Consumer NPC (coeff.)	**1.18**	**1.15**	**1.16**	**1.13**	**1.16**
Consumer NAC (coeff.)	**1.17**	**1.15**	**1.16**	**1.13**	**1.15**
Total Support Estimate (TSE)	**783**	**1 708**	**1 588**	**1 699**	**1 837**
Transfers from consumers	517	1 073	1 041	978	1 198
Transfers from taxpayers	332	721	595	778	791
Budget revenues	-66	-86	-48	-57	-153
Percentage TSE (% of GDP)	**0.6**	**0.5**	**0.5**	**0.5**	**0.5**
Total Budgetary Support Estimate (TBSE)	**305**	**448**	**412**	**460**	**470**
Percentage TBSE (% of GDP)	**0.2**	**0.1**	**0.1**	**0.1**	**0.1**
GDP deflator (2000-02=100)	**100**	**130**	**130**	**131**	**130**
Exchange rate (national currency per USD)	**4.34**	**3.68**	**3.84**	**3.60**	**3.60**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
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.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities for Israel are: wheat, cotton, peanuts, tomatoes, peppers, potatoes, avocados, bananas, oranges, grapefruit, grapes, apples, milk, beef and veal, sheep meat, poultry and eggs.

Source: OECD (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

Israel's economy is relatively small but has been growing rapidly and its GDP per capita almost doubled over the last two decades, even as the population increased by 50%. The share of agriculture in total employment and in GDP has fallen to around 1%. 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 remained relatively stable over the past twenty years, despite the country's continued development. While the agriculture sector is relatively diversified, most of the value of production and exports is generated by high value fruits and vegetables.

Table 14.2. Israel: Contextual indicators

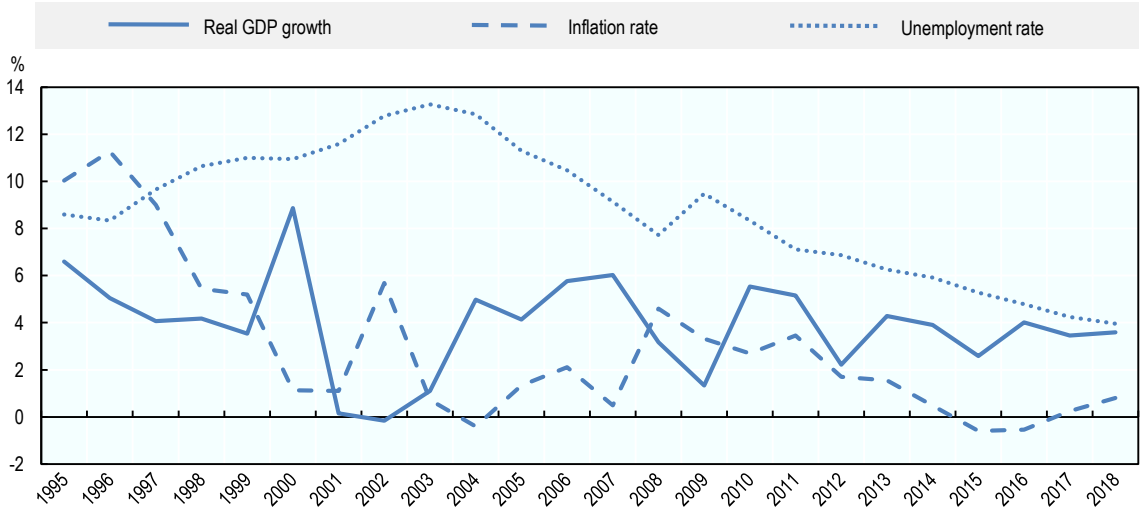
	Israel		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	110	339	0.4%	0.3%
Population (million)	6	9	0.1%	0.2%
Land area (thousand km^2)	22	22	0.03%	0.03%
Agricultural area (AA) (thousand ha)	573	532	0.02%	0.02%
			All countries[1]	
Population density (inhabitants/km^2)	..	399	48	60
GDP per capita (USD in PPPs)	19 744	38 277	7 642	21 231
Trade as % of GDP	24	18	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	2.0	1.3	3.3	3.5
Agriculture share in employment (%)	2.9	1.0	-	-
Agro-food exports (% of total exports)	7.0	3.7	8.1	7.5
Agro-food imports (% of total imports)	6.6	8.1	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	57	58	-	-
Livestock in total agricultural production (%)	43	42	-	-
Share of arable land in AA (%)	60	55	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

Israel maintains a highly performing economy among OECD countries, with robust GDP growth, exceeding 3% per year and close to full employment in 2017-18. After two years of deflationary pressure, moderate inflation started again in 2017 (Figure 14.4).

The agriculture trade balance of Israel continued to decline in 2016-17, with the value of imports of mostly processed food products increasing more than the value of exports of mainly primary commodities (Figure 14.5). This gradual shift may partly reflect the relative appreciation of the Israeli currency compared to the US dollar and the Euro in 2017 (OECD, 2018[2]).

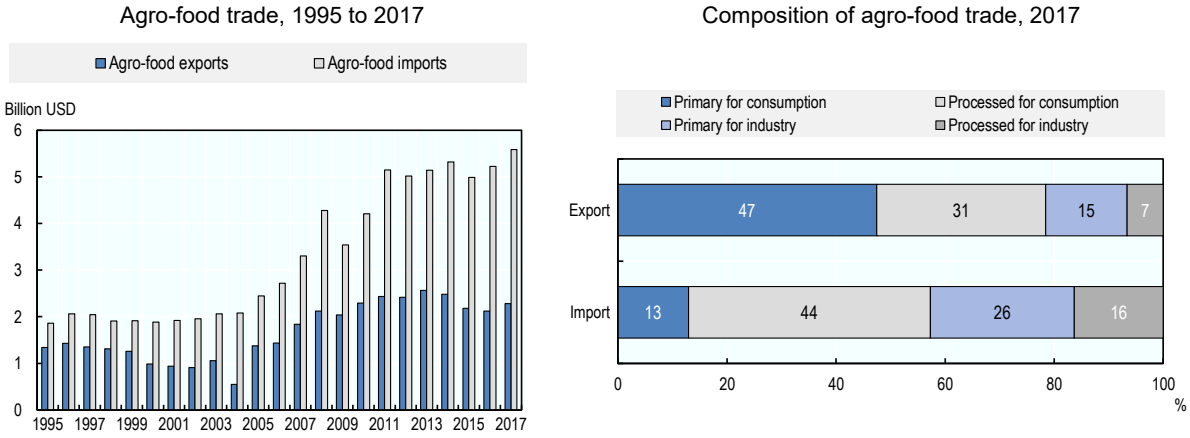
Figure 14.4. Israel: Main economic indicators, 1995 to 2018



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

StatLink https://doi.org/10.1787/888933937814

Figure 14.5. Israel: Agro-food trade



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

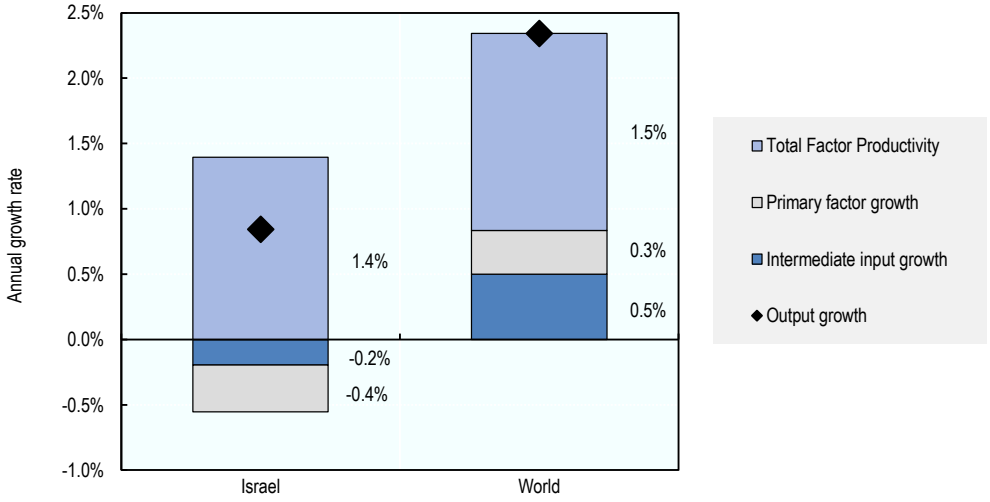
StatLink https://doi.org/10.1787/888933937833

The productivity of Israeli agriculture is generally high, but its estimates fluctuate with changes in the total value of outputs in US dollars. The estimated 1.4% annual growth rate of total factor productivity (TFP) in agriculture over the period of 2006-15 is lower than the world average, unlike past periods, which may be partially attributed to the lower value of output in 2015 (concurrent with an appreciation of the Israel currency).

The overall environmental performance of Israel's agriculture has improved significantly in the past twenty years. In particular, nutrient balances and agriculture's share of

freshwater abstraction have declined significantly, partly due to better agronomic practices and changes in water management. Still, nitrogen and phosphorous balances remain four to ten times the OECD average level, calling for additional efforts.

Figure 14.6. Israel: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

StatLink https://doi.org/10.1787/888933937852

Table 14.3. Israel: Productivity and environmental indicators

	Israel		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	2.8%	1.4%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha	139.8	121.6	33.2	30.0
Phosphorus balance, kg/ha	40.6	31.3	3.7	2.3
Agriculture share of total energy use (%)	1.1	1.6	1.9	2.0
Agriculture share of GHG emissions (%)	3.6	2.6	8.5	8.9
Share of irrigated land in AA (%)	45.2	..	-	-
Share of agriculture in water abstractions (%)[1]	64.0	32.0	45.4	42.5
Water stress indicator	64.0	40.5	9.7	9.7

Note: * or closest available year. 1. Share of agriculture fresh water abstraction in total fresh water abstraction.
Source: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Description of policy developments

Main policy instruments

Over the past thirty years, Israel has implemented a number of **reforms** related to the provision of subsidies, central planning of agricultural industries, and the allocation of production quotas, price controls and import protection. The government continues to be involved in the allocation of key factors of production such as land, water and foreign workers. 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 foreign workers with permits to work in agriculture. Both the overall quota and the allocation of workers to individual farmers are strictly regulated.

Some commodities continue to benefit from **guaranteed prices and production quotas**. Guaranteed prices for milk are based on the average cost of production and while they are 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 and recommended prices, which serve as the basis for calculating the inspected retail prices, together with border protection, are applied as an instrument to provide price support to producers. On the other hand, consumer price controls are applied for a range of basic food products, including bread, milk and dairy products, eggs and salt. Egg and poultry producers in "peripheral areas" at the northern border receive direct payments, based on output levels for egg, and encompassing a mixture of payments decoupled from production and output payments for poultry producers (OECD, 2010[3]).

Support to investments is provided by capital grants. Farmers who participate in the **investment support** scheme are also entitled to income tax exemptions and accelerated depreciation. Since 2009, an investment support programme has been implemented to partly replace foreign workers in the agricultural sector, but budgetary allocations for this programme declined strongly in recent years.

Insurance schemes provided by the Insurance Fund for Natural Risks in Agriculture (Kanat) are subsidised. The government intends to increase premium subsidy rates and to extend the coverage through the inclusion of new crops. The share of the support in the total assurance premium is 80% 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 has been applied for rain-fed crops to protect against a loss of revenue caused by price decrease, low yields or a combination of both. In 2015, a credit fund was launched with 85% state guarantee.

Israel maintains a transparent and open **trade regime** overall. However, high border tariff protection on agri-food products, although much below bound rates, remains an important tool in supporting agricultural producers. Israel's average applied MFN tariff on agricultural goods (WTO definition) amounted to 19.1% in 2018, down from 27.7% in 2012, but still much higher than the 3% average for non-agricultural goods (WTO, 2018a). Israel has tariff rate quotas (TRQs) for wheat, fats and oils, walnuts, prunes, maize, citrus juices, beef and sheep meat and various dairy products. 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 258 preferential TRQs for agricultural goods (WTO, 2018[4]).

Despite certain reforms that began in 2014, Israel's **tariff profile** for agricultural products remains highly uneven, with very high – sometimes prohibitive – tariffs for goods such as dairy products, eggs and certain fruits and vegetables, and low, sometimes zero, tariffs for other commodities such as coarse grains, sugar, oilseed and frozen beef. The tariff system on agriculture is also complicated, involving specific, compound or mixed duties (WTO, 2018[4]). Twenty percent of imported agricultural products are subjected to non-ad valorem rates, compared to 3.8% for all goods (Ibid.). At the same time, some 55.6% of agriculture imports entered Israel duty-free, mostly through MFN duty-free access and under preferential agreements (the most important ones are with the European Union and the United States) (WTO/ITC/UNCTAD, 2018[5]). With the exception of beef, poultry (including turkey), and mutton and products thereof, there is no legal requirement for imported food and agricultural products to be **kosher**, although imported, non-kosher agro-food products are rarely accepted by local marketing channels.

Budgetary allocations for **Research and Development** have regularly increased and have accounted for about 20% of the total agriculture-related budget in recent years. During 2016-2018, ILS 325 million (USD 90 million) were allocated annually to agriculture research and development, of which almost ILS 75 million (USD 21 million) were used for a competitive research fund each year. This, together with an effective transmission of innovations to the farm level through a public extension service, has allowed Israel to become a world leader in agricultural technology, particularly for farming in arid and desert conditions.

Israel has not developed sector-specific policy measures for greenhouse gas mitigation in agriculture, given that agriculture accounts for a limited share of the country's total greenhouse gas emissions (2.7% in 2018). Instead, the government has introduced and applied a number of programmes to **support climate change adaptation**. In addition to its forward-looking water resource management, the government supports research and development programmes on improved agronomic practices, breeding, soil conservation and efficient use of resources and maintains the Israel Plant Gene Bank to conserve indigenous plant species. As explained below, efforts to develop a national quantitative assessment of climate change risks for agriculture are ongoing.

Domestic policy developments in 2018-19

Israel continues to work on the **reform of support for animal production**. At the end of October 2018, an outline for a new reform was signed between the government and the representatives of the **dairy** farmers. This reform aims to switch from the fixed target producer price mechanism to an alternative mechanism of minimum price. The outline of the reform includes a reduction of target prices, further reduction of customs tariff, subsidies for increasing the efficiency of dairy farms, and support for dairy farmers leaving dairy production. The reform process aim to lead to structural change in the sector, with the expansion of the average size of dairy operations. The reform agreement requires a change in legislation to be implemented; a memorandum of law was issued on the subject but the examination of the law was postponed until after the April 2019 general elections.

The Ministry of Finance is continuing to discuss a reform programme with growers of **table eggs**. In the meantime, the Ministry of Agriculture and Rural Development (MARD) has been involved in the enforcement of sanitary conditions at poultry house, and managing a call for proposals and tenders for constructing poultry house complexes for a budget of ILS 50 million (USD 14 million). At the same time, the Galilee Law, which was introduced

in 1988 to support holders of egg production quotas or broiler in the Galilee region, with intention to be phased out in 2017, was renewed in 2017 and continued in 2018.

During 2018, the Ministry was engaged in execution of plans to **reduce regulatory burden,** which were formulated in 2015, 2016 and 2017 (OECD, 2018[2]). An analysis of the implementation of the plans formulated in 2016 and 2017 shows that as of 1 January 2019, the completed reforms yielded savings of ILS 150 million (USD 42 million) and 443 000 waiting days for bureaucratic permits per year. Additionally, in 2018, five plans were formulated to reduce the regulatory burden involving the veterinary supervision on the importation of poultry and birds, the quarantine facilities and veterinary control of horse imports; animal care and animal shows; licenses for removing and transplanting trees; and allocation of grazing areas. These plans were approved by the regulators and by the Director General of the Ministry, and were published in December 2018.

The government also continued to improve the **agriculture marketing system** to reduce costs and possible consumer price pressures.[1] In light of increasing concentration in the wholesale and retail segments and in view of the special production and marketing characteristics of fresh fruits and vegetables (lack of homogeneity, perishable products), MARD conducted a regulatory impact assessment (RIA) of unfair trading practices to evaluate alternatives for improving commercial relations between farmers and wholesalers/retailers of fresh fruit and vegetables. After receiving responses to a draft document, it was decided to establish a voluntary code of conduct. A draft of the code was published in January 2019 for responses from stakeholders. The effectiveness of the code will be evaluated in 2020, and if necessary, the code will be transformed into binding regulation.

Despite intended efforts to reduce food prices, the **guaranteed price** of eggs continued to increase by an average of 3.5% in 2018. Milk target prices declined by 2% from 2017-18. Still, the national producer price for milk remained significantly higher than international prices. Milk accounts for 20% of the total market price support measured for the Israeli agriculture in 2018 and hence still contributes significantly to the relatively high level of Israel's farm support.

The government **supported new tracks of veterinary services** through the Israel Veterinary Services and Animal Health (IVSAH) agency. While it continued to implement control programmes on brucellosis for sheep and goats, salmonellosis and campilobacteriosis in poultry, IVSAH updated the rabies control programme in wild animals in 2018. IVSAH also developed a new information technology system to manage the livestock registration and to reduce the regulatory burden by enabling self, online production of different permits.

In 2018 the **six year drought** continued and the water levels of the Sea of Galilee and of the aquifers worsened, leading the Water Authority to impose further **cuts in the allocation of water throughout the country**, even in the national system (-41%), which is sourced in part by desalination plants. Although the precipitation forecast for 2019 is above the annual average (105-110%), thanks to an unusually rainy winter, water resources are still facing shortage risks in the near-term. The Sea of Galilee has a very high level of salinity and the aquifers are below acceptable levels, except for the Coastal Aquifer. Accordingly, plans are being considered for connecting the Sea of Galilee to the national system and for constructing two additional desalination plants. The option of voluntarily waiving part of the quota in exchange for support was given to farmers in the national system, in order to optimise the usage of the overall water resources. In the Galilee region, support was given in compensation for the cut in water quantities in 2018, as done in 2017.

In parallel, the government continued to implement the 2017 reform of the **agriculture water pricing system**, which aims lead to a convergence in water prices nationally for equity purposes (OECD, 2018[2]). Water prices for private producers were raised for a second time, while water prices for consumers of the national company Mekorot declined to ILS 1.98/m^3 (USD 0.55/m^3). The price increase for private producers will continue in 2019, and prices for consumers of Mekorot will decline to ILS 1.54/m^3 (USD 0.43/m^3) for areas lacking alternative water sources and to ILS 1.81/m^3 (USD 0.50/m^3) for the rest of the country. At the same time, financial support was given to private producers in the Hula Valley area to ensure that the peatlands are irrigated to prevent ecological hazards. The rest of the producers will be eligible for compensation due to the prices' increases as of 2019.

Water and other climatic risks continue to be important elements of Israel's efforts to bolster **agriculture's adaptation to climate change**. Beyond long-term programmes on research and development, soil or plant genetic conservation as well as applicable means of adaptation, MARD is currently collaborating with the Israel Meteorological Service (IMS) to develop a map of quantitative agriculture climate change indicators, which will serve as a basis for a climate change impact assessment. Mapping agricultural risks resulting from climate change requires relevant spatial and temporal resolution. It also requires understanding of the specific sensitivities of each agricultural industry/sector to climate change. In collaboration with climate experts, growers, researchers and extension officers, the project defined around 60 climate change indices relevant to Israel agriculture (e.g. the annual number of warm days above 34ºC, the highest annual number of consecutive dry days and other critical indicators). IMS is conducting multiple analyses of past and projected climate indices. The project, which is expected to conclude in 2020, shall help to quantify climate change's agricultural and economic impacts for different sub-sectors as well as a basis for risk assessment.

The government also continued to **invest in the future viability of its agriculture sector**. In September 2017, MARD and the Ministry of Finance signed an agreement of ILS 160 million (USD 44.5 million) for three years, called "The Next Generation in Agriculture Plan". Within this plan, ILS 45 million (USD 12.5 million) is used to encourage new farmers to join the sector, by supporting 40% of their initial investments. Another ILS 45 million (USD 12.5 million) was allocated as grants for investments in new technologies for all farmers (covering 25% of their investment); ILS 10 million (USD 2.8 million) was assigned as state guarantee for credit for farmers; ILS 15 million (USD 4.2 million) was allocated to breeding new and niche varieties and the remaining ILS 45 million (USD 12.5 million) was used to renew the budget for ongoing programmes.

One of the programmes funded by this last share of the plan aims to support **farmers' markets**. MARD set a budget amounting to ILS 20 million (USD 5.6 million). Twenty-seven municipalities have committed to start the process; however only three markets were operating as of early 2019.

The government is also supporting the development and viability of **agtech startup companies**. MARD's goal in this area is to support this emerging industry and help more new technologies to successfully overcome the often economically difficult stage for innovators to reach the market. In 2018 it initiated a new support track together with the Israel Innovation Authority (IIA) with a total budget of ILS 20 million (USD 5.6 million) (state participation in 30-60% of the eligible costs). The fund shall provide three types of support: 1) deliver research and development to companies, 2) encourage co-operation between companies and regional research and development centres, and 3) support the

development new products (prototypes) at the customer site overseas. The fund was attributed to MARD in 2018 but it will become available for beneficiaries in 2019.

According to the Jewish religion, every 7 years **a sabbatical year** (Jewish *Shmita*) is announced, in which no agricultural land is to be cultivated; the next sabbatical year will take place from September 2021 to September 2022. In practice, farmers have different options; a large majority of Jewish farmers symbolically "rent" their land to non-Jews for a year and continue to cultivate, but some farmers (less than 1% in 2015) apply the recommendation and stop cultivating the land. In November 2017, MARD and the Ministry of Finance signed an innovative agreement to help those participating farmers prepare. Under this agreement, the participating farmers will establish a saving account based on their annual revenue and the government will triple it, in order for them to cope with the loss of income involved in complying with the *Shmita*. ILS 81 million (USD 22.5 million) was allocated to this fund for the years 2018-21.

Trade policy developments in 2018-19

The government is seeking ways to reduce **Israel's reliance on imports of *live* animals**, for animal welfare reasons. At the same time, it is aiming to optimise the welfare of animals imported by sea. Israel depends mainly on beef and lamb imports for consumption. Those imports include live animals and frozen and chilled meat (beef and lamb). Among the activities that were carried out in 2018, the government implemented the extension of shelf life of chilled meat imports to 85 days, enabling imports from distant origins. In addition, the tariff reduction plan that was started in 2017 is expected to increase competition and the variety of sources for imports.

Free trade agreements (FTA) were signed with the European Free Trade Association (EFTA) in 2018 and with Ukraine in January 2019. The revised FTA with Canada and the new FTA with Panama were ratified by Israel in 2018. New FTA negotiations with several other countries, including South Korea, the People's Republic of China, Viet Nam and the EAEU, are at varying stages of progress. A revised United States–Israel Agreement on Trade in Agricultural Products (ATAP) is also under negotiation.

Note

[1] The Joint Price Committee of MARD and the Ministry of Finance, acting according to the "1996-5756 Produce and Services Price Supervision Law", did not find any exceptional profitability of the retail chains in the financial statements of retailers and wholesalers for 2016. Following data analysis of 2017 reports, the Price Committee will consider further measures if necessary.

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Chapter 15. Japan

Support to agriculture

Japan has gradually reduced its support to agriculture but the change has been moderate. Support to producers (PSE) remains high and averaged 47% of gross farm receipts in 2016-18. This is down from the 63% thirty years ago (1986-88) but is still 2.5 times higher than the OECD average. Market price support (MPS) remains the main element of producer support, and is mainly sustained by border measures in particular for rice, pork and milk. The share of potentially most distorting form of support (MPS, support based on output and variable input use - without any input constraints) has declined, but it still accounts for 86% of PSE. The share of direct payments decreased in 2018 due largely to the end of rice farm income support. Budgetary support to producers is mostly focusing on area and income based payments.

The total support estimate to agriculture (TSE) represents 1% of Japan's GDP in 2016-18. PSE represents 82% of TSE, while 18% went to the support for general services provided to agriculture (GSSE). The majority of the GSSE expenditure (86%) finances the development and maintenance of agricultural infrastructure, while 11% is used to finance the agricultural knowledge and innovation system.

Main policy changes

The administratively allocated rice production quotas, in place since 1969, were abolished in 2018. This policy change is expected to raise competitiveness of the Japanese rice farm sector by enabling farmers to plan their production unrestricted by quota allocation. The government replaced this quota system with providing market information such as rice price, supply, demand, and stocks.

A revenue insurance programme was introduced in January 2019. The programme insures total farm revenue, both taking into account the market volatility and yield fluctuations. The participation to the programme is voluntary. The compulsory participation for rice, wheat, or barley producers under the crop insurance programme was eliminated.

The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) entered into force in December 2018 between Japan and five other Asia-Pacific countries (Australia, Canada, Mexico, New Zealand, and Singapore) followed by Viet Nam in January 2019. CPTPP countries represent 13% of the world GDP when fully implemented by the rest of the member countries (Brunei, Chile, Malaysia, and Peru) (World Bank, 2019[1]). Under the CPTPP, Japanese border measures for agricultural products, including tariffs, safeguards and tariff-rate quotas, are eliminated or reduced.

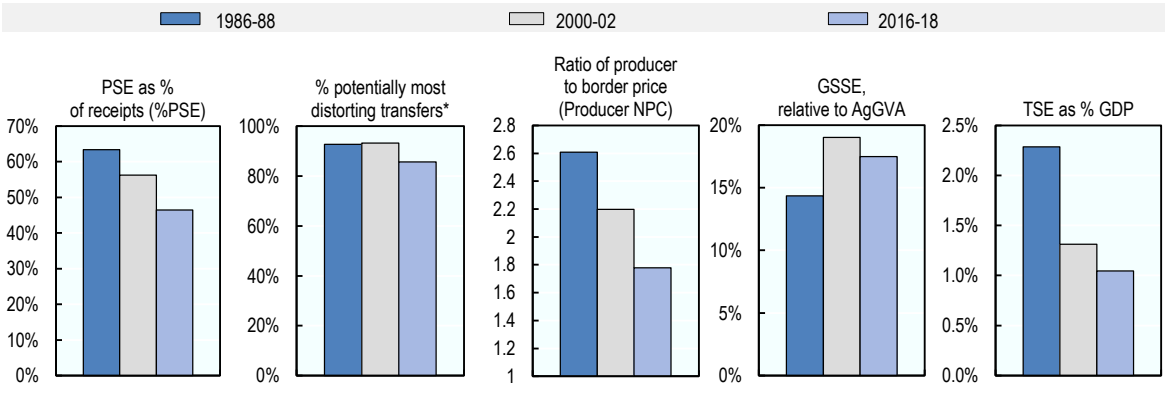
After more than five years of negotiations, Japan and the European Union signed the Economic Partnership Agreement (Japan-EU EPA) in July 2018, which entered into force in February 2019. Japan and the European Union account for 27% of GDP in the world (World Bank, 2019[1]). Japan eliminates tariffs on the European Union's main agricultural products exported to Japan such as wine, pasta, sugar, confectionary and chocolates. The

European Union removed most of its agricultural tariffs at the entry into force of the agreement except a few products such as ice cream and cocoa powder. Tariffs for rice are not subject to reduction or elimination on both sides.

Assessment and recommendations

- Japan has implemented some agricultural policy reform since the early 2000s, but support to producers remains more than twice the OECD average, and continues to be dominated by market price support (MPS), which gives distorting incentives to agricultural producers.
- Implementation of the CPTPP and the Japan-EU EPA should provide further incentives for the Japanese agricultural sector to move towards a more market-oriented sector. The reduction of border measures on agricultural products may also contribute to structural change and further productivity growth of the sector. However, the exclusion from trade barrier reductions of some key products such as on rice limits the benefits to be reaped. A gradual reduction of trade barriers across all commodities would allow to maximise the benefits for consumers through lower prices and for farmers through increased flexibility in production decisions.
- Despite a declining share of rice in the value of production, rice policy continues to be a central aspect of agricultural policy in Japan with rice-related policies accounting for close to 40% of Japan's support to producers, even though Japan has gradually reduced its direct control of the rice market over the last 25 years. Japan's termination of the administratively allocated rice production quotas in 2018 has been an important step to provide more incentives to farmers to respond the market signals and potentially lower rice prices.
- The continued support provided to crop diversification is likely to help reduce abandonment of paddy fields. However, it also incentivises farmers to switch from rice to other crops, thus reducing farmers' incentives to take advantage of the rice quota abolition.
- The importance of the newly implemented revenue insurance programme is likely to rise if the number and scale of natural disasters related to climate change increases further. The new insurance programme is also a step to expand the choice of risk management tools for farmers. However, subsidised insurance systems risk crowding out other market-based and, in particular, on-farm risk management.
- There is significant room to improve the environmental performance of agriculture. Japan has one of the highest nutrient surpluses among OECD countries indicating the potentially high risk of environmental pressures on soil, water and air. Agricultural policy programmes should provide consistent incentives to adopt sustainable production practices. An integrated agri-environmental policy framework with quantitative targets in which all farmers commit to improving their environmental performance should be developed.
- The revision of the Immigration Control Act opens a new possibility for agriculture and food sectors to address the severe labour shortages and ageing of the population that they have been facing for the past decades. Agricultural labour policy can also focus more on education and skill sets demanded by farmers (entrepreneurial and digital skills, agri-environmental knowledge) to enhance the sector productivity.

Figure 15.1. Japan: Development of support to agriculture

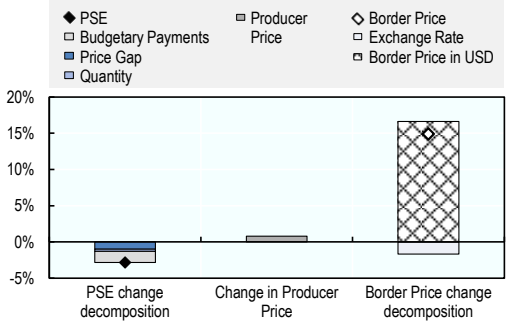


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019[2]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Support to producers (%PSE) has declined gradually over the long term. During 2016-18, farm support represented around 47% of gross farm receipts, but remains high compared to the OECD average. The share of potentially most distorting support has decreased only moderately and accounts for 86% of the PSE (Figure 15.1). MPS continues to be the main element of that support. The level of PSE has somewhat decreased in 2018 due to a decrease in the gap between domestic and border prices and reduction of budgetary payments, in particular for rice (Figure 15.2). Support based on individual commodities (SCT) varies greatly by commodity. SCTs above 50% of commodity gross farm receipts are provided for barley, rice, sugar, milk, pork, cabbage and grapes (Figure 15.3). Prices received by producers are on average 78% above world market prices. Expenditures for GSSE were equivalent to 18% of agricultural value added in 2016-18 and were mainly used on the development and maintenance of infrastructure such as irrigation facilities. TSE was 1% of GDP in 2016-18, reduced by more than half since 1986-88.

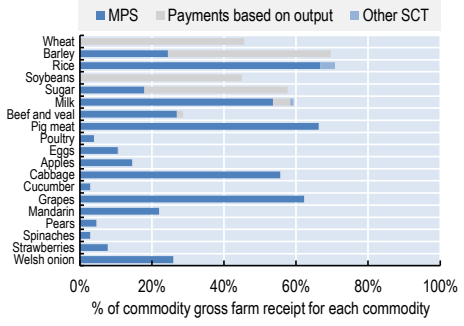
Figure 15.2. Japan: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019[2]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933937890

Figure 15.3. Japan: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019[2]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933937909

Table 15.1. Japan: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**72 767**	**76 354**	**83 191**	**84 580**	**82 670**	**82 323**
***of which:** share of MPS commodities (%)*	68.4	63.8	65.9	65.4	66.4	65.9
Total value of consumption (at farm gate)	**98 515**	**113 281**	**125 343**	**127 283**	**124 887**	**123 857**
Producer Support Estimate (PSE)	**49 307**	**46 096**	**42 202**	**42 409**	**42 376**	**41 819**
Support based on commodity output	45 692	42 970	36 174	36 000	36 201	36 322
Market Price Support[1]	44 153	40 612	34 625	34 538	34 678	34 661
Positive Market Price Support	44 153	40 612	34 625	34 538	34 678	34 661
Negative Market Price Support	0	0	0	0	0	0
Payments based on output	1 539	2 358	1 549	1 462	1 523	1 662
Payments based on input use	1 434	976	856	910	936	723
Based on variable input use	403	85	12	18	9	9
with input constraints	403	85	3	8	0	0
Based on fixed capital formation	890	724	576	611	667	450
with input constraints	403	85	3	8	0	0
Based on on-farm services	142	167	268	281	260	264
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	621	613	2 343	2 604	2 446	1 979
Based on Receipts / Income	0	0	203	229	119	261
Based on Area planted / Animal numbers	621	613	2 140	2 375	2 326	1 718
with input constraints	0	0	1 028	1 014	1 018	1 051
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	2 828	2 895	2 795	2 795
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	2 828	2 895	2 795	2 795
with commodity exceptions	1 560	1 257	2 595	2 662	2 566	2 557
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 (%)	**63.4**	**56.2**	**46.5**	**45.9**	**46.9**	**46.7**
Producer NPC (coeff.)	**2.61**	**2.20**	**1.78**	**1.75**	**1.79**	**1.79**
Producer NAC (coeff.)	**2.73**	**2.29**	**1.87**	**1.85**	**1.88**	**1.88**
General Services Support Estimate (GSSE)	**8 769**	**12 141**	**9 319**	**9 355**	**9 432**	**9 171**
Agricultural knowledge and innovation system	514	861	998	1 067	986	942
Inspection and control	55	66	71	64	68	80
Development and maintenance of infrastructure	7 747	10 620	8 008	7 991	8 164	7 871
Marketing and promotion	152	248	119	111	98	149
Cost of public stockholding	301	345	123	122	116	130
Miscellaneous	0	0	0	0	0	0
Percentage GSSE (% of TSE)	**15.0**	**20.9**	**18.1**	**18.1**	**18.2**	**18.0**
Consumer Support Estimate (CSE)	**-60 839**	**-53 502**	**-52 002**	**-51 803**	**-51 946**	**-52 257**
Transfers to producers from consumers	-43 584	-40 605	-35 546	-35 434	-35 717	-35 487
Other transfers from consumers	-17 214	-12 983	-17 088	-16 982	-16 942	-17 340
Transfers to consumers from taxpayers	-108	35	6	7	5	6
Excess feed cost	68	51	626	607	709	563
Percentage CSE (%)	**-61.8**	**-47.2**	**-41.5**	**-40.7**	**-41.6**	**-42.2**
Consumer NPC (coeff.)	**2.62**	**1.90**	**1.72**	**1.70**	**1.73**	**1.74**
Consumer NAC (coeff.)	**2.62**	**1.89**	**1.71**	**1.69**	**1.71**	**1.73**
Total Support Estimate (TSE)	**57 968**	**58 271**	**51 527**	**51 771**	**51 813**	**50 997**
Transfers from consumers	60 799	53 588	52 634	52 416	52 660	52 827
Transfers from taxpayers	14 384	17 666	15 981	16 336	16 096	15 510
Budget revenues	-17 214	-12 983	-17 088	-16 982	-16 942	-17 340
Percentage TSE (% of GDP)	**2.3**	**1.3**	**1.0**	**1.0**	**1.1**	**1.0**
Total Budgetary Support Estimate (TBSE)	**13 814**	**17 659**	**16 902**	**17 233**	**17 136**	**16 336**
Percentage TBSE (% of GDP)	**0.5**	**0.4**	**0.3**	**0.3**	**0.4**	**0.3**
GDP deflator (1986-88=100)	**100**	**105**	**96**	**96**	**96**	**96**
Exchange rate (national currency per USD)	**147.09**	**118.19**	**110.47**	**108.80**	**112.18**	**110.44**

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 (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

Japan is the world's third largest economy after the United States and the People's Republic of China (hereafter "China") with relatively small land area and high population density. Agriculture constitutes a small share in the economy (1.1% of GDP and 3.4% of employment). The agricultural production had an overall downward trend but has been gradually increasing over the past three years. In value terms, the value of livestock in total farm production is 35.1%, followed by vegetables (26.4%), rice (18.7%), and fruits (9.1%) (MAFF, 2018[3]).

Due largely to the country's mountainous topography, the total agricultural area only represents 12% of total land. About half of agricultural land is rice paddy fields. The agricultural area decreased by more than 10% over the past two decades due to farmland abandonment and conversion to non-farm uses (e.g. residential or commercial uses). The average farm size increased from 1.4 hectares to 2.2 hectares between 1990 and 2015 but remains much smaller than that in other OECD countries. However, concentration of land use to large farms accelerated in the last decade. The share of farms operating more than 10 hectares increased from 34% to 48% between 2005 and 2015. Farms with more than JPY 30 million (USD 0.25 million) of sales accounted for 53% of total output in 2015. The average age of farmers is 66.8 years (MAFF, 2018[4]). The number of commercial farm households and agricultural workers decreased by more than 50% since 1990. With labour leaving the agricultural sector, production levels were sustained by a relatively high rate of total factor productivity growth.

Table 15.2. Japan: Contextual indicators

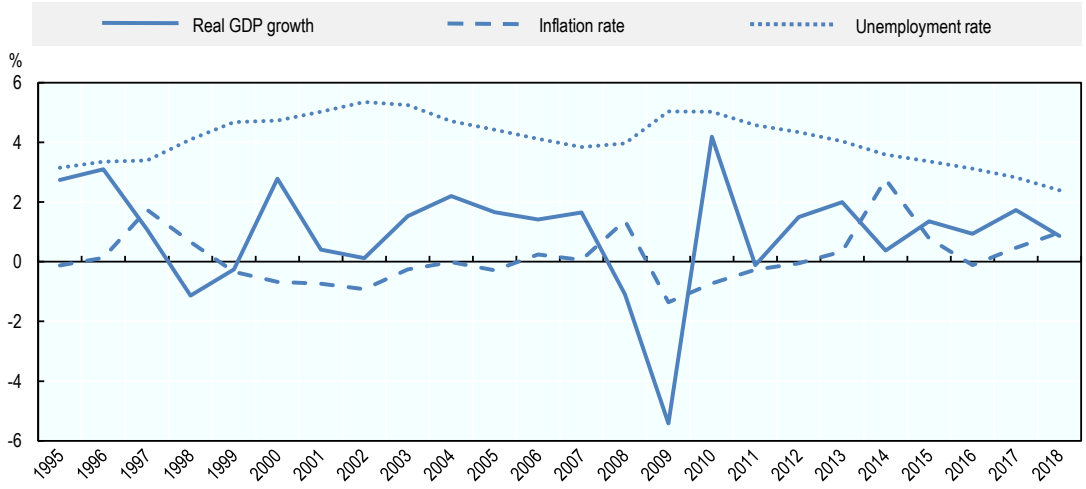
	Japan		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	2 936	5 333	10.0%	5.2%
Population (million)	125	127	3.3%	2.6%
Land area (thousand km^2)	365	365	0.5%	0.5%
Agricultural area (AA) (thousand ha)	5 038	4 471	0.2%	0.1%
			All countries[1]	
Population density (inhabitants/km^2)	336	340	48	60
GDP per capita (USD in PPPs)	23 404	43 299	7 642	21 231
Trade as % of GDP	7	14	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	1.7	1.2	3.3	3.5
Agriculture share in employment (%)	5.7	3.1	-	-
Agro-food exports (% of total exports)	0.4	0.6	8.1	7.5
Agro-food imports (% of total imports)	12.3	8.5	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	76	65	-	-
Livestock in total agricultural production (%)	24	35	-	-
Share of arable land in AA (%)	92	94	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

The food self-sufficiency rate was 38% in 2017 on a calorie basis, meaning that more than 60% of Japanese calorie intake depended on imports. Japan is the world's fourth-largest importer of agro-food products (JPY 6.4 trillion) (USD 57 billion) after the United States,

China, and Germany. The United States is the biggest source of imports at 23%, followed by China at 11%, Australia at 7% and Thailand at 6% (UN Comtrade, 2018[5]). The most imported agro-food goods are tobacco, pork, beef, maize, and fresh and dried fruit. The share of agricultural exports in total exports, on the other hand, constitutes only 0.66% (Table 15.2). Most Japanese agricultural exports are directed at final consumers rather than to an intermediate industry use. Processed food products such as alcohol, green tea, snacks, sauces and seasonings account for the majority of Japan's agro-food exports. Among the unprocessed products, apples and beef are the most exported products.

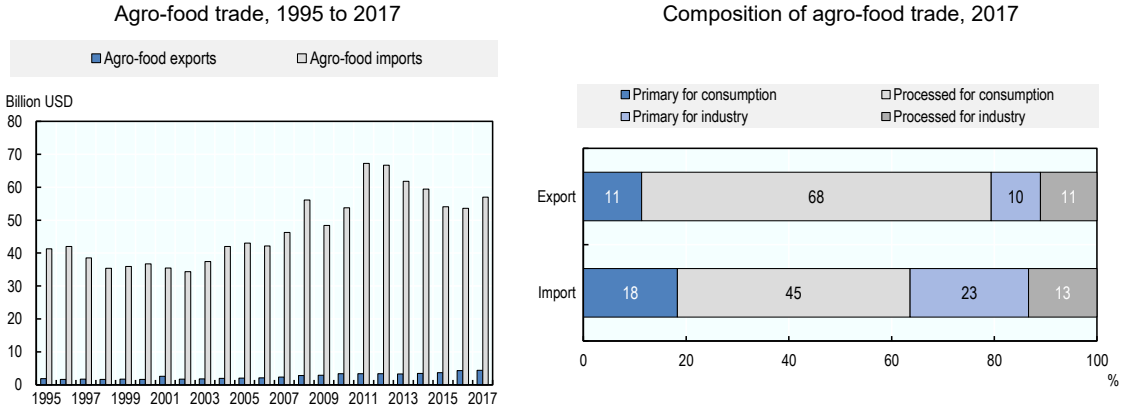
Figure 15.4. Japan: Main economic indicators, 1995 to 2018



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

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Figure 15.5. Japan: Agro-food trade

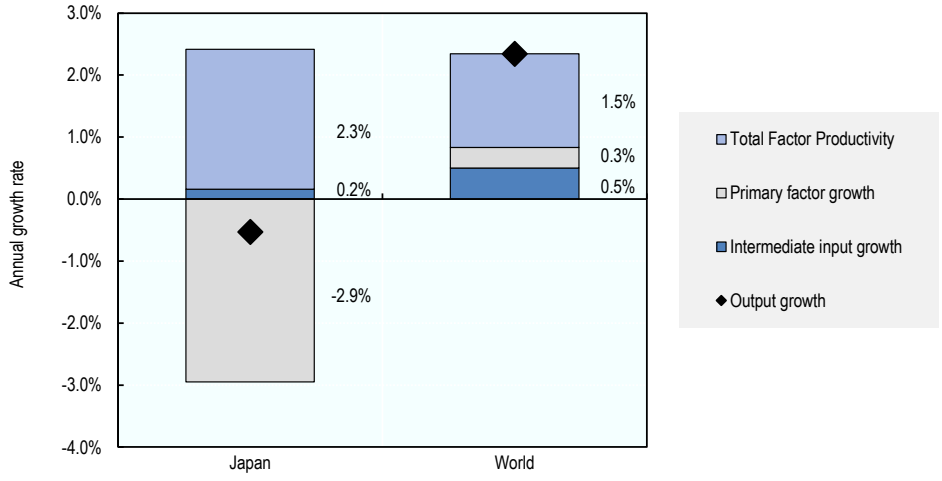


Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database

StatLink https://doi.org/10.1787/888933937947

Agriculture's share in total energy use was 1.2% in 2016, which is below the OECD average. Greenhouse gas (GHG) emissions from agricultural were 2.6 % of the total emissions — the lowest among OECD countries. The main source of agricultural GHG emissions is methane from rice cultivation (42%) followed by methane from livestock enteric fermentation (22%) and Nitrous Oxide from fertiliser application (16%) (MOE; GIO, 2018[6]). Japan's nitrogen and phosphorus balance are one of the highest in OECD. Nitrogen balance in 2013-15 was 177.7kg/hectare, with a high degree of fertiliser use and livestock production, combined with a low share of pastureland (Shindo, 2012[7]). Phosphorus balances have been very high as well, linked to soil-type related fertilisation needs identified in the past (FAO, 2015[8]).The volume of agricultural water use remains stable for the past few decades. Japanese agriculture uses 68% of water of which 94% was directed for paddy field irrigation.

Figure 15.6. Japan: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

StatLink https://doi.org/10.1787/888933937966

Table 15.3. Japan: Productivity and environmental indicators

	Japan		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	1.6%	2.3%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha	166.4	177.8	33.2	30.0
Phosphorus balance, kg/ha	69.9	62.1	3.7	2.3
Agriculture share of total energy use (%)	1.3	1.2	1.9	2.0
Agriculture share of GHG emissions (%)	2.7	2.6	8.5	8.9
Share of irrigated land in AA (%)	54.5	54.4	-	-
Share of agriculture in water abstractions (%)	65.9	67.6	45.4	42.5
Water stress indicator	21.5	19.3	9.7	9.7

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

Description of policy developments

Main policy instruments

Japan maintains a system of high **border protection** and domestic price support for many of its agricultural products. Tariff-rate quota (TRQ) systems with high out-of-quota tariffs are applied to major commodities such as rice, wheat, barley and dairy products. Administered prices are implemented to calves, together with an import tariff. For rice, a TRQ of 682 200 tonnes (milled) is applied. The maximum mark-up for rice imports is set at JPY 292 (USD 2.6) per kg and the out-of-quota tariff-rate of **rice** is JPY 341 (USD 3.0) per kg. Rice import is conducted through state trading fulfilling Japan's **minimum-access** commitment under WTO Agreement on Agriculture.

Japanese tariffs on agricultural products are higher than those on non-agricultural products. On average, they amounted to 13.3% in 2017, compared to 2.5% for non-agricultural products. Agricultural tariffs vary considerably among products with over 36% duty free and 2% above 100% (*ad valorem* equivalent); 11.6% of agricultural tariff lines are non-*ad valorem* (WTO, 2018[9]).

For **paddy-field** farming, a crop diversification payment, which is conditional on conserving a favourable environment for paddy fields, is paid to farmers who switch their use of paddy fields from table rice production to other crops (e.g. wheat, soybean). The income support payment for **upland crops** (wheat, barley, soybean, sugar beet, starch potato, buckwheat and rapeseed) are provided through area- and output-based payments. The area payments are based on current planting, while the output-based payments are based on the volume of sales. Subsidy rates for both payments vary by quality and variety.

The **revenue insurance programme** launched in 2019 provides a safety net for farmers. The programme compensates the loss of farm revenue stemming from both market and natural causalities, relative to a benchmark based on the previous five years' revenues. **Commodity insurance** is available for a range of products (rice, wheat, barley, livestock commodities, fruit, field crops, silkworms). This voluntary programme mainly covers yield losses due to natural disaster but some products are also insured against deterioration of crop quality and production equipment. Government support covers around 50% of the insurance premium, and farmers can now freely choose any risk management programme. However, the revenue insurance programme cannot be combined with other risk management programmes such as crop insurance, the Farm Income Stabilization Programme, or commodity-specific price stabilisation programmes.

The income support payment for upland crops (both area- and output-based payments) and the income based payment are available for so called "**business farmers**" (*Ninaite*), defined as a farm management unit which is, or aims to be, an efficient and stable farm. There are three types of business farmers: certified farmers and certified new farmers are those whose farm management plans are approved by the authorities; and community-based farm co-operatives who are groups of farm households which conduct farm management collectively. To attract younger generations, Japan provides a subsidy to new **young farmers** during a training period (maximum of two years) and the initial operation period (maximum of five years). Up to JPY 1.5 million (USD 13 582) is paid annually to eligible trainees or farmers.

The **farmland banks** (Public Corporations for Farmland Consolidation to Core Farmers through Renting and Subleasing) have been established since 2014, aiming at farmland consolidation. These banks improve farmland conditions and infrastructure if necessary,

and then lease the consolidated farmland to business farmers. Subsidies are provided to land owners who lease their lands to the farmland banks.

Public investment has long been implemented to improve rural infrastructure, such as farmland (e.g. land re-adjustment), agricultural roads, and irrigation and drainage facilities. A direct payment for **environmentally-friendly agriculture** is provided to those who adopt farming practices that contribute to preventing global warming or conserving biodiversity in conjunction with reducing the application of chemical fertilisers and chemical pesticides by more than half of conventional farming in the region. In 2018, the requirement for this payment was revised: complying with Good Agricultural Practice (GAP) is now an additional requirement for receiving it, so that farmers now need to participate in training and submit an activity report to assess the implementation of GAP. Direct payments are provided to farmers in **hilly and mountainous areas** with the aim to avert the abandonment of agricultural land and to contribute to environmental protection and landscape preservation.

In ratifying the **Paris Agreement on Climate Change**, Japan has committed through its Nationally Determined Contribution to reducing its emissions on an economy-wide basis to 26% below 2013 levels by 2030. The government plans to decrease GHG emissions from the agricultural sector in several ways: fuel consumption is to be reduced by promoting energy-saving equipment; paddy field water is to be managed in a way to reduce methane emission; the fertiliser use efficiency is to be improved; and carbon sequestration in farmland is to be enhanced. On **climate change adaptation**, the government has established the adaptation plan including a road map until 2025 to look at how to prepare and build resilience to the effects of climate change.

Japan has seventeen **Economic Partnership Agreements (EPAs)** in force (Singapore, Mexico, Malaysia, Chile, Thailand, Indonesia, Brunei Darussalam, Association of Southeast Asian Nations (ASEAN) , Philippines, Switzerland, Viet Nam, India, Peru, Australia, Mongolia, CPTPP, and the European Union). Japan is currently engaged in several other EPA negotiations including bilateral negotiations with Colombia and Turkey, and plurilateral negotiations including the Japan-China-Korea FTA, the Regional Comprehensive Economic Partnership (RCEP).

Domestic policy developments in 2018-19

The **administratively allocated rice production quotas**, in place since 1969, were abolished in 2018. The programme controlled the supply of rice by allocating a production quota to rice farmers, which would support the price of rice. The termination aimed to raise competitiveness of the Japanese rice farm sector by enabling farmers to plan their production unrestricted by quota allocation. The government replaced the system with providing market information such as rice price, supply, demand, and stocks.

The government maintains support that incentivises **crop diversification**. Subsidies are paid to farmers who shift from table rice production to other crops (wheat, soybeans, and rice for livestock and processing) using their paddy fields. For instance, the production of livestock feed rice can receive a maximum of JPY 105 000 (USD 950) per 10 ares. The government aims to increase the production of livestock feed rice to 1.1 million tonnes by 2025 – ten times more than 2015, and plans to provide JPY 330 billion (USD 3 billion) in 2019.

A new payment scheme for **processing milk** under the Revised Act on Livestock Industry Management Stabilization was implemented in April 2018. Due to price disadvantages for

fresh milk used for processing, payments were previously made to farmers who ship fresh milk to designated dairy organizations, but the scheme now also allows any dairy farmers producing fresh milk for processing to receive the compensatory payment. The payment rate was set at JPY 8 310 (USD 75) per tonne, and it will be allocated for 3.4 million tonnes in total. Dairy farmers and fresh milk collectors receiving the payment are required to submit their "annual marketing plans" to the government.

The **revenue insurance programme**, a new comprehensive risk management tool for farmers, was introduced in January 2019. The programme compensates the decrease of farm revenue by both market volatility and yield fluctuation. The revenue is calculated at farm level rather than regional level or by commodity as in the past programme. In particular, the benchmark revenue is calculated based on the average of the last five years for each farmer. If the revenue during the insured period falls below 90% of its benchmark, the farmers can be compensated up to 90% of the revenue loss relative to the benchmark. The participation to the programme is voluntary and all agricultural commodities are covered with the exceptions of beef cattle, veal calves, hogs, and eggs, which are covered by separate income loss support systems. The compulsory participation for rice, wheat, or barley under the crop insurance programme was eliminated in favour of a voluntary participation. The government covers 50% of the insurance premium and 75% of the reserve fund.

Related to the **income loss support** systems for **beef** and **hog**, the floor level of price stabilisation bands was terminated in December 2018. Instead, from the date of entry into force of the CPTPP, income loss compensation ratio under the legislated Beef Cattle Fattening Business Stabilization Program and the Hog Growing Business Stabilization Programme was raised from 80% of the gap between average production cost and average gross revenue to 90%. The government contribution ratio of the Hog Growing Business Stabilization Programme was increased from 50% to 75%.

The 2018 Growth Strategy aims at 80% of national farmland to be used by business farmers by 2023, but the share remains 55.2% at the end of FY2017. The government conducted reviews and plans to simplify the lending and renting scheme for business farmers in order to accelerate the accumulation and consolidation of farmland. In 2018, the government revised the **Agricultural Management Framework Reinforcement Act**. Approximately 20% of farmland in Japan is unregistered, and their current owners are unknown—preventing the consolidation of farmlands. The revised Act allows for farmland jointly owned, but where one or several of these owners are unknown, to be rented to Farmland Banks[1] without unanimous agreement by those unidentified co-owners.

The **Agricultural Land Act** (ALA) regulates use of farmland. Previously, if farmers cover their farmland with concrete even for agricultural purposes, the land lost its farmland status that carries preferential tax treatment. The government revised the ALA in May 2018 to allow farmers to maintain the status of farmland with the use of concrete on the farmland, facilitating the installation of new agricultural technologies on their production sites (robots, machines, hydroponic culture).

The 2018 National Growth Strategy aims at most business farmers in Japan utilising digital data by 2025. The **Agricultural Data Collaboration Platform Council** (WAGRI) was fully launched in April 2019. It is a platform for agricultural data collaboration to co-ordinate, share and supply agricultural data among users and providers in different fields. As various agricultural data services have been emerging, the government, with the participation of stakeholders, created the **Guideline on Data Contract in Agriculture** in 2018 for agriculture related data contracts. The guideline contains several templates of data

contract and legal commentary in order to build confidence of producers in activities operated by different players on the digital space.

Japan revised the **Act on Urban Farmland Lease Facilitation** in 2018 to encourage urban farmland owners to either continue farming their land or lease it to those who would. Regular farmland leases are renewed automatically unless the owner tells the lessee otherwise. This discouraged landowners to rent out their farmland as they feared endless lease cycles. The revised Act excluded the application of the rule to urban farmland. The revision also allowed those who inherit urban farmland to defer paying inheritance tax until the farmland is sold or converted for non-agricultural use.

The government's engagement to agricultural export promotion continues to be an important policy agenda. In 2018, the value of agricultural product exports from Japan increased to a record high of JPY 566 billion (USD 5.1 billion) – twice that of 2012. In 2018, the government created the **Global Farmers/Fishermen/Foresters/Food Manufacturers Project** (GFP). The project provides export consultations for registered producers seeking export business opportunities, and services to match producers with export traders. The GFP is formulated in line with the government's target to increase agricultural related exports to JPY 1 trillion (USD 9 billion) by 2019.[2]

A series of **large-scale natural disasters** hit Japan in 2018, which caused major damages to the agricultural forestry and fisheries sector (notably, heavy rains, flooding, landslides, earthquakes and typhoons). The damages in the agricultural, forestry and fisheries sectors from these disasters are reported at JPY 568 billion (USD 5.1 billion). The government earmarked supplementary budgets of JPY 159 billion (USD 1.4billion) for the restoration of these sectors, mostly used for recovery of farmland and degraded mountains as well as agricultural facilities.

Japan's parliament passed the **Revised Immigration Control Act** in December 2018 with the aim to ease serious labour shortages. The revised Act established a new status for foreign workers in fourteen sectors (including agriculture, food manufacturing, and food service) to stay up to five years on condition that they pass an occupational and Japanese proficiency exam. The exams are waived for those who have competed a technical intern-training programme, allowing a stay of up to ten years. Under this new status, the government expects to accept 345 510 foreign workers in these sectors during 2019-24.

Trade policy developments in 2018-19

Japan's tariff-rate-quotas continued to be under-filled in FY2018 for some products, including butter and butter oil, prepared whey for infant formula, and skimmed milk powder for school lunches. Japan issued special safe guard measures in FY2018 for some products, including buttermilk and inulin. In FY2018, Japan decided to import up to 13 000 tonnes of butter under state trading in order to meet domestic demand.

In March 2018, Japan and ten other Asia-Pacific countries signed the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (**CPTPP).** The agreement entered into force in December 2018 among the first six countries to ratify the agreement – Japan, Australia, Canada, Mexico, New Zealand, and Singapore, and for Viet Nam in January 2019. Japan maintains its tariff for rice but established a country-specific tariff-rate quota for Australian rice with a 6 000 tonnes quota increasing to 8 400 metric tonnes after 12 years. This is equivalent to 0.1% of the total rice consumption in Japan. Tariffs on beef are to be reduced from 38.5% to 9% in the 16th year. The tariff reduction is accompanied by a volume-based safeguard. On pork, Japan maintains a scheme that includes a gate price

of JPY 524 (USD 5)/kg and safeguards but reduces the maximum specific duty from JPY 482 (USD 4)/kg to JPY 50 (USD 0.5)/kg in the 10th year. The 4.3% *ad valorem* duty for high value cuts will be phased out over 10 years. Japan is to eliminate tariffs on certain types of cheeses in the 16th year. Other dairy products such as butter and skim milk powder were allocated new quotas but maintain current tariffs.

The **Japan-EU Economic Partnership Agreement (EPA)** entered into force on 1 February 2019. Japan is the fourth most important destination for the European Union's agricultural exports (Eurostat, 2018[10]). Japan eliminated its 15% tariffs on wine and tariffs for pasta, sugar confectionary and chocolates are set to be phased out in the 11th year. Import tariffs of 29.8% on hard cheese are to be gradually eliminated over a 15-year period. A TRQ for soft cheese, with a volume set at 20 000 tonnes at the coming into force of the agreement is to increase to 31 000 tonnes in the 16th year, while the in-quota tariffs are to be phased out over the same period. Rules related to beef and pork are similar to those under the CPTPP. However, tariff rates for rice remain unchanged by both parties. The Japan-EU EPA also set specific rules for recognition and protection of agricultural goods and liquor from a particular geographical origin (Geographical Indication; GI). The EPA protects 56 GIs from Japan (48 agricultural goods and 8 liquor).

The government revised the **Comprehensive TPP Related Policy Framework** in 2017 to cushion the impacts from the CPTPP and the Japan-EU EPA. Agriculture is one of the main targeted sectors in the framework. Specifically, the framework sets an agenda for increasing exports of Japanese agricultural, forestry and fishery products and accelerating agricultural structural reforms to counter anticipated market competition by foreign products. A measure to support cheese production was added in 2017 as a response to the Japan-EU EPA. Based on the framework, Japan financed JPY 318.8 billion (USD 2.9 billion) in FY2018 and cumulative of JPY 1.3 trillion (USD 11.8 billion) between FY2015-18 for agriculture, forestry and fishery structural reform programmes. Also outlined in the framework, the government implements countermeasures for five sensitive products, including rice, wheat, livestock (beef and pork), dairy products, and sugar to stabilise the productions.

Notes

[1] Farmland Banks are the intermediators of the government in farmland transactions.

[2] The goal includes the value of food and agriculture, forestry and fishery products. The total value of exports for these products in 2018 was JPY 907 billion (USD 8.2 billion).

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Chapter 16. Kazakhstan

Support to agriculture

The share of producer support in gross farm income (%PSE) was 3.1% in 2016-18. In 2018, domestic producer prices remain on average below world levels although to a lesser extent than in 2017, leading to a negative aggregate price support (MPS) for several crops[1] and an implicit transfer from farmers to consumers as measured by the Consumer Support Estimate. Support to fixed capital formation is a major component of producer support, and accounts for 60% of the budgetary transfers to producers in 2016-18. On average, total support to agriculture growth is in par with economic growth and its share in the economy (%TSE) is stable. The share of general services to the sector (GSSE) in the TSE is stable at around a quarter. Spending on inspection and control, and on the development and maintenance of infrastructure together made up more than 80% of the GSSE expenditure in the past three years.

Main policy changes

The implementation of the 2021 State Programme began in 2017. In 2018, **area payments** for crop production, and **output and headage payments** for livestock production were reduced, eliminating 20 out of 54 types of the payments. The remaining payments were simplified in order to shorten the application process for subsidies and reduce corruption risks.

