Agricultural Policy Monitoring and Evaluation 2018

OECD

Agricultural Policy Monitoring and Evaluation 2018

BETTER POLICIES FOR BETTER LIVES

Please cite this publication as:
OECD (2018), *Agricultural Policy Monitoring and Evaluation 2018*, OECD Publishing, Paris.
http://dx.doi.org/10.1787/agr_pol-2018-en

ISBN 978-92-64-30234-1 (print)
ISBN 978-92-64-30235-8 (PDF)
ISBN 978-92-64-30293-8 (HTML)
ISBN 978-92-64-30292-1 (epub)

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

Photo credits: Cover © Catherine Moreddu.

Corrigenda to OECD publications may be found on line at: *www.oecd.org/about/publishing/corrigenda.htm*.

Foreword

This report *Agricultural Policy Monitoring and Evaluation 2018* is the 31st in the series of OECD reports that monitor and evaluate agricultural policies across countries, and the sixth report to include both OECD countries and a set of Emerging Economies. The present report includes countries from all six continents, including the 35 OECD countries and the six non-OECD EU Member States, as well as ten Emerging Economies: Brazil, People's Republic of China, Colombia, Costa Rica, Kazakhstan, the Philippines, 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 insight 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 developments in agricultural policies and analyses the development of the level and structure of support to agriculture across countries included in the report. The following part consists of 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/agr_pol-2018-en).

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

Acknowledgements

This report was prepared by the Trade and Agriculture Directorate of the OECD with the active participation of countries included in this report. The following people from the OECD Secretariat contributed to the preparation of this report: Martin von Lampe (project leader), Václav Vojtech (co-ordinator), Jesús Antón, Ken Ash, Morvarid Bagherzadeh, Florence Bossard, Carmel Cahill, Dalila Cervantes-Godoy, Dimitris Diakosavvas, Emily Gray, Jared Greenville, Guillaume Gruère, Santiago Guerrero, Ben Henderson, Kentaro Kawasaki, Joanna Ilicic-Komorowska, Shingo Kimura, Jussi Lankoski, Catherine Moreddu, Laura Munro, Véronique de Saint-Martin, Silvia Sorescu, Karine Souvanheuane, Noura Takrouri-Jolly, Clara Thompson-Lipponen and Frank van Tongeren. Statistical and technical assistance was provided by the Technical Team: Joanna Ilicic-Komorowska (co-ordinator), Florence Bossard, Frano Ilicic, Clarisse Legendre, Karine Souvanheuane, Noura Takrouri-Jolly and Urszula Ziebinska. Administrative and editing services were provided by Martina Abderrahmane.

The following experts from Emerging Economies also contributed to this report: China – Cheng Guoqiang (Distinguished Professor, School of Economics and Management, Tongji University), Zhu Mande (Guizhou University) and Yu Wen (Agricultural Information Institute, Chinese Academy of Agricultural Sciences); Kazakhstan – Ruslan Syzdykov (Analytical Centre for Economic Policy in the Agricultural Sector, ACEPAS); the Philippines – Tisha Pia E. Dela Rosa, Frances Kaye, Anne Adao and Katrin Mares (Department of Agriculture), Eduardo Sanguyo and Guadalupe Montes-Erfe (Philippine Statistical Authority); Russian Federation – Olga Melyukhina; South Africa – David Spies (North-West University, Potchefstroom); Ukraine – Vitaliy Zhygadlo; Viet Nam – Hieu Phan Sy (Center for Informatics and Statistics, Ministry of Agriculture and Rural Development, MARD), and Tran Dai Nghia, Vũ Huy Phúc and Tran Cong Thang (Institute of Policy and Strategy for Agriculture and Rural Development, MARD).

Table of contents

Tables

Figures

Boxes

Reader's guide
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.

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 also available by commodity.

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 in Box 2.

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.

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): Is the commodity SCT expressed 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 GSSE (%GSSE): Share of expenditures on general services in the Total Support Estimate (TSE).

Box 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.

Decomposition indicators

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.

Decomposition of price gap elements

***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.

***Per cent change in the 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

The general GSSE definition is complemented in Annex 1.A1 by more specific implementation guidelines, provided under the different categories in the GSSE classification.

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).

Box 2. Definitions of categories in the GSSE classification

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.

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

Sources and Definitions of Contextual Indicators

Table X.2. Contextual indicators

Gross Domestic Product – GDP (USD billion in PPP): OECD National Accounts, Gross domestic product, USD, current PPPs, current prices. Latest year benchmarked from Economic Outlook projections. For EU member countries, data come from EUROSTAT. World Bank, World Development Indicators (WDI) data for Emerging Economies not available in the OECD database.

Population (million): OECD.Stat, National accounts, Main aggregates, Population and employment by main activity, OECD.Stat, Demography and Population, Population statistics, Historical population data and projections (1950-2050) for latest years not available in National accounts database. UN World population prospects, 2017 Revision for Emerging Economies not available in the OECD database. EUROSTAT for the European Union.

Land area (thousands km2): FAO, Land use database, Land area (000 ha) recalculated to thousands km2. Land area excludes water areas.

Agricultural area (AA) (thousand ha): FAO, Land use database, Agricultural area. EUROSTAT for the European Union.

Population density (inhabitants/km2): OECD.Stat, Regions and cities, Regional demography, Population density and regional area. UN World population prospects, 2017 Revision, Population density by region, subregion and country, 1950-2100 (persons per square km) for countries not available in OECD database. For EU members calculated from EUROSTAT population and area.

GDP per capita (USD in PPP): OECD.Stat, National accounts, Main aggregates, Gross domestic product (output approach), per head, USD, current prices, current PPPs. EU countries, EUROSTAT, GDP and main components - Current prices. World Bank, World Development Indicators (WDI) data for Emerging Economies not available in OECD database.

Trade as % of GDP: Trade data from UN COMTRADE Database. Customs data; Average trade: (exports+imports)/2. EU does not account for intra-EU trade.

Agriculture share in GDP (%): OECD.Stat, Country statistical profiles; Value added in agriculture; hunting and forestry; fishing as % of total value added. EU countries: EUROSTAT, Gross value added - Agriculture and fishing - % of all branches (NACE). World Bank, World Development Indicators (WDI) for countries not available in OECD database.

Agriculture share in employment (%): OECD.Stat, Employment by activities and status (ALFS), employment in agriculture, hunting, forestry and fishing as a share of the employment in all activities (ISIC rev.3, A-B and A-X; ISIC rev.4, A and A-U). EUROSTAT for the EU corresponds to the share of employed persons, aged 15 years and over, in agriculture, hunting, forestry and fishing in total NACE activities. World Bank, World Development Indicators (WDI), employment in agriculture, hunting, forestry and fishing as a share of total employment, and national data for countries not available in OECD database.

Agro-food exports in total exports (%): 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 (%): UN COMTRADE Database. Agro-food definition does not include fish and fish products.

Crop in total agricultural production (%): Share of value of total crop production (including horticulture) in total agricultural production. National data.

Livestock in total agricultural production (%): Share of value of total livestock production in total agricultural production. National data.

Share of arable land in AA (%): FAO, Land use database, arable land in percentage of agricultural area.

Table X.3. Productivity and environmental indicators

TFP annual growth (%): USDA Economic Research Service, International Agricultural Productivity Database, October 2017. It presents agricultural Total Factor Productivity indexes, using 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 was recalculated from individual countries data and weights. As reported by USDA, the October 2017 data release no longer used the Hodrick-Prescott filter to smooth the output series. The agricultural output index was replaced by the FAO index of gross agricultural output. Further new input cost shares from Rada, Liefert, and Liefert (2017) were introduced and applied to all former Eastern European Soviet Union States and Russian Federation in the post-1991 periods. As a result of these methodological changes, the reported values have changed considerable as compared to previous releases. The full documentation of the revision is available at: https://www.ers.usda.gov/data-products/international-agricultural-productivity/update-and-revision-history/.

Nitrogen balance (Kg/ha): Balance (surplus or deficit) expressed as kg nitrogen per hectare of total agricultural land. 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 was calculated as the Gross Nitrogen Balance in the EU area over the Utilised agricultural area of the EU.

OECD (2017), Agri-environmental indicators, 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. 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 was calculated as the Gross Phosphorous Balance in the EU area over the Utilised agricultural area of the EU.

OECD (2017), Agri-environmental indicators, http://www.oecd.org/tad/sustainable-agriculture/agri-environmentalindicators.htm.

Agriculture share of total energy use (%): Share of agricultural consumption over total final consumption (TFC).

IEA (2017), "World energy balances", IEA World Energy Statistics and Balances (database), http://dx.doi.org/10.1787/data-00512-en.

Agriculture share of GHG emissions (%): OECD (2017), "Greenhouse gas emissions by source, excluding land use, land-use change and forestry (LULUCF)". European Union as a single area was calculated from UNFCCC data for Greenhouse gas emissions in the EU area over the total GHG emissions in EU area.

OECD (2017), Agri-environmental indicators, http://www.oecd.org/tad/sustainable-agriculture/agri-environmentalindicators.htm.

UNFCCC (2017), website of the UNFCCC Greenhouse Gas Inventory Database, http://ghg.unfccc.int.

Share of irrigated area in Agricultural Area (AA) (%): Share of irrigated area in total agricultural area. FAO data for Emerging Economies not available in OECD database.

OECD (2017), Agri-environmental indicators, http://www.oecd.org/tad/sustainable-agriculture/agri-environmentalindicators.htm.

Share of agriculture in water abstractions (%): Share of agriculture in total freshwater abstractions. European Union as a single area was calculated as the total abstractions for agriculture in the EU area over the total freshwater abstractions in the EU area.

OECD (2017), Agri-environmental indicators, 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 was treated as a single area. OECD (2017), "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 2017

Real GDP growth (%): OECD.Stat, Country statistical profiles, real GDP growth. EU countries: Eurostat, GDP volumes, percentage change over previous period. World Bank, World Development Indicators (WDI) data for Emerging Economies not available in OECD database.

Inflation rate (%): OECD Analytical DataBase (ADB), Annual average rate of change in Harmonized Indices of Consumer Prices (HICPs), EUROSTAT for the European Union, World Bank, World Development Indicators (WDI) for Emerging Economies not available in ADB.

Unemployment rate (%): OECD Analytical DataBase (ADB), labour force statistics. ILO estimates and projections, Unemployment rate by sex and age for emerging countries. EUROSTAT for the European Union.

Figure X.5. Agro-food trade

Agro-food exports (USD billion), 1995 to 2016: UN COMTRADE Database. Agro-food definition does not include fish and fish products.

Agro-food imports (USD billion), 1995 to 2016: UN COMTRADE Database. Agro-food definition does not include fish and fish products.

Composition of agro-food trade, 2016: 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, 2005-14

TFP annual growth (%): USDA Economic Research Service, International Agricultural Productivity Database, October 2017. It presents agricultural Total Factor Productivity indexes, using 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 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 was recalculated from individual countries data and weights.

As reported by USDA, the October 2017 data release no longer used the Hodrick-Prescott filter to smooth the output series. The agricultural output index was replaced by the FAO index of gross agricultural output. Further new input cost shares from Rada, Liefert, and Liefert (2017) were introduced and applied to all former Eastern European Soviet Union States and Russian Federation in the post-1991 periods. As a result of these methodological changes, the reported values have changed considerable as compared to previous releases. The full documentation of the revision is available at: https://www.ers.usda.gov/data-products/international-agricultural-productivity/update-and-revision-history/.

Currencies

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
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

Abbreviations and acronyms

AAFC	Agriculture and Agri-Food Canada
ABC plan	Low carbon Emissions Agriculture plan (Brazil)
ACC	Agricultural Credit Cooperatives (Turkey)
ACCC	Australian Competition and Consumer Commission
ACEP	Agricultural Conservation Easement Program (United States)
ADR	Rural Development Agency (Colombia)
AGF	Direct Government Purchases (Brazil)
AIS	Agriculture Innovation System
AMIS	Agricultural Market Information System
AMS	Aggregate Measurement of Support
ANC	Areas of Natural Constraints (European Union)
ANT	National Land Agency (Colombia)
APEC	Asia-Pacific Economic Cooperation
APL-s	Sustainable Production Agreements (Chile)
APP	Advance Payments Program (Canada)
ARC	Agriculture Risk Coverage (United States)
SEAN	Association of South East Asian Nations
BBA	Bipartisan Budget Act (United States)
BPS	Basic Payment Scheme (European Union)
BRM	Business Risk Management (Canada)
CAP	Canadian Agricultural Partnership
CAP	Common Agricultural Policy (of the European Union)
CASP	Common Agricultural Support Programme (South Africa)
CEPA	Comprehensive Economic Partnership Agreement
CETA	Canada-European Union Comprehensive Economic and Trade Agreement
CFIA	The Canadian Food Inspection Agency
CGCS	Cotton Ginning Cost Share programme (United States)
CIIL	Crown Irrigation Investments Limited (New Zealand)
CO2	Carbon dioxide
COMESA	Common Market for Eastern and Southern Africa
CONAB	National Food Supply Agency (Brazil)
CPI	Consumer Price Index
CPTPP	Comprehensive and Progressive Trans-Pacific Partnership
CRDP	Comprehensive Rural Development Programme (South Africa)
CRP	Conservation Reserve Program (United States)
CSP	Conservation Stewardship program (United States)

DAFF	Department of Agriculture, Forestry and Fisheries (South Africa)
DCFTA	Deep and Comprehensive Free Trade Area (Ukraine, EU)
DFIP	Dairy Farm Investment Program (Canada)
DIRA	Dairy Industry Restructuring Act of 2001 (New Zealand)
DP	Direct Payments
DPDP	Dairy Product Donation Program (United States)
DPIF	Dairy Processing Investment Fund (Canada)
DRDLR	Department of Rural Development and Land Reform (South Africa)
EAEU	Eurasian Economic Union (Kazakhstan, Russia)
EAFRD	European Agricultural Fund for Rural Development
EAGF	European Agricultural Guarantee Fund
EEA	European Economic Area
EFAs	Ecological Focus Areas (European Union)
EEC	European Economic Community
EFP	Environmental Farm Plans (Canada)
EFTA	European Free Trade Association
EPA	Economic Partnership Agreement
EQIP	Environmental Quality Incentive Program (United States)
ERF	Emission Reduction Fund (Australia)
ETS	Emissions trading scheme (New Zealand)
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FCC	State agency Food Contract Corporation (Kazakhstan)
FDA	Food and Drugs Administration (United States)
FDI	Foreign Direct Investment
FEP	Commodity Price Stabilisation Fund (Colombia)
FINAGRO	Financing Fund for the Agricultural Sector (Colombia)
FMD	Foot and Mouth Disease
FMD	Farm Management Deposit (Australia)
FPT	Joint Federal, Provincial and Territorial agreements (Canada)
FSA	USDA Farm Service Agency (United States)
FTA	Free Trade Agreement
FY	Financial (fiscal) year
GAEC	Good Agricultural and Environmental Conditions (European Union)
GAO	Gross Agricultural Output
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GF2	Growing Forward 2 (Canada – new multilateral agricultural policy framework)
GHG	Greenhouse Gases
GIA	Government Industry Agreements on Biosecurity Readiness and Response (NZL)
GRA	Global Research Alliance on Agricultural Greenhouse Gases (New Zealand)
GSP	Generalised System of Preferences
IFSS	Integrated Food Security Strategy (South Africa)
IHS	Import Health Standards (New Zealand)

IMF	International Monetary Fund
INDAP	National Institute for Agricultural Development (Chile)
IPARD (I,II)	Instruments for Pre-Accession Assistance for Rural Development (Turkey)
LDC	Least Developed Countries
LEADER	Links Between Actions for the Development of the Rural Economy (EU)
LFA	Less Favoured Areas
LRAD	Land Redistribution and Agricultural Development (South Africa)
MAFISA	Micro-Agricultural Financial Institutions of South Africa
MADR	Ministry of Agriculture (Colombia)
MAG	Ministry of Agriculture and Livestock (Costa Rica)
MARD	Ministry of Agriculture and Rural Development
MAPA	Ministry of Agriculture, Livestock and Food Supply (Brazil)
MAPIP	Māori Agribusiness: Pathway to Increased Productivity (New Zealand)
MAV	Minimum access volume
MDA	Secretariat for Family Agriculture and Agrarian Development (Brazil)
MERCOSUR	Southern Common Market
MEP	Minimum Export Price (Viet Nam)
MFN	Most Favoured Nation
MMA	Minimum market access
MOU	Memorandum of Understanding
MoFAL	Ministry of Food, Agriculture and Livestock (Turkey)
MPP	Margin Protection Programme (for dairy producers) (United States)
MY	Marketing year
NAFTA	North American Free Trade Agreement
NAMC	National Agricultural Marketing Council (South Africa)
NDC	Nationally Determined Contribution
NAP Ag	National Adaptation Plan in Agriculture (Viet Nam)
NDRC	National Development and Reform Commission (China)
NIA	National Irrigation Administration (Philippines)
NFA	National Food Authority (Philippines)
NFRS	National Farmer Registration System (Turkey)
NLP	National Land Care programme (South Africa)
NPF	Next Agricultural Policy Framework (Canada)
NRCS	USDA Natural Resources Conservation Service (United States)
NTMs	Non-tariff measures
ODEPA	Office of Studies and Agrarian Policies of the Ministry of Agriculture (Chile)
OECD	Organisation for Economic Co-operation and Development
OPEC	Organisation of Petroleum Export Countries
PAA	Government purchases from small-scale agriculture (Brazil)
PCF	Pan-Canadian Framework on Clean Growth and Climate Change
PEM	Policy Evaluation Model
PEP	Product Reward Prize programme (Brazil)
PEPRO	Rural Equity Prize programme (Brazil)
PGPAF	Minimum price programme for family farms (Brazil)

PGP	Primary Growth Partnership (New Zealand)
PLC	Price Loss Coverage (United States)
PPP	Purchasing Power Parity
PRAN	National Agriculture Revitalisation Programme (Colombia)
PROAGRO	General Agriculture Insurance Programme (Brazil)
PROCAMPO	Programme providing payments based on historical areas (Mexico)
Productive PROAGRO	Programme providing payments based on historical areas, replacing PROCAMPO (Mexico)
PROGAN	Programme providing payments based on livestock numbers (Mexico)
QR	Quantitative restrictions
R&D	Research and Development
RDCs	Rural Research and Development Corporations (Australia)
RDP	Rural Development Plan (Programme)
REID	Rural Enterprise and Industrial Development programme (South Africa)
REP	Regional Environmental Programmes (Norway)
RID	Rural Infrastructure Development programme (South Africa)
RMA	Resource Management Act 1991 (New Zealand)
RMA	USDA Risk Management Agency (United States)
SACU	South African Customs Union
SADC	Southern African Development Community
SAFP	Andean Price Band System (Colombia)
SAGARPA	The Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food (Mexico)
SAPARD	Special Accession Programme for Agriculture and Rural Development (EU)
SAPS	Single Area Payment Scheme (European Union)
SCO	Supplementary Coverage Option (United States)
SDR	Special Drawing Rights, IMF
SENARA	National Irrigation and Drainage Service institution (Costa Rica)
SFF	Sustainable Farming Fund (New Zealand)
SGA	State Grain Administration (China)
SINOGRAIN	China Grain Reserves Corporation
SNAP	Supplemental Nutrition Assistance Program (United States)
SPS	Single Payment Scheme (European Union)
SPS	Sanitary and Phytosanitary
SSG	Special Safeguard
STAX	Stacked Income Protection Plan (United States)
STE	State Trading Enterprise
TBT	Technical Barriers to Trade
TCZB	Ziraat Bank (Turkey)
TDCA	Trade, Development and Co-operation Agreement
TFP	Total Factor Productivity
TNA	Transitional National Aid (European Union)
TPP	Trans-Pacific Partnership Agreement
TRQ	Tariff Rate Quota
TTIP	Transatlantic Trade and Investment Partnership (EU, US)
UN	United Nations

UNFCCC	United Nations Framework Convention on Climate Change
URAA	Uruguay Round Agreement on Agriculture
USA	United States of America
USDA	United States Department of Agriculture
VAT	Value Added Tax
VCS	Voluntary Coupled Support (European Union)
WTO	World Trade Organization
ZARC	Agricultural Climate Risk Zoning (Brazil)

Executive Summary

In 2015-17, the agricultural policies of the 51 countries covered in this report provided a total of USD 620 billion (EUR 556 billion) a year on average to their agricultural sectors. Around 78% of this, USD 484 billion (EUR 434 billion) a year, was transferred to individual producers, representing around 15% of gross farm receipts. This report considers recent policy developments across these 51 developed, emerging and developing economies.

Future growth in demand for diverse and high-quality food offers significant opportunities for agriculture. However, the sector faces a number of challenges in meeting future demand sustainably. These include increasing productivity growth, which in many economies is well below potential, enhancing the environmental performance of the sector, including in the context of a changing climate, and improving the resilience of farm households to weather, market and other 'shocks' that cannot always be anticipated.

Most agricultural policies in place today are not well-aligned with these objectives, although a few countries have long provided support in such a targeted manner and a number of others are moving in this direction. Lower levels of support and a shift towards less distorting and, in some cases, better targeted measures have reduced the trade-distorting effects of current policies. This in many cases has reduced the overall negative trade impacts of agricultural policies even beyond the reductions in support levels. However, progress within many countries remains partial, is not shared across all countries, and in some countries reliance on production and trade distorting measures is even increasing. In 2015-17, almost two-thirds of producer support across the 51 countries covered continued to be provided via measures that distort farm business decisions particularly strongly.

It is imperative that consideration be given, on a much more urgent basis, to shifting the policy effort towards addressing these challenges. Doing so requires a clear separation of measures that provide income support to farm households in need, from measures that would underpin increased farm productivity, sustainability, resilience, and overall profitability. Targeting transitional income support to farm households in need can both make that support more effective and free-up resources for public investment in agricultural innovation, environmental care, and resilience.

Recommendations

- A first step is to remove existing policy dis-incentives to increasing productivity, sustainability, and resilience. Remaining production- and trade-distorting support, directly linked to output and input use, should be reduced over time and eventually eliminated. This would allow domestic and international markets to function better, discourage over-use of inputs that can damage the environment, and make limited public funds available for more efficient and effective alternative investments.

- In many countries, agricultural support should then be re-directed to ensure the availability of public services that benefit producers, consumers and society overall. This can include effective human, animal and plant health systems, appropriate science-based biosecurity efforts, well-functioning agricultural innovation systems, and adequate physical and 'soft' infrastructure, amongst others.
- Public investment in research, including efforts to ensure that the outputs of this research reach farmers, can go a long way to ensure that the sector has the capacity to respond to evolving needs and challenges. Collaboration on knowledge generation and transfer with public and private actors – nationally, regionally and internationally – should be encouraged. New information and communication technologies (ICT) also appear to offer untapped potential to improve policy performance and performance on farms - productivity, sustainability, and resilience.
- Where knowledge of agri-environmental performance allows, consideration should be given to drawing on the full range of economic instruments (including information, education, regulation, payments and taxes) in pursuit of environmental and climate change goals. Where this knowledge is inadequate, relevant data and indicators need to be developed. Improved policy performance will require a robust information base on environmental outcomes from alternative agricultural production practices, and their links to policy incentives.
- Governments should streamline their risk management policies by clearly defining the limits between normal business risks, risks for which market solutions can be developed, and catastrophic risks requiring public engagement. Doing so enables pre-defined public intervention, when required, while sending clear signals to farmers and other private agents for developing relevant on-farm and market-based, privately-organised risk management tools. Governments can also play a proactive role in providing information on market risks and coping strategies for farmers and the private sector in order to facilitate the development of risk management strategies and tools.
- In many countries there is a long-standing need to improve understanding of the financial and well-being situation of farm households in order to design effective farm income support measures. Internally consistent data are often lacking on the income and wealth status of farm households, going beyond aggregates and averages to encompass the distribution of financial conditions across the full range of farm households, relative to non-farm households in any given country.
- Finally, it is important to recall that farm households respond to the full set of economic, market and policy factors at play. An essential implication is that policy makers need to design coherent *policy packages* that can address the many opportunities and challenges confronting the sector, and farm households, at any given moment in time. This requires a well-integrated and comprehensive approach to policy development, within and across governments, 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 2017-18 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 developments in approaches to support and policies related to agricultural innovation for sustainable productivity growth. The chapter ends with an assessment of support and policy reforms and related recommendations.

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).

The global economy strengthened in 2017, growing at 3.6%, its fastest rate since 2011, as economic conditions improved in several regions (Table 1.1). Growth in the OECD economies strengthened to 2.4% in 2017, up from 1.8% in 2016, and the OECD-wide unemployment rate fell below its pre-crisis level (OECD, 2018a). In the United States, economic growth increased in 2017 as the drag of past exchange rate appreciations and oil price movements abated. Unemployment was at its lowest level since 2000. Growth in the Euro area continued steadily in 2017, broadening across sectors and countries, and supported mostly by domestic demand. In Japan, growth rebounded to 1.5% in 2017, aided by stronger international trade and fiscal stimulus (OECD, 2017a).

Growth in the Emerging Economies is lower than in the past. After recessions in 2016, growth in Brazil and the Russian Federation recovered in 2017. Growth has resumed in Brazil – initially driven by agriculture, the recovery is now becoming firmer and more broad-based. In the Russian Federation, investment and consumption picked up on the back of higher oil prices and low inflation, and the economy continued to grow slowly. Growth in the People's Republic of China (hereafter, "China") strengthened somewhat in 2017, driven by services and some strategic industries (OECD, 2017a).

Global trade has rebounded since the first half of 2016 and become increasingly broad-based across economies. Global trade growth was 4.8% in 2017, compared with 2.6% in 2016 and 4.7% on average in the period 2005-14. Key factors underlying this include the recovery in Europe (a relatively trade intensive part of the world economy), the strong pick-up in electronics trade in Asia, and a shift in the composition of demand towards investment, which is more trade intensive (OECD, 2017a).

Table 1.1. Key economic indicators

OECD area, unless noted otherwise

	Average 2005-14	2015	2016	2017
	Per cent			
Real GDP growth[1]				
World[2]	3.8	3.3	3.1	3.6
OECD[2]	1.5	2.4	1.8	2.4
United States	1.5	2.9	1.5	2.2
Euro area	0.8	1.5	1.8	2.4
Japan	0.6	1.1	1.0	1.5
Non-OECD[2]	6.2	4.0	4.1	4.6
Brazil	3.5	-3.8	-3.6	0.7
China	10.0	6.9	6.7	6.8
Colombia	4.7	3.1	2.0	1.7
Russia	3.5	-2.8	-0.2	1.9
South Africa	3.1	1.3	0.3	0.7
Output gap[3]	-0.9	-1.4	-1.2	-0.5
Unemployment rate[4]	7.2	6.8	6.3	5.8
Inflation[1,5]	2.0	0.8	1.1	1.9
World real trade growth[1]	4.7	2.7	2.6	4.8

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 potential GDP.
4. Per cent of labour force.
5. Private consumption deflator.

Source: OECD (2017a), *OECD Economic Outlook, Volume 2017 Issue2*, OECD Publishing, Paris, http://dx.doi.org/10.1787/eco_outlook-v2017-2-en. Last updated 27 November 2017. OECD Economic Outlook 102 database.

StatLink http://dx.doi.org/10.1787/888933754937

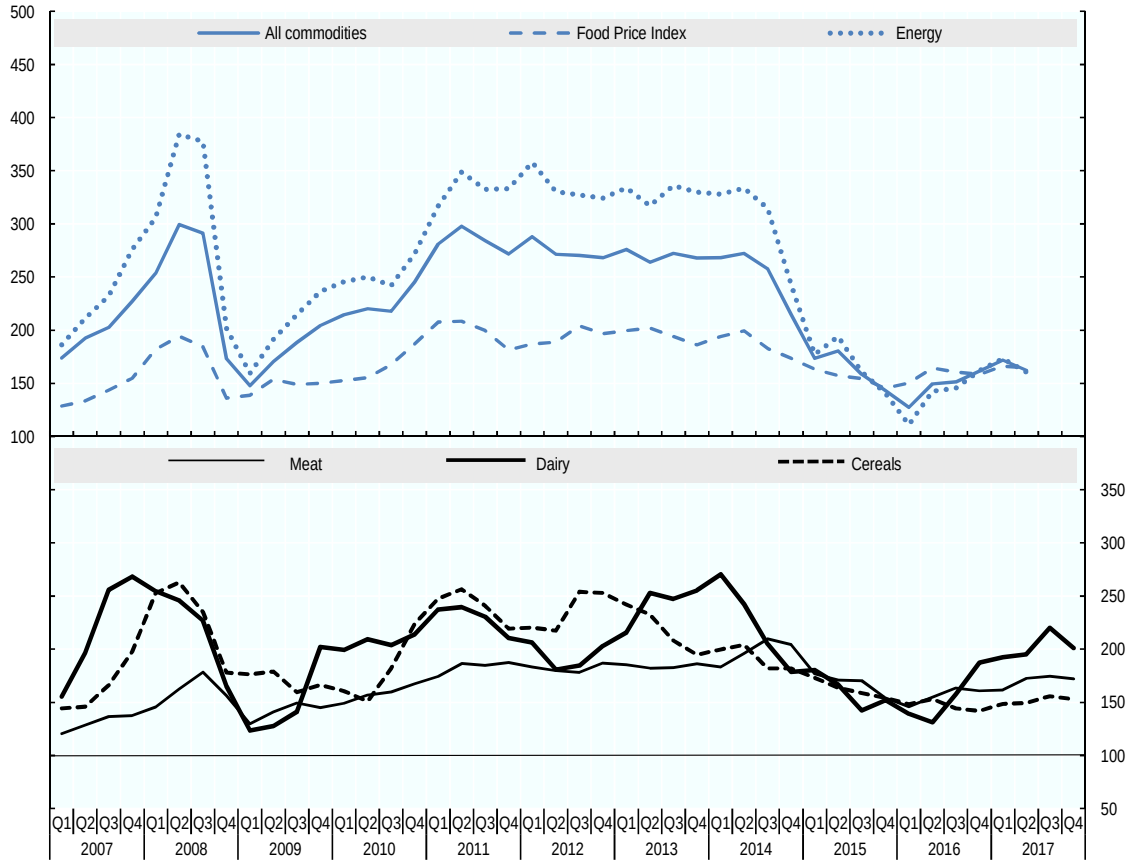
World prices for primary non-agricultural commodities rose in 2017, partly reflecting strong industrial demand as well as geopolitical risks and supply constraints following the agreement amongst Organization of the Petroleum-Exporting Countries (OPEC) and select non-OPEC members to restrict oil production through to March 2018 (Figure 1.1) (OECD, 2017a). Crude oil prices increased by 25% in nominal terms in 2017, however, prices are still considerably below the historical peaks of 2011-2013, and hence did not induce increases in agricultural commodity prices. Demand for biofuels was sustained by obligatory blending and by higher demand for fuel due to lower energy prices, which remained low despite higher crude oil prices (OECD/FAO, 2018). Fertiliser prices were lower during the first 9 months of 2017 as markets continued to face relatively weak global demand due to low crop prices. Markets remain well supplied with adequate stocks and growing low-cost capacity (World Bank Group, 2017).

Food commodity prices increased slightly between January 2016 and January 2017, and saw some further increases thereafter, supported by the global economic recovery and rising production costs (Figure 1.1). In comparison to the preceding years, however, commodity prices remained relatively low. Production in 2017 of most cereals, meat types and dairy products exceeded the already high levels recorded in previous years. Together with high stocks and stagnant demand, this offset the drivers for increased prices discussed above, so that prices for most commodities moved relatively little. Low

prices persisted for cereals as global production, notably of maize and rice, reached historical highs in 2017.

Figure 1.1. Commodity world price indices, 2007 to 2017

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 (2017), Commodity Market Review, Washington, D.C.; the International Monetary Fund for all commodities, food and energy indices, http://www.imf.org/external/np/res/commod/index.aspx; FAO (2017), FAO Food Price Index dataset, Rome: for meat, dairy and cereal indices. Base year is 2002-04 http://www.fao.org/worldfoodsituation/foodpricesindex/en/.

StatLink http://dx.doi.org/10.1787/888933754956

World meat production rose moderately in 2017, driven by increases in the United States mainly, but also in Argentina, China, India, Mexico, Turkey and the Russian Federation. Despite this, world meat prices increased by 9% in 2017, underpinned by increasing import demand for bovine and pig meat and short supplies of sheep meat. The highest price increase was for sheep meat.

Dairy production growth was moderate in 2017, below the average growth rate of the last decade. Prices increased strongly in 2017, driven by declines in milk production in the last quarter of 2016 and first quarter of 2017 (including in major exporters), and by a strong demand for fat solids. This resulted in strongly diverging developments for butter and skim milk powder prices. Butter prices showed a spectacular jump in the first half of

2017, but came down by the end of 2017. On average butter prices were 65% higher than in 2016. Strong demand for milk fats in the form of butter, but also in other products (e.g. cream, full-fat milk and cream yogurts) exceeded the moderate growth in dairy supplies. Constant low prices of skim milk powder (+3% in 2017) were also linked to high stock levels in the European Union (and to a lesser extent in the United States). The price of whole milk powder increased by 46%.

In other commodities, prices of oilseeds did not change, with production remaining broadly at 2016 levels. After increasing strongly in 2016, sugar prices fell sharply in 2017 as production rose in 2017 following two years of shortages. Cotton prices increased even as production continued to recover from the strong drop in 2015. Production grew in all major producing countries except China (OECD/FAO, 2018).

Recent developments in countries' agricultural policies

This section briefly summarises the main developments in countries' agricultural policies in 2017, as well as key policy developments that will be implemented in 2018. More details on the developments summarised below, and details on adjustments made to policy settings and programmes within countries current agricultural policy frameworks, can be found in the "Country Snapshots" in this report. More information is also available in the extended country chapters that are available online.

A number of countries are ***reviewing current agricultural policy frameworks***. **Canada's** Federal, Provincial, and Territorial Ministers of Agriculture reached an agreement on the core elements of the next framework agreement, the *Canadian Agricultural Partnership* (CAP). Canada is also undertaking a Review of its Business Risk Management (BRM) programmes that focuses on the effectiveness of BRM programmes in managing risks and the programmes' impact on innovation and growth. In **Iceland**, the Government and the Farmers' Association concluded new agreements for the ten-year period 2017 to 2026, with extensive reviews scheduled in 2019 and 2023. **Korea's** Development Plan for 2018-22 foresees adjustments to current programmes; investment support for young farmers, for the integration of digital technology into food and agriculture, and for the promotion of renewable energy generation; and measures to further enhance food safety and traceability in the supply chain. In **Norway**, the government and farmers' organisations reached an agreement on various agricultural support measures. Norway also released the White paper No. 11 (2016-17) *Change and development - A future-oriented agricultural production*, which considers plans to reform agricultural policies. **Switzerland** extended the policy framework adopted for the period 2014-17 without significant changes for the period 2018-21.

Reforms to existing policies and support measures occurred in several countries. **China** lowered the 2017/18 minimum support prices for wheat and rice, and replaced the soybeans target price by a "market-oriented soybeans price plus a direct subsidy to soybean farmers" based on area planted. The **European Union** abolished the sugar production quota as initiated in the 2006 reform. **Iceland** began to redeem the milk quota and redistribute it. From 2018, **Japan** abolished its government administered rice production quota and the income support payment for rice producers who meet the rice production target. **Korea** increased the per hectare rate of direct payments for farms and for less-favoured areas. Korea also plans to reduce the area eligible for rice support, by providing a higher payment for diversification along with measures to stimulate demand. **Kazakhstan** eliminated the VAT preference applied to certain agricultural producers and

processors as part of its WTO accession protocol. **Viet Nam** will re-introduce a fee for irrigation services from 2018.

New support measures were introduced into a number of countries. **Canada** established two programmes to help dairy farmers and processors adapt to the anticipated impacts of increased cheese imports from the European Union as a result of the *Canada-European Union Comprehensive Economic and Trade Agreement* (CETA). **Chile** implemented a new programme that targets young farmers (18-35 years old), by providing subsidies for variable and fixed inputs, finance, capacity building, training and the development of networks. **Colombia** implemented a range of new support measures, including a subsidy to rice farmers to store grain; an income compensation payment to cotton producers; and debt rescheduling and debt relief for farmers (from 2018). The **Philippines** abolished the irrigation service fee paid by farmers to increase support for rice producers. The **Russian Federation** announced conditions for intervention purchases of dry milk and butter for the first time. However, no purchases were made as prices remained above the minimum levels. **Ukraine** abolished its VAT accumulation mechanism and introduced a specific "development subsidy". The **United States** authorised a second Cotton Ginning Cost Share (CGCS) programme to help cover cotton ginning costs for the 2017 crop year and made revisions to cotton and dairy programmes. In addition, the 2017 Tax Cuts and Jobs Act includes a number of provisions that will affect agricultural producers, beginning 2018.

There have been ***institutional*** and ***regulatory developments*** in a number of countries. In **Australia**, dairy industry participants signed a voluntary code of conduct to overcome issues surrounding the determination of farm gate prices and perceived unfair practices in the value chain. **Chile's** Ministry of Agriculture created the Ministerial Technical Committee on Climate Change to address the challenges faced by the agriculture sector due to its high vulnerability to weather variability. **Costa Rica** established regulations, general principles and procedures related to chemical registration and use. In the **European Union**, the Omnibus regulation (EU Regulation 2017/2393) amends the financial regulation governing the implementation of the EU budget and 15 sectorial legislative acts, including agriculture. The agreement is aimed at simplifying the CAP. The European Union also renewed the current approval of the herbicide glyphosate for a five-year period. **Israel** introduced several programmes to reduce regulatory burden, facilitate market linkages, and increase competition in the agro-food chain, particularly in the fruit and vegetable sector. In **Kazakhstan**, the partial privatisation of KazAgro was delayed as no buyers came forward at auctions held in 2017 for the privatisation of 11 KazAgro subsidiaries. **Korea** strengthened procedures for product certification and pest and disease control and restructured some of its agricultural organisations. **Turkey** abolished two of its four state-owned marketing boards for agricultural products (for sugar and tobacco), but maintained the Turkish Grain Board, and the Meat and Milk Board. The Ministry of Food, Agriculture and Livestock took over responsibility for administering marketing regulations in 2017. **Ukraine** continued efforts to improve the legislative basis for its food safety, hygiene and quality systems.

On ***risk management***, **Australia** expanded its concessional loans programme, which is used to help producers recover from adverse events and put in place better risk management strategies. In **Brazil**, the Veterinary Inspection system is to be modernised to improve the management of animal disease risks. The government is recruiting six hundred additional sanitary professionals. In the **European Union**, the income stabilisation tool (within the rural development regulation) was amended to include a new sector-specific measure that triggers support if average annual income in the sector drops

by more than 20%. Further, support for insurance contracts becomes available when more than 20% of a farmer's average annual production is destroyed. In **Korea**, the scope and coverage of the agricultural disaster insurance scheme were expanded to three additional products (citron, fig, and crown daisy raised in facilities). **Turkey** extended the coverage of support provided to agricultural insurance in 2018 to more products and risks.

The **European Union**, **New Zealand** and the **United States** implemented measures in response to ***exceptional circumstances*** or ***natural disasters***. Exceptional measures as a result of the Russian embargo were continued in the **European Union** in response to market conditions in the dairy, fruit and vegetables, and pig sectors. **New Zealand** provided relief funding in response to several medium-scale adverse events in 2017. Relief funding was made available for repairing essential infrastructure along with repairs to uninsurable infrastructure. Affected producers could also apply for Rural Assistance Payments. The **United States** implemented a number of measures to provide disaster assistance to producers affected by hurricanes and wildfires in 2017.

On ***land reform and investment***, in **China** a draft of the revised Rural Land Contracting Law plans to extend existing rural land contracts by 30 years upon expiration. Access to land continued to be a priority in **Colombia** and, in 2017, around 3 000 land plots were formalised or legally registered under the auspices of the new ANT Agency. In **New Zealand** rules on access for foreign investors to "sensitive agricultural land" were extended to virtually all agricultural land. In **South Africa** a bill was passed allowing expropriation without compensation of commercial farms owned by white farmers. A change in legislation also prohibits foreigners from buying agricultural land and they can only lease it under long term contracts.

On ***innovation***, **Colombia** approved a law to create a National Agricultural Innovation System. **Costa Rica** is reforming its extension services to better link them with the Innovation and Transfer of Agricultural Technology (INTA), the country's agricultural R&D institution. **Viet Nam** announced a lending programme to promote the development of high-tech, clean agriculture that offers interest rates 0.5-1.5% lower than market interest rates.

On measures and programmes that affect ***agri-environmental and climate outcomes***, **Brazil** passed its national biofuel policy in December 2017. The policy is an attempt to respond to Brazil's Intended Nationally Determined Contribution commitments under the Paris Climate Agreement. Provincial local governments in **China** delineated additional "environmental control zones" – where livestock farming activities are prohibited, in order to address environmental concerns in congested areas and waterways across the South, East and Centre regions of China. **Costa Rica** modified the water pricing system based on consumption at the farm level. **Israel** detailed a new pricing system for freshwater use in agriculture, encompassing two flat rates for agriculture users with or without alternative water sources throughout the country. Countries' progress in implementing greenhouse gas (GHG) mitigation policies in agriculture at a national level are explored in Box 1.1.

On ***trade promotion and market development***, the **Russian Federation** announced the development of agricultural export potential as a new policy orientation. The new Priority Project on Export of Agricultural Products focuses on sanitary and phytosanitary improvements and market research and promotion. **Switzerland's** Ordinance on "Swissness" came into force, which defines the regulations which have to be fulfilled in order to use the Label "Swiss" and the label of the Swiss cross. In **Viet Nam**, the Prime Minister approved a rice export development strategy for 2017-20, with a vision to 2030.

On ***trade***, in March 2018 Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Viet Nam signed a new agreement called the **Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CP-TPP)**. Trade negotiations between the **European Union** and **Mexico** and the European Union and the **Mercosur** advanced in 2017. In September 2017, the **Canada-European Union Comprehensive Economic and Trade Agreement (CETA)** entered into force provisionally, allowing application of about 90% of the agreement's provisions pending EU Member States ratification of the agreement by their national parliaments. The negotiation of the Free Trade Agreement between the Central American Republics and Korea was finalised, and the **Korea-Central America Free Trade Agreement** was signed in February 2018. In September 2017, the European Parliament approved two **EU-Iceland** agreements, one on agricultural trade and one on mutual recognition of geographical indications. In December 2017, the Economic Partnership Agreement between the European Union and Japan was finalised. Pending a final agreement on the investment protection chapter, the deal is expected to enter into force in 2019. Australia concluded a free trade agreement with **Peru** in February 2018 and both Australia and **New Zealand** signed the **Pacific Trade and Economic Agreement (PACER Plus)** in June 2017.

Box 1.1. Climate change mitigation policy progress in agriculture

The agriculture sector is responsible for a substantial share of global greenhouse gas (GHG) emissions, and this is expected to grow over the course of the next century. Stronger economy-wide mitigation efforts to slow down global warming are being embraced worldwide, and a clear trend towards the inclusion of agricultural emissions in national and regional mitigation efforts is visible. Despite this encouraging momentum, national policies that can incentivise the agriculture sector to make a meaningful contribution to national GHG mitigation goals are still lacking. This box provides a brief snapshot of progress on national level GHG mitigation policies in agriculture, based on the countries reviewed in this report. It is not exhaustive and also does not cover subnational and industry-led initiatives.

Some 11% of global anthropogenic GHG emissions are directly attributed to primary agriculture, with another significant share related to increases in agricultural land use. Agriculture's share of total national GHG emissions varies considerably among the countries reviewed in this report, from 3% (Japan and Israel) to 48% (New Zealand).

The Paris Agreement, negotiated at the 21st session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC), provides the framework for co-ordinated global action on climate change. It allows Parties to set their own emission reduction targets set out in their Nationally Determined Contributions (NDCs), to try and meet the Agreement's goal of keeping global warming to well below 2°C while pursuing efforts to limit warming to 1.5°C above pre-industrial levels, by the end of the century (UNFCCC, 2015). To date, the agreement has been ratified by 175 of the 195 signatories. All 23 countries and the European Union which feature in this report are signatories, with only the Russian Federation, Turkey and Colombia[1] yet to ratify. However, since ratifying the Paris Agreement in 2016, the United States has announced its intention to withdraw.

There is growing recognition that agriculture must play its part in contributing to the goal of the Paris Agreement to limit global warming, with scenarios showing that methane and

nitrous oxide emissions, mainly from agriculture, could become the largest source of global emissions by mid-century (Gernaat et al., 2015; Wollenberg et al., 2016). This recognition is reflected in the inclusion of agriculture in the majority of the NDCs submitted by signatories of the Paris Agreement. However, as very few NDCs include sector-specific targets, the contribution of agricultural emission reductions to achieving these pledges remains unclear, and very few national level policies have been implemented to date. Where national policies do exist, these are voluntary and are mostly designed to encourage research, development and the transfer of knowledge about low emission practices and technologies. Several countries also have policies in place that address multiple environmental impacts from agriculture, which may help lower GHG emissions.

Among the countries reviewed in this report, **Australia**'s Emission Reduction Fund (ERF) and **Brazil**'s Low Carbon Agriculture (ABC) Plan most directly target emission reductions in agriculture. Both of these policies pre-date the signing of the Paris Agreement, but are central to their pledged GHG mitigation goals under the Agreement. The Emission Reduction Fund in Australia uses an auction mechanism to allocate government funds primarily to land use sectors, including agriculture. Since 2015, the Fund has been used to contract 18 million tonnes CO_2-eq of abatement in the agricultural sector, with a further 124 and 14 million tonnes CO_2-eq contracted in land vegetation and savannah burning projects, respectively (Clean Energy Regulator, 2018). The ABC plan in Brazil provides a substantial amount of credit to finance the implementation of sustainable practices in agriculture, including carbon sequestration from restoring 15 million hectares of degraded pasturelands, by 2030. While the ambition of these national policies is promising, concerns have been raised about their effectiveness, which can only be judged in the future if and when they can deliver their scheduled targets.

Some countries have also specified national targets for GHG emission reductions in agriculture. **Switzerland**, for example, has proposed to reduce agricultural emissions by one-third by 2050, contributing to a two-thirds reduction of emissions across the whole agro-food chain. **Viet Nam** proposes to reduce emissions by 20% every ten years, while increasing production by 20%, prioritising research on range of measures, while **China** has a specific target for achieving zero growth in fertiliser (a major source of nitrous oxide emissions) and pesticide use by 2020.

Most national policies for emission reductions in the agriculture sector rely on research, development (R&D) and the transfer of knowledge regarding low emission practices and technologies. **New Zealand** is a notable example, with these activities supported through national research programmes and its leading role in co-ordination with the 49 member countries of the Global Research Alliance on Agricultural Greenhouse Gases (GRA) (see also section on Innovation). Several other reviewed countries have indicated that R&D and the promotion of low emission practices are central to their national ambitions to lower agricultural emissions, including **Canada, Costa Rica, Japan, Mexico, Viet Nam** and a number of **European Union** Member States.

A number of the countries included within this report have agri-environmental policies in place that contribute to the abatement of agricultural GHG emissions. For the **European Union**, GHG abatement is mainly addressed through Common Agricultural Policy (CAP) elements that aim to improve environmental performance such as cross-compliance and greening under Pillar 1, and agri-environmental and climatic measures under Pillar 2. EU Member States have also developed specific national policies to tackle climate change, including **Germany, France, Hungary** and **Sweden** among others provide support for

technologies that reduce GHGs and ammonia from manure handling and storage. While the **United States** does not have a specific national mitigation programme for agriculture, the United States Department of Agriculture (USDA) does provide some incentives to producers through various conservation practices and programmes, some of which have mitigation benefits. Similarly, environmental programmes in **Canada** (such as the Environmental Farm Plans and the Environmental Stewardship Incentive) deliver multiple environmental outcomes, including some related to climate change mitigation.

Finally, it is worth noting that the state pledges made under the Paris Agreement are only expected to deliver around one-third of the emission reductions required to reach the goal of keeping global warming well below 2°C, by the end of the Century (UNEP, 2017). With agriculture's share of global GHG emissions likely to increase over time, mitigation policies to reduce this growing emissions source will become increasingly urgent.

Note: 1. The Colombian Congress has passed a bill that ratifies the Paris Agreement, but the process of ratification is not yet completed.
Source: Clean Energy Regulator (2018), "Emissions Reduction Fund", http://www.cleanenergyregulator.gov.au/ERF; Gernaat et al. (2015), "Understanding the contribution of non-carbon dioxide gases in deep mitigation scenarios", *Global Environmental Change;* Wollenberg et al. (2016) "Reducing emissions from agriculture to meet the 2oC target", *Global Change Biology;* UNEP (2017), "The Emissions Gap Report 2017", United Nations Environment Programme (UNEP), Nairobi; UNFCCC (2015), *Adoption of the Paris Agreement*, United Nations Framework Convention on Climate Change, Paris.

Developments in agricultural support

This section provides a quantitative assessment of developments in policy support to agriculture in 2017, and compares policy support in recent years (2015-17) with support provided to the agricultural sector in the mid-1990s (1995-97). It covers the 35 OECD countries as well as the six non-OECD EU Member States and ten emerging and developing economies. In much of this report, the European Union is presented as one economic region. The assessment 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 A provides definitions of the indicators used in the report. The OECD is also a key member of the International Organisations Consortium for Measuring the Policy Environment for Agriculture (the Consortium), an initiative that aims to develop a global picture of the distortions introduced by agricultural policies (Box 1.2).

The burden of agricultural support on countries' economies has generally declined, but public support is still important for the agricultural sectors of some countries

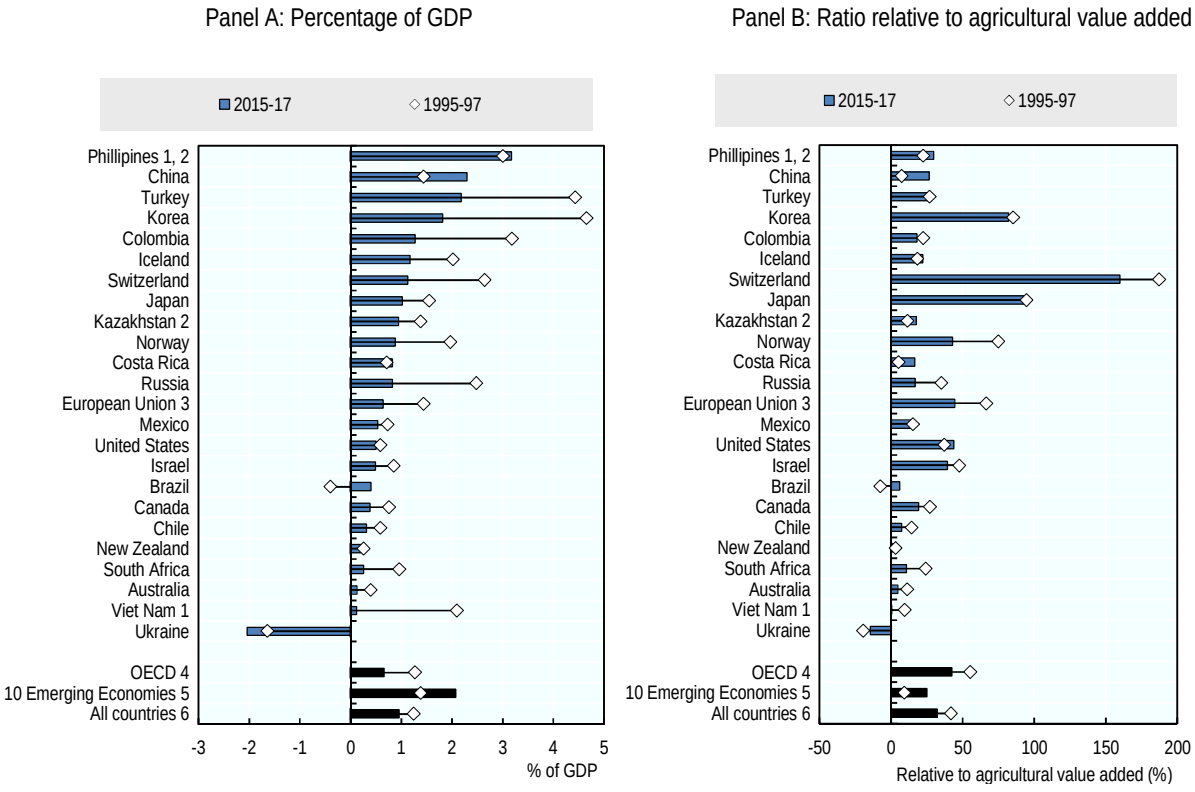
The Total Support Estimate (TSE) is the OECD's broadest indicator of agricultural support. The TSE combines transfers to agricultural producers individually (measured by the Producer Support Estimate, the PSE); policy expenditures that have primary agriculture as the main beneficiary, but do not go to individual producers (measured by the General Services Support Estimate, the GSSE); and budgetary support to consumers of agricultural commodities (the Consumer Support Estimate, the CSE, measured at the farm gate level and net of the market price support element).

The overall burden of agricultural support on the OECD countries' economies has declined since the mid-1990s, as measured by total support as percentage of GDP (%TSE, Panel A of Figure 1.2). In the OECD countries on average, total support to agriculture declined from 1.3% of OECD aggregate GDP in 1995-97 to 0.7% in 2015-17. Significant reductions have occurred in countries where the relative cost to the economy of agricultural support was highest, including Korea, Turkey, Switzerland and Iceland. Nevertheless, the %TSE is high in these countries – between 1.1% and 2.2% 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, the Russian Federation and South Africa. In the mid-1990s, Brazil and Ukraine effectively taxed their agricultural sectors on average. In 2015-17, Brazil provided positive support to the sector of around 0.4% of GDP, while Ukraine is again taxing the sector after providing positive support in the late 1990s and 2000s. Total support as a percentage of GDP has increased substantially in China (from 1.4% to 2.3%) and the Philippines (from 3.0% to 4.7%), and to a lesser extent in Costa Rica and the Philippines, despite the declining importance of agriculture to the economy.

Public policy support continues to be important for the agricultural sector in some countries. In 2015-17, total support relative to the size of countries' agricultural sectors varied widely across the OECD countries, from 160% of agricultural value added[1] in Switzerland, 93% in Japan and 82% in Korea, to less than 15% of agricultural value added in Australia, Chile and New Zealand (Panel B of Figure 1.2). In the European Union, Israel and Norway, TSE relative to agricultural value added was close to the OECD average of 42%. In the emerging and developing countries, total support relative to the size of the agricultural sector ranges from 1% of agricultural value added in Viet Nam to 30% in the Philippines. For most countries, total support has declined relative to the size of the agricultural sector.

Figure 1.2. Total Support Estimate by country, 1995-97 and 2015-17



Notes: Countries are ranked according to the %TSE in 2015-17.
1. For the Philippines and Viet Nam, 1995-97 is replaced by 2000-02.
2. For Kazakhstan and the Philippines, 2015-17 is replaced by 2015-16, due to missing GDP and agricultural value added in 2017.
3. EU15 for 1995-97 and EU28 for 2015-17.
4. 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 EU for 2015-17. Latvia is included in the OECD and in the EU only for 2015-17.
5. The 10 Emerging Economies are Brazil, China, Colombia, Costa Rica, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam. The Philippines and Viet Nam are included only for 2015-17. Indonesia is not included in this report.
6. The All countries total includes all OECD countries, non-OECD EU Member States, and the 10 Emerging Economies.
Source: OECD (2018b), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933754975

Total support to agriculture averaged USD 620 billion (EUR 556 billion) a year in 2015-17 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 2015-17 total support to agriculture in the OECD countries averaged USD 317 billion (EUR 285 billion) a year on average (51% of total support), compared with USD 297 billion (EUR 266 billion) a year on average in the emerging and developing countries.

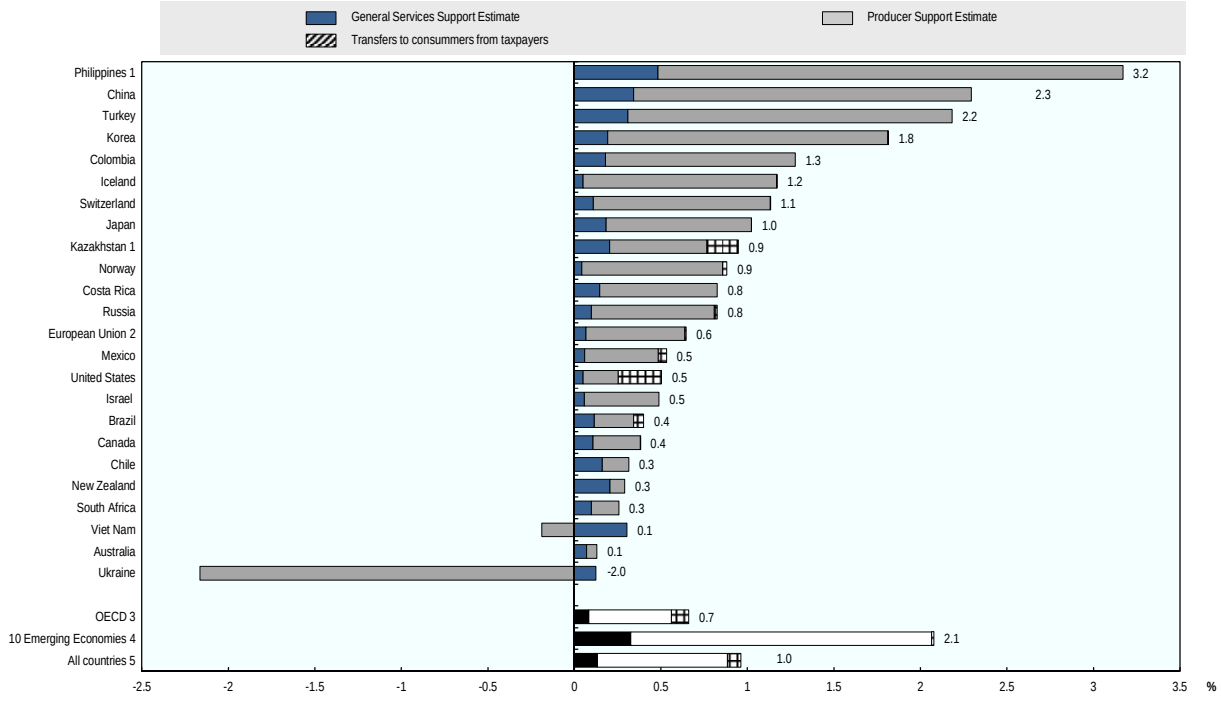
Policy transfers to individual producers dominate total support in almost all countries. As measured by the PSE, around 78% of total support was provided to

individual agricultural producers – USD 484 billion (EUR 434 billion) a year on average in 2015-17. In contrast, only a small share of total support was provided for general services across all the countries examined – 14% of total support or USD 86 billion (EUR 78 billion) a year in 2015-17 (Figure 1.3).

For the OECD countries on average, the PSE accounted for around 72% of total support provided to the agricultural sector in 2015-17, with support for general services that create enabling conditions for the agricultural sector accounting for almost 13% of total support. As exceptions to this, support to general services accounted for over 70% of total support in New Zealand, and over 50% of total support in Australia and Chile. In these countries, %TSE is around 0.3% of GDP. In the United States, around 49% of total support is provided to consumers. In most other countries, 80% or more of support is provided directly to producers.

Figure 1.3. Composition of the Total Support Estimate by country, 2015-17

Percentage of GDP



1. For Kazakhstan and the Philippines, 2015-17 is replaced by 2015-16.
2. EU28.
3. The OECD total does not include the non-OECD EU Member States.
4. The 10 Emerging Economies are Brazil, China, Colombia, Costa Rica, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam. Indonesia is not included in this report.
5. The All countries total includes all OECD countries, non-OECD EU Member States, and the 10 Emerging Economies.

Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933754994

Box 1.2. The International Organisations Consortium for Measuring Policy Environment for Agriculture

The OECD is a key member of the International Organisations Consortium for Measuring Policy Environment for Agriculture (the Consortium), an initiative that aims to provide continually-updated estimates of agricultural support (or incentives) across a range of countries. Together with the OECD's monitoring and evaluation reports and indicators, this initiative is expanding the information available for analysing the impacts of agricultural policies and reforms.

There have been many attempts to measure and monitor agricultural policies in the past, from the seminal efforts of the FAO in the early 1970s, the OECD's PSE/CSE exercise since the early 1980s, and different efforts by other international institutions involved in agricultural policy and development, through to the most recent efforts of the Asian Productivity Organisation (APO), the Food and Agriculture Organisation of the United Nations (FAO), the Inter-American Development Bank (IDB), the International Food Policy Research Institute (IFPRI), and the World Bank (WB). The Consortium builds on these individual efforts to improve knowledge of agricultural policies worldwide and feed more complete information into national policy processes and inter-country dialogue, including at a regional level. By joining forces, the Consortium aims to increase the geographic coverage of policy information, based on a common methodology that assures quality, consistency and comparability across countries and time.

The OECD Global Forum on Agriculture held in December 2013 marked the launch of the Consortium. While FAO, IDB, IFPRI, OECD and the WB are the active members, participation in the Consortium is open to all organisations that wish to contribute their data and analytical resources.

To date, one policy indicator has been derived from the various contributing data sources: the Nominal Rate of Protection (NRP). This measure is the proportional difference between the Producer Price and border prices adjusted for distribution, storage, transport, and other marketing costs, and conceptually equivalent to the OECD's Nominal Protection Coefficient (NPC). Like the OECD's NPC, it measures the extent to which policies result in a divergence between domestic and international prices, and thus provide production incentives. The current dataset covers 58 economies (counting the European Union as one), starting from the year 2005 (Table 1.2). The database was officially released to the public during the OECD Committee for Agriculture in May 2017. Incorporating other indicators of agricultural support and updating and extending the time series is foreseen as work develops.

Table 1.2. Country and commodity coverage by International Organisations

International organisation	Region covered	Number of countries	Time period	Number of individual commodities
OECD	OECD countries and 11 Emerging Economies	25*	1986-2015	58
FAO-MAFAP	Sub-Saharan Africa	13	2005-14	26
IDB-AGRIMONITOR	Latin America and Caribbean	17	2004-15	34
World Bank	South Asia	3	2004-14	19

Notes: Not all countries report all data for all commodities listed and all years. *EU treated as one.

The new database helps to shed light on producer support policies across many countries at different levels of income and development. While the development of support in OECD economies and selected Emerging Economies is well documented in the OECD PSE/CSE data, the data assembled by the Consortium reveal fresh insights on policies in low income countries. For example, during 2005-15, the NRPs of low income countries oscillated around zero, indicating no or little price support to agriculture producers. However, this average hides many countries with negative NRPs, i.e., countries that tax agricultural producer prices, especially for export commodities. The taxation in many cases was driven by high levels of world prices and the use of the agricultural sector as a source of government revenue.

The database of the Consortium is available on a common data platform developed by IFPRI. The address of the platform is www.ag-incentives.org/. The website also contains descriptive information about the Consortium, its members and its organisation.

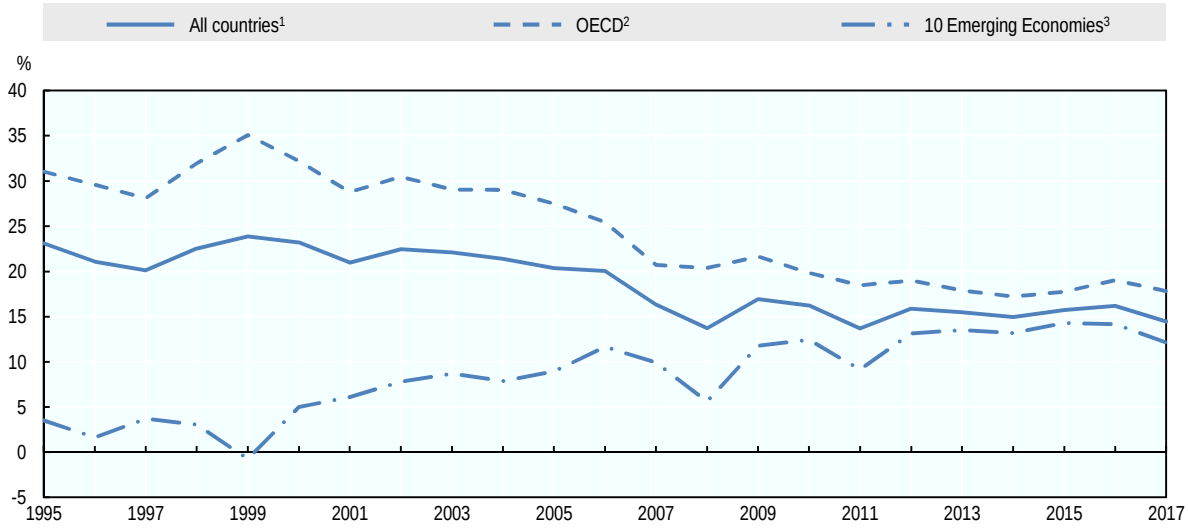
Support to producers in the OECD area and Emerging Economies has converged, and follows a similar trend in recent years

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 2017, around 14.5% of gross farm receipts were due to policies that support farmers, down from 16% in 2016. The monetary value of this support was USD 461 billion (EUR 409 billion) in 2017, down from USD 499 billion (EUR 451 billion) in 2016. The moderate year-on-year change is mainly due to market developments, including movements in world prices for agricultural commodities and exchange rates, rather than changes in policy.

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, from just under 30% of gross farm receipts in 1995-97 to around 18% in 2015-17. In the mid-1990s 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 to around 14% of gross farm receipts in 2015-17, with lower levels of support in 2008 and 2011 reflecting periods of higher world commodity prices. In large part, the %PSE change in the emerging and developing economies is driven by producer support in China.

Figure 1.4. Evolution of the Producer Support Estimate, 1995 to 2017

Percentage of gross farm receipts



1. The All countries total includes all OECD countries, non-OECD EU Member States, and the 10 Emerging Economies.
2. The OECD total does not include the non-OECD EU Member States. Latvia is included only from 2004.
3. The 10 Emerging Economies are Brazil, China, Colombia, Costa Rica, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam. The Philippines and Viet Nam are included from 2000 onwards. Indonesia is not included in this report.
Source: OECD (2018b), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

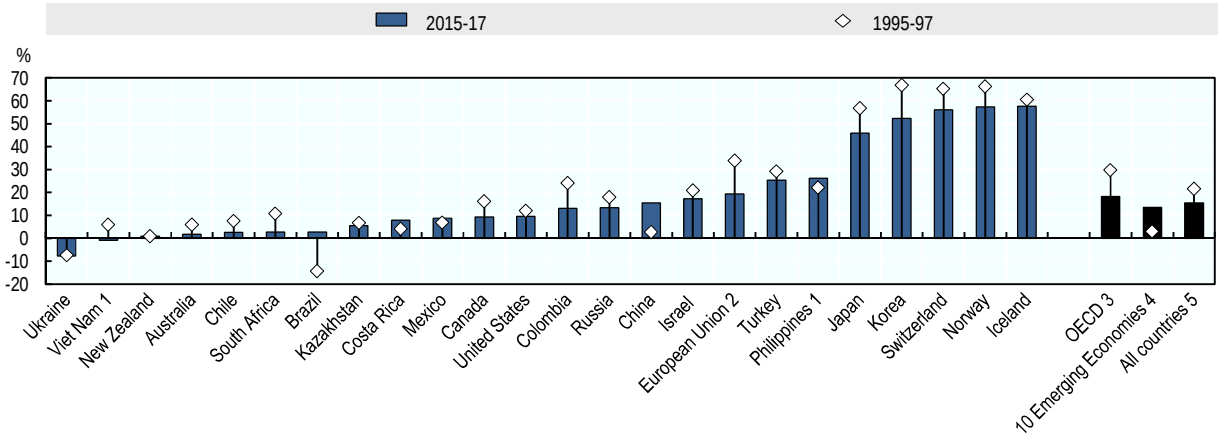
StatLink http://dx.doi.org/10.1787/888933755013

These broad trends are also evident when looking at countries individually (Figure 1.5). In most countries, producer support has declined since the mid-1990s, although the extent varies across countries. Levels of producer support have fallen by two-thirds or more in Australia, Chile and South Africa, while producer support in Canada, Colombia and the European Union fell by over 40%. However, producer support has increased since the mid-1990s in some emerging and developing countries, including China, Costa Rica and the Philippines, and also in Mexico. Producer support has also increased in Brazil, but from negative levels in the mid-1990s.

Nevertheless, current levels of producer support continue to vary widely across countries (Figure 1.5). New Zealand, Australia, South Africa, Chile and Brazil provide very low levels of support to producers, with %PSEs below 3% in 2015-17. In contrast, Japan, Korea, Switzerland, Norway and Iceland support their producers at levels above 45% of gross farm receipts, despite reductions in support since the mid-1990s. Of the emerging and developing economies, only the Philippines provides support at higher levels than the OECD average (PSE of 26% in 2015-17 compared with the OECD average of 18%).

Figure 1.5. Producer Support Estimate by country, 1995-97 and 2015-17

Percentage of gross farm receipts



Notes: Countries are ranked according to the 2015-17 levels.
1. For the Philippines and Viet Nam, 1995-97 is replaced by 2000-02.
2. EU15 for 1995-97 and EU28 for 2015-17.
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 EU for 2015-17. Latvia is included in the OECD and in the EU only for 2015-17.
4. The 10 Emerging Economies are Brazil, China, Colombia, Costa Rica, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam. The Philippines and Viet Nam are included only for 2015-17. Indonesia is not included in this report.
5. The All countries total includes all OECD countries, non-OECD EU Member States, and the 10 Emerging Economies.
Source: OECD (2018b), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755032

Producer support declined in 2017 in most of the countries covered in the report. In the majority of countries, the observed change in the PSE was largely driven by the change in market price support (MPS) – more specifically, by a widening or narrowing of the gap between domestic and border prices. Exceptions included Australia, where producer support fell due to lower budgetary payments only, and Brazil, Canada and Mexico, where budgetary payments were equally important in driving the year-on-year change (Box 1.3). On average, producer support in OECD countries fell from 19% of gross farm receipts in 2016 to 18% in 2017.

Box 1.3. What drove changes in the monetary value of producer support in 2017?

Figure 1.6 shows the contributions of market price support (MPS, horizontal axis) and budgetary payments (BP, vertical axis) to the annual change in the monetary value of support to farmers (PSE, expressed in local currencies) between 2016 and 2017. 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. As an example, the point for Canada indicates that changes in MPS decreased the monetary value of Canada's PSE by around 2% while changes in budgetary payments increased the monetary value of Canada's PSE by a similar amount, resulting in Canada's level of support (in CAD) in the most recent year remaining almost unchanged.

Figure 1.6. Contribution of MPS and budgetary payments to the change in PSE, 2016 to 2017

Notes: Kazakhstan, Ukraine and Viet Nam not shown due to negative MPS data. Indonesia is not included in this report.
Source: OECD (2018b), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755051

Changes in the monetary value of support to farmers in 2017 were driven mainly by changes in MPS, although changes in budgetary support were also important in some countries. Lower MPS drove changes in the monetary value of support in Colombia, New Zealand,[1] Norway, Turkey and Switzerland, with changes in budgetary payments playing a much smaller role. Higher MPS increased producer support in Chile and South Africa; however, producer support remained at very low levels in both countries (less than 3% of gross farm receipts).

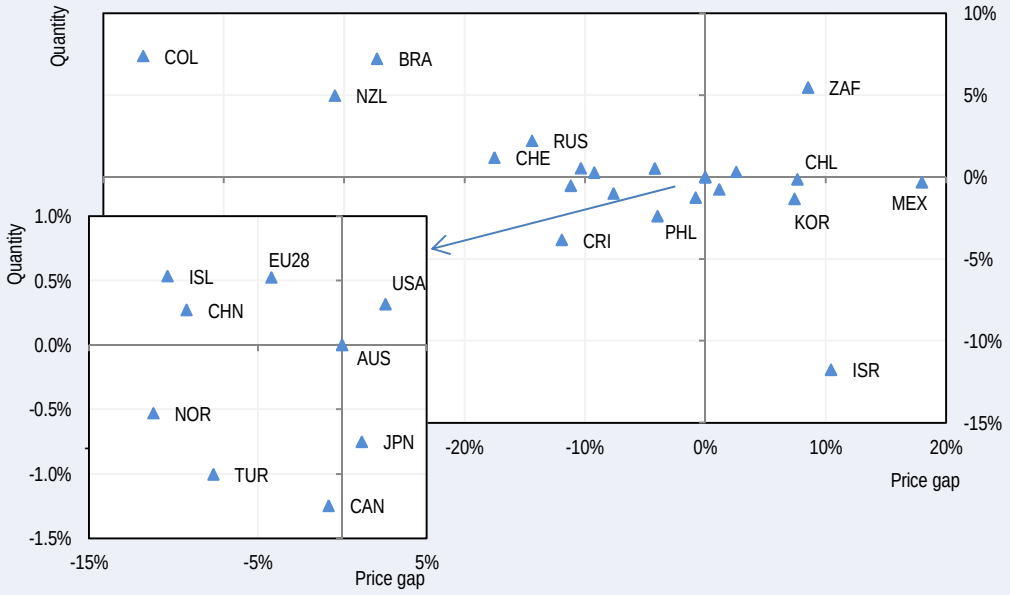
Lower MPS and budgetary payments reduced producer support in Brazil, the Russian

Federation and, to a lesser extent, the European Union. In contrast, producer support increased in Korea and the United States as a result of an increase in MPS and budgetary payments. In Mexico, lower budgetary payments offset an increase in MPS.

Figure 1.7 further disaggregates the change in MPS into its two components: the gap between domestic and border prices (horizontal axis) and the quantities of production which receive support (vertical axis). 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. Moreover, as border prices increased on average for most countries, changes in the price gap depended on relative movements in domestic (producer) prices. In the OECD countries on average, producer prices increased relatively less than border prices, contributing to a decline in MPS in 2017. Exceptions were Chile and Japan, where border prices declined on average, contributing to a small increase in MPS. Producer prices declined on average in in the emerging and developing economies, resulting in a relatively larger decline in MPS between 2016 and 2017. While border prices declined on average in Brazil, Kazakhstan and the Philippines, producer prices declined by relatively more.

On average, currencies depreciated against the US dollar, which also contributed to lower price gaps, in the OECD countries in particular. This is because a weaker local currency will, all other factors being equal, increase reference (border) prices expressed in local currencies for a given country, reducing the country's MPS and overall support level.

Figure 1.7. Contribution of price gaps and output quantities to the change in PSE, 2016 to 2017



Notes: Kazakhstan, Ukraine and Viet Nam not shown due to negative MPS data. Indonesia is not included in this report.
Source: OECD (2018b), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755070

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

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 farmers is as important as the overall level of that support. Governments have a large portfolio of measures at their disposal: they can raise domestic prices by intervening directly in markets or by limiting imports through tariffs or other border measures; they can provide subsidies to reduce farmers' input costs; or they can provide payments to farmers 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.

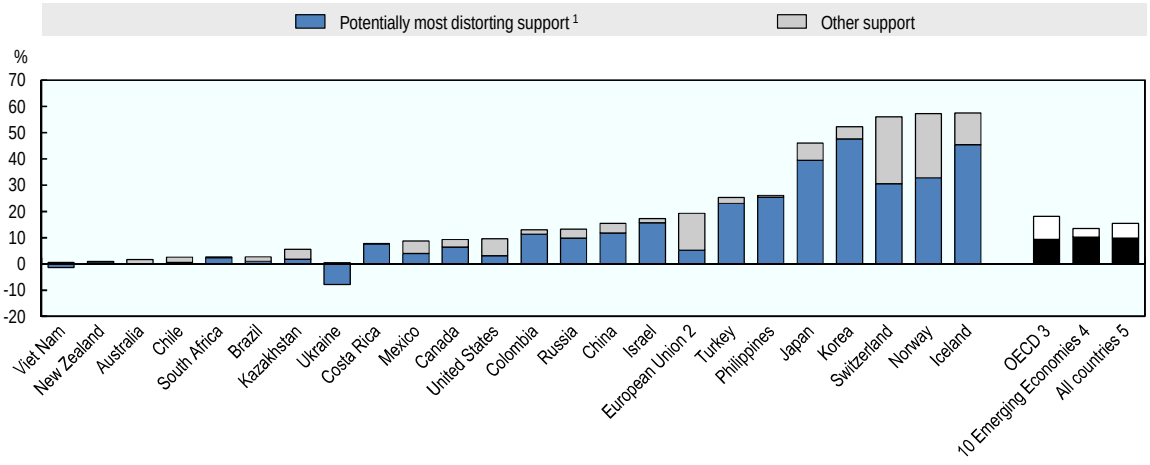
These distinctions are important. The measures listed above will affect agricultural production, incomes, trade and other outcomes differently. For example, MPS has negative impacts on world markets and distorts price signals faced by farmers, reducing incentives to improve efficiency in agricultural production. Moreover, the way in which producer support is provided also influences the ability of agricultural producers to participate in agriculture and food global value chains (GVCs), and the benefits obtained from participation (Box 1.4). 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 1.8). 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). The effects of these types of policies are explored below. 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.

On average, support provided through measures that are most distorting for production and trade accounted for almost two-thirds of the support provided to farmers in 2015-17. In general, such measures are more important in the emerging and developing economies, where they account for over 75% of producer support, compared with 52% of producer support 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 1.8. Composition of the Producer Support Estimate by country, 2015-17

Percentage of gross farm receipts



Notes: Countries are ranked according to the absolute values of the 2015-17 levels.
1. Support based on output (including market price support and 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 10 Emerging Economies are Brazil, China, Colombia, Costa Rica, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam. The Philippines and Viet Nam are included from 2000 onwards. Indonesia is not included in this report.
5. The All countries total includes all OECD countries, non-OECD EU Member States, and the Emerging Economies.
Source: OECD (2018b), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755089

In many OECD countries – as well as in most Emerging Economies – MPS makes up the largest part of support to producers (PSE). However, this also includes some countries with very low levels of support. MPS allows policy makers to support producers without directly burdening the public budget, as support to farmers is paid by consumers of protected products, some of whom may be poor and food insecure. Moreover, importing countries often generate some of their public revenues from import tariffs on agricultural commodities. But market price support does not allow policy makers to discriminate between beneficiaries or target non-farm income objectives. Moreover, the income transfer efficiency of border protection is low, limiting its effectiveness as a measure for raising farm incomes (OECD, 2003).

For the OECD as a whole, MPS was around 45% of the PSE in 2015-17. MPS represents a significant component of producer support in Israel, Japan and Turkey (more than 80% of the PSE) and more than 90% of the PSE in Korea. However, the share of MPS is notably less in countries that rely to a greater extent on direct payments to support producers like Mexico, the United States, the European Union, and also high support countries like Norway and Switzerland. MPS is also significant in the emerging and developing economies, accounting for over 90% of producer support in Costa Rica, the Philippines, more than 80% in Colombia, and more than 50% in China, the Russian

Federation and South Africa (although as noted previously, South Africa's PSE is low at less than 3% of producer support).

In contrast, MPS was negative in Ukraine and Viet Nam as producers of some commodities receive prices below those on world markets. However, in some cases the implicit taxation of producers is not exclusively a policy outcome but reflects what can be broadly termed a 'market development gap'. This can arise from underdeveloped physical infrastructure and institutional deficiencies in emerging and developing economies, which can impede market adjustment and exacerbate the impacts of policies on prices, contributing to the negative results. For example, in Viet Nam producers of export-competing commodities receive prices that are lower than international prices, resulting in negative MPS in some years. However, poor infrastructure contributes to the negative results (OECD, 2015a). Similarly, the forthcoming OECD Review of Agricultural Policies in India finds that negative producer support was due to a combination of factors, as discussed in Box 1.5.

Regarding the other measures that are potentially most distorting for agricultural production and trade, payments based on output are provided to farmers in Iceland (23% of the PSE in 2015-17) and Kazakhstan (15%), and account for 5% to 8% of the PSE in Norway, Turkey and Brazil. 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, Mexico and South Africa (20% or more of the PSE in 2015-17), as well as in Chile, Israel and the Russian Federation. 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. 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.

Less distorting forms of 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 more than 60% in South Africa, and also a significant share of producer support in Australia (41%) and Mexico (35%).

Second, payments based on area, animal numbers, farm receipts or farm income are increasing in the OECD countries (Figure 1.9). In 2015-17, such payments accounted for a large share of producer support in the European Union (64% of the PSE in 2015-17), the United States (45% of the PSE), Norway (40%), Australia (54%) and Switzerland (32%), among other countries. These types of payments are also increasing in China and Kazakhstan, where they represented 14% and 15% of the PSE in 2015-17. However, they are less common in the other emerging and developing economies, accounting for less than 5% of the PSE on average.

Box 1.4. Domestic support and global value chain development and benefits

Agricultural support, and the way that support is provided, can influence the ability of agricultural producers to participate in agriculture and food global value chains (GVCs). It also influences the benefits obtained from participation. GVC participation can be summarised in two ways. First, through looking at purchases of foreign inputs (value added) to be converted into exports – backward participation in GVCs. For example, a flour miller buys foreign wheat to produce exports, or a fruit grower uses imported machinery to help produce exports. Second, through looking at the use of domestic production (value added) in other country exports – forward participation in GVCs. This includes, for example, the use of exports of flour in another country's exports of biscuits. The benefits from GVC participation are measured by domestic value added – the returns to land, labour and capital (including taxes paid and excluding subsidies). Participation in agro-food GVCs can lead to sector growth through both export growth and through influencing overall sector performance (Greenville, Kawasaki and Jouanjean, 2018). Thus, measures to enhance GVC participation can have longer run payoffs. More immediately, policies can also influence the gains from current participation in GVCs through influencing the returns (domestic value added) created.

Policies that influence market prices and confer market price support, such as tariffs, have been found to negatively influence both backward and forward participation. Specifically, countries' own tariffs reduce backward participation, while forward participation is reduced by trading partners' tariffs (Greenville, Kawasaki and Beaujeu, 2017). Furthermore, these policies and other aspects of market openness (such as the ability to import inputs from a wide range of sources) enhance the potential benefits from GVC participation (Greenville, Kawasaki, Jouanjean, forthcoming; Greenville, Kawasaki and Beaujeu, 2017).

General support measures can have a positive influence on backward participation (Greenville, Kawasaki and Beaujeu, 2017). While each general support measure needs to be evaluated on its merits to ensure that it addresses market failures, agricultural support policies that are geared towards general support payments – measured as the share of general services support in total support – are likely to promote backwards participation through providing public services and inputs that promote competitiveness and access to international markets without overly creating distortions in the domestic economy and sector that may negatively affect competiveness (in contrast with some PSE-related measures). Looking at specific aspects of general support, agricultural research and development was found to enhance backward participation. On the forward participation side, the level of general services payments overall was found to enhance forward participation in agro-food GVCs. Specific elements of general support – research and development and infrastructure – were also found to enhance the benefits from GVC participation by leading to higher levels of domestic value added earned from exports into GVCs. These elements can provide producers with the skills and economic capacities to adopt new techniques and technology, often sourced internationally. These factors underpin competitive access to foreign markets through GVCs.