In 2018, a new **seed subsidisation mechanism** was introduced. The programme reimburses seed producers the full cost of producing the quality seeds distributed to farmers. In return, the farmers are required to return 30% of the subsidies to the Seed Development Fund, which finances the acquisition and modernisation of machinery and equipment for certified seed producers at preferential interest rates.

Kazakhstan restructured the **agricultural research and development (R&D) system** in 2018, consolidating 23 Research Institutes (SRI) to 12 and increasing the number of agricultural experimental stations. In addition, business associations have participated in making decisions on the financing of R&D projects with a view to introduce a co-financing scheme in R&D projects.

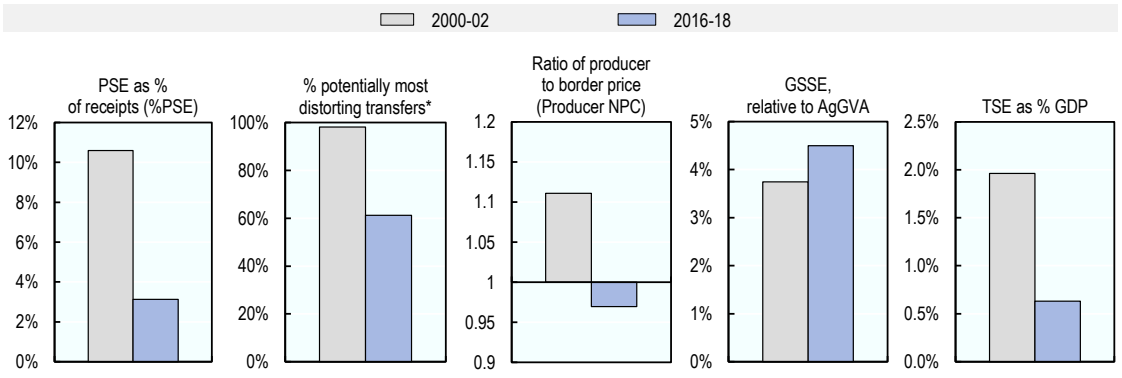
Assessment and recommendations

- While market price support is no longer the sole instrument, all farm support requires production and is hence likely to influence farm production decisions, increase pressure on resources and distort markets.
- Some of the measured negative MPS may be linked to weak infrastructure. A number of infrastructure projects are underway that have the potential to reduce weaknesses in the transport and market infrastructure, facilitate farmers' access to domestic and international markets and improve water and land management. The

focus on infrastructural development should make an important contribution to its international competitiveness and export potential.

- Increased subsidies for fertiliser and chemical inputs and for the use of industrial feed should be assessed in light of their potential negative environmental impact. Furthermore there is a risk of subsidy leakage to the input industry. Current efforts to streamline support to more targeted measures and more transparent attribution conditions should be continued.
- The mandatory crop insurance system should be reformed to increase the role of the crop insurance market.
- The sector's long term productivity should be strengthened by giving producers access to land ownership and long-term rent, by enabling them to better manage market and climate-related risks and by creating incentives for a more efficient and sustainable use of natural resources. Farm decision-making and performance could be improved by developing a national system of extension services.
- Kazakhstan's emission reduction target of 15% by 2030 relative to the 1990 levels (25% conditional on international investments to access low carbon technologies) covers all sectors including agriculture. An agriculture-specific target or reduction plan, however, has not been defined. Given that agriculture accounts for 10% of national emissions, a dedicated target should identify to what degree and how agricultural emissions are to be reduced.

Figure 16.1. Kazakhstan: Development of support to agriculture

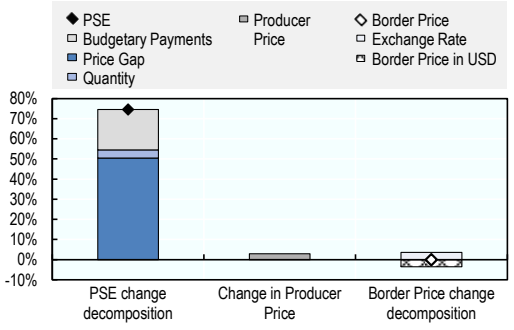


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933937985

Support to agricultural producers as measured by the %PSE was estimated to 3% of gross farm receipts on average in 2016-18. The share of gross producer transfers (whether positive or negative, i.e. expressed in absolute terms) arising from potentially **most distorting** measures (support based on output and variable input use – without input constraints) has gone down from 98% in the early 2000s to 61% on average in 2016-18. Domestic prices were lower than world prices for several crops, with negative MPS corresponding to -9% of gross farm receipts, but slightly higher than world prices for livestock commodities. Overall, the average prices received by farmers are 3% below world prices. **Support to general services** (GSSE) represents 4.5% of agricultural value added in the most recent period, an increase from 3.7% in 2000-02. This reflects the setting up of basic services including pest and disease inspection and control as well as institutional and market infrastructures. **Total support to agriculture** (TSE) as % of GDP declined to 0.6%, but the **Total Budgetary Support Estimate** (TBSE) as % of GDP increased to 1.1%. The share of GSSE in TSE increased from 16% in 2000-02 to 24% in 2016-18. In 2018, the MPS was less negative than in 2017, driven by price changes on domestic and world markets. Reflecting individual commodity price gaps, SCTs were strongly negative for rice and sunflower and slightly positive for livestock products.

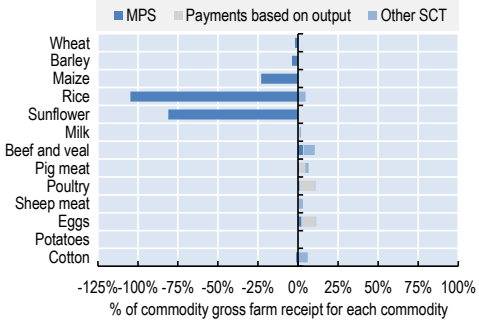
Figure 16.2. Kazakhstan: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933938004

Figure 16.3. Kazakhstan: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933938023

Table 16.1. Kazakhstan: Estimates of support to agriculture

Million USD

	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**3 367**	**12 063**	**10 723**	**12 481**	**12 985**
***of which:** share of MPS commodities (%)*	76.6	60.2	58.6	59.9	62.0
Total value of consumption (at farm gate)	**3 017**	**11 289**	**10 139**	**11 768**	**11 959**
Producer Support Estimate (PSE)	**357**	**406**	**-32**	**466**	**785**
Support based on commodity output	339	-359	-747	-307	-24
Market Price Support[1]	339	-447	-863	-368	-111
Positive Market Price Support	425	118	49	92	213
Negative Market Price Support	-86	-566	-913	-461	-324
Payments based on output	0	88	116	62	87
Payments based on input use	18	682	607	692	748
Based on variable input use	8	168	138	173	193
with input constraints	0	0	0	0	0
Based on fixed capital formation	10	506	462	511	546
with input constraints	0	0	0	0	0
Based on on-farm services	0	8	7	9	9
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	0	81	106	78	59
Based on Receipts / Income	0	0	0	0	0
Based on Area planted / Animal numbers	0	81	106	78	59
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	2	2	2	2
Percentage PSE (%)	**10.6**	**3.1**	**-0.3**	**3.5**	**5.7**
Producer NPC (coeff.)	**1.11**	**0.97**	**0.93**	**0.98**	**1.00**
Producer NAC (coeff.)	**1.12**	**1.03**	**1.00**	**1.04**	**1.06**
General Services Support Estimate (GSSE)	**67**	**285**	**260**	**286**	**311**
Agricultural knowledge and innovation system	3	37	37	34	40
Inspection and control	29	136	119	139	149
Development and maintenance of infrastructure	28	102	93	101	111
Marketing and promotion	0	5	4	5	5
Cost of public stockholding	5	0	0	0	0
Miscellaneous	1	7	6	6	7
Percentage GSSE (% of TSE)	**15.8**	**24.4**	**39.5**	**23.3**	**19.1**
Consumer Support Estimate (CSE)	**-385**	**765**	**1 007**	**718**	**571**
Transfers to producers from consumers	-356	299	628	228	41
Other transfers from consumers	-25	-1	0	1	-4
Transfers to consumers from taxpayers	0	480	429	475	537
Excess feed cost	-4	-12	-49	14	-2
Percentage CSE (%)	**-12.8**	**7.1**	**10.4**	**6.4**	**5.0**
Consumer NPC (coeff.)	**1.14**	**0.97**	**0.94**	**0.98**	**1.00**
Consumer NAC (coeff.)	**1.15**	**0.93**	**0.91**	**0.94**	**0.95**
Total Support Estimate (TSE)	**424**	**1 172**	**657**	**1 226**	**1 633**
Transfers from consumers	381	-298	-628	-229	-37
Transfers from taxpayers	68	1 471	1 284	1 454	1 674
Budget revenues	-25	-1	0	1	-4
Percentage TSE (% of GDP)	**2.0**	**0.6**	**0.5**	**0.8**	**..**
Total Budgetary Support Estimate (TBSE)	**85**	**1 619**	**1 520**	**1 595**	**1 743**
Percentage TBSE (% of GDP)	**0.4**	**1.1**	**1.1**	**1.0**	**..**
GDP deflator (2000-02=100)	**100**	**608**	**589**	**627**	**..**
Exchange rate (national currency per USD)	**147.38**	**334.85**	**342.16**	**325.30**	**337.07**

.. 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 (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

Kazakhstan is an upper middle-income economy, 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 an exporter of mineral fuels and its share of trade in GDP is substantially higher than the corresponding value for all countries analysed in the report. Agriculture contributes about 4% of GDP and employs 18% of the country's working age population. The farm structure is dualistic: large-scale and often highly integrated operations dominate the grain sector, while rural households produce the majority of beef and milk.

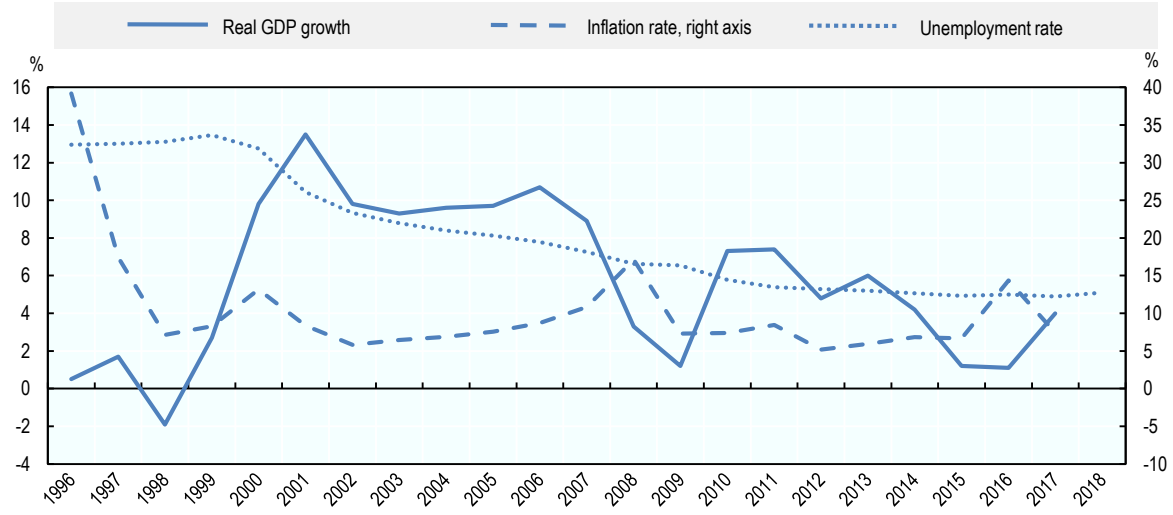
Table 16.2. Kazakhstan: Contextual indicators

	Kazakhstan		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	96	476	0.3%	0.5%
Population (million)	16	18	0.4%	0.4%
Land area (thousand km²)	2 700	2 700	3.4%	3.3%
Agricultural area (AA) (thousand ha)	217 187	216 992	7.2%	7.3%
			All countries[1]	
Population density (inhabitants/km²)	6	7	48	60
GDP per capita (USD in PPPs)	6 039	26 410	7 642	21 231
Trade as % of GDP	27	24	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	12.3	4.4	3.3	3.5
Agriculture share in employment (%)	39.7	18.0	-	-
Agro-food exports (% of total exports)	2.0	5.0	8.1	7.5
Agro-food imports (% of total imports)	0.7	11.5	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	54	55	-	-
Livestock in total agricultural production (%)	46	45	-	-
Share of arable land in AA (%)	16	14	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

GDP growth accelerated to 4.0%, in 2017 from 1.2% in 2015 and 1.1% in 2016. Unemployment has been on a steady decline and reached its lowest level in 2017 at 4.9%. Kazakhstan is a net agro-food importer since the mid-2000s while one of the world's largest wheat exporters. More than 60% of agro-food exports are in primary commodities, of which 82% go to processing. More than 60% of agro-food imports are in processed commodities, of which 78% are for final consumption.

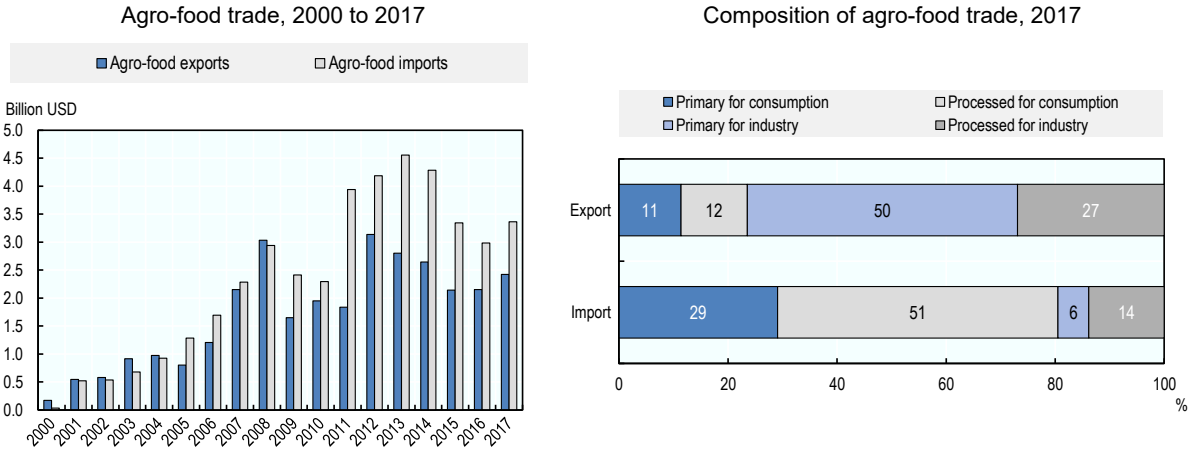
Figure 16.4. Kazakhstan: Main economic indicators, 1996 to 2018



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

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Figure 16.5. Kazakhstan: Agro-food trade



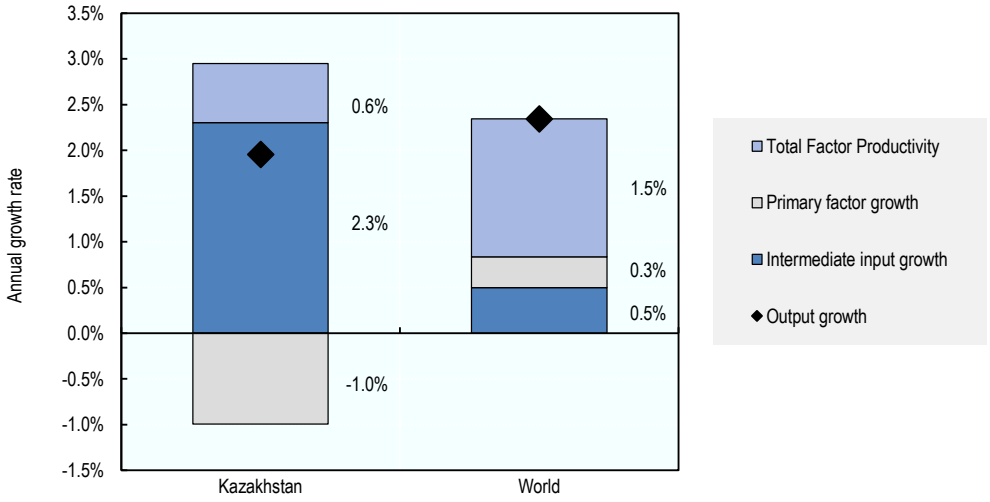
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

StatLink https://doi.org/10.1787/888933938061

The average annual Total Factor Productivity (TFP) growth rate of 0.6% between 2006 and 2015 is low when compared to the world average, and has fallen significantly relative to the 1990s. Still, output grew by 2.0% per year, thanks to strong growth in the use of intermediate inputs and in spite of a reduction in the use of primary factors. Agriculture's share of energy use declined considerably between 1991-2000 and 2006-15. Agriculture's share of greenhouse gas (GHG) emissions also fell during the period but remained above the OECD average in line with the higher contribution of agriculture to the country's GDP.

The share of irrigated land remains low at 1%. A high share of pasture land leads to significantly low level of nitrogen balance.

Figure 16.6. Kazakhstan: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

StatLink https://doi.org/10.1787/888933938080

Table 16.3. Kazakhstan: Productivity and environmental indicators

	Kazakhstan		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	5.8%	0.6%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha[1]	5.4	1.9	33.2	30.0
Phosphorus balance, kg/ha[1]	0.8	0.6	3.7	2.3
Agriculture share of total energy use (%)	4.6	1.9	1.9	2.0
Agriculture share of GHG emissions (%)	14.5	10.1	8.5	8.9
Share of irrigated land in AA (%)	0.9	1.0	-	-
Share of agriculture in water abstractions (%)	..	..	45.4	42.5
Water stress indicator	..	..	9.7	9.7

Note: * or closest available year. 1. Preliminary data.
Source: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Description of policy developments

Main policy instruments

Since 2017, the State Programme of Agro Industrial Complex Development for 2017-21 (hereafter, the 2021 State Programme) defines the agricultural policy framework in Kazakhstan. It replaced the Programme for the Development of Agro Industrial Complex for 2013-20 (Agribusiness 2020) that had been in place since 2013.

While maintaining the principles from the Agribusiness-2020 Programme, the 2021 State Programme announced 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 such as agricultural machinery, agrichemicals, taxation, trade infrastructure and certification. In addition, some input subsidies including on seed, fertiliser and pesticides were also to be increased. Since the implementation of Agribusiness 2020, sub national budgets subsidise a larger share of agricultural policy instruments.

Kazakhstan is a party to the Paris Agreement on Climate Change. Through its Intended Nationally Determined Contribution, Kazakhstan set an economy-wide target to reduce its total GHG emissions by 15% in 2030 compared to 1990, over a period starting in 2021. This target covers all emissions including from agriculture. A more ambitious target of 25% reduction has also been identified conditional on international investments to access low carbon technologies. Specific targets or reduction plans for the agricultural sector have not been defined.

Kazakhstan applies a range of border and domestic price intervention instruments. Border measures are in large part 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 beef of lower grade and poultry products. A TRQ of 21 000 tonnes applies to imports of fresh, chilled or frozen beef and a 140 000 tonnes TRQ applies to fresh, chilled, or frozen poultry, the latter includes a TRQ of 128 000 tonnes for certain frozen bone-in chicken parts, and another one of 12 000 tonnes for remaining poultry items. Bound rates for in-quota tariffs for these TRQs are set at 15%. Bound rates for over-quota imports are set at 40% and no less than EUR 0.65 (USD 0.77) per kilogramme for poultry products. The tariff on pig meat is set to decline from 30% to 25% by 2020.

Intervention on domestic markets is twofold. The State Commission for the Modernisation of the Economy decides intervention purchases of grains to support domestic producer prices. At the same time, a system of consumption price stabilisation is in place for 29 commodities.[1] Intervention is funded by local budgets and responds to local conditions. Purchase occurs after harvest at market prices and commodities are stored before they are released at below market prices later in the year.

Fodder crops and vegetables are supported by the area payments, while per tonne payments are in place for oilseeds, rice, sugar beet and cotton submitted for processing. The livestock sector is supported by headage and output payments. The Agribusiness 2020 programme and the current 2021 State Programme substantially increased subsidies for purchasing mineral fertilisers. Subsidies apply also to the purchase of high quality seeds. The largest share of support to the livestock sector is distributed through pedigree support. Other forms of support to livestock include silage and fodder subsidies, support for artificial insemination and for the purchase of young cattle for feedlots.

Investment subsidy and concessional credit represent principal forms of support to producers. Loans are provided at reduced interest rates by several credit agencies under the umbrella of the state company KazAgro Holding. Interest rates on agricultural loans and leasing contracts are subsidised by up to 7% and 5% per annum for contracts in KZT and USD, respectively. Concessional credits are granted both for short-term and investment loans. Primary producers also benefit from concessional leasing of machinery, which is additionally exempt from Value Added Tax (VAT). Along with agricultural producers, food processors benefit from concessional credit and leasing of machinery and equipment from credit agencies of KazAgro Holding. In addition to support through state-controlled institutions, subsidies to interest rates and leasing fees are available for loans and leasing contracts provided by both private and commercial banks and companies

Investment subsidies for new operations or the expansion of existing operations became an important support measure applied since 2014. In contrast to interest subsidies on investment loans, which reduce farmers' credit costs, this support covers a share of investment project costs and is provided through a complex approval system. It applies to 39 "priority groups" conditioned on compliance with a number of technical specifications and regulatory rules and has to be approved by regional authorities and, in some circumstances, by the Ministry of Agriculture.

Administered prices apply to predetermined quantities of diesel fuel sold to agricultural producers during the sowing and harvesting periods. Agricultural enterprises and individual farms benefit from special tax regimes with substantial concessions. For example, corporate and family farms enjoy a 70% discount on property tax, social tax, VAT, profit tax, and tax on vehicles. Individual farms of less than 3 500 hectares are eligible for a Single Land Tax, which is set as a percentage of the cadastre value of land owned or used and replaces land tax, property tax, social tax, VAT, profit tax, and tax on vehicles. Since 2015 individual farms have to pay a 10% income tax for physical persons on the income above KZT 150 million (USD 0.4 million).

The President's Edict dated 6 May 2016 imposed a moratorium until 31 December 2021 on the foreseen introduction of private ownership of agricultural land and on the extension of the maximum period of agricultural land rent to foreign entities from 10 to 25 years.

Several infrastructure projects are under construction that may ease constraints to agricultural development in Kazakhstan in general and agro-food export capacity in particular. Among other components, expenditure on general national programme for the development of transport infrastructure "Nurly Zhol" envisages the expansion of the railway network to facilitate access to the Persian Gulf region. The programme was started in 2016 and is expected to increase grain exports by up to 8-10 million tonnes per year and open opportunities for other agro-food exports.

Domestic policy developments in 2018-19

The implementation of the 2021 State Programme began in 2017. In 2018, **area payments** for crop production, and **output and headage payments** for livestock production were reduced, eliminating 20 out of 54 types of the payments. The remaining payments were simplified in order to shorten the application process for subsidies and reduce corruption risks.

In 2018, a new **seed subsidisation mechanism** was introduced, which covers 100% of farmers' expenses to purchase seeds that meet quality standards. The programme reimburses seed producers the full cost of producing the quality seeds distributed to farmers. In return, the farmers are required to return 30% of the subsidies to the Seed

Development Fund, which finances the acquisition and modernisation of machinery and equipment for certified seed producers at preferential interest rates.

Kazakhstan reintroduced interest rate subsidies for acquiring fixed assets and leasing agricultural equipment and livestock, allocating KZT 60 billion (USD 178 million) in 2018. In addition, the rate of the investment subsidy is standardised to 25% of the cost of investment, except for pastures watering, where the subsidy rate remains at 80%.

The government started to consider the transformation of the mandatory crop insurance system to a voluntary insurance scheme with a view to expand crop insurance markets in Kazakhstan. A new subsidy would cover the insurance premium instead of the indemnity. To empower the insurance agents to develop insurance products, an electronic platform would be created to monitor fields based on remote sensing data.

Kazakhstan restructured the **agricultural R&D system** in 2018, consolidating 23 Research Institutes (SRI) to 12 and increasing the number of agricultural experimental stations. In addition, business associations have participated in making decisions on the financing of R&D projects with a view to introduce a co-financing scheme in R&D projects.

The transition period for replacing **value-added tax** preferences for domestic producers and processors in agriculture to a WTO compatible subsidy mechanism came to an end on 1 January 2018 (WTO, 2015[2]). Preferences were eliminated, however a new replacement system is not yet in place.

Trade policy developments in 2018-19

Kazakhstan is a participant to the Treaty on the Eurasian Economic Union (EAEU) since its establishment in 2015. This body unifies five countries – Armenia, Belarus, Kazakhstan, Kyrgyzstan and the Russian Federation. Custom procedures between the signatories are simplified and mostly carried out electronically. Beyond free trade and common customs territory, the EAEU guarantees the free movement of labour and capital and sets a common framework for economic policies in its member-states. On 1 January 2018, the Treaty approving the EAEU Unified Customs Code entered into force.

Kazakhstan's border measures are implemented within the Customs Union of the EAEU and a number of national competences in the area of custom regulations are transferred to the EAEU, including SPS and technical regulations.

As a member of the EAEU, efforts to harmonise veterinary and phytosanitary standards are on-going with several export destinations, including the People's Republic of China (hereafter "China"), Iran and Saudi Arabia. Future harmonisation negotiations are planned with Israel, Kuwait, Malaysia, Japan, South Korea and the European Union. The harmonisation of veterinary requirements relates to beef, sheep and camels, to varieties of honey and to fish. The harmonisation of phytosanitary requirements relates to flax, beans, peas, safflower, melon seeds, alfalfa and oil cake. In 2018, Kazakhstan and China signed a number of sanitary and phytosanitary protocols on the export of agricultural products, including beef, rapeseed and alfalfa.

Notes

[1] Much of the negative price support measured for crops may be related to weak infrastructure rather than to active public policy intervention. Wider price distortions at individual commodity levels offset each other in the aggregate measurement.

[1] Intervention varies depending on local conditions. It is implemented for flour (grade 1 and extra class), buckwheat, millet, oats, sugar, rice, potatoes, onions, carrots, beets, peas, cabbage, milk, butter, yoghurt, cheese, curd, beef, lamb, poultry meat, eggs, manna groats, pearl barley, pasta, sunflower-seed oil, oil 49% spread, tea and salt.

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WTO (2015), *"Overview of Kazakhstan's accession protocol commitments", World Trade Organization*, https://www.wto.org/english/news_e/news15_e/kazakhannex_e.pdf. [2]

Chapter 17. Korea

Support to agriculture

Korea has gradually reduced its support to agriculture relative to its gross farm receipts, and modest progress has been made towards more market-oriented agricultural policies in the last decade. The level of producer support of gross farm receipts (%PSE) has decreased from 70% in 1986-88 to 52% in 2016-18, however, it is almost three times the OECD average. Market price support (MPS) dominates in producer support, maintained by a system of tariff rate quotas (TRQs) with high out-of-quota tariffs.

The government has introduced a range of direct payment programmes from the late 1990s, initiated a variable payment for rice and an agricultural insurance scheme from 2005. The share of budgetary payment has decreased in 2018, due mainly to the reduction of variable payments on rice.

In total support, support to general service (GSSE) accounted for 13%. The expenditure on the development and maintenance of infrastructure accounted for 62% of the GSSE. Total support to agriculture (TSE) as a percentage of GDP has declined from 8.6% in 1986-88 to 1.8% in 2016-18, mainly because of overall economic growth.

Main policy changes

Enhancing productivity has been a core goal of agricultural policies in Korea. However, more diversified objectives to meet various societal demands towards agriculture and rural areas have been set in the policy plan for 2018-22.

The government plans to introduce a new direct payment system that would integrate payments for rice, upland crops and less favoured areas. In 2019, the grounds for a new programme are being laid, which includes setting an action plan and discussing with stakeholders. To alleviate the current dependence of rice farmers on direct payments, incentives for crop diversification such as support to drainage, seeds and agricultural machines have been provided since 2018. The subsidised agricultural insurance programme continues to increase its commodity coverage to 78 agricultural products in 2019.

For sustainability, the diversification of energy supplies towards renewable source, including solar power has expanded in Korean agriculture. The regulation on pesticide use was converted from a negative list system to a positive one from 2019. As a result, from January 2019, only pesticides registered on the list are allowed for use in Korea, whether they are produced domestically or imported, and the use of unregistered pesticides is prohibited. As a way of managing livestock diseases, tightened criteria have been implemented for livestock production facilities including storage and handling of manure.

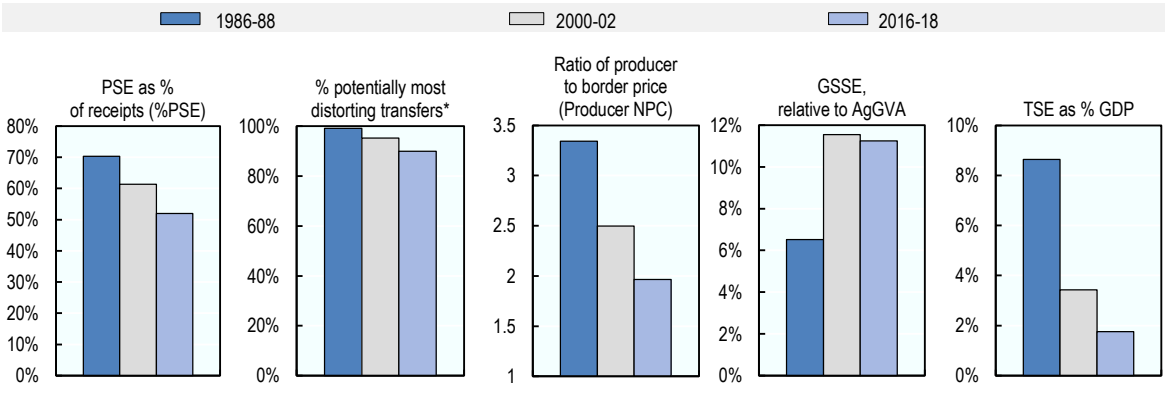
To promote innovation and improve the competitiveness of agriculture, the Smart Agriculture Project making use of Information and Communications Technology (ICT) has been a priority for public expenditure since 2014. The project covers not only collaboration

with producers, retailers and ICT industries but also the settlement of a younger generation in rural areas.

Assessment and recommendations

- Korea has made some progress towards agricultural policy reform since the early 2000s, but support to producers remains almost three times the OECD average, and continues to be dominated by market price support (MPS), which distorts production decisions.
- Agricultural policies should be reoriented towards enhancing long-term competitiveness and improving sustainability. In the future agricultural policy set, reforms of direct payment schemes are likely to play a crucial role. Careful planning of their implementation is required in order to decouple these payments further from specific commodity production and price, and target them to explicit societal objectives, such as environmental protection and the provision of public goods.
- The agricultural insurance scheme has consistently increased its coverage. However, the share of government subsidies to insurance schemes is still high, which hinders market-based decisions and on-farm risk management. The subsidy rate should be gradually reduced and the role of the private sector should be increased. The government should increasingly focus on providing the necessary information on crop growth and markets to the private sector in order to facilitate the development of agricultural insurance markets.
- Promoting environmental-friendly agriculture and preserving the ecosystem need to become priorities to assure long-term growth in agriculture. Given the high surpluses of nitrogen and phosphate, there is room to reduce them and hence improve environmental performance. The policy instruments should be based more on the polluter-pays principle, while the current scheme has been implemented mainly through producer incentives such as abolishing input subsidies and providing direct payment schemes.
- Public investment in agricultural research and development (R&D) and innovation has grown over time. Particularly, the Smart Agriculture Project has been a priority for public expenditure since 2014. However, the current government-led R&D scheme has a financial limitation to meet all the diverse needs of producers and markets. By encouraging investment and participation of the private sector in these R&D projects, a more competitive and demand-driven system could be established. The government should focus its engagement more on areas of public interest where the private sector would under-invest, and co-operation between the public and private sectors needs to be strengthened.
- Policies encouraging farmers to use renewable energy helps long-term sustainability of agriculture. In order for renewable energy sources to settle in rural areas, the government should increase efforts to enhance participation of farmers in public or private projects promoting renewable energy.

Figure 17.1. Korea: Development of support to agriculture

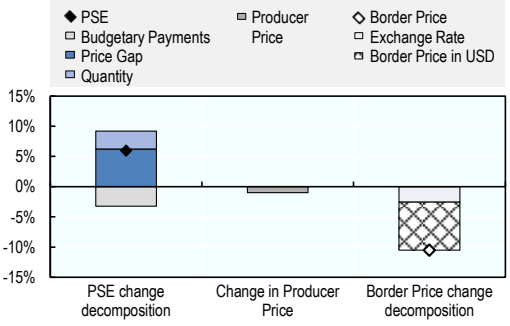


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933938099

Support to producers (%PSE) has declined gradually over the long term, but still represented about 52% of gross farm receipts on average in 2016-18, close to 3 times higher than the OECD average. The share of potentially **most distorting transfers** (based on output and variable input use – without input constraints) still dominates at 90% of that total (Figure 17.1). Increased producer support in 2018 was largely due to a larger price gaps between domestic and border prices, as border prices declined more than domestic prices (Figure 17.2). Prices received by farmers were almost twice the level on world markets as measured by the NPC in 2016-18. Transfers to specific commodities, mainly MPS, represented 93% of total support to farms in 2016-18. The share of the Single Commodity Transfers (SCT) in commodity gross farm receipts is over 60% for soybeans, red pepper, barley, garlic, and pig meat (Figure 17.3). The expenditures for **general services** (GSSE), mainly directed to development and maintenance of infrastructure, were equivalent to 11.2% of the agricultural value added in 2016-18, well above the OECD average. **Total support to agriculture** (TSE) as a share of GDP has declined significantly from 8.6% in 1986-88 to 1.8% in 2016-18, however, it remains 1.7 times higher than the OECD average.

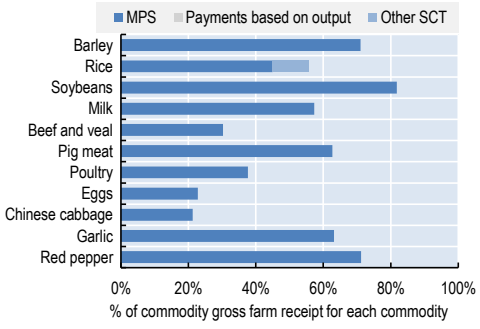
Figure 17.2. Korea: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933938118

Figure 17.3. Korea: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933938137

Table 17.1. Korea: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**16 985**	**26 360**	**42 175**	**40 790**	**41 946**	**43 789**
***of which:** share of MPS commodities (%)*	72.0	63.3	60.6	60.6	61.0	60.1
Total value of consumption (at farm gate)	**17 930**	**31 515**	**55 965**	**51 690**	**54 162**	**62 042**
Producer Support Estimate (PSE)	**12 086**	**16 815**	**23 252**	**20 997**	**23 342**	**25 418**
Support based on commodity output	11 966	15 853	20 746	18 785	20 341	23 112
Market Price Support[1]	11 966	15 853	20 746	18 785	20 341	23 112
Positive Market Price Support	11 966	15 853	20 746	18 785	20 341	23 112
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	622	534	632	702
Based on variable input use	29	207	237	219	215	278
with input constraints	4	34	51	55	51	46
Based on fixed capital formation	57	246	226	203	239	237
with input constraints	0	18	83	66	97	85
Based on on-farm services	4	17	159	112	178	187
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	29	490	1 112	920	1 596	821
Based on Receipts / Income	29	292	67	66	64	70
Based on Area planted / Animal numbers	0	198	1 045	854	1 531	751
with input constraints	0	160	43	42	38	48
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	772	758	774	785
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	772	758	774	785
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 (%)	**70.3**	**61.3**	**52.0**	**48.8**	**51.9**	**55.1**
Producer NPC (coeff.)	**3.34**	**2.50**	**1.97**	**1.85**	**1.94**	**2.12**
Producer NAC (coeff.)	**3.37**	**2.59**	**2.08**	**1.95**	**2.08**	**2.23**
General Services Support Estimate (GSSE)	**1 066**	**2 676**	**3 586**	**3 559**	**3 561**	**3 639**
Agricultural knowledge and innovation system	67	243	726	859	642	677
Inspection and control	26	126	298	267	284	343
Development and maintenance of infrastructure	467	1 811	2 218	2 149	2 290	2 216
Marketing and promotion	0	26	40	43	38	40
Cost of public stockholding	505	471	303	240	306	363
Miscellaneous	0	0	0	0	0	0
Percentage GSSE (% of TSE)	**8.0**	**13.7**	**13.4**	**14.5**	**13.2**	**12.5**
Consumer Support Estimate (CSE)	**-11 832**	**-17 503**	**-25 860**	**-22 562**	**-25 024**	**-29 995**
Transfers to producers from consumers	-11 684	-15 499	-19 619	-17 750	-19 228	-21 878
Other transfers from consumers	-221	-2 096	-6 276	-4 843	-5 831	-8 154
Transfers to consumers from taxpayers	73	93	35	31	35	37
Excess feed cost	0	0	0	0	0	0
Percentage CSE (%)	**-66.1**	**-55.4**	**-46.2**	**-43.7**	**-46.2**	**-48.4**
Consumer NPC (coeff.)	**2.97**	**2.25**	**1.86**	**1.78**	**1.86**	**1.94**
Consumer NAC (coeff.)	**2.95**	**2.24**	**1.86**	**1.78**	**1.86**	**1.94**
Total Support Estimate (TSE)	**13 225**	**19 584**	**26 873**	**24 587**	**26 938**	**29 094**
Transfers from consumers	11 905	17 596	25 895	22 593	25 059	30 032
Transfers from taxpayers	1 541	4 085	7 254	6 837	7 710	7 217
Budget revenues	-221	-2 096	-6 276	-4 843	-5 831	-8 154
Percentage TSE (% of GDP)	**8.6**	**3.4**	**1.8**	**1.7**	**1.8**	**1.8**
Total Budgetary Support Estimate (TBSE)	**1 258**	**3 731**	**6 127**	**5 802**	**6 597**	**5 983**
Percentage TBSE (% of GDP)	**0.8**	**0.7**	**0.4**	**0.4**	**0.4**	**0.4**
GDP deflator (1986-88=100)	**100**	**211**	**291**	**286**	**293**	**295**
Exchange rate (national currency per USD)	**812.03**	**1 224.03**	**1 130.47**	**1 160.59**	**1 130.64**	**1 100.19**

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, cabbage, rice, soybean, milk, beef and veal, pig meat, poultry and eggs.

Source: OECD (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

Featuring a relatively high GDP per capita, Korea is a land-scarce country with the highest population density among OECD countries. Moreover, only 18% of the land area is used for farming, and this area has been reduced by 17% over the period 1995-2017; 84% of agricultural land is arable. Crops account for about 60% of the total value of agricultural production, a declining share compared to the mid-1990s as the livestock sector expanded rapidly to meet a growing domestic demand. Most farms are small family farms with less than 2 hectares of agricultural land. Land consolidation is very slow with the share of land cultivated by farms with more than 5 hectares below 3.6% in 2017.

The importance of agriculture in the economy has been decreasing rapidly, its share in GDP and employment more than halving since 1995 to reach 2.2% of GDP and 4.8% of employment in 2017. Agro-food products accounted for 5.3% of total imports and 1.1% of total exports.

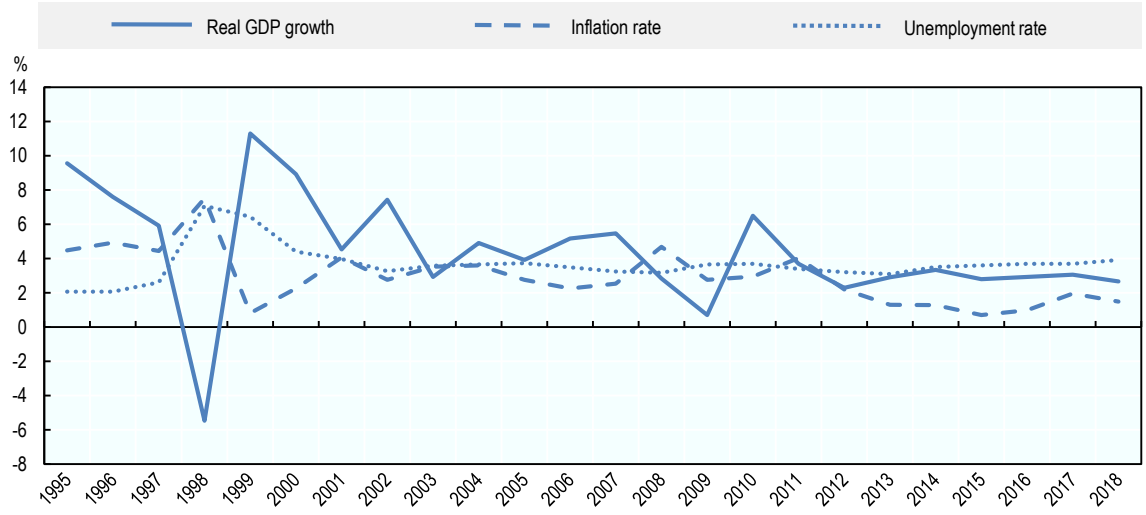
Table 17.2. Korea: Contextual indicators

	Korea		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	600	1 998	2.0%	1.9%
Population (million)	45	51	1.2%	1.1%
Land area (thousand km^2)	96	97	0.1%	0.1%
Agricultural area (AA) (thousand ha)	2 048	1 701	0.1%	0.1%
			All countries[1]	
Population density (inhabitants/km^2)	453	513	48	60
GDP per capita (USD in PPPs)	13 296	38 350	7 642	21 231
Trade as % of GDP	23	34	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	5.9	2.2	3.3	3.5
Agriculture share in employment (%)	11.8	4.8	-	-
Agro-food exports (% of total exports)	1.3	1.1	8.1	7.5
Agro-food imports (% of total imports)	7.0	5.3	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	77	60	-	-
Livestock in total agricultural production (%)	23	40	-	-
Share of arable land in AA (%)	87	84	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

Since 2000, the Korean economy has enjoyed dynamic growth and low levels of unemployment. Annual inflation rates have decreased to levels below 2% since 2013. Korea is one of the largest net agro-food importers in the world. Since 2011, however, the agro-food trade deficit has declined as exports increased while imports remained relatively stable. While over 85% of agro-food exports are products for final consumption, about half of imports are for further processing by the Korean industry. Key imported agricultural commodities include maize, soybeans and wheat for animal feed.

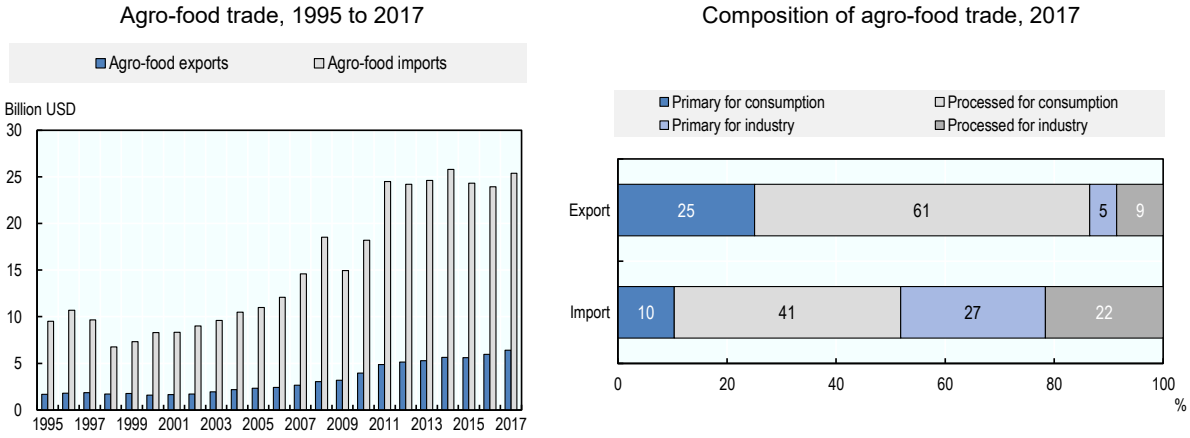
Figure 17.4. Korea: Main economic indicators, 1995 to 2018



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

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Figure 17.5. Korea: Agro-food trade



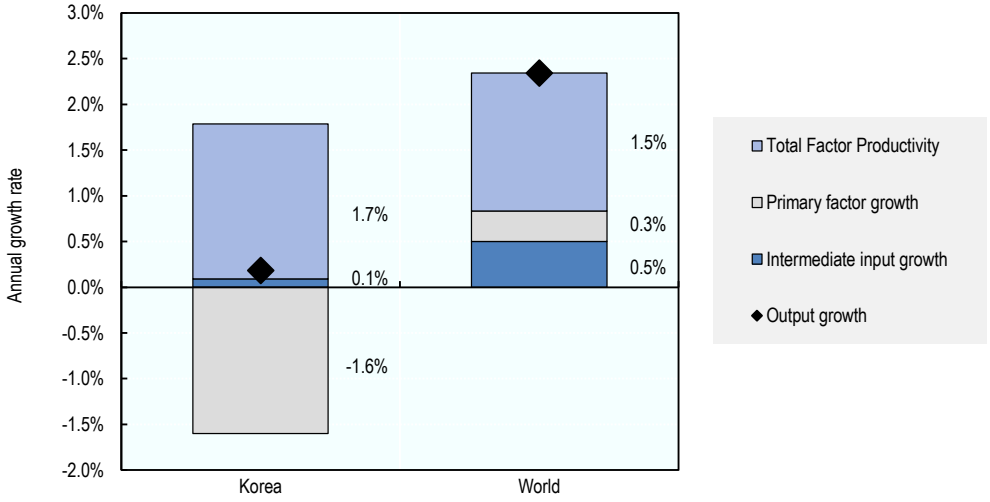
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

StatLink https://doi.org/10.1787/888933938175

At 1.7% per year, total factor productivity (TFP) growth in Korea was slightly higher than the global average over the period 2006-15. It helped maintain production with lower use of primary production factors, in particular land and labour. Nutrient surplus results from high fertiliser use and livestock density linked to land scarcity. Although the level of nutrient surplus per hectare has declined over the last two decades, it is still significantly above the OECD average. Greenhouse gas (GHG) emissions from agriculture slightly decreased. This was a combination of the reduction of methane and nitrous oxide emissions, due to lower rice area and associated fertiliser use, which was partly offset by

higher methane emissions due to an increase in livestock numbers. The share of agriculture in water consumption is higher than the OECD average since rice paddy fields account for close to 53% of agricultural land area.

Figure 17.6. Korea: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

StatLink https://doi.org/10.1787/888933938194

Table 17.3. Korea: Productivity and environmental indicators

	Korea		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	4.0%	1.7%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha	258.2	221.9	33.2	30.0
Phosphorus balance, kg/ha	57.5	46.3	3.7	2.3
Agriculture share of total energy use (%)	2.8	0.9	1.9	2.0
Agriculture share of GHG emissions (%)	5.3	3.0	8.5	8.9
Share of irrigated land in AA (%)	44.2	42.8	-	-
Share of agriculture in water abstractions (%)	62.7	60.6	45.4	42.5
Water stress indicator	32.1	33.0	9.7	9.7

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

Description of policy developments

Main policy instruments

Tariffs and tariff rate quotas (TRQs) are among the main policy instruments for market access and related market price support accounted for 90% of the producer support estimate in 2018. In-quota rates range from 0% to 50% while out of quota rates are between 9% and 887%. With the conclusion of the Uruguay Round, trade restrictions on all agricultural products except rice were converted to tariffs. Non-tariff measures on rice were replaced by a tariff scheme from 1 January 2015, with a tariff rate of 513% on imported rice (this tariff rate is still under process of verification by the WTO). A TRQ volume of 408 700 tonnes is maintained at a 5% tariff rate. Rice is imported exclusively by state trading enterprises (STEs).

A public stockholding scheme for rice, also known as the Public Storage System for Emergencies, was established in 2005. Under this scheme, the government purchases rice from farmers at the market price during the harvest season and releases the stocks during the non-harvest season at the market prices. The government purchase programme for soybeans dates back to 1968. Purchased quantities have increased in recent years due to efforts to encourage crop diversification from rice to other commodities.

Direct payment programmes have been implemented starting from 1997. Today's programmes include early retirement payments, a rice income compensation, and payments for the promotion of environmentally-friendly agriculture, for maintaining agriculture in less favoured areas, and for rural landscape conservation.

The most important direct payment programme is the rice income compensation scheme introduced in 2005. This scheme includes both fixed and variable payments. While the fixed payment is a decoupled income support based on farm size, the variable payment is determined according to the difference between a target price and each year's harvest-period price. If the harvest-period price is lower than the target price, farmers receive 85% of the difference, after deduction of the fixed payment. The target price is adjusted very five years reflecting the five-year price change.

The agricultural disaster insurance scheme, initially introduced for apples and pears in 2001, was gradually extended to 62 crops and 16 livestock categories by 2019. The government subsidises 50% of the insurance premium. A pilot project of an agricultural revenue insurance scheme was introduced for onions, soybeans and grapes in 2015, and the number of commodities covered increased in 2019 by adding Chinese cabbage, daikon, pumpkin, carrot, and scallion.

The 2007 Framework Act on Agriculture, Rural Community and Food Industry lays out the basic policy principles in agriculture, on which five-year implementation plans are established. The plan for 2018-22 has four main policy targets: strengthening the income safety net; innovation for sustainable agriculture; enhancing food safety in the supply chain; and improving rural welfare. Specific measures to pursue these objectives are included in Box 17.1. The Plan also foresees a strengthening of bottom-up participation in policy.

Box 17.1. Korea: Agriculture and Rural Community and Food Industry Development Plan for 2018-22

1. Strengthening income safety net

- Reduction of the area of rice paddy fields by providing incentives such as support to drainage, seeds and agricultural machines for other crops.
- Direct payments for rice less coupled with production.
- Strengthened environmental cross-compliance in the direct payment scheme.
- Expansion of crop insurance programmes.
- Promotion of rural diversification (food industry, tourism) to generate non-farm income for farmer households.

2. Innovation for sustainable agriculture

- Comprehensive support to young start-up farmers.
- Integration of digital technology into agriculture in production, distribution and risk management.
- Promotion of renewable energy production on farms, including photovoltaic, biomass and geothermal heat.

3. Enhancing food safety in supply chain

- Development of a bio-security system focusing on animal disease prevention.
- Support for environmentally-friendly livestock industry practices to reduce pollution.
- Development of a comprehensive animal-welfare road-map to provide standards for facilities, maintenance and rearing density.
- Development of a labelling system informing consumers about animal welfare and health in each livestock farm.
- Improvement of the pesticide registration and traceability management system.

4. Improving rural welfare

- Enhanced direct payments for retirement, farmland pension and basic pension to encourage aged or low-income farmers to retire from production.
- Support to infrastructure including housing, transport and medical facilities.
- Affordable transportation for the elderly and financially disadvantaged.
- Support for rural rental housing with energy saving facilities and barrier-free design.
- Development of a medical outreach service for health check-ups.

5. Bottom-up policy participation

- Agricultural governance to reflect local and regional characteristics.
- Policy design reflecting the opinion of farmers and other economic agents.

Source: Ministry of Agriculture, Food and Rural Affairs (MAFRA).

The five-year (2016-20) promotion plan for environmentally-friendly agriculture sets targets to increase the share of pesticide-free (including organic) cultivation area and more generally to reduce the input of chemical fertilisers and pesticides in crop production through strengthening current direct payments for the promotion of environmentally-friendly agriculture, and support for organic fertiliser use.

Korea has increased investment on "smart farms", using smartphones and remote control to check the crop growth information in real-time. As a result, the number of smart farms is on the rise since 2014.

Support for people moving to farm villages and rural areas to newly join the agricultural industry has been strengthened, in order to revive the rural community. Centres for people who return to farm villages and rural areas were created to provide advisory service and information on relocation policies and housing availability. Also, these centres run training programmes on farming technology, processing and distribution of agricultural products, and rural lifestyle.

Korea has fifteen bilateral and regional Free Trade Agreements (FTAs) in force. Rice is excluded from tariff concessions in all the existing FTAs, but significant tariff concessions for livestock and fruit products are included in some of the FTAs (OECD, 2018[2]). Tariffs on beef from the United States, Australia and Canada will be completely eliminated within 15 years after the respective bilateral FTAs have entered into force. It is also agreed to eliminate tariffs on pork originating from the European Union, the United States, Chile and Canada within a maximum of 10 years. Tariffs on chicken meat mainly coming from the United States and the European Union will be abolished within 10 to 13 years after the respective FTAs have come into force.

In the context of the Paris Agreement on Climate Change, Korea has committed to a reduction of its economy-wide GHG emissions by 37% relative to a Business As Usual Baseline in 2030.[1] In December 2016, the Korean government released its Basic National Roadmap for Greenhouse Gas Reductions by 2030. All sectors and all gases are included in the reduction commitment. The Roadmap includes a commitment for agriculture, which is expected to achieve 0.3% of the total reduction commitment. The government is currently undertaking a review of the Roadmap in order to produce an upgraded version. A National Climate Change Adaptation Plan, developed in 2010, is currently being implemented.

Domestic policy developments in 2018-19

A new direct payment programme has come under discussion, which combines the existing direct payments for rice, upland crops and less favoured areas into one scheme. In 2019, the grounds for a new programme are being laid, which includes persuading stakeholders and setting an action plan. The government aims to decouple payments further from production of a specific commodity (for example, rice), and reinforce the environmental cross-compliance of farmers. In addition, to alleviate the current dependence of rice farmers on direct payments, incentives for **crop diversification** such as support to drainage, seeds and agricultural machines have been provided since 2018.

To encourage on-farm risk management, **agricultural insurance** has increased its commodity coverage to 73 products in 2018 and 78 in 2019. The government made efforts to expand the subscription of farmers, by developing more market-based services reflecting structural changes in agriculture.

To promote the **Smart Agriculture Project**, the government has selected four sites in 2018-19 as "Innovation valleys" - smart farm complexes. The complexes are expected to create synergies through partnership or collaboration in the food supply chain, from R&D institutions and producers to food service and retail firms. The project could also attract the younger population to rural areas. The horticulture sector is now the main target, however,

the livestock sector is set to increase its share in total smart farms (the horticulture sector had over three times as many smart farms as the livestock sector in 2018).

Laws and regulations have been revised to expand the share of renewable energies including **solar power sources**. Some of the farmland regulations, which hindered the establishment of solar power facilities on farmland, have been alleviated in 2018. For further usage of renewable energy sources in the future, sustainable business models based on co-operation between firms and farmers have been developing.

From January 2019, **the regulation on pesticide use** has been converted to a positive list system, which targets to prevent overuse or misuse of pesticides, and to manage products over the maximum residue limits of registered pesticides. As a result, only pesticides registered on the list are allowed for use in Korea, whether they are produced domestically or imported, and the use of unregistered pesticides is prohibited. In order to minimise confusion in rural areas and to ensure the soft landing of farmers, consulting services as well as training are provided to farmers. Meanwhile, to monitor compliance with regulations, more people are employed and inspection methods are elaborated.

The criteria for breeding facilities in animal farms have been tightened to prevent animal diseases and manage animal product safety. A comprehensive quarantine policy plan is to be established in 2019, focusing on the prevention of animal diseases and policy measures to block the spread of diseases after outbreak.

Trade policy developments in 2018-19

A multilateral Free Trade Agreement (FTA) negotiation between Korea and Mercosur countries started in 2018. A bilateral FTA negotiation with Mexico and a multinational FTA negotiation on the Regional Comprehensive Economic Partnership Agreement (RCEP) continues in 2019.

Amendments to the Korea-US FTA were agreed in 2018 and the amended FTA came into force in January, 2019. Also, the Korean government is engaged in negotiations for the improvement of current FTAs (or CEPA) with Chile (started in 2004), ASEAN (started in 2007) and India (started in 2010). The FTA with Central American States will become effective when both parties complete their domestic approval procedures.

Tariffication on rice has been implemented since 2015, and the WTO verification procedure with member countries is still under process. Until 2014, the rice tariffication was suspended based on the results of the Uruguay Round and rice negotiation at the WTO in 2004.

Exports of fresh produce, as well as processed foods, has continuously increased, but is largely concentrated on a small set of commodities, including paprika, strawberry, and tomato. The government has been promoting the export diversification by supporting activities such as developing products tailored to local consumers' preference, finding new buyers, conducting overseas market research, and providing market information.

Note

[1] Submission by the Republic of Korea: Intended Nationally Determined Contribution. NDC Registry: http://www4.unfccc.int/ndcregistry/Pages/All.aspx#collapseKORFirst.

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Chapter 18. Mexico

Support to agriculture

Trade liberalisation and domestic policy reforms in the 1990s led to a considerable reduction in the most production and trade distorting support, such as that based on output (including the MPS) and unconstrained use of variable inputs. Support to producers (PSE) accounted for 8% of gross farm receipts in 2016-18. The majority of transfers to producers were in the form of market price support (MPS), and support based on fixed capital formation and variable inputs. Most MPS goes to sugar as it represented 54% of total MPS.

General services (GSSE) expenditures focus on agricultural knowledge and innovation systems and large irrigation infrastructure – these areas absorbed 80% of GSSE spending in 2016-18.

Total support to agriculture was at 0.5% of Mexican GDP in 2016-18 (%TSE) – this percentage has significantly declined over time and is currently similar to the OECD average. Taxpayers provide 80% of these transfers, the remaining 20% coming from consumers. Consumer contribution to agricultural support is due to agricultural prices supported above international levels via price regulations and border measures.

Main policy changes

The government increased by an average of 23% the reference prices that serve to calculate the rates at which it provides support based on output via the Objective Income programme.

The new government, that took office in December 2018, has made several institutional and administrative changes to Mexico's Secretariat of Agriculture and announced new agricultural policies. The Secretariat has been renamed Secretariat of Agriculture and Rural Development (*Sectretaría de Agricultura y Desarrollo Rural - SADER*); it has a smaller structure, with two under-secretariats instead of three, no delegations in the states and is set to operate in 2019 with a budget reduced by 20% compared to 2018.

The SADER concentrates its efforts in four key programmes whose main declared objective is to increase food security: 1) in-kind credits at zero nominal interest rate and no collateral demanded to livestock producers; 2) guaranteed minimum prices for small producers of maize, beans, wheat and milk; 3) subsidies to produce and use fertilisers; and 4) payments based on area for maize, beans, and wheat producers, targeting small and medium holders and indigenous communities. Implementation of these programmes is expected to be completed in 2019.

In November 2018, Canada, Mexico and the United States signed a new trade agreement, the Mexico-United States-Canada Agreement (called *T-MEC* in Mexico). This new agreement will come into effect after ratification by the three countries.

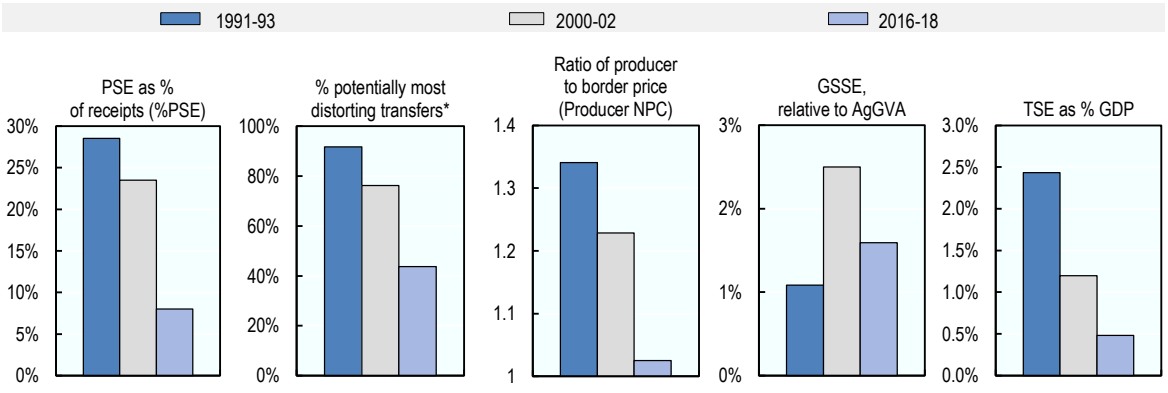
The US Department of Commerce announced plans to withdraw from the 2013 Suspension Agreement on Fresh Tomatoes (SAFT) from Mexico. The SAFT dates from 1996 and

establishes a floor price for Mexican tomato imports into the United States in exchange of suspension of US antidumping investigations.