The influences of producer support on participation and domestic value added creation are more complex. For forward participation, all types of support (potentially most-distorting and less-distorting ones) were correlated with higher levels of participation. However, higher levels of most-distorting payments were also found to decrease domestic

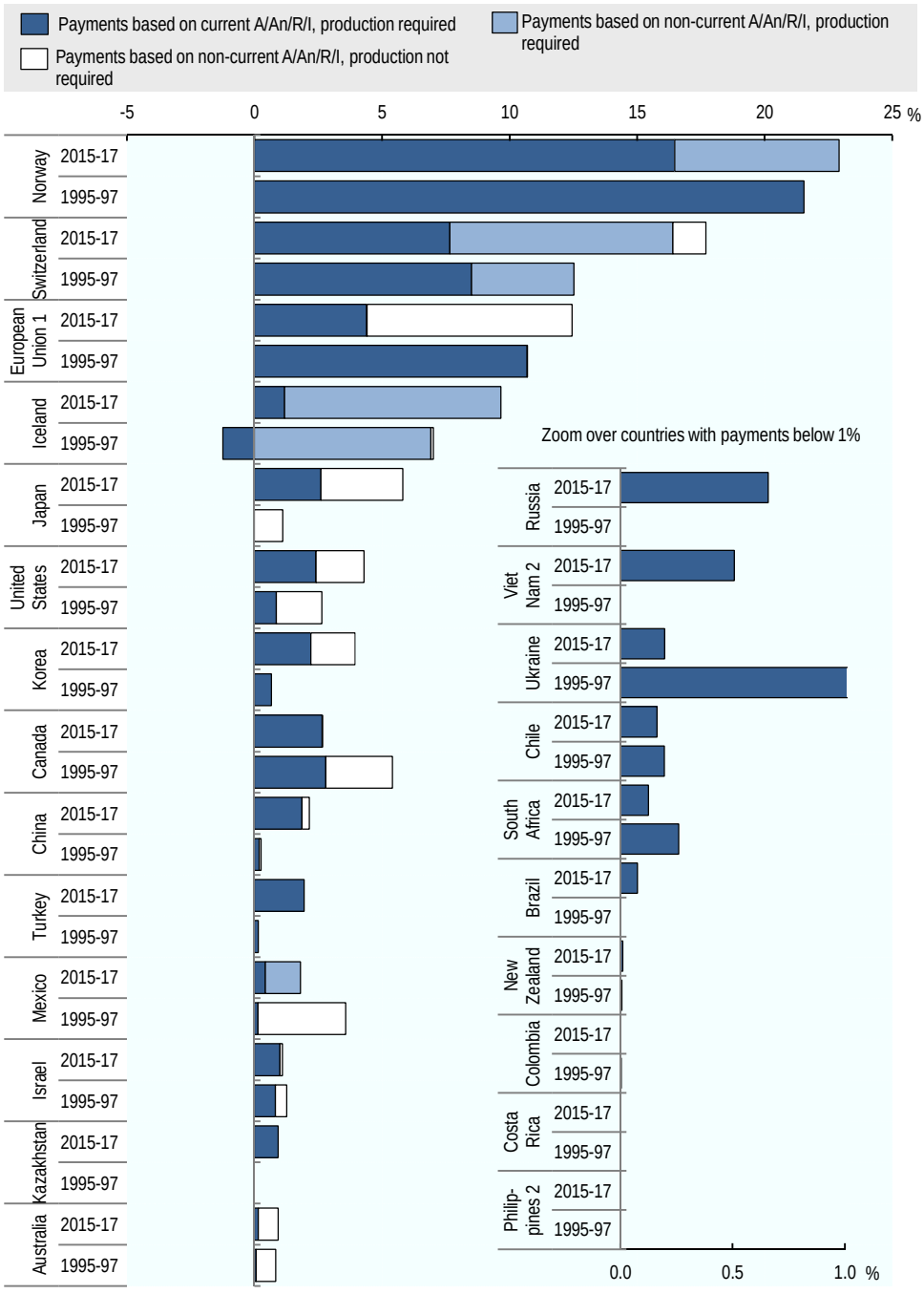
value added from GVC participation. That is, while increasing forward participation, they decrease the domestic returns from being part of GVCs, so while a country may see greater participation from this form of support, it is worse off for doing so (in terms of total domestic returns) – the country pays to participate in GVCs rather than earning from it. In contrast for less-distorting payments, the positive impact on forward participation is not accompanied with a negative effect on domestic value added creation. Thus it can enhance this type of participation without the costs seen for most distorting forms of support – possibly through allowing producers to enter value chains by correcting market failures or by allowing them to produce in a more sustainable and traceable fashion.

Sources: Greenville, Kawasaki and Jouanjean (2018), "Dynamic changes and effects of agro-food GVCs", *OECD Food, Agriculture and Fisheries Papers* (forthcoming); Greenville, J., K. Kawasaki and R. Beaujeu (2017), "How policies shape global food and agriculture value chains", *OECD Food, Agriculture and Fisheries Papers*, No. 100, OECD Publishing, Paris, http://dx.doi.org/10.1787/aaf0763a-en.

There is a trend towards payments that are less coupled with production decisions (Figure 1.9). 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 2015-17. In the European Union, payments based on current area, animal numbers, farm receipts or incomes have been cut by almost two-thirds since the mid-1990s in favour of direct payments 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 1.9. Use and composition of support based on area, animal numbers, receipts and income, by country, 1995-97 and 2015-17

Percentage of gross farm receipts



Notes: Countries are ranked according to the 2015-17 levels.
1. EU15 for 1995-97 and EU28 for 2015-17.
2. For the Philippines and Viet Nam, 1995-97 is replaced by 2000-02.
Source: OECD (2018b), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755108

Box 1.5. Insights from the Review of Agricultural Policies in India

The Review of Agricultural Policies in India (OECD, forthcoming) has been undertaken jointly by the OECD and the Indian Council for Research on International Economic Relations (ICRIER). Agriculture is a key sector in India, at around 47% of total employment and 17% of GDP. The study analyses structural change and performance in India's agricultural sector over the past decades. Sustained by an improved access to inputs such as fertilisers and seeds, as well as better irrigation and credit coverage, production has been increasing and diversifying towards fruit, vegetables and livestock products. India also emerged as a major agricultural exporter of several key commodities, currently being the largest exporter of rice and the second largest of cotton.

Despite these notable achievements, challenges remain; among them, the prevalence of very large numbers of smallholders, low productivity, climate change, pressure on natural resources such as water, persistent food insecurity, and an under-developed food processing and retail sector.

The Review also explores India's agricultural policy settings and calculates support indicators covering 2000-16, comparable to those presented for OECD members and a number of non-OECD economies in this report. Throughout the last decades, agricultural policies in India have sought to achieve food security, often interpreted as self-sufficiency, while ensuring remunerative prices to producers and safeguarding the interest of consumers by making supplies available at affordable prices. As reflected in the analysis based on the support indicators - and in the context of the pressing structural challenges hampering the sustainable growth of the sector the policy instruments applied with the view to achieve these objectives have had mixed results, with farm incomes at less than one-third of those of non-agricultural households.

The level of support to producers as measured by the share of transfers from consumers and taxpayers in gross farm revenues (the %PSE) averaged -6.2% in 2014-16 (equivalent to INR -1 643 billion) made up of budgetary spending corresponding to 6.9% of gross farm receipts (INR 1 816 billion) and market price support of -13.1% of gross farm receipts (INR -3 458 billion). This negative %PSE, made up from negative and positive components, needs careful interpretation.

Almost all commodities examined experienced at least one year of negative market price support in the 2000 to 2016 period, and several commodities registered negative market price support in all years. In other words, producer prices have for many years and for many commodities remained below comparable reference prices in international markets and domestic producers were implicitly taxed. This is partly policy-induced, partly related to other inefficiencies in the marketing chain and partly due to minimum support prices being set below international prices for several commodities at different periods between 2000 and 2016. Policy-induced inefficiencies result from both domestic regulations and trade policy measures. Policies that govern the marketing of agricultural commodities in India include the Essential Commodities Act (ECA) and the Agricultural Produce Market Committee Acts (APMC). Through these Acts, producer prices are affected by regulations influencing pricing, procuring, stocking, moving, and trading commodities. Restrictions stemming from the ECA and APMC Acts also deter private sector investment in marketing infrastructure. Differences among the states in the status of their respective APMC Acts and in how these acts are implemented add to the uncertainties in

supply chains and drive up transaction costs. Overall, the combination of market regulations and infrastructure deficiencies has had a price depressing effect.

In addition, a variety of trade policy measures - such as export prohibitions, export quotas, export duties, and minimum export prices - impede the export of several key commodities and contribute to depressed producer prices. For example, export restrictions or export bans were applied to wheat, non-basmati rice, chickpeas, sugar and milk at different times over the course of the period studied.

Virtually all of the budgetary transfers to agricultural producers in India are accounted for by payments based on variable input use, with overwhelmingly subsidised fertilisers, electricity, and irrigation water. In turn, public expenditures financing general services to the sector (GSSE) have declined over the last decades. Most of this expenditure is in development and maintenance of infrastructure (particularly hydrological infrastructure), followed by the cost of public stockholding and expenditure on the agricultural innovation system.

A corollary to the farm price-depressing effect of the policy set is the resulting support to consumers, as reflected by the %Consumer Support Estimate (%CSE) of 24.7% on average across all commodities in 2014-16. This support is made up of low prices and government subsidies. With producer prices for many commodities below the border reference prices, consumers are paying less for food than they otherwise would. An additional important component of consumer support in India is the food subsidy, which allows large segments of the population to purchase food grains at prices that are much lower than their already low domestic market prices.

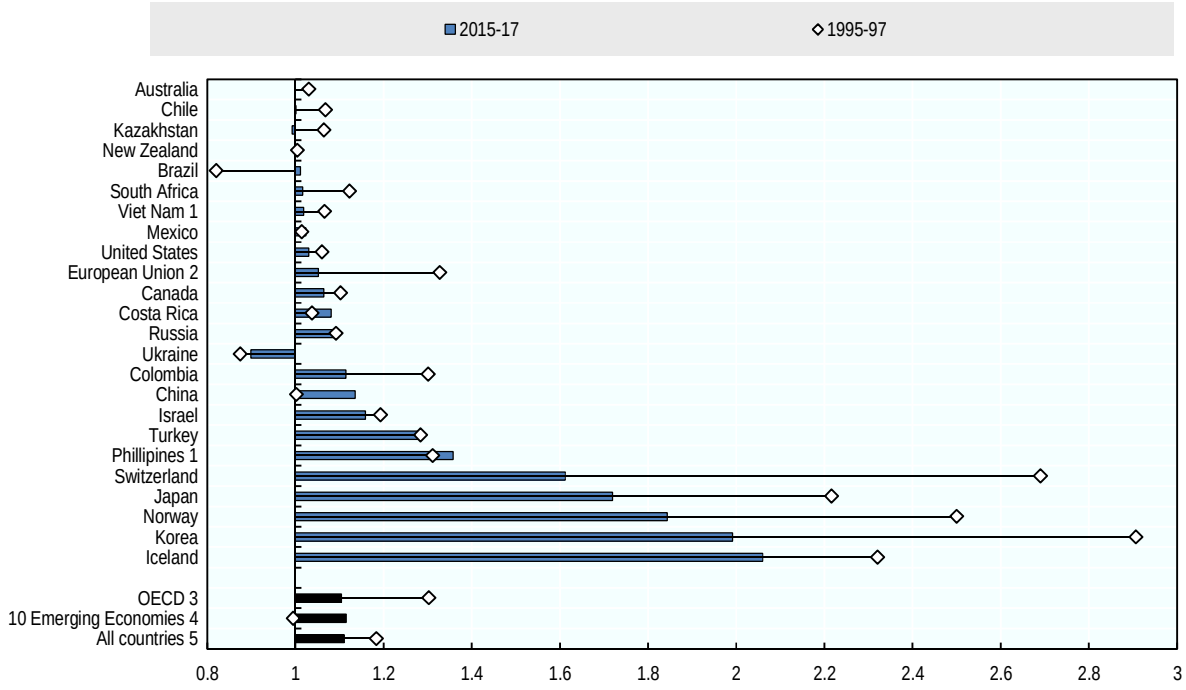
The sum of all positive transfers (i.e. budgetary transfers to producers, to agriculture as a whole, and transfers to consumers from taxpayers), without accounting for the negative market price support, amounts to 1.9% of GDP in 2014-16. This shows the high cost to the Indian economy and contrasts with the sector's relatively poor performance in productivity growth, highlighting the need for resources to be used more effectively.

Source: OECD (2018c), *Agricultural Policies in India*, OECD Food and Agricultural Reviews, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264302334-en.

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 1.10 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, 10% higher than world market prices in 2015-17, compared with around 30% higher in the mid-1990s. Countries that have made substantial progress in aligning effective producer prices with world market prices include Chile, Colombia, the European Union, Korea, South Africa and Switzerland.

Figure 1.10. Producer Nominal Protection Coefficient by country, 1995-97 and 2015-17



Notes: Countries are ranked according to the distance of 2015-17 NPC levels to a neutral NPC of 1.
1. For the Philippines and Viet Nam, 1995-97 is replaced by 2000-02.
2. EU15 for 1995-97 and EU28 for 2015-17.
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 EU for 2015-17. Latvia is included in the OECD and in the EU only for 2015-17.
4. The 10 Emerging Economies are Brazil, China, Colombia, Costa Rica, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam. The Philippines and Viet Nam are included only for 2015-17. Indonesia is not included in this report.
5. The All countries total includes all OECD countries, non-OECD EU Member States, and the 10 Emerging Economies.
Source: OECD (2018b), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755127

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 3% above world market prices in Mexico, South Africa and the United States. In almost all other countries, effective prices received by producers are, on average, higher than world prices. Effective producer prices are 28% higher than world prices in Turkey and 36% higher in the Philippines, whereas effective producer prices in Iceland, Japan, Korea, Norway and Switzerland are 60% to 100% 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 mid-1990s.

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 mid-1990s, but 14% higher than world market prices in 2015-17. Effective producer prices have also increased in Costa Rica and the Philippines. As noted above, in Brazil prices received by farmers have increased since 1995-97, bringing them into alignment with world prices. There are exceptions, most notably Ukraine, where effective producer prices were around 10% lower than their international benchmarks in 2015-17.

Nevertheless, a large share of support targets individual commodities, which distorts the production mix in the sector

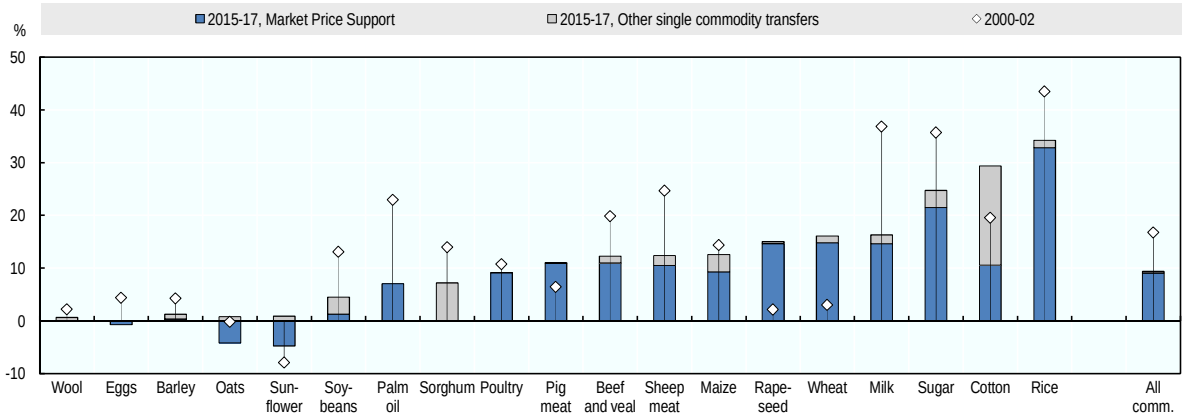
While the NPC in Figure 1.10 indicates that many countries are moving away from MPS and output related support that increases (or decreases) effective prices relative to world market prices, a large share of producer support in 2015-17 was provided to individual commodities. The use of single commodity support is considered to be one of the most production and trade distorting forms of support. The reason for this is that the measures employed are, by definition, targeted to the production of specific products or the use of specific inputs into the targeted sectors. This can create allocative inefficiencies within countries' agricultural sectors by biasing production and resources towards certain commodities at the expense of others.[2] It can also reduce resilience and adaptation to climate change by encouraging farmers to plant specific crops, even if they are not well suited to local climate conditions (OECD, 2017b).

On average, single commodity transfers (SCTs) have declined from 17% of the gross farm receipts for each commodity in 2000-02[3] to 11% in 2015-17 (Figure 1.11). Importantly, variability across commodities has also declined – significant differences in SCTs across commodities can impede adjustment in the agricultural sector and efficient resource use. Support has declined for some of the commodities that received the highest relative levels of support in 2000-02, such as rice, milk, sugar, sheep meat and palm oil. However, support for some heavily supported commodities has trended up over time compared with 2000-02, in particular cotton, rapeseed and wheat. The reforms and policy developments underlying these trends are discussed in more detail in OECD (2017c).

Because market price support represents the largest share of SCT (Figure 1.11), trends in SCTs tend to move with developments in international markets. As discussed in OECD (2017c), SCTs have declined as a share of the PSE since the early 2000s. However, the fall was uneven – after falling between 2000 and 2008 (the height of the food price spike), SCTs subsequently increased. This suggests that in aggregate, the policies directed at isolating domestic markets from international prices for individual commodities have not changed significantly over the period.

Figure 1.11. Single Commodity Transfers, all countries, 2000-02 and 2015-17

Percentage of gross receipts for each commodity



Notes: Commodities are ranked according to the absolute value of % SCT in 2015-17. Not all commodities are relevant for all countries. Indonesia is not included in this report.
Source: OECD (2018b), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755146

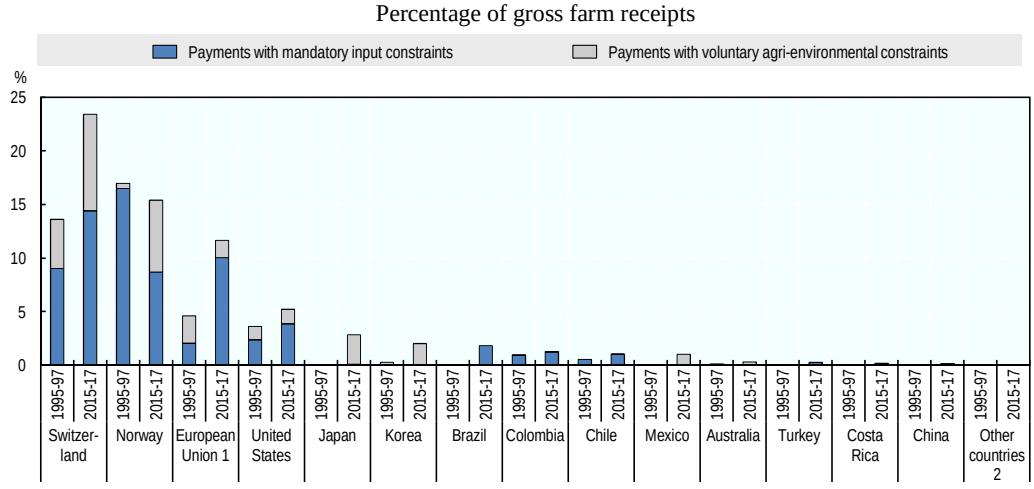
Payments are increasingly tied to specific production practices, reflecting the importance of objectives related to society at large

In some countries, payments are increasingly tied to specific production practices to encourage producers to adopt specific production 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. 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.

Payments linked to mandatory production 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 farmers 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 farmers. Payments linked to the adoption of voluntary agri-environmental constraints and programmes are increasingly used in Japan, Korea and Norway. Other countries also use these types of payments to promote environmental objectives, including Australia, the European Union, Switzerland and the United States.

In some countries, this form of support has become more important for farmers as well, including in countries with high levels of support overall. Over 15% of gross farm receipts derive from such conditional payments in Norway, 23% in Switzerland, and almost 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. Support conditional on the adoption of specific production practices, 1995-97 and 2015-17



Notes: Countries are ranked according to 2015-17 levels.
1. EU15 for 1995-97 and EU28 for 2015-17.
2. Other countries include Canada, Iceland, Israel, Kazakhstan, New Zealand, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam. Indonesia is not included in this report.
Source: OECD (2018b), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

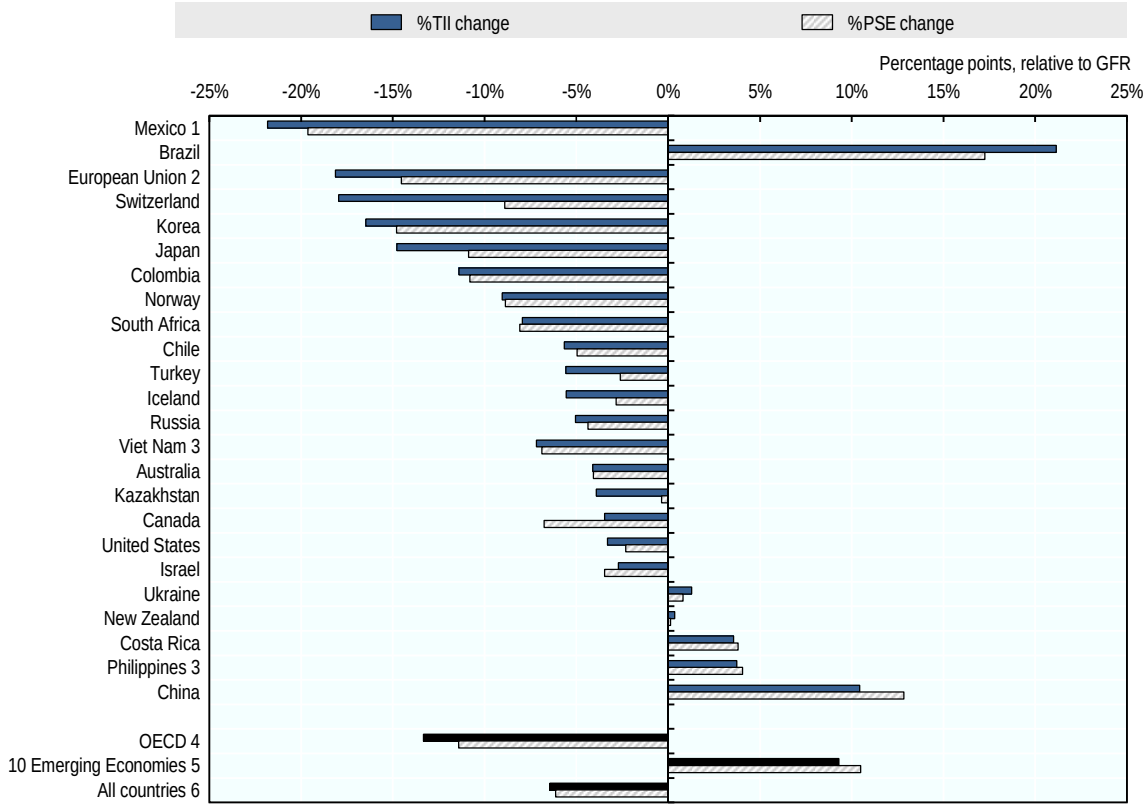
StatLink http://dx.doi.org/10.1787/888933755165

The trade distortive effects of support has often declined more strongly than support levels

Lower levels of farm support, as well as the shift towards less-distorting measures, has helped to make agricultural policy packages more market oriented in many countries. To show this, this section discusses changes in the Trade Impact Index over the past two decades and compares these across countries. The Trade Impact Index and the %PSE are both expressed relative to gross farm receipts (GFR), but rather than being a measure of transfers to producers, the %TII measures distortions to international markets through the trade effects of the policies in place. Box 1.6 provides details on the way the Trade Impact Index is generated.

Figure 1.13 shows that in most countries, the trade impact of their portfolio of agricultural policies has declined more strongly over the past two decades than the reduction in support levels alone would suggest. For the OECD as a whole, while the %PSE declined by about 11 percentage points between 1995-97 and 2015-17, its Trade Impact Index declined by 13 percentage points during the same period. This section explores this further by considering changes in the Trade Impact Index of individual countries' policies, given changes in the level and structure of their support.

Figure 1.13. Percentage point changes in %PSE and Trade Impact Index, 1995-97 to 2015-17



Notes: Countries are ranked according to the Trade Impact Index (TII) changes towards zero. Positive bars show increases in the trade impacts of policies, which in some cases indicate reduced distortions. For example, Brazil's %PSE increased from strongly negative to slightly positive, a policy change that eliminated most of the trade distortive effect that arose from the negative support; hence the increase in the country's Trade Impact Index indicates a removal of an originally negative trade impact in favour of a small positive one.

1. For Mexico, 1995-97 is replaced by 1991-93.
2. EU15 for 1995-97 and EU28 for 2015-17.
3. For the Philippines and Viet Nam, 1995-97 is replaced by 2000-02.
4. 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 EU for 2015-17. Latvia is included in the OECD and in the EU only for 2015-17.
5. The 10 Emerging Economies are Brazil, China, Colombia, Costa Rica, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam. The Philippines and Viet Nam are included only for 2015-17. Indonesia is not included in this report.
6. The All countries total includes all OECD countries, non-OECD EU Member States, and the 10 Emerging Economies.

Source: OECD calculations based on PEM model results and OECD (2018b), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755184

For some countries, the difference between the PSE reduction and the decline in the associated trade impact is particularly strong. **Switzerland**, for instance, has reduced its level of farm support by 9 percentage points, from 65% in the mid-1990s to 56% in 2015-17. At -18 percentage points, the reduction in its Trade Impact Index was much greater, falling from almost 50% in the mid-1990s to less than 32% in the most recent period.

This is because the reduction in the level of support was mainly driven by the decline in market price support, which was almost halved during these twenty years (from 47% to 28% of gross farm receipts). In turn, there was an increase in support provided through: payments based on historical entitlements, which rose from 4% of gross farm receipts (GFR) in 1995-97 to 10% of GFR in 2015-17; and payments for non-commodity outputs, which increased from less than half a percent of GFR to almost 6% of GFR during the same period. As payments based on historical entitlement have a very small trade impact relative to that of MPS (according to PEM simulations, less than 1%) and given that payments for non-commodity outputs are presumed to have none (Box 1.6), this has little effect on trade even though the payments partially offset lower producer support from MPS, and hence only very partially offsets the liberalising effect of the MPS cut. Other categories saw additional minor changes, including a small increase in output payments and some reductions in payments for cereal land and for inputs subject to input constraints and others. But changes in these components alter the overall outcomes for %PSE and Trade Impact Index very little and tend to cancel each other out.

Other countries show similar differences between the change in the %PSE and that in the Trade Impact Index, though in most cases these are smaller than in the case of Switzerland. In the case of the **European Union**, the reduction in the Trade Impact Index is similar to that of Switzerland in percentage points (down from an equivalent of just under 25% of GFR to less than 7% over the two decades), while that of the %PSE was more pronounced (falling from 34% to 19% of GFR). Here too, the principal changes were the reduction in MPS and an increase in payments based on historical entitlements, with the increase in the latter partly offsetting the MPS. Lower MPS in the European Union, from 19% to 4% of GFR, was complemented by the virtual elimination of other distorting support measures: small output payments, worth more than 1% of GFR in 1995-97; headage payments in different forms (3%); and area payments for individual crops (1%) or all cereals (3%). Such payments tend to have trade-distorting effects below those of MPS, but well above those of some of the more decoupled payments. **Japan** is a similar case, although support levels in Japan are closer to those in Switzerland than the European Union: reductions in (highly-distorting) market price support were partly compensated by increased payments of a much less distorting nature, thus reducing the %PSE by less than the Trade Impact Index. Most other OECD countries (as well as a few Emerging Economies) show reductions in the Trade Impact Index that also go beyond those in the %PSE.

In contrast, the change in **Canada's** Trade Impact Index is much less pronounced (-3.5 percentage points) than the reduction in its %PSE would suggest (-6.8%, down from 16% to 9% of gross farm receipts). This is because a reduction in payments based on historical entitlements, worth 2.6% of GFR in 1995-97, accounted for a large part of the decline in producer support. Therefore, a significant part of the PSE reduction affected support with very little trade effect.

Israel, too, has seen its Trade Impact Index change by less than the PSE. While Israel has reduced support for variable inputs without constraints to their use, which is found to have a particularly high potential to distort production and trade, MPS actually increased as a share of gross farm receipts. More importantly for the difference in support and trade impact, and similar to Canada, some of the reduction in support concerned measures that were less trade distorting, such as payments based on farm income or on historical entitlements.

For different reasons, several of the Emerging Economies show different patterns from those discussed above. **China** has increased its levels of support over the past two decades from less than 3% to more than 15% of gross farm receipts. However, the increase in its trade impact was somewhat less pronounced. Because some of the increase in support was in the form of less-distorting policies, including area payments (both to individual crops and to crop groups), payments based on farm income and, to a small extent, historical entitlements, China's Trade Impact Index 'only' increased from 2% to 12.5% relative to GFR. The **Philippines** and **Costa Rica** also show increases in their trade impacts that are smaller than those in their %PSEs, though these changes are much smaller than for China.

Brazil's development tells a very different story. While Brazil also increased support to farmers, this was from a negative overall level (-15% of GFR), to slightly positive support (3%). In particular, strongly negative MPS became slightly positive. However, given that negative MPS is as distortive as positive MPS, the increase in the Trade Impact Index associated with this increase in the PSE and visible in Figure 1.13 indicates significantly reduced distortions.

Ukraine also slightly increased its farm support from negative levels. However, by moving from -8.5% to -7.7% of GFR, its PSE remained strictly negative due to continued (although shrinking) negative MPS. Here again, the positive change in the Trade Impact Index indicates that the trade distortive impact of Ukraine's policies was actually reduced, as average MPS relative to GFR became less negative and hence less distorting.

Kazakhstan, in contrast, has barely changed its overall level of farm support, but strongly changed its composition. Although MPS was eliminated on average (in fact, MPS was marginally negative during 2015-17), this was almost completely compensated by other, less-distorting forms of support, such as support for fixed capital formation and support based on farm incomes.

Finally, in **South Africa**, the level of support and the Trade Impact Index both declined by about 8 percentage points relative to gross farm receipts. Here, almost all of the change in support concerned MPS, while some increased support in less-distorting forms (based on farm incomes) is associated with an increase in payments based on unconstrained input use, which is more distorting than MPS.

On average over the past two decades, the Emerging Economies covered in this report have increased their level of support by more than 10 percentage points relative to gross farm receipts, while the aggregate Trade Impact Index increased by 9 percentage points. The comparatively small difference between these changes is due to the fact that in the mid-1990s, negative support in Brazil offset some of the effects on international markets of positive support in other Emerging Economies. In both periods, however, the Trade Impact Index was smaller than the average %PSE.

This is even more so in the aggregate of all countries covered in this report: while the change in the average Trade Impact Index is similar to that of the average %PSE, the Trade Impact Index is about 5 percentage points below the %PSE in both periods.

To assess agricultural policies in terms of their impacts on markets and, notably, on trade, it is therefore important to carefully examine not only the level of support but also the *composition* of the policy bundle. In addition to the different trade impacts that alternative policy categories can have, negative MPS is as trade-distorting as positive MPS. While positive and negative MPS estimates may cancel each other out in the aggregate, their trade impact does not necessarily do so. This in particular holds for the combination of

positive and negative MPS across commodities within individual countries. Future work could deepen the analysis by exploring the details of commodity-specific support further.

Box 1.6. How were the Trade Impact Indices generated?

The Trade Impact Index, an indicator of the relative trade distortion generated by policy packages, is based on the estimated trade impact of individual policies relative to that of market price support. The Policy Evaluation Model (PEM) provides a means to estimate the trade impact of various policies by simulating alternative policy mixes resulting in the same trade outcomes. The trade impact ratio of policy support compares the transfers provided through a given policy measure to the monetary value of market price support (MPS) that would generate the same trade effect. This approach is rooted in the derivation of summary indexes of trade policy pioneered by Anderson and Neary (1996), taking it to a detailed measuring and modelling of agricultural policies. A trade impact ratio greater (or smaller) than 1 suggests that a measure has a stronger (weaker) trade effect than MPS. Previous analyses have shown that the trade impact of support linked to the unconstrained use of variable inputs is greater than that of MPS (a trade impact ratio greater than 1), while the trade impact of other measures tends to be smaller, ranging from a few percent of the trade impact of MPS in the case of area payments based on non-current parameters, to close to the trade impact of MPS in the case of output payments (Martini, 2011).

The trade impact ratios obtained from PEM for each of the two periods (1995-97 and 2013-15) and for each of the PEM countries[1] in which a given policy category was present in those years. Rations are then averaged across countries and years. For instance, in the three years 1995-97 and across PEM countries, single-commodity area payments were applied in Canada, Switzerland and the EU; these were found to have a trade effect of between 11.8% and 23.7% across countries and years. This results in an average of 19.3% for that period, similar to the 17.0% for the 2013-15 period. The resulting ratios for the 1995-97 and 2013-15 periods are then applied to the support data for all countries in the PSE database associated with this report, reported for the 1995-97 and 2015-17 periods, respectively. As in the example given above, trade impact ratios for a given policy category generally differ to a certain extent across countries and time, and further research may be required to better understand the exact reasons for these differences. To avoid spurious differences across countries, averages are used for the relative trade impacts across policy categories.

The trade impact ratios thus obtained for individual forms of support represented in the PEM are then used to calculate the countries' trade impact equivalents. These equivalents represent the level (or value) of MPS that would generate the same trade effect as a country's entire policy package. This method, updating and extending previous PEM applications including Martini (2011), allows a comparison of the trade impact of the policy packages across countries and time, by extrapolating PEM results (available only for a limited set of jurisdictions and commodities) to all countries and products covered by this report, based on the level and type of support provided in existing policy mixes.

Several policy categories, such as support for non-commodity outputs, are not

reflected in PEM. These are implicitly assumed to not affect market decisions. For most of them, this probably underestimates their trade effect, while some forms of support may in reality may have a negative effect on agricultural output and, hence, on trade (for example, if some productive land is used for amenities such as hedges or green strips). As most of the policies not covered by PEM are unlikely to have a strong trade impact of either sign, and as they represent only a small share of countries' PSE, the error in the estimation of the overall trade effect is probably small.

Similar to the PSE, the value of an MPS equivalent is difficult to compare across countries and time, as it tends to be larger for large agricultural sectors than for smaller ones. As in the case of the %PSE, the Trade Impact Index therefore expresses the value of the MPS equivalents as a percentage of gross farm receipts (GFR). As opposed to the %PSE, which is a measure of transfers, the Trade Impact Index is a measure for the distorting trade impact generated by the policy mix. As negative support can result in distortions worth eliminating just as much as positive support, a negative Trade Impact Index may be considered as much of a problem as a positive one. An increase of a negative Trade Impact Index towards zero therefore indicates a decline in the distorting effects of the policy package.

Due to the uncertainties around country-specific trade-impact ratios, a caveat on the precision of the results shown above applies: these should be seen as indications of relative changes rather than as exact in their magnitudes.

1. Countries covered by PEM currently include Canada, the European Union, Japan, Korea, Mexico, Switzerland and the United States.

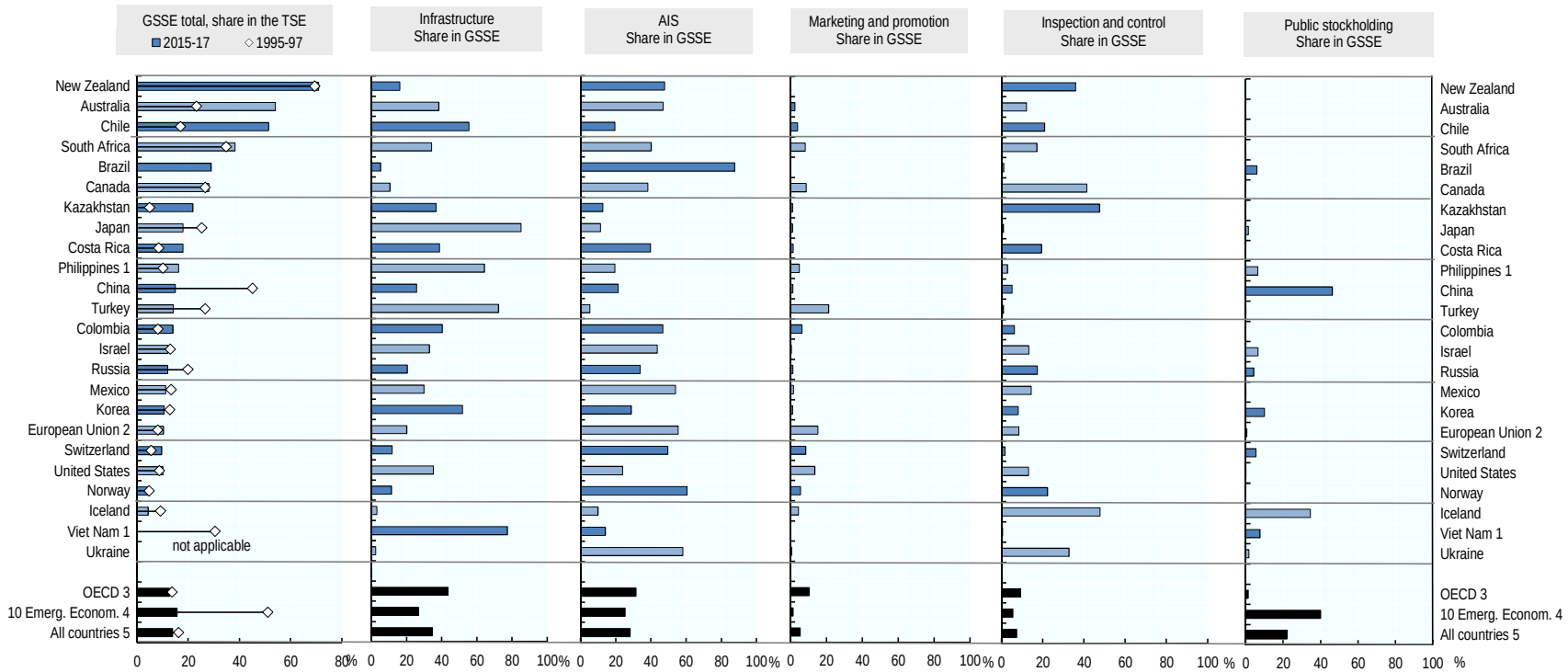
Sources: Anderson, J. and J.P. Neary (1996), "A New Approach to Evaluating Trade Policy", *Review of Economic Studies*, Vol 63 pp. 107-125; Martini, R. (2011), "Long Term Trends in Agricultural Policy Impacts", *OECD Food, Agriculture and Fisheries Papers*, No. 45, OECD Publishing, Paris, http://dx.doi.org/10.1787/5kgdp5zw179q-en.

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). As described previously, on average, support for general services accounts for a much smaller share of total support than support provided directly to producers, averaging 14% of the TSE for all countries covered in this report in 2015-17.

The relative importance of general services in total support varies across countries. As shown in the first panel of Figure 1.14, Australia (54% of total support), Chile (51%) and New Zealand (71%) provide most of their support to agriculture through financing sector-wide services, while South Africa provides 38% of total support, and Brazil and Canada just under 30% of total support. General services account for a much smaller share of total support in most other countries. In some countries, the %GSSE has declined since the mid-1990s, most significantly in China (from almost 45% of total support in the mid-1990s to 15% in 2015-17) but also in Iceland, Japan, Korea, Mexico, the Russian Federation and Turkey.

Figure 1.14. General Services Support Estimate: Share in TSE and composition



Notes: Countries are ranked according to 2015-17 GSSE shares in the TSE. The residual "miscellaneous" category is not shown. AIS = Agricultural Innovation System.1. For the Philippines and Viet Nam, 1995-97 is replaced by 2000-02. Data is not applicable for Viet Nam in 2015-17. 2. EU15 for 1995-97 and EU28 for 2015-17. 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 EU for 2015-17. Latvia is included in the OECD and in the EU only for 2015-17. 4. The 10 Emerging Economies are Brazil, China, Colombia, Costa Rica, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam. The Philippines and Viet Nam are included from 2000 onwards. Indonesia is not included in this report. 5. The All countries total includes all OECD countries, non-OECD EU Member States, and the 10 Emerging Economies.

Source: OECD (2018b), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755203

Countries also 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 Japan, Turkey and Viet Nam, and infrastructure represents more than half of general services expenditure in Chile, Korea and the Philippines – often to improve irrigation coverage and quality. The agricultural innovation system (AIS) is prioritised in Australia, Brazil, Colombia, the European Union, Israel, Mexico, New Zealand, Norway, Switzerland and Ukraine, and plays a key role in many other countries as well. For the OECD countries on average, infrastructure (44% of the GSSE) and the AIS (32% of the GSSE) accounted for more than 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. Public support for the agricultural innovation system is explored further in the following section on ***Developments in approaches to support and policies***.

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.

This implies an important redistribution, which 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.

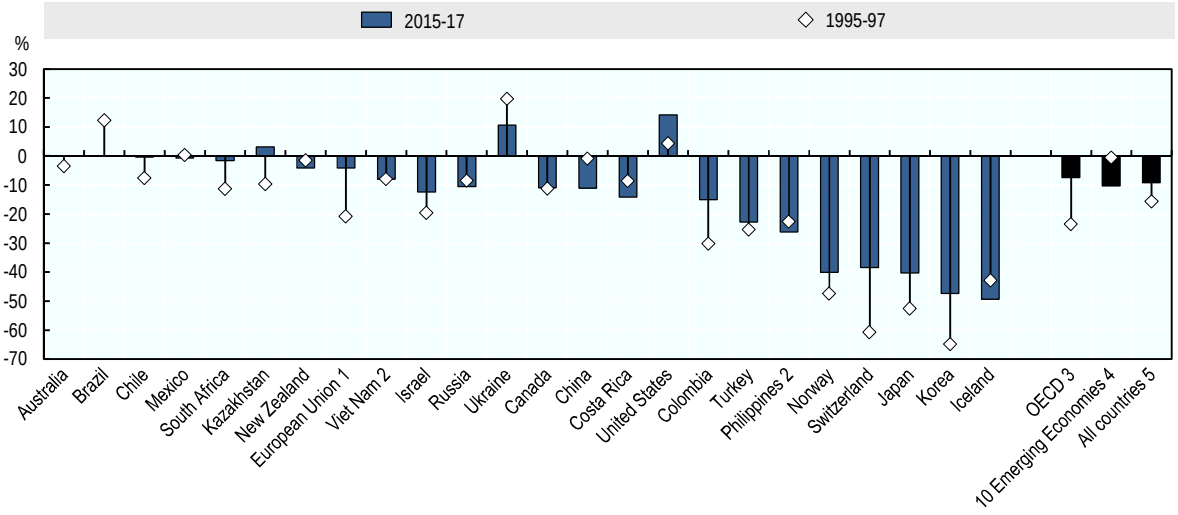
Consumers in almost all countries are harmed by agricultural policies, although to different degrees (Figure 1.15). In 2015-17, the implicit tax on consumers – as indicated by a negative %CSE – ranged from less than one percent in Brazil, Chile and Mexico, to more than 40% in Iceland, Japan, Korea and 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. In China, Costa Rica, the Philippines and the Russian Federation, the %CSE is more negative in 2015-17 relative to its value in the mid-1990s.

A minority of countries provide positive net-support to their consumers, specifically Ukraine (%CSE of 11% in 2015-17), the United States (14%) and, to a lesser extent, Kazakhstan (3%). However, they do so in very different ways. In Ukraine and

Kazakhstan, domestic market prices are, on average, below prices on world markets, which benefits consumers at the expense of agricultural producers. In contrast, the United States has significant domestic food assistance programmes for specific groups of the population, more than offsetting the somewhat higher domestic prices. The %CSE has more than tripled since the mid-1990s, as a result of declining market price support and the expansion of the nutrition programmes, making it the highest consumer support among the countries covered in this report – in value terms, relative to consumer expenditures, and as a share of the Total Support Estimate.