Assessment and recommendations

- Support to agriculture, expressed as a share on gross farm receipts, and the share of most distorting forms of support, significantly decreased since the 1990s, following Mexico's pro-market agricultural policy reforms. However, this trend have been partly reversed since the 2000s, as some of the particularly distorting forms of support, mainly input-based and market price support, have gained weight.
- These forms of support are inefficient, too costly and can damage the environment.
- The majority of the new programmes —preferential credits, guaranteed minimum prices for small producers and incentives to produce and consume fertilisers— intend to target poor farmers. Nevertheless, they can end up being too costly for their objectives of helping small and poor farmers, threaten water and air quality by increased fertiliser use, crowd out private lending, and be too difficult to phase-out. Agricultural policy should not be the only instrument for helping the rural poor. Investments on public goods, innovation and extension services could be more effective to improve the livelihoods of smallholders and their productivity.
- Land reforms were implemented from 1990, but had limited practical impact. Most farms operate under social land tenure. Although perceived as socially necessary, some of the provisions related to social land tenure are among the factors constraining the sale and use of agricultural land.
- One of the main ecosystem services that Mexican small-scale farmers provide is the preservation and on-farm promotion of agrobiodiversity by utilising local plant genetic resources. A well-designed and targeted system of direct payments for those services could be a more cost-effective scheme for helping poor farmers, and could, at the same time, increase the resiliency of agricultural systems and the genetic diversity of plants.
- Input-linked support should be redirected towards the provision of public goods. Investing in electricity and road infrastructures, particularly in the southern part of the country, price and weather information systems, credit access, agricultural knowledge transfer and research and development could unleash the productivity potential of the agriculture sector, while improving its sustainability and profitability.
- Currently, few support programmes require compliance with good environmental practices. Decoupled payments such as those based on area could be improved by imposing environmental conditionality. Achieving the country's commitments for greenhouse gas (GHG) emission reductions under the Paris Agreement on Climate Change will require additional efforts to improve agricultural practices and should go hand in hand with reducing local and regional environmental pressures, including related to water.

Figure 18.1. Mexico: Development of support to agriculture

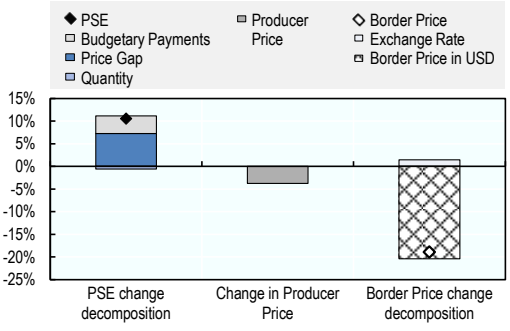


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Support to producers (%PSE) has declined considerably over the long term. During 2016-18, farm support was around 8% of gross farm receipts, less than half the OECD average. The share of potentially most distorting transfers has decreased significantly over time due to a decline in market price support (MPS), falling well below the OECD average (Figure 18.1). Relative to 2017, the level of support increased in 2018 due to a higher MPS, from a larger price gap as domestic prices decreased less than world prices (Figure 18.2), and increased budgetary payments. Prices received by farmers, on average, were some 3% higher than world prices; particularly large differences between sugar and other commodities persist with domestic prices for raw sugar substantially above international reference prices. MPS is the main component of Single Commodity Transfers (SCT) for sugar, dried beans, barley and pig meat. Other forms of product-specific support are particularly relevant for wheat, maize, sorghum, beef and veal, and coffee. Sugar has by far the highest share of SCT in commodity gross farm receipts (Figure 18.3). The expenditures for general services (GSSE) relative to agriculture value added were substantially lower than the OECD average.

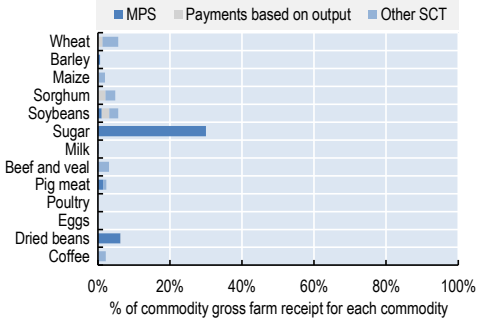
Figure 18.2. Mexico: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Figure 18.3. Mexico: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Table 18.1. Mexico: Estimates of support to agriculture

Million USD

	1991-93	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**28 112**	**31 345**	**52 912**	**48 764**	**53 536**	**56 437**
***of which:** share of MPS commodities (%)*	68.7	66.7	64.7	65.9	63.3	65.0
Total value of consumption (at farm gate)	**26 844**	**31 818**	**52 596**	**54 432**	**53 598**	**49 760**
Producer Support Estimate (PSE)	**8 437**	**7 958**	**4 490**	**4 249**	**4 417**	**4 804**
Support based on commodity output	6 990	5 700	1 306	693	1 479	1 745
Market Price Support[1]	6 938	5 386	1 261	654	1 432	1 698
Positive Market Price Support	6 986	5 418	1 264	661	1 432	1 698
Negative Market Price Support	-47	-32	-2	-7	0	0
Payments based on output	52	315	45	40	47	48
Payments based on input use	1 443	953	2 301	2 537	2 103	2 263
Based on variable input use	746	349	653	736	621	603
with input constraints	0	0	0	0	0	0
Based on fixed capital formation	545	362	1 305	1 444	1 146	1 324
with input constraints	0	4	556	649	495	525
Based on on-farm services	152	241	343	358	336	335
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	3	137	261	251	266	266
Based on Receipts / Income	0	59	0	0	0	0
Based on Area planted / Animal numbers	3	78	261	251	266	266
with input constraints	0	0	88	87	94	84
Payments based on non-current A/An/R/I, production required	0	0	623	768	570	531
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	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 (%)	**28.5**	**23.5**	**8.0**	**8.1**	**7.8**	**8.1**
Producer NPC (coeff.)	**1.34**	**1.23**	**1.03**	**1.01**	**1.03**	**1.03**
Producer NAC (coeff.)	**1.40**	**1.31**	**1.09**	**1.09**	**1.08**	**1.09**
General Services Support Estimate (GSSE)	**1 048**	**621**	**568**	**606**	**573**	**524**
Agricultural knowledge and innovation system	288	304	349	345	353	348
Inspection and control	0	102	105	98	110	108
Development and maintenance of infrastructure	284	112	101	163	98	43
Marketing and promotion	83	103	13	0	13	25
Cost of public stockholding	392	0	0	0	0	0
Miscellaneous	0	0	0	0	0	0
Percentage GSSE (% of TSE)	**10.1**	**6.9**	**10.2**	**11.3**	**10.5**	**9.0**
Consumer Support Estimate (CSE)	**-6 363**	**-5 057**	**-446**	**-65**	**-604**	**-669**
Transfers to producers from consumers	-7 099	-5 468	-952	-581	-1 083	-1 193
Other transfers from consumers	-315	-86	-2	0	-2	-3
Transfers to consumers from taxpayers	852	348	506	511	481	526
Excess feed cost	199	149	2	6	0	0
Percentage CSE (%)	**-24.5**	**-16.1**	**-0.9**	**-0.1**	**-1.1**	**-1.4**
Consumer NPC (coeff.)	**1.38**	**1.21**	**1.02**	**1.01**	**1.02**	**1.02**
Consumer NAC (coeff.)	**1.32**	**1.19**	**1.01**	**1.00**	**1.01**	**1.01**
Total Support Estimate (TSE)	**10 337**	**8 927**	**5 564**	**5 366**	**5 472**	**5 855**
Transfers from consumers	7 414	5 554	954	581	1 085	1 196
Transfers from taxpayers	3 238	3 459	4 612	4 785	4 389	4 662
Budget revenues	-315	-86	-2	0	-2	-3
Percentage TSE (% of GDP)	**2.4**	**1.2**	**0.5**	**0.5**	**0.5**	**0.5**
Total Budgetary Support Estimate (TBSE)	**3 398**	**3 541**	**4 303**	**4 713**	**4 040**	**4 157**
Percentage TBSE (% of GDP)	**0.8**	**0.5**	**0.4**	**0.4**	**0.3**	**0.3**
GDP deflator (1991-93=100)	**100**	**396**	**867**	**818**	**867**	**916**
Exchange rate (national currency per USD)	**3.08**	**9.49**	**18.89**	**18.63**	**18.87**	**19.18**

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, beans, tomatoes, rice, soybean, sugar, milk, beef and veal, pig meat, poultry and eggs.

Source: OECD (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

Mexico has a population of 124 million, ranks as the 11th largest world economy and has a per capita GDP of USD 19 000, below average per capita GDP of countries covered in this report. Agriculture's share on GDP has declined from 4.4% in 1995 to 3.4% in 2017. Trade is an important driver of Mexico's economy: it represents 36% of GDP and has grown 12 percentage points in 20 years. Agro-food trade is a non-negligible fraction of total trade, both in terms of exports and imports, representing 7.7% and 6.3% of each, respectively. In the last two decades, the labour structure of the agriculture sector changed radically from 23% of total workforce in 1995 to the current 13%. While the crop sector still dominates in terms of its contribution to total value of production (58%), the participation of the livestock sector is important (42%).

Since 2015, Mexico registered a positive net agro-food balance. While, most agro-food exports are primary and processed for final consumption, more than half of agro-food imports are intermediate products for further processing.

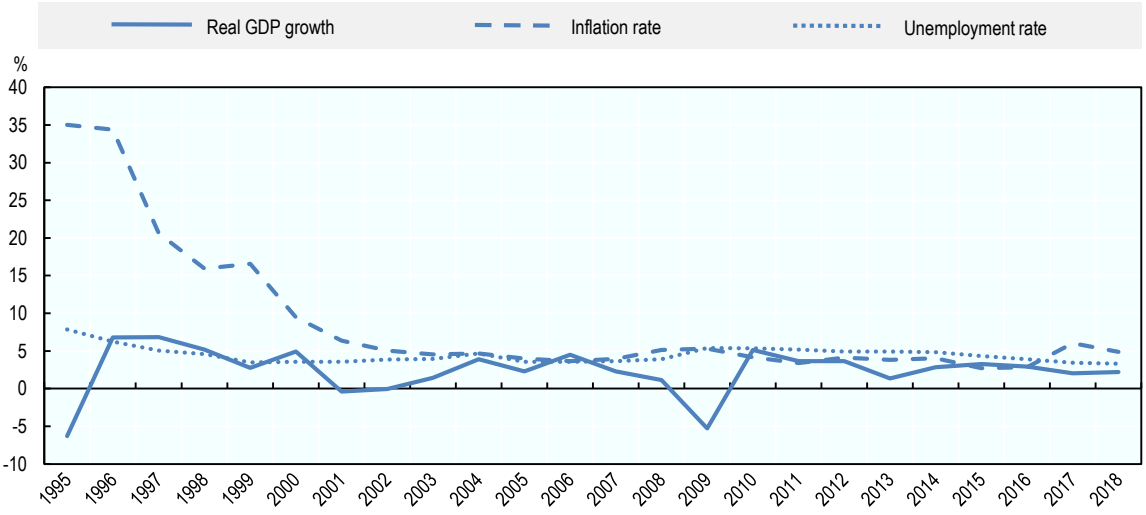
Table 18.2. Mexico: Contextual indicators

	Mexico		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	778	2 425	2.6%	2.4%
Population (million)	94	124	2.5%	2.6%
Land area (thousand km²)	1 944	1 944	2.4%	2.4%
Agricultural area (AA) (thousand ha)	106 195	106 236	3.5%	3.6%
			All countries[1]	
Population density (inhabitants/km²)	48	63	48	60
GDP per capita (USD in PPPs)	8 351	19 093	7 642	21 231
Trade as % of GDP	24	36	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	4.4	3.4	3.3	3.5
Agriculture share in employment (%)	23.4	12.9	-	-
Agro-food exports (% of total exports)	7.3	7.7	8.1	7.5
Agro-food imports (% of total imports)	7.2	6.3	7.4	6.6
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 (%)	21	21	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

Economic growth has remained relatively stable around 2% per year since 2014. The inflation rate rose in 2017 mainly due to energy and food prices linked largely to the liberalisation of the domestic energy market. In 2018, inflation decreased but it is still above the central bank's objective of 3%. Unemployment rate has remained stable around 3% a year, although informality remains elevated at more than 50% of total employment.

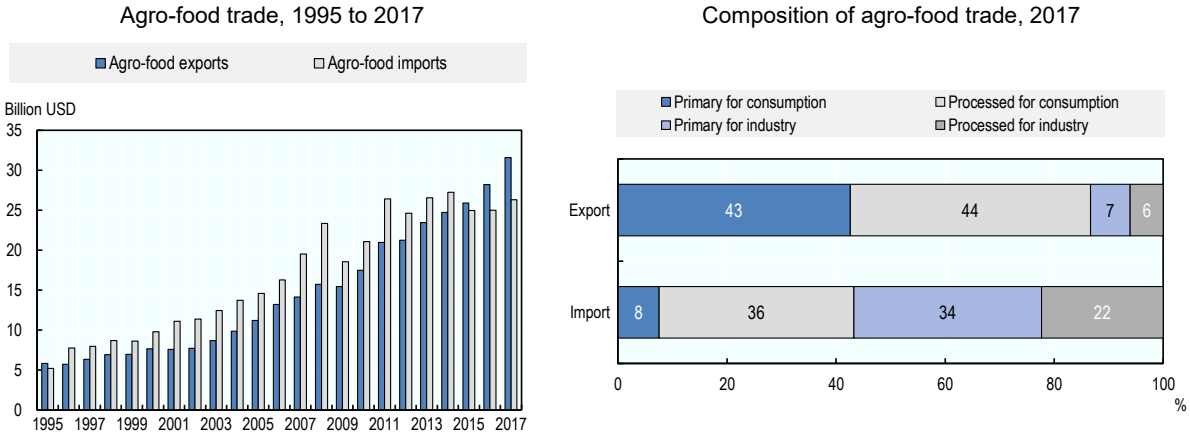
Figure 18.4. Mexico: Main economic indicators, 1995 to 2018



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

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Figure 18.5. Mexico: Agro-food trade

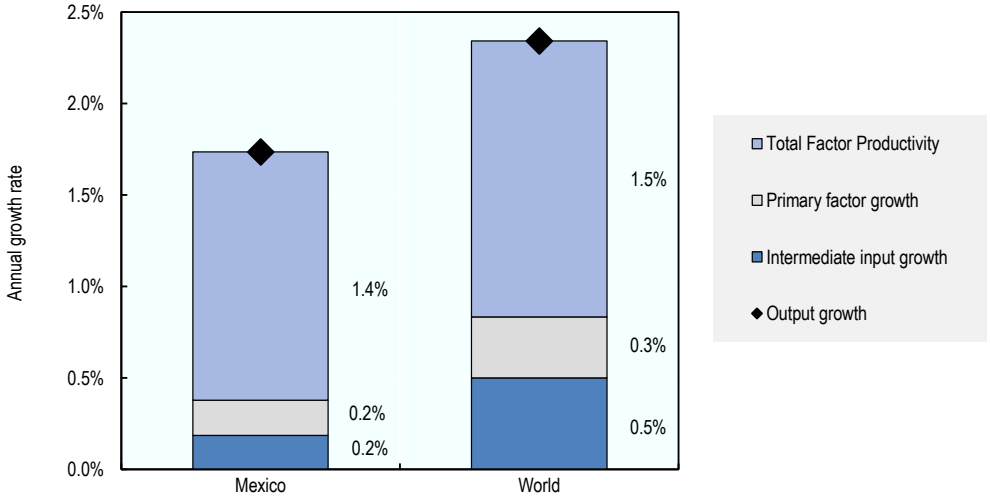


Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

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Agricultural output in Mexico has been increasing predominantly due to the improvements in Total Factor Productivity (TFP), and to a limited extent to more use of intermediate inputs (fertiliser and feed) and primary factors. TFP growth between 2006 and 2015 is estimated similar to the global average, but much less dynamic than during the 1990s. Nutrient balances have increased at higher rates than OECD average, potentially impacting water and air quality. Water stress is well above the OECD average, and agriculture is partly responsible for this pressure due to its share on total water abstractions.

Figure 18.6. Mexico: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

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Table 18.3. Mexico: Productivity and environmental indicators

	Mexico		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	2.8%	1.4%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha	23.5	24.4	33.2	30.0
Phosphorus balance, kg/ha	1.2	2.1	3.7	2.3
Agriculture share of total energy use (%)	2.6	3.4	1.9	2.0
Agriculture share of GHG emissions (%)	20.2	14.9	8.5	8.9
Share of irrigated land in AA (%)	4.9	5.7	-	-
Share of agriculture in water abstractions (%)	84.8	76.3	45.4	42.5
Water stress indicator	15.6	18.3	9.7	9.7

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

Description of policy developments

Main policy instruments

For the period 2013-18, Mexico's agricultural policy was framed within the Sectoral Development Programme for Agriculture, Fisheries and Food. The Programme was broadly oriented at boosting domestic production and strengthening food security, seeking greater self-sufficiency in principal grains and oilseeds. The Programme emphasises increased productivity, profitability and competiveness of the agriculture and food sector and sets the specific objectives on improving the productivity of small farms, reduction of

water use, increased domestic production of agricultural inputs, extension, risk prevention and management, promotion of healthy food, financial inclusion, regional development, expanding information systems and modernising the Ministry of Agriculture.

The Sectoral Programme brought three main changes to programmes providing support to producers. First, PROCAMPO was replaced by Productive PROAGRO which continues to provide area payments, but unlike PROCAMPO that did not require production, the new payments are contingent on proved actual production outlays in, for example, machinery, certified seeds, fertilisers, insurance, and price hedging. Second, after more than 20 years of being stagnant in terms of beneficiaries, the list of beneficiaries was updated and expanded keeping total supported area. Finally, compared to the previous plan, the 2013-18 Sectoral Programme puts a stronger emphasis on investment and on-farm services support, particularly targeting poor and arid areas.

Mexico has reformed its agricultural policies over the last two decades, reducing border protection following its commitments within WTO, NAFTA and other trade agreements and implementing direct payment programmes. Mexican agricultural markets operate today under a fairly open trade regime as the majority of trade flows occurs within regional free trade agreements. However, domestic market price support and payments based on output are still maintained for some key commodities such as sugar, maize, wheat and sorghum. Market price support remains the largest component of support to producers.

Another important type of support takes the form of investment assistance, which mainly covers part of the investment cost or finances the credit guaranty for purchases of on-farm machinery and infrastructure for crop and livestock production, and for the technical upgrading of irrigation systems and cultivation of horticultural crops in greenhouses.

A range of programmes are targeted to small agricultural producers and, more broadly, the rural poor. A special investment support programme operates for small maize and bean growers. The Strategic Project for Food Security (PESA) provides investments and technical assistance, both at individual and community levels, to support farming in marginal and poor areas, by covering up to 90% of the investment costs mostly related to improving water and food supply in poor households, and 100% of technical assistance costs for making the food production and consumption in poor areas more sustainable.

Support for variable inputs is also significant and includes subsidies for price hedging, electricity, irrigation, and crop insurance. Payments based on area and livestock numbers are also important, mostly provided through two programmes: Productive PROAGRO which provides per hectare payments based on historical land area but contingent on production; and Productive PROGAN which offers per head payments based on historical livestock numbers and requires its beneficiaries to comply with certain environmental requirements.

A considerable part of Mexican territory is under social land tenure arrangements – *ejidos*, or agrarian communities – in which special management regimes govern both collective land and land plots granted to individuals. The most recent Agricultural Census (2007) reports that 69% of farms operate under social land tenure, representing 39% of agricultural land.

With slightly over half of the population below the national poverty line, food consumer subsidies are an important poverty alleviation instrument in Mexico. Poor families obtain basic staples through DICONSA rural shops, while the LICONSA programme sells milk at prices below market levels, and the SEDESOL programme provides conditional cash transfers.

Mexico's climate pledge to the Paris Climate Conference in December 2015 includes both unconditional and conditional targets. Mexico has committed to unconditionally lower GHG emissions by 25% and black carbon emissions1 by 51% of business as usual (BAU) levels by 2030. Depending on international support, the GHG target could increase to as much as 40%. In order to achieve such targets, the general strategy for the agriculture sector promotes the adoption of technologies that improve the sustainability of the sector and the use of biodigesters in livestock farms as well as conserving and restoring grasslands.

Domestic policy developments in 2018-19

In May 2018, the government increased by an average of 23% the reference prices that serves to calculate the rates at which it provides deficiency payments via the Objective Income (*Ingreso Objetivo*) programme. Through this programme, the government fixes target prices for contracted production of maize, wheat, sorghum, soybeans, safflower, canola, cotton, rice and sunflower. If the contract price is lower than the target price, the government pays the difference. The new government that took office as of December 2018, has laid out plans to impose minimum price policies that could potentially increase the transfers related to market price support.

The new government has also made several institutional and administrative changes to Mexico's Secretariat of Agriculture and announced new agricultural policies. The Secretariat has been renamed Secretariat of Agriculture and Rural Development (*Sectretaría de Agricultura y Desarrollo Rural - SADER*). The move is part of the government plan to decentralize the federal administration. The new Secretariat is structurally smaller, with two under-secretariats instead of three, no delegations in the states and is set to operate in 2019 with a budget 20% smaller than the one it received in 2018.

The SADER has announced that it would concentrate its efforts in four key programmes whose main declared objective is to increase food security: preferential credits, guaranteed minimum prices for small producers, incentives to produce and consume fertilisers, and payments based on area. Implementation of the programmes is expected to be completed in 2019.

In-kind credits at zero nominal interest rate and no collateral to livestock producers with less than 35 heads and honey producers with no more than 200 hives are provided to farmers located in 13 states: Veracruz, Oaxaca, Chiapas, Guerrero, Yucatán, Campeche, Tabasco, Quintana Roo, Michoacán, Jalisco, Tamaulipas, Nayarit and Zacatecas.

Guaranteed minimum prices will be granted to small producers of maize, beans, wheat and milk. Announced minimum prices are between 26% (wheat) to 58% (maize) higher than observed farm gate prices in 2018. The eligibility criteria vary for different commodities: maize producers with no more than 5 hectares with a cap of 20 tonnes per producer; bean producers with no more than 20 rain-fed hectares or 5 irrigable hectares, with a cap of 15 tonnes per producer; wheat and rice producers of any size with a cap of, respectively, 100 tonnes and 120 tonnes per producer; milk smallholder producers who sell their product to LICONSA – support is capped at 15 litres per day, per cow, and eligible producers are those owning 100 cows or less.

The National Fertiliser Programme encompasses two strategies. One is to increase the domestic production of phosphate and nitrogen fertilisers by subsidising PEMEX, the state-owned oil company, and the second one is to distribute fertilisers to small producers located in poor areas.

Finally, **payments based on area** will target small and medium producers and include producers from indigenous communities. Producers holding no more than 0.2 irrigable hectares or 5 rain-fed hectares will receive MXN 1 600 (USD 85) per hectare and per growing season. Producers with land holdings of between 0.2 irrigated hectares and 5 irrigated areas or holding between 5 and 20 rain-fed hectares will receive MXN 1 000 (USD 53) per hectare and per growing season.

Additionally, the government announced the fusion of LICONSA and DICONSA into SEGALMEX (*Seguridad Alimentaria Mexicana*) or Mexican Food Security. SEGALMEX will be in charge of administering the guarantee minimum price support programme for farmers and the distribution of fertiliser according to the National Fertiliser Programme.

Trade policy developments in 2018-19

In November 2018, Canada, Mexico and the United States signed a new trade agreement, the Mexico-United States-Canada Agreement (called *T-MEC* in Mexico). This new agreement will come into effect after ratification by the three countries. T-MEC preserves the existing agriculture commitments for Mexican products from the North American Free Trade Agreement (NAFTA).

The US Department of Commerce announced plans to withdraw from the 2013 Suspension Agreement on Fresh Tomatoes (SAFT) from Mexico. The SAFT dates from 1996 and establishes a floor price for Mexican tomato imports into the United States in exchange for suspension of US antidumping investigations. The SAFT has been renegotiated several times and its current version will expire in May 2019. If the United States officially withdraws from the suspension agreement, antidumping investigations are set to resume, potentially affecting tomato producers, mostly located in the state of Sinaloa.

Note

[1] Black carbon is particular matter formed by the incomplete combustion of fossil, biofuels and biomass; it is a short-lived but powerful climate warming pollutant.

Chapter 19. New Zealand

Support to agriculture

Since its reform of agricultural policies in the mid-1980s, production and trade distorting policies have almost disappeared in New Zealand, and the level of support to farmers has been the lowest among OECD countries, accounting for less than 1% of farm receipts. Practically all prices are aligned with world market prices. Exceptions are fresh poultry and table eggs (as well as some bee products) which cannot be imported to New Zealand due to the absence of Import Health Standards (required for risk products to be allowed for imports) for these products. Some support for on-farm services mainly related to animal health, and for disaster relief, provide additional farm support to a small extent.

Agricultural policies in New Zealand predominantly focus on animal disease control, relief payments in the event of natural disasters, and the agricultural knowledge and information system. The government also provides support to large-scale off-farm investments in irrigation systems. Over the past decades, the share of agricultural land under irrigation was significantly expanded. Overall, for most of the past two decades, more than 70% of all support was through general services.

Main policy changes

Policies often respond to specific and acute problems. Key policy changes thus comprise a set of detailed measures, relating notably to disaster relief, biosecurity, and investments in the environmental sustainability performance of the land-use sector.

In 2018, several medium-scale adverse events have triggered government support for the Enhanced Task Force Green programmes and Rural Assistance Payments. These programmes provide funding for clean-up and recovery work, and relief to farmers in hardship, respectively.

In response to the 2017 discovery of the bacterial infection mycoplasma bovis, a biosecurity response was declared. Government and sector leaders agreed to work towards eradication of the disease, 68% of the cost of which is to be borne by public funding.

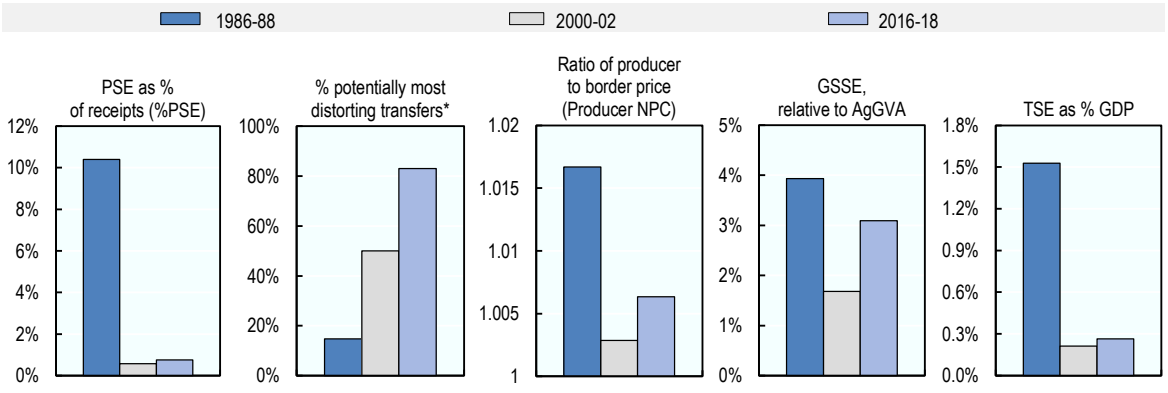
With the Comprehensive and Progressive Agreement for the Trans-Pacific Partnership (CPTPP), a tenth New Zealand Free Trade Agreement entered into force, covering nearly one-fourth of New Zealand's goods and services trade and almost a fourth of its agro-food exports.

Assessment and recommendations

- New Zealand's agricultural sector remains open and focused towards foreign markets and trade, as underlined by the country's low level of producer support. Its export orientation is supported by New Zealand's engagement in numerous free trade agreements, the tenth of which being the Comprehensive and Progressive Agreement for the Trans-Pacific Partnership, which has just entered into force.

- New Zealand's policy mix rightly focusses on key general services and, notably, its agricultural knowledge and innovation system. Investments in these areas should help improve agricultural productivity growth which, in recent years, has been comparatively low. Overall, public expenditures for general services are often complemented by mandatory funding from private investors which can help to ensure effective allocation of general services investments.
- New Zealand's Import Health Standards (IHS), a key tool to ensure the country's biosecurity vis-à-vis imported products, present an exception to this open-market principle. While required for all risk products to be importable, no IHS are in place for some livestock products, including eggs, fresh chicken meat and honey, and these products therefore cannot be imported into New Zealand. While representing only a small share of New Zealand's agricultural output, this deprives consumers of lower prices and larger choices. The development of relevant IHS would hence benefit consumers while ensuring required biosecurity standards.
- Kiwifruit exports to markets other than Australia continue to be regulated by requiring authorisation by Kiwifruit New Zealand for third-country exports by groups other than Zespri. New Zealand should aim to change these restrictions which burden the participation in kiwifruit exports by other firms wishing to do so and hence reduce competition and efficiency in this trade activity.
- The enforcement of the Overseas Investment Amendment Act 2018 adds further restrictions on foreign investment in New Zealand's in agricultural land. While its impact will depend on the actual implementation of the Act, attention should be given to not discourage valuable foreign investment that could enhance productivity and competitiveness of the farm sector.
- While several of New Zealand's agricultural sectors, including meat and dairy processors, nitrogen fertiliser manufacturers and imports, and live animal exporters, have reporting obligations under the New Zealand Emissions Trading System, agricultural greenhouse gas (GHG) emissions are neither constrained nor taxed. The agriculture sector accounts for half the country's GHG emissions. Ambitions to reduce such emissions, in line with New Zealand's commitment to the Paris Agreement on Climate Change, are pursued mainly through its support to a number of research activities at both national and international levels.

Figure 19.1. New Zealand: Development of support to agriculture

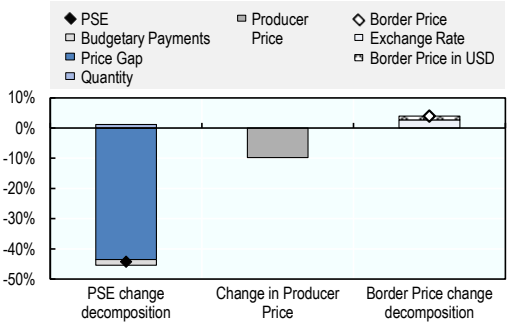


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933938327

Support to producers (%PSE). After the reforms in the mid-1980s and the corresponding sharp decline of the support to producers, the %PSE has remained at levels below 2% of gross farm receipts; during 2016-18, it averaged 0.8%. Most of this (very low) support to producers is provided through some market price support (MPS), one of the potentially most distorting forms of support and arising from SPS-related import restrictions (Figure 19.1). This creates some Single Commodity Transfers (SCT) for poultry meat and eggs, corresponding to 9% and 36% of commodity-specific gross farm receipts, respectively (Figure 19.3). Other than those, domestic prices are aligned with world prices, resulting in an average price ratio between domestic and reference levels (NPC) of less than 1.01. Overall, total support to agriculture (TSE) represents less than 0.3% of GDP. Most of the support is provided for general services, focusing mainly on the knowledge and information system and on biosecurity-related measures (Figure 19.1). In 2018, the low PSE further declined as price gaps in poultry and egg markets narrowed, both due to higher world prices and lower domestic ones (Figure 19.2).

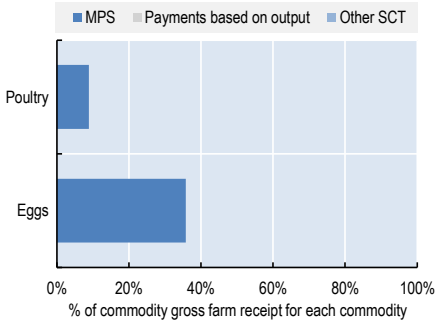
Figure 19.2. New Zealand: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Figure 19.3. New Zealand: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933938365

Table 19.1. New Zealand: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**4 067**	**6 371**	**18 115**	**17 196**	**18 730**	**18 419**
***of which:** share of MPS commodities (%)*	72.1	73.1	72.2	72.0	72.3	72.3
Total value of consumption (at farm gate)	**997**	**1 411**	**2 921**	**2 810**	**2 991**	**2 963**
Producer Support Estimate (PSE)	**434**	**36**	**138**	**162**	**163**	**88**
Support based on commodity output	65	18	114	138	138	67
Market Price Support[1]	63	18	114	138	138	67
Positive Market Price Support	63	18	114	138	138	67
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	21	22	21	20
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	21	22	21	20
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	26	1	2	2	3	1
Based on Receipts / Income	26	1	2	2	3	1
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 (%)	**10.4**	**0.6**	**0.8**	**0.9**	**0.9**	**0.5**
Producer NPC (coeff.)	**1.02**	**1.00**	**1.01**	**1.01**	**1.01**	**1.00**
Producer NAC (coeff.)	**1.12**	**1.01**	**1.01**	**1.01**	**1.01**	**1.00**
General Services Support Estimate (GSSE)	**119**	**85**	**386**	**379**	**395**	**386**
Agricultural knowledge and innovation system	60	46	179	189	183	166
Inspection and control	31	28	151	134	149	171
Development and maintenance of infrastructure	27	11	56	56	63	49
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)	**20.6**	**70.1**	**73.8**	**70.0**	**70.8**	**81.4**
Consumer Support Estimate (CSE)	**-63**	**-16**	**-106**	**-125**	**-129**	**-63**
Transfers to producers from consumers	-61	-16	-106	-125	-129	-63
Other transfers from consumers	-2	0	0	0	0	0
Transfers to consumers from taxpayers	0	0	0	0	0	0
Excess feed cost	0	0	0	0	0	0
Percentage CSE (%)	**-6.5**	**-1.2**	**-3.6**	**-4.4**	**-4.3**	**-2.1**
Consumer NPC (coeff.)	**1.07**	**1.01**	**1.04**	**1.05**	**1.04**	**1.02**
Consumer NAC (coeff.)	**1.07**	**1.01**	**1.04**	**1.05**	**1.04**	**1.02**
Total Support Estimate (TSE)	**553**	**122**	**524**	**541**	**558**	**474**
Transfers from consumers	63	16	106	125	129	63
Transfers from taxpayers	492	105	419	416	429	411
Budget revenues	-2	0	0	0	0	0
Percentage TSE (% of GDP)	**1.5**	**0.2**	**0.3**	**0.3**	**0.3**	**0.2**
Total Budgetary Support Estimate (TBSE)	**489**	**103**	**410**	**403**	**420**	**407**
Percentage TBSE (% of GDP)	**1.4**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
GDP deflator (1986-88=100)	**100**	**139**	**199**	**194**	**200**	**202**
Exchange rate (national currency per USD)	**1.71**	**2.25**	**1.43**	**1.44**	**1.41**	**1.45**

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 New Zealand are: wheat, maize, oats, barley, milk, beef and veal, sheep meat, wool, pig meat, poultry and eggs.

Source: OECD (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

New Zealand is a relatively small and thinly populated economy with a per capita GDP slightly above the OECD average, but well above the average of all countries covered by the report. Its market openness is related to its high dependency on international trade. Agriculture's importance in the total economy is higher than in most other countries covered in this report: the sector accounts for about 6% in both GDP and employment. Moreover, agro-food products account for almost two-thirds of the country's total exports. With little arable land, grass-fed livestock products represent the backbone of the agricultural sector, making New Zealand the world's largest exporter of dairy products and sheep meat. Fruit and horticultural products also contribute significantly to the country's agriculture and food exports.

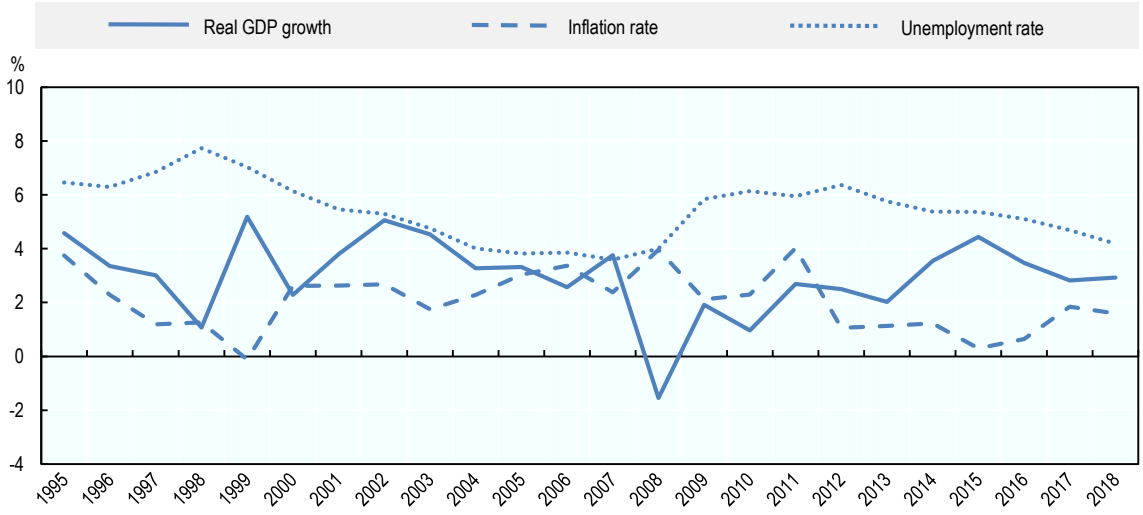
Table 19.2. New Zealand: Contextual indicators

	New Zealand		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	66	195	0.2%	0.2%
Population (million)	4	5	0.1%	0.1%
Land area (thousand km^2)	263	263	0.3%	0.3%
Agricultural area (AA) (thousand ha)	14 975	10 651	0.5%	0.4%
			All countries[1]	
Population density (inhabitants/km^2)	14	18	48	60
GDP per capita (USD in PPPs)	17 819	40 886	7 642	21 231
Trade as % of GDP	22	19	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	8.2	6.0	3.3	3.5
Agriculture share in employment (%)	9.7	6.2	-	-
Agro-food exports (% of total exports)	50.8	63.9	8.1	7.5
Agro-food imports (% of total imports)	7.8	11.6	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	20.4	23.8	-	-
Livestock in total agricultural production (%)	79.6	76.2	-	-
Share of arable land in AA (%)	11	5	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

New Zealand has a stable economy having featured robust growth and a relatively low inflation rate for most of the past decade. It shows consistent and growing net exports of agricultural products, which after some drops in 2015 and 2016 due to, among others, lower dairy prices, have picked up again in 2017. Most of New Zealand's agro-food trade, particularly of its exports, is processed food for final consumption. On the import side, intermediary products represent more than a third of the trade basket.

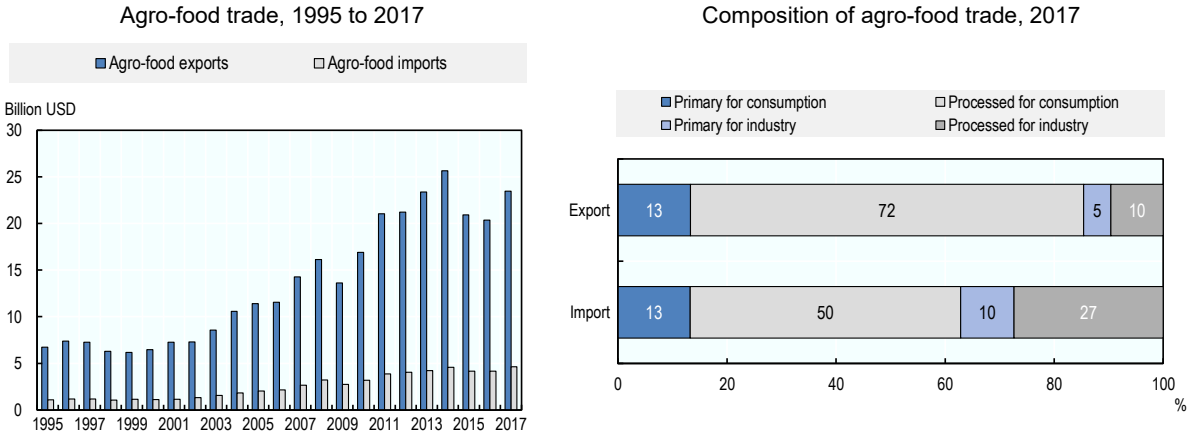
Figure 19.4. New Zealand: Main economic indicators, 1995 to 2018



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

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Figure 19.5. New Zealand: Agro-food trade



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

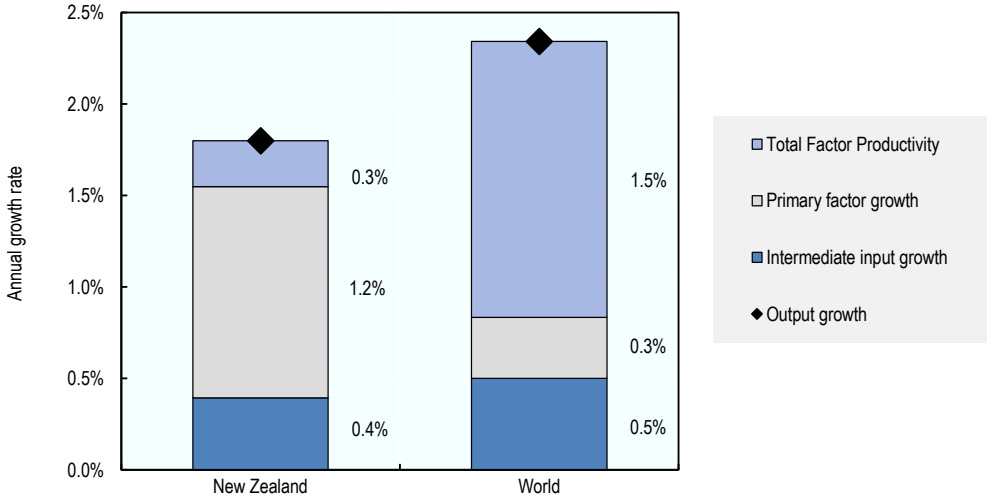
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New Zealand's average growth in total factor productivity (TFP) is estimated at less than 0.3% per year over the 2006-15 period, the lowest value across countries covered by this report and well below the growth rate during the 1990s.

New Zealand's agricultural sector is the country's prime consumer of freshwater and has strongly expanded its irrigated land as a response to climate related uncertainties. Nonetheless, its overall level of water stress is limited. Agriculture is also the main source

of GHG emissions, due to the high importance of grass-fed livestock production. For the same reason, the country's nutrient surpluses are well above the respective OECD averages.

Figure 19.6. New Zealand: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

StatLink https://doi.org/10.1787/888933938422

Table 19.3. New Zealand: Productivity and environmental indicators

	New Zealand		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	1.7%	0.3%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha	36.4	59.5	33.2	30.0
Phosphorus balance, kg/ha	10.7	7.4	3.7	2.3
Agriculture share of total energy use (%)	3.5	4.5	1.9	2.0
Agriculture share of GHG emissions (%)	52.3	49.2	8.5	8.9
Share of irrigated land in AA (%)[1]	3.7	6.9	-	-
Share of agriculture in water abstractions (%)	..	61.7	45.4	42.5
Water stress indicator	0.7	2.2	9.7	9.7

Note: * or closest available year. 1. Data are not comparable between time periods due to change in methodology.
Source: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Description of policy developments

Main policy instruments

New Zealand largely limits its agricultural support to expenditures on general services, such as agricultural research and bio-security controls for pests and diseases. A significant share of the costs of regulatory and operational functions, including for border control, is charged to beneficiaries (primary sector businesses) or those who create risks (primary sector businesses and exporters).

Practically all of New Zealand's agricultural production and trade is free from economic regulations. Since the phasing out of restrictions for dairy exports to specific tariff quota markets by the end of 2010, such export rights are now allocated to dairy companies on the proportion of milk-solids collected. **Export regulations** continue to exist for kiwifruit: the New Zealand company Zespri has the default right to export kiwifruit to all markets other than Australia, although not the exclusive one. 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. Kiwifruit exporters to Australia are required to hold an export licence under the New Zealand Horticulture Export Authority Act 1987 which provides for multiple exporters to that market.

The 2017 amendments to the **Kiwifruit Export Regulations 1999** allow Zespri shareholders to consider setting rules around maximum shareholding and eligibility for dividend payments; clarify the activities Zespri can undertake as a matter of core business; and enhance the independence and transparency of Kiwifruit New Zealand.

The **Dairy Industry Restructuring Act 2001 (DIRA)** was established to promote the efficient operation of the New Zealand dairy industry. In particular, it aims at ensuring that farmers can freely enter and exit the Fonterra Co-operative, and that other processors can obtain raw milk necessary for them to compete in dairy markets. A review of the DIRA, launched in May 2018, includes the open entry and exit obligations, the farm gate milk price settings, contestability for farmers' milk, the risks and costs for the sector, and the incentives or disincentives for dairy to move to sustainable, higher-value production and processing.

The **Food Act 2014**, in force since 1 March 2016 with a three-year transition period, aligns the domestic food system with the risk-based approach of other New Zealand food statutes that have more of an export focus. New Zealand's food system aligns with international trends in food regulation that have shifted to using a risk-based approach that focuses on the outcome of providing safe and suitable food, rather than using prescriptive regulation.

Import Health Standards (IHS) are documents issued under the **Biosecurity Act 1993**. They state the requirements that must be met before risk goods can be imported into New Zealand. Risk goods can only be imported if an IHS is in place for the product, and if all relevant IHS measures have been met. For some products (table eggs, uncooked chicken meat, and 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.

"**Industry good**" activities[1] (such as research and development, forming and developing marketing strategies, and providing technical advice) previously undertaken by statutory marketing boards are now managed through producer levy-funded industry organisations under the **Commodity Levies Act 1990**. Under this legislation, levies can only be imposed if they are supported by producers, and producers themselves decide how levies are spent. With a very limited number of exceptions, levy funds may not be spent on commercial or

trading activities. The levying organisations must seek a new mandate to collect levies every six years through a referendum of levy payers.

The New Zealand government continues to engage with industry and stakeholders to build biosecurity readiness and response capability. The **Government Industry Agreement for Biosecurity Readiness and Response (GIA)** has established an integrated approach to preparing for and effectively responding to biosecurity risks, through partnerships between the government and primary industry sector groups. Signatories share decision making, costs and responsibility in preparing for and responding to biosecurity incursions. In 2018, Horticulture NZ, DairyNZ, and Beef+Lamb New Zealand signed the GIA deed, bringing to 20 the number of industry groups that have joined with the Ministry for Primary Industries under GIA. Participation in GIA is voluntary.

OVERSEER is a nutrient management tool used for setting and managing nutrients within environmental limits. It helps farmers and growers improve their productivity, reduce nutrient leaching into waterways, and reduce greenhouse gas emissions. The intellectual property of OVERSEER is jointly owned by the Ministry for Primary Industries, AgResearch Limited, and the Fertiliser Association of New Zealand. The tool is increasingly being used by regional councils that are implementing the National Policy Statement on Freshwater Management. Additional funding of NZD 5 million (USD 3.5 million) between 2019 and 2022 aims at quicker adoption of environmentally friendly farm practices, the inclusion of a wider range of land types and farming systems, and a more user-friendly interface.

Pastoral Genomics is a New Zealand consortium for forage improvement through biotechnology. It is funded by the Ministry of Business, Innovation and Employment (MBIE), DairyNZ, Beef+Lamb New Zealand, Grasslands Innovation, NZ Agriseeds, DEEResearch, AgResearch, and Dairy Australia. The consortium aims to generate better forage cultivars that will increase productivity, profitability and environmental sustainability of New Zealand's pastoral farming systems. The New Zealand Government is investing NZD 7.3 million (USD 5.5 million)[2] between 2015 and 2020 through the MBIE partnerships scheme; this funding will be matched by industry funding. The partnership has specifically chosen genomic selection as it is a non-regulated technology enabling more rapid uptake by the partner seed companies.

Sustainable Food and Fibre Futures (SFF Futures) is the consolidation of two previous investment programmes: the Sustainable Farming Fund and the Primary Growth Partnership, which consequently both closed to new applications. With an increased emphasis on sustainability, SFF Futures funds innovative projects that will create more value and improved sustainability for the food and fibre industries. SFF Futures has a budget of NZD 40 million (USD 28 million) per year and provides a single gateway for farmers, growers, harvesters and industry to apply for investment in a range of projects that deliver economic, environmental and social benefits. Projects can range from small, one-off initiatives to long-running multi-million dollar partnerships. Community projects will require co-investment from the partner organisation of at least 20 percent of costs. Profit-driven projects will require co-investment of at least 60% of costs. Applications for SFF Futures funding opened in October 2018.

In ratifying the **Paris Agreement on Climate Change**, New Zealand has committed itself to a Nationally Determined Contribution of reducing emissions on an economy-wide basis to 30% below 2005 levels over the period 2021-30 (-11% below 1990 levels by 2030). The commitment includes all sectors and all gases, with no specific targets or commitments set

for the agricultural sector. New Zealand is on track to achieve its current target under the UNFCCC (-5% below 1990 levels by 2020).

The **New Zealand Emissions Trading Scheme** (NZ ETS), New Zealand's primary policy response to climate change, imposes reporting obligations on agriculture, including meat processors, dairy processors, nitrogen fertiliser manufacturers and importers, and live animal exporters, although some exemptions apply. The NZ ETS also imposes an emissions cost on the transport fuels, electricity production, synthetic gases, waste and industrial processes sectors.

The New Zealand Government continues to research and develop mitigation technologies to reduce agricultural greenhouse gas emissions. It does so through the **New Zealand Agricultural Greenhouse Gas Research Centre** (NZAGRC), the **Pastoral Greenhouse Gas Research Consortium** (PGgRc), and in co-ordination with the 52 member countries of the **Global Research Alliance on Agricultural Greenhouse Gases** (GRA).

The NZAGRC, funded by the Ministry for Primary Industries, brings together nine organisations that conduct research to reduce New Zealand's agricultural greenhouse gas emissions.[3] Research is focused on finding practical ways of **reducing on-farm methane and nitrous oxide emissions** while improving productivity and sequestering soil carbon.

The PGgRc is a partnership, funded 50:50 by Government and industry,[4] that aims to provide livestock farmers with the information and means to mitigate their greenhouse gas emissions. The PGgRc mainly focuses on research to **reduce methane emissions in ruminant animals**.

The GRA, of which New Zealand hosts the Secretariat, was established in 2009. Its member countries collaborate on the **research, development and extension of technologies and practices** that can deliver more climate-resilient food systems without growing greenhouse gas emissions. New Zealand also hosts the GRA Special Representative and leads the GRA's Livestock Research Group. In 2017, a new scholarship programme was established to build global expertise on climate change, agriculture, and food security, with the purpose of boosting New Zealand's contribution to agricultural greenhouse gas research. The scholarship programme is a joint initiative of the GRA and the climate change programme of the Consultative Group on International Agricultural Research (CGIAR). New Zealand funding is to support around 40 recipients to be hosted in research centres of the CGIAR and GRA member countries and partners within three years.

The **Afforestation Grant Scheme** is a NZD 19.5 million (USD 13.5 million) programme to establish 15 000 hectares of new forest plantations between 2015 and 2020, providing funds to farmers and land owners. New planting aims at increased erosion control, improved water quality, reduced environmental impacts following flooding, and reduced GHG emissions. The 2018 funding round, worth around NZD 6.1 million (USD 4.2 million), saw 6 123 hectares contracted to plant new forests in winter 2019. Future afforestation applications are to be funded through the One Billion Trees programme (see below).

The Ministry for Primary Industries' General Export Requirements for Bee Products strengthen traceability across the supply chain and provide a scientific definition of **mānuka honey** that can be used to identify and authenticate mānuka honey from New Zealand. Based on a combination of five attributes (comprising four chemicals and one DNA marker from mānuka pollen), the requirements aim to give consumers and trading partners confidence that all mānuka honey exported is true to label.

With the overall goal of adding value to exports, the Ministry for Primary Industries' programme, **Māori Agribusiness: Pathway to Increased Productivity (MAPIP)**, focuses on Māori primary sector assets under collective ownership. The MAPIP framework supports Māori primary sector asset owners who seek to sustainably increase the productivity of their primary sector assets, including land, agriculture, horticulture, forestry, and seafood.

On **climate change adaptation**, the New Zealand Government has established a Technical Working Group to look at how to build resilience to the effects of climate change, while ensuring sustainable economic growth. Members of the Group represent various economic sectors, including agriculture.

New Zealand currently has ten **Free Trade Agreements** (FTAs) in force, which account for approximately two-thirds of the value of New Zealand's total exports and 70% of its agro-food exports. As a trade dependent economy, and being geographically distant from export markets, FTAs are one way through which the New Zealand government aims at supporting improved productivity, value-added, and export earnings in the primary sector. Two additional agreements are concluded but not yet in force – the New Zealand-Gulf Cooperation Council FTA (involving Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates), and the Anti-Counterfeiting Trade Agreement (ACTA).[5]

Domestic policy developments in 2018-19

Farmers and growers faced three medium-scale adverse events in 2018 – flooding/storm damage in Taranaki & Tasman, flooding in Gisborne, and drought in both the North and South Islands (noting this began in 2017 for some regions). Across these events the Rural Support Trusts claimed NZD 195 000 (USD 135 000) in costs from the New Zealand Government. Rural Support Trusts are a nationwide network that directly assists rural communities and individuals affected by adverse events. The support provided is primarily aimed at, but not limited to, primary producers and can extend beyond physical damages.

The New Zealand Government made NZD 750 000 (USD 520 000) available for **Enhanced Task Force Green (ETFG)** programmes as part of flood recovery measures in Tasman and Gisborne. ETFG programmes allow hiring workers and acquiring relevant equipment to help with clean-up and recovery after emergency events having caused significant damage.

Rural Assistance Payments (RAPs) were made available and utilised as a result of the drought. RAPs are available to farmers in real hardship. RAPs cover essential living costs for those farmers whose income is severely impacted by a medium-scale (or greater) adverse event and they have no other means of supporting the family.

In July 2017, the bacterial infection ***Mycoplasma bovis*** was found in cattle in South Canterbury. This was the first detection of *Mycoplasma bovis* in New Zealand and the Ministry for Primary Industries declared a biosecurity response. *Mycoplasma bovis* presents no food safety or human health risks, but can cause serious health problems in cattle, which do not respond to treatment, and hence adversely affects both productivity and animal welfare. Affected farmers can apply for compensation from the Ministry for Primary Industries, under the Biosecurity Act 1993, where they have suffered a verifiable loss as a result of damage to, or destruction of, property (including stock and equipment destroyed in an attempt to limit the spread of the bacteria) as a result of the exercising of powers under the Act, or as a result of restrictions imposed on the movement or disposal of goods.

In May 2018, Government and agricultural sector leaders agreed to work towards eradication of *Mycoplasma bovis* from New Zealand to protect the national herd and long-term productivity of the farming sector. A Strategic Science Advisory Group is expected to provide international expertise on a range of science matters, to identify any potentially useful research and emerging technologies, and to provide assurances that the eradication research efforts continue to be fit for purpose. The government projects the full cost of phased eradication over 10 years at NZD 886 million (USD 613 million). Of this, NZD 16 million (USD 11 million) is loss of production borne by farmers, and NZD 870 million (USD 602 million) is the cost of the biosecurity response (including compensation to farmers). Government will meet 68% of this cost, with the two industry groups DairyNZ and Beef+Lamb New Zealand to meet the remaining 32%. An additional NZD 30 million (USD 21 million) over two years in funding for scientific research will support the eradication programme.

Changes to the **Animal Welfare Act 1999**, in May 2015, gave the Ministry for Primary Industries the ability to make animal welfare regulations. The regulatory programme is being developed and implemented in three tranches. As an initial set of regulations, the Young Calf and the Export of Livestock for Slaughter regulations were released in July 2016. A further set of regulations came into effect on 1 October 2018. These regulations related to stock transport, farm husbandry, companion and working animals, pigs, layer hens, rodeos, surgical or painful procedures, inspection of traps, and crustaceans. The final substantive package of regulations focuses on significant surgical procedures and is due to be completed in early 2020.

Amendments to the **Misuse of Drugs (Industrial Hemp) Regulations 2006** and the **Food Regulations 2015** came into effect in November 2018, allowing hulled, non-viable and qualifying low THC hemp seed to be treated as any other edible seed. Growing, possession and trade of whole seeds still require a licence from the Ministry of Health.

The **Extension Service Model** is a pilot initiative to support farmers in improving their environmental performance and value creation. It builds on existing programmes to ensure farmers use information on environmental sustainability and value creation as part of their farm planning. The Extension Service Model will be rolled out over four years from 1 July 2018 with funding of NZD 3 million (USD 2.1 million) from SFF Futures.

Both the Ministry for Primary Industry's **Irrigation Acceleration Fund (IAF)** and the **Crown Irrigation Investments Limited (CIIL)** are currently winding down. With the exception of three schemes under the CIIL, no further projects will be funded. These three schemes, to be funded for their construction phases due to their advanced states, include the completion of Central Plains Water Stage 2 (Canterbury plains); construction of the Kurow-Duntroon scheme (Kurow, South Canterbury); and construction of the Waimea Community dam (Nelson/Tasman). Funding support for community-based water management and storage projects or smaller-scale, locally run and environmentally sustainable water storage projects may be considered against the criteria for investment within the Provincial Growth Fund, a newly established economy-wide fund.

The **One Billion Trees Fund**, launched in November 2018, is a step towards achieving the goal of planting at least one billion trees by 2028, and towards lifting annual planting rates (including re-planting following harvest and new planting) from about 60 million trees in 2018 to about 100 million per year within 2-3 years. The Fund provides NZD 118 million (USD 82 million) for grants to landowners and organisations to plant trees for a variety of purposes, including erosion control, carbon sequestration, timber and biodiversity. It also

provides NZD 120 million (USD 83 million) for partnership projects to reduce barriers to tree planting through innovation, research and sector development initiatives.

The **Overseas Investment Amendment Act 2018** came into force in October 2018, and brought residential and lifestyle land under the definition of "sensitive" land. The key change was replacing the large farm directive with a broader, rural land directive which applies to all rural land larger than five hectares, other than forestry. As a result, most New Zealand land is now "sensitive", meaning that the consent of the Overseas Investment Office is required for transactions of such land involving "overseas persons" as defined under the Act. The Amendment Act also places conditions on overseas investors – they must now demonstrate how their investment will benefit the country.

Trade policy developments in 2018-19

With the Comprehensive and Progressive Agreement for the Trans-Pacific Partnership (CPTPP),[6] a tenth New Zealand Free Trade Agreement entered into force on 30 December 2018. It covers nearly one-fourth of New Zealand's good and services trade and almost a fourth of its exports of agro-food products.

New Zealand continues negotiations in the Regional Comprehensive Economic Partnership (RCEP).[7] Negotiations between New Zealand and the countries of the Pacific Alliance[8] started in October 2017, while those for a New Zealand-European Union FTA were launched in September 2018. Negotiations to upgrade the New Zealand-China FTA are ongoing, while those on the New Zealand-Singapore Closer Economic Partnership (CEP) were substantially concluded in 2018.

Notes

[1] 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[2]).

[2] All values in this policy description use the 2018 exchange rate for monetary conversion.

[3] The seven member Crown research institutes and universities are: AgResearch, Landcare Research, Lincoln University, Massey University, National Institute of Water and Atmospheric Research, Plant Food Research and Scion. The two other organisations involved are DairyNZ and the Pastoral Greenhouse Gas Research Consortium.

[4] Industry partners are DairyNZ, Beef+Lamb New Zealand, DEEResearch and Fertiliser Research.

[5] Other ACTA signatories include Australia, Canada, the European Union and 22 of its Member States, Korea, Japan, Mexico, Morocco, Singapore, and the United States.

[6] Other CPTPP countries include Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, Peru, Singapore, and Viet Nam.

[7] Other RCEP participants include the member states of the Association of Southeast Asian Nations (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Viet Nam), Australia, the People's Republic of China (hereafter "China"), India, Japan, and South Korea.

[8] Pacific Alliance countries include Chile, Colombia, Mexico and Peru.

References

NZIER (2007), *"Productivity, profitability and industry good activities", a report to Dairy Insight, New Zealand Institute of Economic Research*, https://nzier.org.nz/publication/productivity-profitability-and-industry-good-activities. [2]

OECD (2019), *"Producer and Consumer Support Estimates", OECD Agriculture statistics (database)*, http://dx.doi.org/10.1787/agr-pcse-data-en. [1]

Chapter 20. Norway

Support to agriculture

Norway's progress in reducing support levels has been modest; its farming sector continues to receive one of the highest levels of support in the OECD area. Market price support (MPS), mainly due to border protection, still remains the main component of support to producers, and its share in total support to farms (PSE) has been reduced by only 1 percentage point between 1986-88 and 2016-18. While the share of potentially most production and trade distorting support has declined, it still represented most of the support in recent years.

The Total Support Estimate to agriculture (TSE) was slightly less than 1% of GDP in recent years. Support to producers (PSE) accounts for 61% of gross farm receipts, which is more than three times higher than the OECD average. Expenditures on general services for the sector as a whole (General Service Support Estimate - GSSE) are relatively small – around 4.5% of TSE – and mostly finance the agricultural knowledge and innovation system.

Main policy changes

The political platform released by the coalition government, which was formed in January 2019, broadly follows the strategic orientations of the White Paper, released in December 2016. The government, *inter alia*, aims to enhance the efficiency and competiveness of the sector, while maintaining the overall system of market regulation. An agreement was reached between the government and the two farmers' organisations involved in the agricultural negotiations concerning setting target prices and the budgetary framework for payments to farmers.

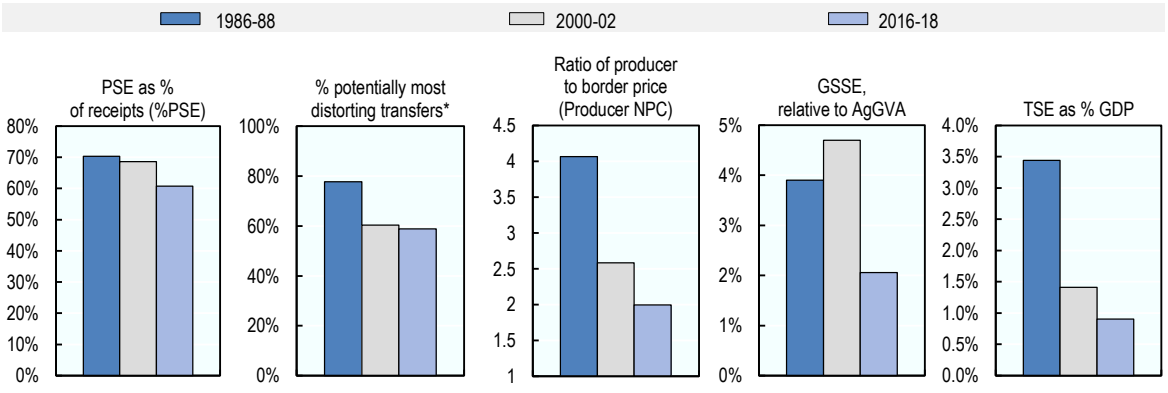
Several measures were launched to help farmers with the consequences of drought during the spring and summer of 2018. The National Environmental Programme was revised and updated. Under the European Economic Area (EEA), tariff rate quotas increased on several products, including meat, cheese, vegetables and certain products used in the food industry for producing processed agricultural products.

Assessment and recommendations

- Agricultural support remains overly concentrated on maintaining the *status quo* and progress towards reform has been very modest. Despite lower price distortions, Norway's agricultural sector remains among the most highly protected. There is considerable scope for accelerating the pace of reforms in order to achieve stated goals at lower cost to taxpayers and consumers.
- Further progress is needed to reduce the potentially most distorting support in order to increase exposure to market signals and eliminate measures impeding structural shifts towards a more productive and environmentally-sustainable agricultural sector.

- The new political platform for the government postulates limited reforms — such as increasing emphasis on research and development (R&D) and on measures for environmentally sustainable food production — that are steps towards enhancing the efficiency and reducing policy-related transaction costs and should be accelerated.
- An assessment of whether the current format of annual negotiation between government and farmer representatives is well-suited to promoting reform would also be beneficial.
- The national cross-sectoral bio-economy strategy provides an opportunity to increase the sustainability of the agro-food sector through the increase in the efficiency of the use of natural resources, help the agricultural sector to adapt to climate change and foster policy coherence.
- In 2018, Norway experienced the driest and warmest summer for the last seventy years and several measures were launched to help farmers. In the likelihood of increased extreme weather conditions it is advisable that drought support measures focus on encouraging drought preparedness and resilience of the sector, rather than on the provision of ad hoc financial aid.
- Environmental taxation is a core pillar of Norway's efforts to reduce greenhouse gas (GHG) emissions not covered by the European Trading System (ETS), and in tackling other environmental issues. This tool should be considered for agriculture, along with other market-based and regulatory climate mitigation measures.
- Pursuing productivity growth while maintaining environmental protection and sustainable natural resource management should be a policy priority. In this context, re-orienting support towards general services, especially for the agricultural knowledge and innovation system is an avenue to be further explored.

Figure 20.1. Norway: Development of support to agriculture

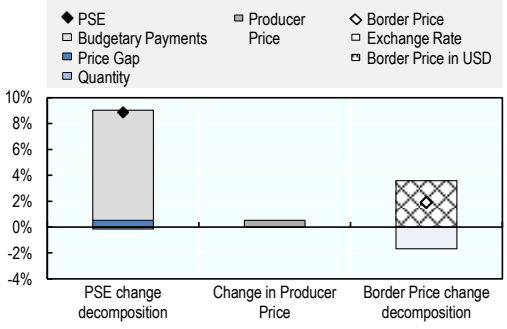


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933938441

Support to producers (%PSE) has declined gradually over the long term. In 2016-18, support has been around 60% of gross farm receipts, which is more than three times higher than the OECD average. The share of the potentially **most distorting support** has decreased, but it is still more than half of farmers support (Figure 20.1). Market price support is the main component of the most distorting support. The level of support in 2018 has increased mainly due to the large increase of *Crop Insurance Compensation* payments (Figure 20.2). Effective prices received by farmers, on average, were 1.8 times higher than world prices in 2016-18. Single Commodity Transfers (SCT) accounted for 61% of the total PSE. The share of the SCT in the commodity gross receipts is around or higher than 30% for all commodities (Figure 20.3). The expenditures for **general services** (GSSE) relative to total support to agriculture were almost three times lower than the OECD average. **Total support to agriculture** as a share of GDP has declined significantly over time. About 93% of the total support is provided to individual farmers (PSE).

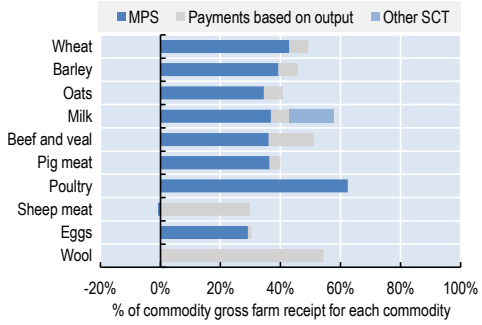
Figure 20.2. Norway: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933938460

Figure 20.3. Norway: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933938479

Table 20.1. Norway: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**2 533**	**2 052**	**3 769**	**3 758**	**3 759**	**3 789**
***of which:** share of MPS commodities (%)*	73.3	80.8	76.5	74.4	77.2	77.7
Total value of consumption (at farm gate)	**2 610**	**2 027**	**3 751**	**3 768**	**3 758**	**3 726**
Producer Support Estimate (PSE)	**2 801**	**2 324**	**3 370**	**3 242**	**3 261**	**3 609**
Support based on commodity output	2 027	1 333	1 888	1 851	1 872	1 941
Market Price Support[1]	1 354	996	1 593	1 596	1 573	1 611
Positive Market Price Support	1 354	996	1 600	1 596	1 580	1 623
Negative Market Price Support	0	0	-6	0	-8	-11
Payments based on output	673	337	295	255	299	330
Payments based on input use	250	117	172	165	171	181
Based on variable input use	149	71	90	86	93	92
with input constraints	0	0	0	0	0	0
Based on fixed capital formation	91	38	72	69	69	79
with input constraints	0	0	0	0	0	0
Based on on-farm services	11	8	10	10	10	10
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	524	871	954	872	868	1 123
Based on Receipts / Income	0	49	83	88	83	79
Based on Area planted / Animal numbers	524	822	871	784	784	1 044
with input constraints	371	644	644	627	626	679
Payments based on non-current A/An/R/I, production required	0	0	348	345	342	356
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	8	8	8	8
Based on long-term resource retirement	0	0	0	0	0	0
Based on a specific non-commodity output	0	3	8	8	8	8
Based on other non-commodity criteria	0	0	0	0	0	0
Miscellaneous payments	0	0	0	0	0	0
Percentage PSE (%)	**70.4**	**68.6**	**60.8**	**60.0**	**59.9**	**62.4**
Producer NPC (coeff.)	**4.06**	**2.58**	**1.99**	**2.00**	**1.99**	**2.00**
Producer NAC (coeff.)	**3.37**	**3.18**	**2.55**	**2.50**	**2.49**	**2.66**
General Services Support Estimate (GSSE)	**129**	**158**	**165**	**157**	**166**	**171**
Agricultural knowledge and innovation system	74	62	104	95	106	110
Inspection and control	5	25	37	39	37	36
Development and maintenance of infrastructure	29	54	15	15	14	15
Marketing and promotion	21	15	9	9	9	10
Cost of public stockholding	0	2	0	0	0	0
Miscellaneous	0	0	0	0	0	0
Percentage GSSE (% of TSE)	**4.1**	**6.2**	**4.5**	**4.5**	**4.7**	**4.4**
Consumer Support Estimate (CSE)	**-1 333**	**-1 010**	**-1 577**	**-1 610**	**-1 554**	**-1 566**
Transfers to producers from consumers	-1 660	-1 104	-1 658	-1 675	-1 651	-1 647
Other transfers from consumers	-138	-47	-89	-119	-79	-68
Transfers to consumers from taxpayers	220	71	101	100	103	100
Excess feed cost	244	70	69	84	73	50
Percentage CSE (%)	**-55.8**	**-51.3**	**-43.2**	**-43.9**	**-42.5**	**-43.2**
Consumer NPC (coeff.)	**3.22**	**2.30**	**1.87**	**1.91**	**1.85**	**1.85**
Consumer NAC (coeff.)	**2.26**	**2.06**	**1.76**	**1.78**	**1.74**	**1.76**
Total Support Estimate (TSE)	**3 150**	**2 553**	**3 637**	**3 499**	**3 530**	**3 881**
Transfers from consumers	1 797	1 151	1 747	1 795	1 730	1 715
Transfers from taxpayers	1 490	1 449	1 979	1 824	1 879	2 233
Budget revenues	-138	-47	-89	-119	-79	-68
Percentage TSE (% of GDP)	**3.4**	**1.4**	**0.9**	**0.9**	**0.9**	**0.9**
Total Budgetary Support Estimate (TBSE)	**1 796**	**1 557**	**2 043**	**1 903**	**1 957**	**2 270**
Percentage TBSE (% of GDP)	**2.0**	**0.9**	**0.5**	**0.5**	**0.5**	**0.5**
GDP deflator (1986-88=100)	**100**	**163**	**272**	**260**	**270**	**286**
Exchange rate (national currency per USD)	**6.88**	**8.59**	**8.27**	**8.40**	**8.27**	**8.13**

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 (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

Agriculture constitutes a relatively small share of the economy. Land most suitable for farming, around 3% of the territory, tends to be located in the most populous and rapidly growing regions. While the contribution of agriculture to GDP and employment is small, Norway has consistently stressed the importance of the sector for policy priorities such as achieving food security and maintaining population in rural areas.

The sector produces a rather narrow range of commodities. In addition to sheep farming, the primary activity has traditionally been cows (for milk and meat) and cereals (mainly used as animal feed). The farm structure is dominated by relatively small family farms, many of which are in remote locations.

Table 20.2. Norway: Contextual indicators

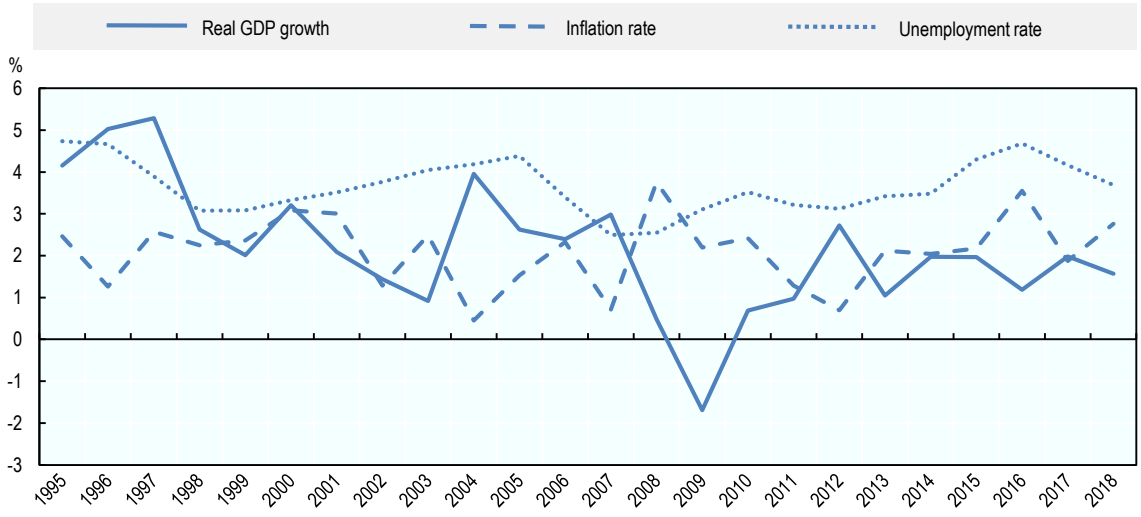
	Norway		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	106	328	0.4%	0.3%
Population (million)	4	5	0.1%	0.1%
Land area (thousand km^2)	365	365	0.5%	0.5%
Agricultural area (AA) (thousand ha)	1 127	984	0.04%	0.03%
			All countries[1]	
Population density (inhabitants/km^2)	14	17	48	60
GDP per capita (USD in PPPs)	24 322	61 475	7 642	21 231
Trade as % of GDP	24	23	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	3.0	2.2	3.3	3.5
Agriculture share in employment (%)	5.2	2.1	-	-
Agro-food exports (% of total exports)	1.3	1.0	8.1	7.5
Agro-food imports (% of total imports)	6.2	9.0	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	27	29	-	-
Livestock in total agricultural production (%)	73	71	-	-
Share of arable land in AA (%)	88	82	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

Sound management of natural resources and business dynamism has helped to boost Norway's per capita GDP, which is now one of the highest in the world. Combined with its "Nordic model" ensuring inclusiveness and low inequality, Norway exhibits impressive levels of well-being in many dimensions. Sustaining Norway's inclusive society will require successful economic diversification away from oil-related activities and continue seizing opportunities from globalisation and digitalisation. Employment growth remains strong and the unemployment rate declined, and inflation remains low.

Norway is a net importer of agricultural products: agro-food imports represent around 10% of total imports, while agro-food exports represent 1% of total exports. The vast majority of Norway's agricultural production is consumed domestically. Imports of products mostly take place where domestic production does not meet demand. Most of the agro-food trade is for final consumption.

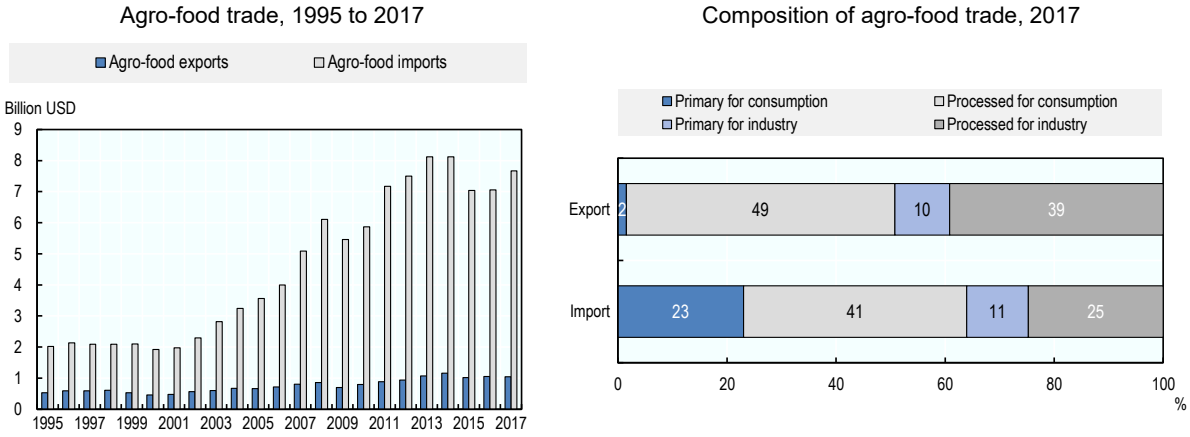
Figure 20.4. Norway: Main economic indicators, 1995 to 2018



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

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Figure 20.5. Norway: Agro-food trade

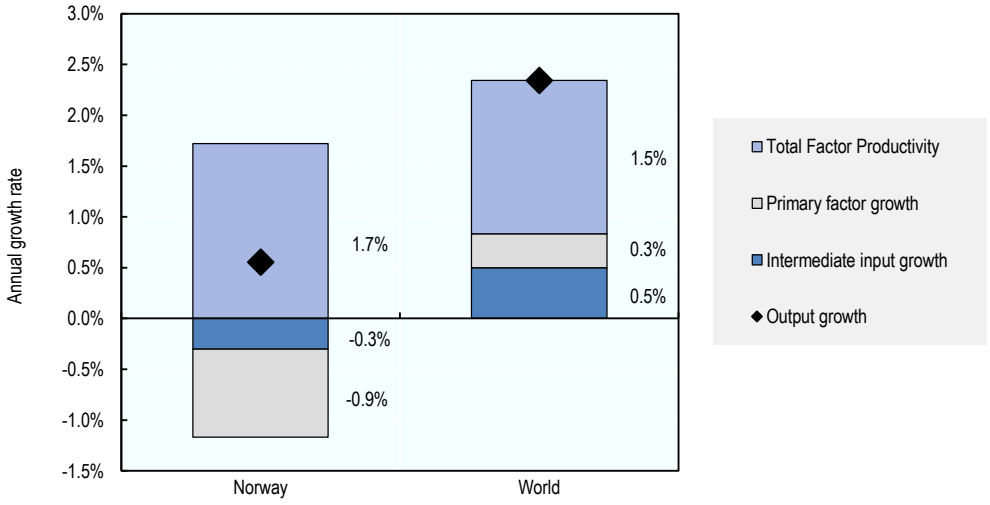


Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

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Over the 2006-15 period, agricultural output is estimated to have increased at a slow annual pace. Variable inputs and fixed factors of production have declined, while total factor productivity is estimated to have increased – at a rate that is slightly higher than the world average. Overall, pressure from agriculture on the environment has decreased, as is shown by the decrease in nutrient surpluses per hectare, in air emissions and energy use from agriculture. The lowering of nutrient surpluses, though still high, has reduced the risk of environmental pressures on soil, water and air. This reflects both improvements in nutrient use efficiency by farmers and slow growth of agricultural production.

Figure 20.6. Norway: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

StatLink https://doi.org/10.1787/888933938536

Table 20.3. Norway: Productivity and environmental indicators

	Norway		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	0.4%	1.7%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha	108.1	106.3	33.2	30.0
Phosphorus balance, kg/ha	13.2	10.6	3.7	2.3
Agriculture share of total energy use (%)	3.6	1.4	1.9	2.0
Agriculture share of GHG emissions (%)	9.2	8.5	8.5	8.9
Share of irrigated land in AA (%)	..	3.3	-	-
Share of agriculture in water abstractions (%)	30.2	..	45.4	42.5
Water stress indicator	0.7	..	9.7	9.7

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

Description of policy developments

Main policy instruments

The strategic objectives of agricultural and food policies, as set out in the White Paper No. 11 (2016–17) "Change and development - A future-oriented agricultural production" are: food security; agriculture throughout the country; creating more added-value; and sustainable agriculture. The agricultural policy aims at the sustainable use of agricultural resources, developing know-how and contributing to the creation of employment and value

added in farming and farm-based products throughout the country. Agricultural support policy is a component of Norway's regional and rural policies.

The principal policy instruments supporting agriculture include border measures, domestic market regulation based on the Marketing Act and budgetary payments. The Marketing 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.

Target prices are provided for milk, pork, grains and some fruits and vegetables. Target prices and the budgetary framework for payments to farmers are negotiated annually between the government and farmers' organisations. Marketing fees are collected from producers to finance marketing activities dealing with surpluses, including export subsidies for livestock products. Milk production quotas were introduced in 1983 and a system of buying and selling quotas was introduced in 1997.

Various direct payments to farmers, including area and headage payments as well as payments based on product quantities (meat) continue to be provided. Many of these payments are differentiated by region and farm size in order to provide adequate income support across all type of farms and regions. Environmental levies on agricultural pesticides are applied.

The National Environmental Programme contains the main **agri-environmental measures**, such as the Acreage Cultural Landscape Support, payments to extensive grazing, payments for grazing animals, organic agriculture, Regional Environmental Programmes (REP) and special environmental measures in agriculture. Examples of programmes include payments to reduce water pollution from agricultural fields, environmentally-friendly spreading of manure, mowing small (abandoned) fields with high or special biodiversity in the forest and mountains areas, grazing on islands, maintenance around heritage sites in the agricultural landscape, etc.

In 2016, the Government published the national strategy on **bio-economy**. This was a broad cross-sectoral strategy, developed by eight ministries, including the Norwegian Ministry of Agriculture and Food. The strategy points out three overarching objectives – increased value creation, reduction in climate gas emissions, increased resource use efficiency and sustainability – and four focus areas: co-operation across sectors, industries and thematic areas; markets for renewable bio-based products; efficient use and profitable processing of renewable biological resources; and sustainable production and extraction of renewable biological resources. Given Norway's experience in environmental taxation, the government proposes several regulatory improvements to create a level playing field for bio-based products, for example taxes or quotas for fossil-based products to account for negative environmental and climate effects. In addition, a revision of fertiliser regulations and an increase in the use of organic fertilisers/sludge, including regulations for deposing, storage and spreading, are on the agenda.

Most of Norway's tariff-rate-quotas 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 100-400% although there is a system of "open periods" for imports at reduced tariff rates when domestic prices rise above threshold levels.

As from 1 January 2015, Norway unilaterally eliminated import duties on 114 agricultural tariff lines. While these duties were low (and not of significant importance for the protection of Norwegian agricultural production), their elimination resulted in reduction of customs procedures and administrative costs.

Domestic policy developments in 2018-19

The new coalition government formed in January 2019, broadly supports the strategic orientations of the White paper No. 11 (2016-17). The government aims to enhance the efficiency and competiveness of the sector, while maintaining the overall system of market regulation and border protection. Key elements of the government's new political platform for agriculture include: continuation of the system of annual agricultural negotiations; balanced agricultural production across the country; continuation of the milk quota system; introduction of the Act on Good Business Conduct during 2020; following up the soil protection strategy; stimulate organic farming; reinforcing the focus on animal welfare; strengthen R&D; and continuation of the policy for low antibiotic use and low prevalence of antibiotic resistance in animal husbandry.

In May 2018, an agreement was reached between the government and the two farmers' organisations involved in the agricultural negotiations. The main changes in the agreement were: 1) an increase in target prices with a total budgetary effect of NOK 198 million (USD 24 million) from 1 July 2018; 2) an increase in budgetary support of NOK 770 million (USD 95 million) from 2018 to 2019; 3) transfer of NOK 70 million (USD 9 million) from the 2017 budget and an increase in the tax relief on NOK 62 million (USD 8 million); iv) increased support for investments and development programme; v) increased support for areas with poor conditions for agricultural production; increased focus on R&D in agricultural technology; and as from 2019 a new subsidy for small- and medium-sized dairy farms.

Several measures were launched to help farmers with the consequences of **drought** during the spring and summer of 2018: 1) the farmers' associations and the state have agreed on a crisis package of NOR 525 million (USD 65 million) to be financed by the Agricultural Development Fund to the amount of NOK 225 million (USD 28 million), and a grant of NOK 300 million (USD 37 million) fresh funds; 2) a dispensation from the requirement to gather feed from pastures (this will allow for additional feeding on pasture while the farmer still receives feed support); 3) an exemption for harvesting area with catch crops (fast-growing crops that are grown between successive plantings of a main crop), while maintaining subsidies for such crops under the Regional Environment Program; 4) an exemption to retain grants for organically fertilised areas even if the pasture is used for feed or grazing instead of crops; 5) the advance compensation payment for crop damage increased from 50% to 70% of the total; 6) and the removal of import duties on hay. In addition, *Crop Insurance Compensation* support increased from NOR 33 million (USD 4.1 million) to NOR 1 667 million (USD 206 million).

Since 2015, farmers selling cow milk quota were allowed to sell up to 80% of their quota at a free price directly to other producers within a production region (mainly defined as the county), and a minimum of 20% had to be sold to the government at a fixed price. There are 14 production regions for quota redistribution. Each year the quotas are multiplied by a factor to fix the amount of milk each producer can deliver to a dairy (i.e. actual production possibility). Due to drought during the spring and summer of 2018, and a concern of not producing enough milk, the actual production possibilities were first adjusted in June from a factor of 0.98 to 0.99, and then again in August to 1.04. For the quota year 1 January to 31 December 2019, the quotas are set to be multiplied by a factor of 0.98.

In 2018, a new strategy on **organic** production was passed by Parliament. The strategy highlights three focus areas to achieve the goal of stimulating to organic production: knowledge and skills; area payments to support organic production; and developing an effective value chain.

The budget for the **Regional Environmental Programmes** (REP) was increased by 14% to NOK 493.2 million (USD 61 million) for 2019. In 2018, the National Environmental Programme was revised and updated. Higher priority is accorded to climate change challenges, while work continues on simplification and enhancement of goal-orientation of programmes.

Although carbon pricing is extensive in Norway, **emissions from agriculture** are neither subject to a carbon-dioxide tax nor included in the ETS. Norway's commitment to the Paris Agreement is to reduce GHG emissions by at least 40% by 2030 compared with the 1990 level. Norway also decided to enter into a dialogue with the European Union on a joint fulfilment of the 2030 climate commitment. GHG emissions from agriculture include methane associated with animal husbandry and N_2O associated with nitrogen fertilisation. Norway has implemented other measures – both statutory and financial as well as measures related to information – affecting the emissions from agriculture. In 2018, the government and farmers' unions started negotiations on how to limit emissions over 2021-30.

The **rural development** aspects of Norwegian agricultural policy include several programmes designed to stimulate innovation and the establishment of alternative businesses on farms and alternative employment in rural areas. Most of the funding is financed through the Agricultural Development Fund. The proposal of the total allocation of funds for rural development (on the Agricultural Agreement) was NOR 1 124 million (USD 136 million) for 2018 and NOR 1 134 million (USD 140 million) for 2019.

Trade policy developments in 2018-19

Article 19 of the European Economic Area (EEA) agreement provides that contracting parties will periodically carry out reviews of the conditions of their trade in agricultural products. The round of these reviews agreed in 2013 and finalised in April 2017, and changes agreed entered into force in October 2018. Tariff rate quotas increased on several products, including meat, cheese, vegetables and certain products used in the food industry for producing processed agricultural products.

As part of the European Free Trade Association (EFTA), Norway has negotiated 29 Free Trade Agreements (FTAs) with 40 partner countries. In 2018, agreements were concluded with India, Viet Nam, Malaysia and MERCOSUR. EFTA has also started re-negotiations of free trade agreements with Mexico, Chile and the Southern African Customs Union (SACU) - Botswana, Lesotho, Namibia, South Africa and Swaziland. These Free Trade Agreements and negotiations include processed agricultural products and a range of primary agricultural products. In 2018, Norway and the People's Republic of China held further meetings on a bilateral agreement.

At the WTO Ministerial Meeting in Nairobi on 19 December 2015, the member states decided that if the developed countries (Norway, Canada and Switzerland) abolish export subsidies on products destined for the least developed countries, they would be permitted to provide export subsidies for processed products, dairy products and swine meat until the end of 2020. In 2018, Norway notified the WTO that all export subsidies for agricultural products will be phased out by the end of 2020. Export subsidies of processed products to the European Union and marketing activities for horticultural products are financed directly by the government.

Chapter 21. Philippines

Support to agriculture

The level of support to producers, measured as a share of gross farm receipts (%PSE), averaged 26% in 2016-18. This is higher than the OECD average and one of the highest among all emerging economies covered by this report.

Market price support (MPS), which reflects the existing trade barriers (mainly Tariff Rate Quotas - TRQs), is the dominant form of support to Philippine producers. Rice producers are the main beneficiaries of the price support policies. The MPS for rice accounted for almost a half of the total value of MPS and represented 58% of gross farm receipts for rice in 2016-18. In addition to rice, substantial levels of support are provided to sugarcane, pig meat, and poultry, in particular through high import tariffs. The high level of MPS comes with an implicit taxation of primary consumers including the food processing industry, averaging 26% of the value of consumption in 2016-18 (%CSE).

Expenditures on general services (GSSE) as a ratio of agricultural value added have increased in recent years. Most of the expenditure on general services finances the development of infrastructure, in particular irrigation systems and – increasingly – also for extension programmes. The overall cost of support to the Philippine agricultural sector was at 2.9% of GDP in 2016-17. It was nearly six times the OECD average and one of the highest across all countries measured.

Main policy changes

The Philippines is moving away from quantitative restrictions on rice toward a system based on tariff rate quotas, except from Association of Southeast Asian Nations (ASEAN) countries from which imports will be facing a uniform 35% tariff and no quotas.

To increase support for rice producers, the government supressed the Irrigation Service Fee (ISF) paid by farmers to cover operational and maintenance costs of the irrigations systems as from 2017. The subsidy to the National Irrigation Administration (NIA), replacing the abolished ISF, continued under the 2018 national budget with PHP 2 billion (USD 38 million) to provide free irrigation for small farmers.

The National Irrigation Administration (NIA) was provided with additional PHP 41.7 billion (USD 0.79 billion) to ensure the development, restoration, repair, and rehabilitation of climate-resilient irrigation systems nationwide.

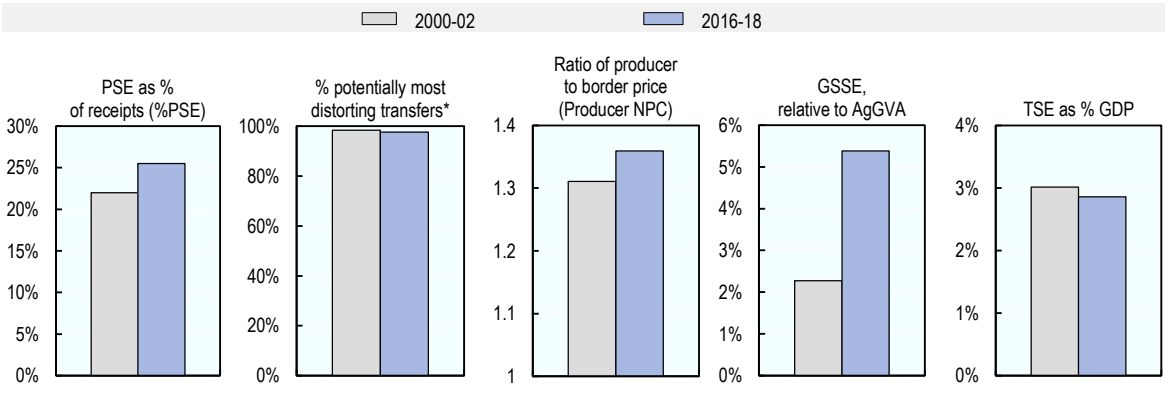
Assessment and recommendations

- The Philippines' key agricultural policy objectives focus on food security and poverty alleviation through guaranteeing a stable supply of staple food (rice) at affordable prices. The goal of self-sufficiency in rice has driven a range of policy measures supporting rice producers – as opposed to the regional trend toward the diversification into higher value commodities – while contributing to the

undernourishment of poor households that are net rice consumers and effectively taxed by higher prices.

- The Philippines is slowly moving away from quantitative restrictions on rice imports and changing the role of the National Food Authority (NFA), which was previously the only authorised institution allowed to import rice in case of actual or projected shortage. Now the NFA allocates permits to eligible importers for the importation of rice, and is confined to local paddy procurement and to maintaining buffer stocks at an equivalent of two weeks of national consumption. A continued effort to deregulate markets, reduce trade barriers and shifting away from commodity-specific forms of support could improve the country's food security by increased diversification of production, better allocation of resources, with subsequent effects on consumption and income.
- In view of the Philippines' high susceptibility to typhoons, tropical storms and flooding, the government should adopt a holistic approach to risk management and mainstream adaptation policy objectives across programmes and institutions. Moreover, the effectiveness of current risk management tools should be assessed – in particular, the extent to which insurance and cash-transfer schemes encourage risk-reducing decision-making on farm on the farm. Lastly, farmer awareness should be increased by sharing information about local conditions, future projections and adaptive solutions.
- The agricultural sector's total factor productivity (TFP) growth is slower than the world average and slower than in most countries in the region. This is likely to be linked to decades of underinvestment (or, in some cases, misdirected investment), policy distortions, uncertainties linked with the implementation of agrarian reform and periodic extreme weather conditions. In 2017, the Philippines reallocated some funding from variable input subsidies to investment in infrastructure and through the re-orientation of agricultural knowledge systems. Continuing such efforts to refocus budgetary support on long-term structural reform is key to promoting productivity growth.
- Agricultural policies in the Philippines are designed and implemented by a complex system of institutions. The government could strengthen institutional co-ordination between the Department of Agriculture and other relevant departments and institutions that develop and implement programmes supporting agriculture; strengthen transparency and accountability of publicly-funded programmes; accelerate efforts to build a solid policy-relevant statistical system; and integrate monitoring and evaluation mechanisms into the policy process.

Figure 21.1. Philippines: Development of support to agriculture

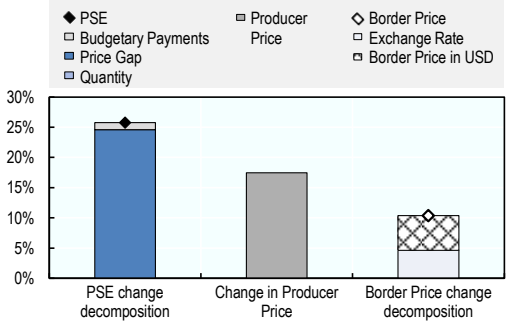


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Support to producers (%PSE) was around 26% in 2016-18, indicating that more than one-fourth of gross farm revenues were generated by policies. Compared to 2000-02, the level of support has grown (Figure 21.1); an increase can be noted from 2017 to 2018 due to an increased price gap between domestic prices and world prices (Figure 21.2). A dominant part of support is provided through market price support, with a strong focus on rice. Market price support and input subsidies without input constraints, both considered as potentially **most distorting forms of support**, represent almost the total value of support to producers. On average, prices received by farmers were 36% higher than world prices in 2016-18 (compared to 31% in 2000-02). MPS is also the main component of Single Commodity Transfers (SCT): rice and sugar had the highest share of SCT in commodity gross farm receipts in 2016-18 (Figure 21.3). Expenditures for **general services** (GSSE) relative to agricultural value added more than doubled from 2000-02 to 2016-18 (Figure 21.1). A dominant share of these expenditures is allocated to infrastructure, in particular on investment in irrigation systems, the other important (and increasing) expenditures are on extension. **Total support to agriculture** as a share of GDP was 2.9% in 2016-18 – one of the highest across all countries covered by the OECD support indicators.

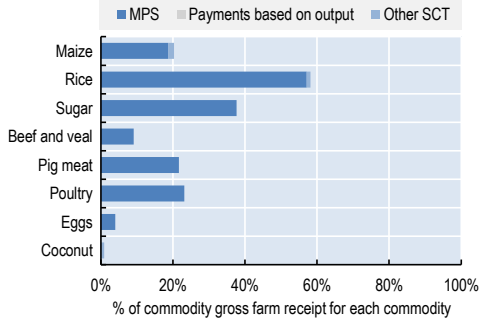
Figure 21.2. Philippines: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933938574

Figure 21.3. Philippines: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933938593

Table 21.1. Philippines: Estimates of support to agriculture

Million USD

	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**9 727**	**29 808**	**29 278**	**28 567**	**31 578**
***of which:** share of MPS commodities (%)*	89.2	89.3	88.5	89.1	90.1
Total value of consumption (at farm gate)	**9 951**	**32 130**	**31 001**	**31 014**	**34 374**
Producer Support Estimate (PSE)	**2 163**	**7 681**	**7 799**	**6 918**	**8 327**
Support based on commodity output	2 090	7 371	7 451	6 660	8 001
Market Price Support[1]	2 090	7 371	7 451	6 660	8 001
Positive Market Price Support	2 130	7 371	7 451	6 660	8 001
Negative Market Price Support	-40	0	0	0	0
Payments based on output	0	0	0	0	0
Payments based on input use	69	305	344	254	316
Based on variable input use	36	131	115	117	161
with input constraints	0	0	0	0	0
Based on fixed capital formation	32	174	229	137	155
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	6	4	4	10
Percentage PSE (%)	**22.0**	**25.5**	**26.3**	**24.0**	**26.1**
Producer NPC (coeff.)	**1.31**	**1.36**	**1.38**	**1.33**	**1.37**
Producer NAC (coeff.)	**1.28**	**1.34**	**1.36**	**1.32**	**1.35**
General Services Support Estimate (GSSE)	**244**	**1 531**	**1 443**	**1 536**	**1 615**
Agricultural knowledge and innovation system	56	311	276	341	316
Inspection and control	14	53	41	55	62
Development and maintenance of infrastructure	155	970	922	951	1 036
Marketing and promotion	6	67	90	65	47
Cost of public stockholding	12	108	89	101	133
Miscellaneous	1	23	23	23	21
Percentage GSSE (% of TSE)	**10.1**	**16.6**	**15.6**	**18.2**	**16.2**
Consumer Support Estimate (CSE)	**-2 261**	**-8 401**	**-8 320**	**-7 685**	**-9 199**
Transfers to producers from consumers	-2 316	-7 882	-8 041	-7 071	-8 533
Other transfers from consumers	-147	-976	-802	-980	-1 145
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	201	456	522	366	479
Percentage CSE (%)	**-22.6**	**-26.1**	**-26.8**	**-24.8**	**-26.8**
Consumer NPC (coeff.)	**1.33**	**1.38**	**1.40**	**1.35**	**1.39**
Consumer NAC (coeff.)	**1.29**	**1.35**	**1.37**	**1.33**	**1.37**
Total Support Estimate (TSE)	**2 408**	**9 213**	**9 241**	**8 455**	**9 942**
Transfers from consumers	2 463	8 857	8 843	8 051	9 678
Transfers from taxpayers	92	1 331	1 200	1 383	1 409
Budget revenues	-147	-976	-802	-980	-1 145
Percentage TSE (% of GDP)	**3.0**	**2.9**	**3.0**	**2.7**	**..**
Total Budgetary Support Estimate (TBSE)	**318**	**1 842**	**1 790**	**1 794**	**1 941**
Percentage TBSE (% of GDP)	**0.4**	**0.6**	**0.6**	**0.6**	**..**
GDP deflator (2000-02=100)	**100**	**171**	**170**	**173**	**..**
Exchange rate (national currency per USD)	**48.96**	**50.19**	**47.49**	**50.40**	**52.67**

.. 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 (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

The Philippines is a mid-size country in terms of land area, but its population of 105 million makes it the world's 13th most populous country. At USD 8 343 in purchasing power parity (PPP), GDP per capita in the Philippines is little above one-third the average GDP per capita of all countries analysed in this report (Table 21.2). Agriculture is a key sector for the Philippines, accounting for a little more than a quarter of total employment and one-tenth of GDP (Table 21.2). Farms tend to be small-sized with the average landholding at just 1.3 hectare – a figure that has been falling in recent years.

Since 2012, the Philippines has achieved relatively stable growth of around 6% annually, and reduced its rate of unemployment (Figure 21.4). Inflation has fallen to a low of less than 1% in 2015 before rising again. Overall, the Philippine economy, including its agro-food sector, integrates well in international markets – as measured by the ratio of trade to GDP at 27% in 2017.

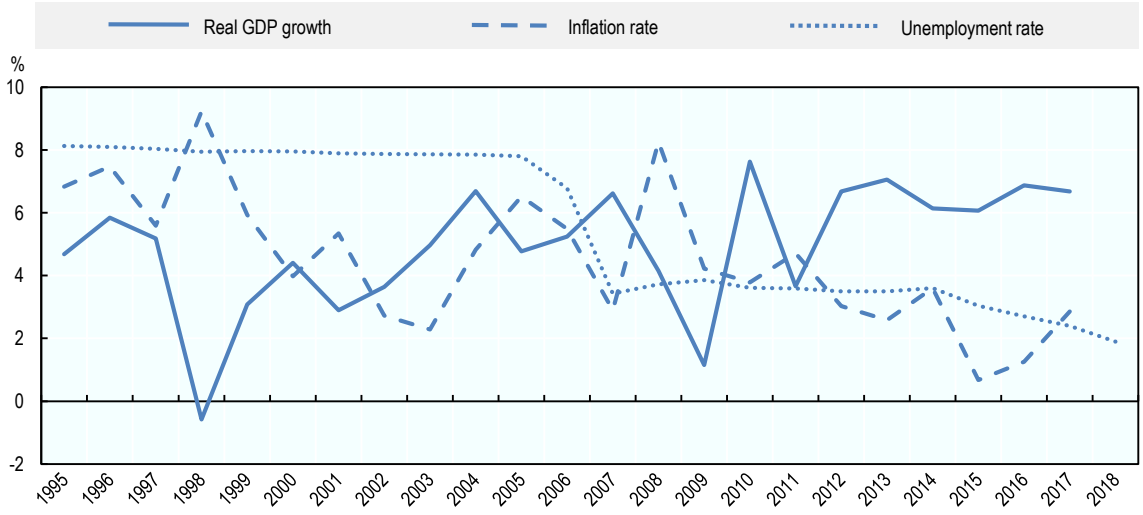
Table 21.2. Philippines: Contextual indicators

	Philippines		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	202	875	0.7%	0.9%
Population (million)	70	105	1.8%	2.2%
Land area (thousand km²)	298	298	0.4%	0.4%
Agricultural area (AA) (thousand ha)	11 015	12 440	0.4%	0.4%
			All countries[1]	
Population density (inhabitants/km²)	234	352	48	60
GDP per capita (USD in PPPs)	2 887	8 343	7 642	21 231
Trade as % of GDP	33	27	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	21.6	9.7	3.3	3.5
Agriculture share in employment (%)	44.1	26.0	-	-
Agro-food exports (% of total exports)	8.5	8.1	8.1	7.5
Agro-food imports (% of total imports)	8.6	11.2	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	71	59	-	-
Livestock in total agricultural production (%)	29	41	-	-
Share of arable land in AA (%)	48	45	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

With limited land and a large population, the Philippines is a growing net importer of agro-food products. Of these imports, three-quarters are processed goods that are used directly for (final) consumption or as intermediate inputs by the processing industry. On the export side, around half of all agro-food exports are sold to firms for use as inputs in export markets, with another half going to foreign consumers (Figure 21.5).

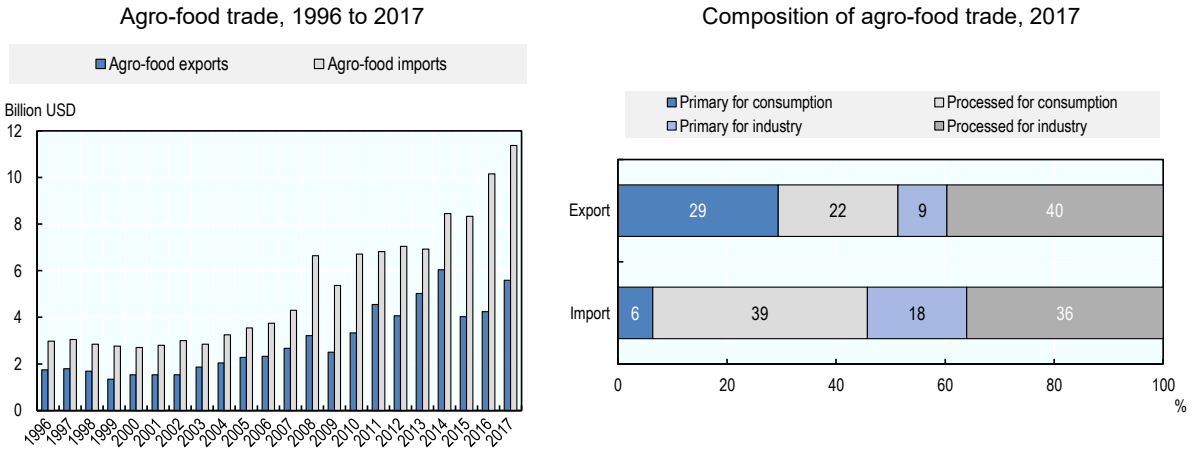
Figure 21.4. Philippines: Main economic indicators, 1995 to 2018



Note: Change in the ILO definition of employment in 2005.
Sources: OECD statistical databases; World Bank, WDI and ILO estimates and projections.

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Figure 21.5. Philippines: Agro-food trade



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

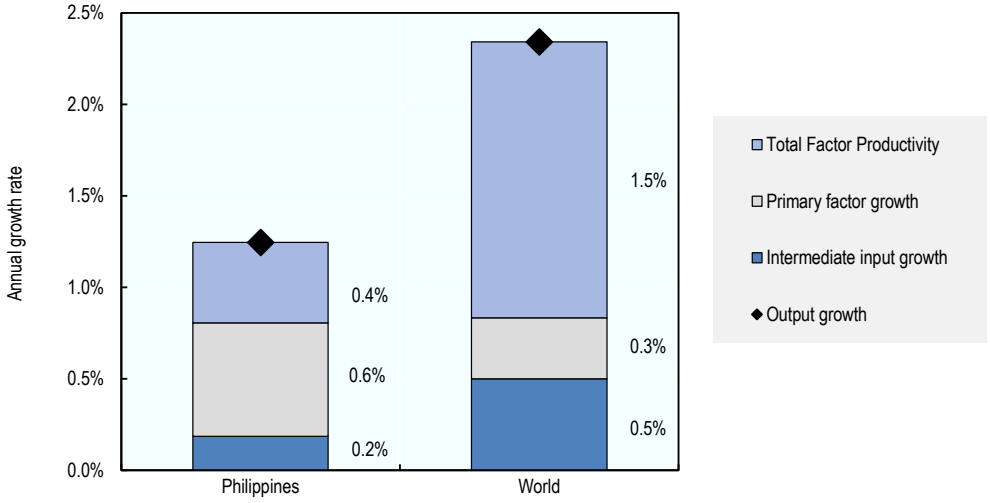
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At 0.4% per year, the agricultural Total Factor Productivity (TFP) growth has increased moderately over the past ten years, the output growth has remained relatively weak and has averaged 1.2% per year, well below the world average (Figure 21.6) and is one of the lowest growth rates in Southeast Asia (OECD, 2017[2]).

Agricultural land resources are under strain from frequent natural disasters, population growth and urbanisation. The Philippines has abundant water resources, of which the

agriculture sector is the main user – accounting for 82% of total freshwater withdrawals (Table 21.3). Nonetheless, shortages can occur during the dry season in some regions. Agriculture share in total energy use has increased, but remains well below the OECD average.

Figure 21.6. Philippines: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

StatLink https://doi.org/10.1787/888933938650

Table 21.3. Philippines: Productivity and environmental indicators

	Philippines		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	0.3%	0.4%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha[1]	40.5	45.3	33.2	30.0
Phosphorus balance, kg/ha[1]	3.5	2.3	3.7	2.3
Agriculture share of total energy use (%)	0.3	0.7	1.9	2.0
Agriculture share of GHG emissions (%)	33.0	..	8.5	8.9
Share of irrigated land in AA (%)	..	..	-	-
Share of agriculture in water abstractions (%)	..	82.0	45.4	42.5
Water stress indicator	..	..	9.7	9.7

Note: * or closest available year. 1. Preliminary data.
Source: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Description of policy developments

Main policy instruments

Market price support is the dominant form of support to Philippine producers. Price support policy is focused mainly on rice and sugar and reflects a combination of trade barriers and domestic market regulation. Discussions to reform the current system of quantitative restrictions for rice, and potentially sugar, are underway. The rice price support policy is implemented by the National Food Authority (NFA) through price support for producers, a subsidised release price for consumers, government procurement, and import restrictions. The NFA is in charge of keeping buffer stocks of rice to stabilise consumer price levels and ensure adequate and continuous supply. For sugar, production quotas and trade barriers are used for producer price support and market regulation.

Tariff protection remains the Philippines' main trade policy tool. Trade liberalisation has primarily occurred within regional trade agreements, particularly the ASEAN Free Trade Area. The simple average applied Most Favoured Nation tariff on agricultural products was 9.8% in 2016. All tariff lines applied are *ad valorem* and range from 0% to 65%.

Tariff rate quotas are applied for 14 agricultural products, with in-quota tariffs ranging from 30% to 50% and out-of-quota from 35% to 65%. This means that out-of-quota rate is extremely close to the in-quota rate. Products covered include live swine, goats and poultry and meat thereof, potatoes, coffee, maize, rice, sugar, and coffee. However, for three of those agricultural products (live horses, live bovine animals and beef), the TRQ is not implemented. For three others (poultry meat, potatoes and coffee), it is only applied to a specific range of tariff lines (WTO, 2018[3]). Import licensing is required for all regulated products (including those under TRQs) and are intended to safeguard public health, national security and welfare and to meet international treaty obligations.

The Philippines apply **quantitative restriction (QR) on rice imports.** These restrictions were first established when joining the WTO in 1995: the Philippines benefited from a special treatment clause (Article 5 of the Agreement on Agriculture) which allowed it to maintain QRs on rice imports on the basis of food security until 2012. In return, the Philippines had to guarantee minimum market access in the form of a progressively increasing import quota (minimum access volume, MAV). In 2012, the Philippines requested a new extension of its special treatment for rice through a waiver until 2017. The waiver was granted in July 2014 on the condition that the Philippines increased the MAV to 805 200 tonnes, lowered the in-quota tariff to 35% and that, after 30 June 2017. , its importation of rice would be subject to ordinary customs duties established on the basis of a tariff equivalent to be calculated in accordance with the guidelines defined in the WTO Agreement on Agriculture (WTO, 2014[4]). QRs on rice imports were unilaterally extended to December 2020. However, the "Revised Agricultural Tariffication Act" passed in 2018 is proposing to reform the system of QR on rice imports (see trade policy developments section).

Sanitary and phytosanitary requirements are complex and remain unchanged despite the reform of the food safety regime in 2013 (entered into force in 2015) with the "Food Safety Act", the country's first comprehensive food safety law that applies to all food from "farm-to-fork", whether domestically produced or imported (WTO, 2018[3]).

Several agricultural commodities are subject to **export controls** and may require permits in addition to agency approval, namely rice, grains and grain products, and sugar. Exports of rice and maize remain restricted and, in principle, controlled by the NFA.

Budgetary support to agricultural producers, both through payments provided to farmers individually and to the agricultural sector as a whole (general services), is marginal compared to the value of transfers created by market price support and when compared to the OECD average. During the 2000s, budgetary support to producers went mainly to subsidise use of variable inputs. However, payments to producers for fixed capital formation have increased in recent years.

Crop insurance has expanded significantly in recent years. Approximately 15% of farmers received free crop insurance coverage in 2017 and the government plans to increase coverage to 20% in 2018 (PCIC, 2018[5]). The system is fully dependent on the Philippines Crop Insurance Corporation, a government corporation under the Department of Agriculture.

Expenditures on **general services** have increased significantly since the end of the 2000s. The most important item is the development and maintenance of infrastructure, of which a major share is devoted to off-farm investments in irrigation systems. Expenditures financing extension services is the second most important (and increasing) item in GSSE.

In 1988, the Philippines undertook an ambitious **agrarian reform** that covered close to three quarters of the country's total agricultural land. By end-2015, the redistribution of land was almost complete, but property rights remain to be settled, with almost half of the reform beneficiaries still covered by collective ownership certificates. Various restrictions on land-market transactions and insecure property rights set limits to on-farm investment and weakened the potential economic benefits of the reform.

Domestic policy developments in 2018-19

The **Irrigation Service Fee** (ISF) paid by farmers to cover operational and maintenance (O&M) costs of the irrigations systems was abolished for rice producers owning eight hectares of land or less in 2017. The government approved a fund of PHP 2.3 billion (USD 48 million) to enable the National Irrigation Administration (NIA) to cover the O&M costs in 2017 (FAO, 2016[6]). The subsidy of the ISF to the NIA continued under the 2018 national budget with PHP 2 billion (USD 38 million) to ensure free irrigation for small farmers. The surface of newly irrigated land developed was 16 562 hectares in 2017 and 18 447 hectares in 2018 (Department of Budget and Management, 2018[7]).

Total budgetary allocations to agriculture remained relatively stable at PHP 45.9 billion (USD 0.91 billion) in 2017 and PHP 50.6 billion (USD 0.96 billion) in 2018 (Simeon, 2018[8]), though their structure changed. Payments based on input use declined – in particular, due to a decline in funding for post-harvest facilities (such as dryers, warehouses and seed storage). At the same time, funding for general services support increased – most notably, due to a rise in the budget for the development and maintenance of irrigation systems, in line with the national priority to increase infrastructure spending , as well as additional funding for extension programmes. The NIA was allocated and additional PHP 41.7 billion (USD 0.79 billion) to ensure the development, restoration, repair, and rehabilitation of climate-resilient irrigation systems nationwide. The 2019 total budget for agriculture will remain similar, if slightly lower than 2018, at PHP 49.8 billion (USD 0.95 billion) (Simeon, 2018[8]).

Expanding opportunities in agriculture, forestry, and fisheries was one of the budget priorities in 2018. Investments were planned in infrastructure, including the construction of irrigation systems, farm-to-market roads and mechanisation and post-harvest facilities. Investments are also planned in research and development as well as in financial assistance

with a "quick credit programme" and a "crop insurance programme". Finally, the Department of Agrarian Reform (DAR) was allocated PHP 9.9 billion (USD 191 million) to fast track the distribution of land to farmers and provide other basic support services.

The Philippines ratified the Paris Agreement on Climate Change in March 2017, committing to cut emissions by 70% by 2030 and strengthen adaptation efforts. Agriculture is not among the priority sectors for emission reductions, however, the Philippines Climate Change Commission asked the agriculture and fishery stakeholders to submit proposals for the Philippines' Nationally Determined Contribution (NDC) on the Paris Agreement, to be submitted by 2020 (Philippine Council for Agriculture and Fisheries, 2018[9]).

Trade policy developments in 2018-19

The Philippines had previously committed in the WTO to discontinue a **quantitative restriction (QR) on rice imports** in mid-2017; however, an executive order (No. 23) was issued in May 2017, which has unilaterally extended tariff concessions and the QRs. The QRs are now set to be maintained until December 2020 or until Congress amends the Agricultural Tariffication Act of 1996 (which currently exempts rice from tariffication).

Confronted with rising inflation, in August 2018, the Philippine House of Representatives approved the proposed "Revised Agricultural Tariffication Act". The Senate have passed legislation to this effect, with a reconciled bill approved by a Bicameral Conference Committee on 28 November 2018 (GAIN, 2018[10]). It moves trade policies away from quantitative restrictions on rice toward a system based on tariff rate quotas, except from ASEAN countries from which imports face a uniform 35% tariff and no quotas. The MFN bound tariff for rice imports is to be set at 40% in-quota and at 180% for imports outside quotas. The current MAV of 805 000 tonnes is set to revert to its 2012 level of 350 000 tonnes (GAIN, 2018[11]). The NFA, previously the only authorised institution allowed to import rice in case of actual or projected shortage, is tasked to allocate permits to eligible importers for the importation of rice. NFA would remain the sole authority for local paddy procurement and be tasked to maintain buffer stocks at an equivalent of two weeks of national consumption.

In April 2016, the Philippines signed a Free Trade Agreement (FTA) with the member states of the **European Free Trade Association (EFTA)**. This broad-based agreement covers trade in goods (industrial and agricultural goods, fish and other marine products), rules of origin, trade facilitation, trade in services, investment, competition, protection of intellectual property rights, government procurement and sustainable development (GAIN, 2016[12]). In March 2018, the Philippines Senate voted to ratify the agreement, and the agreement entered into force on 1 June 2018 for the Philippines, Norway, Liechtenstein and Switzerland and has been fully implemented since 24 October 2018.[1]

The Philippines and the European Union continue to negotiate an **EU-Philippines FTA**. The current relationship between the two parties is based on the Partnership and Cooperation Agreement signed in 2012. The aim of the negotiations is to conclude an agreement that covers a wide range of areas including tariffs, non-tariff barriers to trade, trade in services and investment, as well as trade aspects of public procurement, intellectual property, competition and sustainable development (EC, 2017[13]).

Note

[1] See https://www.efta.int/free-trade/free-trade-agreements/philippines.

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Chapter 22. Russian Federation

Support to agriculture

Around 83% of total support to agriculture (TSE) in 2016-18 was provided to producers individually (PSE), with the rest directed to general services for agriculture (15%) and to support agricultural commodity buyers (2%).

Support to producers fluctuated over the long-term, but after 2010 has remained within a band between 12% and 15% of gross farm receipts (%PSE). The largest part of transfers to producers (77%) originates from the most distorting forms of support, such as market price support and subsidies based on output and variable input use. The aggregate market price support disguises strong variations in support across commodities: it represents a mix between the border protection for imported livestock products and sugar, and the implicit and explicit taxation of exported grains and oilseeds. Livestock producers additionally benefit from domestic grain prices being below the world levels. Within support to general services, the agricultural knowledge system, development and maintenance of infrastructure, and the inspection and control system absorb the largest shares of public funding.

Total support to agriculture (TSE) was equal to 0.8% of GDP in 2016-18. This percentage has been decreasing since the mid-1990s, largely reflecting GDP growth and the declining GDP share of the agricultural sector. Taxpayers provide 39% of total support transfers, the remaining 61% coming from consumers. Consumer contribution to agricultural support is due to agricultural prices supported on average 10% above the international levels. Net of the budgetary support to agricultural commodity buyers, this increased their expenditures by 11% (%CSE) in 2016-18.

Main policy changes

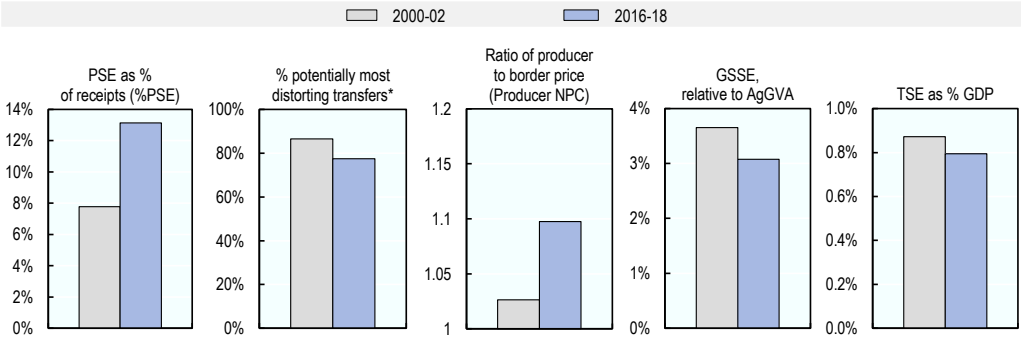
The State Programme for the Development of Agriculture was revised. Its end year was extended from 2020 to 2025, its structure changed to combine projects and programmes for better administration, and new projects on digital agriculture and agricultural export were included. A substantial increase of state support is foreseen for the development of export infrastructure, facilitation of access to foreign markets through phytosanitary improvements, and product promotion and positioning abroad. Greater emphasis has been placed on family farming, rural co-operation and rural development. Apart from these new features, the current version of the State Programme has maintained the previous directions of support and the underlying measures. As previously, the State Programme is focussed on increasing investments in agriculture and downstream industries and providing production stimulus to import competing sectors. Compared to the first phase (2013-17) it is foreseen to increase the State Programme's financing by 17% per year on average. The ban on agro-food imports from a number of countries imposed in 2014 was extended until end-2019. As one of the parties to the Treaty on the Eurasian Economic Union (EAEU), the Russian Federation implemented a new EAEU Customs Code in 2018 and adopted a number of new EAEU regulations in sanitary and phytosanitary, and technical regulation

areas. In 2018, the Russian Federation as a member of the EAEU signed an interim agreement leading to the formation of a free trade area with Iran and a non-preferential agreement on economic and trade co-operation with the People's Republic of China (hereafter "China").