Figure 1.15. Consumer Support Estimate by country, 1995-97 and 2015-17

Percentage of consumption expenditure at farm gate



Notes: Countries are ranked according to absolute values of the 2015-17 levels. A negative percentage CSE is an implicit tax on consumption.
1. EU15 for 1995-97 and EU28 for 2015-17.
2. For the Philippines and Viet Nam, 1995-97 is replaced by 2000-02.
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 EU for 2015-17. Latvia is included in the OECD and in the EU only for 2015-17.
4. The 10 Emerging Economies are Brazil, China, Colombia, Costa Rica, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam. The Philippines and Viet Nam are included from 2000 onwards. Indonesia is not included in this report.
5. The All countries total includes all OECD countries, non-OECD EU Member States, and the 10 Emerging Economies.
Source: OECD (2018b), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755222

Developments in approaches to support and policies: A closer look at agricultural innovation for sustainable productivity growth

Notwithstanding the diversity of countries featured within this report, the challenges facing their agricultural sectors – and motivating their agricultural policies – are broadly the same. These include ensuring the economic viability of the sector; responding to growing demand for food and non-food uses of agricultural commodities; using available

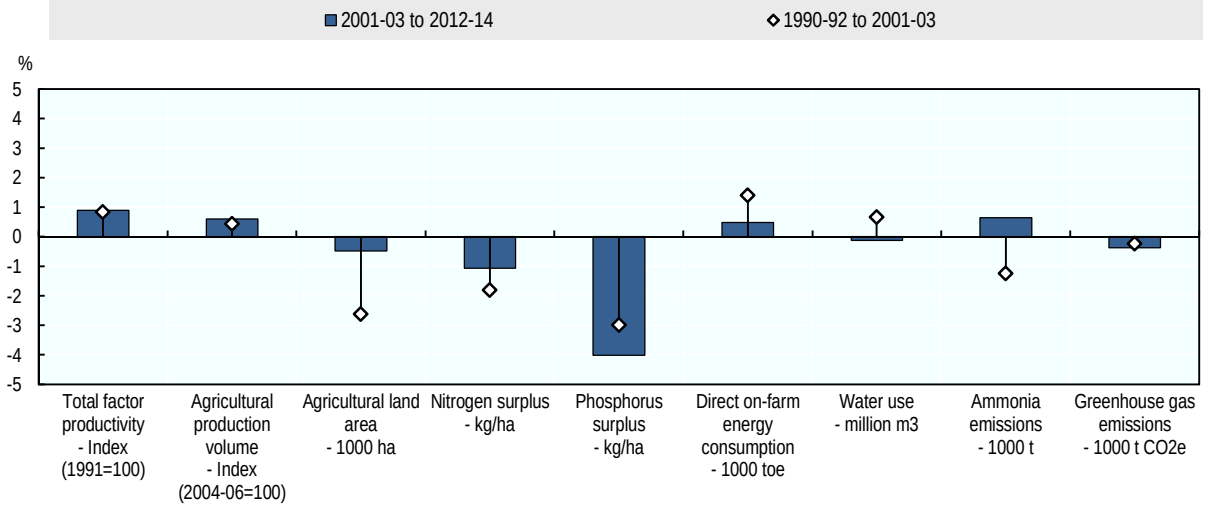
land, water and biodiversity resources more sustainably; and adapting to and mitigating climate change effects. This section takes a closer look at the extent to which the innovation policy environment in the countries included within this report fosters the creation and adoption of appropriate agricultural innovation that can potentially contribute to sustainable productivity growth. To this end, it highlights two key elements of agricultural innovation systems: knowledge *generation* (agricultural research and development) and knowledge *transfer* (agricultural extension, training and agricultural education).

The agricultural sector faces significant challenges

In recent years, significant productivity improvements in agriculture have enabled the sector to rise to the abovementioned challenges. Nevertheless, global productivity growth figures mask significant differences across regions, with lagging growth in some countries (OECD, 2016a; USDA, 2017b). In addition, while the sustainability performance of the sector in OECD countries has improved in some respects – reflecting declining trends in nutrient surpluses, for example (Figure 1.16) – trends in sustainability performance vary across countries, and national averages mask serious local problems. Unsustainable agricultural practices persist, potentially constraining long-term sustainable productivity growth. Environmental conditions may also pose obstacles to sustainable productivity growth in the long term (OECD, 2016a). Countries in emerging and developing regions, Southeast Asia, for example, also face pressing challenges with respect to both the sustainability of current agricultural practices and changing environmental conditions (OECD, 2017e).

Figure 1.16. OECD agri-environmental performance

Average annual percent change 1990-92 to 2001-03 and 2001-03 to 2012-14, or nearest available period



Source: OECD (2018d), *Agri-environmental Indicators* (database), http://www.oecd.org/tad/sustainable-agriculture/agri-environmentalindicators.htm; IEA (2016), *World Energy Balances* (database), http://www.iea.org/statistics/topics/energybalances/; USDA (2017a), USDA Economic Research Service *International Agricultural Productivity* (database), www.ers.usda.gov/data-products/international-agricultural-productivity.aspx.

StatLink http://dx.doi.org/10.1787/888933755241

Innovation is a key driver of sustainable productivity growth

A large body of work suggests that innovation – the generation and application of new knowledge to productive or organisational processes – can be crucial to achieving the necessary sustainable productivity growth of the sector in the face of climate change and resource pressures (IO, 2012; OECD, 2015b). Appropriate innovation can drive productivity growth by enabling farmers to increase their efficiency through the adoption of new technologies and practices (OECD, 2013). It can also play an important role in ensuring the long-term sustainability of that growth by increasing the resilience of the sector to environmental challenges that may constrain growth, and by allowing for the more sustainable use of resources.

Governments and the international community have recognised the importance of innovation for sustainable productivity growth. The United Nations sustainable development goals (SDGs), for example, which were adopted in 2015, highlight the need for investment in innovation and in the agricultural innovation system in particular. This message was reiterated at the Ministerial Meeting of the OECD Committee for Agriculture in 2016, where 46 countries, together with the European Union, agreed that innovation should be prioritised in order to achieve sustainable productivity growth, including through organisational change, cross-sectoral co-operation, greater public and private investment in research and development (R&D), technology transfer and adoption, education and training, and advisory services (OECD, 2016b).

As the challenges faced by the sector become increasingly important, so too will knowledge generation and knowledge transfer that can lead to appropriate changes in farm practices. And as agricultural systems become more complex, farmers will require more advanced innovation skills. While large improvements in sustainable productivity could be achieved with greater adoption of current technologies, shifting challenges require the continuous creation of innovative solutions that are better adapted to evolving and diverse demands. However, this poses a challenge for agricultural innovation systems (networks of actors that contribute to the development, diffusion and use of new agricultural technologies and institutional innovations), which may struggle with limited resources to find an appropriate balance between investment in research in new innovations (and in the anticipation of future research needs) and in training and advisory services that enable adoption and diffusion of innovation by farmers (OECD, 2016c).

Agricultural innovation can be influenced by a range of policy areas

Innovation in agriculture is influenced by a broad range of policies, both economy-wide and agriculture-specific, in addition to measures explicitly focused on innovation. These are identified within an OECD framework for the review of policy incentives and disincentives to innovation (OECD, 2015b). **Economy-wide** policies that affect innovation choices include macro-economic policy-settings; institutional governance; environmental standards; investment, land, labour and education policies; and incentives for investment, such as a predictable regulatory environment and robust intellectual property rights. **Agricultural** policies, broadly defined, can also stimulate or inhibit agricultural innovation. As discussed earlier in this report, agricultural domestic and trade-related policies that distort markets reduce producers' incentives to use production factors more productively, thus potentially discouraging innovation. On the other hand, allowing producers to face production risks and access appropriate risk management systems, where applicable, is essential to improve the adoption of innovation. Finally, **innovation** policies directly support and guide the development and diffusion of

technologies and practices related to management, and the production, processing and marketing of food and agricultural products. These include policies that contribute to agricultural knowledge generation, such as direct investments in public and private research and development (R&D) and R&D institutions, as well as indirect support to private R&D through tax rebates, credit guarantees, competitive grants and funding of public-private partnerships. They also include measures that facilitate agricultural knowledge transfer, such as agricultural education, extension and advisory services, in addition to data collection and dissemination networks related to agricultural production and marketing. Robust governance of agricultural innovation systems is also important to ensure optimal use of resources for the provision and adoption of needed information.

Agricultural innovation features within many country policy frameworks

Agricultural innovation is referred to – albeit with varying degrees of emphasis – within the policy frameworks of a large number of countries and regions featured in this report, including **Australia, Canada, Costa Rica, the European Union, Japan, Korea, Norway, Switzerland** and **Turkey**. In the **European Union**, for example, fostering knowledge transfer and innovation, and the promotion of resource efficiency are two of the six priority areas of Pillar 2 of the Common Agricultural Policy for 2014-20, which funds programmes specifically dedicated to research and innovation in agriculture. In addition, a Strategic Approach to EU Agricultural Research and Innovation was developed in 2016, in consultation with stakeholders (European Commission, 2016). **Canada**'s agricultural policy framework until 2018, Growing Forward 2 (GF2), stresses three broad priority areas, one of which is innovation. Provinces must spend a minimum of 25% of their funding envelope on innovation programming. The agricultural policy framework for the 2018-22 period, the Canadian Agriculture Partnership, will focus on enhancing the competitiveness of the sector through research, science and innovation, and the adoption of innovative products and practices, with an emphasis on sustainable growth (AAFC, 2018). In **Costa Rica**, the State Policy for the Costa Rican Agri-food Sector and Rural Development 2010-2021 emphasises innovation and technological development, in addition to competitiveness and sustainability objectives (OECD, 2017f). In **Australia**, the Agricultural Competitiveness White Paper aims to boost innovation within the sector, amongst other objectives.

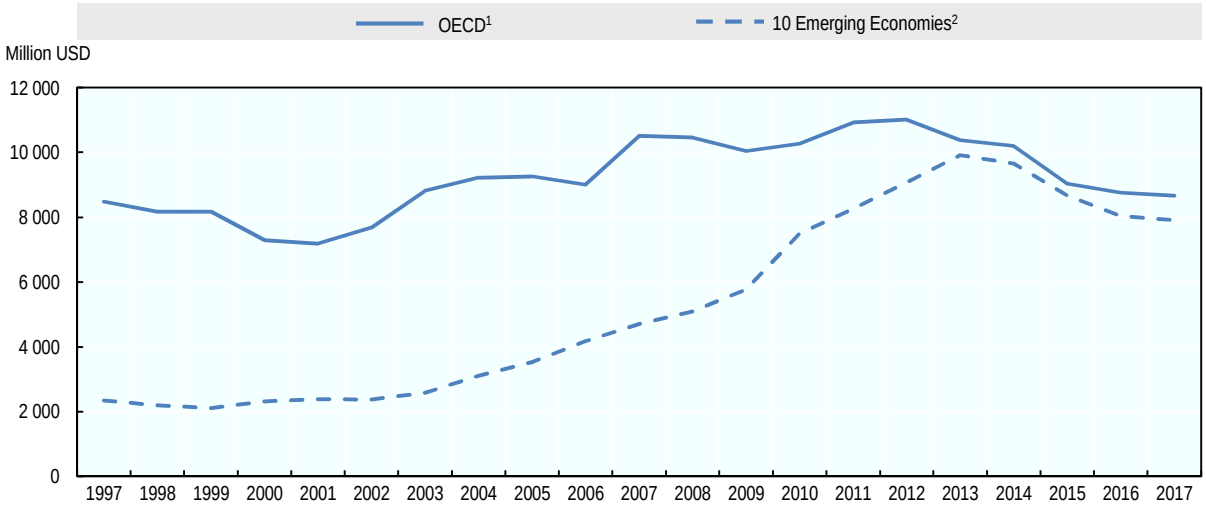
Agriculture is also an explicit priority of a number of national innovation strategies, such as the National Science and Technology Plan 2002–20 (NSTP) in the **Philippines** (OECD, 2017e) and the 13th Five Year Plan for Science and Technology Innovation in **China**.

Public expenditure on AIS is increasing, yet accounts for a decreasing share of total support for agriculture in some regions

While the role of governments in AIS is not limited to the provision of budgetary support, public expenditure data can provide an indication of the engagement of governments in knowledge generation and transfer. Indeed, it would appear that the increasing emphasis of agricultural innovation systems within policy frameworks has largely been reflected in increases in public expenditure allocated to AIS over the last 20-year period. Although expenditure in both OECD and developing and emerging regions has fallen slightly in the most recent years, both have generally increased over the 1997-2017 period, with increases in expenditure of emerging and developing regions particularly significant, and largely driven by developments in China (Figure 1.17).

Figure 1.17. Government expenditure on Agricultural Innovation Systems, 1997 to 2017

Real USD



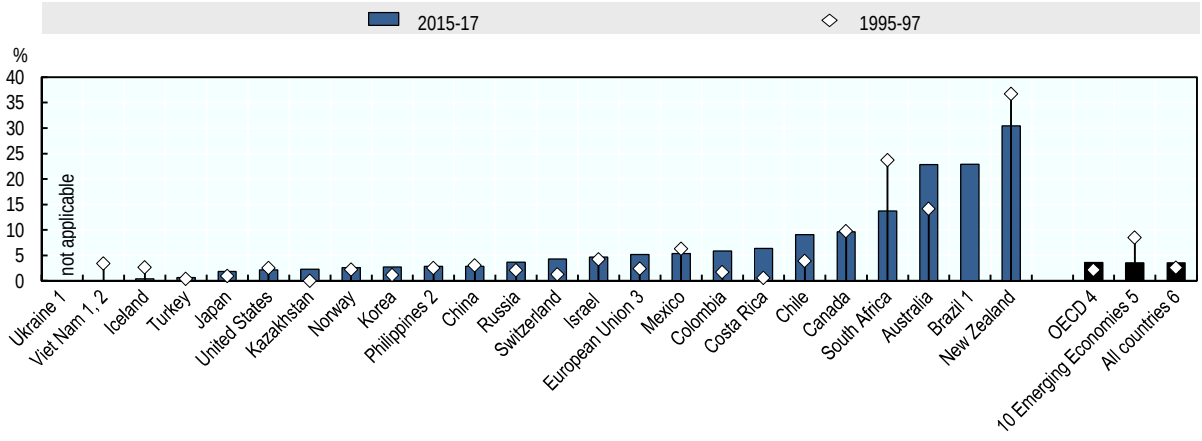
Notes: Absolute dollar values are expressed in real 1997 USD using United States GDP deflator.
1. The OECD total does not include the non-OECD EU Member States. Latvia is included only from 2004.
2. The 10 Emerging Economies are Brazil, China, Colombia, Costa Rica, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam. The Philippines and Viet Nam are included from 2000 onwards. Indonesia is not included in this report.
Source: OECD (2018b), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755260

As a *share of total support* to the sector, however, a slightly different picture emerges, with AIS expenditure in developing and emerging regions representing a decreasing share of the TSE in the last 20-year period, falling from 8.4% in 1995-97 to 3.5% in 2015-17. In contrast, the share has increased slightly in the OECD region as a whole, rising from 2.1% of TSE in 1995-97 to converge with developing and emerging region levels in 2015-17. Of all countries included within this report, expenditure as a share of TSE increased the most in Australia, while South Africa decreased the most (Figure 1.18). These differences between actual expenditure and expenditure as a share of TSE may be due to the fact that, as mentioned earlier, support to individual producers remains an important feature of the policy landscape in a number of countries.

Differences in government expenditure on AIS across countries are explained by a number of factors. With respect to knowledge generation, these include: 1) different ambitions and scope of agricultural research across countries, with emerging and smaller countries tending to focus on adaptive research, while larger and more affluent countries are active in all research fields and stages; and 2) the extent of private research and its complementarity with public efforts. With regard to knowledge transfer, the respective roles of private and public actors in funding and delivering advice to farmers differ widely (see section on Extension, below). In many economies, moreover, the funding of agricultural education cannot be distinguished from general funding for education, posing difficulties for the accurate comparison of countries.

Figure 1.18. Government expenditure on Agricultural Innovation Systems as a share of TSE by country, 1995-97 and 2015-17



Notes: Countries are ranked according to the 2015-17 levels.
1. Brazil 1995-97, Ukraine 1995-97 and 2015-17, and Viet Nam 2015-17 are not applicable due to negative TSEs.
2. For the Philippines and Viet Nam, 1995-97 is replaced by 2000-2002.
3. EU15 for 1995-97 and EU28 for 2015-17.
4. 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 EU for 2015-17. Latvia is included in the OECD and in the EU only for 2015-17.
5. The 10 Emerging Economies are Brazil, China, Colombia, Costa Rica, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam. The Philippines and Viet Nam are included only for 2015-17. Indonesia is not included in this report.
6. The All countries total includes all OECD countries, non-OECD EU Member States, and the 10 Emerging Economies.
Source: OECD (2018b), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755279

R&D accounts for the majority of public expenditure on AIS in many regions

With respect to the components of AIS, governments have an important role to play in both knowledge generation and transfer, in addition to the maintenance of knowledge infrastructure (such as life science infrastructure - e.g. gene banks -, agricultural research institutions, networks and centres of excellence, and databases) that can enable collaborative efforts both with the private sector and internationally (OECD, 2013; OECD, 2015b). The appropriate mix of knowledge generation and transfer components will inevitably differ across countries, with some necessarily prioritising research and development (R&D) and others public education or extension.

Public engagement in **Research and Development (R&D)**, either as a performer of R&D, a funder, or both, can play a vital role in innovation that can contribute to sustainable productivity growth. As a performer of R&D, the public sector tends to focus on basic research with a long-term horizon and uncertain returns. It also often focuses on areas with "public good" aspects, such as environmental and natural resources benefits (OECD, 2013). Moreover, because of the public good nature of public research, it encourages the diffusion and transmission of knowledge to farmers. Public engagement in R&D can also serve to incentivise private investment, either by the co-financing of

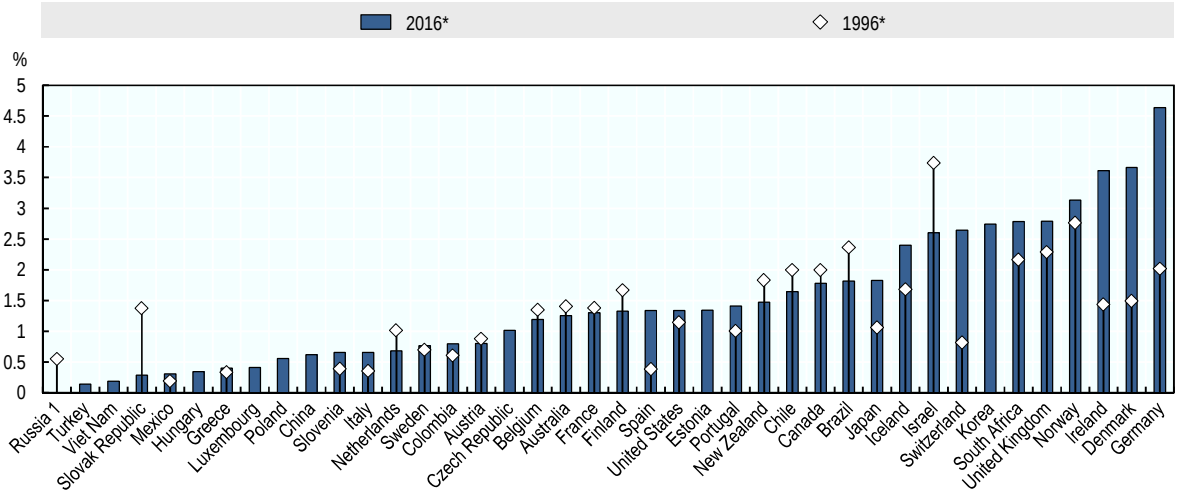
research projects, by public-private partnerships, or by stimulating R&D in projects that capitalise on the knowledge spillovers generated by public R&D. In addition, public investment in agricultural R&D is estimated to have significant impacts on agricultural TFP growth and competitiveness (Alston, 2010). Indeed, public spending on agricultural R&D has been found to be more effective at raising sustainable agricultural productivity than other public expenditures in agriculture, such as irrigation and fertiliser subsidies (Diaz-Bonilla, Orden and Kwiecinski, 2014).

The public sector continues to be the main **source of funding** for agricultural R&D, whether performed in public or private organisations (OECD, 2015b; OECD, 2013). In a number of countries, the public research mandate has been broadened to include environmental, food and other issues. The focus has also shifted away from primary agriculture to innovation along the food chain and to non-technological innovations, such as institutional or marketing innovations (OECD, 2013). In both the OECD and emerging and developing regions, R&D accounts for the majority of public expenditure on AIS as a share of total support. In the OECD region in 2015-17, agricultural R&D accounted for 2% of total support, marginally higher than that of developing and Emerging Economies (1.9%) during the same period.

R&D intensity figures (the share of budget appropriations on agricultural R&D as a share of agricultural value added) at country level can shed further light on government efforts. Between 1996 and 2016, R&D intensities increased for a number of countries for which comparable data are available, including **Germany, Denmark, Ireland,** the **United Kingdom, Norway, Switzerland, Spain** and **Japan**, but decreased in others, suggesting that in some countries, public funding is not keeping pace with agricultural sector growth (Figure 1.19). In some cases where public expenditure declined, agricultural sciences R&D has nevertheless benefited from increased private sector funding, as has been the case with producer levy co-funded Rural R&D Corporations (RDCs) in **Australia**, for example (OECD, 2013; see also section below), although this has not been sufficient to prevent total expenditure from decreasing. In the **United States**, the share of public expenditure has decreased due to significant increases in private efforts, with the result that public funding accounted for less than a quarter of the total in 2016 (OECD, 2016d).

Figure 1.19. Public R&D intensity of agricultural sciences, 1996 and 2016

Government budget appropriations or outlays for research and development (GBAORD) on agricultural sciences as a percentage of agricultural value added



Notes: Countries are ranked according to the 2016 levels.
* or nearest available year: 2016 is replaced by 2015 for Belgium, Estonia, Greece, Hungary, Ireland, Israel, Italy, Japan, Korea, Poland, Slovenia, Spain, Sweden, Turkey, the United Kingdom, and the United States; by 2014 for Iceland, New Zealand, South Africa, Switzerland; by 2013 for Brazil, Canada, Chile, China, Colombia; and by 2010 for Viet Nam. 1996 is replaced by 1995 for New Zealand.
1. For the Russian Federation, recent data are not available.
Source: OECD (2017d), "Research and Development", *OECD Statistics* (database), http://stats.oecd.org/; and for Brazil, Chile, China, Colombia, South Africa and Viet Nam: ASTI (2017), *Agricultural Science and Technology Indicators* (database), www.asti.cgiar.org/data.

StatLink http://dx.doi.org/10.1787/888933755298

Public support is increasingly used to leverage private engagement in R&D

In addition to funding public research, governments also play an important role in providing direct and indirect **support for *private* investment and participation** in agricultural R&D. Private investment is lower in agriculture than other sectors, due to the small-scale nature of farms and agri-food firms, and tends to take place in large input and food processing companies, and in areas such as farm equipment and seeds (OECD, 2015d).

A variety of measures are adopted by governments to encourage greater participation of private actors in R&D. Public funds are often allocated directly to a range of **projects** of different scales that are selected in a competitive manner, including the **United States-Israel** Binational Agricultural Research and Development (BARD) fund (BARD, 2012), the Centres of Scientific Excellence and Competence Centre programmes in **Estonia** (OECD, 2018e) and the Conservation Innovation Grants in the **United States**. The latter aim to stimulate public and private innovation, farmers included, in resource cultivation (USDA NRCS, n.d.). Other direct funding arrangements include **public-private partnerships (PPPs)**, which are increasingly used to capitalise on synergies between private and public research capacities and stimulate private investment in innovations that have a public goods nature (OECD, 2013). **Chile** favours PPP and competitive funding

for agricultural R&D. In **Brazil**, the research agency of the Ministry of Agriculture, Embrapa, is expanding its partnerships with both private and public actors, including a recent agreement with the association of cotton producers. In the **Netherlands**, the national R&D strategy involves the funding of PPPs in the "top sectors" of the economy, agriculture included (OECD, 2015f).

In countries such as Australia and New Zealand, co-funding instruments, with contributions from producers, are also used to leverage private participation in R&D. In **New Zealand**, for example, 29% of public expenditure on agricultural R&D in 2017 was directed to Primary Growth Partnerships (PGP) schemes, which normally receive 50-50 matching funds from the industry. PGP schemes aim to boost the productivity, economic growth and sustainability of the primary, forestry and food sectors (OECD, 2013). Investments cover education and skills development, R&D, commercialisation, commercial development, and technology transfer. In **Australia**, 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.

In addition to direct forms of funding, a variety of funding mechanisms such as **R&D tax rebates** and **credit guarantees** to industry, **venture capital**, and "pull mechanisms" such as **innovation prizes** or **Advance Market Commitments (AMCs)** have been adopted by governments (OECD, 2013). R&D tax concessions are provided by the majority of countries, including the **Philippines, Viet Nam, Canada** and **Korea**, for example (OECD, 2013; OECD, 2017e). In **Korea**, the national food cluster FOODPOLIS, an R&D-focused and export-oriented platform, offers tax exemptions to participating companies.

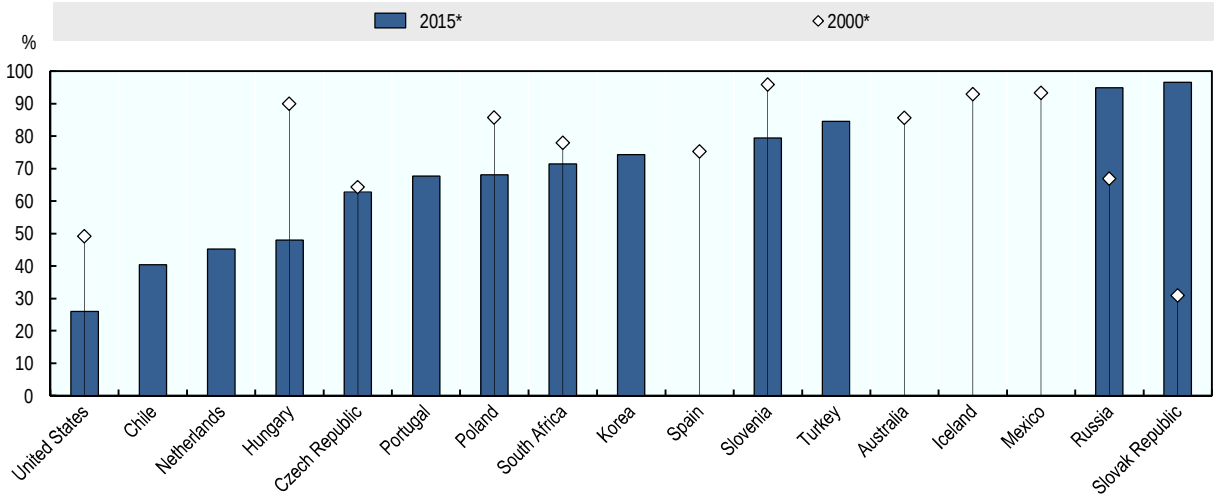
The public sector nevertheless remains a key performer of agricultural R&D in most countries

In most countries featured in this report, the public sector also plays a leading role in performing agricultural R&D. Generally speaking, the share of R&D performed by governments is higher for agricultural sciences and agricultural R&D than for total R&D (OECD, 2013). In 2015, agricultural R&D performed by government and higher education institutions accounted for 60% of total (public and private) expenditure on agricultural sciences in the majority of countries for which data are available, and for over 90% of total expenditure in some cases (Figure 1.20). While there may be inconsistencies in data across time, trends in this share between 2000 and 2015 appear to be mixed, reflecting the stronger involvement of the private sector in certain countries or the decrease in public R&D in some cases. Private sector efforts tend to concentrate on seed sectors and food processing (OECD, 2016d). Nevertheless, data on the shares of public and private involvement are limited for the majority of countries, and it is likely that the government share is even higher in emerging and developing economies. Examples of agricultural R&D performed by governments include the development of new rice varieties in **Viet Nam** (OECD, 2017e), research on agricultural soils and agriculture and climate in **France** (the Agriculture-Innovation 2025 programme), the development of climate adaptation technologies in the **United States** (via a network of Regional Climate Hubs) and, in **New Zealand**, the R&D of mitigation technologies to reduce agricultural

greenhouse gas emissions at the New Zealand Agricultural Greenhouse Gas Research Centre (NZAGRC).

Figure 1.20. Expenditure on agricultural sciences R&D performed by government and higher institutions, selected countries, 2000 and 2015

Percentage of Gross Domestic Expenditure (GERD) on agricultural sciences R&D



Notes: Countries are ranked according to the levels of the most recent presented year.
* or nearest available year: 2015 is replaced by 2014 for the Czech Republic, the Netherlands, Poland, Portugal, the Slovak Republic, Slovenia, Turkey and the United States; and by 2013 for Hungary and South Africa. 2000 is replaced by 2003 for Mexico; by 2002 for Australia; by 2001 for South Africa; and by 1999 for Iceland.
Source: OECD (2017d), "Research and Development", *OECD Statistics* (database), http://stats.oecd.org/; For the United States: USDA (2017a), *Agricultural Research Funding in the Public and Private Sectors*, https://www.ers.usda.gov/data-products/agricultural-research-funding-in-the-public-and-private-sectors/.

StatLink http://dx.doi.org/10.1787/888933755317

Regional and international research collaboration is important to overcome regional and global challenges

Governments also play a key role in the facilitation of **regional and international research collaboration** in projects, networks and capacity building. R&D collaboration is a valuable means for countries to optimise their domestic research resources and benefit from specialisation and international research spillovers, and thus more efficiently address mutual challenges (OECD, 2013). The Consultative Group on International Agricultural Research (CGIAR), the Global Forum for Agricultural Research (GFAR), the Global Research Alliance on Agricultural Greenhouse Gases, the INNOVAGRO Network and the Global Conference on Agricultural Research for Development (GCARD) are just a few notable examples (OECD, 2013). In some regions, cross-country research collaboration is explicitly required by innovation policy – the **European Union** is one such example. While the main objective of this policy is the co-ordination of research across EU Member States, third countries can also participate in some cases.

A broad variety of models exist for the funding and delivery of extension, training and advisory services

Beyond agricultural R&D, the capacity of AIS to contribute to sustainable agricultural productivity growth depends on the availability of effective **extension, training** and **advisory services** from a diversity of actors. These are important for the facilitation of farmers' access to and adoption of technology and knowledge, in addition to their participation in innovation networks and ability to formulate their specific demands (OECD, 2013). Advisory services can also to some extent compensate for farmers' lack of skills or training by providing information that supports innovation (OECD, 2016c).

Governments can play an important role in ensuring that extension and advisory services continue to respond to demands from an increasingly diverse farm population on a wide range of topics. Where advisory services are important for the provision of public goods, but not necessarily financially rewarding for the private sector, public financing may be required. In some countries, advisory services that combine public and private providers may be optimal. Even when agricultural extension is farmer-led, however, governments have a role to play in encouraging environmentally-friendly technologies and practices (OECD, 2013).

While the public sector plays a major advisory role in some countries, producer organisations traditionally play a major role in others, occasionally with public co-funding. In some countries, the public sector has either reduced the direct provision of advice or now focuses solely on ensuring access to advice from diverse sources (OECD, 2016c).

One area generally focused on by the public extension system is **agri-environmental management**. Estimates of public expenditure for services in this area, where data are available, are significant, even if they remain a very small proportion of total public support for the sector (OECD, 2015c). Nevertheless, public investment in training, extension and advisory services, while important, is only one tool that governments have at their disposal to foster effective extension for sustainable productivity growth. The creation of broader policy incentives that exist for the adoption of practices and technologies, referred to earlier, is also key.

Current extension systems provide an increasing number of services, ranging from technical and financial advice to implementation of policy. Diverse models also exist for financing and providing these services, and there can be broad variations in the mix of options that is best suited to support the agricultural development strategy of countries (OECD, 2015c). The last two decades have witnessed a shift away from the delivery of advice by governments to various combinations of private and public funding of services delivered by private sector organisations. While some extension systems are entirely publicly financed and managed (e.g. in **Belgium, Italy, Greece, Slovenia, Sweden, Spain, Portugal, Luxembourg, Japan**, and **Poland**), in other countries (e.g. **England**, **the Netherlands** and **New Zealand**), systems are privately funded and delivered. In countries such as **Canada, Chile** and **Ireland**, services are provided by both public institutions and private companies, and farmers finance part or all of the cost. Finally, there are systems co-managed by farmers' organisations (e.g. in **Austria**, **Denmark**, **France** and **Finland**), with funding from the government, farmers' organisations and individual farmers. In the **United States**, all four arrangements can be found (OECD, 2015c). Although concerns have been raised as to whether the trend towards privatisation of extension is constraining the effectiveness of AIS (OECD, 2015c), both public and private funding of initiatives have roles to play in many cases, and will reflect

government policies and resources, the nature of the issues, the type of provider, and the purpose of the measure.

One of the innovative forms of extension delivery that has emerged in recent years has been the **peer group initiative**. Group initiatives encourage dialogue between facilitators and farmers, allowing facilitators to gain insight into what makes farmers most receptive to advice. Farmer-to-farmer extension is also considered to result in more efficient information dissemination (OECD, 2015c). Experience of predominantly local peer group or co-operative initiatives is growing in Europe in particular. In **Ireland**, for example, farmer discussion groups, or "knowledge transfer groups", have become an important means of interaction between public sector advisers and farmers. In 2015, the Irish government launched the latest Knowledge Transfer Group scheme with a focus on profitability, breeding, animal health and environmental sustainability (Teagasc, 2017). **Sweden** also operates a peer group initiative focused on nutrient use (OECD, 2015c). Another method of extension delivery that is becoming increasingly widespread is information and communications technology (ICT)-based extension and information provision, such as the e-Extension programme in the **Philippines** (OECD, 2017e).

Subject areas addressed by extension are varied, including advisory services for sustainable land use in **Iceland** (Stjornarradid, 2016) and **Australia** (OECD, 2015c; Landcare, 2017); training and extension in water-saving practices in **Turkey**; extension programmes explicitly targeting smaller-scale and impoverished farmers, such as in **Chile** (OECD, 2015c), **Mexico** and **South Africa** (DAFF, n.d.); risk management training in the **United Kingdom (Northern Ireland)**; and training on climate change adaptation in **Chile**, **Costa Rica** (OECD, 2017f), **New Zealand** (MPI, 2017) and a number of **European Union** Member States, for example. The **United States** provides public technical assistance to land owners through various conservation practices and programmes, such as the Conservation Stewardship Program (CSP), which aim to help producers to conserve and enhance soil, water, air, and related natural resources.

Agricultural education needs to better reflect changing needs

In addition to extension provision, agricultural education is key to ensure that farmers have the necessary skills, understanding and innovative capacity to foster future sustainable productivity growth, and to train agricultural specialists, scientists and service providers who can enhance the relevance and efficiency of agricultural innovation systems. Aside from technical knowledge in areas such as production, processing, agribusiness and biotechnology, graduates require professional skills, such as leadership, communication, facilitation, and organisational capabilities that are important for AIS.

In many countries included within this report, higher education in agriculture is dominated by public (often regional) universities, which may receive some private funding. In some countries, both agricultural universities and agricultural departments in general universities exist. Applied agricultural education is provided through public and private technical (vocational) schools (OECD, 2013).

Generally speaking, however, specialised agricultural education has become less attractive for students in many developed countries, potentially slowing the adoption of innovation in the sector (OECD, 2013). Exceptions include the **Netherlands**, which has successfully adapted and broadened curricula to meet emerging needs (OECD, 2015f). In contrast, agricultural education continues to attract students from emerging and developing economies, who also represent a significant share of agricultural students in

some OECD countries (such as the **United States**, **Australia**, **Canada** and the **Netherlands**) (OECD, 2015e; 2016d; 2015f; 2015g).

Assessing support and reforms

In 2015-17, agricultural support policies in the 51 countries covered in this report provided a total of USD 620 billion (EUR 556 billion) a year on average to their agricultural sectors. Around 78% of this, USD 484 billion (EUR 434 billion) a year, was transferred directly to individual producers. In 2015-17, 15% of gross farm receipts were due to policies that support agricultural producers.

Future growth in demand for diverse and high-quality food offers significant opportunities for agriculture. However, the sector faces a number of challenges in meeting future demand sustainably in the context of a changing climate. These include the need to be more responsive to the uncertainties ahead, to increase resilience to weather, market or other shocks, and to enhance the environmental performance of the sector. With respect to climate, for example, agricultural production is responsible for a significant share of anthropogenic greenhouse gas emissions. While this share varies significantly across the countries covered in this report, efforts to reduce emissions from farming are indispensable for achieving the goals set by the Paris Agreement of the COP21. In most countries, clear strategies for agricultural contributions to emission reductions have yet to be developed and implemented. Faced with opportunities and challenges such as the above, it is important that agricultural policy packages are efficient and effective, and promote a productive, sustainable and resilient sector.

Appropriate general services are needed to equip the agricultural sector for future challenges

To strengthen the sector's capacity to respond to future challenges and opportunities, a variety of general services will be crucial. This includes various forms of sector-specific hard and soft infrastructure, appropriate biosecurity efforts, and a well-functioning agricultural innovation system adapted to the needs of the sector. On average, countries spent around 14% of total support or USD 86 billion (EUR 78 billion) a year in 2015-17 on general services for the sector. Given the dominance of transfers to individual producers, there is scope in many countries to shift the focus away from direct support of producers and towards general services for the sector that can foster its long-term performance, in order to better capitalise on opportunities and address challenges.

In addition to ensuring sufficient and stable funding of AIS, governance systems need to ensure that funding is both effective and relevant. This has been achieved in some cases by means of collaboration between public and private actors on extension and advisory services, as well as in research and development (R&D). Collaboration across national systems, regions and internationally, can also serve to maximise the gains from domestic resources and benefit from specialisation and knowledge spillovers, as demonstrated by a number of ongoing regional and international research collaboration efforts. International co-operation could be facilitated via the removal of institutional constraints, for example. The effectiveness of public funding for the AIS could also be improved by focusing on areas that are not covered by private sector efforts.

In terms of other general services to the sector, appropriate investments in physical and knowledge infrastructure, from ICT to transportation facilities, are vital to the delivery of, and access to, important services, and have an important role in improving farmers'

connectedness to markets, knowledge and other services. Similarly, biosecurity efforts are important for maintaining access to valuable export markets and reducing the risk of pest and disease outbreaks that can cause harm and damage to agricultural industries. Appropriate investments in animal and plant health systems that create incentives for producers' own prevention measures are also key.

- Countries should therefore **shift the focus of agricultural support to general services** for the sector, where there is a net benefit to society from doing so. In particular, well-functioning agricultural innovation systems, appropriate science-based biosecurity efforts, and investments in adapted physical and other infrastructure are required to enhance the preparedness of their agricultural sectors to respond to future challenges and opportunities. Redirecting producer support to general services can also provide a pathway to transition the sector away from distorting forms of support.
- In particular, **appropriate investments in research, together with efforts to ensure that the outputs of this research reach farmers**, can go a long way to ensure that the sector has the capacity to respond to evolving needs and challenges. While the appropriate mix of knowledge generation and transfer efforts will inevitably differ across countries, with some necessarily prioritising R&D and others public education or extension, governments should strive for balance between investments in knowledge generation and transfer where possible. Collaboration on knowledge generation and transfer with public and private actors – nationally, regionally and internationally, where relevant and possible – should be encouraged. Public funds should primarily target innovations that the private sector does not deliver, typically those with long-term impacts such as on sustainability or those related to the creation of positive externalities or avoidance of negative ones. Countries should also evaluate innovation systems to ensure that these maximise payoffs to investments, and do not crowd out private efforts.

Improved targeting of producer support is also vital to achieve sector goals

Within the envelope of transfers to individual producers, there are also opportunities to improve the targeting of support, to better align the measures used with countries' goals for the sector. In a number of OECD countries, payments tied to specific production practices, or associated with mandatory or voluntary agri-environmental constraints, 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).

There is significant scope within budgets to reorient transfers to individual producers towards payments that target well defined and measurable objectives for the sector, as well as broader societal objectives. Tax-financed support to farmers is predominantly provided via payments that are untargeted to beneficiaries or outcomes, reducing their effectiveness. 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 is not generally well-targeted to those farm households in need, and 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 – and how this differs from non-agricultural households – is essential in order to define specific policy objectives for farm income levels and related policy instruments.
- Ideally, payments to farmers should **target the production of the non-market goods and services sought by society (for instance improving environmental performance, animal welfare, or addressing 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.

Continued reliance on most-distorting support undermines efforts to improve agricultural productivity and sustainability

Shifting the focus of support towards general services for the sector and targeted producer support will help the sector to address challenges related to sustainable productivity growth in the context of a changing and uncertain climate. However, these efforts are undermined by countries' continued reliance on measures that strongly distort production and trade. In 2015-17, almost two-thirds of producer support was provided via measures that distort production and trade particularly strongly.

For example, innovation will be important for achieving sustainable productivity growth in the face of climate change and resource pressures. But by disconnecting farmers from market signals, countries also obstruct efforts to strengthen their agricultural innovation systems. The payoff to public investments in knowledge generation and transfer, as well as to efforts to leverage greater private sector engagement, will not be maximised if producers lack the right incentives to adopt innovations.

This is because support provided through measures that distort production and trade is inconsistent with the goal of competitive, sustainable, productive and resilient farm and food businesses. Exposure to competition in domestic and world markets plays a fundamental role in encouraging on-farm innovation. Yet almost 60% of support to individual producers is provided by maintaining higher prices on domestic markets compared with those on international markets. Market price support shields producers from market signals and impedes adjustments within the sector by biasing production and resources towards more heavily-protected commodities. This in turn weakens incentives for innovation – not only to adopt more efficient and sustainable technologies, but to improve product quality and develop new markets.