Assessment and recommendations

- The State Programme for Development of Agriculture is aimed at boosting the agricultural production and agro-food import substitution. The political context since mid-2010 has intensified the country's import substitution orientation into self-sufficiency policy in the agro-food area. Most recently, the policy orientation was broadened to also include the development of agricultural export potential and tapping the markets of large agro-food importers.
- Policy making in the past two years was focussed on improving the administration of government funding. The transfer of funds from the federal centre to regions was simplified, which in principle may facilitate tailoring of support to regional needs. Project principle was also introduced into the State Programme to strengthen the connection between policy goals, resources engaged, and desired outcomes. These changes are recent and the extent to which they reduce policy administration costs and enable a more efficient use of funds is yet unclear.
- Although there has been some shift towards area and per head payments, distorting subsidies and import protection continue to prevail as policy instruments to achieve the stated objectives of import substitution and export development.
- These objectives, however, require substantial and sustained improvements in the competitiveness of agriculture, which is more likely to be achieved through prioritising investments in the sector's long-term productivity, such as infrastructure and plant and livestock health systems.
- Research and development (R&D) and knowledge transfer is one more critical field to lever competitiveness, in particular as the recent export development objective requires knowledge and capabilities to seize new demand signals and external market opportunities. The success of the current sectoral programme for support of scientific and technological development will depend, among other things, on the stability of R&D financing, including through mobilising private sources and ensuring that funding and activities respond to business demands. However, apart from creating R&D products, it is also important to enable their uptake by producers. This challenge lies beyond agricultural policy and requires further improvements in overall conditions for investment and doing business.
- Human capital is another key factor of long-term growth. Consecutive targeted programmes directed resources for rural development. A substantial increase of such spending is foreseen within a new State Programme on integrated development of rural territories. This is a positive development, as much remains to be done to improve living conditions in rural areas and secure skills and knowledge for rural economy.

Figure 22.1. Russia: Development of support to agriculture

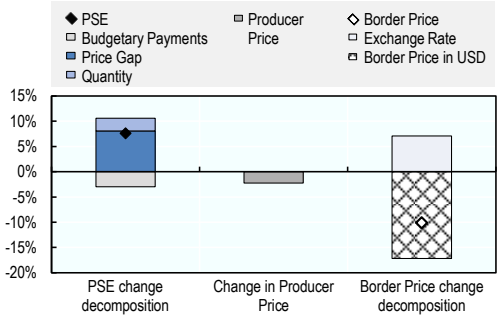


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Support to producers (%PSE) was at 13% of producer gross receipts in 2016-18, below the OECD average and above the level observed in 2000-02 (8%). This total masks negative MPS measured for some commodities, equal to 1.7% of producer gross receipts in 2016-18. The share of gross producer transfers (whether positive or negative) provided in most **potentially distorting forms** declined from 87% in 2000-02 to 77% in 2016-18 (Figure 22.1). The total value of producer support in local currency rose by 8% in the most recent year, largely due to an increase in the market price support as domestic prices fell less strongly than border prices. The effect of higher market price support on the PSE was mitigated by some reduction in budgetary payments (Figure 22.2). Prices received by farmers were on average 10% above those observed on world markets in 2016-18 (NPC), compared to 3% in 2000-02. This aggregate NPC disguises border protection for livestock products and sugar and taxation of grains and oilseeds. Products receiving the highest commodity-specific support relative to the value of gross farm receipts from those commodities (%SCT) are milk (32%), sugar (31%), and beef and veal (21%). Grains and oilseeds are implicitly taxed (Figure 22.3). The share of Single Commodity Transfers (SCT) in the PSE was 72% in 2016-18. The expenditures for **general services** (GSSE) fell relative to the sector's value added – they were equivalent to 3% in 2016-18, compared to nearly 4% in 2000-02, which partly reflects the growth of agricultural output value. **Total support to agriculture** (TSE) as a % of GDP decreased from 0.9% in 2000-02 to 0.8% in 2016-18, mostly being a result of the GDP growth.

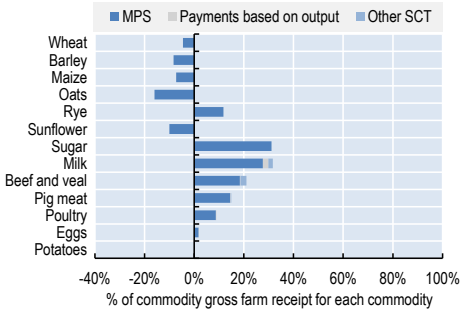
Figure 22.2. Russia: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Figure 22.3. Russia: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Table 22.1. Russian Federation: Estimates of support to agriculture

Million USD

	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**26 411**	**72 062**	**66 276**	**77 091**	**72 821**
***of which:** share of MPS commodities (%)*	78.7	78.1	78.5	77.5	78.3
Total value of consumption (at farm gate)	**32 347**	**73 399**	**67 959**	**78 613**	**73 626**
Producer Support Estimate (PSE)	**2 108**	**9 882**	**9 629**	**10 012**	**10 005**
Support based on commodity output	1 107	6 809	6 601	6 676	7 151
Market Price Support[1]	910	6 496	6 218	6 371	6 900
Positive Market Price Support	2 224	7 715	7 072	7 613	8 459
Negative Market Price Support	-1 314	-1 218	-854	-1 242	-1 559
Payments based on output	198	313	383	304	250
Payments based on input use	719	2 214	2 226	2 244	2 170
Based on variable input use	359	290	400	197	275
with input constraints	0	0	0	0	0
Based on fixed capital formation	318	1 847	1 741	1 983	1 817
with input constraints	0	0	0	0	0
Based on on-farm services	42	76	86	64	78
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	0	580	510	579	650
Based on Receipts / Income	0	28	1	43	39
Based on Area planted / Animal numbers	0	552	509	536	611
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	282	280	291	514	34
Percentage PSE (%)	**7.8**	**13.1**	**13.8**	**12.4**	**13.2**
Producer NPC (coeff.)	**1.03**	**1.10**	**1.10**	**1.09**	**1.10**
Producer NAC (coeff.)	**1.08**	**1.15**	**1.16**	**1.14**	**1.15**
General Services Support Estimate (GSSE)	**684**	**1 761**	**1 543**	**1 902**	**1 838**
Agricultural knowledge and innovation system	175	583	509	588	651
Inspection and control	203	473	443	503	475
Development and maintenance of infrastructure	230	378	279	469	385
Marketing and promotion	2	34	21	40	40
Cost of public stockholding	1	78	0	102	130
Miscellaneous	73	216	291	200	158
Percentage GSSE (% of TSE)	**24.0**	**14.8**	**13.5**	**15.7**	**15.2**
Consumer Support Estimate (CSE)	**-1 740**	**-8 352**	**-8 089**	**-8 166**	**-8 801**
Transfers to producers from consumers	-541	-6 534	-6 045	-6 556	-7 000
Other transfers from consumers	-865	-1 772	-1 841	-1 676	-1 798
Transfers to consumers from taxpayers	25	212	242	177	216
Excess feed cost	-359	-259	-445	-111	-220
Percentage CSE (%)	**-5.6**	**-11.4**	**-11.9**	**-10.4**	**-12.0**
Consumer NPC (coeff.)	**1.05**	**1.13**	**1.13**	**1.12**	**1.14**
Consumer NAC (coeff.)	**1.06**	**1.13**	**1.14**	**1.12**	**1.14**
Total Support Estimate (TSE)	**2 818**	**11 855**	**11 414**	**12 092**	**12 059**
Transfers from consumers	1 406	8 305	7 886	8 232	8 798
Transfers from taxpayers	2 276	5 321	5 369	5 536	5 059
Budget revenues	-865	-1 772	-1 841	-1 676	-1 798
Percentage TSE (% of GDP)	**0.9**	**0.8**	**0.9**	**0.8**	**0.7**
Total Budgetary Support Estimate (TBSE)	**1 908**	**5 358**	**5 196**	**5 720**	**5 158**
Percentage TBSE (% of GDP)	**0.6**	**0.4**	**0.4**	**0.4**	**0.3**
GDP deflator (2000-02=100)	**100**	**582**	**545**	**573**	**627**
Exchange rate (national currency per USD)	**29.56**	**62.73**	**67.05**	**58.33**	**62.81**

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 Russia are: wheat, maize, rye, barley, oats, sunflower, sugar, potatoes, milk, beef and veal, pig meat, poultry and eggs.

Source: OECD (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

The Russian Federation has the largest land area in the world and is abundantly endowed with agricultural land. Natural, economic, and social conditions are highly diverse. The country is the world's sixth largest economy in purchasing power parity (PPP) terms. Agriculture contributes 4.0% of GDP and 6.7% of employment, both shares significantly declined since the mid-1990s. In 2018, the country ranked second world's largest producer of barley, rye, sunflower seeds and sunflower oil and fourth largest producer of wheat; it is also among world's top ten producers of dairy products, pig meat, and poultry.

The farm structure is dualistic, where commercial operations of different sizes co-exist with household units. Commercial units generate two-thirds of agricultural output and produce virtually all grain, oilseeds, and sugar, 82% of animals for slaughter, and somewhat over 60% of milk. Households engage in agriculture mainly for own consumption and generate one-third of total output value. They grow nearly 70% of potatoes and 55% of vegetables produced in the country.The rural population is 37.6 million (2018) or 26% of the total, a share which has remained stable since 2009. Households allocated on average 36% of their final consumption expenditures to food (2017), this share ranging from 52% for the poorest to 27% for the richest 20% of the population.

Table 22.2. Russia: Contextual indicators

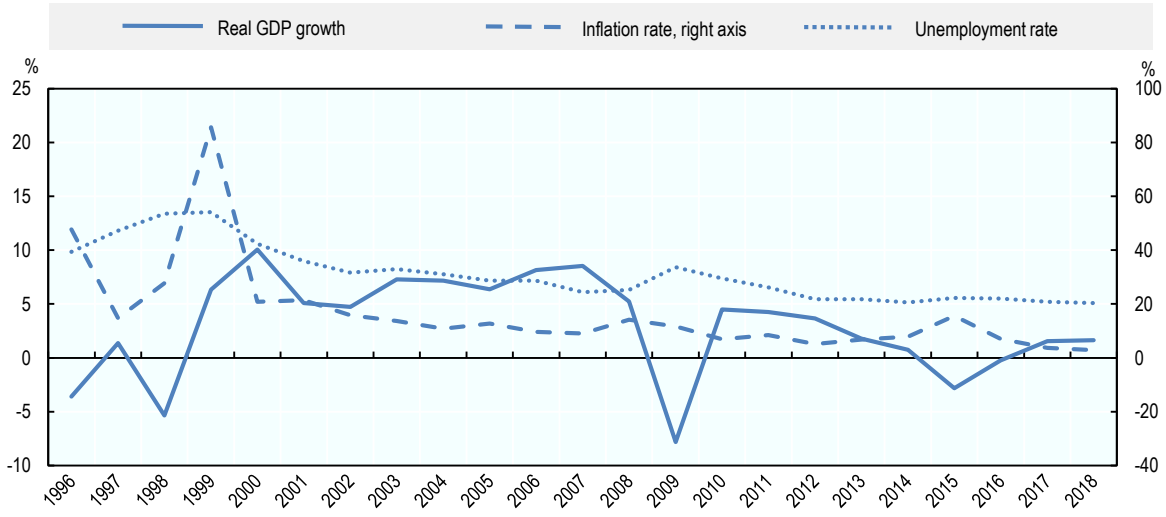
	Russia		International comparison	
	1995*	2017*	1995*	2017*
Economic context			**Share in total of all countries**	
GDP (billion USD in PPPs)	896	3 532	3.0%	3.4%
Population (million)	148	147	3.8%	3.0%
Land area (thousand km²)	16 378	16 377	20.5%	20.2%
Agricultural area (AA) (thousand ha)	216 400	217 722	7.2%	7.3%
			All countries[1]	
Population density (inhabitants/km²)	9	9	48	60
GDP per capita (USD in PPPs)	6 038	24 789	7 642	21 231
Trade as % of GDP	18	19	9.9	14.7
Agriculture in the economy			**All countries[1]**	
Agriculture in GDP (%)	6.7	4.0	3.3	3.5
Agriculture share in employment (%)	12.0	6.7	-	-
Agro-food exports (% of total exports)	2.1	4.8	8.1	7.5
Agro-food imports (% of total imports)	18.1	12.1	7.4	6.6
Characteristics of the agricultural sector			**All countries[1]**	
Crop in total agricultural production (%)	53	51	-	-
Livestock in total agricultural production (%)	47	49	-	-
Share of arable land in AA (%)	59	57	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

GDP growth continued in 2018, after picking up in 2017 from the recession of the previous two years. Inflation accelerated in 2018, but remained modest, while the unemployment rate continued to decrease. Agricultural output fell by 0.6% in 2018, on the backdrop of a less abundant grain crop than a year before. The Russian Federation remained the largest wheat and rye, and the third largest barley exporter in 2018. The country was among the top ten meat importers. Agro-food products account for a significant but declining share of total imports and for a smaller, but rising share in total exports. The negative agro-food

trade balance has narrowed. The agro-food imports are focussed on supplying domestic final food consumption, while exports are largely destined to agro-processors abroad.

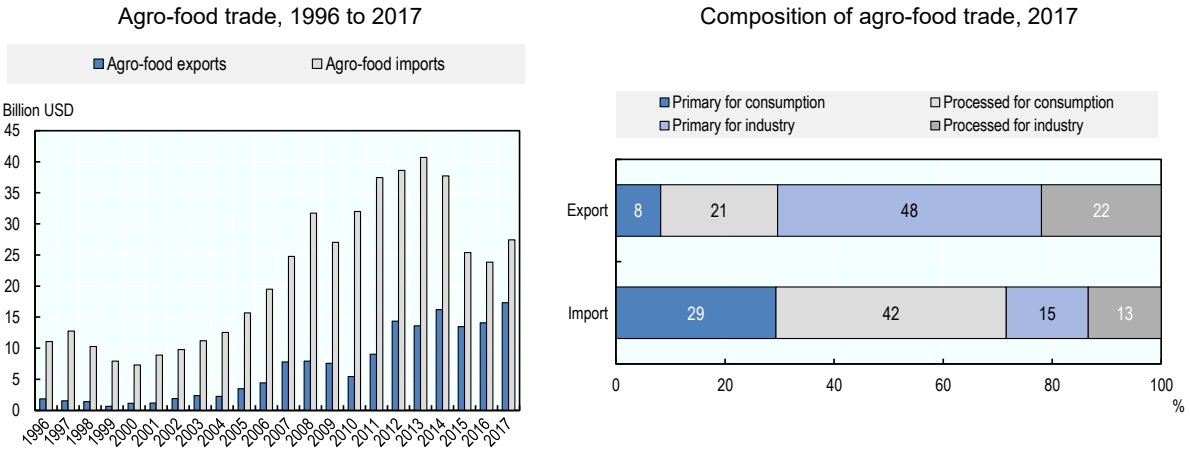
Figure 22.4. Russia: Main economic indicators, 1996 to 2018



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

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Figure 22.5. Russia: Agro-food trade



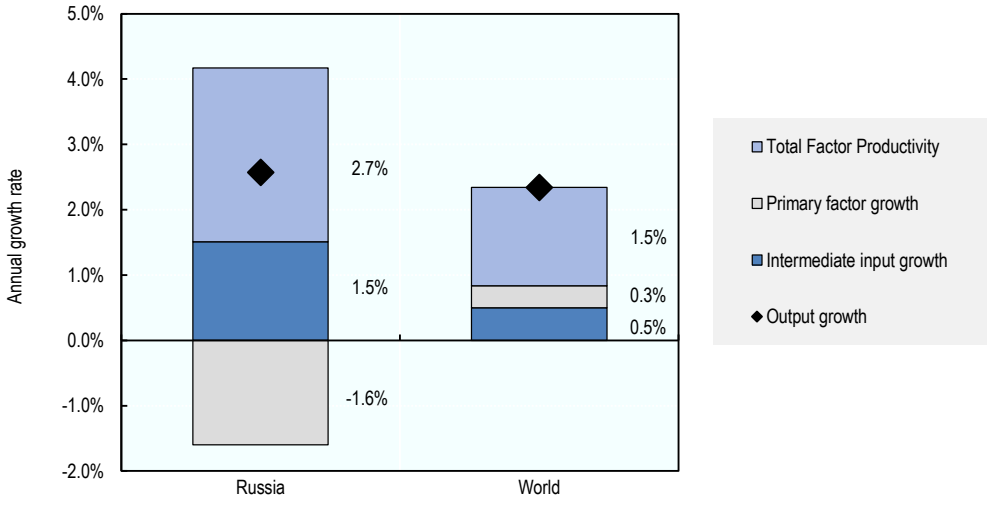
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database

StatLink https://doi.org/10.1787/888933938745

Agricultural output has been recovering from a deep recession in the 1990s. Output growth since 2006 has been driven mainly by the improvements in Total Factor Productivity (TFP), significantly exceeding average global TFP growth. The higher use of intermediate inputs contributed to growth to a lesser degree, while the employment of primary factors, in particular of machinery and labour, has declined. The share of agriculture in total energy

use decreased since the 2000s and was less than the OECD average in 2017, despite greater importance of the sector in the economy than in OECD countries. Agriculture's contribution to greenhouse gas (GHG) emissions has also declined to below-OECD level. Compared to the OECD area, agriculture accounts for a relatively small share of total water abstractions. Aggregate indicators suggest that water stress is much less of a problem than in many OECD countries. However, preliminary estimates point to the existence of a negative nitrogen balance since mid-2000s.

Figure 22.6. Russia: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

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Table 22.3. Russia: Productivity and environmental indicators

	Russia		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	0.9%	2.7%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha[1]	7.4	-9.5	33.2	30.0
Phosphorus balance, kg/ha[1]	2.8	1.2	3.7	2.3
Agriculture share of total energy use (%)	5.3	1.7	1.9	2.0
Agriculture share of GHG emissions (%)	8.7	5.1	8.5	8.9
Share of irrigated land in AA (%)	..	2.0	-	-
Share of agriculture in water abstractions (%)	28.5	28.9	45.4	42.5
Water stress indicator	1.8	1.6	9.7	9.7

Note: * or closest available year. 1. Preliminary data.
Source: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Description of policy developments

Main policy instruments

The Russian Federation applies a range of price policy instruments. The main one is **border protection,** including Tariff Rate Quotas (TRQs) and non-tariff measures. Border measures are in large part implemented within the framework of the Customs Union of the Eurasian Economic Union (EAEU). Domestic price regulation measures are also applied, such as market interventions. They can be implemented for grains and, since 2017, also for milk. The government can purchase or sell these products if the market prices move above or below the established price band. Prices at which market interventions are carried out, however, do not play the role of price guarantees. Restrictions on imports or exports can be imposed during the intervention periods.

Payments based on output for marketed livestock products are provided from regional budgets and there is also a national payment for milk, which is co-financed by the federal and regional governments. **Concessional credit** is one of the most important support instruments, with concessions taking the form of interest subsidies to borrowers. Since 2017, concessions are also granted in the form of reduced interest rates fixed by the government, combined with a financial compensation to lending banks. In addition to interest subsidies, a range of subsidies for variable inputs are in place. Support is also provided through **investment co-financing** and **leasing** of machinery, equipment and pedigree livestock at preferential terms. **Area payments** for crop production began in 2013, replacing several previous nationwide input subsidies provided for sowing and harvesting campaigns. Agricultural producers also benefit from a number of tax preferences and from concessions on repayment of historical arrears on federal taxes and social contributions**.**

Most of the support measures described above are implemented within a multi-year **State Programme for the Development of Agriculture** (hereafter, State Programme) – the country's main agricultural policy framework. It is based on the principle that support measures be co-financed by federal and regional governments, with co-financing rates varying across the regions and individual measures. In addition to support included in the State Programme, regions implement and finance their own, strictly **regional support measures**.

The current State Programme has been undergoing amendments since its launch in 2013 in response to the significant changes in overall economic conditions. Its sub-programmes were reconfigured in 2015 and 2017. The Programme's initial budget targets were also adjusted in terms of the overall amounts of spending and shifts of funds within and between programme components. In 2018 and 2019, the State Programme underwent further changes in terms of structure, spending levels, administration, and implementation horizon.

Domestic policy developments in 2018-19

At its inception, the State Programme has been oriented at the 2010 Doctrine on Food Security. As its primary objective, the Programme stated reaching the self-sufficiency targets in key foodstuffs set in the Doctrine.[1] The political context in the second half of the 2010s further strengthened the self-sufficiency orientation for agricultural policy in the Russian Federation.

The State Programme underwent revisions in 2018 and 2019 (GRF, 2019[2]). Its implementation horizon has been extended from 2020 to 2025. Food security based on import substitution remains the principal agricultural policy objective, however, export

development and income growth of rural households are emphasised as additional objectives. The following growth targets are to be met by 2025 relative to 2017, the year ending the first phase of the Programme: increase in agricultural production by 16.3%; increase in agricultural value added by RUB 2 079.6 billion (USD 31.6 billion)[2] to reach a total of RUB 5 774 billion (USD 88 billion); more than a doubling of exports; increase of fixed capital investments in agriculture by 21.8%; and growth in disposable resources of rural households by RUB 3 560 (USD 54) per person per month to reach RUB 21 870 (USD 332).

Another change concerns the Programme's structure. It now distinguishes between "departmental projects" and "departmental programmes". Projects have a fixed timeframe, while programmes represent continuous processes. Starting from 2018, six departmental projects and six departmental programmes constitute the State Programme. The projects include: 1) technical modernisation; 2) stimulation of investment activity; 3) development of the sub-sectors which ensure accelerated import substitution; 4) export of products of agro-industrial complex; 5) support system for family farming and development of rural co-operation; and 6) digital agriculture. The six programmes are: 1) the Programme's administration; 2) sustainable development of rural areas; 3) ensuring general conditions of the functioning of the agro-industrial complex;[3] 4) veterinary and phytosanitary surveillance; 5) scientific and technological support for the development of the agro-industrial complex; and 6) development of land amelioration complex.

Digital agriculture and agricultural export are new components of the State Programme. The new version also emphasises family farming and rural development more explicitly. Thus, being previously included in other parts of the State Programme, support to family farms and rural co-operatives is now presented as a separate component (see above). Starting from 2020, it is also foreseen to raise the activity on sustainable development of rural areas from the status of departmental programme (ii above) to an independent State Programme "Integrated development of rural territories up to 2025". According to preliminary information, it is to receive RUB 225 billion (USD 3.3 billion) of federal funding on average per year, which is a substantial increase compared to an average of RUB 14 billion (USD 212 million) in 2014-19. These resources, as previously, will be complemented by the allocations from regional budgets and extra-budgetary sources, such as profits from commercial activities of public institutions, investments from private businesses, non-governmental organisations, and other sources. Apart from these new features, the current State Programme maintains the previous directions of support and the underlying measures. However, the project-and-programme approach is intended to improve the Programme's administration and efficiency of spending.

It is planned to allocate in total RUB 6 881 billion (USD 104 billion) to the State Programme over the eight-year period of 2018-25. Compared to the levels in 2013-17 (first phase of the State Programme), this means an increase in per year financing by 17% on average. Of the aggregate eight-year funding, around 40% is budgetary sources (federal and regional) and the remaining 60% is extra-budgetary sources. The Programme's six projects account for slightly over 90% of the aggregate eight-year spending, and are to absorb almost all planned non-budgetary sources and over 70% of budgetary spending (GRF, 2019[2]).

In 2018, the federal budget allocated RUB 258 billion (USD 3.9 billion) to the State Programme, 10% more than last year (State Treasury, 2019[3]; MoA, 2019[4]). Around 36% of this expenditure were directed to stimulation of investment activities (project b above) consisting of interest subsidies on investment loans and the co-financing of investment

projects, and 25% were spent on development of the sub-sectors (project c above) covering key production subsidies (State Treasury, 2019[3]). This federal spending was topped up by contributions from the regions across the components of the State Programme. In addition, regions provided strictly regional support beyond the State Programme.

The federal funding for the State Programme for 2019 is planned at RUB 303.6 billion (USD 4.6 billion), which is above the similar budget target set at the beginning of 2018 (FL, 2018[5]; State Treasury, 2019[3]). The funding targets are maintained roughly at the previous year level for the departmental programmes, while the main changes in the funding are foreseen for the departmental projects. Thus, the project on stimulation of investment activities is to receive around 20% more than a year before. A substantial increase is also planned for the project on export development, although compared to a relatively limited budget of 2018. The project on digital agriculture will be newly funded. On the other hand, the budgets for the projects on technical modernisation and development of sub-sectors are to be reduced (Fastova, 2019[6]).

After a high grain crop in 2016/17, a record harvest followed in the 2017/18 season, with the result of continued downward pressure on grain prices. Reduced **transportation tariffs** on domestic grain shipments were introduced to stimulate grain shipments from Russian regions with excess supplies to other country regions. The associated loss of the Russian Railways company was compensated from the federal budget. This compensation effectively started in 2018, reaching RUB 1.7 billion (USD 26 million) (State Treasury, 2019[3]). This measure added to the temporary waiver of wheat export duty in force since September 2016. In mid-2018, the subsidising of grain transportation was stopped in view of a less favourable crop forecast for the 2018/19 season.

Interest subsidies on short-term loans and investment credit are one of the principal producer support measures. The policy orientation at the start of the State Programme 2013-20 has been to downsize the new commitments to subsidise credit. However, the pledge to accelerate import substitution and the sharp deterioration of lending conditions in late 2014 reversed the original plans. Support is currently prioritising **investment credit** and is provided in the form of interest subsidies and in the form of preferential fixed interest rates. The latter mechanism was introduced in 2017 and is intended to gradually replace interest subsidies which are now continued only for investment loans taken before 2017. Five large banks, Rosselkhozbank, Sberbank, Gazprombank, Alfa-Bank, and VTB Bank provided 95% of all preferential investment credit to agricultural and agro-food borrowers in 2017-18. Around 57% of this credit was borrowed for production of livestock, 27% for production of crops, 9% for agro-food processing, 4% went to development of small farming, and 3% for purchases of agricultural machinery.

Investment grants is a relatively recent measure in place since 2015. In 2015-17, around 80% of the investment grants were directed for construction of industrial milk production units and greenhouses, the remainder was provided for facilities to store horticultural products, wholesale distribution centres, and for setting-up or modernising selection and genetic centres for livestock and plants. The scope of investment co-financing has recently been narrowed: wholesale distribution centres were excluded from the list of co-financed projects in 2018, and greenhouses in 2019. The government's co-financing rate for other objects is currently fixed at 20%, except for flax and hemp processing plants and industrial milk production complexes for which it is set at 25%.

Leasing of machinery, equipment and livestock at preferential terms is an additional policy supporting investments in fixed assets in agriculture and agro-food industries. It is implemented by the Federal Company RosAgroLeasing. In 2018, RosAgroLeasing

received RUB 4 billion (USD 61 million) from the federal budget for recapitalisation (State Treasury, 2019[3]).

The aggregate spending on production subsidies included in the **unified payment** was around RUB 49 billion (USD 741 million) in 2018, which is slightly above the previous year level. Regions contributed approximately 20% to this amount (MoA, 2019[4]). Unified payment was introduced in 2017, integrating 27 previous individual subsidies across different components of the State Programme. This includes several subsidies for crop and livestock production, subsidies for insurance and interest on short-term credit, support of small-scale farmers, and the assistance provided within the previous component on "economically important regional programmes". The purpose of the unified payment had been to simplify the budgeting and transfer of funds from the federal centre to regions. Regions top-up this payment and continue to allocate it across individual supports included in the unified payment, with producers, as previously, receiving the assistance in the form of individual supports. Regions, however, can select every year specific types of individual supports within the unified payment depending on regional priorities.

Some changes in the implementation of the **unified payment** and the **area payment** for crops, were announced, reflecting the efforts to increase agricultural insurance. Insurance covered 5% of total area planted to annual and perennial crops in 2016 and 1.7% in 2017 (MoA, 2018[7]). Crop and livestock insurance subsidies are among the subsidies included in the unified payment. Starting from 2019, they will have separate budgetary earmarks within the unified payment to ensure potential uptake of this support by the regions. Similarly as of 2019, part of the area payment will be earmarked for crop insurance subsidies. Another 15% of the area payment will be allocated to regions in proportion to planned insured areas (Fastova, 2019[6]).

The Russian Federation adopted its first law on **organic products** which is to take effect on 1 January 2020 (FL, 2018[8]). It will regulate production, storage, transportation, labeling, and marketing of organic products. Country's organic food industry is nascent, so this new law is expected to provide impetus to this sector which is believed to have considerable development potential both on domestic and foreign markets. Some estimates indicate that imported organic products currently account for up to 80% of the Russian Federation's organic food market (USDA, 2019[9]).

Trade policy developments in 2018-19

Since the accession to the World Trade Organisation (WTO) in July 2012, the Russian Federation's applied Most Favoured Nation (MFN) agricultural tariff has been reduced to 10.2%, below the average final bound agricultural tariff of 10.9%.[4] In 2017, the applied agricultural tariff was nearly twice the non-agricultural tariff (6.2%). Animals and animal products, sugar and confectionary face the highest import duties within the agricultural group (WTO/ITC/UNCTAD, 2018[10]). Meat imports from the non-CIS area are subject to TRQs. In 2018, in accordance with the Russian Federation's commitments to the WTO, import tariffs in the Unified Customs Tariff of the EAEU were reduced on certain agricultural goods. These reductions concerned mainly processed foods, such as specific prepared and preserved meat items, mango chutney, and certain beer items (EAEU Commission, 2018[11]; EAEU Commission, 2018[12]). As of December 2018, the Russian Federation had not applied any definitive antidumping measures with respect to agricultural goods (WTO, 2019[13]).

In July 2018, the ban on agro-food imports from the **European Union**, the **United States**, **Canada**, **Australia**, **Norway** and several other countries was extended until

31 December 2019. It was initially introduced on 7 August 2014 for a period of one year after the imposition of sectoral sanctions on the Russian Federation in the context of developments related to Ukraine. Sanctions and counter-sanctions have since then been extended several times. The list of products prohibited for imports into the Russian Federation include live swine (except pure-bred animals for breeding), meat and certain meat by-products, milk products, fruits and vegetables, prepared foods, fish, and salt. Since the first introduction of the ban, lactose-free milk and its derived products, seed potatoes and seeds of some other crops, young salmon and trout, and certain molluscs have been removed from this list.

In the difficult context of bilateral political relations, mutual trade restrictions between the Russian Federation and **Ukraine** continued. On 29 December 2018, the Russian government prohibited importation of certain agricultural goods from Ukraine and their transit through the territory of the Russian Federation. The goods concerned are wheat and meslin, vegetable oils, a range of processed foods, beer, vine of grape, and ethanol. These items belong to a broader list which also includes industrial goods. This was announced as part of the "special economic measures related to unfriendly actions of Ukraine towards citizens and legal persons of the Russian Federation" (GRF, 2018[14]). This prohibition adds to the already existing ban on Ukrainian agro-food imports, the same as imposed on the European Union, the United States, Canada, Australia, Norway and other countries described above, which was extended also to Ukraine on 1 January 2016. At that time Ukraine responded by prohibiting imports of a broad range of agro-food imports from the Russian Federation and has maintained and expanded this list since then. On 18 December 2018, Ukraine prolonged its ban until 2020. It covers products such as meats, milk products, certain fish, breads and confectionery, vodka, beer, and other.

On the export policy side, **export development** is a new policy priority. Beyond the longer-term growth in grain and oilseed exports, this re-orientation is also due to more recent increases in production of other agricultural products, notably swine and poultry meat.

The Project on Export of Agricultural Products was included in the State Programme as a new component in 2017. Its implementation in the current version of the Programme is extended up to 2025. The project seeks to increase agro-food exports to USD 45 billion per year by the end of 2024, and formulates the following objectives: generation of new mass of exportable goods, development of export infrastructure, facilitation of access to foreign markets in the sanitary and phytosanitary area, and creation of effective system of product promotion and positioning abroad (Fastova, 2019[6]). RUB 694 million (USD 12 million) of federal funding was allocated to this project in 2017 and RUB 1.43 billion (USD 22 million) in 2018. It is foreseen to increase federal financing of this project to RUB 38.8 billion (USD 589 million) in 2019 (State Treasury, 2019[3]; Fastova, 2019[6]). The Chinese market is regarded as one of the key destinations for export development. In November 2018, the Federal Service for Veterinary and Phytosanitary Surveillance of the Russian Federation and Chinese customs authorities signed protocols on mutual supplies of poultry meat and milk products. The next step will be to agree on the list of enterprises approved for exports. This is an important move, as Russian exports of poultry to China had been stopped since 2005 following the outbreaks of Avian Influenza (RBK, 2018[15]).In addition, in February 2018, China removed its ban on wheat imports from six Siberian and Far-East regions of the Russian Federation which was introduced in 2016 on phytosanitary grounds. Earlier, the Ministry of Agriculture of the Russian Federation announced plans to construct new grain transit points and grain terminals in the regions with country's main export outlets, including the Far East (Izvestia, 2017[16]).

The Russian Federation, together with ***Belarus***, ***Kazakhstan***, ***Armenia*** and ***Kyrgyzstan***, is a member of the **Treaty on the Eurasian Economic Union (EAEU)**. On 17 May 2018, the EAEU signed agreements with Iran and China during the Astana Economic Forum. An Interim Agreement Leading to Formation of a Free Trade Area between the EAEU and its Member States and the **Islamic Republic of Iran** in its part related to agriculture foresees a reduction from 25% to 100% of EAEU import duties on a broad range of products imported from Iran, notably, certain fish products, vegetables and fresh and dried fruits. The EAEU will enjoy from 20% to 75% tariff reductions on products such as beef and veal, butter, certain confectionery and chocolate, mineral waters, oil and fat products. This agreement is to take effect 60 days after its ratification by all parties. At the moment of writing (mid-April 2019), it was ratified by Belarus, **Kazakhstan** and the **Russian Federation**. The parties regard this document as a basis for creation of a free trade area within the next three years (EAEU Commission, 2018[17]).

Another document signed in Astana was the Agreement on Economic and Trade Cooperation between the EAEU and the **People's Republic of China**. It is non-preferential, among its articles of relevance to agricultural trade are: transparency, technical barriers to trade, sanitary and phytosanitary measures, trade facilitation, and sectoral cooperation including in agriculture (EAEU Commission, 2018[18]). In 2018 and early 2019, the EAEU also held negotiations on free trade agreements with **Egypt, Israel**, **Serbia** and **Singapore**.

During the monitored period, the EAEU continued to develop its regulatory base in various areas. On 1 January 2018, the new EAEU Customs Code took effect. Developments in SPS and technical regulations in 2018-19 concerned unified quarantine phytosanitary requirements and quarantine list, veterinary requirements for controlled goods and the list of such goods, amendments to EAEU technical regulations on safety of milk and dairy products and on labelling of food products, maximum residue levels in livestock products, and other issues.

Notes

[1] These targets are expressed as minimum percentages of commercial food supplies originating from domestic production. They are set at between 80% and 95% and cover the following products: grains, sugar, vegetable oil, meat and meat products, milk and meat products, fish and fish products, and salt. In 2018, self-sufficiency rates were above the targets of the Doctrine on Food Security for all products except milk and salt.

[2] All values in roubles are converted into US dollars using an official exchange rate of the Central Bank of Russia in March 2019.

[3] This component covers commodity interventions, anti-epizootic measures including specific measures related to control and prevention of African Swine Fever, disaster assistance and some other activities.

[4] Agricultural tariff corresponds to the WTO definition and covers the HS-codes as specified in Annex 1 of WTO Agreement on Agriculture.

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Chapter 23. South Africa

Support to agriculture

South Africa reduced its support to agriculture during the reforms of the mid-1990s and support to farms has remained below 5% of gross farm receipts since 2010. In 2016-18, support to agriculture was around 3% of gross farm receipts. Total support estimate to agriculture (TSE) was around 0.3% of GDP in 2016-18 and direct support to farms (PSE) represented around 65% of the total support, the remaining 35% financing general services to the sector.

Market price support and payments based on input use are the most important components of support to producers. However, the level of price distortions is low and domestic prices for most commodities are aligned with world price levels, except for sugar and to a lesser extent milk and wheat, mainly due to import tariffs. Direct payments, mainly in the form of investment subsidies, are mostly directed towards the small-scale farming sector. As for the General Services Support Estimate (GSSE), the main elements are payments financing the agricultural knowledge and innovation system and expenditure on infrastructure. Most of the support in these two categories is targeted towards creating an enabling environment for the small-scale farming sector that has emerged following the land reform. Expenditures financing inspection and control are also an important element of the services provided to the sector.

Main policy changes

Overall, policies supporting farmers have remained unchanged. Most of the policy measures and direct payments continue to be targeted to the smallholder sub-sector. The Government provides post settlement assistance, including production loans to new and upcoming farmers (mostly operating on redistributed or restituted land).

During 2016 and 2017, there were several policy changes targeted to enhance the redistribution of land within the land reform (legislation allowing compulsory purchase of land in public interest; *Strengthening the Relative Rights of People Working the Land)*. In March 2018, the Parliament voted for a bill that allows for the expropriation without compensation of commercial farms (mostly owned by white farmers). In order to be applied in practice, however, this legislation requires a change in the Constitution.

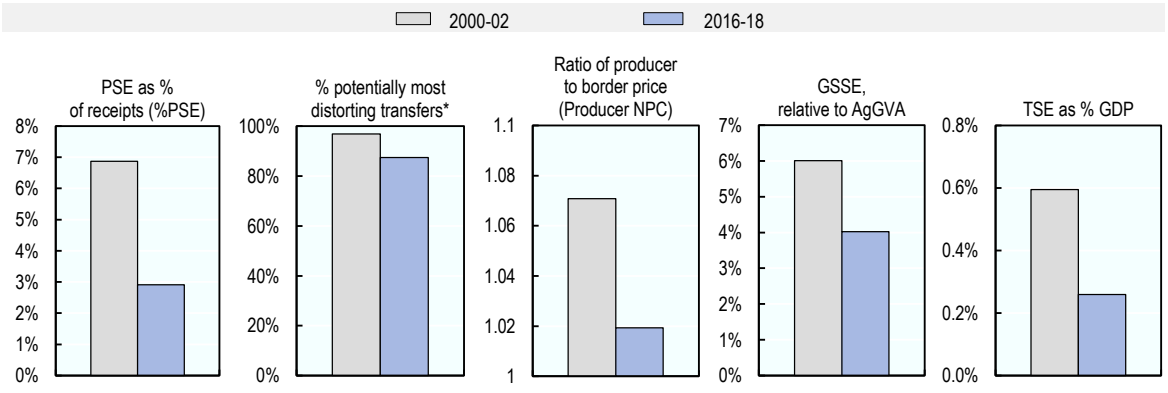
Assessment and recommendations

- The current relatively low level of Market Price Support for South African agriculture is the result of significant policy reforms implemented in the mid-1990s. These reforms reduced total support to agriculture (mainly price support) and its distortive effects on production and trade and have enhanced efficiency of the commercial farming sector and its integration with world markets.
- Since the reforms in the 1990s, increases in budgetary spending are financing the land reform process and supporting its beneficiaries (subsistence, smallholders and

commercial farmers). The main challenge continues to be implementing and effectively targeting support programmes that are tailored to the needs of emerging farmers.

- To strengthen the capacity and efficiency of programmes assisting incoming entrepreneurs into commercial farming, the involvement of experienced commercial farmers in the development of support programmes is key. Private-public partnerships are an efficient tool for engaging the available resources and addressing the current weaknesses in supporting programmes and services from public authorities. In this respect, the latest Parliament decision to allow for expropriation of commercial farms, where most of the skill for commercial farming lies, puts a hurdle to the declared goal of building a market oriented competitive farming sector and is a potential threat to the food security of the country.
- The pace of land reform should be closely linked to the development of the enabling environment for the beneficiaries of land reform (including education and training, adequate infrastructure, and marketing channels). Without those developments, land redistribution by itself cannot deliver the expected outcomes, such as improving the welfare of the black rural population, increasing food security in rural areas and developing a viable commercial sector.
- The Carbon tax is the main component of the government policy on climate change. The first carbon tax implementation phase is set for 2017-20 and agriculture is not included, but it is likely to be affected indirectly through increased input costs. However, for Phase 2 (from 2020) the Government should consider to apply a Carbon tax to the farming sector too. This should create incentives for farmers to further look for ways to reduce use of some inputs and switch to alternative inputs or practices.

Figure 23.1. South Africa: Development of support to agriculture

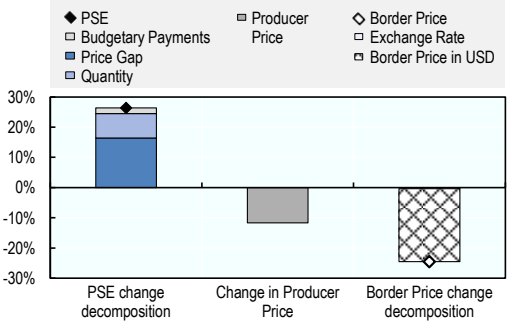


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933938783

Support to producers (%PSE) declined in the second half of the 1990s and has remained low since then. In the most recent period support has been around 3% of gross farm receipts, well below the OECD average. The share of potentially **most distorting transfers** remains high, as most support is provided in the form of MPS and input subsidies (Figure 23.1). But this high share should be interpreted against the very low level of total support provided to farms. The level of support in the most recent year has increased due to higher MPS, mainly due to an increase in the price gap but also in the quantity produced. The larger price gap reflects domestic prices declining less than world prices. The increase in the border price was due exclusively to higher prices in USD (no exchange rate effect) (Figure 23.2). Prices received by farmers were, on average, slightly above world prices; however, prices for most products are aligned with world prices, while the price gap is larger for sugar, being 33% above world prices. MPS is the main component of Single Commodity Transfers (SCT): with sugar having the highest share of SCT in commodity gross farm receipts (Figure 23.3). Overall, SCT represent 64% of the total PSE. The expenditures for **general services** (GSSE) relative to agriculture value added, mainly on knowledge and infrastructure, are in line with the OECD average. **Total support to agriculture** as a share of GDP has declined over time. Currently, around 65% of the total support is provided to individual farmers (PSE).

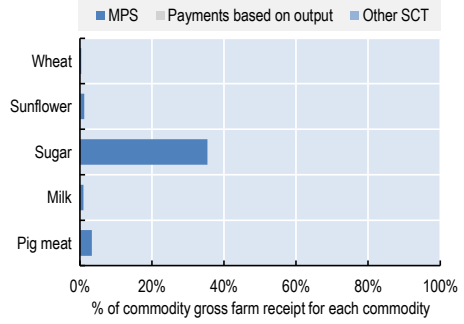
Figure 23.2. South Africa: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933938802

Figure 23.3. South Africa: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933938821

Table 23.1. South Africa: Estimates of support to agriculture

Million USD

	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**6 824**	**19 254**	**16 940**	**20 881**	**19 942**
***of which:** share of MPS commodities (%)*	74.8	73.4	71.1	74.6	74.3
Total value of consumption (at farm gate)	**6 209**	**19 312**	**18 146**	**19 503**	**20 287**
Producer Support Estimate (PSE)	**451**	**571**	**352**	**600**	**761**
Support based on commodity output	411	368	173	391	540
Market Price Support[1]	411	368	173	391	540
Positive Market Price Support	424	368	173	391	540
Negative Market Price Support	-13	0	0	0	0
Payments based on output	0	0	0	0	0
Payments based on input use	36	189	159	198	209
Based on variable input use	25	132	114	137	144
with input constraints	0	0	0	0	0
Based on fixed capital formation	11	55	44	59	63
with input constraints	0	0	0	0	0
Based on on-farm services	1	2	1	2	2
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	3	14	20	10	12
Based on Receipts / Income	3	14	20	10	12
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 (%)	**6.9**	**2.9**	**2.1**	**2.8**	**3.8**
Producer NPC (coeff.)	**1.07**	**1.02**	**1.01**	**1.02**	**1.03**
Producer NAC (coeff.)	**1.07**	**1.03**	**1.02**	**1.03**	**1.04**
General Services Support Estimate (GSSE)	**264**	**312**	**281**	**321**	**334**
Agricultural knowledge and innovation system	146	131	118	134	141
Inspection and control	39	53	43	55	59
Development and maintenance of infrastructure	78	106	97	108	112
Marketing and promotion	0	23	23	24	22
Cost of public stockholding	0	0	0	0	0
Miscellaneous	0	0	0	0	0
Percentage GSSE (% of TSE)	**35.6**	**35.6**	**44.4**	**34.9**	**30.5**
Consumer Support Estimate (CSE)	**-344**	**-274**	**-180**	**-241**	**-400**
Transfers to producers from consumers	-338	-270	-173	-241	-395
Other transfers from consumers	-20	-4	-7	0	-5
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	14	0	0	0	0
Percentage CSE (%)	**-5.7**	**-1.4**	**-1.0**	**-1.2**	**-2.0**
Consumer NPC (coeff.)	**1.06**	**1.01**	**1.01**	**1.01**	**1.02**
Consumer NAC (coeff.)	**1.06**	**1.01**	**1.01**	**1.01**	**1.02**
Total Support Estimate (TSE)	**715**	**883**	**633**	**921**	**1 095**
Transfers from consumers	359	274	180	241	400
Transfers from taxpayers	377	614	460	680	700
Budget revenues	-20	-4	-7	0	-5
Percentage TSE (% of GDP)	**0.6**	**0.3**	**0.2**	**0.3**	**0.3**
Total Budgetary Support Estimate (TBSE)	**304**	**515**	**460**	**530**	**555**
Percentage TBSE (% of GDP)	**0.2**	**0.2**	**0.2**	**0.2**	**0.1**
GDP deflator (2000-02=100)	**100**	**281**	**267**	**282**	**294**
Exchange rate (national currency per USD)	**8.69**	**13.75**	**14.70**	**13.31**	**13.25**

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, peanuts, grapes, oranges and apples.

Source: OECD (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

South Africa is 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 significant and poverty persists. South Africa has experienced a relatively moderate level of inflation —around 5-6% in recent years, with inflation targeting in the range of 3 to 6 %. But a persistently high rate of unemployment remains a challenge. The GDP growth rate has been declining since 2011 (Figure 23.4).

The importance of agriculture in the economy is relatively low, accounting for around 2.5% of GDP, and 6% of employment (Table 23.2). Due to a large component of modern farming and processing industries the backward and forward linkages in the agro-food complex is much larger than the primary sector. South Africa has abundant agricultural land, but only 13% is arable, and the remaining agricultural area is mostly semi-arid pastures with extensive livestock production. There is a highly dualistic farm structure, with a well-developed and market oriented sector of large-scale commercial farms and a large number of smallholder and subsistence farms.

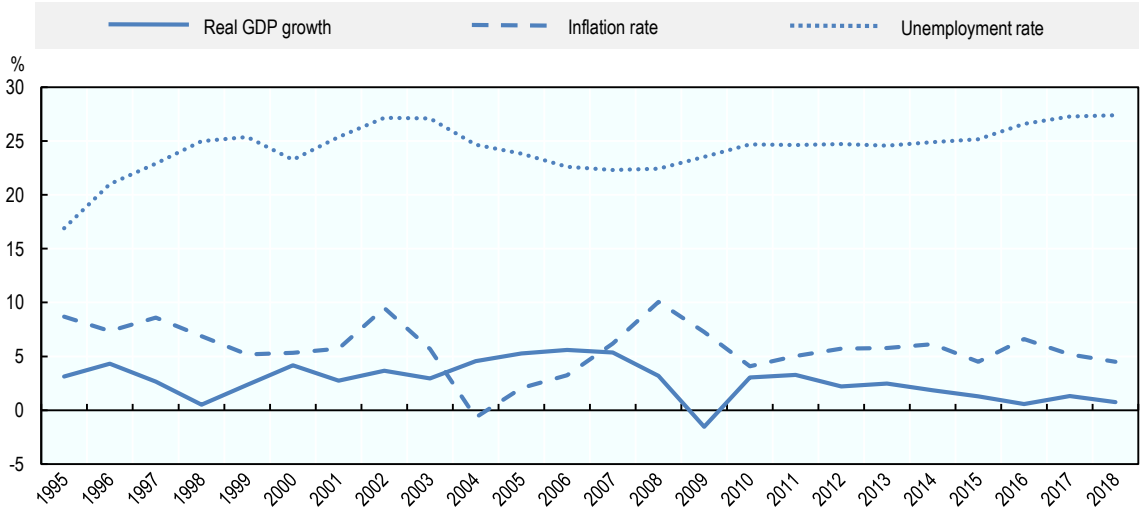
Table 23.2. South Africa: Contextual indicators

	South Africa		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	277	766	0.9%	0.7%
Population (million)	40	57	1.0%	1.2%
Land area (thousand km^2)	1 213	1 213	1.5%	1.5%
Agricultural area (AA) (thousand ha)	97 520	96 841	3.2%	3.2%
			All countries[1]	
Population density (inhabitants/km^2)	35	47	48	60
GDP per capita (USD in PPPs)	6 895	13 545	7 642	21 231
Trade as % of GDP	18	24	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	3.9	2.6	3.3	3.5
Agriculture share in employment (%)	18.7	5.6	-	-
Agro-food exports (% of total exports)	8.3	11.2	8.1	7.5
Agro-food imports (% of total imports)	7.4	7.9	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	53.2	50.3	-	-
Livestock in total agricultural production (%)	46.8	49.7	-	-
Share of arable land in AA (%)	14	13	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

South Africa is a consistent net exporter of agro-food products and the values of both exports and imports are rising (Figure 23.5). The share of agro-food exports in total exports was around 11%, while the share of agro-food imports was around 8% in recent years (Table 23.2). Almost three-quarters of agro-food exports are for final consumption, both of primary and processed products. Agro-food imports are equally distributed among those for final consumption (52% of total imports) and for further processing in industry (55%) (Figure 23.5).

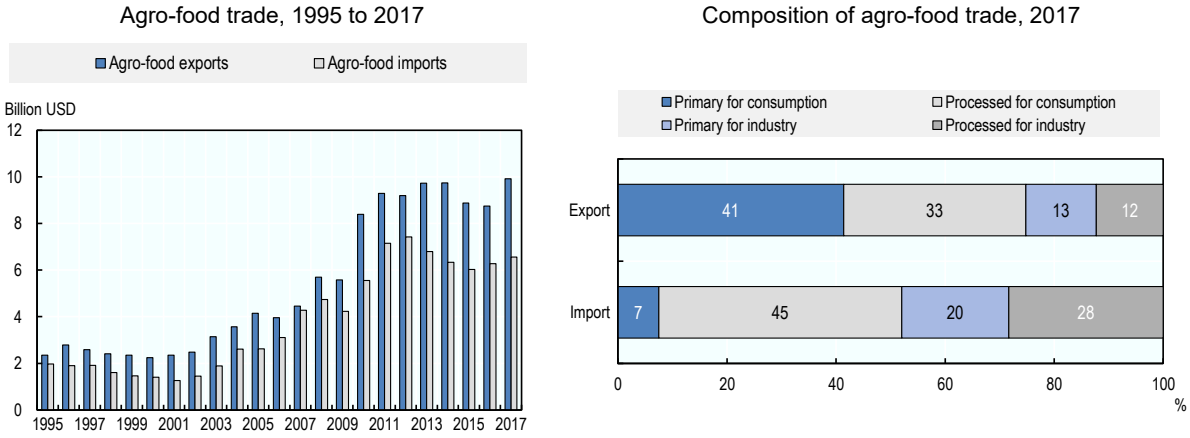
Figure 23.4. South Africa: Main economic indicators, 1995 to 2018



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

StatLink https://doi.org/10.1787/888933938840

Figure 23.5. South Africa: Agro-food trade



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

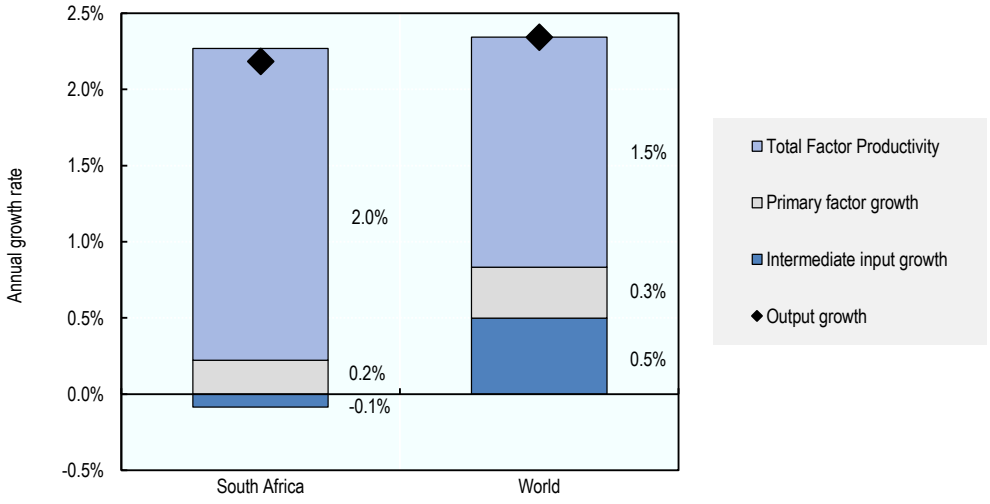
StatLink https://doi.org/10.1787/888933938859

Total factor productivity (TFP) growth is driving agricultural output growth in South Africa (Figure 23.6). While TFP growth has slowed relative to the preceding decade, it averaged 2% per year during 2006-15, and remains above the world average (Table 23.3).

A small increase in primary factors, mainly investments and to some extent labour, also contributed to the increase in output, offsetting a slight decline in the use of intermediate inputs (Figure 23.6). Although agriculture uses 63% 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 another important user of water in agriculture. Agriculture's share in energy use has declined, but remains above the OECD average.

Figure 23.6. South Africa: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

StatLink https://doi.org/10.1787/888933938878

Table 23.3. South Africa: Productivity and environmental indicators

	South Africa		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	3.4%	2.0%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha[1]	-1.5	-2.4	33.2	30.0
Phosphorus balance, kg/ha[1]	1.4	1.1	3.7	2.3
Agriculture share of total energy use (%)	3.8	2.8	1.9	2.0
Agriculture share of GHG emissions (%)	9.3	..	8.5	8.9
Share of irrigated land in AA (%)	..	1.7	-	-
Share of agriculture in water abstractions (%)	..	63.0	45.4	42.5
Water stress indicator	..	..	9.7	9.7

Note: * or closest available year. 1. Preliminary data.
Source: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Description of policy developments

Main policy instruments

In the mid-1990s, substantial reforms reduced state intervention in agricultural markets, which led to a stronger market orientation of the sector. Under the current system, there are no domestic market support interventions and no export subsidies applied. Border

measures, applied on the Southern African Customs Union (SACU) common borders, are the only price support policy. The Sugar Agreement of 2000 (between different agents in the sugar production chain) permits raw sugar to be exported only through a single-channel industry arrangement, and allocates quotas to individual producers for sugar sold on the domestic market.

Other policy instruments used are input subsidies, mainly in the form of a diesel tax rebate; programmes supporting new farmers benefiting from land reforms; and general services provided to the sector, mainly research, extension and inspection services. The *National Land Care Programme* (NLP) is a community-based and government-supported approach promoting sustainable management and use of natural agricultural resources.

The key government bodies implementing these policies are the Department of Agriculture, Forestry and Fisheries (DAFF) and the Department of Rural Development and Land Reform (DRDLR). In addition, the *National Agricultural Marketing Council* (NAMC), a national public body, provides DAFF with strategic advice on agricultural marketing issues; undertakes investigations on agricultural marketing and marketing policy; and coordinates the implementation of all statutory measures implemented by the food industry.

The **Land Reform**, launched in 1994, is the key policy issue related to the agricultural sector. The main objectives of the Land Reform are to redress past injustices, foster reconciliation and stability, support economic growth, improve household welfare and alleviate poverty in rural areas. Land restitution, land redistribution and land tenure reform are the main elements of the Land Reform. During the process of implementing the Land Reform a range of programmes (*Comprehensive Agricultural Support Programme; Illima/Letsema projects; Micro-agricultural Financial Institutions of South Africa – MAFISA*) were implemented to create an enabling environment for the previously disadvantaged farmers (subsistence, smallholders and commercial), such as capacity building, provision of appropriate information services and infrastructures.

A review of the Land redistribution for agricultural development (LRAD) projects indicated that a number of projects implemented are not economically viable. The DRDLR amended the Land Reform regulation in order to rationalise the land redistribution process and to assist the vulnerable projects. The Agricultural Land Holding Account (created in 2009) is responsible for land acquisition and, through the Recapitalisation and Development Programme, for recapitalisation and development of distressed land reform projects. The beneficiaries may dispose of the land after an agreed lease period, provided the project is economically viable.

The Integrated Food Security Strategy (IFSS), introduced in 2002, based on public and private civil society partnerships, focuses on household food security as the building block for national food security. One of the strategic approaches is to increase household food supplies by providing production support services to households' own food production. The food security objective is further supported by *Fetsa Tlala*, an integrated food production initiative (introduced in 2013), which is aimed at the production of staple foods on fallow land with agricultural potential in communal areas.

The Comprehensive Rural Development Programme (CRDP), launched in 2009, provides support for the development of rural areas through two main programmes, both of them related to the agricultural sector. The Rural Infrastructure Development (RID) programme promotes investment in rural infrastructure. Expenditure increased significantly due to the increase in funding for projects providing access to basic services, particularly sanitation, irrigation and roads. The Rural Enterprise and Industrial Development (REID) programme

assists in the co-ordination and facilitation of rural enterprise development, industrial development and support to rural communities to produce their own food.

South Africa is a founding member of the Southern African Customs Union (SACU).[1] This is a full **customs union**, with a common external tariff. In 1994, South Africa became a member of the Southern African Development Community (SADC).[2] For the implementation of the FTA, the SADC incorporated the principle of asymmetry: a phase-down (started in 2000) of SACU tariffs in five years (by 2005); and those of other SADC countries to be completed in 12 years, i.e. by 2012. Hence, from 2012, the SADC free trade agreement (FTA) has been fully implemented.

South Africa is also a beneficiary of the USA African Growth and Opportunity Act (AGOA), which is a non-reciprocal trade preference programme that grants eligible Sub-Saharan Africa (SSA) countries duty-free quota-free (DFQF) access to the United States (U.S.) for selected export products. The AGOA act was enacted in 2000 for a period of 8 years to 2008. The initial Act was extended to 2015, and further extended to 2025. AGOA has a positive impact on some of South Africa's agricultural sub-sectors in particular the exports of wine, macadamia nuts and oranges.

Signatory to the 2016 Paris Agreement on Climate Change, the South African Government has committed to **reducing greenhouse gas (GHG) emissions** by 34% by 2020 and 42% by 2025 relative to the levels in 1990 (National Climate Change Response Policy 2011), through an approval of a carbon tax bill on 16 August 2017. The **Carbon tax** bill is an integral part of the system for implementing government policy on climate change. The bill is designed to enable South Africa to meet its NDC commitments, and to reduce the country's GHG emissions in line with its National Climate Change Response Policy and National Development Plan.

Domestic policy developments in 2018-19

Overall, policies supporting farmers have remained unchanged. Most of the policy measures continue to be targeted to the smallholder sub-sector. The DAFF and the DRDLR provide post settlement assistance, including **production loans** to new and upcoming farmers (mostly operating on redistributed or resituated land). Several programmes are implemented to support those farmers in order to assist them to develop commercially viable businesses:

- The Comprehensive Agricultural Support Programme (CASP) focuses mainly on providing support in the following areas: On and off-farm infrastructure and production inputs; targeted training, skill development and capacity building; marketing and business development and support; information and knowledge management; technical and advisory services, regulatory services and financial services. Overall, the budgetary expenditure financing CASP was ZAR 1 506 million (USD 113 million) in 2017 (FY2017/18[3]), and the sum budgeted for 2018 (FY2018/19) is ZAR 1 595 million (USD 120 million).
- The *Ilima/Letsema* Programme (implemented in 2008/09) aims to increase food production, particularly by the smallholder farming sector. Through provincial departments, it finances mostly conditional grants for specific production projects such as upgrading irrigation schemes and other infrastructure and on farm investments to strengthen production capacity. The budget allocation to the programme was ZAR 522 million (USD 39 million) in 2017 and for 2018 the budgeted amount increased to ZAR 552 million (USD 41 million).