Most-distorting forms of support are also inconsistent with the goal of improving the environmental sustainability of the sector and can increase pressures on the environment. By encouraging production, market price support and payments based on outputs can lead to more intensive use of inputs, while support for variable inputs without constraints increases the risk of their over- or misuse. Support targeted to specific commodities can also reduce resilience and adaptation to climate change by encouraging farmers to plant specific crops, even if they are not well-suited to local climate conditions. Finally, while the existence of environmental externalities and public goods linked to agricultural activities can justify some form of public policies, the most-distorting forms of support discussed here are blunt instruments that fail to target the underlying market failures and often worsen the situation.

Market price support is also an ineffective instrument for providing income support. On the producer side, such support is disproportionally captured by large producers who are arguably not in need of support. Moreover, the income transfer efficiency of border protection is low, limiting its effectiveness as a measure for raising farm incomes. When it comes to food security, the use of market price support is most often counterproductive. Driven through a push for food self-sufficiency, higher market prices act as a regressive tax on households – disproportionally hurting poorer vulnerable households due to the greater relative importance of food in their budgets.

Some progress has been made in a number of countries to reduce the trade distorting effects of policy packages, by both reducing support levels and by shifting support to less distorting (and generally more targeted) forms. This has resulted in Trade Impact Indices often falling more significantly than support levels over the past two decades. This progress is, however, not shared across all countries and often has remained partial, with significant trade distortions remaining and increasing in several countries.

On these grounds, there is a need for countries to re-orient their agricultural support policies from an approach that emphasises direct and untargeted support to producers – particularly support provided through highly distorting measures – to one that directly addresses the recognised opportunities and challenges facing the sector.

- **Market price support should be reduced and eliminated**, including the negative market price support that is still prevalent in some countries. Market price support is a non-transparent and untargeted measure that is inconsistent with the goals of enhancing innovation and improving productivity and the environmental sustainability of the sector. A well-functioning domestic market and international trading system is important to connect producers to market opportunities, to enhance the food security of the poorest, and to maximise the payoffs to public investments in agricultural innovation systems.
- Similarly, **output payments and** distorting **input subsidies should also be reduced** with a view to eventual elimination. They represent an inefficient use of government budgets, generally fail to appropriately target specific policy outcomes, and increase the risk of environmental damage. Scaling down these forms of support can help to free public funds for more targeted farm support and for better funding of needed general services.

Risk management systems should increase producers' resilience to weather, market and other shocks

Helping producers to better manage risk is a key policy objective for a number of countries. As an alternative to more distorting forms of support, facilitating access to risk management tools can improve producers' resilience to risks emanating from both domestic and international sources, and provide a more stable operating environment for investment in innovation. 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.

There are also strong links between risk management policies and on-farm adaptation to climate change. Government initiatives to protect farmers from climate change risks can affect farmers' choice of strategies. For example, public support for insurance schemes and for *ex post* payments may reduce the incentive to diversify farm production away from more climate sensitive crops and farm practices. In this sense, government-supported instruments can potentially crowd out appropriate adaptation strategies by farmers (Antón et al., 2012).

The OECD has proposed a three-tier risk management system that distinguishes normal business risks (to be borne and managed by farmers) from larger risks suitable for market solutions (such as insurance systems and futures markets) and infrequent catastrophic risks requiring public engagement (OECD, 2011). Countries should clarify and streamline their risk management policies accordingly to increase producers' prevention measures and resilience to risk:

- First, the **limits between normal business risks, risks for which market solutions can be developed, and catastrophic risks requiring public engagement should be clearly defined**, to avoid crowding out market solutions and farmers' own risk management practices. These definitions will allow administrations to become active when public involvement is required, while sending clear signals to farmers and other private agents for developing relevant on-farm and market-based, privately-organised risk management tools for non-catastrophic risks.
- Second, **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.
- Thirdly, **governments should play a proactive role in providing information and other general services** for farmers and the private sector to facilitate the development of risk management strategies and tools. Governments should facilitate the provision of information on market risks, animal and plant health risks, climate risks and adaptation solutions.

To conclude, while some progress is evident in a number of the abovementioned areas, greater efforts are needed to align agricultural policies with the emerging needs of the sector. Indeed, the current structure of agricultural support suggests that there is scope

within the budgets of many countries to ensure that policy settings effectively promote the productivity, sustainability and resilience of agriculture. This will require greater focus of support on the provision of general services – notably appropriate agricultural innovation systems, biosecurity efforts, and sector-specific infrastructure – and the improved and consistent targeting of producer support. There is an urgent need to shift away from most production- and trade-distorting forms of support that can also harm the environment and reduce incentives for innovation. Appropriate risk management systems that improve the resilience of farmers to market, climate and other shocks are a valuable alternative to more-distorting forms of support.

Notes

[1] 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, 2017).

[2] In some countries, programmes applied broadly across commodities are captured in SCT – such as the crop insurance programmes in the United States. In such instances, the distorting effect on production will be less.

[3] Commitments made under the Agreement on Agriculture were completed in 2000, and a new and unfinished round of negotiations commenced in Doha in 2001. This section assesses developments in single commodity transfers since 2000-02 to coincide with this period.

References

AAFC (2018), "Canadian Agricultural Partnership: Federal activities and programs" (webpage), Agriculture and Agri-Food Canada, Ottawa, http://www.agr.gc.ca/eng/about-us/key-departmental-initiatives/canadian-agricultural-partnership/canadian-agricultural-partnership-federal-activities-and-programs/?id=1511361680577.

Alston, J. (2010), "The Benefits from Agricultural Research and Development, Innovation, and Productivity Growth", *OECD Food, Agriculture and Fisheries Working Papers*, No. 31, OECD Publishing, Paris, http://dx.doi.org/10.1787/5km91nfsnkwg-en.

Anderson, J. and J.P. Neary (1996), "A New Approach to Evaluating Trade Policy", *Review of Economic Studies*, Vol 63 pp. 107-125.

Antón, J. et al. (2012), "A Comparative Study of Risk Management in Agriculture under Climate Change", *OECD Food, Agriculture and Fisheries Papers*, No. 58, OECD Publishing, Paris, http://dx.doi.org/10.1787/5k94d6fx5bd8-en.

ASTI (2017), *Agricultural Science and Technology Indicators* (database), International Food Policy Research Institute, www.asti.cgiar.org/data (accessed March 2018).

BARD (2012), "United States-Israel Binational Agricultural Research and Development Fund" (webpage), http://www.bard-isus.com/local.aspx?lfidl=2 (accessed 8 April 2018).

Clean Energy Regulator (2018), "Emissions Reduction Fund" (webpage), Australian Government Clean Energy Regulator, http://www.cleanenergyregulator.gov.au/ERF (accessed 9 March 2018).

DAFF (n.d.), "Comprehensive Agricultural Support Programme (CASP)" (webpage), Department of Agriculture, Forestry and Fisheries (DAFF) of the Republic of South Africa, Pretoria, http://www.nda.agric.za/doaDev/topMenu/DoAProgrammes/CASP.htm (accessed 8 April 2018).

Diaz-Bonilla, E., D. Orden and A. Kwieciński (2014), "Enabling Environment for Agricultural Growth and Competitiveness: Evaluation, Indicators and Indices", *OECD Food, Agriculture and Fisheries Papers*, No. 67, OECD Publishing, Paris, http://dx.doi.org/10.1787/5jz48305h4vd-en.

European Commission (2016), *A Strategic Approach to EU Agricultural Research and Innovation: Final Paper*, European Commission, Brussels, https://ec.europa.eu/programmes/horizon2020/en/news/final-paper-strategic-approach-eu-agricultural-research-and-innovation.

FAO (2017), *FAO Food Price Index* (dataset), Food and Agriculture Organization of the United Nations, Rome, www.fao.org/worldfoodsituation/foodpricesindex/en/.

Gernaat, D.E.H.J. et al. (2015), "Understanding the contribution of non-carbon dioxide gases in deep mitigation scenarios", *Global Environmental Change*, Vol. 33, pp.142–153, https://doi.org/10.1016/j.gloenvcha.2015.04.010.

Greenville, J., K. Kawasaki and M-A. Jouanjean (2018), "Dynamic changes and effects of agro-food GVCs", *OECD Food, Agriculture and Fisheries Papers*, OECD Publishing, Paris, forthcoming.

Greenville, J., K. Kawasaki and R. Beaujeu (2017), "How policies shape global food and agriculture value chains", *OECD Food, Agriculture and Fisheries Papers*, No. 100, OECD Publishing, Paris, http://dx.doi.org/10.1787/aaf0763a-en.

IEA (2016), *World Energy Balances* (database), International Energy Agency, Paris, http://www.iea.org/statistics/topics/energybalances/.

IMF (2017), *Commodity Market Review*, International Monetary Fund, Washington, DC, http://www.imf.org/external/np/res/commod/index.aspx.

IO (2012), *Sustainable Agricultural Productivity Growth and Bridging the Gap for Small-Family Farms*, Interagency Report to the Mexican G20 Presidency, with contributions by Bioversity, CGIAR Consortium, FAO, IFAD, IFPRI, IICA, OECD, UNCTAD, Coordination team of UN High Level Task Force on the Food Security Crisis, WFP, World Bank, and WTO, 12 June, www.oecd.org/tad/agriculturalpoliciesandsupport/50544691.pdf.

Kitous, A., K. Keramidas, T. Vandyck and B. Saveyn (2016), *GECO 2016: Global Energy and Climate Outlook: Road from Paris*, European Commission, Brussels, http://publications.jrc.ec.europa.eu/repository/bitstream/JRC101899/geco2016%20-%20global%20energy%20and%20climate%20outlook%20-%20road%20from%20paris%20160916.pdf .

Landcare (2017), *Landcare Australia* (website), https://landcareaustralia.org.au/ (accessed 18 April 2018).

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

MPI (2017), "Sustainable Farming Fund" (webpage), New Zealand Ministry for Primary Industries, http://www.mpi.govt.nz/funding-and-programmes/farming/sustainable-farming-fund/ (accessed 18 April 2018).

OECD (2018a), *OECD Economic Outlook, Interim Report March 2018*, OECD Publishing, Paris, http://dx.doi.org/10.1787/eco_outlook-v2017-sup3-en.

OECD (2018b), "Producer and Consumer Support Estimates", *OECD Agriculture Statistics* (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

OECD (2018c), *Agricultural Policies in India*, OECD Food and Agricultural Reviews, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264302334-en.

OECD (2018d), *Agri-environmental Indicators* (database), http://www.oecd.org/tad/sustainable-agriculture/agri-environmentalindicators.htm.

OECD (2018e), *Innovation, Agricultural Productivity and Sustainability in Estonia*, OECD Food and Agricultural Reviews, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264288744-en.

OECD (2017a), *OECD Economic Outlook, Volume 2017 Issue 2*, OECD Publishing, Paris, http://dx.doi.org/10.1787/eco_outlook-v2017-2-en.

OECD (2017b), *Agricultural Policies in the Philippines*, OECD Food and Agricultural Reviews, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264269088-en.

OECD (2017c), *Agricultural Policy Monitoring and Evaluation 2017*, OECD Publishing, Paris, http://dx.doi.org/10.1787/agr_pol-2017-en.

OECD (2017d), "Research and Development", *OECD Statistics* (database), http://stats.oecd.org/.

OECD (2017e), *Building Food Security and Managing Risk in Southeast Asia*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264272392-en.

OECD (2017f), *Agricultural Policies in Costa Rica*, OECD Food and Agricultural Reviews, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264269125-en.

OECD (2016a), *Sustainable Productivity Growth in Agriculture: Trends and Policy Performance*, Agriculture Policy Note, April 2016, Paris, http://www.oecd.org/tad/policynotes/sustainable-productivity-growth-agriculture.pdf.

OECD (2016b), "Declaration on Better Policies to Achieve a Productive, Sustainable and Resilient Global Food System", Meeting of the OECD Committee for Agriculture at Ministerial Level, Paris, 7-8 April, 2016, http://www.oecd.org/agriculture/ministerial/declaration-on-better-policies-to-achieve-a-productive-sustainable-and-resilient-global-food-system.pdf.

OECD (2016c), *Adapting Innovation Systems to New Challenges*, Agriculture Policy Note, April 2016, Paris, https://www.oecd.org/tad/policynotes/adapting-innovation-systems-new-challenges.pdf.

OECD (2016d), *Innovation, Agricultural Productivity and Sustainability in the United States*, OECD Food and Agricultural Reviews, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264264120-en.

OECD (2015a), *Agricultural Policies in Viet Nam 2015*, OECD Food and Agricultural Reviews, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264235151-en.

OECD (2015b), *Analysing Policies to Improve Productivity Growth, Sustainably: Draft Framework*, OECD Publishing, Paris, http://www.oecd.org/tad/agricultural-policies/Analysing-policies-improve-agricultural-productivity-growth-sustainably-december-2014.pdf.

OECD (2015c), *Fostering Green Growth in Agriculture: The Role of Training, Advisory Services and Extension Initiatives*, OECD Green Growth Studies, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264232198-en.

OECD (2015d), *Agricultural Policy Monitoring and Evaluation 2015*, OECD Publishing, Paris, http://dx.doi.org/10.1787/agr_pol-2015-en.

OECD (2015e), *Innovation, Agricultural Productivity and Sustainability in Australia*, OECD Food and Agricultural Reviews, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264238367-en.

OECD (2015f), *Innovation, Agricultural Productivity and Sustainability in the Netherlands*, OECD Food and Agricultural Reviews, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264238473-en.

OECD (2015g), *Innovation, Agricultural Productivity and Sustainability in Canada*, OECD Food and Agricultural Reviews, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264238541-en.

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

OECD (2011), *Managing Risk in Agriculture: Policy Assessment and Design*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264116146-en.

OECD (2003), *Farm Household Income: Issues and Policy Responses*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264099678-en.

OECD (2001), *Market Effects of Crop Support Measures*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264195011-en.

OECD/FAO (2018), *OECD-FAO Agricultural Outlook 2018-2027*, OECD Publishing, Paris, forthcoming.

Rossier, R., S. Quiédeville, H. Stolz, D. Barjolle, M. Stolze (2015), *Study on Investment in Agricultural Research: Review for Switzerland*, The Impact of Research on EU Agriculture (Impresa), Frick, Switzerland, http://www.impresa-project.eu/fileadmin/user_upload/IMPRESA/Filesharing/IMPRESA_country_report_Switzerland.pdf

Stjornarradid (2016), "Framework Agreement on the general operating environment for the agricultural sector and on appropriations not provided for in the agreements on the operating environment for the horticultural, cattle and sheep sectors in the period between 2017 and 2026", Government Offices of Iceland, https://www.stjornarradid.is/media/atvinnuvegaraduneyti-media/media/Acrobat/Agricultural-Framework-Agreement-----English.pdf

Teagasc (2017), "Knowledge Transfer Groups Programme" (webpage), Teagasc, Carlow, Ireland, https://www.teagasc.ie/about/farm-advisory/advisory-services/discussion-groups/ (accessed 8 April 2018).

UNFCCC (2015), "Adoption of the Paris Agreement", United Nations Framework Convention on Climate Change, 21st Conference of the Parties, Paris.

USDA (2017a), *International Agricultural Productivity* (database), United States Department of Agriculture Economic Research Service, Washington, DC, https://www.ers.usda.gov/data-products/international-agricultural-productivity/ (accessed 5 April 2018).

USDA (2017b), "International Agricultural Productivity: Summary findings" (webpage), United States Department of Agriculture Economic Research Service, https://www.ers.usda.gov/data-products/international-agricultural-productivity/summary-findings/ (accessed 5 April 2018).

USDA (2017), *Agricultural Research Funding in the Public and Private Sectors*, https://www.ers.usda.gov/data-products/agricultural-research-funding-in-the-public-and-private-sectors/ (accessed April 2018).

USDA NRCS (n.d.), "Conservation Innovation Grants" (webpage), USDA National Resources Conservation Service, Washington, DC, https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/cig/ (accessed 7 April 2018).

Wollenberg, E., M. Richards, P. Smith et al. (2016), "Reducing emissions from agriculture to meet the 2oC target", *Global Change Biology*, Vol. 22, pp.3859-3864, https://doi.org/10.1111/gcb.13340.

World Bank (2017), *World Bank DataBank* (database), http://data.worldbank.org/indicator/NV.AGR.TOTL.ZS.

World Bank Group (2017), *Commodity Markets Outlook* (database), October, World Bank, Washington, DC, http://www.worldbank.org/en/research/commodity-markets.

Country snapshots

This part contains an overview of the overall developments of support in the OECD area and selected Emerging Economies overall, followed by snapshots on agricultural policy developments and support to agriculture in each of the countries covered in this report. A more comprehensive discussion is provided in the country chapters published online (https://doi.org/10.1787/agr_pol-2018-en).

Chapter 2. Overall trends in agricultural support

OECD Total

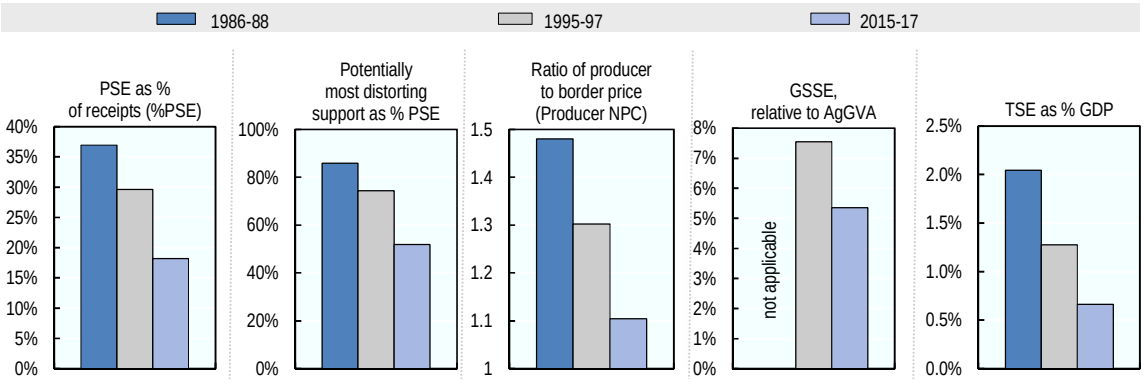
The total support to agriculture (TSE) provided in OECD countries represented USD 317 billion (EUR 285 billion) per year on average in 2015-17 of which 72%, or USD 227 billion (EUR 205 billion), was provided as support to farms (PSE). Support to farms represented 18% of gross farm receipts (%PSE) in 2015-17 across the OECD area, a decline from almost 30% in 1995-97 (Table 2.1).

Together with the level of support, the way support is delivered to farmers 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). This form of support has 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 which also play a smaller role today across the OECD than twenty years ago.

At the other end of the spectrum in the PSE classification, less distorting forms of support are found, 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 areas or livestock numbers of a given reference year in the past) have increased significantly in many OECD countries, representing 4% of gross farm receipts and more than a fifth of the PSE across OECD countries during 2015-17. Payments based on current crop areas and animal numbers were reduced slightly from 1995-97 and represent currently around 15% of total farm support (Table 2.1).

The expenditures financing general services to the sector (GSSE) declined slightly in the OECD area from USD 44 billion per year in 1995-97 to USD 40 billion in 2015-17. Most of these expenditures in 2015-17 go to the financing of infrastructures (USD 17.5 billion), despite a slight decline compared to 1995-97, while the expenditures to Agricultural knowledge an innovation (USD 13 billion) have increased by half since 1995-97. Expenditures for inspection and control services also increased while spending for marketing and promotion activities and on public stockholding declined in the same period, but all of these represented substantially smaller shares of the GSSE (Table 2.1).

Figure 2.1. OECD: Development of support to agriculture

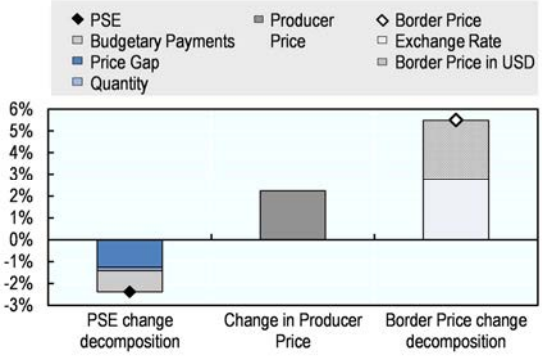


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database). http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755336

Support to farmers in the OECD area as a share of gross farm receipts **(%PSE)** has declined gradually over the long term. In 2015-17, 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). Effective prices received by farmers, on average, were 10% higher than world prices; large differences between commodities persist with domestic prices for rice being a double of the world price, prices for sugar 37%, sunflower 20% and milk and beef 15% above world prices. In 2017, the level of support has decreased due to both lower budgetary payments and lower MPS. The decrease in MPS results from a smaller price gap, as world prices on average increased more than domestic prices (Figure 2.2). Overall in the OECD area, Single Commodity Transfers (SCT) represented 54% of the total PSE during 2015-17. 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 2.3). The relative expenditures for **general services** (GSSE), mainly on knowledge and infrastructure, have declined 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 the total support is provided to individual farmers (PSE).

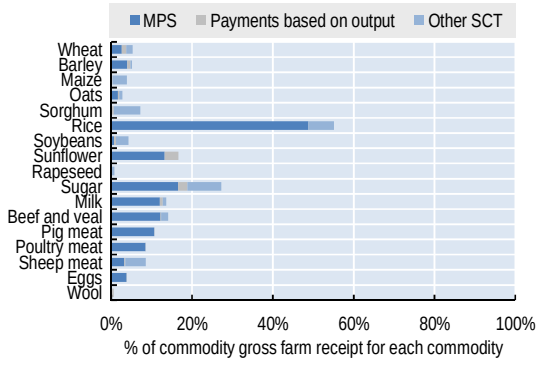
Figure 2.2. OECD: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755355

Figure 2.3. OECD: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755374

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

Million USD

	1986-88	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**594 049**	**774 284**	**1 134 857**	**1 136 197**	**1 112 306**	**1 156 069**
***of which:** share of MPS commodities (%)*	71.9	70.4	68.2	68.7	68.3	67.7
Total value of consumption (at farm gate)	**549 065**	**747 128**	**1 027 650**	**1 024 469**	**1 009 622**	**1 048 857**
Producer Support Estimate (PSE)	**239 909**	**253 656**	**228 866**	**223 572**	**235 104**	**227 921**
Support based on commodity output	196 903	178 043	108 999	103 635	114 561	108 802
Market Price Support[1]	184 304	171 008	105 285	99 779	110 823	105 255
Payments based on output	12 599	7 035	3 714	3 856	3 739	3 547
Payments based on input use	20 259	24 190	27 026	28 609	26 547	25 921
Based on variable input use	9 774	11 013	10 506	10 842	10 148	10 529
with input constraints	743	417	719	762	690	704
Based on fixed capital formation	6 942	7 516	9 326	10 498	9 068	8 410
with input constraints	1 235	744	2 361	2 388	2 531	2 165
Based on on-farm services	3 543	5 661	7 194	7 269	7 331	6 981
with input constraints	439	1 056	1 400	1 211	1 483	1 506
Payments based on current A/An/R/I, production required	18 756	41 859	37 774	34 607	40 035	38 681
Based on Receipts / Income	2 052	1 414	3 618	3 319	3 547	3 989
Based on Area planted / Animal numbers	16 704	40 445	34 156	31 288	36 488	34 692
with input constraints	4 093	16 237	27 463	25 749	28 654	27 986
Payments based on non-current A/An/R/I, production required	533	459	2 259	2 498	2 254	2 026
Payments based on non-current A/An/R/I, production not required	2 080	6 626	48 678	49 990	47 254	48 790
With variable payment rates	181	639	7 630	8 139	7 372	7 380
with commodity exceptions	0	0	7 479	7 989	7 220	7 227
With fixed payment rates	1 899	5 988	41 047	41 851	39 882	41 410
with commodity exceptions	1 561	4 917	2 563	2 345	2 735	2 610
Payments based on non-commodity criteria	1 078	3 135	3 410	3 349	3 569	3 314
Based on long-term resource retirement	1 076	2 951	2 247	2 191	2 383	2 167
Based on a specific non-commodity output	2	183	1 094	1 093	1 112	1 076
Based on other non-commodity criteria	0	1	70	64	74	71
Miscellaneous payments	300	-656	718	883	885	387
Percentage PSE (%)	**36.9**	**29.6**	**18.2**	**17.7**	**19.0**	**17.8**
Producer NPC (coeff.)	**1.48**	**1.30**	**1.10**	**1.10**	**1.11**	**1.10**
Producer NAC (coeff.)	**1.59**	**1.42**	**1.22**	**1.22**	**1.23**	**1.22**
General Services Support Estimate (GSSE)	**25 570**	**43 997**	**40 009**	**39 992**	**39 947**	**40 090**
Agricultural knowledge and innovation system	4 851	8 432	12 613	12 736	12 501	12 602
Inspection and control	1 073	1 508	3 719	3 672	3 703	3 782
Development and maintenance of infrastructure	10 223	23 273	17 445	16 656	17 786	17 894
Marketing and promotion	2 156	5 451	4 179	4 884	3 907	3 747
Cost of public stockholding	5 872	3 518	512	493	508	535
Miscellaneous	1 395	1 816	1 541	1 550	1 542	1 530
Percentage GSSE (% of TSE)	**9.0**	**13.6**	**12.6**	**12.8**	**12.4**	**12.7**
Consumer Support Estimate (CSE)	**-160 010**	**-169 780**	**-73 443**	**-65 288**	**-78 922**	**-76 118**
Transfers to producers from consumers	-169 080	-166 979	-98 117	-93 581	-102 602	-98 169
Other transfers from consumers	-22 306	-30 289	-23 960	-20 664	-25 262	-25 953
Transfers to consumers from taxpayers	19 956	25 490	48 071	48 706	48 052	47 456
Excess feed cost	11 420	1 997	563	251	890	548
Percentage CSE (%)	**-30.2**	**-23.5**	**-7.5**	**-6.7**	**-8.2**	**-7.6**
Consumer NPC (coeff.)	**1.54**	**1.36**	**1.13**	**1.13**	**1.15**	**1.13**
Consumer NAC (coeff.)	**1.43**	**1.31**	**1.08**	**1.07**	**1.09**	**1.08**
Total Support Estimate (TSE)	**285 435**	**323 144**	**316 946**	**312 270**	**323 103**	**315 466**
Transfers from consumers	191 386	197 267	122 077	114 244	127 864	124 122
Transfers from taxpayers	116 355	156 165	218 829	218 689	220 501	217 297
Budget revenues	-22 306	-30 289	-23 960	-20 664	-25 262	-25 953
Percentage TSE (% of GDP)	**2.0**	**1.3**	**0.7**	**0.7**	**0.7**	**0.6**

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 and Slovenia, for which data are not available. The OECD total for 1995-97 includes all countries except Latvia. 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 (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758300

Emerging Economies

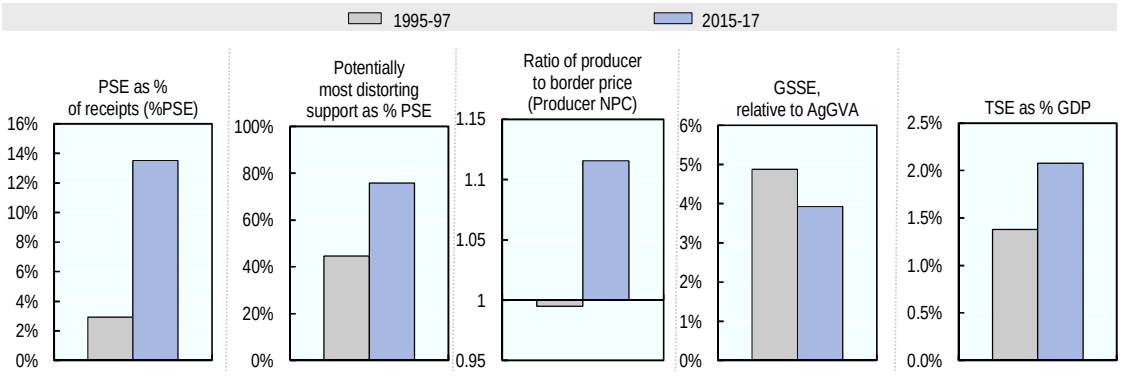
The total support to agriculture (TSE) provided in the Emerging Economies[1] represented USD 297 billion (EUR 266 billion) per year on average in 2015-17 of which 84% or USD 249 billion (EUR 223 billion) were provided as support to farms (PSE). Expressed as a share on gross farm receipts (%PSE), support to farms represented 13.5% in 2015-17 on average across the Emerging Economies, a substantial increase from 2.9% in 1995-97 (Table 2.2).

Together with the increase of support, the share of payments based on output (including the MPS) and input use in total support to farms has also increased. The payments 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 these potentially most production and trade distorting payments has substantially increased in the Emerging Economies and at almost 80% stays well above the OECD average.

Among the remaining forms of support to farms, the most important are payments based on 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 1995-97 but reached close to 10% of total support to farms in 2015-17. All other forms of support to farms remain marginal (Table 2.2).

The expenditures financing general services to the sector (GSSE) in the Emerging Economies reached an annual average of USD 46 billion (EUR 42 billion) in 2015-17. Most of these expenditures went to the financing of public stockholding (USD 19 billion), the remaining expenditures went to finance mainly infrastructure projects and agricultural knowledge an innovation (USD 12 billion each) (Table 2.2).

Figure 2.4. Emerging Economies: Development of support to agriculture

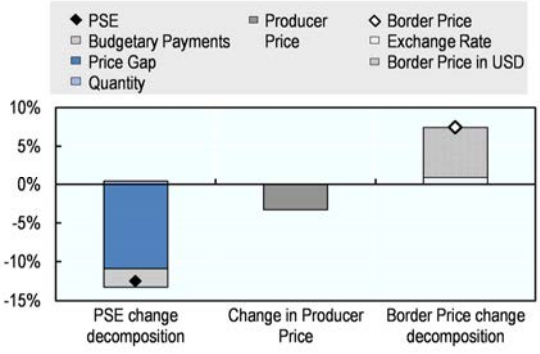


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database). http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755393

In contrast to the OECD area the **Support to farmers** in Emerging Economies has increased substantially over the long term. In 2015-17, support has been around 14% of gross farm receipts, still bellow but getting closer to the OECD average. The share of potentially **most distorting support** has increased over time due to a rise of market price support (MPS) and is the dominant part of the support (Figure 2.4). Effective prices received by farmers, on average, were 12% higher than world prices; large differences between commodities persist with domestic prices for rapeseed, rice, wheat, sugar and milk being highly supported while other commodities, notably barley, oats, and sunflower were taxed as domestic prices stand below world market levels. In 2017, the level of support has decreased mainly due to lower MPS as budgetary payments were almost unchanged. The decrease in MPS results from a smaller price gap as world prices increased while domestic prices declined slightly (Figure 2.5). Overall, Single Commodity Transfers (SCT) represented three-quarters of the total PSE during 2015-17. Rapeseed, rice, wheat, sugar and milk had the highest share of SCT in commodity gross farm receipts, while SCTs were negative for barley, oats, and sunflower. MPS is the main component of the SCTs in most cases (Figure 2.6). On average, the expenditures for **general services** (GSSE), mainly on public stockholding, knowledge and infrastructure, relative to agriculture value added were below the OECD average. **Total support to agriculture** as a share of GDP has increased over time, mainly driven by the increase of support to farms, which was about 84% of the total support.

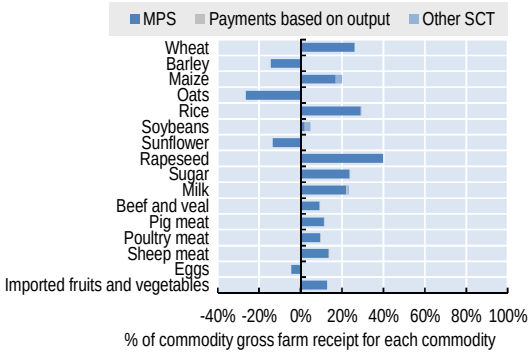
Figure 2.5. Emerging Economies: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755412

Figure 2.6. Emerging Economies: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933755431

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

Million USD

	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**364 842**	**1 768 653**	**1 760 203**	**1 738 686**	**1 807 070**
***of which:** share of MPS commodities (%)*	79.2	77.6	77.6	77.3	75.4
Total value of consumption (at farm gate)	**376 380**	**1 757 093**	**1 726 369**	**1 750 853**	**1 794 058**
Producer Support Estimate (PSE)	**11 109**	**248 528**	**261 474**	**257 180**	**226 931**
Support based on commodity output	-1 444	182 879	194 671	188 396	165 571
Market Price Support[1]	-2 482	177 685	189 452	183 379	160 224
Payments based on output	1 039	5 194	5 219	5 017	5 347
Payments based on input use	11 255	31 030	34 958	30 784	27 347
Based on variable input use	6 514	6 957	8 845	7 235	4 792
with input constraints	108	1 588	2 026	1 668	1 070
Based on fixed capital formation	4 126	20 404	22 085	19 935	19 193
with input constraints	6	1 276	1 429	1 337	1 063
Based on on-farm services	615	3 668	4 028	3 614	3 362
with input constraints	1	21	25	21	18
Payments based on current A/An/R/I, production required	811	27 829	25 634	29 416	28 439
Based on Receipts / Income	808	3 245	2 455	3 713	3 566
Based on Area planted / Animal numbers	3	24 585	23 180	25 702	24 873
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	164	4 164	3 439	5 576	3 477
With variable payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
With fixed payment rates	164	4 164	3 439	5 576	3 477
with commodity exceptions	0	0	0	0	0
Payments based on non-commodity criteria	0	2 373	2 620	2 673	1 826
Based on long-term resource retirement	0	2 373	2 620	2 673	1 826
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	322	253	153	334	272
Percentage PSE (%)	**2.9**	**13.5**	**14.3**	**14.2**	**12.1**
Producer NPC (coeff.)	**0.99**	**1.12**	**1.13**	**1.12**	**1.10**
Producer NAC (coeff.)	**1.03**	**1.16**	**1.17**	**1.17**	**1.14**
General Services Support Estimate (GSSE)	**11 892**	**46 398**	**52 659**	**44 392**	**42 143**
Agricultural knowledge and innovation system	2 425	11 734	12 223	11 476	11 502
Inspection and control	612	2 591	2 979	2 462	2 333
Development and maintenance of infrastructure	3 741	12 460	13 520	12 152	11 707
Marketing and promotion	34	697	797	633	662
Cost of public stockholding	3 952	18 570	22 750	17 344	15 616
Miscellaneous	1 128	346	389	324	323
Percentage GSSE (% of TSE)	**51.1**	**15.6**	**16.7**	**14.6**	**15.6**
Consumer Support Estimate (CSE)	**-2 004**	**-180 684**	**-192 469**	**-188 785**	**-160 799**
Transfers to producers from consumers	1 543	-169 191	-181 554	-178 282	-147 738
Other transfers from consumers	-2 534	-23 174	-25 468	-24 613	-19 441
Transfers to consumers from taxpayers	269	1 679	1 517	1 601	1 919
Excess feed cost	-1 283	10 002	13 036	12 508	4 462
Percentage CSE (%)	**-0.5**	**-10.3**	**-11.2**	**-10.8**	**-9.0**
Consumer NPC (coeff.)	**1.00**	**1.12**	**1.14**	**1.13**	**1.10**
Consumer NAC (coeff.)	**1.01**	**1.11**	**1.13**	**1.12**	**1.10**
Total Support Estimate (TSE)	**23 270**	**296 605**	**315 650**	**303 173**	**270 993**
Transfers from consumers	991	192 365	207 022	202 894	167 179
Transfers from taxpayers	24 813	127 414	134 096	124 892	123 254
Budget revenues	-2 534	-23 174	-25 468	-24 613	-19 441
Percentage TSE (% of GDP)	**1.4**	**2.1**	**2.3**	**2.2**	**1.8**

Note: p: provisional. NPC: Nominal Protection Coefficient. NAC: Nominal Assistance Coefficient.
A/An/R/I: Area planted/Animal numbers/Receipts/Income.
The Emerging Economies are Brazil, China, Colombia, Costa Rica, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam. The Emerging Economies total for 1995-97 includes data for all countries except the Philippines and Viet Nam, for which data are available from 2000 onwards.
1. Market Price Support (MPS) is net of producer levies and excess feed cost. MPS commodities: see notes to individual country tables.

Source: OECD (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758319

All countries

The total support to agriculture (TSE) provided in all countries covered in this report represented USD 620 billion (EUR 556 billion) per year on average in 2015-17 of which 78% or USD 484 billion (EUR 434 billion) were provided as support to farms (PSE). Expressed as a share on gross farm receipts (%PSE), support to farms represented 15.5% in 2015-17 on average for all countries covered, a reduction from 21.4% in 1995-97 (Table 2.3).

The changes of the structure of support related to all countries in the report in the period from 1995-97 to 2015-17, were relatively moderate. The share of the potentially most distorting forms of support (based on output or based on unconstrained use of variable inputs) has declined slightly, but these policies continue to represent almost two-thirds of the PSE across all countries. Most importantly, the share of Market Price Support (MPS) in the PSE has barely changed, transferring more than 9% of gross receipts to farmers in the countries covered. Payments based on output or based on unconstrained input use play a shrinking role overall but continue to contribute to this group of support.

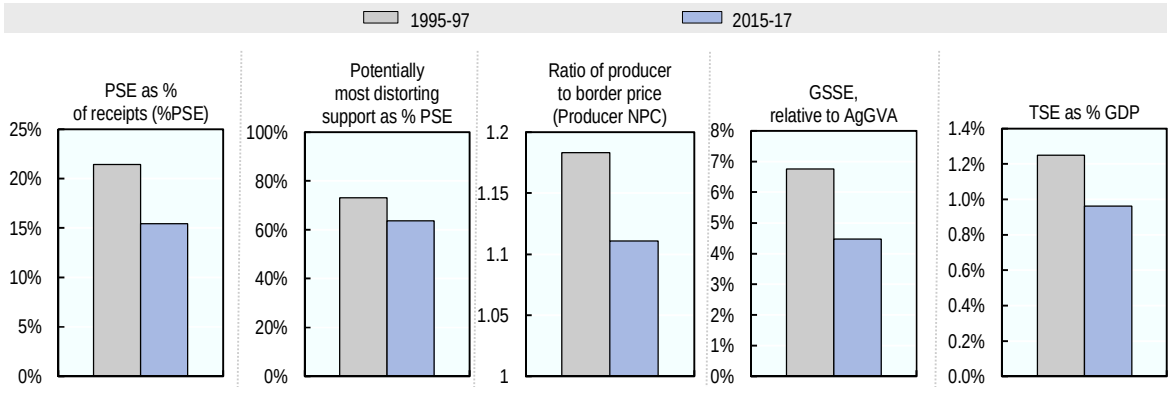
Among the remaining forms of support to farms, the most important are payments based on areas planted and animal numbers and payments based on historical parameters not requiring production. The importance of these latter payments, which are decoupled from current production and hence much less production and trade distorting, has increased significantly and today represents almost 12% of all farm 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 86 billion (EUR 76 billion) in 2015-17. Most of these expenditures went to the financing of infrastructure projects (USD 30 billion), agricultural knowledge an innovation (USD 24 billion) and public stockholding (USD 19 billion) (Table 2.3).

Note

[1] The Emerging Economies included in this report are: Brazil, China, Colombia, Costa Rica, Kazakhstan, Philippines, Russian Federation, South Africa, Ukraine and Viet Nam.

Figure 2.7. All countries: Development of support to agriculture

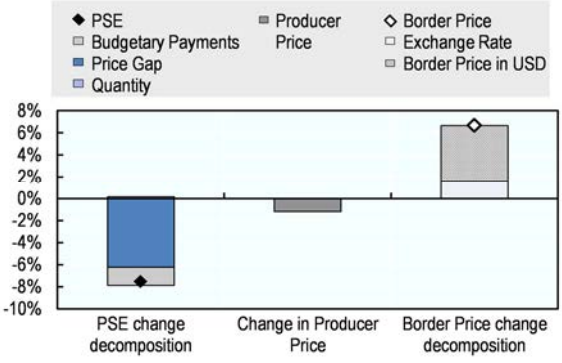


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database). http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755450

Support to farmers (%PSE), when measured for all countries in the report, has declined gradually over the long term. In 2015-17, support has been at 15.5% of gross farm receipts. The share of potentially **most distorting support** has decreased slightly over time due to the increase of the less distorting parts of support (Figure 2.7). Effective prices received by farmers, on average, were 11% higher than world prices; larger price gaps are recorded for rice, sugar, wheat and milk. In 2017, the level of support has decreased mainly due to lower MPS as total budgetary payments were almost unchanged. The decrease in MPS results from a reduced price gap as world prices increased while domestic prices declined slightly (Figure 2.8). Overall, Single Commodity Transfers (SCT) represented two-thirds of the total PSE during 2015-17. Rice, sugar, wheat, and milk had the highest share of SCT in commodity gross farm receipts (Figure 2.9). 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.