Since 2016, there were several policy changes targeted to enhance the redistribution of land within the land reform (started in 1994). In May 2016, South Africa passed a bill that allows the compulsory purchase of land in the public interest. The bill enables the state to pay for land at a value determined by a government adjudicator[4] and then expropriate it for the "public interest", ending the willing-buyer, willing-seller approach to land reform. Another initiative of the government to accelerate the land reform is the policy approach called Strengthening the Relative Rights of People Working the Land. This initiative empowers farm workers through a model that positions farm workers as part owners in agricultural operations alongside the existing farm owners.

The Agricultural Land Holdings Bill was published on 17 March 2017. The Bill makes provision for the establishment of a Land Commission (Commission) to establish a register of public and private agricultural land ownership. Every owner of a private agricultural land holding must lodge a notification of ownership with the Commission in the prescribed form within 12 months of the implementation of the Bill. The notification is to include the race, gender and nationality of the owner, and the size and use of the agricultural holding. According to the Act, foreign persons cannot buy agricultural land and may only conclude long-term leases of agricultural land (30 to 50 years) and such leases must be registered in a Deeds Registry within 90 days. In March 2018, the Parliament voted for a bill, which allows for the expropriation without compensation of commercial farms (mostly owned by white farmers). In order to be applied in practice, this legislation requires a change in the Constitution.

The **Carbon tax** bill is an integral part of the system for implementing government policy on climate change. South Africa implements the Carbon tax through a phase-in approach. The current Phase 1 period is set for 2017 to 2020. Primary agriculture is exempted from the carbon tax during the first phase; however, this may be reassessed for Phase 2 (from 2020). Primary agriculture is likely to be affected in Phase 1 indirectly through increased input costs, particularly electricity, fertilisers and pesticides, as well as fuel and energy. This should create incentives for farmers to look for ways to reduce use of some inputs and switch to alternative inputs or practices. To help encourage such good practices, numerous Carbon tax discounts can be obtained.

Trade policy developments in 2018-19

Import protection for agricultural and food products is based on specific and ad valorem tariffs. Tariff rate quotas (TRQs) exist for a range of agricultural products under the WTO minimum market access commitments, with tariffs at 20% of the bound rates. The zero import tariffs for maize (applied since 2007) continued in 2018-19. In September 2017, South Africa lowered its wheat import tariff.

During 2017/18 the International Trade Administration Commission (ITAC) reviewed the dollar-based reference prices and variable tariff formulas for Wheat, Maize and Sugar. Sunset reviews are underway on the anti-dumping duties for Frozen Bone-in portions of Fowls of the species *Gallus Domesticus* originating in or imported from the United States of America. Currently a safeguard tariff is in place on bone-in chicken pieces from the European Union. Tariffs on Chicken meat imports are also being reviewed. ITAC is also reviewing the safeguard on EU imports of potato chips and French fries.

A Southern Africa Development Community (SADC) group consisting of the members of the South Africa Customs Union (SACU) plus Mozambique negotiated an Economic Partnership Agreement (EPA) with the European Union. This agreement came into force in 2016 for SACU, and became fully operational in February 2018 when Mozambique

joined. It grants preferential tariffs to imports from the European Union for substantially all trade. Equally, imports from Mozambique (the only SADC country outside the SACU) are duty free, with very few exceptions.

Regional integration and an increase in intra-Africa trade is a high priority for South Africa. Based on a decision by the Heads of State and Government, SACU, as part of the SADC, is engaging the East African Community (EAC) and the Common Market for Eastern and Southern Africa (COMESA) in the creation of the Tripartite Free Trade Area (TFTA). The TFTA initiative resulted into negotiations of the African Continental Free Trade Area (AfCFTA). The Agreement is a starting point for more detailed negotiations on trade in goods and services and other trade-related issues such as competition, investment and intellectual property rights. African leaders held an Extraordinary Summit from 17-21 March 2018 in Kigali, Rwanda, during which the Agreement establishing the AfCFTA was presented for signature. The majority of members, 44 out of the 55 African Union (AU) Member States, signed the AfCFTA Agreement. Additionally, five countries, including South Africa, signed the Agreement during the 31st Ordinary Session of the African Union in Mauritania on 1 July 2018, bringing the total number of signatories to 49.

Notes

[1] The SACU members are: Botswana, Lesotho, Namibia, Swatini and South Africa.

[2] The SADC member countries are: Angola, Botswana, Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swatini, Tanzania, Zambia and Zimbabwe.

[3] FY – financial year April/March.

[4] The Property Valuation Act (act 17 of 2014) introduced the function of the Office of the Valuer-General within the structure of the Department of Rural Development and Land Reform. The intention is to introduce just and equitable valuation of land identified for restitution and provide valuations in support of offers to land purchase and expropriation.

Chapter 24. Switzerland

Support to agriculture

Over the past decades, Switzerland has seen some moderate reductions in its support to agriculture, but support levels tended to stabilise most recently. Support to farms (PSE) remains high in terms of its share on gross farm receipts and is almost three times above the OECD average. Total support to agriculture (TSE) was around 1% of GDP in 2016-18 and is dominated by direct support to farms (PSE). In contrast, changes over time in the structure of support are more pronounced, as market price support (MPS) has partly been replaced by various types of direct payments.

MPS, mainly due to tariff-rate quotas with high out-of-quota tariffs, remains the main component of support. However, over the past 30 years, MPS has been reduced from 80% to around 50% of total support to producers. Nonetheless, average domestic prices still have been 57% above world prices in 2016-18. Switzerland provides significant direct payments to farms (almost all subject to environmental cross-compliance), which were introduced to partly compensate the reduction of the MPS. The role of the direct payments has been increasing over time and while it represented around 20% of support to producers in the 1980s, it has increased to almost 50% in current years. Most of these payments are currently provided in the form of general payments per area, payments to maintain farming in less favoured conditions, and payments to farmers who voluntarily apply stricter farming practices related to environmental and animal welfare societal demand.

Expenditures for general services are high in Switzerland. The main element of the General Services Support Estimate (GSSE) is to finance the agricultural knowledge and innovation system, which represents almost half of the GSSE expenditures.

Main policy changes

The policy framework implemented during the period 2014-17 was extended, by a decision of the Parliament, without any particular changes for the period 2018-21 (*Politique agricole* 2018-21 – PA 2018-21). Overall, the spending budgeted for 2018-21 was reduced by 1.7% compared to 2014-17. The main change was a 30% reduction for the financial envelope for improving the production base and social measures, mainly by cutting support to farm investments. There were no further reforms to the border measures and the protection remains relatively high.

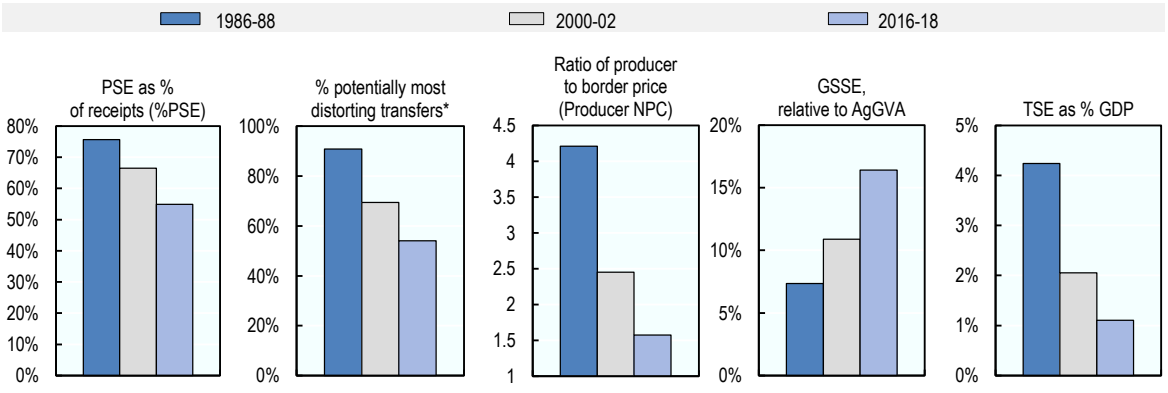
In 2018, the Federal Council decided to temporarily increase support for sugar because of low prices at the world market. The minimum customs protection for sugar has increased, and the area payments to sugar beet were raised by CHF 300 (USD 307) per ha. These changes took effect early in 2019.

The Swiss parliament adopted a legislation abolishing export subsidies for processed food products from 1 January 2019. The funds initially affected to finance these export subsidies are to be transferred to the agricultural budget to finance direct payments to milk and bread wheat to compensate the price reduction related to the elimination of these export subsidies.

Assessment and recommendations

- Security of food supply should be sought through a more competitive agriculture rather than by direct payments. Potentially competitive producers should optimise their production and respond to market signals. Policies facilitating structural change including investment support and exit strategies should facilitate such process. Continued reductions of import barriers and the scheduled elimination of the export subsidies to processed products are important steps to further reduce the burden to consumers and interference with markets.
- The removal of milk price controls and milk quotas had a potential to increase competitiveness and better allocate resources. However, the compulsory nature of private contracts on prices and quantities of delivered milk means that the abolished production quota system was *de facto* replaced by another production control mechanism but on a private base. As the production quota system, this may hinder the necessary structural changes towards a more competitive dairy sector. Policies enhancing and facilitating structural change may play a role in this context.
- In redesigning the direct payment schemes for the period after 2021, a better distinction could be made between policies that address market failures (the provision of positive externalities and public goods as well as the avoidance of negative externalities), and those that address income problems. For the latter a use of economy wide measures, as opposed to specific agricultural ones, could be sought.
- Further development of the food consumer information system related to issues such as environment and animal welfare should also contribute to address some market failures.
- In the framework of the Paris Agreement on Climate Change, a key tool for achieving the statutory climate change targets used by Switzerland is the CO_2-tax combined with an Emission trading system (ETS). Up to now the Swiss agricultural sector is only partly affected by the current CO_2 legislation as the levy is applied on fuels used to heat the glasshouses and heated barns for livestock. To reach the declared objectives for the agricultural sector a focus on more targeted policies is needed as well as extension of the CO_2 tax to other parts of the farming sector to increase the incentives for further reduction of the emissions.

Figure 24.1. Switzerland: Development of support to agriculture

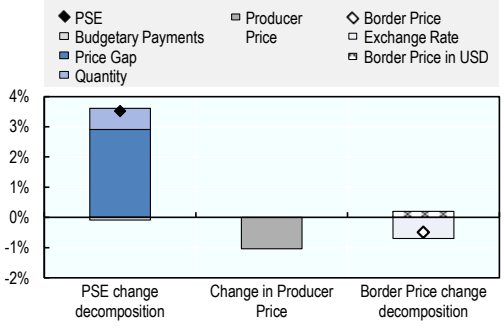


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933938897

Support to producers (%PSE) has declined gradually over the long term. In the 2016-18 period support has been around 55% of gross farm receipts, three times higher than the OECD average. The share of potentially **most distorting transfers** has decreased over time due to a decline in market price support (MPS), but still stands at about half of the support (Figure 24.1). The level of support has increased from 2017 to 2018 mainly due to the increased MPS, brought about by lower world prices. (Figure 24.2). Prices received by farmers were higher than world prices (by 57% on average); price support, the main component of Single Commodity Transfers (SCT), varies between commodities. The highest price gaps and hence the highest share of SCT in commodity gross farm receipts are observed for poultry and eggs (Figure 24.3). Overall, SCT represent 54% of the total PSE. The expenditures for **general services** (GSSE), mainly on knowledge and innovation, relative to agriculture value added record an upward trend and are among the highest across the countries covered by this report. **Total support to agriculture** as a share of GDP has declined significantly over time. Almost 90% of the total support is provided to individual farmers (PSE).

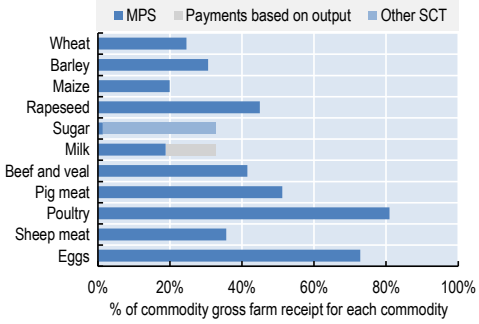
Figure 24.2. Switzerland: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933938916

Figure 24.3. Switzerland: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933938935

Table 24.1. Switzerland: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**7 966**	**6 126**	**8 918**	**9 036**	**8 812**	**8 905**
***of which:** share of MPS commodities (%)*	63.2	53.4	56.2	54.2	57.5	56.9
Total value of consumption (at farm gate)	**9 379**	**7 295**	**10 224**	**10 563**	**10 020**	**10 090**
Producer Support Estimate (PSE)	**6 739**	**5 350**	**6 822**	**7 348**	**6 422**	**6 695**
Support based on commodity output	5 834	3 657	3 620	4 161	3 222	3 478
Market Price Support[1]	5 807	3 438	3 322	3 864	2 924	3 178
Positive Market Price Support	5 807	3 438	3 322	3 864	2 924	3 178
Negative Market Price Support	0	0	0	0	0	0
Payments based on output	27	218	298	297	298	300
Payments based on input use	358	126	145	142	146	147
Based on variable input use	289	67	68	68	68	68
with input constraints	0	14	0	0	0	0
Based on fixed capital formation	46	53	77	75	78	79
with input constraints	0	0	30	25	29	36
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	958	936	960	979
Based on Receipts / Income	10	0	0	0	0	0
Based on Area planted / Animal numbers	382	564	958	936	960	979
with input constraints	217	540	912	889	914	934
Payments based on non-current A/An/R/I, production required	18	51	1 067	1 068	1 065	1 068
Payments based on non-current A/An/R/I, production not required	0	774	137	164	131	117
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	137	164	131	117
with commodity exceptions	0	0	0	0	0	0
Payments based on non-commodity criteria	0	58	706	694	710	713
Based on long-term resource retirement	0	0	0	0	0	0
Based on a specific non-commodity output	0	58	706	694	710	713
Based on other non-commodity criteria	0	0	0	0	0	0
Miscellaneous payments	137	120	188	183	189	193
Percentage PSE (%)	**75.6**	**66.5**	**54.9**	**58.7**	**52.2**	**53.9**
Producer NPC (coeff.)	**4.21**	**2.45**	**1.57**	**1.72**	**1.49**	**1.53**
Producer NAC (coeff.)	**4.10**	**2.99**	**2.22**	**2.42**	**2.09**	**2.17**
General Services Support Estimate (GSSE)	**431**	**337**	**740**	**737**	**737**	**747**
Agricultural knowledge and innovation system	110	70	368	367	367	370
Inspection and control	9	24	12	12	12	13
Development and maintenance of infrastructure	80	54	83	85	81	84
Marketing and promotion	29	37	64	62	65	65
Cost of public stockholding	66	32	42	41	41	43
Miscellaneous	137	120	171	170	170	172
Percentage GSSE (% of TSE)	**5.5**	**5.8**	**9.8**	**9.1**	**10.3**	**10.0**
Consumer Support Estimate (CSE)	**-6 459**	**-4 198**	**-3 748**	**-4 437**	**-3 370**	**-3 437**
Transfers to producers from consumers	-5 843	-3 495	-3 036	-3 574	-2 664	-2 870
Other transfers from consumers	-1 458	-901	-735	-891	-732	-581
Transfers to consumers from taxpayers	700	147	5	5	5	4
Excess feed cost	141	50	18	23	20	9
Percentage CSE (%)	**-74.3**	**-58.7**	**-36.7**	**-42.0**	**-33.7**	**-34.1**
Consumer NPC (coeff.)	**4.49**	**2.52**	**1.58**	**1.73**	**1.51**	**1.52**
Consumer NAC (coeff.)	**3.89**	**2.42**	**1.58**	**1.72**	**1.51**	**1.52**
Total Support Estimate (TSE)	**7 870**	**5 834**	**7 567**	**8 090**	**7 164**	**7 446**
Transfers from consumers	7 301	4 395	3 771	4 466	3 395	3 451
Transfers from taxpayers	2 027	2 340	4 531	4 516	4 500	4 576
Budget revenues	-1 458	-901	-735	-891	-732	-581
Percentage TSE (% of GDP)	**4.2**	**2.1**	**1.1**	**1.2**	**1.1**	**1.1**
Total Budgetary Support Estimate (TBSE)	**2 063**	**2 396**	**4 245**	**4 227**	**4 240**	**4 268**
Percentage TBSE (% of GDP)	**1.1**	**0.8**	**0.6**	**0.6**	**0.6**	**0.6**
GDP deflator (1986-88=100)	**100**	**127**	**137**	**137**	**137**	**137**
Exchange rate (national currency per USD)	**1.58**	**1.64**	**0.98**	**0.99**	**0.98**	**0.98**

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 (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

Switzerland is a small economy with one of the highest GDP per capita and relatively low inflation and unemployment. It is a densely populated country especially in the valley areas. The relative importance of agriculture in the Swiss economy is low with its share in the GDP below 1%, while its share in employment is around 3.5%. These relatively low shares are mainly due to highly developed industrial and services sectors in the economy (Table 24.2 and Figure 24.4).

The farm structure is dominated by relatively small family farms. Hills and mountain farming areas (including the alpine summer pastures) are used for extensive milk and meat production, while more concentrated pork and poultry production is located in valleys. The agricultural area is mostly grassland with arable land representing 26% of the total. Over the longer-term, crop production has shifted away from traditional arable crops (grains, oilseeds) towards an increasing production of fruits and vegetables.

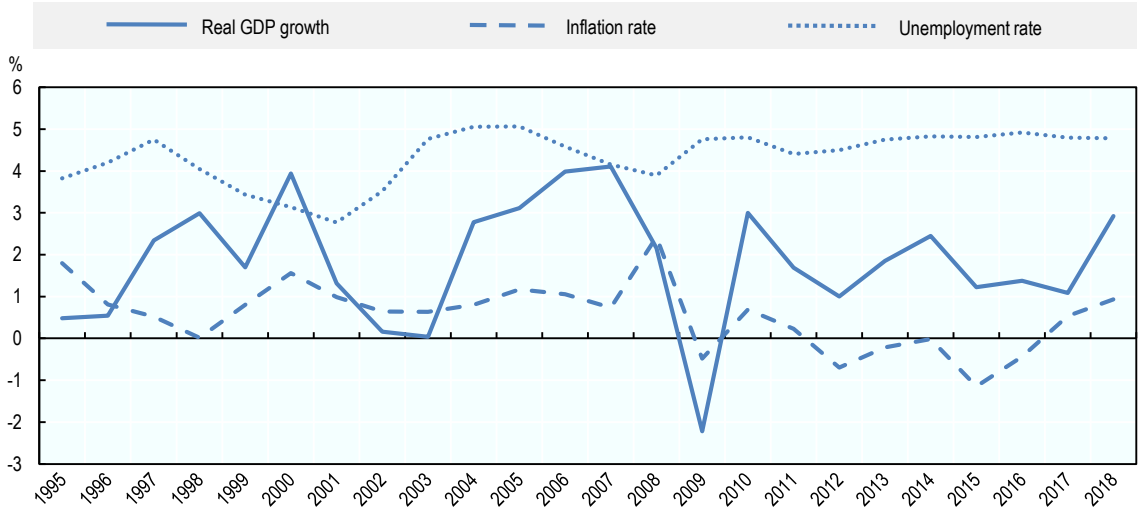
Table 24.2. Switzerland: Contextual indicators

	Switzerland		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	211	560	0.7%	0.5%
Population (million)	7	8	0.2%	0.2%
Land area (thousand km^2)	40	40	0.05%	0.05%
Agricultural area (AA) (thousand ha)	1 582	1 516	0.05%	0.05%
			All countries[1]	
Population density (inhabitants/km^2)	175	211	48	60
GDP per capita (USD in PPPs)	29 670	64 835	7 642	21 231
Trade as % of GDP	24	42	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	1.5	0.7	3.3	3.5
Agriculture share in employment (%)	4.5	3.5	-	-
Agro-food exports (% of total exports)	3.3	3.1	8.1	7.5
Agro-food imports (% of total imports)	7.0	4.5	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	45	50	-	-
Livestock in total agricultural production (%)	55	50	-	-
Share of arable land in AA (%)	27	26	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

Switzerland has consistently been a net agro-food importer; its current share of agro-food imports in total imports is 4.5%, while the share of agro-food exports in total exports is around 3% (Table 24.2). Swiss agro-food exports consist mostly of processed products for final consumption (85% of total agro-food exports). This category is also the most important, although less dominant, in the agro-food imports (49%), and imports for further processing in the food industry represent almost one-third of the imports (Figure 24.5).

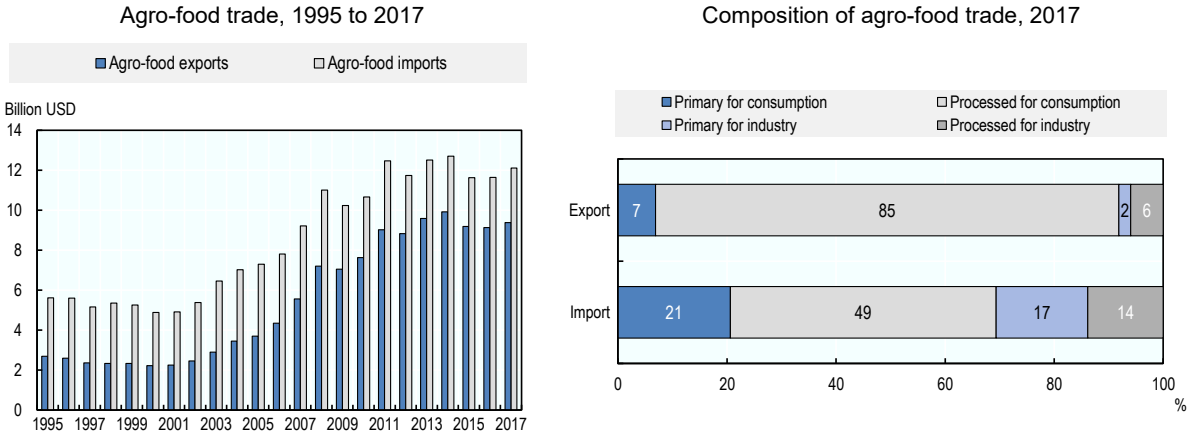
Figure 24.4. Switzerland: Main economic indicators, 1995 to 2018



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

StatLink https://doi.org/10.1787/888933938954

Figure 24.5. Switzerland: Agro-food trade



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

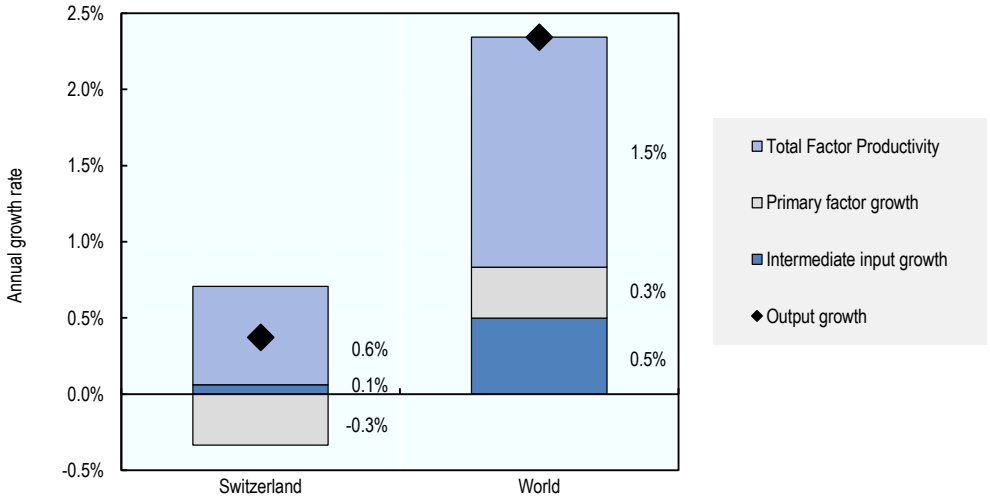
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Total factor productivity (TFP) growth has slowed significantly and, at 0.6% between 2006 and 2015, was well below the global average (Table 24.3). As the use of primary factors went down and intermediate inputs has barely changed, output growth was even lower.

Swiss agriculture is largely rain-fed. Swiss farmers irrigate only 2% of their arable land and the share of agriculture in the country's water abstraction is less than one-fifth of the OECD average. Nutrient surpluses have declined substantially notably for phosphorus, but the surplus of Nitrogen is still twice the OECD average. The share in greenhouse gas

(GHG) emissions remains unchanged and higher than the OECD average. Agriculture's share in energy use went down, and is less than one-third of the OECD average.

Figure 24.6. Switzerland: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

StatLink https://doi.org/10.1787/888933938992

Table 24.3. Switzerland: Productivity and environmental indicators

	Switzerland		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	1.8%	0.6%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha	72.8	60.0	33.2	30.0
Phosphorus balance, kg/ha	7.3	2.3	3.7	2.3
Agriculture share of total energy use (%)	1.3	0.6	1.9	2.0
Agriculture share of GHG emissions (%)	12.2	12.4	8.5	8.9
Share of irrigated land in AA (%)	..	2.2	-	-
Share of agriculture in water abstractions (%)	..	8.0	45.4	42.5
Water stress indicator	4.9	3.8	9.7	9.7

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

Description of policy developments

Main policy instruments

In a 2017 referendum, the Swiss electorate adopted a new article on food security in the Swiss Constitution. In order to guarantee the supply of food to the population, the Confederation shall create the required conditions for: 1) safeguarding the basis for

agricultural production, and agricultural land in particular; 2) food production that is adapted to local conditions and which uses natural resources efficiently; 3) an agriculture and food sector that responds to market requirements; 4) cross-border trade relations that contribute to the sustainable development of the agriculture and food sector; and 5) using food in a way that conserves natural resources. The new article in the Constitution supports the general thrust of current agricultural policy. It sets out how to guarantee proper food supplies to the Swiss population in the long term. In doing so, it takes account of the entire process from farmers to consumers. Food supplies should be guaranteed by exploiting both domestic production and imported foodstuffs.

Most agro-food imports to Switzerland are regulated by **Tariff Rate Quotas** (TRQ) with relatively low in-quota tariffs and high out-of-quota **tariffs**. TRQs in particular cover meat, milk products, potatoes, fruits, vegetables, bread cereals and wine. Since 1999, an auctioning system is used to allocate most of the TRQs to traders.

All **export subsidies** for primary agricultural products were eliminated by 1 January 2010. Export subsidies for some processed agricultural products are allowed within a transitional period until 2020 and compensate for high prices of domestically produced agricultural inputs.

Following the abolition of the **milk quotas** in May 2009, the inter-branch organisation for milk (*l'Interprofession du Lait – IP Lait*) developed and implemented for its members *standard milk delivery contracts* (setting three levels of prices and corresponding volumes for contingents A, B and C). A decision of the Federal Council, made those standard milk delivery contracts compulsory to all milk producers (i.e. also to those outside the *IP Lait*) from 1 July 2013 to end 2021(with a potential to be further extended). The fact, that these contracts are made compulsory for all producers continuously from 2013 up to 2021 (with a potential to be further extended), means that the abolished production quota system was *de facto* replaced by a another production control mechanism but on a private base. The effective price paid to milk producers remains on average 51% above the world market prices (producer NPC) in 2016-18.

The network of Swiss trade agreements consists of the European Free Trade Association (EFTA) Convention, the Free Trade Agreement with the European Union and another 30 agreements concluded with 41 countries. All these agreements were negotiated and signed within EFTA with the exception of agreements with the People's Republic of China, Japan and the Faroe Islands.

The budgetary spending supporting agriculture consists of three broad financial envelopes. **Direct payments**: direct payments to farms for meeting societal demand such as food security, environmental services (landscape, biodiversity, sustainable use of resources) and animal welfare. **Production and marketing**: expenditures are mainly for support dairy producers in the form of direct payments for milk delivered for cheese processing and to milk production without silage feed. Area payments are paid for oilseeds and protein crops and, since 2008, an area payment for sugar beet replaced the system of subsidies to processors and related system of guaranteed prices to sugar beet growers (discontinued in 2008). Export subsidies are still applied to processed dairy and wheat products. Some expenditures under this heading finance also general services to the sector such as marketing and product promotion. **Improving the production base and social measures**: spending includes direct support to farm investments, but also general services to the sector through infrastructure improvement and social measures.

In March 2017, the Swiss Parliament decided to extend, up to end 2021 and without any substantial changes (see domestic policy development part), the current framework, that had originally been implemented for the period 2014-17 (PA 2014-17). The main change in PA 2014-17, relative to the system of direct payments prior to 2014, was the replacement of general headage payments to ruminants by an area payment to pastures with a requirement for a minimal stocking density. Another important shift in the structure of payments was the suppression of general area payments and reallocation of payments more closely related to specific policy objectives complemented by transition payments to make the reform socially acceptable. Most of the animal welfare and agri-environmental payments from the previous period continue to be applied under the various main categories of the 2014-17 framework still in place. The environmental cross-compliance conditions continue to be applied within the new system of payments. Discussion on the policies to be applied from 2022 (PA 2022+) have already started among the Government and the stakeholders.

The Ordinance on Swissness (*HasLV*) came into force in 2017. It defines the criteria which have to be fulfilled in order to use the Label "Swiss" and the use of the label of the Swiss cross.

In the framework of the Paris Agreement on Climate Change, a key tool for achieving the statutory climate change targets used by Switzerland is the CO_2 levy. It is an incentive tax and has been imposed since 2008 on fossil fuels such as oil or natural gas. This tool is combined with an Emission Trading System (ETS) which enables to reduce emissions where the costs are low. Switzerland wants to link its ETS to the EU scheme so that Swiss companies can participate in the larger and more liquid EU emissions market and benefit from the same competition conditions as EU companies. To this end, an agreement was signed with the European Union on 23 November 2017. Swiss Parliament approved this agreement on 22 March 2019 and accepted the necessary changes to the current CO_2 Act. Up to now the Swiss agricultural sector is only partly affected by the current CO_2 legislation as the levy is applied on fuels used to heat the glasshouses and heated barns for livestock.

In December 2017, the Swiss Federal Council revised its climate policy for 2021-30 for reducing Swiss emissions in 2030 by 50% compared to the 1990 level. Based on the Swiss climate strategy for agriculture, the proposed target is to reduce emissions in agriculture by one-third by 2050, this effort should contribute to a two-thirds reduction of emissions in the whole agro-food chain (this commitment includes reductions of emissions both at the production and consumption levels). The main activities contributing to this reduction are in the reduction of emissions from livestock production, application and management of fertilisers, soil preparation, reduction of the use of fossil energies and production of renewable energies by the sector. In the whole agro-food chain, the reduction of emissions is related to input industries, processing, but also to final consumption where change of diet and reduction of food waste may be the main drivers. Up to now, the remains unclear which policies will be applied to reach those objectives. In the farming sector, payments are provided supporting the use of technologies which are likely to contribute to the reduction of emissions.

Domestic policy developments in 2018-19

In March 2017, the Swiss Parliament voted a budgetary envelope to finance agricultural policies for 2018-21 (AP 18-21). Overall, the spending was reduced only marginally by 1.7% compared to the 2014-17 budget envelope. The budget reduction was more substantial (30%) for the financial envelope Improving the production base and social

measures, mainly by cutting support to farm investments. The budgetary envelopes were almost unchanged for Production and marketing (+0.5%) and Direct payments (-0.1%).

The system of the Direct payments remains the same as in 2014-17. The main change is the gradual reduction of transitional payments (to be eliminated by 2021), while the saved budgetary resources are shifted to finance other direct payments (biodiversity, animal welfare).

In September 2017, the Federal Council approved the Phytosanitary Products Action Plan. It highlights how, using appropriate measures, the use of plant protection products and related risks to health and the environment can be reduced. The direct payment to the efficient use of resources is part of these measures. The following technologies will be also made eligible for those payments from 2018 to 2021: i) the biphasic feeding of pigs depleted in nitrogen; and ii) technologies reducing the use of plant protection products in fruit, viticulture, and sugar beet.

At its meeting of 30 November 2018, the Federal Council decided to temporarily increase support for sugar because of low prices. The minimum customs protection for sugar has been fixed at CHF 70 (USD 72) per tonne. The area payments to sugar *beet* will now be CHF 2 100 (USD 2 147) per hectare (an increase of CHF 300 per hectare). These changes will take effect early in 2019.

In January 2018, following a stakeholder consultation a charter on digitalisation in the Swiss agro-food sector was launched. This charter implements the federal strategy – which aims to support digital development; actively address structural change; and create networked transformation processes – specifically concerning handling data in agriculture. Those who sign the charter commit to contribute actively to the process of digitalising the Swiss agro-food sector.

Trade policy developments in 2018-19

As a member of the European Free Trade Association (EFTA), Switzerland signed an FTA with Ecuador in June 2018. This agreement also includes important concessions in agro-food trade. FTAs with Georgia and the Philippines were put into force in 2018.

In June 2018, EFTA countries have also signed a renegotiated FTA with **Turkey**. The initial FTA signed in 1992 (the oldest EFTA agreement) included unilateral agro-food trade concessions to Turkey. The renegotiated agreement includes concessions on agro-food trade on both sides. In December 2018, the EFTA countries signed a new comprehensive FTA with Indonesia, covering also concessions on agro-food products such as palm oil and comprehensive sustainability provisions.

As an EFTA member, Switzerland participates in ongoing free trade negotiations with **India,** Mercosur, Malaysia and **Viet Nam**. Negotiations with Algeria, Thailand, and the **Customs union of the Russian Federation**, Belarus and **Kazakhstan** are on hold for the moment. Free Trade Agreements with **Chile, Mexico** and **SACU** are currently facing a renegotiation. These Free Trade Agreements and the ongoing negotiations also cover trade with processed agricultural products and a range of primary agricultural products.

Preferential tariff rates are unilaterally applied to imports from developing countries under the general system of preferences. In the context of the initiative of the Swiss government to grant zero tariffs on all products originating in Least Developed Countries (LDC), all agricultural imports from LDCs are duty and quota free since September 2009.

In 2018, export subsidies for processed products amounted to CHF 94.6 million (USD 96.7 million) (CHF 81.9 million spent on dairy products and CHF 12.7 million on grain based products). The same level and structure of export subsidies is expected to be provided in 2018. In December 2017, the Swiss parliament adopted a legislation abolishing these export subsidies from 1 January 2019. The funds initially allocated to finance export subsidies will be transferred to the agricultural budget to finance direct payments to milk and cereals to compensate the price reduction related to the elimination of these export subsidies.

Chapter 25. Turkey

Support to agriculture

Despite a series of reforms since the late 1990s, the level of farm support in Turkey, while varying from year to year, has remained around 20% during 2016-18, which is slightly higher than the average for the OECD area. Most distorting forms of support dominate as Market Price Support (MPS) accounted for 72% of the producer support in 2016-18, resulting from domestic price support, tariffs and other import barriers as well as export subsidies for certain products. The level of price distortions has remained higher than the OECD average: domestic prices remain on average 18% above world prices in 2016-18.

The other important elements of producer support are payments based on output and variable input use, which account for 13% of support to producers. Payments based on commodity output have increased since the decoupled direct payments were abolished in 2009. The main direct payments to farms in Turkey are deficiency payments ("premium payments"), which are designed to cover the difference between the target price and market price of the product. Payments based on current area and animal number, such as agricultural insurance programmes, have increased in recent years and the share of such payments reached 9% of producer support in 2016-18.

As for the General Services Support Estimate (GSSE), the main element is financing the development and maintenance of infrastructure, which accounts for approximately 75% of the GSSE expenditure. While expenditure for the agricultural knowledge and innovation system grew in the last decade, its share in GSSE expenditure remained around 5% in 2016-18. The total support estimate to agriculture (TSE) averaged 2% of GDP in most recent years, which is twice the OECD average.

Main policy changes

In 2018, the Ministry of Food, Agriculture and Livestock (MoFAL), and the Ministry of Forestry and Water Affairs were merged to form the Ministry of Agriculture and Forestry. The preparatory work for the next 2019-23 Strategic Plan is underway under the Ministry of Agriculture and Forestry (MAF).

The coverage of the support to agricultural insurance has been extended to more products and risks. In 2018, the coverage of the programme was extended to the production loss of barley, rye, oat and triticale, covering risks related to drought, frost, hot winds, heat waves, excess moisture and excessive precipitation. For 2019, the coverage was further extended to chickpeas, red lentils and green lentils. In 2018, 1.76 million agricultural insurance policies were issued with TRY 2.05 billion (USD 424 million) of government support to the insurance premium.

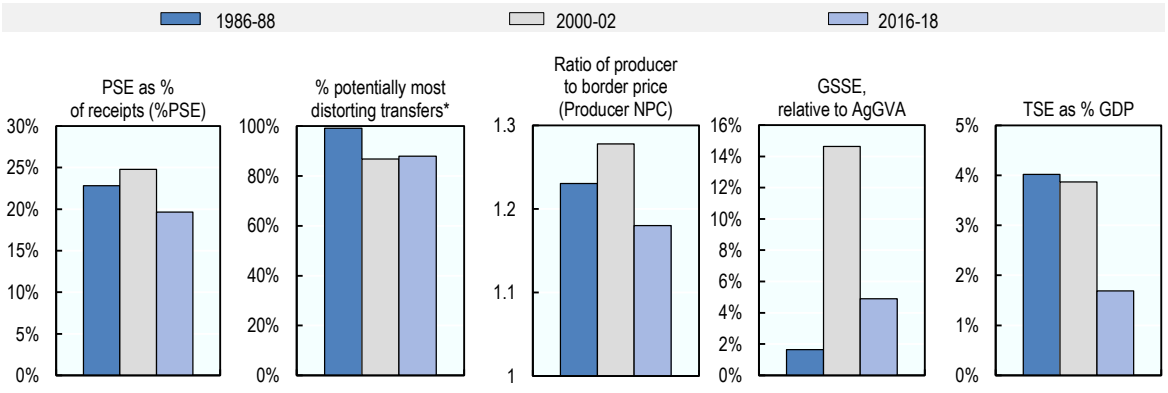
Within the scope of Combating Agricultural Drought, the "Turkey Agricultural Drought Strategy and Action Plan", 2018-22, was published. The main strategies of the Action Plan are: developing a capable institutional structure, making a holistic and comprehensive plan, and transforming the structure of the agricultural sector to one least affected by drought.

Activities in the Action Plan are grouped under five headings: 1) drought risk estimation and crisis management; 2) ensuring sustainable water supply; 3) effective management of agricultural water demand; 4) increasing support to R&D activities, and training and extension services; and 5) institutional capacity building.

Assessment and recommendations

- Turkey has made progress in the last decade towards strengthening the agricultural sector's legal and institutional framework. However, greater efforts need to be made to transform the state economic enterprises into economically viable entities operating under competitive market conditions.
- Since 1986-88, progress in improving market orientation has been variable, with ad hoc changes to policy settings within a macro-economic context of high inflation and volatile exchange rates. The share of producer support in gross farm receipts is slightly higher than the OECD average.
- Agricultural policy should be reoriented from supporting production towards improving agricultural productivity and adding more value with sustainable use of natural resources.
- A re-orientation of agricultural policies should allow producers to react flexibly to market conditions. Currently, producer support is granted mainly through the most market distorting measures, altering the prices farmers face on output and input markets. Further efforts are required to reduce the share of the most distorting types of support.
- Programmes such as payments for supporting organic agriculture, good farming practices and land conservation are more targeted to the policy objective to develop an environmentally-friendly agricultural sector. The role of such policies should be increased.
- Turkey should increase investments on education and skills, critical physical infrastructure and the innovation system. The support directed to the agricultural knowledge and innovation system has increased in recent years, but still accounts for only around 5% of the expenditures for general services.

Figure 25.1. Turkey: Development of support to agriculture

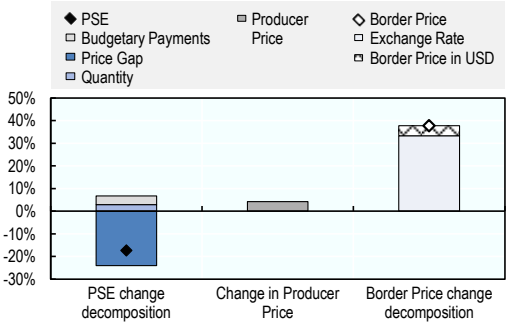


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933939011

Support to producers (%PSE) has been fluctuating with no clear long-term trend. In 2016-18, support has been around 20% of gross farm receipts, slightly above the OECD average. The share of potentially **most distorting transfers** has decreased slightly over time due to decline in market price support (MPS) and border protection, but still accounts for close to 90% of producer transfers (Figure 25.1). In 2018, the level of support has decreased due to lower MPS. The decrease in MPS results from a reduced price gap as world prices increased much more than domestic prices, due mainly to the depreciation of currency (Figure 25.2). Effective prices received by farmers, on average, were 18% higher than world prices; large differences between commodities persist with domestic prices for beef and veal, potatoes, and sunflower at more than 40% above world prices. Overall, SCT represent around 90% of the total PSE. MPS is the main component of Single Commodity Transfers (SCT): beef and veal, potatoes, sunflower, and poultry meat, but also cotton and barley had a high share of SCT in commodity gross farm receipts (Figure 25.3). The expenditures for **general services** (GSSE), mainly on development and maintenance of infrastructure, relative to agriculture value added were slightly lower than the OECD average. **Total support to agriculture** as a share of GDP has declined significantly since the mid-1990s. Around 85% of the total support is provided to individual farmers (PSE).

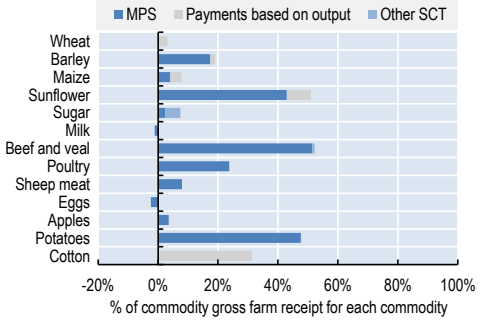
Figure 25.2. Turkey: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933939030

Figure 25.3. Turkey: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933939049

Table 25.1. Turkey: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**18 343**	**22 169**	**57 134**	**60 925**	**58 884**	**51 592**
***of which:** share of MPS commodities (%)*	55.0	70.6	67.2	69.9	67.5	64.2
Total value of consumption (at farm gate)	**14 003**	**18 759**	**39 423**	**41 548**	**40 575**	**36 147**
Producer Support Estimate (PSE)	**4 326**	**6 120**	**12 290**	**15 968**	**12 874**	**8 030**
Support based on commodity output	3 441	5 232	10 347	13 709	11 026	6 305
Market Price Support[1]	3 430	4 916	9 288	12 653	9 844	5 368
Positive Market Price Support	3 434	4 924	9 396	12 811	10 009	5 368
Negative Market Price Support	-3	-8	-108	-158	-165	0
Payments based on output	11	316	1 058	1 057	1 182	936
Payments based on input use	885	426	825	917	817	742
Based on variable input use	850	302	483	529	526	395
with input constraints	0	0	0	0	0	0
Based on fixed capital formation	19	116	335	380	285	341
with input constraints	0	0	0	0	0	0
Based on on-farm services	16	8	7	8	7	5
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	0	25	1 118	1 341	1 030	983
Based on Receipts / Income	0	0	229	233	234	219
Based on Area planted / Animal numbers	0	25	889	1 108	796	764
with input constraints	0	0	158	156	187	130
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 (%)	**22.8**	**24.8**	**19.6**	**24.9**	**20.8**	**14.8**
Producer NPC (coeff.)	**1.23**	**1.28**	**1.18**	**1.25**	**1.19**	**1.12**
Producer NAC (coeff.)	**1.30**	**1.33**	**1.24**	**1.33**	**1.26**	**1.17**
General Services Support Estimate (GSSE)	**333**	**3 507**	**2 256**	**2 685**	**2 395**	**1 686**
Agricultural knowledge and innovation system	67	29	123	123	156	91
Inspection and control	51	67	20	37	3	20
Development and maintenance of infrastructure	22	513	1 683	2 164	1 644	1 240
Marketing and promotion	95	2 888	429	361	591	336
Cost of public stockholding	0	0	0	0	0	0
Miscellaneous	99	11	0	0	0	0
Percentage GSSE (% of TSE)	**7.4**	**37.0**	**15.7**	**14.4**	**15.7**	**17.4**
Consumer Support Estimate (CSE)	**-3 125**	**-4 752**	**-6 228**	**-8 300**	**-6 661**	**-3 722**
Transfers to producers from consumers	-3 114	-4 787	-6 238	-8 314	-6 677	-3 722
Other transfers from consumers	-54	-62	-39	-72	-45	0
Transfers to consumers from taxpayers	0	0	0	0	0	0
Excess feed cost	43	97	49	86	61	0
Percentage CSE (%)	**-22.8**	**-23.4**	**-15.0**	**-20.0**	**-16.4**	**-10.3**
Consumer NPC (coeff.)	**1.30**	**1.31**	**1.18**	**1.25**	**1.20**	**1.11**
Consumer NAC (coeff.)	**1.30**	**1.31**	**1.18**	**1.25**	**1.20**	**1.11**
Total Support Estimate (TSE)	**4 659**	**9 626**	**14 546**	**18 653**	**15 269**	**9 716**
Transfers from consumers	3 168	4 849	6 277	8 386	6 722	3 722
Transfers from taxpayers	1 545	4 839	8 308	10 339	8 592	5 994
Budget revenues	-54	-62	-39	-72	-45	0
Percentage TSE (% of GDP)	**4.0**	**3.9**	**1.7**	**2.2**	**1.8**	**1.3**
Total Budgetary Support Estimate (TBSE)	**1 229**	**4 710**	**5 257**	**6 000**	**5 425**	**4 347**
Percentage TBSE (% of GDP)	**1.1**	**2.0**	**0.6**	**0.7**	**0.6**	**0.6**
GDP deflator (1986-88=100)	**100**	**139 664**	**726 640**	**641 760**	**711 758**	**826 401**
Exchange rate (national currency per USD)	**0.00**	**1.12**	**3.84**	**3.02**	**3.65**	**4.84**

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 Turkey are: wheat, maize, barley, sunflower, sugar, potatoes, tomatoes, grapes, apples, cotton, tobacco, milk, beef and veal, sheep meat, poultry and eggs.

Source: OECD (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

Primary agriculture accounts for 6% of GDP and employs 19% of the workforce, making agriculture one of the most important sectors of the country's economy. Turkey is a net exporter of agricultural products, which account for more than 10% of total exports, and access to world markets is a significant issue for the sector. Notwithstanding various structural bottlenecks, such as the predominance of small-sized, subsistence and semi-subsistence farms, Turkey ranks as 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.

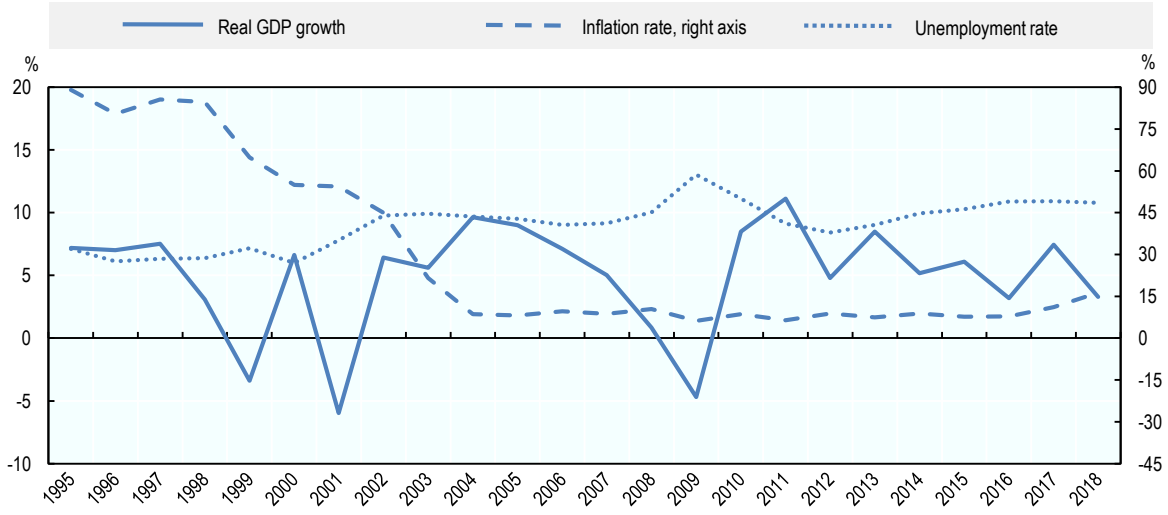
Table 25.2. Turkey: Contextual indicators

	Turkey		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	603	2 261	2.0%	2.2%
Population (million)	60	79	1.5%	1.6%
Land area (thousand km^2)	770	770	1.0%	1.0%
Agricultural area (AA) (thousand ha)	39 493	38 327	1.3%	1.3%
			All countries[1]	
Population density (inhabitants/km^2)	76	105	48	60
GDP per capita (USD in PPPs)	10 087	27 078	7 642	21 231
Trade as % of GDP	12	23	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	15.7	6.1	3.3	3.5
Agriculture share in employment (%)	44.1	19.4	-	-
Agro-food exports (% of total exports)	19.9	10.4	8.1	7.5
Agro-food imports (% of total imports)	9.9	6.2	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	68	53	-	-
Livestock in total agricultural production (%)	32	47	-	-
Share of arable land in AA (%)	62	53	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

Turkey has maintained a strong economic growth at more than 4% of annual growth of real GDP in recent years, but the growth decelerated in 2018. The exchange rate has depreciated steadily since mid-2017, but intensified market pressures in August 2018 led to a further depreciation of around 30%, contributing to rising inflation. Turkey's agro-food imports are dominated by primary and processed products for further processing by the domestic industry. These accounted for 79% of total agro-food imports in 2017. In turn, processed and primary products for consumption are key export categories, accounting for 76% of total agro-food exports.

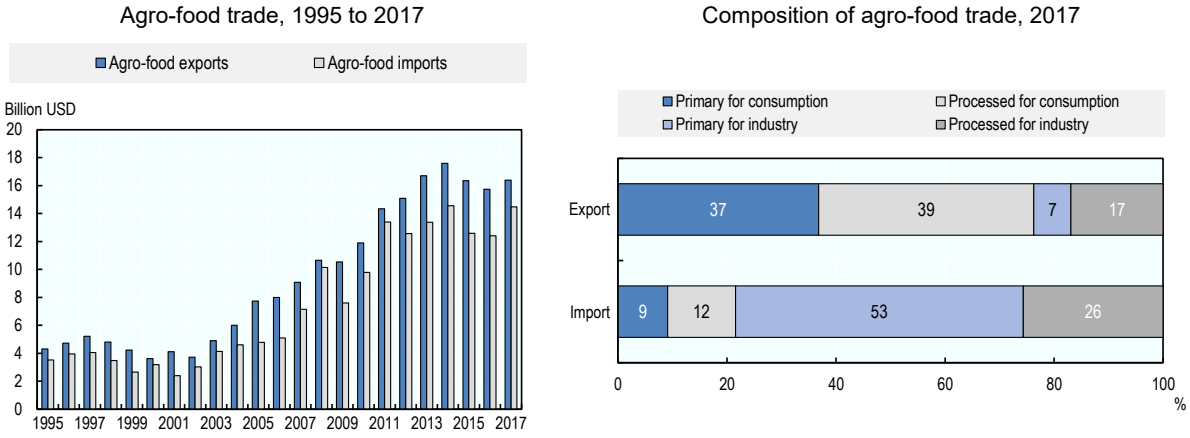
Figure 25.4. Turkey: Main economic indicators, 1995 to 2018



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

StatLink https://doi.org/10.1787/888933939068

Figure 25.5. Turkey: Agro-food trade

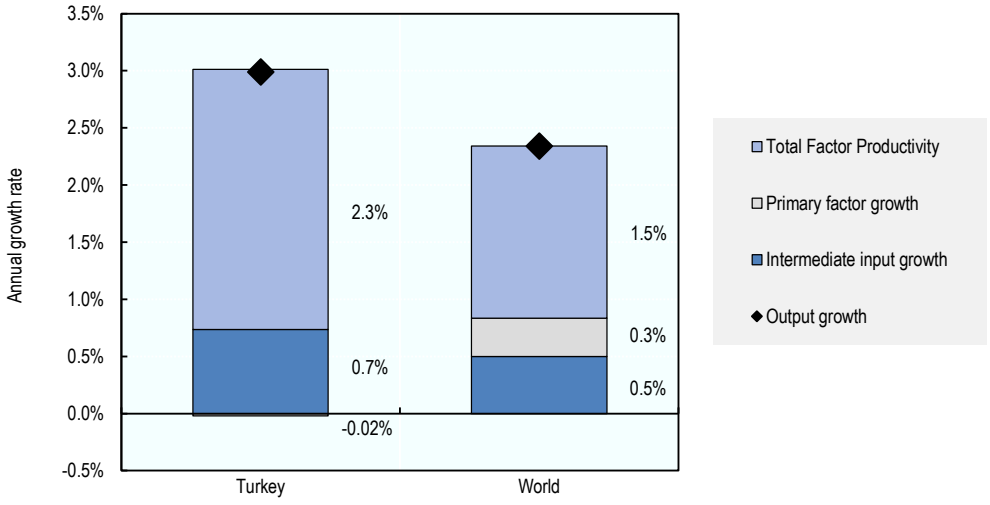


Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

StatLink https://doi.org/10.1787/888933939087

During 2006-15, the agricultural output and total factor productivity (TFP) in Turkey grew faster than globally. The intensity of input use per hectare of agricultural land is, in general, lower than many other OECD countries, but the phosphorus balance is particularly high in Turkey due to intensive livestock production. Agriculture accounts for more than 80% of water use. The expansion of irrigated area, combined with a decrease in precipitation due to climate change, may have contributed to the increased water stress.

Figure 25.6. Turkey: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

StatLink https://doi.org/10.1787/888933939106

Table 25.3. Turkey: Productivity and environmental indicators

	Turkey		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	1.3%	2.3%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha	27.9	23.3	33.2	30.0
Phosphorus balance, kg/ha	9.0	7.0	3.7	2.3
Agriculture share of total energy use (%)	5.5	3.7	1.9	2.0
Agriculture share of GHG emissions (%)	16.9	11.4	8.5	8.9
Share of irrigated land in AA (%)	7.9	10.1	-	-
Share of agriculture in water abstractions (%)	86.9	84.0	45.4	42.5
Water stress indicator	14.3	22.2	9.7	9.7

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

Description of policy developments

Main policy instruments

The strategic objectives of agricultural policies, as identified in the Tenth Development Plan (2014-18) include the development of a globally competitive and environmentally-friendly agricultural sector, and the provision of sufficient and balanced nutrition to Turkish people. The **2018-22 Strategic Plan of the Ministry of Food, Agriculture and Livestock** (MoFAL) was prepared with the objectives of ensuring sustainable production, access to adequate and reliable food, rural development and competitiveness of the sector. Particular

attention is given to the efforts to increase the efficiency of water use in agriculture, policies to support agricultural production and supply security, raising the standard of living in rural areas, encourage women and young population to production, and R&D and extension of technologies to the sector.

In the 2018-22 Strategic Plan, seven strategic areas have been defined for the agricultural sector: i) agricultural production and supply security; ii) food safety; iii) plant and animal health, and animal welfare; iv) agricultural infrastructure and rural development; v) aquaculture and fisheries resource management; vi) research and development; and vii) institutional capacity building.

Import tariffs, complemented by purchasing prices fixed for cereals and sugar beet, provide support for domestic production. Export subsidies are applied to a number of products including processed fruit and vegetables, poultry meat and eggs. Export subsidies are granted in the form of reductions of the exporters' debts vis-à-vis public corporations (for example, for taxes, and telecommunications or energy costs) (WTO, 2016[2]). Production quotas are applied at the farm level for sugar beet.

Deficiency payments ("premium payments") are provided for the products that are in short domestic supply. The payment covers the difference between the market price and the target price that is calculated based on production and marketing cost. Deficiency payments were first introduced in 2002 for oilseeds, olive oil and cotton and later for tea (2004), grains and paddy (2005) and pulses (2008). The payment rates are differentiated in 941 basins. In order to ensure the production planning, determining the most suitable ecological and economical crops with high yield and quality in each agricultural basin, in total 21 eligible products are defined under the support programme including grains, pulses, some oilseeds and feed crops. Contrary to the initial plan to convert former output based payments to area based payments, the payments continue to be based on output under the new system due to technical difficulties of implementation. The government aims to change crop production patterns to follow ecological conditions and to increase the production of crops that are short in supply, while decreasing excess supply in some other crops.

Hazelnut producers receive payments based on area. Area payments are also provided for fodder crops, organic farming, good agricultural practices, certified seeds, gasoline and fertiliser use.

Payments based on input use are provided mainly in the form of interest rate concessions and payments to improve animal breeds and farm production capacity (e.g. field levelling, drainage, soil improvement and protection and land consolidation). Farmers and agricultural enterprises benefit from **concessional loans** offered by the *Ziraat Bank* (TCZB) and Agricultural Credit Co-operatives (ACC). Interest rate concessions vary by type of agricultural operation (livestock breeding, irrigation, organic agriculture and good farming practices). Each farmer registered under the National Farmer Registration System (NFRS) receive a so-called "diesel payment" and a "fertiliser payment" separately based on current area of production. Additional support for soil analyses that were a perquisite for receiving fertiliser payments was re-introduced in 2017, as a support to the authorised laboratories.

A number of regulations control water and soil pollution, and provide protection to wetlands. Land conservation payments protect the land quality and ensure sustainability of natural resources in agricultural lands. The government plays a major role in providing infrastructure investment, especially for irrigation, including within the South-Eastern Anatolia and Konya Plain Projects.

Among the four state owned marketing boards for agricultural products, the former Sugar Authority and the Tobacco and Alcohol Market Regulatory Authority were closed and MoFAL took over the responsibility to administer the marketing regulations in 2017. Turkey continues to maintain two other state owned marketing boards for agricultural products: the Turkish Grain Board, and the Meat and Milk Board. Although their importance in agricultural marketing has declined, marketing boards provide price support through commodity purchasing and stockpiling. They also disburse subsidies, supply inputs to farmers, and are involved in the importing and exporting of agricultural commodities (OECD, 2011[3]).

The Action Plan for the Program on Enhancing Efficiency of Water Use in Agriculture, introduced in 2015, prioritises modernizing irrigation infrastructure, extending water saving practice for agricultural producers through training and extension programmes, revising support policies based on water scarcity and improving the governance of water policies. The plan aims to decrease the use of underground water and increase the use of water-saving irrigation technologies.

On rural development, a new National Rural Development Strategy was issued in 2014. The ongoing support on rural development projects involves co-financing of beneficiaries to mobilise private-sector resources. Public investments to improve the agricultural infrastructure have been accelerated to boost agricultural production and increase the competitiveness of the sector. MoFAL also increased funding for IT projects, to improve data collection and the monitoring network and its efficient use, and to develop traceability in the sector.

Since the mid-2000s, specific rural development policy frameworks have emerged in the context of Turkey's efforts to comply with the EU acquis. The first national Rural Development Strategy for 2007-13 was adopted in 2006 as the basis of the EU Instrument for Pre-Accession Assistance Rural Development (IPARD-I). IPARD is intended to address the country's needs in the pre-accession period in the area of rural development. Within the framework of IPARD-1, EUR 1.045 billion (USD 1.28 billion) was paid to the beneficiaries. The IPARD-I was implemented in 42 provinces and approximately EUR 2.3 billion (USD 2.81 billion) investment was realised with 10 653 projects. The National Rural Development Strategy for 2014-20 covering the IPARD-2 period was adopted in 2014. Turkey has launched its IPARD-II for 2014-20 with a budget of EUR 1.04 billion (USD 1.27 billion). As of the end of 2018, EUR 106.6 million was granted under IPARD-II.