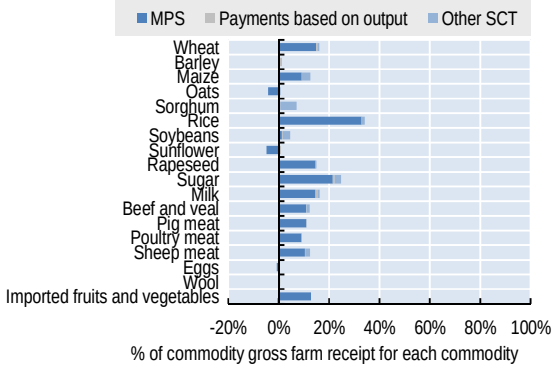
Figure 2.8. All countries: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755469

Figure 2.9. All countries: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755488

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

Million USD

	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**1 139 126**	**2 928 921**	**2 921 183**	**2 875 472**	**2 990 108**
***of which:** share of MPS commodities (%)*	71.5	73.7	74.6	74.0	72.4
Total value of consumption (at farm gate)	**1 123 508**	**2 837 810**	**2 801 038**	**2 812 260**	**2 900 132**
Producer Support Estimate (PSE)	**264 765**	**483 563**	**491 141**	**498 655**	**460 894**
Support based on commodity output	176 599	293 155	299 224	304 522	275 721
Market Price Support[1]	168 526	283 979	289 880	295 501	266 557
Payments based on output	8 073	9 176	9 344	9 021	9 164
Payments based on input use	35 444	58 768	64 501	57 892	53 910
Based on variable input use	17 527	17 530	19 759	17 449	15 380
with input constraints	525	2 318	2 803	2 368	1 783
Based on fixed capital formation	11 641	30 327	33 394	29 448	28 140
with input constraints	749	3 638	3 817	3 868	3 228
Based on on-farm services	6 276	10 911	11 347	10 996	10 390
with input constraints	1 056	1 421	1 236	1 504	1 524
Payments based on current A/An/R/I, production required	42 670	67 146	61 725	71 179	68 533
Based on Receipts / Income	2 222	6 870	5 780	7 265	7 564
Based on Area planted / Animal numbers	40 448	60 276	55 945	63 914	60 969
with input constraints	16 237	28 418	26 679	29 718	28 857
Payments based on non-current A/An/R/I, production required	459	2 274	2 532	2 259	2 029
Payments based on non-current A/An/R/I, production not required	6 791	55 414	56 099	55 272	54 871
With variable payment rates	639	7 630	8 139	7 372	7 380
with commodity exceptions	0	7 479	7 989	7 220	7 227
With fixed payment rates	6 152	47 784	47 960	47 899	47 491
with commodity exceptions	4 917	2 565	2 347	2 737	2 611
Payments based on non-commodity criteria	3 135	5 803	5 981	6 268	5 159
Based on long-term resource retirement	2 951	4 622	4 811	5 061	3 994
Based on a specific non-commodity output	183	1 111	1 106	1 133	1 094
Based on other non-commodity criteria	1	70	64	74	71
Miscellaneous payments	-334	1 004	1 078	1 263	671
Percentage PSE (%)	**21.4**	**15.5**	**15.7**	**16.2**	**14.5**
Producer NPC (coeff.)	**1.18**	**1.11**	**1.12**	**1.12**	**1.10**
Producer NAC (coeff.)	**1.27**	**1.18**	**1.19**	**1.19**	**1.17**
General Services Support Estimate (GSSE)	**55 889**	**86 350**	**92 580**	**84 261**	**82 209**
Agricultural knowledge and innovation system	10 857	24 378	24 995	24 007	24 131
Inspection and control	2 119	6 323	6 663	6 177	6 128
Development and maintenance of infrastructure	27 014	30 024	30 350	30 041	29 682
Marketing and promotion	5 485	4 651	5 382	4 307	4 263
Cost of public stockholding	7 470	19 088	23 251	17 862	16 152
Miscellaneous	2 945	1 887	1 941	1 866	1 853
Percentage GSSE (% of TSE)	**16.1**	**13.9**	**14.6**	**13.3**	**13.9**
Consumer Support Estimate (CSE)	**-171 784**	**-256 167**	**-259 275**	**-270 160**	**-239 066**
Transfers to producers from consumers	-165 436	-269 405	-276 725	-283 481	-248 011
Other transfers from consumers	-32 822	-47 211	-46 157	-49 906	-45 571
Transfers to consumers from taxpayers	25 759	49 828	50 319	49 723	49 441
Excess feed cost	715	10 622	13 287	13 504	5 075
Percentage CSE (%)	**-15.6**	**-9.2**	**-9.4**	**-9.8**	**-8.4**
Consumer NPC (coeff.)	**1.21**	**1.13**	**1.13**	**1.13**	**1.11**
Consumer NAC (coeff.)	**1.19**	**1.10**	**1.10**	**1.11**	**1.09**
Total Support Estimate (TSE)	**346 414**	**619 741**	**634 040**	**632 640**	**592 544**
Transfers from consumers	198 258	316 617	322 881	333 387	293 582
Transfers from taxpayers	180 978	350 336	357 315	349 159	344 533
Budget revenues	-32 822	-47 211	-46 157	-49 906	-45 571
Percentage TSE (% of GDP)	**1.3**	**1.0**	**1.0**	**1.0**	**0.9**

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: Brazil, China, Colombia, Costa Rica, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam. The All countries total for 1995-97 includes data for all countries except Latvia, the Philippines and Viet Nam, 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 (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758338

Chapter 3. Australia

Support to agriculture

Australia has reduced its support to its agricultural producers continuously from already relatively low levels in 1986-88. Australia's Producer Support (%PSE) is one of the lowest in the OECD area at 1.7% of gross farm receipts for the period 2015-17, with total support to agriculture (TSE) representing around 0.1% of GDP. Support to Australian agriculture is roughly equally 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. In 2017, of the support that is provided directly to producers, around 46% was provided in the form of subsidies to input use. Much of this relates to measures that provide subsidies for upgrading on-farm water infrastructure to help reduce negative environmental externalities, and payments that seek to help producers deal better with droughts and other natural events through concessional loans at concessional interest rates. Much of the remaining producer support is directed towards risk and environmental management, with income tax averaging arrangements, farm management deposits and other environmental programmes accounting for 47% of the PSE (those payments are based on non-current area with production not required).

Australia has developed an extensive Agricultural Knowledge and Innovation System which, with the development of infrastructure, accounts for the greatest share of the general services support provided to the sector – respectively, these two areas account for 51% and 34% of GSSE expenditure. 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 56% in 2017.

Main policy changes

In 2017, new policies were developed that increased the scope of the concessional loan arrangements. The use of concessional loans as an intervention to enable recovery from adverse events has a long history in Australia. During 2017, steps were taken to extend existing programmes for some producers. Specifically, Business Improvement Concessional Loans were introduced in July 2017 that expanded the pool of eligible farm businesses. Loans are only available to former recipients of the Farm Household Allowance, are capped at AUD 1 million, and are subject to specific eligibility criteria.

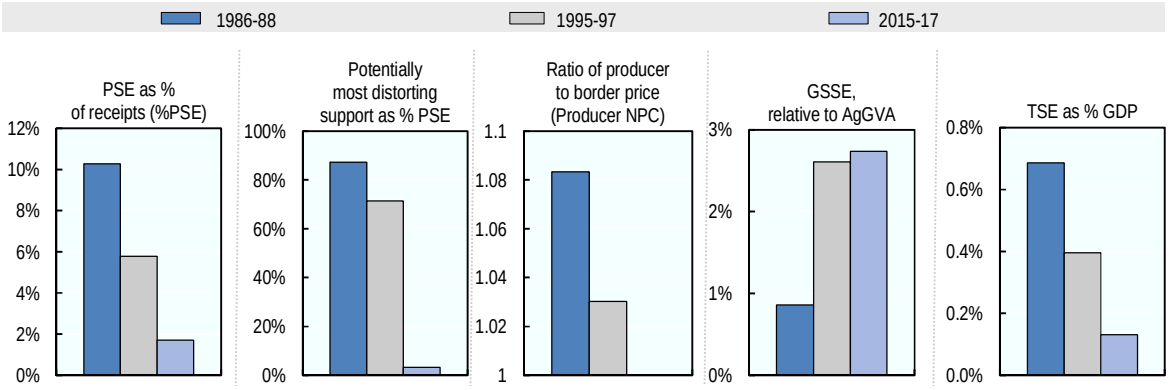
Australia has continued to foster its strong trade links with major trading partners. In March 2018, Australia and ten other countries signed the Comprehensive and Progressive Trans-Pacific Partnership. A month earlier, Australia also signed a bilateral free trade agreement with Peru. In June 2017, Australia concluded the negotiations for the Pacific Trade and Economic Agreement (PACER Plus). Australia continues to further

negotiations with Indonesia, India and the European Union along with a number of plurilateral agreements.

Assessment and recommendations

- There has been continuous and significant progress on policy reform since 1986-88, reducing the level of support to agriculture as measured by the %PSE to under 2%. Australia also removed the potentially most distorting forms of support in the early 2000s, when remaining policy measures that conveyed market price support were removed. The remaining support programmes are targeted to risk management, environmental conservation and provision of general services.
- Since the end of the Exceptional Circumstances programmes in 2013, Australia has continued to reform its drought policies. An Intergovernmental Agreement is now in place that aims to focus drought support measures on encouraging drought preparedness and resilience. Most policy measures have moved in this direction, with recent policies on insurance and savings concessions focusing on market and producer-level decisions as the core response to risk. Despite this, in recent years there has been increased use of concessional loans with subsidised interest rates (concessional variable interest rates lower than commercially available interest rates). Similar past programmes have been questioned in terms of their the efficiency and effectiveness (PC, 2009). These measures should be reviewed to ensure they are effective and efficient responses to the challenges that are faced by the sector and do not encourage additional risk taking by producers or reduce overall sector resilience.
- The overall challenge for the future is to improve the economic viability of farms while ensuring a sustainable use of scarce resources, in particular, water. Water policy remains a contentious area, however, reforms completed to date have allowed market mechanisms to deliver scarcity pricing signals to producers. In this light, water market reforms and basin management should continue to be a policy priority, alongside efforts to help producers better adapt to climate change.
- Agriculture, through the opportunities provided to land owners, is covered by Australia's Direct Action climate policy. There are questions about the programmes ability to deliver additional emissions reductions over those that would have occurred anyway. These provisions should be reviewed to ensure they deliver additionality with respect to purchases of land related emissions reductions.
- Australia should continue using its industry partnership arrangement through rural research and development corporations (RDCs) to foster innovation and the adoption of new technologies and practices, in order to improve productivity growth.

Figure 3.1. Australia: Development of support to agriculture

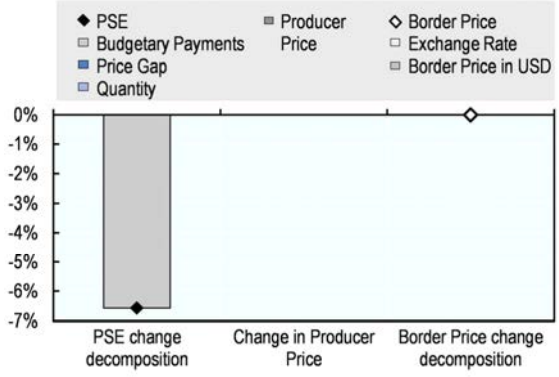


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755507

Support to farmers (%PSE) has declined gradually over the long term. During 2015-17, support has been less than 2% of gross farm receipts, well below the OECD average. The share of potentially **most distorting support** has decreased significantly over time due to decline in market price support (MPS) following reforms to various marketing arrangements, and sits well below the OECD average (Figure 3.1). Prices received by Australian farmers are on par with international prices, with only sugar producers the recipient of single commodity transfers (SCT) related to capital subsidies to reduce environmentally detrimental run-off (Figure 3.3). Most distorting forms of support now represents very small share of the (low) PSE. Overall, the value of farm support fallen by some 7% in 2017 due to a reduction in budgetary expenditures (Figure 3.2); as production levels also fell between 2016 and 2017, however, the %PSE has remained unchanged (Table 3.1). Expenditures for **general services** (GSSE) have increased over time, but growth has slowed over the most recent period. **Total support to agriculture** as a share of GDP has declined significantly over time with the majority of support made up of GSSE expenditure– around 56% of the total support is provided as GSSE.

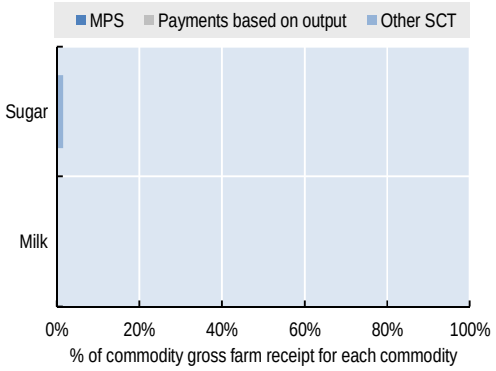
Figure 3.2. Australia: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755526

Figure 3.3. Australia: Transfer to specific commodities (SCT), 2015-2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database). http://dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933755545

Table 3.1. Australia: Estimates of support to agriculture

Million USD

	1986-88	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**14 358**	**21 486**	**45 030**	**42 634**	**47 138**	**45 317**
of which: *share of MPS commodities (%)*	81.7	75.3	67.9	69.4	68.0	66.4
Total value of consumption (at farm gate)	**5 142**	**7 717**	**19 518**	**18 536**	**19 308**	**20 710**
Producer Support Estimate (PSE)	**1 506**	**1 282**	**786**	**770**	**809**	**779**
Support based on commodity output	1 095	630	0	0	0	0
Market Price Support[1]	1 095	630	0	0	0	0
Payments based on output	0	0	0	0	0	0
Payments based on input use	230	466	345	318	354	362
Based on variable input use	217	287	44	17	51	65
with input constraints	0	0	19	6	20	31
Based on fixed capital formation	4	25	192	177	205	194
with input constraints	0	0	94	87	104	90
Based on on-farm services	9	154	109	124	98	104
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	0	14	67	76	76	48
Based on Receipts / Income	0	14	60	65	67	48
Based on Area planted / Animal numbers	0	0	7	11	9	0
with input constraints	0	0	7	11	9	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	171	359	348	360	368
With variable payment rates	181	103	348	323	356	364
with commodity exceptions	0	0	204	180	212	218
With fixed payment rates	0	68	11	25	4	4
with commodity exceptions	0	0	0	0	0	0
Payments based on non-commodity criteria	0	1	16	28	20	2
Based on long-term resource retirement	0	0	0	0	0	0
Based on a specific non-commodity output	0	0	15	27	17	2
Based on other non-commodity criteria	0	1	1	1	3	0
Miscellaneous payments	0	0	0	0	0	0
Percentage PSE (%)	**10.3**	**5.8**	**1.7**	**1.8**	**1.7**	**1.7**
Producer NPC (coeff.)	**1.08**	**1.03**	**1.00**	**1.00**	**1.00**	**1.00**
Producer NAC (coeff.)	**1.11**	**1.06**	**1.02**	**1.02**	**1.02**	**1.02**
General Services Support Estimate (GSSE)	**95**	**384**	**928**	**866**	**913**	**1 006**
Agricultural knowledge and innovation system	95	291	436	475	407	427
Inspection and control	0	20	113	101	123	115
Development and maintenance of infrastructure	0	54	357	267	360	442
Marketing and promotion	0	20	22	23	23	21
Cost of public stockholding	0	0	0	0	0	0
Miscellaneous	0	0	0	0	0	0
Percentage GSSE (% of TSE)	**5.9**	**23.2**	**54.1**	**52.9**	**53.0**	**56.3**
Consumer Support Estimate (CSE)	**-600**	**-267**	**0**	**0**	**0**	**0**
Transfers to producers from consumers	-600	-267	0	0	0	0
Other transfers from consumers	0	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 (%)	**-11.7**	**-3.5**	**0.0**	**0.0**	**0.0**	**0.0**
Consumer NPC (coeff.)	**1.13**	**1.04**	**1.00**	**1.00**	**1.00**	**1.00**
Consumer NAC (coeff.)	**1.13**	**1.04**	**1.00**	**1.00**	**1.00**	**1.00**
Total Support Estimate (TSE)	**1 601**	**1 666**	**1 715**	**1 636**	**1 723**	**1 785**
Transfers from consumers	600	267	0	0	0	0
Transfers from taxpayers	1 000	1 399	1 715	1 636	1 723	1 785
Budget revenues	0	0	0	0	0	0
Percentage TSE (% of GDP)	**0.7**	**0.4**	**0.1**	**0.1**	**0.1**	**0.1**
GDP deflator (1986-88=100)	**100**	**134**	**227**	**223**	**226**	**234**
Exchange rate (national currency per USD)	**1.40**	**1.32**	**1.33**	**1.33**	**1.35**	**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 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 (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758357

Chapter 4. Brazil

Support to agriculture

Brazil provides a relatively low level of support and protection to agriculture, reflecting its position as a competitive exporter. The level of producer support (PSE) was 2.7% of gross farm receipts in 2015-17, well below the OECD average. The total support estimate to agriculture (TSE) was 0.4% of GDP, and the direct support to farms (PSE) represented 50% of the total support to the sector (TSE) in the same period. Support based on output and payments based on input use are the most prominent elements of the PSE. Expenditures on agricultural knowledge and innovation systems are the main elements of the General Services Support Estimate (GSSE) and accounted for close to 90% of the total GSSE in 2015-17.

More than half of support to producers is provided through measures based on variable input, mainly concessional credit and crop insurance subsidies. Concessional credit is available for farm marketing and working capital but also for investment in fixed capital. Since 2008 all support based on input use is conditional to environmental criteria. One-third of support to producers is provided through measures that distort farm output prices, such as regional minimum guaranteed prices and deficiency payments. 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.

Main policy changes

The Agricultural and Livestock Plan 2017/18 increased the maximum budgeted allocation for rural credit by 2.5%, and banks are obliged to provide up to 20% of their deposits to finance subsidised rural credit for working capital and for agricultural products storage were significantly increased up to 20% of their deposits. However, as inflation decelerated and reference interest rates (SELIC) declined in 2017, applied market interest rates were lower than the ones fixed for the 2017/18 period and the regional minimum guaranteed prices for key crops were maintained at or below previous year levels.

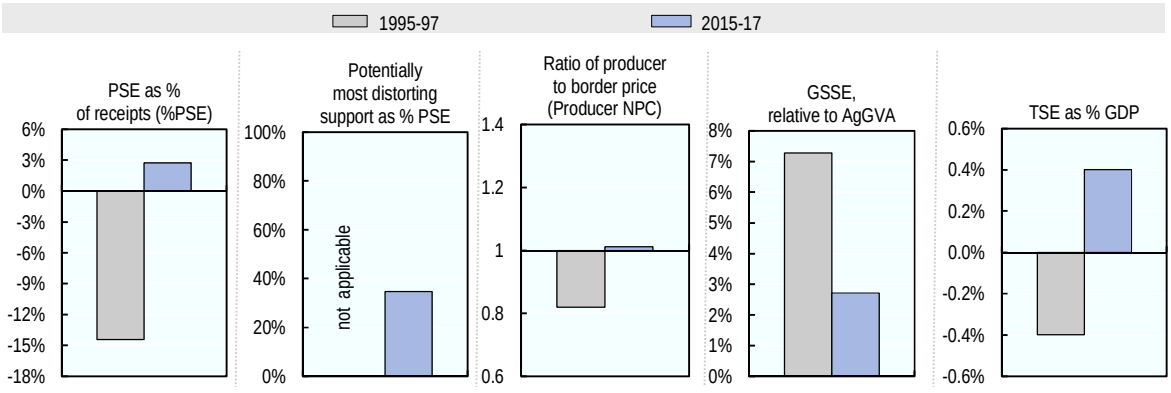
A strategic plan for the eradication and prevention of Foot and Mouth Disease was launched and the Veterinary Inspection system is to be modernised, with the government recruiting 600 additional sanitary professionals.

The national biofuel policy RenovaBio passed in December 2017 responds to Brazil's Intended Nationally Determined Contributions commitments under the Paris Agreement on Climate Change. It is designed to increase biofuel production, and establishes mandates related to biofuel certification and tradable decarbonisation credits.

Assessment and recommendations

- The prices received by agricultural producers in Brazil fell in 2017 in the context of a significant decline in inflation, and most regional minimum prices fixed by the Government did not increase. These developments highlight that, in spite of regional price support programmes, prices received by agricultural producers in Brazil are almost aligned with international markets. However, differences in support levels by commodity persist and should be removed to eliminate distortions within the agricultural sector.
- Agricultural credit at preferential interest rates is central to Brazil's agricultural policy. The reduction of the reference interest rate SELIC makes credit more affordable and allows better targeting credit support to small producers and to innovative capital investment. While credit support is intended to address failures in financial markets, it entails default-related risks and most of the credit is concentrated on more distorting short-term borrowing for commercial farmers. A gradual downsizing of those short-term concessional loans should be considered now that market interest rates are lower, and regulations and procedures should be simplified. Agricultural credit support could be better targeted to support on-farm investments that explicitly incorporate technological innovations, advanced farm management and environmental practices.
- Expenditure on general services to agriculture constituted almost a third of total support to the agricultural sector in 2015-17, with a focus on R&D and innovation transfer. The agricultural innovation system has helped to maintain relatively high productivity growth rates in the commercial sector. Maintaining the research capacity and focus, and increasing the diffusion and adoption of innovations to a wider range of farmers, will be important, including through partnerships between the Government research agency *Embrapa* and other private and public actors.
- The Ministry of Agriculture's development of on-line risk assessment tools should help to generate risk awareness and facilitate self-assessment and decision making by farmers. In order to develop more efficient insurance products and monitor the performance of subsidized insurance, it is essential to strengthen the information base of these tools and to facilitate the information sharing among different actors.
- Most support programmes in Brazil are currently conditional on environmental criteria and zoning rules, and the ABC plan provides credit to finance the implementation of sustainable practices. The effectiveness of these conditions and credit programmes to achieve 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 INDCs under the Paris Climate Agreement.
- Recent efforts to improve animal health have delivered significant results in 2017 with the OIE declaration of Brazil as free of the contagious bovine pleuropneumonia, and the recognition by the Government of Brazil of the last two states as free of foot and mouth disease with vaccination. The ongoing restructuring of the sanitary and phytosanitary inspection system should pursue further strengthening the system by improving its efficiency and professional independence, in order to restore confidence and open export markets for Brazilian agriculture.

Figure 4.1. Brazil: Development of support to agriculture

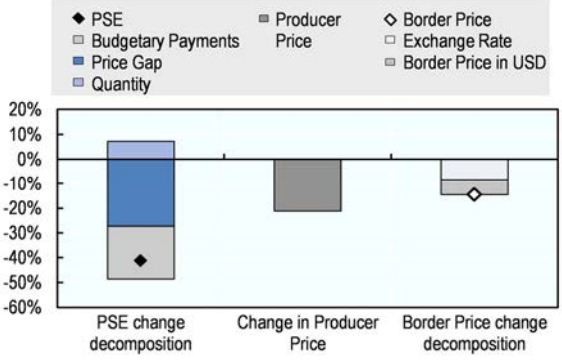


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755621

Brazil has moved from taxing the sector in the mid-1990s to a low level of **Support to farmers (%PSE)** of 2.7% of gross farm receipts in 2015-17, well below the OECD average (Figure 4.1). The share of potentially **most distorting support** was 35% of the PSE in that period, reflecting Market Price Support and deficiency payments. Since 2008, all support to variable inputs use is conditional to environmental criteria. Prices received by farmers were almost aligned with world prices in 2015-17, while they were 18 % lower in 1995-97. The expenditures for **general services** (GSSE) corresponded to 2.7% of the agricultural value added in 2015-17, down from 7.3% in 1995-97. Almost 90% of this expenditure was for financing the agricultural knowledge and innovation system. **Total support to agriculture** was 0.4% of GDP in 2015-17, below the OECD average. About half of the total support (TSE) is provided to individual farmers (PSE). The level of support to producers (PSE) in 2017 has decreased by 41%, due to declines in both MPS and budgetary payments. The decrease in MPS results from a smaller price gap as domestic prices declined more than border prices (Figure 4.2). Transfers to specific commodities (SCT) represented 63% of the support to farmers (PSE) (Figure 4.3). Most of the SCT were in the form MPS. The commodities with highest SCT transfers in 2015-17 were rice (16%), wheat (10%), cotton (5%) and maize (4).

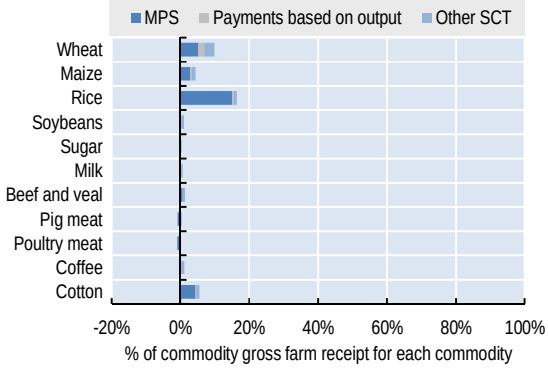
Figure 4.2. Brazil: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database). http://dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933755640

Figure 4.3. Brazil: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database). http://dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933755659

Table 4.1. Brazil: Estimates of support to agriculture

Million USD

	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**43 895**	**154 100**	**143 171**	**148 086**	**171 042**
***of which:** share of MPS commodities (%)*	73.0	82.3	82.0	82.2	82.7
Total value of consumption (at farm gate)	**52 747**	**102 759**	**97 385**	**103 370**	**107 521**
Producer Support Estimate (PSE)	**-6 826**	**4 234**	**3 802**	**5 423**	**3 479**
Support based on commodity output	-9 705	1 469	572	2 405	1 429
Market Price Support[1]	-9 784	1 241	306	2 200	1 216
Payments based on output	78	228	265	205	212
Payments based on input use	2 879	2 647	3 116	2 891	1 935
Based on variable input use	1 659	1 376	1 747	1 478	903
with input constraints	0	1 376	1 747	1 478	903
Based on fixed capital formation	1 156	1 202	1 345	1 270	992
with input constraints	0	1 202	1 345	1 270	992
Based on on-farm services	65	69	23	143	39
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	0	119	114	127	115
Based on Receipts / Income	0	119	114	127	115
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 (%)	**-14.4**	**2.7**	**2.6**	**3.6**	**2.0**
Producer NPC (coeff.)	**0.82**	**1.01**	**1.00**	**1.02**	**1.01**
Producer NAC (coeff.)	**0.87**	**1.03**	**1.03**	**1.04**	**1.02**
General Services Support Estimate (GSSE)	**3 365**	**2 194**	**1 946**	**2 308**	**2 328**
Agricultural knowledge and innovation system	1 135	1 927	1 746	1 878	2 155
Inspection and control	108	24	16	35	21
Development and maintenance of infrastructure	1 686	113	61	218	59
Marketing and promotion	7	3	3	3	3
Cost of public stockholding	428	127	120	173	90
Miscellaneous	0	0	0	0	0
Percentage GSSE (% of TSE)	**..**	**29.0**	**28.3**	**26.5**	**33.0**
Consumer Support Estimate (CSE)	**6 442**	**-96**	**782**	**-1 177**	**107**
Transfers to producers from consumers	6 520	-1 314	-306	-2 617	-1 017
Other transfers from consumers	-123	-142	-41	-253	-132
Transfers to consumers from taxpayers	14	1 124	1 130	985	1 256
Excess feed cost	30	236	0	708	0
Percentage CSE (%)	**12.3**	**-0.1**	**0.8**	**-1.1**	**0.1**
Consumer NPC (coeff.)	**0.89**	**1.01**	**1.00**	**1.03**	**1.01**
Consumer NAC (coeff.)	**0.89**	**1.00**	**0.99**	**1.01**	**1.00**
Total Support Estimate (TSE)	**-3 447**	**7 552**	**6 878**	**8 715**	**7 063**
Transfers from consumers	-6 398	1 456	347	2 871	1 149
Transfers from taxpayers	3 073	6 238	6 571	6 098	6 046
Budget revenues	-123	-142	-41	-253	-132
Percentage TSE (% of GDP)	**-0.4**	**0.4**	**0.4**	**0.5**	**0.3**
GDP deflator (1996-98=100)	**91**	**427**	**398**	**431**	**453**
Exchange rate (national currency per USD)	**1.00**	**3.34**	**3.33**	**3.49**	**3.19**

.. 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 Brazil are: wheat, maize, rice, soybean, sugar, milk, beef and veal, pig meat, poultry, cotton, coffee.

Source: OECD (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758376

Chapter 5. Canada

Support to agriculture

Canada has significantly reduced its agricultural support since the late 1980s. Producer support as a share of gross farm receipts fell sharply between 1986-88 and 1995-97, 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 there have not been any significant policy changes to MPS measures for dairy, poultry, and eggs. Lower levels of disaster payments in recent years and a shift of budgetary expenditures towards general service support to the sector since the mid-1990s have resulted in lower farm income support overall.

Canada's PSE declined from 36% in 1986-88 to 9% in 2015-17, and has been consistently below the OECD average. However, the share of potentially most distorting support (based on output and variable input use – without input constraints) was 69% in 2015-17, above the OECD average and at a similar level to 1986-88. MPS for milk accounts for the largest share of potentially most distorting support. On average, prices received by farmers were 12% higher in 2015-17 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 2015-17.

Main policy changes

The agricultural policy framework in Canada, *Growing Forward 2* (GF2), expired in March 2018. In 2017, the core elements of the next framework agreement, the *Canadian Agricultural Partnership* (CAP) were agreed between the Federal, Provincial, and Territorial (FPT) ministers of agriculture. CAP prioritises investment in six areas: 1) science, research and innovation; 2) markets and trade; 3) environmental sustainability and climate change; 4) value-added agriculture and agri-food processing; 5) risk management; and, 6) public trust. It will also feature new programmes that facilitate regional collaboration among Canadian provinces and territories and strengthen the participation of women, youth and Indigenous Peoples in the agriculture and agri-food sector. Similar to GF2, CAP has three elements: 1) federally-delivered CAP activities; 2) FPT cost-shared programming delivered by Provinces and Territories; and 3) FPT cost-shared business risk management (BMR) programmes.

In September 2017, provisional application began for the *Canada-European Union Comprehensive Economic and Trade Agreement* (CETA). Under the CETA, Canada established annual duty-free Tariff-Rate Quotas (TRQs) for cheese from the European Union. To help dairy farmers and processors to adapt to the anticipated impacts from increased cheese imports from the European Union, Canada has established two different programmes.

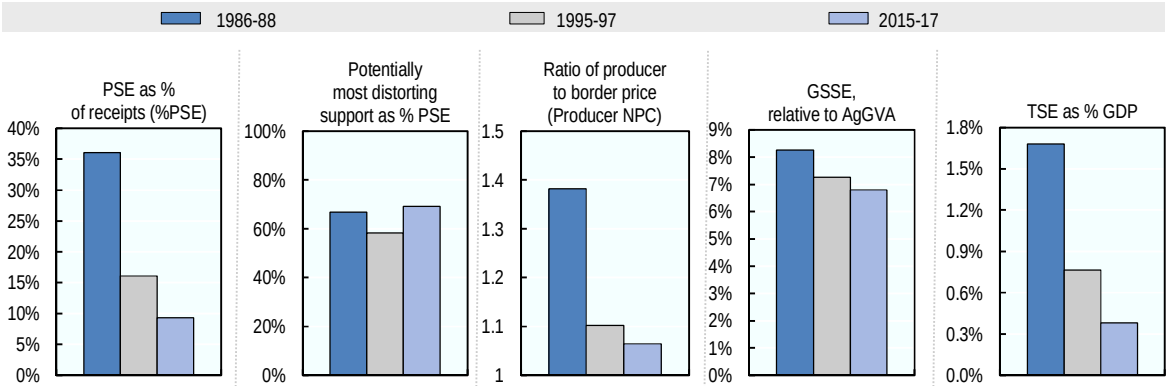
The *Dairy Farm Investment Program* (DFIP) supports Canadian milk producers to improve productivity through upgrades of their equipment. The programme will begin as a five-year CAD 250 million matching contribution programme with the dairy producers. The programme will encourage producers to make productivity enhancement investments, to improve equipment and herd management.

The *Dairy Processing Investment Fund* (DPIF) provides funding to dairy processors for investments that will improve productivity and competitiveness in the dairy sector. The programme provides non-repayable contributions to support projects through capital investment in equipment and infrastructure and access to expertise to engage private sector technical, managerial, and business expertise. The overall budget of the DPIF is CAD 100 million (USD 77 million).

Assessment and recommendations

- Over time, there has been an increasing emphasis on general service support to the sectors relative to farm income support through new programmes that target industry-led research and development, adoption of innovation in food and agriculture, and marketing initiatives.
- The dairy, poultry and egg sectors are protected from international competition and continue to receive high market price support. This distorts production and trade and 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.
- Stricter protocols and disciplines should be in place for programmes that provide budgetary support to mitigate farm income fluctuations. This would reduce potential pressure for additional support in situations where existing programmes suffice, and encourage farmers to find better ways to manage risk at farm level.
- 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 5.1. Canada: Development of support to agriculture

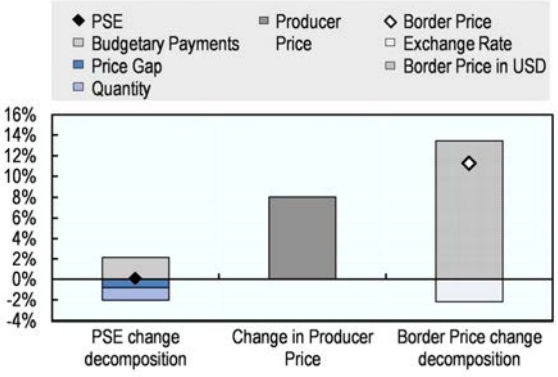


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755735

Support to farmers (%PSE) has declined gradually over the long term. In the most recent period support has been around 10% of gross farm receipts, below the OECD average. The potentially **most distorting support** remains to be the largest share of producer support, due to market price support (MPS) to the dairy, poultry and egg sectors (Figure 5.1). The level of support in the most recent year remained almost unchanged, as a lower level of MPS was offsetting the increase in higher budgetary payments. The decrease in MPS results from a smaller price gap as domestic prices increased less than world prices (Figure 5.2). Prices received by farmers, on average, were slightly higher than world prices; large differences between commodities persist with the domestic price for milk being more than 80% above world prices. MPS is the main component of Single Commodity Transfers (SCT): milk has the highest share of SCT in commodity gross farm receipts (Figure 5.3). Overall, SCT represent 79% 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. More than 70% of the total support is provided to individual farmers (PSE).

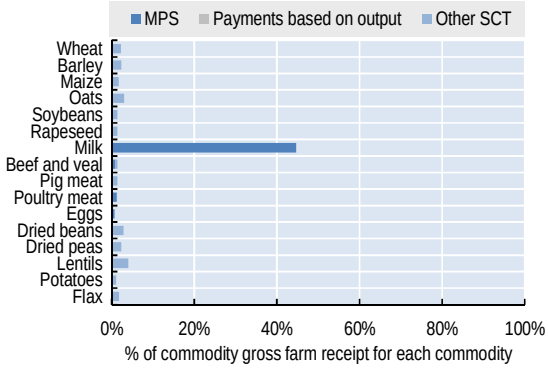
Figure 5.2. Canada: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755754

Figure 5.3. Canada: Transfer to specific commodities (SCT), 2015-2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database). http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755773

Table 5.1. Canada: Estimates of support to agriculture

Million USD

	1986-88	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**14 083**	**20 052**	**44 819**	**45 130**	**43 666**	**45 662**
***of which:** share of MPS commodities (%)*	85.6	84.2	85.1	85.3	84.8	85.1
Total value of consumption (at farm gate)	**12 688**	**15 656**	**28 645**	**29 076**	**28 007**	**28 852**
Producer Support Estimate (PSE)	**6 136**	**3 526**	**4 328**	**4 013**	**4 436**	**4 534**
Support based on commodity output	3 488	1 793	2 711	2 571	2 798	2 764
Market Price Support[1]	3 125	1 670	2 711	2 571	2 798	2 764
Payments based on output	364	123	0	0	0	0
Payments based on input use	1 098	521	382	378	377	393
Based on variable input use	629	260	286	291	274	294
with input constraints	0	0	0	0	0	0
Based on fixed capital formation	448	246	76	64	68	94
with input constraints	0	0	0	0	0	0
Based on on-farm services	20	15	20	23	34	4
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	1 336	612	1 227	1 058	1 254	1 368
Based on Receipts / Income	467	334	509	489	466	572
Based on Area planted / Animal numbers	869	278	718	570	788	796
with input constraints	0	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	0	577	0	0	0	0
With variable payment rates	0	535	0	0	0	0
with commodity exceptions	0	0	0	0	0	0
With fixed payment rates	0	42	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	23	8	6	7	9
Percentage PSE (%)	**36.1**	**16.1**	**9.3**	**8.6**	**9.8**	**9.6**
Producer NPC (coeff.)	**1.38**	**1.10**	**1.06**	**1.06**	**1.07**	**1.06**
Producer NAC (coeff.)	**1.56**	**1.19**	**1.10**	**1.09**	**1.11**	**1.11**
General Services Support Estimate (GSSE)	**1 153**	**1 276**	**1 693**	**1 736**	**1 707**	**1 636**
Agricultural knowledge and innovation system	483	579	647	699	662	581
Inspection and control	283	259	700	721	708	671
Development and maintenance of infrastructure	268	153	180	151	165	223
Marketing and promotion	85	251	148	145	154	146
Cost of public stockholding	0	0	0	0	0	0
Miscellaneous	34	34	18	22	17	14
Percentage GSSE (% of TSE)	**15.7**	**26.6**	**28.1**	**30.2**	**27.8**	**26.5**
Consumer Support Estimate (CSE)	**-2 860**	**-1 758**	**-3 151**	**-2 829**	**-3 303**	**-3 322**
Transfers to producers from consumers	-3 089	-1 750	-2 690	-2 508	-2 798	-2 764
Other transfers from consumers	-36	-19	-463	-322	-507	-561
Transfers to consumers from taxpayers	31	4	2	2	2	3
Excess feed cost	234	7	0	0	0	0
Percentage CSE (%)	**-22.7**	**-11.2**	**-11.0**	**-9.7**	**-11.8**	**-11.5**
Consumer NPC (coeff.)	**1.33**	**1.13**	**1.12**	**1.11**	**1.13**	**1.13**
Consumer NAC (coeff.)	**1.29**	**1.13**	**1.12**	**1.11**	**1.13**	**1.13**
Total Support Estimate (TSE)	**7 320**	**4 806**	**6 023**	**5 752**	**6 146**	**6 172**
Transfers from consumers	3 125	1 769	3 153	2 830	3 305	3 324
Transfers from taxpayers	4 231	3 056	3 333	3 243	3 348	3 408
Budget revenues	-36	-19	-463	-322	-507	-561
Percentage TSE (% of GDP)	**1.7**	**0.8**	**0.4**	**0.4**	**0.4**	**0.4**
GDP deflator (1986-88=100)	**100**	**126**	**185**	**183**	**184**	**189**
Exchange rate (national currency per USD)	**1.32**	**1.37**	**1.30**	**1.28**	**1.33**	**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 (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758395

Chapter 6. Chile

Support to agriculture

Chile's agricultural support creates limited distortions to agricultural markets, with almost no market price support provided to farmers. The support to farmers is one of the lowest amongst OECD countries at 2.6% of gross farm incomes (%PSE). Domestic prices are aligned with international prices. Support to farmers is mostly targeted to small-scale farmers and mainly based on input use, in particular support to fixed capital formation and the provision of services. Total public spending on agriculture increased by 1.4% from 2016 to 2017.

Main policy changes

The fundamental orientation of agricultural policy remained unchanged with a twin focus on productivity and the inclusion and development of smallholders and indigenous farmers. Policy measures continue to target at a number of areas: the expansion and more efficient irrigation systems; maintaining Chile's strong sanitary and phyto-sanitary conditions; enhancing policy instruments that promote the development of smallholders and indigenous farmers and, in particular, young farmers; promoting innovation; and improving the sustainability of resources, in particular degraded soils.

In 2017, the National Institute for Agricultural Development (INDAP) started implementing the programme called "Yo Joven & Rural" (Me, Young and Rural); this programme supports rural youth (18-35 year-olds) involved in agricultural activities, by providing subsidies, financing, capacity building, training and the development of networks.

Several policy initiatives on agricultural sustainability and climate change were developed in 2017. The Minister of Agriculture through its Office of Agricultural Policies and Studies (ODEPA) together with other public institutions, and in consultation with key stakeholders, created the Protocol of Sustainable Agriculture, which has been implemented since its creation in 2015. The protocol is a voluntary scheme that identifies ten principles of sustainable agriculture and serves as the basis for the development of Sustainable Production Agreements (APL-S) in the agricultural subsectors. In 2017, the APL-S for the walnuts sector was developed and discussed with the private sector. Additionally, an APL-S proposal for the rice sector was drafted. Furthermore, in order to ensure the inclusion of family farming in the APL-S, a capacity building plan was created and started to be implemented in 2018.

A National Committee for the Prevention and Reduction of Food Losses and Waste was created with the participation of public institutions, civil society, the private sector and academia. The Agenda for Sustainable Development of the Chilean dairy sector was prepared through public-private coordination. This agenda provides a roadmap for the next four years, which contains strategic objectives, actions and indicators to improve the

sustainability of the sector, aligned with the UN Sustainable Development Goals (SDGs) and with the Dairy Sustainability Framework (DSF) of the International Dairy Federation (IDF).

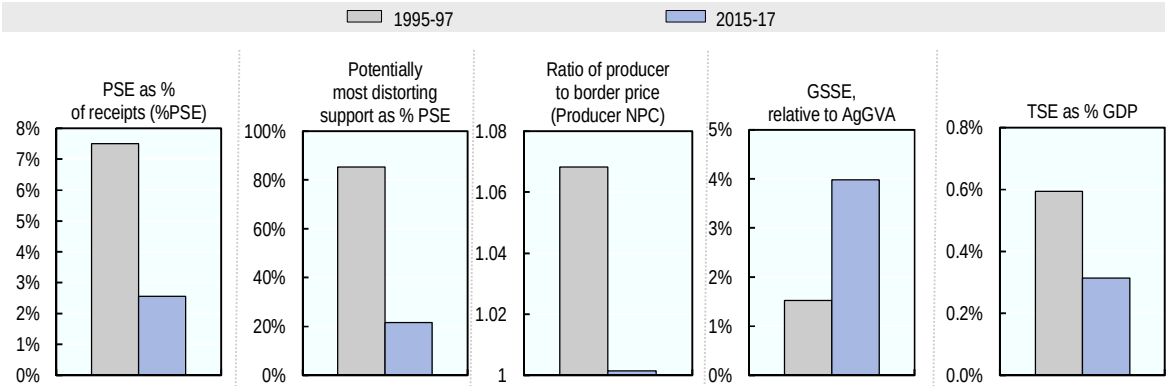
In order to plan investments in irrigation considering sustainable water use, the National Irrigation Committee (CNR), with the participation of public and private stakeholders, completed 23 irrigation management plans in the 15 regions of the country. In 2017, the Ministerial Technical Committee on Climate Change (CTICC) was created through Decree 360, 2017. This committee aims to address the challenges facing Chilean agriculture due to high vulnerability from weather variability.

Chile signed a Free Trade Agreement with Indonesia in 2017. The country has also deepened the existing agreements and is currently negotiating the modernisation 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 March 2018 the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CP-TPP) was signed in Santiago, Chile by 11 countries including Chile.