Domestic policy developments in 2018-19

In 2018, MoFAL, and the Ministry of Forestry and Water Affairs were merged to form the Ministry of Agriculture and Forestry (MAF). The preparatory work for the next Strategic Plan is underway under the MAF.

The coverage of the support to agricultural insurance has been extended to more products and risks. In 2018, the coverage of the programme was extended to the production loss of barley, rye, oat and triticale, covering risks related to drought, frost, hot winds, heat waves, excess moisture and excessive precipitation. It was further extended to chickpeas, red lentils and green lentils at the beginning of 2019. In 2018, 1.76 million agricultural insurance policies were issued with TRY 2.05 billion (USD 424 million) of government support to the insurance premium.

Within the scope of Combating Agricultural Drought, the "Turkey Agricultural Drought Strategy and Action Plan", 2018-22, was published. The main strategies of the Action Plan are: developing a capable institutional structure, making a holistic and comprehensive plan, and transforming the structure of agricultural sector to one least affected by drought. Activities in the Action Plan are grouped under five headings: i) drought risk estimation and crisis management; ii) ensuring sustainable water supply; iii) effective management of agricultural water demand; iv) increasing support to R&D activities, and training and extension services; and v) institutional capacity building.

Trade policy developments in 2018-19

The average rate of customs duties applied in 2018 for basic agricultural products, which are not a part of the Customs Union Common External Tariff, was 57.4%. Throughout the year customs duties were decreased on live breeding and fattening cattle, some nuts, residues, oilcakes and oilseeds.

Export subsidies for agricultural products were announced in the Official Gazette on 12 April 2018 and were applied on exports during 2018. In 2018, 16 commodity groups, out of the 44 groups eligible under Turkey's WTO commitments, received export subsidies.

In 2018, Turkey signed Free Trade Agreements (FTA) with Venezuela and Qatar. FTA negotiations are still ongoing with 9 countries: **Ukraine, Japan, Mexico, Colombia**, Peru, Ecuador, Thailand, Indonesia and Pakistan.

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OECD (2019), *"Producer and Consumer Support Estimates", OECD Agriculture statistics (database)*, http://dx.doi.org/10.1787/agr-pcse-data-en. [1]

OECD (2011), *Evaluation of Agricultural Policy Reforms in Turkey*, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264113220-en. [3]

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Chapter 26. Ukraine

Support to agriculture

Producer support in Ukraine, as measured by the PSE, has been volatile over the past three decades, mostly reflecting changes in market price support (MPS).[1] Since 1991, MPS has been negative in most years, reflecting average producer prices below international reference levels, but with significant variation across commodities and time. Protected by import tariffs, prices for most meat products and, depending on the year, sugar, have been aligned with or above international price levels. Those for several grains, sunflower seeds and milk have generally been somewhat below reference prices. However, the impact on prices of the state-owned Agrarian Fund and the State Food and Grain Corporation activities, and the annual MoU on grain exports is likely to be limited. Due to adverse political and economic conditions, producer support overall has been negative since 2014 as budgetary support in the form of tax benefits and input support has only partly offset this overall negative MPS.

Support for general services has been growing since 2015 but remains small compared to other countries. During 2016-18, the GSSE averaged 1.5% of agricultural value added, well below the level during the mid-1990s but twice the 2015 level. Most of these expenditures go to inspection and control services and agricultural schools.

Main policy changes

After the temporary replacement of the former VAT accumulation system by a (much smaller) "development subsidy" proportional to the VAT for a subset of agricultural commodities, neither of the two support measures was in place in 2018.

Taking effect in the 2018/19 marketing year, the sugar quota regime together with its minimum prices have been abolished.

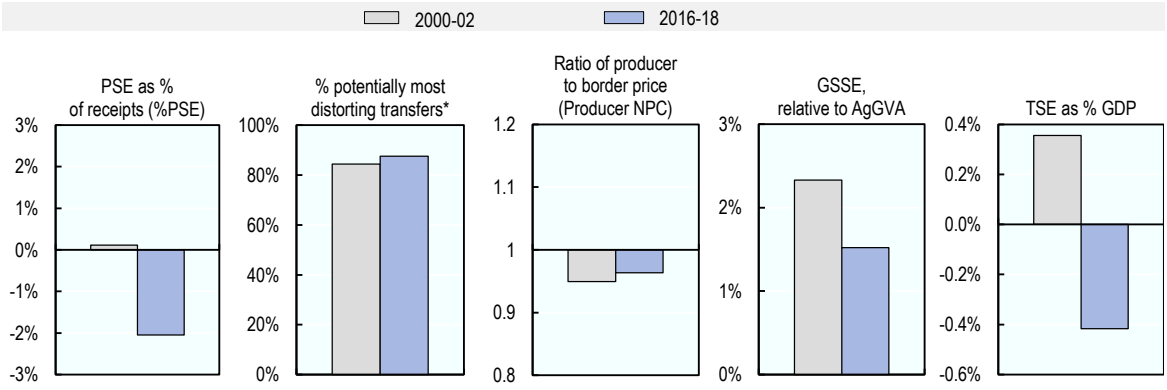
In turn, funding for support related to the purchase of breeding animals or agricultural machinery and equipment increased significantly. Within those envelopes, specific payments were targeted towards smaller farmers. For the first time since 2013, livestock producers received significant support for the construction and reconstruction of animal farms and complexes, as well as per head payments for cows and young cattle.

In the context of aligning with EU legislation within the Deep and Comprehensive Free Trade Area, the State Service of Ukraine for Food Safety and Consumer Protection resumed official controls and veterinary checks. Funding for this service has grown five-fold in 2018. Drafting and adoption of sanitary and phytosanitary legislation has also accelerated, and 17 EU legal acts were adopted. Ukraine has also adopted relevant laws on animal welfare, consumer information related to food, and the production and marketing of organic food products.

Assessment and recommendations

- Producer prices in several of Ukraine's export oriented sectors, notably for sunflower seed and milk, remain substantially below world price levels. Uncertainties related to the VAT treatment of exporting enterprises, the market activities (although limited) of state-owned enterprises as well as limitations in export infrastructure may contribute to this negative support. Ukraine could take more advantage of its agricultural competitiveness and should take additional steps to facilitate exports, including continued investments into the logistics and transportation system in line with growing export volumes.
- The abolishment of the VAT accumulation system and the "development subsidy" that followed in 2017, should help increase the efficiency in the sector. Both types of support were linked to VAT receipts and used by farmers for various production inputs. Ensuring well-functioning input markets, including for agricultural credits, remains key for improving farmers' access to agricultural inputs.
- The repeated extension of the moratorium on the sale of agricultural land continues to put rigidities on the land market that prevent this key agricultural resource from being optimally allocated. The improvement of the economic viability and efficiency of the sector will also depend on overcoming these rigidities.
- Productivity in agriculture has grown at impressive rates over the past decade, but deteriorating capital stocks, likely caused by economic and political uncertainties, threaten future productivity growth. A return to macroeconomic and political stability will be critical for maintaining and developing a productive agricultural sector.
- Ukraine's Nationally Determined Contribution to the 2015 Paris Agreement on Climate Change commits the country to greenhouse (GHG) emissions in 2030 not exceeding 60% of its 1990 levels, including from all agricultural and other land use sources. The recently approved Action Plan should help implementing a multi-sectoral monitoring, reporting and verification of GHG emissions. With agriculture responsible for more than 12% of national emissions, specific reduction targets and related policy action will need to complement this Plan for achieving the overall ambition.
- Public expenditures for general services have started to recover after the economic depression of 2014-15. Most importantly, this concerns the resumed inspection and control activities by the State Service of Ukraine for Food Safety and Consumer Protection, a key service for the export-oriented sector. To ensure high performance even under climate change of sector already sensitive to weather variability, Ukraine will need a well-functioning and sufficiently funded knowledge and information system. The government's commitment to develop recommendations for adaptation to climate change and related advisory services will be important in this regard.

Figure 26.1. Ukraine: Development of support to agriculture

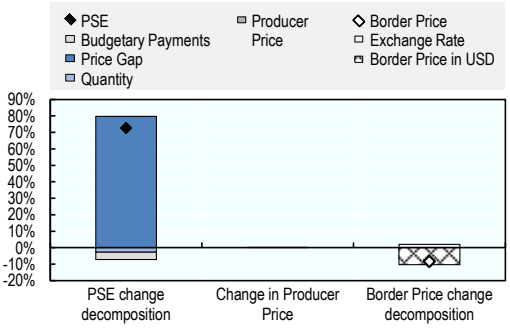


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933939125

Support to producers (%PSE) has been slightly negative for the past five years, averaging -2.1% of gross farm receipts during 2016-18. Negative market price support (MPS) for several exported products, worth 4% of total gross farm receipts, is only partly compensated by some positive MPS for pig meat and sugar, and some limited budgetary producer support. On average, producer prices are some 4% below the reference prices: the Nominal Rate of Protection (NRP) was 0.96 for the 2016-18 average, slightly higher than during 2000-02. As a consequence, more than 90% of gross producer transfers (whether positive or negative, i.e. expressed in absolute terms) are implemented in forms that are potentially most distorting, a share that has barely changed from the early 2000s. The negative MPS also drove the total support negative: the TSE corresponded to -0.4% of GDP during 2016-18 (Figure 26.1). Producer support has increased year-on-year (i.e. has become less negative) in 2018 mainly due to falling export prices for non-fat dairy products (Figure 26.2). Single commodity transfers (SCTs) mirror the MPS across commodities, with some grains, sunflower seed and milk being implicitly taxed while pig meat shows positive SCT worth 10% of its commodity gross farm receipts (Figure 26.3).

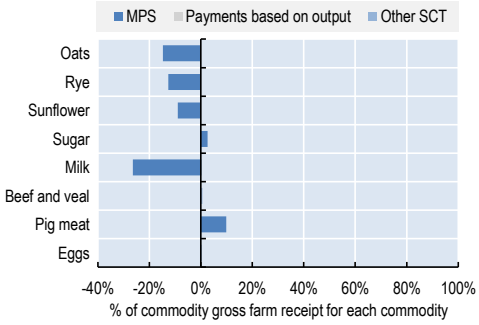
Figure 26.2. Ukraine: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933939144

Figure 26.3. Ukraine: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Table 26.1. Ukraine: Estimates of support to agriculture

Million USD

	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**9 619**	**28 788**	**26 354**	**28 423**	**31 586**
***of which:** share of MPS commodities (%)*	86.8	82.3	82.3	81.8	82.7
Total value of consumption (at farm gate)	**7 051**	**16 183**	**16 223**	**16 665**	**15 660**
Producer Support Estimate (PSE)	**11**	**-606**	**-809**	**-796**	**-213**
Support based on commodity output	-456	-1 055	-1 494	-1 147	-523
Market Price Support[1]	-572	-1 055	-1 494	-1 147	-523
Positive Market Price Support	382	137	100	164	145
Negative Market Price Support	-954	-1 191	-1 594	-1 312	-668
Payments based on output	116	0	0	0	0
Payments based on input use	203	278	521	190	122
Based on variable input use	169	231	520	161	13
with input constraints	0	0	0	0	0
Based on fixed capital formation	31	47	1	29	109
with input constraints	0	0	0	0	0
Based on on-farm services	2	0	0	0	0
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	265	171	164	161	188
Based on Receipts / Income	265	161	164	161	158
Based on Area planted / Animal numbers	0	10	0	0	31
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 (%)	**0.1**	**-2.0**	**-3.0**	**-2.8**	**-0.7**
Producer NPC (coeff.)	**0.95**	**0.96**	**0.95**	**0.96**	**0.98**
Producer NAC (coeff.)	**1.00**	**0.98**	**0.97**	**0.97**	**0.99**
General Services Support Estimate (GSSE)	**121**	**156**	**110**	**138**	**220**
Agricultural knowledge and innovation system	51	67	66	68	68
Inspection and control	26	73	35	54	129
Development and maintenance of infrastructure	36	7	2	5	14
Marketing and promotion	1	1	1	1	0
Cost of public stockholding	1	3	2	3	3
Miscellaneous	7	6	4	7	6
Percentage GSSE (% of TSE)	**91.3**	**..**	**..**	**..**	**..**
Consumer Support Estimate (CSE)	**440**	**1 033**	**1 399**	**1 057**	**643**
Transfers to producers from consumers	529	1 050	1 407	1 074	669
Other transfers from consumers	-34	-13	-7	-15	-18
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	-55	-4	0	-2	-9
Percentage CSE (%)	**6.2**	**6.3**	**8.6**	**6.3**	**4.1**
Consumer NPC (coeff.)	**0.93**	**0.94**	**0.92**	**0.94**	**0.96**
Consumer NAC (coeff.)	**0.94**	**0.94**	**0.92**	**0.94**	**0.96**
Total Support Estimate (TSE)	**133**	**-450**	**-699**	**-657**	**8**
Transfers from consumers	-495	-1 036	-1 399	-1 058	-652
Transfers from taxpayers	662	600	708	416	677
Budget revenues	-34	-13	-7	-15	-18
Percentage TSE (% of GDP)	**0.4**	**-0.4**	**-0.7**	**-0.6**	**0.0**
Total Budgetary Support Estimate (TBSE)	**705**	**605**	**795**	**490**	**531**
Percentage TBSE (% of GDP)	**1.9**	**0.6**	**0.9**	**0.4**	**0.5**
GDP deflator (2000-02=100)	**100**	**1 034**	**931**	**1 137**	**..**
Exchange rate (national currency per USD)	**5.38**	**26.50**	**25.55**	**26.67**	**27.27**

.. 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 (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

Ukraine is classified as an upper middle income country. It features a large area of fertile arable land, making agriculture a major sector of the economy compared to most other countries in this report: it accounts for 10% of the country's economy and 15% of its employment. Agro-food exports represent more than 40% of Ukraine's total exports.

Most of Ukraine's agricultural area is arable, and crops represent some three-quarters of agricultural output, up from two-thirds in the mid-1990s.

Table 26.2. Ukraine: Contextual indicators

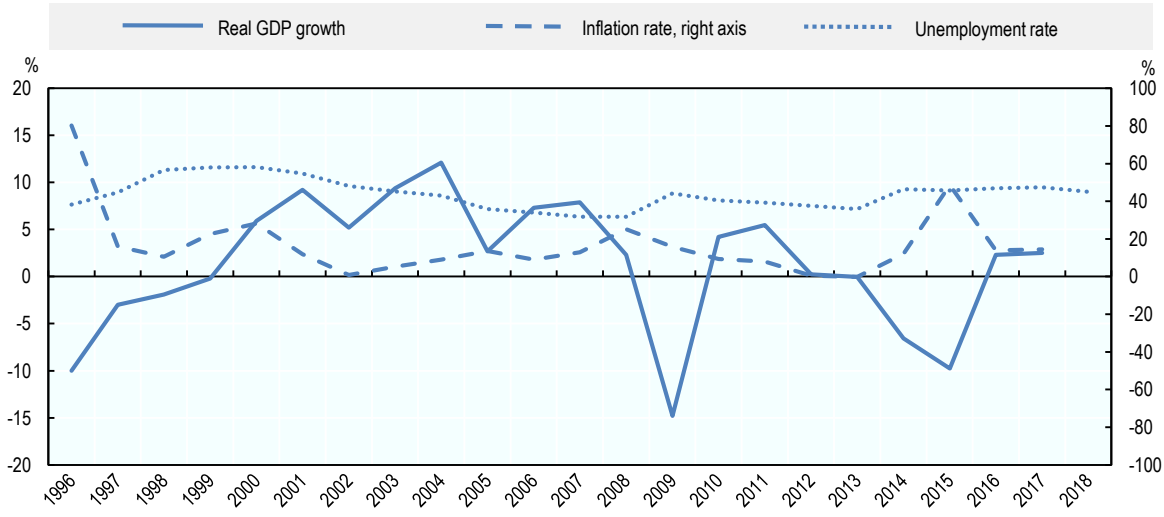
	Ukraine		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	190	368	0.6%	0.4%
Population (million)	51	44	1.3%	0.9%
Land area (thousand km^2)	579	579	0.7%	0.7%
Agricultural area (AA) (thousand ha)	41 853	41 515	1.4%	1.4%
			All countries[1]	
Population density (inhabitants/km^2)	88	76	48	60
GDP per capita (USD in PPPs)	3 689	8 667	7 642	21 231
Trade as % of GDP	36	42	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	13.8	10.2	3.3	3.5
Agriculture share in employment (%)	19.1	14.9	-	-
Agro-food exports (% of total exports)	21.6	41.0	8.1	7.5
Agro-food imports (% of total imports)	7.6	7.8	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	65.9	75.29	-	-
Livestock in total agricultural production (%)	34.1	24.71	-	-
Share of arable land in AA (%)	80	79	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

Between 2013 and 2015, real GDP had fallen by 16% while inflation rates had risen to almost 50%, due to adverse political circumstances. Since then, the economy has grown steadily at rates between 2.4% and 3.3% per year while inflation rates have come down. Unemployment also rose in 2014 and continues to be high at almost 10% (Figure 26.4).

Ukraine is among the world's leading exporters of grains and vegetable oils. Its agro-food exports have grown rapidly between the late 1990s and 2012, and export growth has resumed after the drop between 2012 and 2015, again due to adverse political circumstances. Most of Ukraine's agro-food exports are intermediary, mainly primary, products for further processing. Imports, in turn, are more mixed, with primary and processed products for final consumption representing almost 60% of agro-food imports (Figure 26.5).

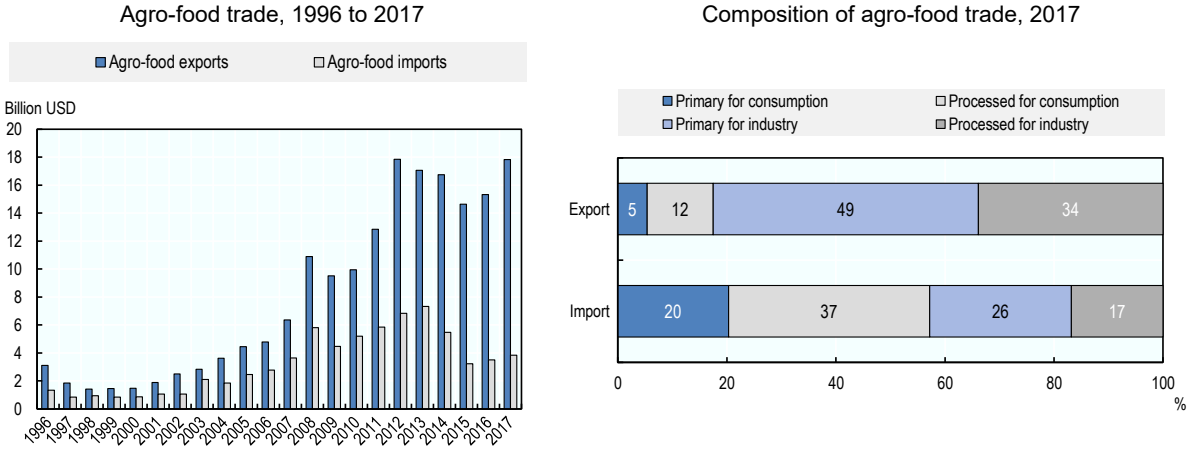
Figure 26.4. Ukraine: Main economic indicators, 1996 to 2018



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

StatLink https://doi.org/10.1787/888933939182

Figure 26.5. Ukraine: Agro-food trade



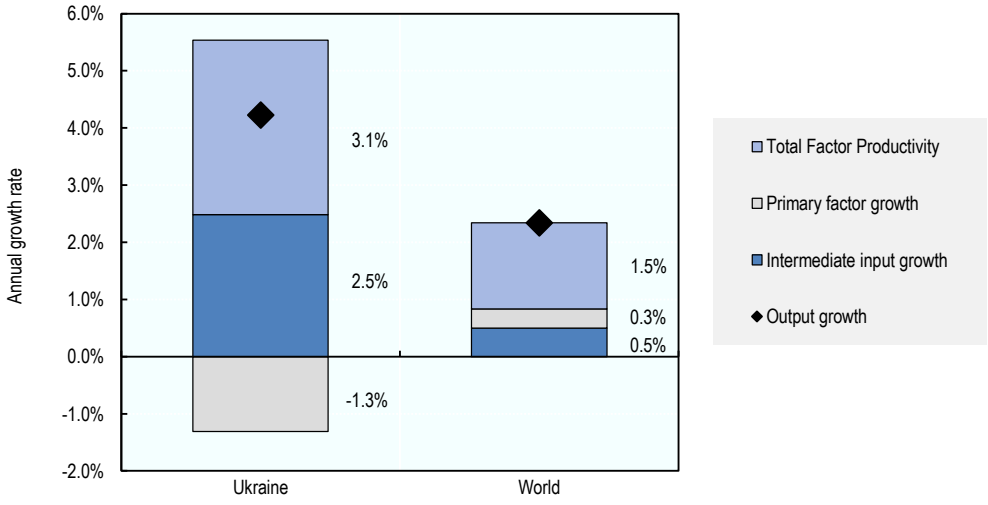
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

StatLink https://doi.org/10.1787/888933939201

Both agricultural output and total factor productivity grew at rates significantly above global averages, at more than 4% and 3.1% per year in the decade ending 2015, respectively. Output was also driven by intermediate input growth, while the use of primary factors, notably of capital, shrank. The shrinking capital stock may pose a risk for continued productivity growth in the future (Figure 26.6).

Despite the declining importance of agriculture within the economy, agriculture's shares in the country's energy use and GHG emissions have increased since the mid-1990s. In contrast, nutrient balances are much lower today than back then (Table 26.3).

Figure 26.6. Ukraine: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

StatLink https://doi.org/10.1787/888933939220

Table 26.3. Ukraine: Productivity and environmental indicators

	Ukraine		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	0.3%	3.1%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha[1]	34.9	0.8	33.2	30.0
Phosphorus balance, kg/ha[1]	6.3	0.2	3.7	2.3
Agriculture share of total energy use (%)	2.9	4.1	1.9	2.0
Agriculture share of GHG emissions (%)	10.8	12.5	8.5	8.9
Share of irrigated land in AA (%)	..	5.1	-	-
Share of agriculture in water abstractions (%)	..	..	45.4	42.5
Water stress indicator	..	..	9.7	9.7

Note: * or closest available year. 1. Preliminary data.
Source: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Description of policy developments

Main policy instruments

Ukraine's agricultural policy measures are formulated in a number of major laws and decisions. The law "**On State Support of Agriculture in Ukraine**" defines priorities and measures of agricultural policy. The "**Concept of Rural Development in Ukraine**", approved in 2015, provides priorities for the development of rural areas in Ukraine until 2025. Ukraine's policies are increasingly influenced by the Association Agreement with

the European Union, ratified by Ukraine in 2014. Finally, the financial scope of agricultural policies is defined in the annual law "**On State Budget of Ukraine**".

The "**Comprehensive Strategy of Implementing Legislation on Sanitary and Phytosanitary Measures**" was approved in 2016 and provides for a process of harmonisation of Ukraine's SPS legislation with EU requirements, and stipulates the objective to emulate in Ukraine, by 2019, a system of food quality control similar to the European one.

Ukraine's legislation provides for a range of instruments to intervene in agricultural markets. These include tariff protection, non-tariff trade regulation, and various forms of domestic price measures. The state agency Agrarian Fund can implement domestic **price interventions** through the operation of the State Intervention Fund. Initially dealing only with grain, the Agrarian Fund has become progressively involved in other activities, such as sugar commodity interventions, state purchases and sales of a broad range of agricultural and food products, forward-contracting, flour processing and wholesaling.

For purchases by the Agrarian Fund, official minimum and maximum intervention prices are set, and cover commodities that are "objects of state regulation". The exact list of such products and the periods during which these administered prices will be in effect are defined by specific government decrees. Minimum prices do not play a role of guaranteed prices but are regarded as a floor-price reference for private market operators. Minimum intervention prices should not exceed domestic market price levels to comply with the Ukraine's WTO domestic support commitment. While until 2016, the Agrarian Fund has continued to procure grains under this mechanism, during the 2016/17-2018/19 marketing years no budgetary funds have been allocated to state interventions, and corresponding minimum prices have not been set.

Agricultural producers are eligible for a **Single Tax** (the Fixed Agricultural Tax before 2015), which is set as a percentage of agricultural land value, established on 1 July 1995 and adjusted since with the general consumer price index. Introduced in 1998, the Single Tax originally replaced twelve taxes for which agricultural enterprises were liable as business entities. The implied benefits from this tax have been narrowing since then. At present, the Single Tax replaces only three taxes – profit tax, land tax (for land used in agricultural production), and special water use fee – with agricultural producers liable to all other taxes due on agricultural businesses. The Single Tax regime generates implicit tax benefits to agricultural producers which for recent years were estimated to be around UAH 4.3 billion (USD 158 million) annually.

Since 2002, a moratorium on the sale of agricultural land bans selling farmland in Ukraine, although leasing for cultivation is permitted. In December 2018, this moratorium was extended again for 2019.

On 27 June 2014, the European Union and Ukraine signed the **Deep and Comprehensive Free Trade Area (DCFTA)** as part of their Association Agreement. It became provisionally applied from 1 January 2016 and formally entered into force on 1 September 2017. The liberalisation of trade between the European Union and Ukraine is to be implemented within a transition period of seven to ten years. The European Union opens zero-tariff rate quotas for Ukraine's principal agro-food products, such as grain, meat and milk products, and sugar, and grants free access for the others. Ukraine reduced import duties for a number of goods imported from the European Union. About 40% of agriculture-related import duties were reduced to zero immediately after the Agreement entered into force, and around a half of import duties will be eliminated during the transition

period. However, about 10% of tariff lines covering selected products in such product categories as dairy and eggs, sugar, miscellaneous edible products, animal oils and fats, feeding stuff for animals will preserve non-zero tariffs. Since 1 January 2016, Ukraine applies three TRQs with zero in-quota tariffs for imports from the EU of pig meat, poultry meat and poultry meat preparations, and sugar, respectively. Ukraine has secured the right to use safeguard measures and additional trading conditions (e.g. to apply entry prices for a certain number of tariff lines). The parties committed to apply no export subsidies for mutually traded agricultural goods.

The DCFTA incorporates fundamental WTO rules on non-tariff barriers, such as prohibition of import and export restrictions, disciplines on state trading etc. The main barrier for trade integration remains Ukraine's difficulty in complying with EU food safety, veterinary and phytosanitary requirements. Thus, the DCFTA contains provisions for technical regulations, standards and conformity assessments to harmonise with those of the European Union, as well as for technical co-operation in the field of technical regulations, standards and related issues between Ukraine and the European Union.

Ukraine signed the **Paris Agreement of the United Nations Framework Convention on Climate Change** in April 2016, and ratified it in September 2016. Through its Nationally Determined Contribution, Ukraine committed to total emissions across sectors, including agriculture, not exceeding 60% of those in 1990 (equivalent to not exceeding 140% of those in 2012). In December 2016, the Cabinet of Ministers of Ukraine (CMU) adopted the **National Concept of State Policy in the Field of Climate Change up to 2030**. The "**Strategy for Low Carbon Development of Ukraine up to 2050**" (SLCD) has been approved by the Cabinet of Ministries of Ukraine in July 2018. The SLCD defines a co-ordinated approach by various parties concerned and provides a national vision for separating economic growth and social development from the increase of greenhouse gas emissions. The Action Plan for the implementation of this Concept was approved by the CMU in late 2018 (see below). In addition, the Ministry of Agrarian Policy and Food (MAPF) is developing measures to improve environmental practices related to the adaptation of agriculture and forestry to climate change, in line with the obligations under the Association Agreement with the European Union.

Domestic policy developments in 2018-19

Ukraine's legislative framework has seen a number of developments: The "**Concept of Development of Farms and Agricultural Cooperatives for 2018-20**", approved by the Cabinet Ministers of Ukraine (CMU), provides the relevant conditions for the implementation of support programs for concessional loans and for the encouragement of agricultural co-operatives. The "**Action Plan of the Strategy for the Development of Small and Medium Enterprises**", adopted in May 2018, allows for specific support measures for SMEs and addresses the modernisation of the relevant regulatory framework, following up on analyses undertaken by the EU-financed Better Regulation Delivery Office.

The Law "**On the State Control for Conformity with Legislation on the Safety and Quality of Food and Feed, Animal Health and Wellbeing**" adopted by the national Parliament in May 2017, and in force since April 2018, regulates the state's control of production facilities to ensure the desired level of protection of human health and consumer interests. It also provides for reduced physical inspections of imported agricultural and food products into the customs territory of Ukraine subject to certain requirements regarding the

type of product imported and its origin, and conditional on a prescribed set of documentation.

The Law "**On Feed Safety and Hygiene**", adopted by the national Parliament in December 2017 and in , is to come into force in January 2020, sets legal and organisational principles for production, circulation, labelling and presentation of feedstuff, and regulates the relations between executive authorities[1] and feed market operators.

After substantial reductions, the state budget for supporting the Ukrainian agricultural sector was significantly increased since 2016. In 2018, total expenses by the Ministry of Agrarian Policy and Food of Ukraine for direct subsidies to agricultural producers amounted to UAH 4.2 billion (USD 154 million), up from UAH 0.3 billion (USD 12 million) in 2016 when most of the support had been provided through public revenues foregone.

Livestock producers benefitted from specific support programmes in 2018: UAH 1 340 million (USD 49 million) were allocated for the partial reimbursement of costs related to the construction and reconstruction of animal farms and complexes. Another UAH 512 million and UAH 320 million (USD 19 million and USD 12 million) were directed to agricultural enterprises as a subsidy per head of cows and to rural households as a subsidy per head of young cattle, respectively.

As in 2017, the programme "**State support of animal husbandry**" provided partial compensation to agricultural producers purchasing high breeding animals. Allocations in 2018 significantly exceeded those in 2017 and amounted to UAH 215 million (in 2017: UAH 11.7 million) (USD 7.9 million and USD 0.4 million, respectively). In contrast, no allocations were made for debt repayment under the same programme, which had provided UAH 158 million (USD 5.9 million) to livestock producers in 2017.

Similar to the programme **"Partial compensation of interest on commercial bank credit**", re-activated in 2015, the Ministry continued to support agricultural enterprises through the programme **"Financial support in agriculture through preferential credits**" to the tune of UAH 266 million (USD 9.8 million) in 2018. In addition, the state programmes **"Financial support for farm development**" and **"State support of livestock sector**", transferred UAH 8.5 million and UAH 3.7 million (USD 0.3 million and USD 0.1 million) to support short-term loans, respectively. The state programme "Financial support for farm development" additionally included a subsidy of UAH 6.4 million (USD 0.2 million) to partially compensate costs for seeds for smaller farmers.

Funding of the "**Subsidy for partial compensation of agricultural machinery and equipment**" has been increased almost eight-fold from its 2017 volume, comprising a total of UAH 1 020 million (USD 34 million), including UAH 108 million (USD 4 million) specifically earmarked for smaller farms[2].

Specific support also continued to be provided for planting material and the construction of refrigerators for orchards, vineyards and berry fields. At UAH 394 million (USD 14 million), this support was slightly smaller in 2018 than in the preceding year, when funds were also available for debt repayments.

From 1999 to 1 January 2017, significant support to agricultural producers had been provided through unpaid VAT, which was accumulated on special accounts and used for input purchases. In 2017, the VAT accumulation system was abolished, with the payment of a "Development Subsidy" with similar characteristics of being based on VAT receipts

and spent for various production inputs having been paid instead. Since 2018, this form of support has ceased to be provided to agricultural producers.

The **sugar production quota system** has been abolished since September 2018, and minimum prices for sugar beet within the sugar quota no longer exist, putting an end to a system developed in the late 1990s. The **sugar quota** regime had been another element of price support policy. Reflecting domestic beet production, a national marketing quota for sugar produced from sugar beet and sold on the domestic market used to be set annually, together with the minimum in-quota prices for sugar beet and sugar. This quota, allocated to individual sugar plants, had not accounted for sugar processed from imported raw cane sugar, which had been subject to a Tariff Rate Quota (TRQ).

During 2018, the State Service of Ukraine for Food Safety and Consumer Protection resumed its official controls and veterinary checks, following the entry into force of the "**Law on State Control for Food, Feed, Animal Health and Animal Welfare**" in April 2018. Furthermore, the drafting and adoption of sanitary and phytosanitary (SPS) legislation has accelerated, with 17 legal acts compatible with EU legislation adopted and more than 140 others put in the legislative process during 2017-18.

The Law "**On Foodstuff Information**", adopted in December 2018, establishes the legal and organisational groundwork for providing food information to consumers, aiming at a high level protection of citizens' health, well-being, social and economic interests. In particular, the law defines relevant terminology and specific obligations of food market operators, including regarding the specific placement of information, labelling and others.

The Law "**On the Basic Principles and Requirements for Organic Production, Circulation and Labelling of Organic Products**", adopted in July 2018, provides the main framework for the production of organic food products and the functioning of the market for organic products. It also defines the roles and obligations for public authorities and organic market operators, and lays out further public policy directions for the development of organic product markets.

Budget allocations for land reforms have more than tripled in 2018 compared to 2017, and reached UAH 342 million (USD 12.5 million). Among the financed work was a normative monetary valuation of agricultural land for all of Ukraine. The results of this valuation are used for the State Land Cadastre and made available to users online and free of charge.

Smaller farmers benefitted from the compensation of up to 90% of costs for **extension services**. A total of UAH 0.2 million (USD 7 300) were allocated to this support in 2018.

Ukraine made further steps towards implementing its commitments under the **2016 Paris Agreement of the UNFCCC**. In December 2018, the CMU approved the **Action Plan** on the implementation of the Concept for the Implementation of the State Policy on Climate Change for the Period up to 2030. The multi-sectoral Action Plan foresees constant monitoring, reporting and verification of greenhouse gas emissions, emissions trading, the application of financial instruments for emission reductions, and mechanisms towards public-private partnerships. The Government also commits to develop, during the 2019-20 biennium, recommendations for the adaptation of agriculture to climatic changes and as well as a medium-term action plan for the adaptation of forestry. Both the recommendations and a corresponding allocation of budgetary funds are conditions for public activities on spatially specific advice for agricultural producers regarding the risks associated with future climate change.

The Laws "**On Environmental Impact Assessment**" and "**On Strategic Environmental Assessment**" adopted in May 2017 and March 2018, respectively, provide for the legal basis for environmental assessments in Ukraine. The former establishes the principles of environmental impact assessments (EIAs) which aim at preventing environmental damage, ensuring environmental safety, environmental protection, efficient use and renewal of natural resources in the political decision-making process related to economic activities with potentially significant environmental impact. In turn, the latter law mandates strategic environmental assessments, including mandatory public consultations, for a variety of projects including in agriculture; among others, it establishes relevant procedures for the implementation and approval of such strategic environmental assessments.

The Ministry of Agrarian Policy and Food is being restructured, giving specific attention to the sustainable management of forestry and fisheries resources.

Trade policy developments in 2018-19

Ukraine has been a member of the WTO since 2008. The country charges import tariffs on most agricultural products, with applied MFN tariffs averaging at 9.2%. While most imports face *ad valorem* tariffs, Ukraine maintains a global tariff-rate quota for raw cane sugar which, however, has not been used since 2014. Export duties are applied to some oilseeds, live animals, raw hides and a few non-agricultural products. Furthermore, Ukraine has suspended VAT refunds for exports of soybeans from September 2018, and for exports of rapeseed from January 2020; both suspensions are scheduled to last until December 2021.

The Canada-Ukraine Free Trade Agreement (CUFTA) came into force in August 2017 as Ukraine's fourth trade agreement, adding to those with the rest of the Commonwealth of Independent States,[3] with the European Free Trade Association, and with the European Union. The FTA with Israel was signed in January 2019 but is yet to be put in force, pending ratification of the signatories. Negotiations on a FTA with Turkey are ongoing.

In response to a suspension by the Russian Federation of its free trade regime with Ukraine under the Agreement on Free Trade in the Commonwealth of Independent States (CIS) Area and the implementation of a ban by the Russian Federation on imports of agro-food products from Ukraine, Ukraine in turn has suspended trade preferences for imports from the Russian Federation foreseen by the CIS FTA. Ukraine has banned imports of a list of 43 agricultural goods from the Russian Federation. This list includes meat and meat by-products, fish, milk and dairy products, tea, coffee, grain and its processing products, vegetable and animal oils, confectionery, baby foods, beer, vodka, ethyl alcohol, cigarettes and others. In December 2018, the suspension of trade preferences and the ban on specific imports were further prolonged until the end of 2019. Anti-dumping duties for chocolate and other cocoa-based food products produced in the Russian Federation, effective from 20 June 2017 for a period of five years, continue to be in place.

In August 2018, the Ministry of Agrarian Policy and Food and main associations of grain exporters signed the traditional Memorandum of Understanding (MoU) on recommended volumes of grain exports. This non-binding agreement puts maximum export quantities of wheat and meslin (including flour in grain equivalent) during the 2018/19 marketing year at 16 million tonnes, slightly less than agreed for the preceding marketing year (16.5 million tonnes). These quantities can be revised during the marketing year, and actual exports have repeatedly exceeded agreed volumes in the past. Export targets for other grain types were not set by the 2018 MoU.

The new **Export Promotion Office** has been established in 2018 as a consultative and advisory body under the Ministry of Economic Development and Trade of Ukraine, to help Ukrainian exporters in opening new markets. It provides assistance to both Ukrainian exporters and foreign importers.

Moreover, and per request by the CMU, a new **Export Credit Agency** was created in late 2018. This new agency is to facilitate Ukraine's transition from a raw material exporter to a supplier of value added goods and services.

Notes

[1] Market price support data have been revised backwards for a number of commodities, including for all grains, sugar, pig meat, poultry, and milk. Revisions relate to updated transport and processing margins, changed trade status, the choice of reference prices, and zeroing market price differentials in the absence of relevant policies. Revisions affect the whole time series since 1986, with adjustments being most significant for the years from 2013 onwards, for which MPS estimates (and, hence, PSE estimates) are less negative than before.

[1] Cabinet of Ministers of Ukraine (CMU), Ministry of Agrarian Policy and Food (MAPF) and State Service of Ukraine for Food Safety and Consumer Protection (SSUFSCP).

[2] In Ukraine, the term "farm" is used for privately owned agricultural enterprises, as opposed to other legal forms such as business partnerships, co-operatives or state enterprises. "Smaller farms" are those using up to 500 hectares of agricultural land and with net revenues of the preceding year not exceeding UAH 15 million (USD 0.55 million).

[3] Other members and associate members include Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Moldova, the Russian Federation, and Turkmenistan.

Chapter 27. United States

Support to agriculture

The level of support provided to agricultural producers in the United States has been consistently below the OECD average. Producer support (PSE) was 10% of gross farm receipts in 2016-18. On average, prices received by farmers in 2016-18 were 4% higher than those observed in world markets, largely as a result of Market price support (MPS) for milk, sugar, and to a lesser extent sheep meat. These commodities are protected by border measures (including tariff rate quotas). Producer prices of other commodities are mostly aligned with border prices. Support to consumers accounts for close to half of total support to US agriculture as a result of US domestic food assistance programmes. Expenditures for general services (GSSE) were equivalent to 4.9% of agricultural value added in 2016-18, below the OECD average.

MPS has become a progressively smaller share of US support to agriculture. Budgetary support has increased in importance over time, mainly due to increases in payments that require production – reflecting the emphasis placed on farm insurance and risk management – and, to a lesser extent, increases in input payments. Reflecting the fact that crop insurance and the primary crop commodity programmes are counter-cyclical to market prices, the level of budgetary support is inversely related to market price developments. Support has peaked when world commodity prices were depressed (in terms of USD), while high commodity prices after 2007-08 contributed to lower levels of support.

Main policy changes

The Agriculture Improvement Act of 2018 (the 2018 Farm Bill), was enacted on 20 December 2018 and will remain in force through 2023. The 2018 Farm Bill largely continues programmes implemented under the 2014 Farm Bill and there are few major changes to agricultural and food policies. Around 76% of total expenditures are projected for domestic food assistance programmes. For the titles that affect agricultural producers most directly, spending on crop insurance accounts for 9% of total projected expenditures, while commodities and conservation programmes each account for 7%.

In July 2018, USDA announced a package of trade mitigation programmes to assist farmers affected by retaliatory tariffs resulting in the loss of traditional export markets. The USD 12 billion package includes: the Market Facilitation Program (MFP), which provided payments to producers of soybeans, cotton, wheat, sorghum, hogs, milk, fresh sweet cherries, and shelled almonds; the Food Purchase and Distribution Program (FPDP), which provides for purchases of up to USD 1.2 billion in other commodities targeted by retaliatory tariffs: and the Agricultural Trade Promotion Program (ATP), which will provide up to USD 200 million in cost-share assistance to eligible US organisations to develop foreign markets for US agricultural products.

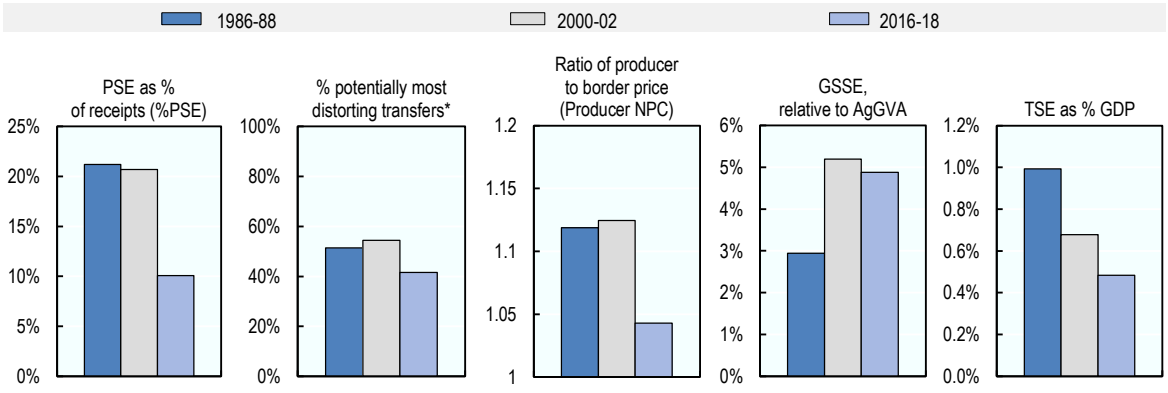
On 30 November 2018, the United States, Mexico, and Canada signed a new trade agreement, the United States-Mexico-Canada Agreement (USMCA), which will replace the North American Free Trade Agreement (NAFTA) once it is ratified by all three

countries and enters into force. The USMCA will preserve the existing agriculture commitments from NAFTA, and will eliminate tariffs for certain additional products between Canada and the United States. It creates new market access opportunities for United States exports of dairy, poultry, and eggs to Canada, and in exchange the United States will provide new access to Canada for dairy, peanuts, processed peanut products, and a limited amount of sugar and sugar containing products. All other tariffs on agricultural products traded between the United States and Mexico will remain at zero.

Assessment and recommendations

- Levels of producer support and border protection have decreased since the early-2000s. However, low levels of support since then have been primarily due to higher world commodity prices, as many of the agricultural support programmes are counter-cyclical to market prices.
- The increasing emphasis on insurance and risk management policy tools is, in principle, a good approach to providing support to producers when they are in need. However, most insurance programmes remain commodity-specific. Moving to an all farm-revenue approach would exploit differences in price and yield variability across products, reducing government costs for a given objective, and also remove distortions across commodity sectors. Risk management instruments should also be evaluated to ensure that they do not transfer risk that should be borne by farmers to the public budget.
- Established voluntary conservation programmes like the Environmental Quality Incentives Program (EQIP) and the programmes consolidated into the Agricultural Conservation Easement Program (ACEP) appear to be effective in addressing soil conservation and water pollution problems. Careful assessments are needed to ensure that these and newer programmes, like the Regional Conservation Partnership Program, are well targeted and provide additional environmental benefits to public spending.
- Recent Farm Bills have continued strong support for farm incomes and strengthened the risk management system to help build farmers' resilience to natural disasters and market shocks. Given this, the recent return to providing ad hoc support should be re-considered to ensure that it does not dis-incentivise necessary adjustments to new climate and market conditions.
- While a high rate of productivity growth – driven by farm consolidations and the adoption of innovations – has helped to maintain the competitiveness of US agro-food exports, future export competitiveness will also be determined by preferential access to markets facilitated by trade agreements. Resolving current uncertainties around access to markets will be important to ensure that farmers are able to pursue available market opportunities.

Figure 27.1. United States: Development of support to agriculture

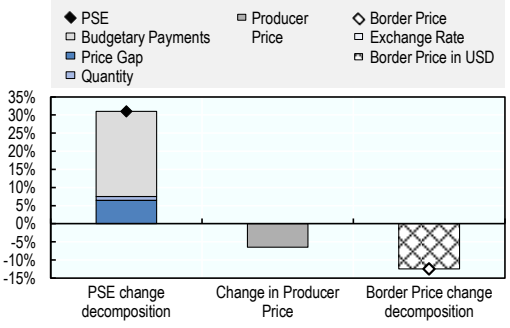


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

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Support to producers (%PSE) has declined from 21% of gross farm receipts in 2000-02 to 10.1% in 2016-18. The share of potentially **most distorting transfers** was 42% in 2016-18, below the OECD average and lower than levels in 2000-02 (Figure 27.1). Expenditures for **general services** (GSSE) were equivalent to 4.9% of agricultural value added in 2016-18, down from 5.2% in 2000-02. **Total support to agriculture** represented 0.5% of GDP in 2016-18. In 2018, the level of support increased due to higher budgetary payments and MPS. The increase in MPS results from a larger price gap as domestic prices declined by less than world prices (Figure 27.2). On average, prices received by farmers in 2016-18 were 4% higher than those observed in world markets. This largely results from market price support for sugar, milk and sheep meat, as producer prices of other commodities are mostly aligned with border prices (Figure 27.3). Single commodity transfers (SCT) accounted for 54.9% of producer support in 2016-18. SCTs account for the highest share of producer support for sugar and milk.

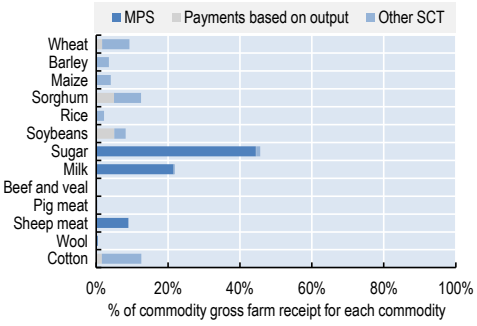
Figure 27.2. United States: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933939258

Figure 27.3. United States: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933939277

Table 27.1. United States: Estimates of support to agriculture

Million USD

	1986-88	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**143 469**	**193 454**	**352 286**	**355 467**	**368 848**	**332 542**
***of which:** share of MPS commodities (%)*	78.3	73.6	75.3	76.2	75.8	73.8
Total value of consumption (at farm gate)	**121 087**	**162 491**	**289 044**	**274 294**	**290 989**	**301 849**
Producer Support Estimate (PSE)	**35 337**	**46 480**	**38 188**	**36 442**	**33 813**	**44 308**
Support based on commodity output	15 114	22 404	14 615	10 519	11 550	21 776
Market Price Support[1]	12 003	15 222	11 940	10 252	11 519	14 051
Positive Market Price Support	12 089	15 222	11 940	10 252	11 519	14 051
Negative Market Price Support	-86	0	0	0	0	0
Payments based on output	3 111	7 181	2 675	267	32	7 725
Payments based on input use	7 061	7 572	8 613	8 550	8 482	8 807
Based on variable input use	3 697	3 091	1 823	1 780	1 834	1 856
with input constraints	739	168	576	583	586	561
Based on fixed capital formation	1 233	361	1 796	1 672	1 748	1 969
with input constraints	1 233	358	1 741	1 631	1 669	1 922
Based on on-farm services	2 131	4 120	4 993	5 099	4 900	4 981
with input constraints	349	677	1 456	1 412	1 441	1 516
Payments based on current A/An/R/I, production required	12 231	5 655	8 699	8 059	9 334	8 703
Based on Receipts / Income	912	2 055	2 201	2 106	2 038	2 459
Based on Area planted / Animal numbers	11 319	3 600	6 498	5 953	7 296	6 244
with input constraints	2 565	1 570	6 492	5 946	7 288	6 242
Payments based on non-current A/An/R/I, production required	0	0	229	328	0	358
Payments based on non-current A/An/R/I, production not required	338	8 789	3 967	7 015	2 452	2 434
With variable payment rates	0	3 969	3 966	7 013	2 451	2 434
with commodity exceptions	0	3 969	3 966	7 013	2 451	2 434
With fixed payment rates	338	4 819	1	3	1	0
with commodity exceptions	0	4 819	0	0	0	0
Payments based on non-commodity criteria	592	2 061	2 065	1 970	1 994	2 231
Based on long-term resource retirement	592	2 050	2 044	1 948	1 974	2 210
Based on a specific non-commodity output	0	0	0	0	0	0
Based on other non-commodity criteria	0	11	21	22	20	21
Miscellaneous payments	0	0	0	0	0	0
Percentage PSE (%)	**21.2**	**20.7**	**10.1**	**9.5**	**8.6**	**12.2**
Producer NPC (coeff.)	**1.12**	**1.12**	**1.04**	**1.03**	**1.03**	**1.07**
Producer NAC (coeff.)	**1.27**	**1.26**	**1.11**	**1.11**	**1.09**	**1.14**
General Services Support Estimate (GSSE)	**3 108**	**6 164**	**9 987**	**9 824**	**10 937**	**9 201**
Agricultural knowledge and innovation system	1 129	1 805	2 358	2 212	2 399	2 462
Inspection and control	372	685	1 269	1 269	1 285	1 252
Development and maintenance of infrastructure	13	461	3 332	3 351	4 151	2 493
Marketing and promotion	495	957	1 279	1 235	1 355	1 247
Cost of public stockholding	0	107	3	9	0	0
Miscellaneous	1 100	2 149	1 747	1 747	1 747	1 747
Percentage GSSE (% of TSE)	**6.4**	**8.6**	**10.6**	**10.6**	**12.0**	**9.3**
Consumer Support Estimate (CSE)	**-2 630**	**2 952**	**32 687**	**35 048**	**32 950**	**30 064**
Transfers to producers from consumers	-11 699	-14 831	-11 738	-10 131	-11 289	-13 795
Other transfers from consumers	-1 314	-1 642	-1 728	-1 368	-1 846	-1 971
Transfers to consumers from taxpayers	10 089	19 425	46 154	46 546	46 085	45 830
Excess feed cost	294	0	0	0	0	0
Percentage CSE (%)	**-2.4**	**2.1**	**13.5**	**15.4**	**13.5**	**11.7**
Consumer NPC (coeff.)	**1.12**	**1.11**	**1.05**	**1.04**	**1.05**	**1.06**
Consumer NAC (coeff.)	**1.02**	**0.98**	**0.88**	**0.87**	**0.88**	**0.89**
Total Support Estimate (TSE)	**48 534**	**72 069**	**94 329**	**92 812**	**90 835**	**99 339**
Transfers from consumers	13 013	16 473	13 466	11 499	13 135	15 766
Transfers from taxpayers	36 835	57 239	82 590	82 681	79 546	85 544
Budget revenues	-1 314	-1 642	-1 728	-1 368	-1 846	-1 971
Percentage TSE (% of GDP)	**1.0**	**0.7**	**0.5**	**0.5**	**0.5**	**0.5**
Total Budgetary Support Estimate (TBSE)	**36 531**	**56 847**	**82 388**	**82 560**	**79 316**	**85 288**
Percentage TBSE (% of GDP)	**0.7**	**0.5**	**0.4**	**0.4**	**0.4**	**0.4**
GDP deflator (1986-88=100)	**100**	**139**	**189**	**185**	**189**	**193**
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 (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

The United States is the world's second largest economy and the third largest country by land area and population. US GDP per capita is more than double the average of all countries analysed in this report (Table 27.2). Primary agriculture accounts for a small part of the economy – around 1.0% of GDP and 1.6% of employment – but agro-food exports account for almost 11% 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 production of a wide range of commodities. In recent years, total agricultural production has been divided relatively equally between crops and livestock, although their shares vary over time. Key industries include grains (maize and wheat), oilseeds (soybeans), cotton, cattle, dairy, poultry, and fruits and vegetables.

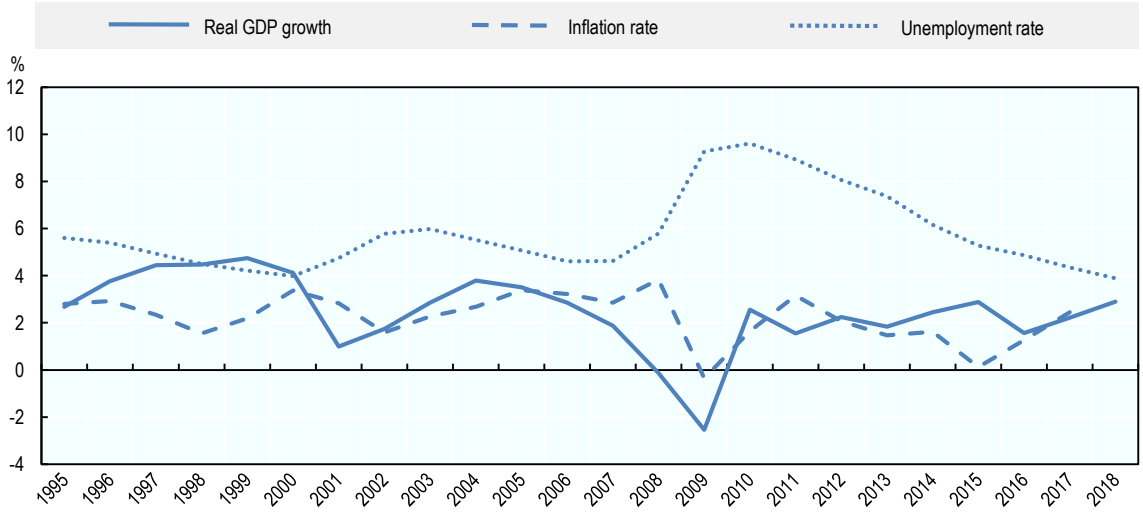
Table 27.2. United States: Contextual indicators

	United States		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	7 640	19 485	25.9%	19.0%
Population (million)	267	326	6.9%	6.8%
Land area (thousand km^2)	9 159	9 147	11.5%	11.3%
Agricultural area (AA) (thousand ha)	420 139	405 863	14.0%	13.6%
			All countries[1]	
Population density (inhabitants/km^2)	29	35	48	60
GDP per capita (USD in PPPs)	28 749	59 535	7 642	21 231
Trade as % of GDP	9	10	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	1.6	1.0	3.3	3.5
Agriculture share in employment (%)	2.8	1.6	-	-
Agro-food exports (% of total exports)	11.4	10.8	8.1	7.5
Agro-food imports (% of total imports)	4.4	5.6	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	61	57	-	-
Livestock in total agricultural production (%)	39	43	-	-
Share of arable land in AA (%)	43	38	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

The rate of US economic growth increased in 2018, and unemployment is at its lowest level since 2000 (Figure 27.4). The current expansion is now one of the longest on record. The United States is a net exporter of agro-food products and the world's largest agricultural exporter. In recent years the US agro-food trade surplus has narrowed (Figure 27.5). Exports to Canada, the People's Republic of China (hereafter "China") and Mexico accounted for over 42% of US agro-food exports in 2017, while over half of US agro-food imports are sourced from Mexico, Canada and the European Union. Exports are dominated by primary products for further processing and processed products for final consumers, while almost half of agro-food imports are processed products for final consumption.

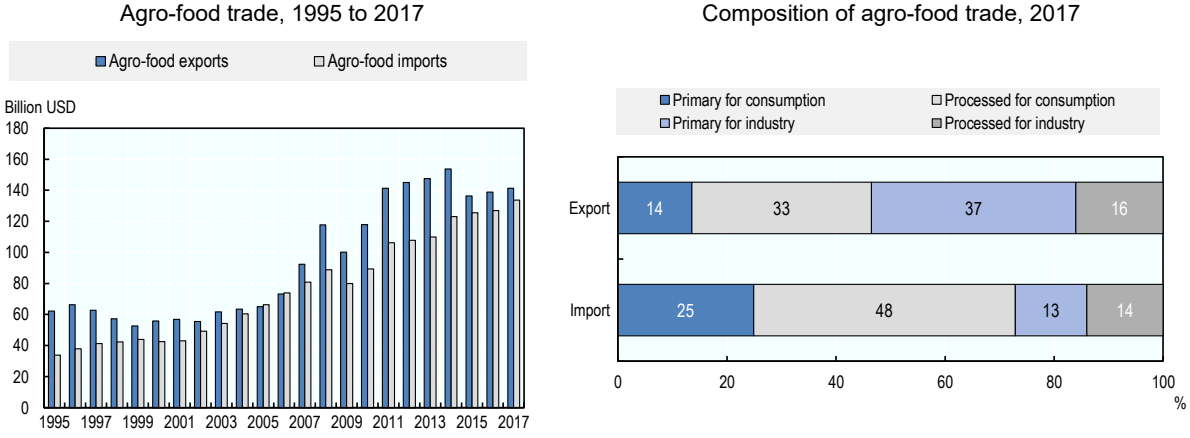
Figure 27.4. United States: Main economic indicators, 1995 to 2018



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

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Figure 27.5. United States: Agro-food trade



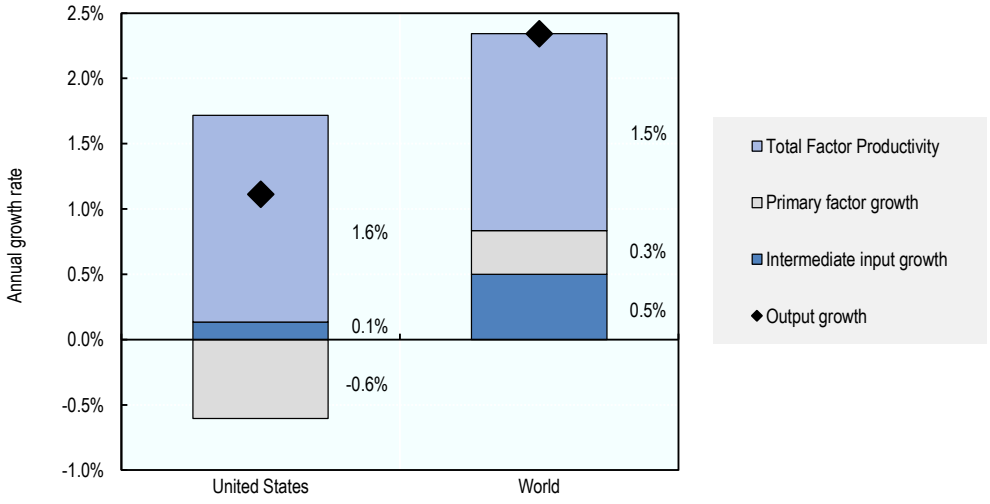
Note: Numbers may not add up to 100 due to rounding.
Source: UN Comtrade Database.

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Total factor productivity (TFP) growth has driven agricultural output growth of 1.1% per year on average over the recent decade, offsetting declining use of primary factors (Figure 27.6). TFP growth averaged 1.6% per year between 2006 and 2015, driven by farm consolidation and the adoption of innovations in crop and livestock breeding, nutrient use and pest management, farm practices, and farm equipment and structures. The high productivity growth realised by US agriculture has been achieved with an overall reduction in environmental pressures from the sector. Nutrient surplus intensities at the national level have declined and are at similar levels to the average for OECD countries (Table 27.3).

Agriculture's share in energy use is below the OECD average, as are greenhouse gas (GHG) emissions. However, water stress in the United States is above the OECD average.

Figure 27.6. United States: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

StatLink https://doi.org/10.1787/888933939334

Table 27.3. United States: Productivity and environmental indicators

	United States		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	2.2%	1.6%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha	37.1	28.1	33.2	30.0
Phosphorus balance, kg/ha	4.0	2.7	3.7	2.3
Agriculture share of total energy use (%)	1.1	1.3	1.9	2.0
Agriculture share of GHG emissions (%)	7.6	8.6	8.5	8.9
Share of irrigated land in AA (%)	5.3	5.3	-	-
Share of agriculture in water abstractions (%)	41.3	35.8	45.4	42.5
Water stress indicator	18.8	19.8	9.7	9.7

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

Description of policy developments

Main policy instruments

The Agricultural Act of 2014 (2014 Farm Bill) provides the basic legislation governing farm programmes for the period 2014 to 2018. The 12 titles of the 2014 Farm Bill authorise policies for commodity programmes, crop insurance, conservation on agricultural land,

domestic food assistance, agricultural trade promotion and international food aid, farm credit, rural development, agricultural research, forestry on private lands, horticulture and organic agriculture, and bioenergy, among others. Almost 80% of budgetary spending under the 2014 Farm Bill is allocated to domestic food assistance programmes – primarily, the *Supplemental Nutrition Assistance Program* (SNAP) – with farm programmes accounting for just over 20% of the projected budgetary outlays.

Agriculture in the United States is also affected by a wide range of other legislation, at both Federal, State and local levels, including trade measures, food safety regulation, commodity trading and finance, tax policy, energy, and transportation.

The primary crop commodity programmes under the 2014 Farm Bill include programmes that make payments to producers with historical base acres of programme crops (wheat, feed grains, rice, oilseeds, peanuts and pulses)[1] when prices fall below statutory minimums or when crop revenue is low relative to recent levels. Producers are not required to produce the historical 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 their fixed reference prices. 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 make a choice between the PLC and ARC programmes on a commodity-by-commodity basis, which then remained in place through 2018.

Sugar is supported by a tariff rate quota (TRQ), together with provisions for non-recourse loans and marketing allotments. Milk and dairy products are no longer supported by minimum prices with government purchases of butter, skim milk powder and cheddar cheese, but tariffs and TRQs continue. A programme for dairy producers, the Margin Protection Program for Dairy Producers (MPP-Dairy), insures the margin between milk price and feed costs for a premium, with payments made on enrolled historical milk production. The related Dairy Product Donation Program (DPDP) makes purchases of dairy products for feeding programmes under certain conditions, which did not occur during the 2014-18 period. Marketing assistance loans continue for wheat, feed grains, cotton, rice, oilseeds, pulses, wool, mohair and honey, as do border measures (including TRQs) for beef and sheep meat and some other products, although US agricultural tariffs are generally low.

The crop insurance programme offers coverage options for both yield and revenue losses. Traditional crop insurance makes available 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) offers producers additional area-based insurance coverage in combination with traditional crop insurance policies (but excluding crops for which producers have elected to participate in the ARC programme). The Stacked Income Protection Plan (STAX) provides premium subsidies to upland cotton producers to purchase area-based revenue insurance policies (cotton is not a covered commodity under the PLC and ARC programmes). Participants in the STAX programme may not purchase SCO policies for the same upland cotton acreage.

At the federal level, agri-environmental programmes focus on measures to: convert environmentally fragile cropland to approved conservation uses (including long-term retirement); and encourage crop and livestock producers to adopt practices that reduce environmental pressures. Since the enactment of the 1985 Farm Act, eligibility for most federal commodity programme payments is subject to the recipients having established an individual farm-based conservation plan to protect highly erodible cropland and wetlands.

The 2014 Farm Act restored the conservation compliance eligibility requirement for crop insurance premium subsidies that was removed in 1996.

Other farm programmes include direct and guaranteed loans – including microloans – for farmland purchase and for operating credit, which are designed to assist producers who face difficulty obtaining credit on their own 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 specifically to specialty crops, organic production, and pest and disease prevention, as well as promotion of sustainable farming practices.

Production of ethanol and other biofuels is mainly supported in the form of mandated blending for fuel use, and loan and grant programmes.

The United States is continually working to enhance agricultural productivity, even under increasing climate variability and extreme weather events. On climate adaptation, The United States Department of Agriculture (USDA) continues to operate its network of Regional Climate Hubs. These link USDA research and programme agencies in order to develop and deliver science-based, region-specific information and technologies to agricultural producers and professionals to enable climate-informed decision-making, and provide access to assistance to implement those decisions. USDA also helps producers mitigate GHG emissions and adapt to a changing climate, while improving the natural resource base, by providing technical and financial assistance to landowners through various conservation practices and programmes. The United States signed the Paris Agreement on Climate Change on 22 April 2016, but has since announced its intention to withdraw from the Paris Agreement.

Domestic policy developments in 2018-19

The most significant policy developments in 2018-19 include the enactment of a new Farm Bill, the Agriculture Improvement Act of 2018 (2018 Farm Bill), preceded by changes to farm programmes in the Bipartisan Budget Act of 2018 (BBA), and the package of trade mitigation programmes announced in July 2018 to assist farmers affected by retaliatory tariffs resulting in the loss of traditional export markets. The United States also renegotiated the trilateral trade agreement with Canada and Mexico, with the new United States–Mexico–Canada Agreement (USMCA) intended to supersede NAFTA.

The **2018 Farm Bill** was enacted on 20 December 2018 and will remain in force through 2023. The key changes to agricultural and food policies are highlighted in the following section on "Key changes from the 2018 Farm Bill", although their impact will not be seen until implementation begins in 2019. Other legislative changes to farm programmes that took effect during 2018 include programmes amended by the Bipartisan Budget Act of 2018 (BBA), which was enacted in February 2018, and include revisions to: the *Agriculture Risk Coverage* (ARC) and *Price Loss Coverage* (PLC) programmes, the *Margin Protection Program for Dairy* (MPP-Dairy), and disaster programmes.

In July 2018, USDA announced a package of **trade mitigation programmes** to assist farmers affected by retaliatory tariffs resulting in the loss of traditional export markets. The package included three programs: the *Market Facilitation Program* (MFP), the *Food Purchase and Distribution Program* (FPDP), and the *Agricultural Trade Promotion Program* (ATP). The MFP provided payments to producers of eight commodities – soybeans, cotton, wheat, sorghum, hogs, milk, fresh sweet cherries, and shelled almonds – directly impacted by retaliatory tariffs during the 2018 crop year, resulting in the loss of

traditional export markets. Payments were made on 2018 production at fixed rates in two instalments and are expected to total USD 8-9 billion. The FPDP provides for purchases of up to USD 1.2 billion in other commodities targeted by retaliatory tariffs. The ATP will provide up to USD 200 million in cost-share assistance to eligible US organisations to develop foreign markets for US agricultural products through activities such as consumer advertising, public relations, point-of-sale demonstrations, participation in trade fairs and exhibits, market research, and technical assistance.

A number of changes to programmes that make **direct payments** to producers were implemented in 2018, including revisions to the ARC/PLC programme made under the BBA (OECD, 2018[2]). The BBA established seed cotton as a covered commodity under the ARC and PLC programmes. Producers with generic base acres (former upland cotton base acres) reallocated that base to either seed cotton or other covered commodities based on 2009-12 planting history. Producers allocating their base acres to seed cotton had a one-time opportunity to update former upland cotton payment yields to 90% of their average 2008-12 upland cotton yields. Producers allocating generic acres to seed cotton elected either ARC or PLC coverage for their seed cotton base acres; producers allocating to other covered commodities retained their existing ARC or PLC election for that base. Enrolment of seed cotton and other covered commodity base was completed in December 2018.

Payments to cotton producers under a second ad hoc *Cotton Ginning Cost Share* (CGCS) programme, announced on 3 March 2018, were completed by the end of September. Payments were based on a producer's 2016 cotton planted acres, multiplied by 20% of the average ginning cost for each production region. Producers were required to meet eligibility requirements, including active engagement in farming, conservation compliance, and adjusted gross income limits. Payments were limited to USD 40 000 per producer.

On **disaster assistance**, the BBA made a number of changes in eligible losses and payment limits to Supplemental Disaster Assistance Programs – the standing disaster programmes for livestock and trees, bushes, vineyards. Those changes came into effect in 2018 (OECD, 2018[2]).

The BBA also provided USD 2.36 billion in disaster assistance for crop, tree, bush, and vine losses caused by hurricanes and wildfires during 2017. That assistance was implemented through the Wildfires and Hurricanes Indemnity Program (WHIP). Producers with crop insurance or non-insured crop disaster assistance program (NAP) coverage were eligible for higher loss compensation than those who were uninsured. In addition, producers receiving 2017 WHIP payments are required to purchase crop insurance at the 60% coverage level, or NAP if crop insurance is not available, for the next two crop years after payments were received. NAP provides financial assistance to producers of non-insurable crops when low yields, loss of inventory, or prevented planting occur due to natural disasters.

In addition to WHIP, USDA provided a grant to the State of Florida to reimburse citrus producers for the cost of buying and planting replacement trees, including resetting and grove rehabilitation, repairing damages to irrigation systems, and for losses incurred during the 2019 and 2020 crop years resulting from damage caused by the 2017 hurricanes.

On **food labelling**, on 20 December 2018, the Secretary of Agriculture announced the National Bioengineered Food Disclosure Standard. The National Bioengineered Food Disclosure Law, passed by Congress in 2016, directed USDA to establish a national mandatory standard for disclosing foods that are or may be bioengineered. The Standard defines bioengineered foods as those that contain detectable genetic material that has been

modified through certain lab techniques and cannot be created through conventional breeding or found in nature. The implementation date of the Standard is 1 January 2020, except for small food manufacturers, whose implementation date is 1 January 2021. The mandatory compliance date is 1 January 2022. Regulated entities may voluntarily comply with the Standard until 31 December 2021.

On **natural resources and environmental measures**, on 6 August 2018, USDA released a three-year action plan that outlines its priorities and goals for using current and future Farm Bill conservation programmes to help agricultural producers improve the water quality and overall health of the Chesapeake Bay watershed, which has been the focus of ongoing efforts to improve water quality and natural resources. The plan, developed by USDA's Natural Resources Conservation Service, will rely on financial and technical support from Farm Bill conservation programmes and will be implemented in close association with soil and water conservation districts, government agencies and non-government organisations in the Chesapeake Bay watershed.

On 18 September 2018, USDA released a set of standard indicators and associated laboratory procedures to assess soil health. These measures – recommended through a multi-organisation collaboration among soil health experts in the federal, university, public and private sectors – are being developed to improve conservation programme planning and implementation across the United States. The indicators include organic matter recycling and carbon sequestration, soil structure stability, general microbial activity, carbon food source, bioavailable nitrogen, and microbial community diversity. Laboratory methods for assessing each indicator were chosen based on interpretability, ease of use, cost effectiveness, measurement repeatability, and ability to inform agricultural management decisions.

On 7 December 2018, USDA announced updated guidance for making wetland determinations for conservation compliance, required for participation in USDA programmes and Federal crop insurance. The updates clarify and provide for increased uniformity, but do not change the definition of wetland. Updates to the conservation compliance provisions include: a specified date range for precipitation data; clarification of previously completed wetland determinations; adding definitions for specific wetland types to the regulation; clarifying the limits on where determinations are required; establishing that offsite impacts on neighbouring wetlands can be assessed when producers request minimal effects exemption determinations; and incorporating criteria to reflect on-field observations of hydrology.

Highlights from the 2018 Farm Bill

The 2018 Farm Bill was enacted on 20 December 2018, and will remain in force through 2023. The legislation is divided into 12 titles that authorise policies for commodity programmes, conservation on agricultural land, agricultural trade promotion and international food aid, nutrition programmes, farm credit, rural development, agricultural research, forestry on private lands, energy, horticulture and organic agriculture, and crop insurance, among others. The 2018 Farm Bill generally continues programmes under the 2014 Farm Bill and there are few major changes to agricultural and food policies, with changes made to some programmes under the Bipartisan Budget Act of 2018 (see (OECD, 2018[2]) and this section).

Total expenditures for the 2018 Farm Bill are projected to be USD 428 billion, slightly higher than the level projected for a continuation of the 2014 Farm Bill. Of that amount, 76% is projected for programmes in the Nutrition title, primarily for the Supplemental

Nutrition Assistance Program (SNAP). Crop insurance is projected to account for 9% of total expenditures, and Commodities and Conservation for 7% each. The remaining titles together account for only 1% of projected spending, although increases in funding for programmes in those titles make up half of the USD 1.8 billion increase in projected 2018 Farm Bill funding.

The 2018 Farm Bill extends the main **crop commodity programmes** that make payments to producers with historical base acres of programme crops – Agriculture Risk Coverage (ARC) and Price Loss Coverage (PLC) – with only minor changes to yield calculations. ARC benchmark revenue formulas will reflect historical yield trends. The law also increased substitute (or plug) yields, which are used to mitigate the effects of years with unusually low yields on the benchmark. Producers will have a one-time option to update PLC payment yields on their base acres. In addition, the reference prices used to determine PLC payment rates and to provide a floor price for ARC revenue calculations will be allowed to rise up to 15% above the reference price established in the 2014 Farm Bill when the five-year average price for a covered commodity rises sufficiently above the statutory reference price. Producers with historical base will also be given the opportunity to change their programme election between ARC and PLC annually, beginning in crop year 2021. Finally, base acres that have remained in continuous grassland since 2017 will be suspended from eligibility for ARC or PLC, but will become eligible for conservation payments under the Conservation Stewardship Program (CSP).

The 2018 Farm Bill raises loan rates for most commodities under the Marketing Assistance Loan programme, although those loan rates remain below current market prices. The law also lifts payment limits for marketing assistance loans (including for peanuts). However, payment limits were not binding under the previous rule due to the availability of the certificate exchange repayment option, which was not subject to payment limits.

On **sugar**, the non-recourse loan rate for sugar, which allows producers to forfeit their commodity when sugar prices fall below that level, was raised from USD 0.1875/lb to USD 0.1975/lb.

On **dairy**, the 2018 Farm Bill replaces the Margin Protection Program for dairy producers (MPP-Dairy) with the Dairy Margin Coverage (DMC) programme. Some of the changes are carried over from the revisions to MPP-Dairy included in the BBA, including the increase in the share of historical milk production eligible for lower premiums, and the monthly margin calculation and payment period. DMC also increases the top level of margin coverage available on the first 5 million pounds of historical production from USD 8 to USD 9.50 per hundredweight (cwt), and reduces the premiums for other coverage levels. The 2018 Farm Bill also allows producers to participate in both DMC and dairy livestock insurance programmes.

On **disaster assistance**, the 2018 Farm Bill adjusted the Livestock Indemnity Program (LIP) to expand the losses eligible for coverage, including loss of un-weaned livestock due to adverse weather and livestock losses due to certain livestock diseases. The 2018 Farm Bill also removes the payment limit for the Emergency Assistance for Livestock, Honey Bees, and Farm-Raised Fish Program (ELAP), leaving the Livestock Forage Disaster Program (LFP) the only livestock disaster programme subject to a payment limit. The BBA lifted the payment limitation for LIP.

On **animal disease prevention and response**, the 2018 Farm Bill reauthorises and provides mandatory funding for the National Animal Health Laboratory Network and directs USDA to create two new programmes to improve US systems to protect against,

prepare for, and respond to animal and zoonotic disease outbreaks: the National Animal Disease Preparedness and Response Program (NADPRP) and the National Animal Vaccine and Veterinary Countermeasures Bank (NAVVCB).

On **crop insurance**, the 2018 Farm Bill makes only limited changes to the Federal Crop Insurance Program (FCIP). However, there are new provisions that address conservation issues. New penalties are added to "sodsaver" provisions that limit insurance availability for crops grown on native sod, and new definitions of "good farming practices" will include approved conservation practices like the use of cover crops. The law also expands the list of insurable commodities, including, but not limited to: irrigated grain sorghum, irrigated rice production, citrus crops, hops and industrial hemp. Emphasis is also placed on expanding research to improve insurance products for specialty and alternative crops, including whole-farm insurance, losses from tropical storms and hurricanes, citrus crops, greenhouse production, and local foods.

The 2018 Farm Bill makes no major changes to the suite of **conservation programmes** operated by USDA. Mandatory funding for conservation programmes is increased by a total of roughly 2% during 2019-23, but working land programme funding as a share of total conservation funding continues at the same level as under the 2014 Farm Bill, ending the shift in conservation programme funding towards working lands programmes that has held for the last three Farm Bills. Regarding programmes on working land (that is, cropland and grazing land in production), funding was increased for the Environmental Quality Incentives Program (EQIP). The Conservation Stewardship Program (CSP) was continued, but at a reduced funding level, and its acreage cap was replaced by a funding cap. Regarding land retirement programmes, funding was increased for the Agricultural Conservation Easement Program (ACEP) and the acreage cap for the Conservation Reserve Program (CRP) was increased from 24 million acres to 27 million acres by 2023. The Regional Conservation Partnership Program (RCPP) is now directly funded and no longer implemented through set-asides from the other Farm Bill conservation programmes

Provisions in the 2018 Farm Bill to protect drinking water require USDA to use at least 10% of funding for conservation programmes (except CRP) to encourage practices related to water quality and quantity that protect source waters for drinking.

On **finance and farm credit**, the upper limit on farm ownership and operating loans has been increased to allow producers to borrow larger amounts, reflecting increased land values and operating costs since that last increase in 2008.

On **trade**, a new Agricultural Trade Promotion and Facilitation Program, with mandatory annual funding of USD 255 million, consolidates funding for USDA's four continuing market development and export promotion programmes – the Market Access Program (MAP), the Foreign Market Development Program (FMDP), the Emerging Markets Program (EMP), and the Technical Assistance for Specialty Crops (TASC) programme – and adds to it the Priority Trade Fund (PTF). The PTF provides the Secretary of Agriculture USD 3.5 million annually to support new flexibility for expanding or maintaining markets when the other trade promotion programmes have reached authorised funding limits. In addition, funding under the MAP and FMDP programmes may now be used to carry out authorised programmes in Cuba, with some restrictions.

On **research**, among a number of provisions modifying continuing programmes, the 2018 Farm Bill establishes the new Agricultural Advanced Research and Development Authority (AGARDA) to develop technologies, research tools, and products through advanced research on long-term and high-risk challenges for food and agriculture. AGARDA will

focus on basic and long-term research not supported by industry. The Research title also provides support for international capacity-building partnerships.

On **technical assistance**, the 2018 Farm Bill continues to make assistance for beginning, socially disadvantaged, and military veteran farmers a priority area for technical assistance.

On **domestic food assistance**, the 2018 Farm Bill makes few changes to the Nutrition title, but provides additional funds to expand education and training programmes for able-bodied low-income Americans eligible to receive food assistance through SNAP and expands data tracking for programme integrity.

The 2018 Farm Bill renames the Food Insecurity and Nutrition Incentive grant programme as the Gus Schumacher Nutrition Incentive Program, and makes it permanent with funding of approximately USD 50 million per year. The programme provides Federal matching funds to projects that encourage SNAP recipients to purchase fruits and vegetables by reducing their purchase cost. A "produce prescription programme" is established as a separate component of the grant programme, with funding to develop and evaluate projects that provide fruits and vegetables in hospitals and clinics to SNAP participants with or at risk of developing diet-related health conditions.

Trade policy developments in 2018-19

On 30 November 2018, the United States, Mexico, and Canada signed a new trade agreement, the **United States-Mexico-Canada Agreement** (USMCA). This new agreement will replace the North American Free Trade Agreement (NAFTA) once it is ratified by all three countries and enters into force. All food and agricultural products that have zero tariffs under NAFTA will remain at zero tariffs. Since the original NAFTA did not eliminate all tariffs on agricultural trade between the United States and Canada, the USMCA will create new market access opportunities for United States exports to Canada of dairy, poultry, and eggs, and in exchange the United States will provide new access to Canada for dairy, peanuts, processed peanut products, and a limited amount of sugar and sugar-containing products. All other tariffs on agricultural products traded between the United States and Mexico will remain at zero (USTR, 2018[3]).

On 16 October 2018, the US Trade Representative notified the US Congress that the Administration intended to initiate negotiation on trade agreements with the **European Union, Japan**, and the **United Kingdom**.

On 18 January 2018, the WTO compliance panel issued its report in the **China** – Anti-Dumping and Countervailing Duty Measures on Broiler Products from the United States case. The compliance panel found that China did not bring its measures into compliance with the panel's findings. China agreed to remove the antidumping and countervailing duties that were subject to the dispute (WTO, 2019[4]).

On 20 July 2018, the United States requested the establishment of a panel to examine **Canadian** measures governing the sale of wine in grocery stores. On 30 November 2018, the United States and Canada signed a side letter as part of the USMCA to modify the measures identified in the US panel request by 1 November 2019. The United States agreed to pause the WTO dispute until 1 November 2019 (WTO, 2019[5]).

On 1 August 2018, the US Commerce Department put in place an antidumping and countervailing duty order on **Spanish** ripe olive imports, following the final determination of the US International Trade Commission that subsidised imports of Spanish ripe olives had caused material injury to the US industry.

The United States initiated WTO dispute proceedings against **China** regarding its domestic support and administration of tariff-rate quotas for wheat, rice and maize continued in 2018. A WTO dispute panel circulated its report for the domestic support case on 28 February 2019 and found that China had exceeded its 8.5% *de minimis* level of support for wheat and rice. On that basis, the panel recommended that China bring its inconsistent measures into conformity with its obligations under the Agreement on Agriculture. The panel report did not make an assessment for maize, as the minimum purchase price system for maize was eliminated in 2016 (WTO, 2019[6]). The panel report in the TRQ case is expected in 2019 (WTO, 2019[7]).

In 2017, the United States proceeded with arbitration to determine the level of countermeasures against **India** in relation to its restrictions on imported US poultry and other products. The United States and India on several occasions postponed both the release of the Arbitrator's decision on the level of suspension of concessions and the remaining steps in the compliance panel proceeding while the two sides discuss potential resolution of the dispute. In March 2018, the United States and India agreed to veterinary export certificates for the shipment to India of US poultry and poultry products (WTO, 2019[8]).

In November 2017, the WTO Appellate Body ruled in favour of the United States in the case of Indonesia's licensing regimes affecting importation of certain horticultural products, animals and animal products. Indonesia was given until 22 July 2018 to comply with the panel ruling. On 2 August 2018, the United States requested WTO authorisation to suspend concessions pursuant to Article 22.2 of the Uruguay Round Understanding on Rules and Procedures Governing the Settlement of Disputes (DSU). On 14 August 2018, Indonesia objected to the United States' proposed level of suspension of concessions and the matter was referred to arbitration (WTO, 2019[9]).

Note

[1] Base acres are a farm's historical crop-specific acreage of wheat, feed grains, upland cotton, rice, oilseeds, pulse crops, or peanuts eligible to participate in commodity programs. Base acres do not necessarily align with current plantings (USDA, 2019[10]).

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Chapter 28. Viet Nam

Support to agriculture

The overall level of support provided to Viet Nam's agriculture sector fluctuates at low and negative levels, largely driven by changes in market price support (MPS). In 2016-18, Viet Nam's producer support estimate (PSE) was negative at –5.9%. MPS varies across commodities. Producers of import-competing commodities, such as maize, sugar cane and beef, benefit from tariff protection, while producers of several exported commodities are implicitly taxed. Budgetary transfers are relatively small and include payments based on variable input use, primarily expenditure to subsidise an irrigation fee exemption, and direct payments to rice producers that are tied to maintaining land in rice production. Rice producers also benefit from a price support system based on target prices designed to provide farmers with a profit of 30% above production cost. In some years this price support system results in implicit taxation of rice producers when domestic prices are below international levels.

Support for general services for agriculture is dominated by expenditure to develop and maintain infrastructure, in particular irrigation. Total support to agriculture (TSE) varies between positive and negative values, as in some years budgetary transfers to producers and expenditure on general services do not compensate for overall negative MPS.

Main policy changes

In 2018, Viet Nam issued a number of policies to support agricultural sector and rural development, including Decree No. 57/2018/ND-CP on incentive policies to encourage enterprises to invest in agriculture and rural areas, and Decree No. 98/2018/ND-CP on policies to encourage farming households, co-operatives and enterprises to develop value chain linkages in the production and sale of agricultural products. The policies encourage agricultural restructuring through the use of high technology in agricultural production, and co-operation between farming households, co-operatives and enterprises, including to develop large-scale production areas.

Crop and livestock producers will receive subsidies for insurance premiums of up to 20%, and up to 90% for producers classified as being in or near poverty. Enterprises that apply high technologies in large-scale agricultural production are eligible for insurance premium subsidies of up to 20%. The types of events supported by insurance include natural disasters, animal diseases and plant pests (Decree No. 58/2018/ND-CP).

The Government amended the credit policy for agricultural and rural development, doubling the loan amount available to farming households and farm owners without collateral. Hi-tech agricultural enterprises can also access credit without providing collateral, up to 70% of the project value (Decree No. 116/2018/ND-CP).

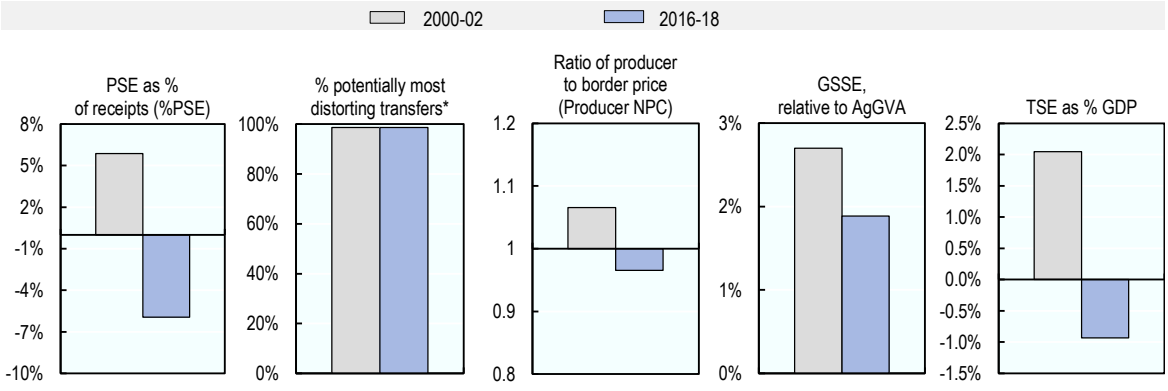
The government also relaxed business conditions for rice exporters. Decree No. 107/2018/ND-CP halves the volume of rice that traders must hold on reserve. The new Decree also removes the requirement that traders own warehouses for at least 5 000 tonnes

and processing capacity of at least 10 tonnes per hour to be eligible to export rice. Instead, traders must have at least one storage and one milling facility that meet national standards and regulations, which can be owned or leased.

Assessment and recommendations

- Viet Nam's deeper integration into the global economy, including through trade agreements such as the Comprehensive and Progressive Agreement for a Trans-Pacific Partnership (CPTPP) and the EU-Vietnam Free Trade Agreement (FTA), brings opportunities for the agricultural sector to expand and diversify exports and markets. But these agreements also pose challenges, for example, increased competition from imports as agro-food tariffs are reduced within preferential trade agreements, and will require domestic producers to meet stringent food hygiene, safety and technical standards of export markets.
- Further efforts are needed to improve the sector's competitiveness and environmental sustainability. Most of the easy sources of lifting production – expanding the agricultural land area and using higher rates of fertilisers – have been fully exploited, and negative environmental impacts are increasingly seen. While these conditions are challenges for Viet Nam, they also open opportunities to adopt new technologies, create incentives for farm consolidation to increase the scale of production, and to focus attention on improving quality.
- To improve the allocation of scarce land resources, farm consolidation could be encouraged, including through various forms of co-operation between farmers, and restrictions on crop choice should be removed. This can also help small-scale farming households connect to market opportunities and participate in value chains.
- To further improve the competitiveness and quality of Viet Nam's rice exports, additional reforms could be considered to further ease restrictions on rice exporters, in particular, deregulating the export floor price. The current system risks cutting-off potentially profitable rice exports and creates uncertainty in engaging in export transactions if the minimum export price is likely to be changed.
- Water overuse is exacerbated by the low cost of water, and increases the agricultural sector's vulnerability to drought. While re-introducing a fee for irrigation services is a positive step, a fee based on a per unit of water charge – rather than on area or crop type as previously applied – would encourage greater water use efficiency.

Figure 28.1. Viet Nam: Development of support to agriculture

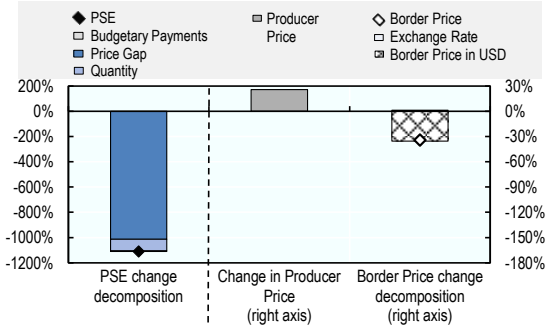


Note: * Share of potentially most distorting transfers in cumulated gross producer transfers.
Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933939353

Support to producers (%PSE) was -5.9% in 2016-18, implying an implicit overall taxation, compared to a positive level of support in 2000-02. Almost all gross transfers to producers – whether positive or negative (i.e. expressed in absolute terms) – are provided via measures that are potentially **most distorting to production and trade** (Figure 28.1). Expenditures for general services (GSSE), which focus largely on irrigation systems, were equivalent to 1.9% of agricultural value added in 2016-18, among the lowest across countries covered by this report, and down from 2.7% in 2000-02. Total support to agriculture varies between positive and negative values. The PSE declined significantly (i.e. became more negative) in 2018, as negative price gaps widened, most significantly for rice (Figure 28.2). On average during 2016-18, effective prices received by farmers (including output payments) were 3% lower than world prices, though this hides large differences between commodities. Transfers to single commodities vary widely, with maize, sugar, beef and veal, and eggs receiving positive MPS, while cashew nuts, pig and poultry meats, coffee, tea and rubber are implicitly taxed (Figure 28.3).

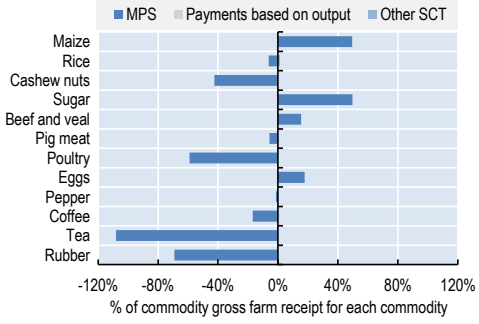
Figure 28.2. Viet Nam: Drivers of the change in PSE, 2017 to 2018



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933939372

Figure 28.3. Viet Nam: Transfer to specific commodities (SCT), 2016-18



Source: OECD (2019[1]), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink https://doi.org/10.1787/888933939391

Table 28.1. Viet Nam: Estimates of support to agriculture

Million USD

	2000-02	2016-18	2016	2017	2018p
Total value of production (at farm gate)	**8 570**	**43 055**	**41 406**	**42 948**	**44 810**
***of which:** share of MPS commodities (%)*	82.3	66.6	69.5	65.9	64.4
Total value of consumption (at farm gate)	**7 483**	**39 149**	**38 509**	**37 497**	**41 440**
Producer Support Estimate (PSE)	**518**	**-2 562**	**-2 066**	**-434**	**-5 185**
Support based on commodity output	396	-2 915	-2 488	-765	-5 493
Market Price Support[1]	396	-2 915	-2 488	-765	-5 493
Positive Market Price Support	926	2 029	1 929	2 637	1 521
Negative Market Price Support	-530	-4 945	-4 417	-3 402	-7 014
Payments based on output	0	0	0	0	0
Payments based on input use	101	259	326	237	215
Based on variable input use	101	259	325	237	215
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	94	96	94	92
Based on Receipts / Income	0	0	0	0	0
Based on Area planted / Animal numbers	0	94	96	94	92
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 (%)	**5.9**	**-5.9**	**-4.9**	**-1.0**	**-11.5**
Producer NPC (coeff.)	**1.07**	**0.97**	**0.97**	**1.00**	**0.90**
Producer NAC (coeff.)	**1.06**	**0.94**	**0.95**	**0.99**	**0.90**
General Services Support Estimate (GSSE)	**206**	**614**	**677**	**592**	**572**
Agricultural knowledge and innovation system	23	87	83	89	91
Inspection and control	4	3	3	3	3
Development and maintenance of infrastructure	173	468	543	445	415
Marketing and promotion	1	1	1	1	1
Cost of public stockholding	5	54	46	53	62
Miscellaneous	0	0	0	0	0
Percentage GSSE (% of TSE)	**28.7**	**..**	**..**	**..**	**..**
Consumer Support Estimate (CSE)	**-605**	**-790**	**-1 979**	**-2 252**	**1 861**
Transfers to producers from consumers	-604	453	-12	-1 457	2 827
Other transfers from consumers	-22	-1 748	-2 764	-1 213	-1 268
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	22	505	796	418	301
Percentage CSE (%)	**-8.0**	**-2.0**	**-5.1**	**-6.0**	**4.5**
Consumer NPC (coeff.)	**1.09**	**1.03**	**1.08**	**1.08**	**0.96**
Consumer NAC (coeff.)	**1.09**	**1.02**	**1.05**	**1.06**	**0.96**
Total Support Estimate (TSE)	**724**	**-1 948**	**-1 389**	**158**	**-4 613**
Transfers from consumers	626	1 295	2 776	2 670	-1 560
Transfers from taxpayers	120	-1 495	-1 401	-1 299	-1 786
Budget revenues	-22	-1 748	-2 764	-1 213	-1 268
Percentage TSE (% of GDP)	**2.0**	**-0.9**	**-0.7**	**0.1**	**-2.2**
Total Budgetary Support Estimate (TBSE)	**328**	**967**	**1 099**	**923**	**880**
Percentage TBSE (% of GDP)	**0.9**	**0.5**	**0.5**	**0.4**	**0.4**
GDP deflator (2000-02=100)	**100**	**375**	**368**	**383**	**..**
Exchange rate (national currency per USD)	**15 000.33**	**22 701.33**	**22 365.42**	**22 715.36**	**23 023.21**

.. 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 (2019), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: http://dx.doi.org/10.1787/agr-pcsedata-en

Contextual information

Viet Nam is a mid-size country in terms of area, and its population of 96 million makes it the 15th most populous country in the world. Around two-thirds of the population live in rural areas. Since the mid-1980s, a long series of reforms have moved the economy, including the agricultural sector, in the direction of open markets for trade and investment, private decision-making, private land use rights, and a greater role for private firms. These reforms resulted in rapid, stable and inclusive economic growth, transforming Viet Nam from one of the world's poorest nations to a lower middle-income country, and contributing to significant reductions in poverty rates and improvements in other social outcomes, including in rural areas.

The agricultural sector in Viet Nam has undergone significant structural changes in recent decades, reflecting a shift away from staple foods to export commodities, in particular perennial crops such as rubber and cashew nuts, and to livestock production for the domestic market, in particular pig meat. Nevertheless, crops dominate with rice accounting for around 35% of the value of agricultural production. Agricultural production more than tripled in volume terms between 1990 and 2016. While the relative importance of agriculture in the economy has declined over time, agriculture remains an important sector, contributing 15% to Viet Nam's GDP and employing 41% of the labour force.

Table 28.2. Viet Nam: Contextual indicators

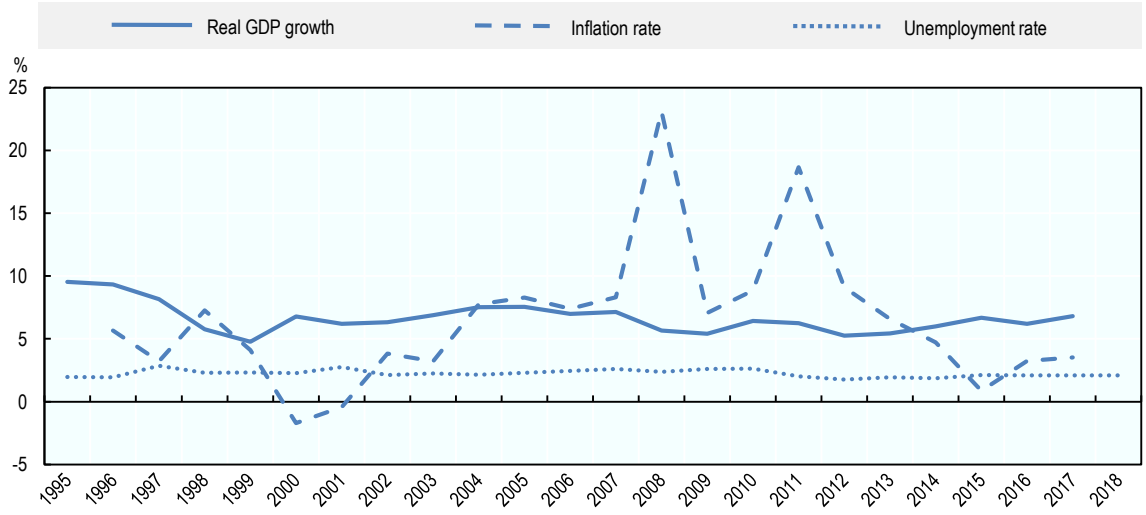
	Viet Nam		International comparison	
	1995*	2017*	1995*	2017*
Economic context			Share in total of all countries	
GDP (billion USD in PPPs)	107	647	0.4%	0.6%
Population (million)	75	96	2.0%	2.0%
Land area (thousand km^2)	310	310	0.4%	0.4%
Agricultural area (AA) (thousand ha)	7 079	12 178	0.2%	0.4%
			All countries[1]	
Population density (inhabitants/km^2)	243	308	48	60
GDP per capita (USD in PPPs)	1 425	6 776	7 642	21 231
Trade as % of GDP	46	87	9.9	14.7
Agriculture in the economy			All countries[1]	
Agriculture in GDP (%)	27.2	15.3	3.3	3.5
Agriculture share in employment (%)	70.6	40.9	-	-
Agro-food exports (% of total exports)	15.8	9.5	8.1	7.5
Agro-food imports (% of total imports)	6.0	9.5	7.4	6.6
Characteristics of the agricultural sector			All countries[1]	
Crop in total agricultural production (%)	80	67	-	-
Livestock in total agricultural production (%)	20	33	-	-
Share of arable land in AA (%)	76	57	33	34

Note: *or closest available year. 1. Average of all countries covered in this report. EU treated as one.
Source: OECD statistical databases; UN Comtrade; World Bank, WDI and national data.

The agro-food sector is integrated with international markets. Agro-food exports have increased eight-fold since the early 2000s, and Viet Nam is now one of the world's largest exporters of a wide range of agricultural commodities, including cashews, black pepper, coffee, cassava and rice. Two-thirds of Viet Nam's agro-food exports are delivered to foreign consumers without further processing. Agro-food imports have also increased

significantly. The majority of agro-food imports form intermediate inputs into Viet Nam's processing sectors.

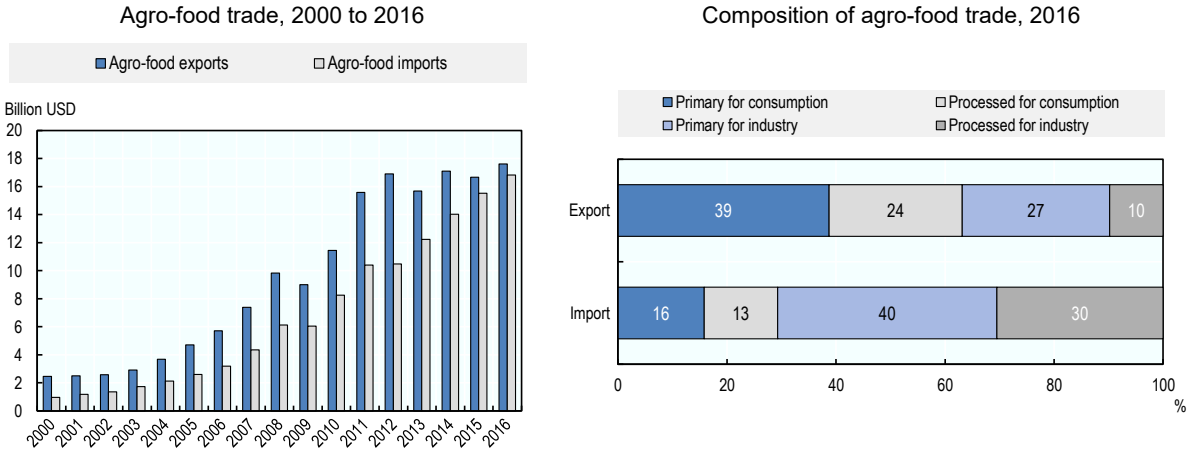
Figure 28.4. Viet Nam: Main economic indicators, 1995 to 2018



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

StatLink https://doi.org/10.1787/888933939410

Figure 28.5. Viet Nam: Agro-food trade



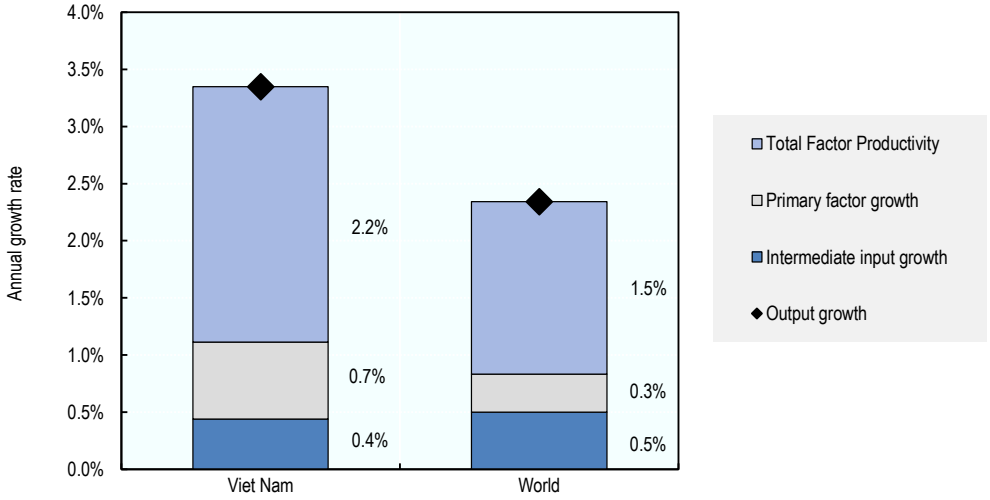
Note: Numbers may not add up to 100 due to rounding. Agro-food trade includes natural rubber.
Source: UN Comtrade Database.

StatLink https://doi.org/10.1787/888933939429

Agricultural production increased by 3.3% per year on average between 2006 and 2015, driven by total factor productivity growth of 2.2% per year and greater use of primary factors and intermediate inputs. However, agriculture places significant and growing pressure on natural resources. The sector accounts for almost a third of Viet Nam's greenhouse gas emissions. Excessive use of fertilisers, pesticides and other chemicals has

contributed to a gradual degradation of water and land quality. In addition to climate change, excessive use of inputs poses a significant risk to agricultural production and the capacity of the sector to maintain strong rates of productivity and output growth.

Figure 28.6. Viet Nam: Composition of agricultural output growth, 2006-15



Note: Primary factors comprise labour, land, livestock and machinery.
Source: USDA Economic Research Service Agricultural Productivity database.

StatLink https://doi.org/10.1787/888933939448

Table 28.3. Viet Nam: Productivity and environmental indicators

	Viet Nam		International comparison	
	1991-2000	2006-2015	1991-2000	2006-2015
			World	
TFP annual growth rate (%)	2.3%	2.2%	1.6%	1.5%
			OECD average	
Environmental indicators	**1995***	**2017***	**1995***	**2017***
Nitrogen balance, kg/ha[1]	143.9	150.0	33.2	30.0
Phosphorus balance, kg/ha[1]	24.6	31.5	3.7	2.3
Agriculture share of total energy use (%)	1.9	1.1	1.9	2.0
Agriculture share of GHG emissions (%)	62.1	29.2	8.5	8.9
Share of irrigated land in AA (%)	..	..	-	-
Share of agriculture in water abstractions (%)	..	..	45.4	42.5
Water stress indicator	..	..	9.7	9.7

Note: * or closest available year. 1. Preliminary data.
Source: USDA Economic Research Service, Agricultural Productivity database; OECD statistical databases; FAO database and national data.

Description of policy developments

Main policy instruments

Market price support (MPS) is the dominant form of support provided to Vietnamese producers, with border protection being the main tool used to support prices. MPS varies across commodities. In particular, producers of import-competing commodities such as beef and veal, and sugar cane, are protected by tariffs. Producers of export commodities such as natural rubber, coffee, cashew nuts and tea are implicitly taxed, in that they are paid prices for their outputs that are lower than world prices. As a result, total MPS is the sum of positive and negative support. Farm gate rice prices are supported by a subsidy to rice purchasing enterprises for the temporary storage of rice during harvest and establishment of target prices which vary between regions and crop season with the objective of providing farmers with a profit of 30% above production cost.

Budgetary transfers to producers are relatively small. Expenditure associated with subsidising the irrigation fee exemption is the dominant payment. An area payment with the objective of keeping 3.8 million ha in paddy rice production has been provided since 2012. In 2016, **direct payments** for rice growers were doubled to VND 1 million (USD 44)/ha/year for land under wet paddy cultivation, and increased fivefold to VND 500 000 (USD 22)/ha/year for other rice land, except upland fields not under paddy land-use plans.[1] The decree also provides support for land reclamation for rice cultivation at VND 10 million (USD 440)/ha/year, except for upland fields, and VND 5 million (USD 220)/ha/year for wet paddy land reclaimed from one-crop paddy land or other crop land.

Other programmes that provide support based on input use include programmes that provide plant genetic and animal breeding material to farmers at subsidised rates. At the national level, these are often provided as part of the package for farmers recovering from natural disasters or disease outbreaks. Since 2009, a number of policy packages have been introduced to provide farmers with subsidised credit to purchase inputs and assets for agricultural production (fertilisers, pesticides, machinery and equipment). Since 2003, most farming households and organisations have been exempt from paying agricultural land use tax or benefited from a land tax reduction.

General services for the agricultural sector are dominated by expenditures on irrigation systems. Expenditures on other forms of general services such as extension services, research and development, inspection and control and marketing and promotion are relatively limited.

All land is owned by the state and administered by it on behalf of the people. Farmers have **land user rights**, and benefit from a wide range of rights, including the right to rent, buy, sell and bequeath land and to use land as collateral with financial institutions for mortgages. However, there are restrictions on land use including the duration of land use rights, land areas per household, the choice of crops, and land transfers and exchanges.

Following Viet Nam's accession to the WTO in 2007, the simple **average MFN applied tariff** on agricultural imports decreased from around 25% in the mid-2000s to 16.4% in 2017, compared with a simple average bound tariff on agricultural products of 19.1%. Applied tariffs are much lower on imports originating from countries or regions with which Viet Nam signed free trade agreements. For example, the average tariff is just 3.4% on agricultural imports from Association of Southeast Asian Nations (ASEAN) members and 5.4% from the People's Republic of China (hereafter "China").

Since joining the World Trade Organisation (WTO) in 2007, Viet Nam has made some progress towards implementing the requirements of the **Sanitary and Phytosanitary Agreement**. However, the regulatory regime still suffers from limited enforcement capacity, poor co-ordination and a large number of overlapping regulations.

Until 2016, the government maintained a large **degree of control over rice exports**. Exporters had to meet specific milling and storage requirements, the minimum export price had to be respected, and certain administrative functions were given to the Viet Nam Food Association (VFA). However, in January 2017, in line with the Investment Law of 2014, Viet Nam's Ministry of Industry and Trade (MOIT) abolished Decision No. 6139/2013/QD-BCT, which had stipulated strict conditions for becoming a rice exporter.

Viet Nam implements **trade liberalisation** through multilateral, regional and bilateral trade agreements. It is a member of the WTO, ASEAN and Asia-Pacific Economic Cooperation (APEC), and supports trade liberalisation between ASEAN members and their major trading partners in the region, including China, Japan, India, Korea, Australia and New Zealand.

Viet Nam's 2011 **National Strategy on Climate Change** tasks the agricultural sector with reducing greenhouse (GHG) emissions by 20% every ten years, while increasing gross production by 20% and reducing the poverty rate by 20% (Decision 2139/QD-TTg). The Ministry of Agriculture and Rural Development (MARD) subsequently issued an action plan to adapt to and mitigate climate change in the agricultural sector, most recently in Decision No. 819/QD-BNN-KHCN. The action plan prioritises research on, selection and production of plant varieties and animal breeds able to minimise GHG emissions and adapt to climate change; minimum tillage and techniques for reducing the use of water and fertilisers to minimise methane gas emissions in rice fields; the reduction of plants contributing to GHG emissions; and an increase in the production of bioenergy crops. MARD has also approved a programme to reduce GHG emissions in the crop, livestock, fishery and forestry sectors, and in irrigation and rural industries by 2020, while enhancing economic growth and reducing poverty (Decision No. 3119/QD-BNN-KHCN). The programme aims to: reduce GHG emissions in agriculture and rural areas by 20%; ensure that 3.2 million ha of rice apply advanced methods, such as the System of Rice Intensification and Alternative Wetting and Drying (AWD); and promote more efficient use of agricultural inputs.

Viet Nam ratified the **Paris Agreement on Climate Change** in 2016. Viet Nam's Nationally-Determined Contribution (NDC) includes the commitment to reduce greenhouse gas (GHG) emissions by 8% between 2021 and 2030 compared to Business-as-Usual (BAU) levels using domestic resources, and up to 25% conditional on receiving international support. The Action Plan to Implement the Paris Agreement on Climate Change is outlined in Decision 2053/QD-TTg dated 28 October 2016, and includes activities for adaptation and mitigation in the agricultural sector.

The commitment to reduce agricultural GHG emissions has also been affirmed in recent decisions. In 2017, MARD issued Decision No. 932/QD-BNN-KH approving the **Green Growth Action Plan of the agriculture and rural development sector for the period 2016-20**. This plan outlines ten prioritised tasks and policy measures to reduce GHG by 20% in 2020, compared with the BAU scenario. Key activities include applying: organic farming; efficient use of agricultural inputs; short duration, high quality rice varieties; water saving practices (AWD); climate smart agriculture (CSA) practices; integrated crop management practices to reduce GHG emissions from rice and crop production; and

enhancing animal feed mixing and animal waste (biogas) and crop residues management to reduce CH4 and other GHG emissions.

Domestic policy developments in 2018-19

In 2018, Viet Nam promulgated a number of policies to support **agricultural sector and rural development** and the restructuring of agricultural production to improve competitiveness, increase value-added and promote sustainable development. The different policies offer a range of incentives to attract private investment into agriculture and rural areas, with a particular emphasis on promoting the application of high technology in agricultural production and on encouraging co-operation between farming households, co-operatives and enterprises, including to increase the scale of production by developing large-scale production areas.

Under Decree No. 57/2018/ND-CP on incentive policies to encourage enterprises to invest in agriculture and rural areas, enterprises with eligible agricultural projects are offered a range of preferential support measures, including: exemptions from or reductions in land or water surface rents; preferential credit; support for the transfer and the application of high-technology in agriculture, human resources training, and market development and promotion activities; and support for investments in facilities and equipment for processing or preserving agricultural products.

The government also issued a decree on policies to encourage farming households, co-operatives and enterprises to develop linkages in the production and sale of agricultural products, with the aims of increasing production efficiency and the quality of agricultural products (Decree No. 98/2018/ND-CP). The types of linkages supported include joint investments by farmers, agricultural co-operatives and enterprises in the production and processing of agricultural products, and linkages between different stages of the value chain, including to supply inputs, purchase agricultural products or undertake production activities (e.g. land preparation and, harvesting). The Decree provides support for the organisation developing the linkage project, including support to hire consultants. A given linkage project may also receive support to invest in machinery, equipment and infrastructural facilities serving the linkage, as well as subsidies for agricultural extension and training, and for plant varieties, livestock breeds, packaging and labels.

Also on agricultural sector and rural development, the government approved the scheme for developing 15 000 efficient co-operatives and unions of co-operatives (Decision No. 461/2018/QD-TTg). The scheme aims to maintain, strengthen and improve the operating efficiency of existing agricultural co-operatives; promote the application of high technology by co-operatives; and establish an additional 5 200 agricultural co-operatives. To support co-operative development, the government will continue to support the innovation and development of co-operatives under the 2012 Law on Co-Operatives, including through training managers. The government will also continue to review and modify policy mechanisms for supporting co-operatives.

The government also issued a series of amendments to the **credit policy** for agricultural and rural development (Decree No. 116/2018/ND-CP). The amendments more clearly identify who is allowed to take up loans, and expand available credit limits. In particular, farming households, co-operative groups and other organisations that are not legal entities can access loans from credit institutions. The Decree also removes the requirement that farm owners – farming households operating above a defined minimum scale and level of sales – must have a farm economy certificate from competent authorities. The Decree doubles the loan amount available without collateral to farming households and farm

owners. Hi-tech agricultural enterprises, including enterprises without a hi-tech agribusiness certificate but having hi-tech agribusiness plans or projects, can access credit without providing collateral, up to 70% of the project value.

The Government continued to implement the National Target Program for New Rural Development for the period 2016-20. The government issued Decision No. 490/2018/QD-TTg approving the "One Commune, One Product" programme for the 2018-20 period. The programme aims to develop typical agricultural and non-agricultural products and services in each commune. The total cost of implementing the programme is estimated at VND 45 000 billion (USD 1.95 million), mainly sourced from capital mobilised by the private sector, loans from credit institutions and international organisations. The government's role is to take the form of: planning production areas; managing and supervising product quality standards; and providing support for education, training, technical advice, the application of science and technology, branding, trade and product promotion, and credit.

On **risk management**, the government issued Decree No. 58/2018/ND-CP on agricultural insurance, which regulates the types of events supported by agricultural insurance and the level of support. Individuals engaged in crop (rice, rubber, pepper, cashew, coffee, fruit trees and vegetables), livestock (buffaloes, cows, pigs and poultry) and aquaculture production will receive subsidies for insurance premiums of up to 90% for those classified as being in or near poverty, and up to 20% for all others. Enterprises that apply high technologies in large-scale agricultural production shall receive subsidies for insurance premiums of up to 20%. The types of events supported by insurance include natural disasters, animal diseases and plant pests (as determined by the competent state agencies).

Viet Nam issued the Law on Crop Production 2018 (Law No. 31/2018/QH14) and the Law on Animal Husbandry 2018 (Law No. 32/2018/QH14). So far, Viet Nam has promulgated seven laws in the field of agriculture and rural development, the others being the Laws on Irrigation (2017), Forestry (2017), Fishery (2017), Animal Health (2015) and Plant Protection and Quarantine (2013).

In May, the government issued a Decree that supports the development of **small-scale and on-farm irrigation** (Decree No. 77/2018/ND-CP). The Decree provides support for investments in and the construction of water storage facilities; advanced and water-saving irrigation systems; and electric pumping stations, culverts and solid canals.

In August, the government issued Decree No. 109/2018/ND-CP on **organic agriculture**. The Decree establishes the principles of organic agriculture and provides support to enterprises producing organic agricultural products. This includes priority in accessing support provided through investment promotion policies for agriculture and rural areas, as well as funding for science and agricultural extension. Eligible enterprises are required to verify that they meet technical standards of organic production, which can be national standards, international standards, regional standards and foreign standards, including labelling requirements.

Trade policy developments in 2018-19

Viet Nam ratified the **Comprehensive and Progressive Agreement for a Trans-Pacific Partnership** (CPTPP) on 12 November 2018. The agreement came into force on 30 November following ratification by Australia on 31 October 2018 (the 6th nation to ratify). The agreement entered into force for Viet Nam on 14 January 2019. In July 2018, the European Union and Viet Nam agreed on final texts for the **European Union-Vietnam**

Free Trade Agreement (FTA) and the **European Union-Vietnam Investment Protection Agreement** (IPA). The European Union-Vietnam FTA is expected to be signed and take effect in 2019.

Starting in January 2018, Viet Nam lowered or removed its import tariffs on oilseed and oilseed products, in line with provisions in a number of regional and bilateral free trade agreements. Countries or country groups benefitting from the tariff adjustments include: ASEAN, **Australia, Chile, China**, EAEU, **India, Japan**, **Korea** and **New Zealand** (FAO, 2019[2])

In August, the government **relaxed conditions on rice exports** (Decree No. 107/2018/ND-CP). Decree No. 107 repeals an earlier decree (Decree No. 109/2010/ND-CP) that stipulated provisions to determine minimum export prices and required traders to: own warehouses for at least 5 000 tonnes and processing capacity of at least 10 tonnes per hour, register export contracts with the Viet Nam Food Association, and maintain rice reserves equivalent to 10% of the volume shipped in the preceding six months (FAO, 2019[2]). Under the new Decree, to be eligible to export rice, companies must have at least one storage and one milling facility that meet national standards and regulations, which can be owned or leased. Traders must also maintain rice reserves equivalent to 5% of the volume shipped in the preceding six months. Traders exporting organic, parboiled and multi-micronutrient fortified rice are not bound by these conditions, nor will they be required to acquire export certificates.

Note

[1] Wet-paddy farming land is defined as land currently under wet-paddy cultivation or having the conditions for growing two or more wet-paddy crops a year; other paddy farming land is defined as land for growing only one wet-paddy crop a year and land for growing upland rice. Approximately 95% of current paddy land meets the wet-paddy land definition (OECD, 2015[3]).

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Annex I.A. Sources and Definitions of Contextual Indicators

Table X.2. 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: 2017 Revision, Population, for Emerging Economies not available in the OECD database.

Land area (thousands km^2): FAOSTAT Land Use (database), Land area ('000 ha) recalculated to thousands km^2. Land area excludes water areas.

Agricultural area (AA) (thousand ha): FAOSTAT Land Use (database), Agricultural area.

Population density (inhabitants/km^2): OECD Regional and Cities (database), Regional demography, Population density and regional area. United Nations, World Population Prospects: 2017 Revision, 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 (output 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, 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; and national data for Emerging Economies not available in OECD database.

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 X.3. Productivity and environmental indicators

TFP annual growth (%): Agricultural Total Factor Productivity indexes of the USDA Economic Research Service use primarily FAO data supplemented by national data. Agricultural TFP indexes 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.
USDA, Economic Research Service (2018), International Agricultural Productivity database, https://www.ers.usda.gov/data-products/international-agricultural-productivity/ (accessed October 2018).

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 (2018), Agri-environmental indicators (database), http://www.oecd.org/tad/sustainable-agriculture/agri-environmentalindicators.htm.

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 (2018), Agri-environmental indicators (database), http://www.oecd.org/tad/sustainable-agriculture/agri-environmentalindicators.htm.

Agriculture share of total energy use (%): Share of agricultural consumption in total final consumption (TFC).
International Energy Agency (2018), IEA World Energy Statistics and Balances (database), https://doi.org/10.1787/data-00512-en, and OECD Agri-environmental indicators (database), http://www.oecd.org/tad/sustainable-agriculture/agri-environmentalindicators.htm,

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 (2018), https://unfccc.int, and OECD Agri-environmental indicators (database), http://www.oecd.org/tad/sustainable-agriculture/agri-environmentalindicators.htm

Share of irrigated area in Agricultural Area (AA) (%): Share of irrigated area in total agricultural area.
OECD (2018), Agri-environmental indicators (database), http://www.oecd.org/tad/sustainable-agriculture/agri-environmentalindicators.htm 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 (2018), Agri-environmental indicators (database), http://www.oecd.org/tad/sustainable-agriculture/agri-environmentalindicators.htm.

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 (2018), "Water: Freshwater abstractions", OECD Environment Statistics (database), http://dx.doi.org/10.1787/data-00602-en.

Figure X.4. Main macro-economic indicators, 1995 to 2018

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.

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 X.5. Agro-food trade

Agro-food exports (USD billion), 1995 to 2017: UN COMTRADE (database). Agro-food definition does not include fish and fish products.

Agro-food imports (USD billion), 1995 to 2017: UN COMTRADE (database). Agro-food definition does not include fish and fish products.

Composition of agro-food trade, 2017: 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 X.6. Composition of agricultural output growth, 2006-15

TFP annual growth (%): Agricultural Total Factor Productivity indexes 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, machinery power, livestock capital, synthetic NPK fertilisers, and animal feed, where weights are input (factor) cost shares. Special breakdown created to dissociate primary factors (land, labour, machinery and livestock) from intermediate input (feed and fertilizer) growth. Output growth corresponds to gross agricultural output for each country.
Agricultural TFP indexes 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.
USDA, Economic Research Service (2018), International Agricultural Productivity database, https://www.ers.usda.gov/data-products/international-agricultural-productivity/ (accessed October 2018).

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.

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
INR	Indian rupee
ILS	Israeli shekel
ISK	Icelandic krona
JPY	Japanese yen
KRW	Korean wong
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

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