Assessment and recommendations

- Agricultural policies in Chile involve few market distortions. PSE averaged 2.6% of gross farm receipts in 2015-17 and general services (GSSE) accounted for 51% of total support to the sector.
- Total budgetary outlays to the sector increased by 1.4% between 2016 and 2017. Direct payments are mostly targeted at small-scale agriculture and aim to improve productivity, competiveness, recovery of degraded soils, 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.
- Approaches for the sector continue to support small-scale agriculture and indigenous people development as well as to protect and improve natural resources, sustainable productivity, infrastructure, access to markets and competitiveness. Around 70% of direct payments go to small-scale agriculture and half of the spending on the sector is on general services, a share that is four times the OECD average.
- While payments to farmers are targeted towards small-scale agriculture and indigenous farmers, careful attention should be paid to assessing their effectiveness. Impact assessments should be carried out systematically.
- As more projects and programmes related to agriculture have been created that are not within the auspices of the Ministry of Agriculture, the need for co-ordination across ministries and agencies becomes progressively more important, as well as strong systems of programme evaluation.
- While Chile's agricultural sector remains responsible for a substantial share of the country's overall GHG emissions, no sector-specific target or plan has been set that could help achieving its emission reduction commitment under the Paris Agreement on Climate Change.

Figure 6.1. Chile: Development of support to agriculture

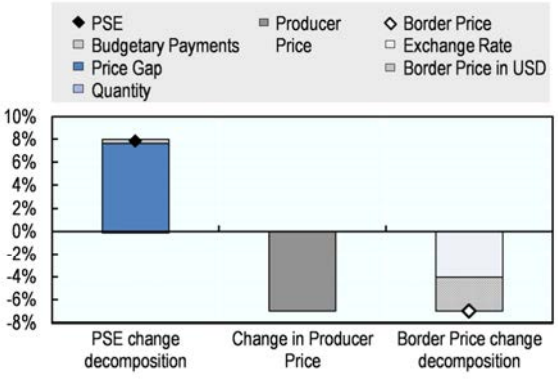


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755849

Support to farmers as measured by the %PSE declined from 7.6% in 1995-97 to 2.6% in 2015-17. This support is amongst the lowest in the OECD area and it is mostly delivered through direct payment, mainly to smallholders. Over time Chile has reduced the potentially most distorting support (based on output and variable input use – without input constraints). Most of the support to farmers has been linked to input subsidies, in particular to fixed capital formation input use. Producer prices are practically aligned with world prices (Figure 6.1), and border price changes are directly transmitted to domestic producer prices (Figure 6.2). Expenditures for general services were equivalent to 4% of the agricultural value added in 2015-17, a higher figure than the 1.5% observed in the 1995-97 period. Total agricultural support was 0.3% of GDP in 2015-17. Support to General services (GSSE) accounted for about half of the total support (TSE) in 2015-17. Transfers to single commodities are limited to sugar and maize and represented 2.4% of commodity gross farm receipts in 2015-17 (Figure 6.3).

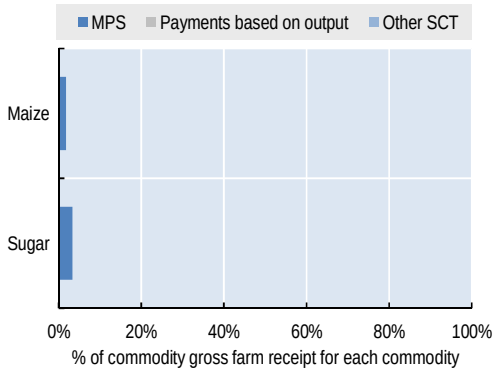
Figure 6.2. Chile: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755868

Figure 6.3. Chile: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database). http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755887

Table 6.1. Chile: Estimates of support to agriculture

Million USD

	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**5 122**	**14 829**	**13 545**	**14 411**	**16 532**
***of which:** share of MPS commodities (%)*	64.6	52.9	54.9	55.6	48.3
Total value of consumption (at farm gate)	**5 151**	**13 044**	**12 012**	**12 243**	**14 877**
Producer Support Estimate (PSE)	**390**	**388**	**400**	**360**	**405**
Support based on commodity output	317	21	14	10	39
Market Price Support[1]	317	21	14	10	39
Payments based on output	0	0	0	0	0
Payments based on input use	63	342	353	343	331
Based on variable input use	16	63	69	67	52
with input constraints	0	0	0	0	0
Based on fixed capital formation	24	180	177	180	185
with input constraints	17	97	98	91	103
Based on on-farm services	23	99	107	96	94
with input constraints	1	35	33	35	36
Payments based on current A/An/R/I, production required	10	25	33	7	35
Based on Receipts / Income	0	0	0	0	0
Based on Area planted / Animal numbers	10	25	33	7	35
with input constraints	10	25	33	7	35
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 (%)	**7.5**	**2.6**	**2.9**	**2.4**	**2.4**
Producer NPC (coeff.)	**1.07**	**1.00**	**1.00**	**1.00**	**1.00**
Producer NAC (coeff.)	**1.08**	**1.03**	**1.03**	**1.03**	**1.02**
General Services Support Estimate (GSSE)	**79**	**410**	**399**	**403**	**430**
Agricultural knowledge and innovation system	22	81	83	77	82
Inspection and control	1	86	80	85	92
Development and maintenance of infrastructure	50	228	219	225	239
Marketing and promotion	5	16	17	16	16
Cost of public stockholding	0	0	0	0	0
Miscellaneous	1	0	0	0	0
Percentage GSSE (% of TSE)	**17.0**	**51.4**	**49.9**	**52.8**	**51.5**
Consumer Support Estimate (CSE)	**-392**	**-50**	**-35**	**-31**	**-83**
Transfers to producers from consumers	-324	-21	-14	-10	-39
Other transfers from consumers	-76	-32	-21	-21	-56
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	7	4	0	0	12
Percentage CSE (%)	**-7.6**	**-0.4**	**-0.3**	**-0.3**	**-0.6**
Consumer NPC (coeff.)	**1.08**	**1.00**	**1.00**	**1.00**	**1.01**
Consumer NAC (coeff.)	**1.08**	**1.00**	**1.00**	**1.00**	**1.01**
Total Support Estimate (TSE)	**469**	**799**	**799**	**763**	**835**
Transfers from consumers	399	54	35	31	95
Transfers from taxpayers	145	778	785	753	796
Budget revenues	-76	-32	-21	-21	-56
Percentage TSE (% of GDP)	**0.6**	**0.3**	**0.3**	**0.3**	**0.3**
GDP deflator (1995-97=100)	**100**	**237**	**228**	**236**	**247**
Exchange rate (national currency per USD)	**409.47**	**659.85**	**654.32**	**676.54**	**648.68**

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 and poultry.

Source: OECD (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758414

Chapter 7. 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 2015-17. This partly reflects recent policy reforms undertaken with respect to the market intervention systems for soybeans, rapeseed, cotton, and maize, as well as to the minimum support price system for wheat and rice. Another factor is the nominal depreciation of the CNY vis-à-vis USD since 2013 after a long period of gradual appreciation.

The Total Support Estimate (TSE) was 2.3% of GDP in 2015-17, thus about two times higher than the OECD average. Market Price Support (MPS) remains the dominant part of total support, but payments based on area planted have been consistently increasing since 2014. 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.

Main policy changes

A major institutional reform was announced in early 2018, including a restructuring of both current Ministries of Agriculture and of Environmental Protection. In addition, a draft of the revised Rural Land Contracting Law issued in November 2017 plans to extend existing rural land contracts by 30 years upon expiration.

In 2017 and early 2018, China continued policy reforms to diminish the negative consequences of high domestic prices compared to those on international markets. In this sense, the minimum support prices were lowered for both 2017/18 wheat and rice crops. Following the completion of the three-year soybeans target price trial in 2017, this was replaced by "market-oriented soybeans price plus a direct subsidy to soybean farmers" based on area planted.

In order to address environmental concerns in congested areas and waterways across the South, East and Centre regions of China, additional "environmental control zones" – where livestock farming activities are prohibited – were delineated by provincial governments in 2017.

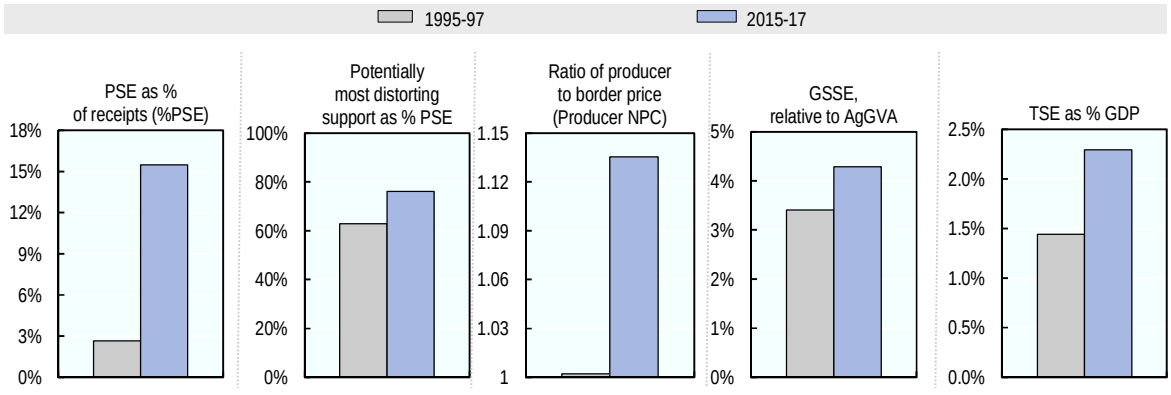
Assessment and recommendations

- 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. In the future, the link between direct payments and production decisions should also be loosened by providing them on a historical area basis, for instance, and 'greened' 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. The cost of public stockholding still has the largest expenditure share in general services support, accounting for more than one-third in recent years. Further efforts are thus needed to restructure agricultural support from direct payments to farms towards public investment in R&D and infrastructure, thus ensuring that support through direct payments only has a transitory role in backing farmers' adjustment to a new market environment.
- Recent reforms in land transfer rules have contributed to the emergence of "new-style" farms, including co-operative farms and farms run by agribusiness companies. The sector remains however dominated by small farms, thus further reducing the cost of transferring operational rights through transparent exchange platforms at the local level is key. For the reforms in land regulations to continue delivering expected outcomes, these need to be complemented by further investments in elements of the broader enabling environment for agriculture and rural development, such as education and training and financial services.
- Land and water are very scarce in China and 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. In addition, the announced water price reform could be accelerated to cover water provision costs, in order to enhance the efficiency of water use.
- Several broad work plans have recently been put forward across institutions in view of strengthening policies addressing agricultural GHG emissions and supporting the sector's adaptation to climate change. In this sense, the restructured Ministry of Ecological Environment could help mainstream adaptation policy objectives across current and planned programmes – including on better targeting extension services for farmers – as well as to provide a platform for institutional coordination.

Figure 7.1. China: Development of support to agriculture

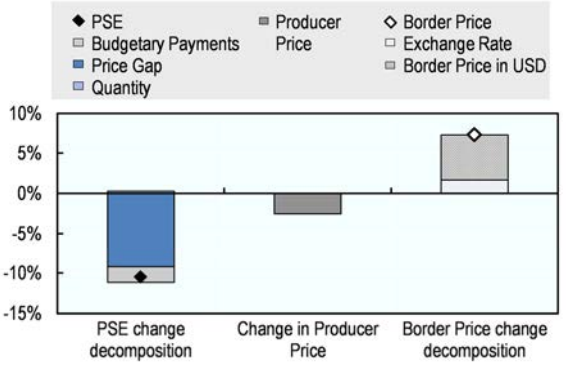


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755963

Support to farmers (%PSE) has steadily increased since 1995-97. In 2015-17 support represented around 15.5% of gross farm receipts, slightly below the OECD average. The share of potentially **most distorting support** has increased over time due to government-led temporary purchase and storage policy for various key crops together with border protection (Figure 7.1). The level of support declined in 2017, mostly due to a fall of domestic prices vis-à-vis those on international markets; this fall is driven by reforms of the Chinese market intervention system and by the continued depreciation of the CNY vis-à-vis USD. Prices received by farmers were on average 13% higher than world prices in 2015-17 (Figure 7.2). MPS remains the dominant part of total support and is the main component of Single Commodity Transfers (SCT), but the role of payments based on output has been consistently growing since 2014, particularly for cotton, soybeans and maize. With the exception of eggs, producers are benefiting from high transfers accounting for between 12% and 52% of commodity receipts (Figure 7.3). Overall, SCT represent 76% of the total PSE. At 4.3% in 2015-17, 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 has also increased over time and at 2.3% in 2015-17 is one of the highest among the countries covered.

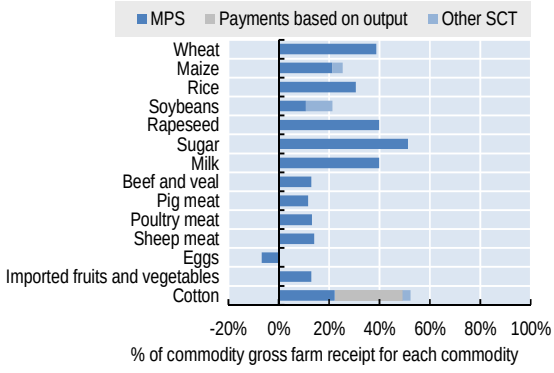
Figure 7.2. China: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933755982

Figure 7.3. China: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756001

Table 7.1. China: Estimates of support to agriculture

Million USD

	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**239 511**	**1 385 814**	**1 391 103**	**1 369 369**	**1 396 971**
***of which:** share of MPS commodities (%)*	90.7	76.0	77.0	76.6	74.4
Total value of consumption (at farm gate)	**242 835**	**1 443 245**	**1 420 969**	**1 439 718**	**1 469 048**
Producer Support Estimate (PSE)	**6 472**	**224 171**	**236 057**	**232 180**	**204 277**
Support based on commodity output	2 013	167 510	180 241	172 116	150 173
Market Price Support[1]	2 013	163 029	175 862	167 801	145 425
Payments based on output	0	4 480	4 378	4 315	4 747
Payments based on input use	3 832	23 335	25 566	23 375	21 064
Based on variable input use	2 055	3 427	3 907	3 952	2 421
with input constraints	0	0	0	0	0
Based on fixed capital formation	1 297	16 472	17 867	16 076	15 473
with input constraints	0	0	0	0	0
Based on on-farm services	479	3 437	3 792	3 347	3 171
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	464	26 791	24 192	28 441	27 739
Based on Receipts / Income	464	3 014	2 035	3 566	3 440
Based on Area planted / Animal numbers	0	23 777	22 158	24 875	24 298
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	164	4 164	3 439	5 576	3 477
With variable payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
With fixed payment rates	164	4 164	3 439	5 576	3 477
with commodity exceptions	0	0	0	0	0
Payments based on non-commodity criteria	0	2 372	2 618	2 672	1 825
Based on long-term resource retirement	0	2 372	2 618	2 672	1 825
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 (%)	**2.7**	**15.5**	**16.3**	**16.2**	**14.0**
Producer NPC (coeff.)	**1.00**	**1.14**	**1.15**	**1.14**	**1.11**
Producer NAC (coeff.)	**1.03**	**1.18**	**1.19**	**1.19**	**1.16**
General Services Support Estimate (GSSE)	**5 530**	**39 365**	**45 319**	**37 738**	**35 038**
Agricultural knowledge and innovation system	450	8 444	9 023	8 372	7 936
Inspection and control	265	1 984	2 212	1 978	1 762
Development and maintenance of infrastructure	1 292	10 162	11 020	9 949	9 516
Marketing and promotion	0	536	632	457	518
Cost of public stockholding	3 523	18 239	22 431	16 981	15 305
Miscellaneous	0	0	0	0	0
Percentage GSSE (% of TSE)	**45.1**	**14.9**	**16.1**	**14.0**	**14.6**
Consumer Support Estimate (CSE)	**-2 193**	**-159 897**	**-172 608**	**-166 882**	**-140 200**
Transfers to producers from consumers	-526	-151 282	-165 740	-158 945	-129 162
Other transfers from consumers	-1 191	-17 996	-20 256	-18 919	-14 813
Transfers to consumers from taxpayers	252	0	0	0	0
Excess feed cost	-727	9 382	13 388	10 983	3 774
Percentage CSE (%)	**-0.9**	**-11.1**	**-12.1**	**-11.6**	**-9.5**
Consumer NPC (coeff.)	**1.01**	**1.13**	**1.15**	**1.14**	**1.11**
Consumer NAC (coeff.)	**1.01**	**1.12**	**1.14**	**1.13**	**1.11**
Total Support Estimate (TSE)	**12 254**	**263 536**	**281 376**	**269 918**	**239 315**
Transfers from consumers	1 717	169 278	185 997	177 864	143 974
Transfers from taxpayers	11 728	112 254	115 635	110 973	110 153
Budget revenues	-1 191	-17 996	-20 256	-18 919	-14 813
Percentage TSE (% of GDP)	**1.4**	**2.3**	**2.6**	**2.4**	**2.0**
GDP deflator (1995-97=100)	**100**	**182**	**178**	**180**	**187**
Exchange rate (national currency per USD)	**8.34**	**6.56**	**6.28**	**6.64**	**6.76**

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 (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758433

Chapter 8. Colombia

Support to agriculture

Colombia's level of support to farms was 13% of gross farm receipts in 2015-17, which is slightly below the OECD average. Level of support has been decreasing due to a depreciation of the Colombian Peso, the declining of producer prices, particularly after the increase of production of main agricultural products under the *Colombia Siembra* initiative. Market price support (MPS) is the main component of the PSE – accounting for more than 82%, over the period 2015-17. MPS is mostly stemming from the use of border measures for several agricultural products including rice, maize, poultry, milk, sugar, and pig meat. Budgetary transfers to farmers accounted for 18% of the PSE, and were mostly payments based on variable input use. Budgetary payments to general services to the sector as a whole (GSSE), have been relatively small, accounting on average for only 14% of the total support estimate (TSE). Budgetary allocations on these items include: agricultural research and knowledge transfer, infrastructure, particularly in irrigation, and farm restructuring.

Main policy changes

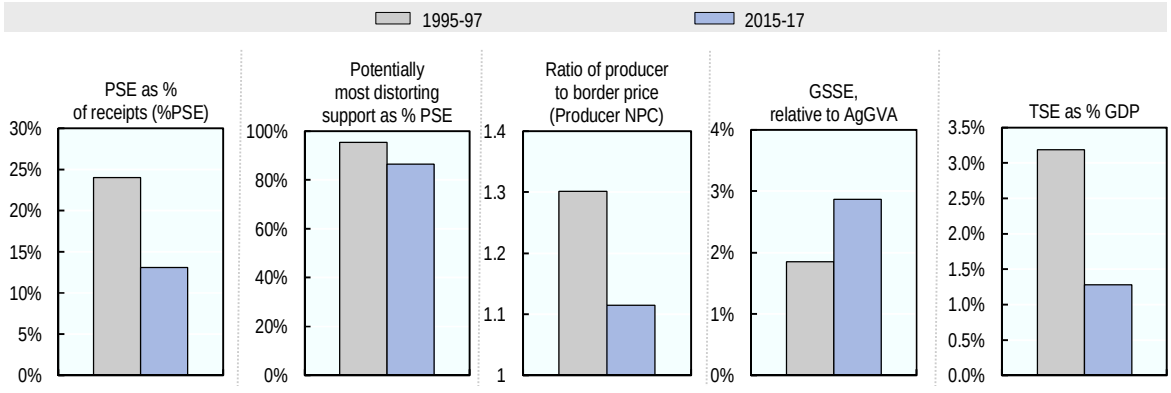
In 2017, support to stockholding of around 400 000 tonnes of rice was given to wholesalers with the capacity to store the grain. An income compensation payment was also given to cotton producers. Relieving financial constraints continues to be a priority and, in July 2017, the Law 1847 was approved, which provides debt rescheduling and debt relief for farmers. The implementation of this Law will take place in 2018. Budgetary transfers increased by 11% in 2017, and 16 new programmes were created, in the context of the *Colombia Siembra* initiative. Some programmes are on GSSE others are payments to individual farmers. For example, 12 programmes were on general services, 10 of which were directed on extension services. The other four programmes were given as support for equipment acquisition and the provision of services.

Access to land continued to be a priority and in 2017 around 3 000 land plots were formalised or legally registered under the auspices of the new ANT Agency. Efforts were taken to strengthening animal and plant health. The Colombian agency in charge of animal and plant health (ICA) established a number of new regional surveillance networks. Furthermore, a number of phytosanitary requirements to export fresh agricultural products was implemented. In December 2017, Congress also approved a law that created the National Agricultural Innovation System (SNIA), which includes both research and development, and extension services to farmers. The implementation of SNIA will take place in the coming years. In 2017, import tariffs on used agricultural machinery and equipment were removed for a period of two years. Tariffs on cotton and peanuts where also removed. Negotiations are ongoing with Japan and Turkey for the establishment of new trade agreements.

Assessment and recommendations

- Colombia's agricultural sector faces a wide series of structural and institutional challenges that hinder productivity and competitiveness. Underinvestment in public goods and services, poor land management, 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.
- Comprehensive land access policy framework is necessary to stabilise the country and to promote rural development. Improved land rights 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.
- Critical areas such as infrastructure, agricultural research and development, and agricultural knowledge transfer and farm restructuring continue to receive limited support.
- A systematic review and impact assessment of the wide array of policy instruments, and programmes to support agriculture would be important. The majority of current programmes cover very broad and different areas and are implemented through a bundle of policy instruments with unclear impact. The review should redefine and reorganise policy instruments based on evidence of costs and benefits.
- Market price support (MPS) is the dominant form of support to producers. An assessment of the actual effects of the Price Band System should be undertaken to provide the basis for designing alternative policies that achieve the objectives set for the sub-sectors covered by the price band.
- Improving strategic information collection on the agricultural sector is crucial for the good design of policies.

Figure 8.1. Colombia: Development of support to agriculture

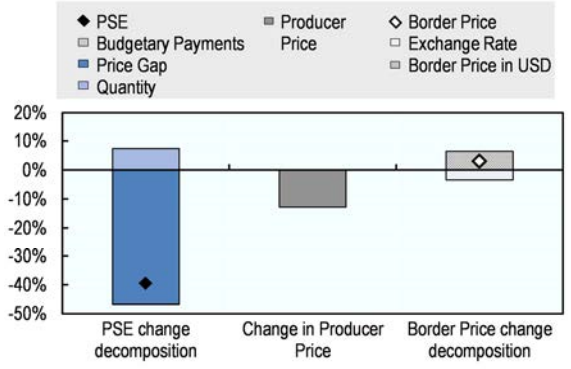


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756077

Support to farmers (%PSE). Since the 1990s, Colombia has provided significant levels of support to its farmers. The %PSE for 2015-17 was 13.1% of gross farm receipts, but has declined to 9% in 2017. The share of potentially **most distorting support** is around 80% of the PSE, being linked to commodity market price support during (Figure 8.1). Effective prices received by farmers, on average, are estimated to be 12% higher than those observed in the world markets. Expenditures for general services were equivalent to 2.9% of the agricultural value added in 2015-17, larger than the 1.8% seen in 1995-97. **Total support to agriculture** represents 1.3% of GDP for the period 2015-17, exceeding the OECD average. The share of GSSE in TSE was 14% for 2015-17. The level of support in 2017 has declined due to a reduction of producer prices, following increasing production (Figure 8.2). The most important Single Commodities Transfers (SCTs) were benefitting rice (59% of commodity gross farm receipt), maize (47%), sugar (20%) and pig meat (25%) (Figure 8.3).

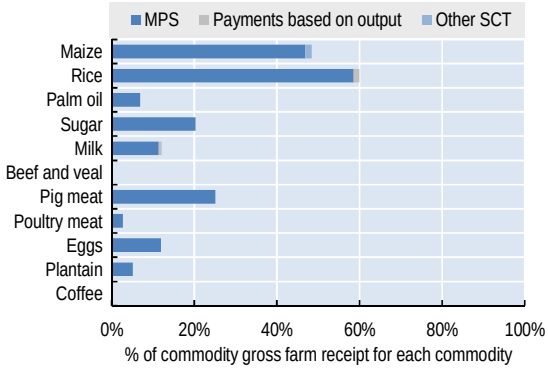
Figure 8.2. Colombia: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database). http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756096

Figure 8.3. Colombia: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database). http://dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933756115

Table 8.1. Colombia: Estimates of support to agriculture

Million USD

	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**14 228**	**24 189**	**23 041**	**23 937**	**25 590**
***of which:** share of MPS commodities (%)*	72.9	73.4	81.5	70.5	68.2
Total value of consumption (at farm gate)	**10 644**	**23 082**	**18 958**	**24 658**	**25 629**
Producer Support Estimate (PSE)	**3 451**	**3 245**	**3 615**	**3 763**	**2 356**
Support based on commodity output	3 275	2 718	2 885	3 345	1 922
Market Price Support[1]	3 249	2 671	2 797	3 315	1 901
Payments based on output	26	46	88	29	22
Payments based on input use	175	527	730	418	434
Based on variable input use	126	291	400	244	230
with input constraints	108	209	276	187	162
Based on fixed capital formation	23	148	198	112	135
with input constraints	5	70	78	63	67
Based on on-farm services	27	87	131	62	69
with input constraints	0	21	25	21	18
Payments based on current A/An/R/I, production required	1	0	0	0	0
Based on Receipts / Income	0	0	0	0	0
Based on Area planted / Animal numbers	1	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**	**13.1**	**15.2**	**15.4**	**9.0**
Producer NPC (coeff.)	**1.30**	**1.12**	**1.12**	**1.14**	**1.09**
Producer NAC (coeff.)	**1.32**	**1.15**	**1.18**	**1.18**	**1.10**
General Services Support Estimate (GSSE)	**311**	**532**	**664**	**421**	**512**
Agricultural knowledge and innovation system	79	248	276	213	255
Inspection and control	11	34	36	25	40
Development and maintenance of infrastructure	221	216	302	153	194
Marketing and promotion	0	35	51	30	23
Cost of public stockholding	0	0	0	0	0
Miscellaneous	0	0	0	0	0
Percentage GSSE (% of TSE)	**8.2**	**14.0**	**15.5**	**10.1**	**17.8**
Consumer Support Estimate (CSE)	**-3 207**	**-3 469**	**-3 007**	**-3 984**	**-3 417**
Transfers to producers from consumers	-2 964	-2 350	-2 114	-2 965	-1 971
Other transfers from consumers	-251	-1 166	-922	-1 065	-1 512
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	8	47	29	46	67
Percentage CSE (%)	**-30.3**	**-15.0**	**-15.9**	**-16.2**	**-13.3**
Consumer NPC (coeff.)	**1.44**	**1.18**	**1.19**	**1.20**	**1.16**
Consumer NAC (coeff.)	**1.44**	**1.18**	**1.19**	**1.19**	**1.15**
Total Support Estimate (TSE)	**3 762**	**3 777**	**4 279**	**4 184**	**2 868**
Transfers from consumers	3 215	3 516	3 035	4 030	3 484
Transfers from taxpayers	797	1 427	2 166	1 219	896
Budget revenues	-251	-1 166	-922	-1 065	-1 512
Percentage TSE (% of GDP)	**3.2**	**1.3**	**1.5**	**1.5**	**0.9**
GDP deflator (1995-97=100)	**100**	**393**	**373**	**395**	**413**
Exchange rate (national currency per USD)	**1 029.96**	**2 916.56**	**2 744.51**	**3 053.88**	**2 951.29**

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 (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758452

Chapter 9. Costa Rica

Support to agriculture

Costa Rica's support to farmers was 8% of gross farm receipts (%PSE) in 2015-17. While this is less than a half of the OECD average, the support is almost entirely (96%) based on Market Price Support (MPS), one of the most production and trade distorting forms of support. Products with the highest MPS include rice, poultry, pig meat and sugar. The remaining 4% of support is provided mainly through input subsidies for fixed capital formation and payments for environmental services. Support to farmers (PSE) was the largest component of the Total Support Estimate (TSE) to agriculture in 2015-17 accounting for 82% of the total; the remaining 18% was based financing general services to the sector (GSSE). However, expenditures on GSSE accounted for 85% of budgetary expenditure to agricultures in 2015-17.

Main policy changes

The fundamental parameters of agricultural policy remained unchanged, the policy objectives continue to emphasise agricultural productivity and inclusiveness by focusing in the development of small-scale agriculture. Besides the price support policies, agricultural policy is mainly focused on general services to the sector such as: agricultural knowledge and innovation system, particularly on extension services; on inspection and control; and on the development and maintenance of infrastructure, particularly on irrigation. Some minor budgetary payments are provided directly to farmers as fixed capital formation subsidies and payments for environmental services.

In 2016/2017, the government began to reform the extension services (under the auspices of the Ministry of Agriculture and Livestock-MAG), with the ambition to better link these services with the Innovation and Transfer of Agricultural Technology (INTA), the agricultural R&D institution. The National Irrigation and Drainage Service institution (SENARA) revised and changed the water pricing system and now applies a variable rate based on water availability and costs of maintaining the irrigation system.

An executive Decree 40059-MAG-MINAE-S was implemented in 2017, on Technical Regulation (RTCR) No. 484:2016. This document establishes the regulations, principles and procedures for the registration, use and control of synthetic pesticides in agriculture, and of other agricultural inputs (SEPSA, 2018).

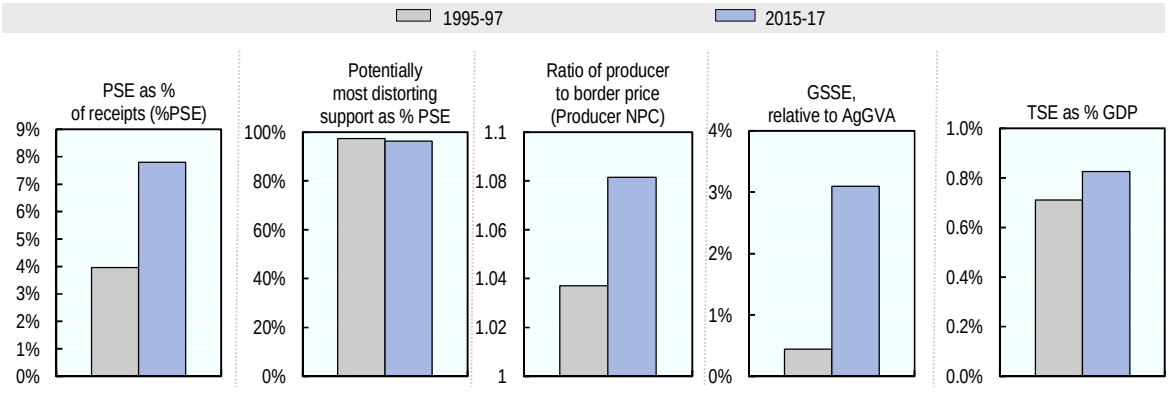
In February 2017, the government ended an anti-dumping investigation on imports of unrefined crystal white sugar from Brazil, and decided to impose an anti-dumping measure of 6.82%, which was adjusted to 3.67%. The government also authorized the duty-free import of 6 294 metric tonnes of black beans and red beans, valid for 9 months running from September 2017 to June 2018. Another authorization was for duty-free imports of 2 602 metric tonnes of white corn. A safeguard for imports of brown rice was established in 2017. During 2017, the negotiation of the Free Trade Agreement (FTA)

between the Central American Republics and Korea was finalised. The FTA was signed in February 2018. In 2015, Costa Rica has 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, 2018). The two parties continue their consultations under the WTO Dispute Settlement Mechanism.

Assessment and recommendations

- Costa Rica's producer support is still predominantly provided through border protection namely for rice, poultry, pig meat, milk and sugar. This support continues to distort both domestic markets and trade, constrains competition and, hence, productivity and competitiveness. The government should develop and communicate a strategy on how to phase out market price support to ensure a smooth transition.
- As more than 80% of the government budgetary allocations are directed to general services, ensuring and improving efficiency of these services is fundamental. Extension services are a core function for the agricultural sector, but capacity constraints and misallocated resources reduce their effectiveness.
- Major investments are required to improve the sector's infrastructure, 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.).
- 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 co-ordination is therefore important to ensure that support programmes are implemented in a more efficient manner.
- Small-scale producers suffer from poor access to credit and financial tools. In addition, stringent requirements impede small-scale farms from taking advantage of available credit sources, and 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 development banking system and agricultural organisations could be expanded as a first step to improve the financial infrastructure for smallholders in particular.
- Under the framework of the Paris Agreement on Climate Change, the country commits to a maximum of emissions of 9 374 000 net tonnes of CO2 equivalent by 2030. The commitment implies a reduction of GHG emissions of 44%, compared to a Business as Usual (BAU) scenario. Costa Rica also has developed some agricultural sector-specific targets to help achieve the country commitments on emissions.

Figure 9.1. Costa Rica: Development of support to agriculture

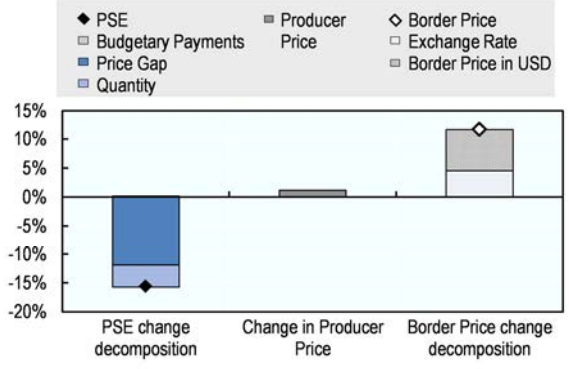


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756191

Support to farmers, as measured by the %PSE has increased from 4% in 1995-97 to 8% in 2015-17, remaining 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 96% of the PSE in 2015-17, little below its 1995-97 level. Border protection and price interventions resulted in producer prices that were 8% higher than international prices in 2015-17, on average. Around 85% of budgetary spending is on general services to the sector (GSSE). This support was equivalent to 3.1% of agricultural value added in 2015-17, a significant increase relative to 1995-97. Total support (TSE) has been increasing over time and reached 1.1% of GDP in 2015-17 (Figure 9.1). Around 87% of the total support was provided in the form of support directly to farms, while support to general services represented the remaining 13%. The level of farm support decreased by 3% in 2017, mainly due to the decrease in MPS. This decrease was due to a combination of slightly higher world prices in USD for some products and a weaker local currency (Figure 9.2). Single Commodity Transfers (SCT) represented, on average, 97% of the total PSE and are particularly important for rice (61% of gross farm receipts), poultry (35%), sugar (30%) and pig meat (31%) (Figure 9.3).

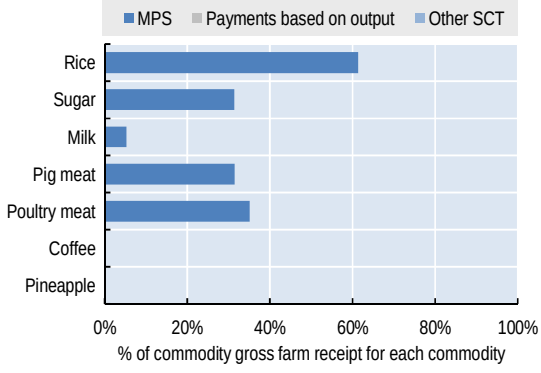
Figure 9.2. Costa Rica: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756210

Figure 9.3. Costa Rica: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database). http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756229

Table 9.1. Costa Rica: Estimates of support to agriculture

Million USD

	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**1 957**	**4 929**	**4 610**	**4 912**	**5 264**
***of which:** share of MPS commodities (%)*	80.4	87.3	90.4	88.4	83.0
Total value of consumption (at farm gate)	**861**	**2 289**	**2 204**	**2 287**	**2 376**
Producer Support Estimate (PSE)	**79**	**388**	**463**	**387**	**313**
Support based on commodity output	71	373	444	374	300
Market Price Support[1]	71	373	444	374	300
Payments based on output	0	0	0	0	0
Payments based on input use	8	13	17	11	11
Based on variable input use	7	4	3	3	5
with input constraints	0	3	3	3	4
Based on fixed capital formation	1	8	12	6	5
with input constraints	0	4	6	4	4
Based on on-farm services	1	2	2	2	1
with input constraints	1	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	1	1	1	2
Based on long-term resource retirement	0	1	1	1	2
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 (%)	**4.0**	**7.8**	**10.0**	**7.9**	**5.9**
Producer NPC (coeff.)	**1.04**	**1.08**	**1.11**	**1.08**	**1.06**
Producer NAC (coeff.)	**1.04**	**1.08**	**1.11**	**1.09**	**1.06**
General Services Support Estimate (GSSE)	**7**	**84**	**88**	**82**	**82**
Agricultural knowledge and innovation system	1	34	32	35	34
Inspection and control	0	16	17	16	16
Development and maintenance of infrastructure	6	33	37	31	30
Marketing and promotion	0	1	1	1	1
Cost of public stockholding	0	0	0	0	0
Miscellaneous	0	0	1	0	0
Percentage GSSE (% of TSE)	**8.5**	**17.9**	**16.0**	**17.6**	**20.8**
Consumer Support Estimate (CSE)	**-76**	**-324**	**-381**	**-311**	**-281**
Transfers to producers from consumers	-69	-289	-359	-278	-230
Other transfers from consumers	-7	-35	-22	-32	-51
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	0	0	0	0	0
Percentage CSE (%)	**-8.7**	**-14.1**	**-17.3**	**-13.6**	**-11.8**
Consumer NPC (coeff.)	**1.09**	**1.16**	**1.21**	**1.16**	**1.13**
Consumer NAC (coeff.)	**1.09**	**1.16**	**1.21**	**1.16**	**1.13**
Total Support Estimate (TSE)	**87**	**472**	**551**	**470**	**395**
Transfers from consumers	76	324	381	311	281
Transfers from taxpayers	18	183	192	191	166
Budget revenues	-7	-35	-22	-32	-51
Percentage TSE (% of GDP)	**0.7**	**0.8**	**1.0**	**0.8**	**0.7**
GDP deflator (1995-97=100)	**100**	**543**	**537**	**549**	..
Exchange rate (national currency per USD)	**206.00**	**548.78**	**534.59**	**543.96**	**567.78**

.. 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 Costa Rica are: rice, sugar, milk, beef and veal, pig meat, poultry, bananas, coffee, palm oil and pineapple.

Source: OECD (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758471

Chapter 10. European Union

Support to agriculture

The European Union has gradually reduced its support to agriculture since the mid-1990s. New instruments, in particular payments that do not require production have gained weight and price distortions have been significantly reduced. At the same time, more payments are submitted to environmental compliance. Around 50% of support to producers is conditional on mandatory environmental constraints. An additional 8% of support to producers goes to voluntary environmental schemes that go beyond the mandatory requirements.

Support to producers as a share of gross farm receipts (%PSE) has stabilised at around 20% since 2010. Payments not requiring production account for about 45% of support. The production-linked support has decreased in 2017, mainly driven by decrease in market price support due to higher world prices for agricultural products, rather than a change in policy setting. Production-linked budget payments have decreased only slightly.

The greatest share of overall support to the agricultural sector (TSE) goes to producers (about 88%). Investments in knowledge and infrastructures are the main components of general services to the sector at large (GSSE) which represent the remaining 12% of TSE.

Main policy changes

In 2017, the main policy developments were linked to the full implementation of the CAP 2014-20, including the CAP simplification within the Omnibus regulation that introduced changes to the four CAP regulations on direct payments, rural development,[1] common market organisation and horizontal regulation. The Omnibus regulation (EU Regulation 2017/2393), endorsed on 16 October 2017, amends the financial regulation governing the implementation of the EU budget and 15 sectorial legislative acts, including agriculture.

The end of the sugar production quota in 2017 is an important further step away from production and trade distorting measures.

A number of exceptional measures continued in response to market conditions in the dairy, fruit and vegetables, and pig sectors. In the dairy sector these included public intervention, support to private storage and voluntary supply management and public distribution. Additional packages were targeted to dairy and livestock producers to implement measures such as support to small scale farming, extensive production, environmental and climate friendly production, cooperation between farmers, improvement of quality and added value, training in financial instruments and risk management tools. Exceptional measures targeted to the fruits and vegetables sectors included market withdrawal, subsidised “non-harvesting” and “green harvesting”. In addition to expenditure from European Union funds, Member States were allowed to match these amounts with national funds.

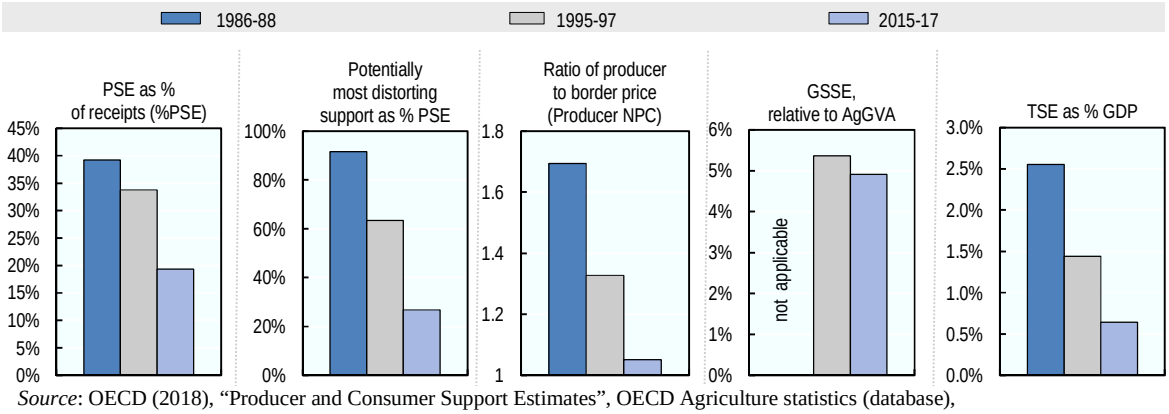
Assessment and recommendations

- Over the past three decades, policy reforms have considerably reduced the level and improved the composition of support. The increased weight of payments that do not require production offers producers the flexibility to respond to market signals and to make their production choices independently from government intervention. In some sectors, however, prices paid to producers remain disconnected from world market prices, and potentially most distorting forms of support still represent a quarter of the PSE, suggesting that further improvements towards more market orientation are possible.
- The share of support requiring production decreased in 2017, mainly due to lower market price support following higher world prices, while budgetary payments that encourage specific commodity production decreased only a little. This form of support influences production choices at the farm level and may distort competition.
- Market access for agricultural products has improved through bilateral agreements and the reduction of applied tariffs. However, import and export licensing, Tariff Rate Quotas and special safeguards continue to apply to a number of products. These measures push support up when world prices decline.
- The CAP 2014-20's small farmers scheme and the flexibility to introduce additional payments for the first hectares have redistributive effects which, however, could have effect on structural adjustment.
- Climate change adaptation and mitigation in agriculture are addressed via measures aiming at improving environmental performance: cross-compliance and greening under Pillar 1, and agri-environmental and climatic measures under Pillar 2. Around 50% of support to producers is conditional on mandatory environmental constraints. Payments also support farmers who engage in voluntary environmental schemes that go beyond the mandatory conditions. The growing share of these payments within the PSE highlights the European Union's move towards more targeted support for overcoming market failures.The efficiency of these measures should be assessed against the environmental objectives.
- The CAP 2014-20 partly reverses the downward trend of production and trade distorting support. Member States have used greater flexibility to implement coupled payments for specific sectors. Other less market and resource allocation distorting means could be used to support achieving long-term competitiveness and productivity gains. Short-term income variations can be addressed with risk management tools. Policies should focus on offering European farmers a levelled playing field, deepening market orientation and better targeting support to improve the long-term productivity, sustainability and efficiency of the sector.

Note

[1] Within the rural development regulation, the income stabilisation tool was amended to include a new sector-specific measure that triggers support if average annual income in the sector drops by more than 20%. Further, support for insurance contracts becomes available when more than 20% of a farmer's average annual production is destroyed.

Figure 10.1. European Union: Development of support to agriculture

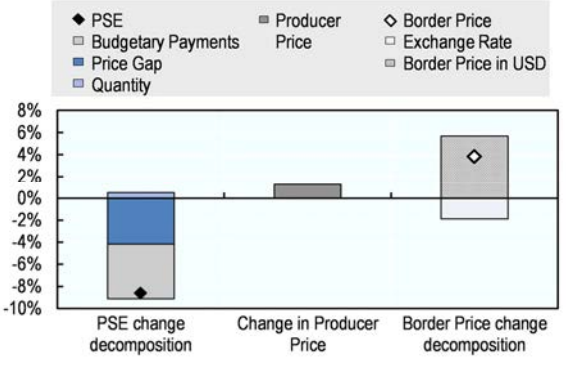


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756305

Support to farmers (%PSE) has declined gradually over the long term. In 2015-17, support has been around 19% of gross farm receipts, slightly above the OECD average. The share of potentially **most distorting support** has decreased significantly over time due to decline in market price support (MPS), falling well below the OECD average (Figure 10.1). In 2017, the level of support has decreased due to both lower budgetary payments and lower MPS. The decrease in MPS results from a smaller price gap as world prices increased more than domestic prices (Figure 10.2). Effective prices received by farmers, on average, were slightly higher than world prices; large differences between commodities persist with domestic prices for beef and veal and poultry being more than 20% and for rice 47% above world prices. MPS is the main component of Single Commodity Transfers (SCT): rice, beef and veal, and poultry had the highest share of SCT in commodity gross farm receipts, but SCTs for sheep meat, sugar and potatoes were also substantial (Figure 10.3). Overall, SCT represent 26% of the total PSE. The expenditures for **general services** (GSSE), mainly on knowledge and infrastructure, relative to agriculture value added were in line with OECD average. **Total support to agriculture** as a share of GDP has declined significantly over time. About 88% of the total support is provided to individual farmers (PSE).

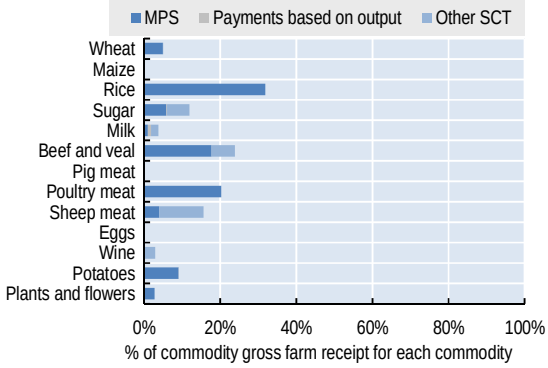
Figure 10.2. European Union: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756324

Figure 10.3. European Union: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756343

Table 10.1. European Union: Estimates of support to agriculture

Million USD

	1986-88	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**233 558**	**295 609**	**418 546**	**417 082**	**404 209**	**434 349**
***of which:** share of MPS commodities (%)*	75.0	73.7	73.6	74.0	73.2	73.5
Total value of consumption (at farm gate)	**208 051**	**284 566**	**441 318**	**433 001**	**428 795**	**462 158**
Producer Support Estimate (PSE)	**97 379**	**116 953**	**95 636**	**93 771**	**99 987**	**93 150**
Support based on commodity output	88 243	71 493	20 044	17 789	22 854	19 488
Market Price Support[1]	82 606	67 147	19 503	17 245	22 284	18 978
Payments based on output	5 637	4 346	541	544	570	509
Payments based on input use	5 116	8 106	12 666	13 798	11 830	12 370
Based on variable input use	960	2 827	5 649	5 675	5 472	5 800
with input constraints	0	0	47	53	42	45
Based on fixed capital formation	3 046	3 287	5 461	6 721	4 696	4 966
with input constraints	0	106	88	99	79	85
Based on on-farm services	1 109	1 992	1 556	1 403	1 662	1 604
with input constraints	90	512	20	3	35	23
Payments based on current A/An/R/I, production required	3 587	36 921	21 814	20 159	25 164	20 119
Based on Receipts / Income	147	81	202	172	188	245
Based on Area planted / Animal numbers	3 440	36 840	21 612	19 987	24 975	19 874
with input constraints	940	14 037	18 026	16 922	20 330	16 825
Payments based on non-current A/An/R/I, production required	0	0	48	91	45	8
Payments based on non-current A/An/R/I, production not required	0	30	39 734	40 482	38 449	40 272
With variable payment rates	0	0	0	0	0	0
with commodity exceptions	0	0	0	0	0	0
With fixed payment rates	0	30	39 734	40 482	38 449	40 272
with commodity exceptions	0	0	20	24	25	11
Payments based on non-commodity criteria	478	1 242	774	735	903	684
Based on long-term resource retirement	476	1 112	333	295	440	263
Based on a specific non-commodity output	2	130	392	392	414	370
Based on other non-commodity criteria	0	0	49	48	49	50
Miscellaneous payments	-43	-838	557	718	743	208
Percentage PSE (%)	**39.2**	**33.8**	**19.3**	**19.0**	**20.7**	**18.3**
Producer NPC (coeff.)	**1.69**	**1.33**	**1.05**	**1.04**	**1.06**	**1.05**
Producer NAC (coeff.)	**1.64**	**1.51**	**1.24**	**1.23**	**1.26**	**1.22**
General Services Support Estimate (GSSE)	**9 144**	**10 636**	**11 144**	**12 171**	**10 682**	**10 580**
Agricultural knowledge and innovation system	1 814	3 870	6 186	6 191	6 075	6 291
Inspection and control	194	285	942	908	929	988
Development and maintenance of infrastructure	1 331	2 089	2 249	2 831	1 907	2 010
Marketing and promotion	1 210	2 053	1 700	2 186	1 667	1 247
Cost of public stockholding	4 571	2 281	49	36	84	27
Miscellaneous	24	57	18	18	20	17
Percentage GSSE (% of TSE)	**8.2**	**8.1**	**10.3**	**11.3**	**9.6**	**10.1**
Consumer Support Estimate (CSE)	**-72 475**	**-58 343**	**-18 201**	**-15 783**	**-19 991**	**-18 830**
Transfers to producers from consumers	-83 403	-64 443	-18 637	-16 875	-21 359	-17 678
Other transfers from consumers	-1 631	-607	-977	-232	-314	-2 385
Transfers to consumers from taxpayers	4 992	4 962	1 006	1 324	923	771
Excess feed cost	7 567	1 745	407	0	759	462
Percentage CSE (%)	**-35.7**	**-20.8**	**-4.1**	**-3.7**	**-4.7**	**-4.1**
Consumer NPC (coeff.)	**1.69**	**1.30**	**1.05**	**1.04**	**1.05**	**1.05**
Consumer NAC (coeff.)	**1.55**	**1.26**	**1.04**	**1.04**	**1.05**	**1.04**
Total Support Estimate (TSE)	**111 515**	**132 551**	**107 786**	**107 267**	**111 591**	**104 501**
Transfers from consumers	85 034	65 050	19 614	17 107	21 673	20 063
Transfers from taxpayers	28 112	68 108	89 149	90 392	90 232	86 823
Budget revenues	-1 631	-607	-977	-232	-314	-2 385
Percentage TSE (% of GDP)	**2.6**	**1.4**	**0.6**	**0.7**	**0.7**	**0.6**
GDP deflator (1986-88=100)	**100**	**135**	**187**	**188**	**185**	**..**
Exchange rate (national currency per USD)	**0.91**	**0.81**	**0.90**	**0.90**	**0.90**	**0.89**

.. Not available

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 1995-97; and EU28 from 2014 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 (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758490

Chapter 11. Iceland

Support to agriculture

Iceland's level of support remains among the highest within the OECD, although it has fallen due to higher world market prices and a strong devaluation of the Icelandic Króna. Reforms of agricultural policies have been limited, with a shift towards more decoupled payments in the sheep meat sector in the mid-1990s and the establishment of a market for dairy quotas.

At 58% of gross farm receipts the PSE was more than three times the OECD average in 2015-17. The total support to agriculture (TSE) has averaged 1.2% of the country's GDP in recent years, with support to farmers (PSE) being the dominant component (96%). Support to general services (GSSE) accounts for just over 4% of TSE, with almost half related to expenditures for inspection and public stockholding.

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. In addition, market price support is complemented with the payment entitlements system which is directly or indirectly coupled with production factors. Market price support accounts for 55% of the support to farmers in 2015-17. Output payments for milk producers and the more decoupled payments to sheep meat producers represent most of the remaining PSE. As a consequence, 80% of farm support is provided through some of the potentially most production and trade distorting forms.

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 until 2019; ii) reduction in support entitlements in sheep production and increased in support related to quality control. In addition, there is more emphasis on support that is not linked to specific agricultural sectors.

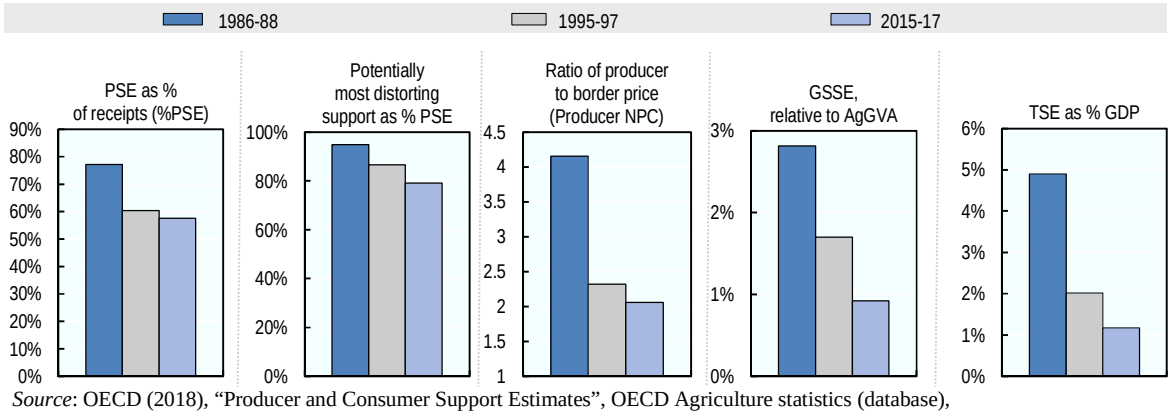
Assessment and recommendations

- 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. Despite the shift towards more decoupled payments in the sheep meat sector in the mid-1990s and the establishment of a market for dairy quotas helping to reduce efficiency losses, Iceland's support to farmers remains

well above that of most other OECD countries. Moreover, support to farmers continues to be provided in the form that is potentially the most distorting, thereby hindering agricultural producers from receiving market signals and responding to them. To reduce the level of support and its distortive effects in a sustainable manner, policies need to be changed away from border protection and in favour of measures less linked to production

- 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 complex *non-ad valorem* duties.
- Programmes, such as the quality control programme for sheep farming, which is subject to environmental compliance requirements, could contribute to sustainable land management.
- 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 new agreements between the Government and the Farmer's Association which provide the policy framework for the 2017-26 period, are an opportunity for fostering the reform process to make Iceland's agricultural sector more responsive to market forces, including through phasing out of support to the dairy and sheep sectors, and the 2019 review of the production quota system.
- While the short-term effects of climate change could be favourable for agriculture, pests such as indigenous insects may become a greater threat, introducing new challenges to agriculture in Iceland.

Figure 11.1. Iceland: Development of support to agriculture

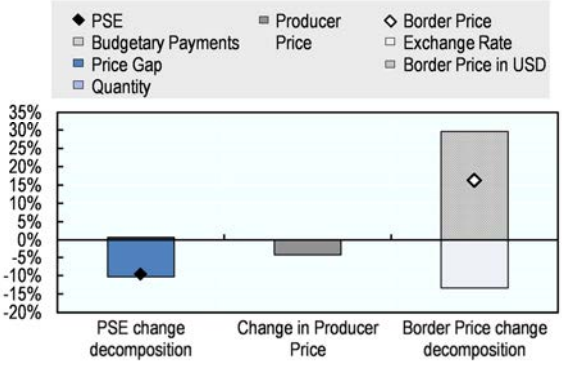


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756438

Support to farmers (%PSE) has declined by 20 percentage points between 1986-88 and 2015-17. But at 56% of gross farm receipts, it remains high compared to most other OECD countries and the potentially **most distorting support** in total represents 80% of the total PSE (Figure 11.1). The level of support has decreased in 2017 due to the decrease in MPS. The decrease in MPS results from a smaller price gap brought about by lower average domestic prices and increased world prices in USD which more than offset the effects of the appreciation of ISK against the USD (Figure 11.2). 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 2015-17 are poultry (4.36), eggs (3.58) and wool (3.3). MPS is also the main component of Single Commodity Transfers (SCT): poultry, eggs and wool had more than 70% of their gross farm receipts derived from SCT (Figure 11.3). Overall, SCT represent 98% of the total PSE. The expenditures for **general services** (GSSE), mainly on inspection and public stockholding, decreased relative to agriculture value added from 2.8% in 19986-88 to 0.9% in 2015-17. **Total support to agriculture** as a share of GDP has declined significantly over time. More than 95% of the total support is provided to individual farmers (PSE).

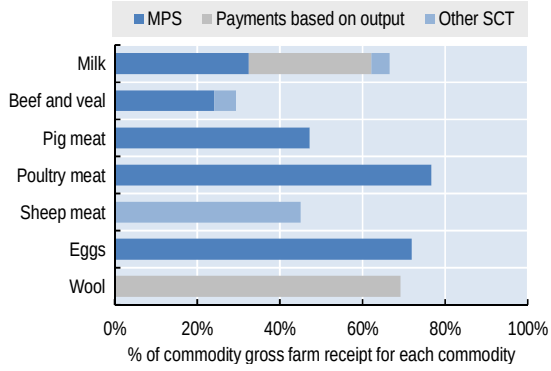
Figure 11.2. Iceland: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756457

Figure 11.3. Iceland: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756476

Table 11.1. Iceland: Estimates of support to agriculture

Million USD

	1986-88	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**236**	**153**	**289**	**260**	**292**	**315**
***of which:** share of MPS commodities (%)*	80.3	73.5	83.6	82.9	84.4	83.6
Total value of consumption (at farm gate)	**205**	**144**	**233**	**224**	**254**	**220**
Producer Support Estimate (PSE)	**193**	**131**	**225**	**201**	**234**	**239**
Support based on commodity output	180	114	175	158	185	183
Market Price Support[1]	179	67	123	111	133	125
Payments based on output	2	46	52	47	52	58
Payments based on input use	13	5	12	10	11	14
Based on variable input use	3	0	2	2	3	3
with input constraints	0	0	0	0	0	0
Based on fixed capital formation	6	2	5	4	5	5
with input constraints	0	0	0	0	0	0
Based on on-farm services	4	3	5	4	4	6
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	-1	-3	5	4	5	5
Based on Receipts / Income	-1	-3	-1	-1	-1	-1
Based on Area planted / Animal numbers	0	0	6	5	6	6
with input constraints	0	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	15	33	29	33	37
Payments based on non-current A/An/R/I, production not required	1	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	1	0	0	0	0	0
with commodity exceptions	1	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 (%)	**77.2**	**60.4**	**57.6**	**57.4**	**59.6**	**55.7**
Producer NPC (coeff.)	**4.16**	**2.32**	**2.06**	**2.06**	**2.17**	**1.96**
Producer NAC (coeff.)	**4.38**	**2.52**	**2.36**	**2.35**	**2.47**	**2.26**
General Services Support Estimate (GSSE)	**18**	**14**	**10**	**8**	**11**	**11**
Agricultural knowledge and innovation system	5	5	1	1	1	1
Inspection and control	1	1	5	4	6	5
Development and maintenance of infrastructure	2	3	0	0	0	0
Marketing and promotion	1	1	0	0	0	1
Cost of public stockholding	9	4	4	3	3	4
Miscellaneous	0	0	0	0	0	0
Percentage GSSE (% of TSE)	**6.9**	**9.2**	**4.3**	**3.9**	**4.6**	**4.5**
Consumer Support Estimate (CSE)	**-112**	**-59**	**-115**	**-102**	**-124**	**-120**
Transfers to producers from consumers	-157	-64	-115	-103	-124	-119
Other transfers from consumers	-1	-1	-1	0	0	-2
Transfers to consumers from taxpayers	46	5	1	1	1	1
Excess feed cost	0	0	0	0	0	0
Percentage CSE (%)	**-70.4**	**-42.9**	**-49.4**	**-45.6**	**-48.9**	**-54.8**
Consumer NPC (coeff.)	**4.38**	**1.82**	**1.98**	**1.84**	**1.96**	**2.22**
Consumer NAC (coeff.)	**3.38**	**1.75**	**1.98**	**1.84**	**1.96**	**2.21**
Total Support Estimate (TSE)	**257**	**150**	**235**	**210**	**246**	**251**
Transfers from consumers	158	65	116	103	124	121
Transfers from taxpayers	100	86	120	107	121	132
Budget revenues	-1	-1	-1	0	0	-2
Percentage TSE (% of GDP)	**4.9**	**2.0**	**1.2**	**1.2**	**1.2**	**1.1**
GDP deflator (1986-88=100)	**100**	**211**	**529**	**524**	**535**	**528**
Exchange rate (national currency per USD)	**40.94**	**67.48**	**119.85**	**131.90**	**120.84**	**106.82**

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 (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758509

Chapter 12. Israel

Support to agriculture

Despite efforts to introduce market-oriented reforms, the overall agriculture policy support has remained stable from 2015 to 2017, due to the persistence of regulations, price controls and border protection targeting specific commodities.

The share of producer support in gross farm receipts (%PSE), 17% in 2015-17, is approaching the OECD average. At the same time, the share of potentially most market-distorting forms of support in Israel is much higher (93%) than the OECD average. Poultry and milk producers benefit from the highest level of market price support, accounting for 48% of the total PSE in 2015-17, up from 41% in 1995-97. Input subsidies increased between 2015 and 2017, mainly due to changes in water policies. Total support for agriculture (TSE) has remained stable at 0.5% of GDP, just below the OECD average.

The share of General Services Support Estimates (GSSE) in total support in 2017 represents 12.5% of TSE, close to the OECD average; it includes more infrastructure investment, reinforced inspection and control, and some additional support for the Agricultural Knowledge and Innovation System.

Main policy changes

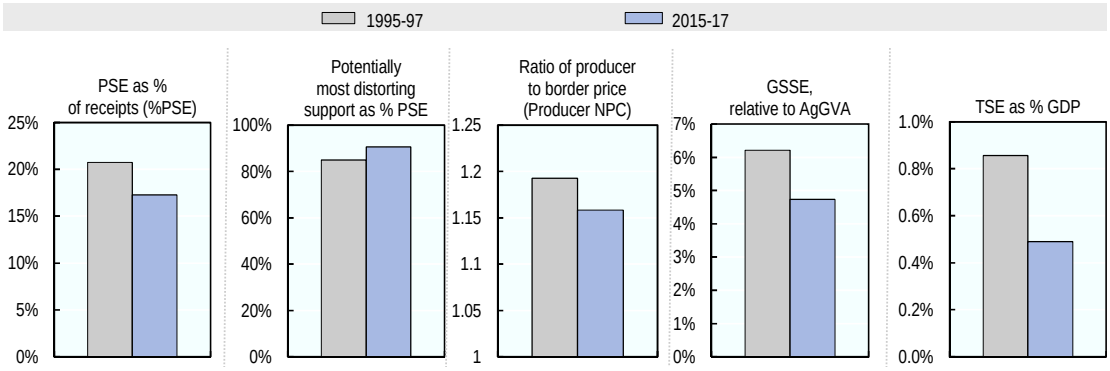
Several measures have been undertaken to improve market linkages and increase competition in the agro-food chain, aiming in particular to lower food prices. The government approved thirteen programmes to reduce the regulatory burden in the agro-food chain. Several initiatives were launched to encourage greater competition in marketing of and consumer access to local and fresh horticulture produce. The government gathered market data from large retailers and wholesalers in view of introducing possible margin controls on fruits and vegetables. While target prices for egg, milk and wheat increased, the government continued its programme to open the beef market in exchange for area-based support linked to pasture land, and the duty free quota for cheese was increased by 10%.

The Water Authority published the implementation rules for the new agricultural water pricing system. Freshwater rates for producers in areas with no alternative water source will amount to ILS 1.54 (USD 0.43)/m^3, while other producers will pay the difference between a rate of ILS 1.81 (USD 0.5)/m^3 and the calculated cost of pumping they face, both by June 2019. Meanwhile, the country's Northern regions faced its fifth year of drought, which led the Water Authority to further restrict water allocations and to disconnect water supplies coming from the "Kinneret surrounding" region from the rest of the country, increasing the its reliance on desalinated water.

Assessment and recommendations

- The level of support to agriculture in Israel continued to be stable in the period 2015-17, just as the OECD average declined. This evolution reflects the continued high border protection for selected agricultural commodities and various forms of support for farm inputs. Such a structure of support effectively taxes consumers.
- While the tariff reform in the beef sector is a step in the right direction, its scope should be expanded to cover other commodities. Israel maintains very high tariffs for goods such as dairy products, eggs and certain fruits and vegetables that could also be gradually removed and replaced, if necessary and as a temporary measure, by direct payments. The tariff system on 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 final consumers of agro-food products.
- Israel's estimated annual growth rate of total factor productivity in agriculture is higher than world average, thanks to advances in technology due to research and development, high managerial skills of Israeli farmers and effective public extension service. Expenditures on agricultural knowledge and innovation system should continue to increase.
- Israel's comprehensive water management system has enabled the country to sustain a productive agriculture sector under very intense water stress. Still, the recent agriculture water price reform, aiming at equity, may reduce the degree of freedom of the government to manage future freshwater use in agriculture. By applying flat water rates, the system does not allow freshwater prices to reflect regional differences. It leaves water allocation restriction as the main remaining policy instrument adaptable to regional climatic conditions, making the water system less flexible in a context of increasing climatic volatility. Facilitating further trading in water allocations could help improve the system's efficiency and flexibility.
- The government has invested in agriculture's resilience to natural and climate risks, but it should continue 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 geared towards higher environmental performance.

Figure 12.1. Israel: Development of support to agriculture

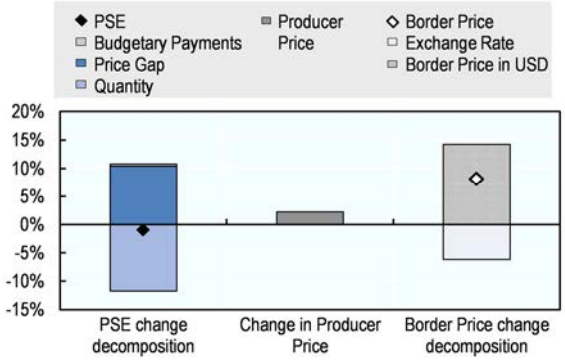


Source: OECD (2018a), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756552

Support to farmers (%PSE) has declined moderately over the long term. In the most recent period, support has been around 17% of gross farm receipts, slightly under the OECD average. The share of potentially **most distorting support** has increased in the last two decades due to a higher level of market price support (MPS) and continued border protection (Figure 12.1). The level of support has slightly decreased (-1%) in 2017 due to a small reduction of MPS. This in turn results from a significantly reduced agricultural production, which is almost entirely offset by an increased average price gap (Figure 12.2). Effective prices received by farmers, on average, are still 16% higher than world prices; large differences between commodities persist with domestic prices for poultry and bananas being 65% and 101% above world prices, respectively. MPS is the main component of Single Commodity Transfers (SCT): bananas, milk and poultry have the highest share of SCT in commodity gross farm receipts (Figure 12.3). Overall, SCT represent 85% of the total PSE. The expenditures for **general services** (GSSE), mainly on knowledge and infrastructure, have declined relative to agriculture value added over twenty years. **Total support to agriculture** as a share of GDP declined significantly over time. 88% of the total support is provided directly to farmers (PSE).

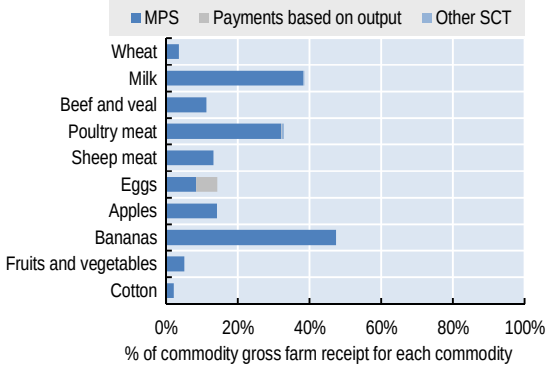
Figure 12.2. Israel: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018a), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756571

Figure 12.3. Israel: Transfer to specific commodities (SCT), 2015-2017



Source: OECD (2018a), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756590

Table 12.1. Israel: Estimates of support to agriculture

Million USD

	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**3 621**	**7 799**	**7 583**	**7 765**	**8 051**
***of which:** share of MPS commodities (%)*	72.4	82.6	80.0	82.4	85.5
Total value of consumption (at farm gate)	**3 697**	**7 510**	**7 455**	**7 597**	**7 479**
Producer Support Estimate (PSE)	**810**	**1 388**	**1 367**	**1 360**	**1 437**
Support based on commodity output	544	1 163	1 148	1 142	1 199
Market Price Support[1]	523	1 147	1 133	1 127	1 183
Payments based on output	20	16	16	16	16
Payments based on input use	215	137	128	128	154
Based on variable input use	143	95	91	88	105
with input constraints	0	0	0	0	0
Based on fixed capital formation	57	24	20	26	26
with input constraints	0	0	0	0	0
Based on on-farm services	15	18	17	15	24
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	32	80	83	82	76
Based on Receipts / Income	30	65	72	62	60
Based on Area planted / Animal numbers	2	16	11	20	16
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	18	8	8	7	8
With variable payment rates	0	8	8	7	8
with commodity exceptions	0	0	0	0	0
With fixed payment rates	18	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 (%)	**20.7**	**17.3**	**17.5**	**17.0**	**17.3**
Producer NPC (coeff.)	**1.19**	**1.16**	**1.16**	**1.16**	**1.16**
Producer NAC (coeff.)	**1.26**	**1.21**	**1.21**	**1.20**	**1.21**
General Services Support Estimate (GSSE)	**121**	**190**	**185**	**179**	**206**
Agricultural knowledge and innovation system	48	83	79	81	88
Inspection and control	17	25	25	19	31
Development and maintenance of infrastructure	3	63	62	56	70
Marketing and promotion	19	1	1	1	1
Cost of public stockholding	34	12	13	12	12
Miscellaneous	0	6	6	9	3
Percentage GSSE (% of TSE)	**13.0**	**12.0**	**11.9**	**11.6**	**12.5**
Consumer Support Estimate (CSE)	**-722**	**-923**	**-1 012**	**-940**	**-817**
Transfers to producers from consumers	-569	-882	-958	-899	-789
Other transfers from consumers	-159	-43	-52	-46	-31
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	6	1	-3	4	2
Percentage CSE (%)	**-19.6**	**-12.3**	**-13.6**	**-12.4**	**-10.9**
Consumer NPC (coeff.)	**1.25**	**1.14**	**1.16**	**1.14**	**1.12**
Consumer NAC (coeff.)	**1.24**	**1.14**	**1.16**	**1.14**	**1.12**
Total Support Estimate (TSE)	**931**	**1 578**	**1 552**	**1 539**	**1 643**
Transfers from consumers	728	924	1 009	944	820
Transfers from taxpayers	362	696	594	640	854
Budget revenues	-159	-43	-52	-46	-31
Percentage TSE (% of GDP)	**0.9**	**0.5**	**0.5**	**0.5**	**0.5**
GDP deflator (1995-97=100)	**100**	**169**	**167**	**169**	**169**
Exchange rate (national currency per USD)	**3.22**	**3.78**	**3.89**	**3.84**	**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 (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758528

Chapter 13. Japan

Support to agriculture

Japan has gradually reduced its support to agriculture but the change has been relatively moderate. Producer support as a percentage of gross farm receipts (%PSE) is about 46% in 2015-17, down from 63% in 1986-88 but still much higher than the OECD average. Market price support (MPS) remains the main element of PSE and is mainly sustained by trade barriers, especially for rice, pork and milk. Prices received by producers are on average 72% above world market prices.

While the share of potentially most distorting support (MPS, support based on output and variable input use – without input constraints) has declined, it still accounts for 85% of producer support. The share of direct payments in the PSE increased in recent years, particularly in the form of area and income based payments.

The total support estimate to agriculture (TSE) represents 1.0% of Japan's GDP in 2015-2017. Support for producers (PSE) represents 82% of TSE in 2015-2017, while another 18% is the support for general services provided to agriculture (GSSE). Around 85% of the GSSE is directed to the development and maintenance of infrastructure such as irrigation facilities and disaster prevention, while 11% of the GSSE finances the agricultural knowledge and innovation system.

Main policy changes

Government administered rice production quota are abolished in 2018. The end of the quota system, which has been in place since the 1970s, will enable farmers to plan their production in response to market demand without relying on government quota allocation. To support farmers' decision making and facilitate the transition towards more market orientation, the government provides detailed market information on rice such as demand forecasts. The income support payment for rice to those who meet the rice production target, is also abolished in 2018.

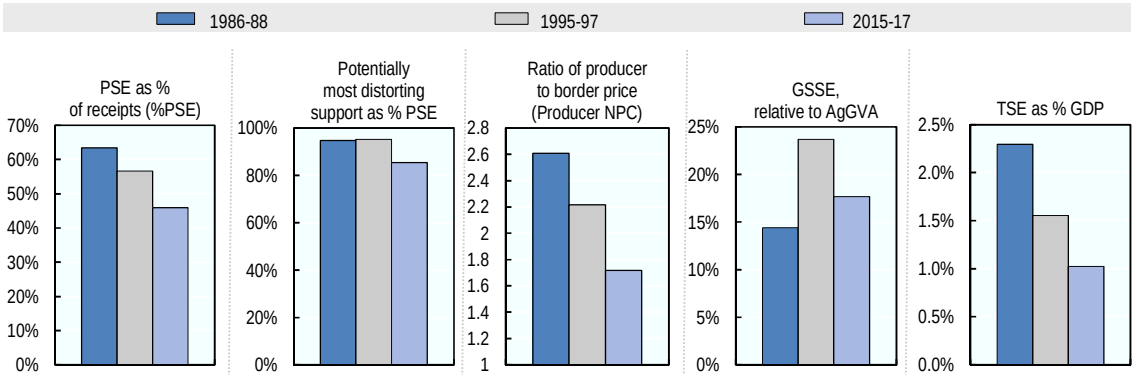
Japan finalised negotiations for the Economic Partnership Agreement with the European Union in December 2017. Under the agreement, access to the Japanese market for EU agricultural products, including dairy, pork, beef, and wheat are to be improved, while rice is excluded from any tariff commitment.

In March 2018, Japan and ten other Pacific Rim nations signed the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). Under the agreement, market access of agricultural products, including sensitive products such as rice, pork, dairy products, beef, wheat, barley, and sugar, is to be improved by various measures which include tariff cuts.

Assessment and recommendations

- Phasing out of the administrative allocation of rice production is an important step to give farmers more freedom to respond to market signals and lower rice prices, yet the remaining trade barriers will keep the price of rice high. A gradual reduction of these measures will help to generate benefits for consumers through lower prices and for farmers through increased flexibility in production decisions.
- Japan has made significant efforts to promote land consolidation to "business farmers" certified by authorities. The establishment of farmland banks and various types of support for which only business farms are eligible could contribute to farm size growth and lower production costs. However, farmers may be reluctant to release their farmland if there is a chance of selling their farmland for non-farm usage (such as construction of industry and service facilities, or private housing) at much higher prices. Reducing the incentive for farmland owners to speculate in such a way, for instance by taxing the price differential between agriculture and non-agriculture land, would further help structural change and land consolidation.
- Japan's agricultural productivity (measured by total factor productivity) has grown at a faster pace than the world average. In order to maintain this trend, shifting away from market price support towards the support for agricultural innovation and promotion of private research and development (R&D) activities is important. The current agricultural innovation system is characterised by a traditional top-down approach, where scientists in the public sector develop new technologies that are disseminated by extension officers to farmers. A greater involvement of the private sector, including by public-private partnerships in the area of research, could unleash additional potential for innovation and productivity growth.
- Lowering GHG emissions from agricultural sources is an important step to achieve Japan's commitment in the context of the United Nations Framework Convention on Climate Change (UNFCCC) and specifically the 2016 Paris Agreement on Climate Change. R&D activities will play key role in mitigating GHG emissions and helping adaptation to climate change through, for instance, development of low-emission agricultural practices and heat-tolerant varieties.
- Japan intends to pursue economic partnerships with other countries and to promote agro-food exports. While this signals a move towards a more market-oriented agricultural sector, the reduction of border measures on agricultural products would contribute to structural change and further productivity growth of the Japanese agro-food sector through competition with foreign products.

Figure 13.1. Japan: Development of support to agriculture

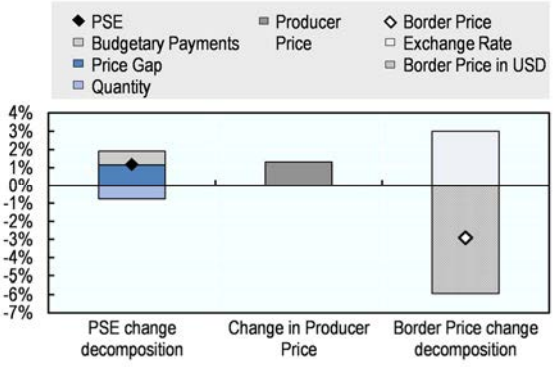


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756666

Support to farmers (%PSE) has declined gradually over the long term. During 2015-17, farm support represented around 46% of gross farm receipts, but remains high compared to the OECD average. The share of potentially **most distorting support** (MPS and support based on output and variable input use – without input constraints) has decreased slightly in recent years, but still accounts for 85% of the PSE (Figure 13.1). Market price support continues to be the main element of that support. The level of support has increased in 2017 due to an increase in the gap between domestic and border prices, in particular for rice (Figure 13.2): while the domestic rice price increased by 6%, the import price decreased by 17% from 2016 to 2017. The level and structure of the **Single Commodity Transfers** (SCT) vary greatly by commodity. SCTs above 50% of commodity gross farm receipts are maintained for barley, rice, sugar, milk, pork, cabbage and grapes (Figure 13.3). Expenditures for **general services** (GSSE) were equivalent to 18% of agricultural value added in 2015-17 and mainly focused on the development and maintenance of infrastructure such as irrigation facility. **Total support to agriculture** (TSE) was 1.0% of GDP in 2015-17, reduced by more than half since 1986-1988.

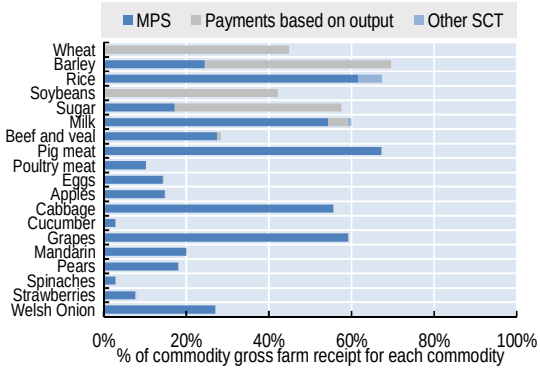
Figure 13.2. Japan: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756685

Figure 13.3. Japan: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756704

Table 13.1. Japan: Estimates of support to agriculture

Million USD

	1986-88	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**72 767**	**95 057**	**78 542**	**72 709**	**84 580**	**78 337**
of which: *share of MPS commodities (%)*	68.4	67.9	65.6	65.7	65.4	65.5
Total value of consumption (at farm gate)	**98 515**	**141 486**	**117 236**	**107 357**	**127 283**	**117 069**
Producer Support Estimate (PSE)	**49 307**	**57 306**	**39 765**	**33 495**	**43 305**	**42 494**
Support based on commodity output	45 692	53 411	33 524	27 751	36 847	35 975
Market Price Support[1]	44 153	51 795	32 057	26 370	35 345	34 454
Payments based on output	1 539	1 616	1 468	1 381	1 502	1 521
Payments based on input use	2 056	2 804	1 225	1 191	1 370	1 113
Based on variable input use	1 024	1 164	455	431	477	456
with input constraints	0	0	0	0	0	0
Based on fixed capital formation	890	1 443	507	514	611	397
with input constraints	0	0	0	0	0	0
Based on on-farm services	142	197	263	246	281	261
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	0	0	2 247	2 025	2 143	2 572
Based on Receipts / Income	0	0	405	320	229	665
Based on Area planted / Animal numbers	0	0	1 842	1 705	1 914	1 907
with input constraints	0	0	983	917	1 014	1 018
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	1 091	2 769	2 528	2 945	2 834
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	1 091	2 769	2 528	2 945	2 834
with commodity exceptions	1 560	1 091	2 544	2 322	2 711	2 599
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**	**56.6**	**46.0**	**42.0**	**46.8**	**49.2**
Producer NPC (coeff.)	**2.61**	**2.22**	**1.72**	**1.60**	**1.75**	**1.82**
Producer NAC (coeff.)	**2.73**	**2.31**	**1.85**	**1.72**	**1.88**	**1.97**
General Services Support Estimate (GSSE)	**8 769**	**19 418**	**8 673**	**7 950**	**9 288**	**8 780**
Agricultural knowledge and innovation system	514	897	985	959	1 067	929
Inspection and control	55	96	75	85	64	76
Development and maintenance of infrastructure	7 747	17 583	7 393	6 716	7 924	7 538
Marketing and promotion	152	256	96	72	111	105
Cost of public stockholding	301	586	124	118	122	132
Miscellaneous	0	0	0	0	0	0
Percentage GSSE (% of TSE)	**15.0**	**25.2**	**17.9**	**19.2**	**17.7**	**17.1**
Consumer Support Estimate (CSE)	**-60 839**	**-74 606**	**-47 418**	**-39 921**	**-52 283**	**-50 051**
Transfers to producers from consumers	-43 584	-51 314	-32 076	-26 378	-35 368	-34 483
Other transfers from consumers	-17 214	-23 528	-15 381	-13 576	-16 957	-15 612
Transfers to consumers from taxpayers	-108	240	7	7	7	6
Excess feed cost	68	-4	33	25	36	38
Percentage CSE (%)	**-61.8**	**-52.6**	**-40.4**	**-37.2**	**-41.1**	**-42.8**
Consumer NPC (coeff.)	**2.62**	**2.11**	**1.68**	**1.59**	**1.70**	**1.75**
Consumer NAC (coeff.)	**2.62**	**2.11**	**1.68**	**1.59**	**1.70**	**1.75**
Total Support Estimate (TSE)	**57 968**	**76 964**	**48 444**	**41 452**	**52 600**	**51 281**
Transfers from consumers	60 799	74 842	47 458	39 953	52 325	50 095
Transfers from taxpayers	14 384	25 650	16 368	15 075	17 232	16 797
Budget revenues	-17 214	-23 528	-15 381	-13 576	-16 957	-15 612
Percentage TSE (% of GDP)	**2.3**	**1.6**	**1.0**	**0.9**	**1.1**	**1.1**
GDP deflator (1986-88=100)	**100**	**109**	**96**	**96**	**96**	**96**
Exchange rate (national currency per USD)	**147.09**	**107.96**	**114.00**	**121.00**	**108.80**	**112.18**

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 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 (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758547

Chapter 14. Kazakhstan

Support to agriculture

The share of producer support in gross farm income (%PSE) was nearly 6% in 2015-17. In 2017, domestic producer prices remain on average below world levels although to a lesser extent than in 2016, leading to a negative aggregate price support (MPS)[1] and an implicit transfer from farmers to consumers as measured by the Consumer Support Estimate. Support to farm investments gains prominence, with its share in budgetary transfers to producers increasing to 60% in 2017 from less than 30% in 2013. 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 22%. Spending on Inspection and control and on development and maintenance of infrastructure together made up more than 80% of the GSSE in the past three years.

Main policy changes

In 2017, Kazakhstan continued the implementation of changes initiated in 2016 to its set of agricultural policy instruments. The total budget for state support was maintained while the number of payment schemes reduced from 65 to 54. Output payments to livestock were reallocated to subsidise feed costs. Larger amounts were attributed to the subsidisation of pedigree livestock, debt rescheduling and interest rates for investments, for micro-credit and for agricultural loans and leasing contracts.

On 1 January 2018, Kazakhstan eliminated the VAT preference to certain agricultural producers and processors as foreseen in its WTO accession protocol of 2015. Beyond binding the AMS, the *de minimis* levels and agricultural export subsidies, other commitments include the compliance with the WTO SPS and TBT Agreements, the use of international standards for technical regulations as well as participation in international conformity assessment procedures.

Greater use is made of Information Technologies. Since 2017, applications to KazAgro credit and leasing instruments can also be submitted through an electronic system. Computerised customs procedures are now part of the new Customs Code of the Eurasian Economic Union that came into force in January 2018.

The partial privatisation of KazAgro is delayed as no buyers came forward at auctions in 2017 for the sale of 11 KazAgro subsidiaries.

Assessment and recommendations

- Between 1995-97 and 2015-17, Kazakhstan's support to agriculture as measured by the %PSE has decreased and its composition has changed. While market price support is no longer the sole instrument, all farm support requires production and

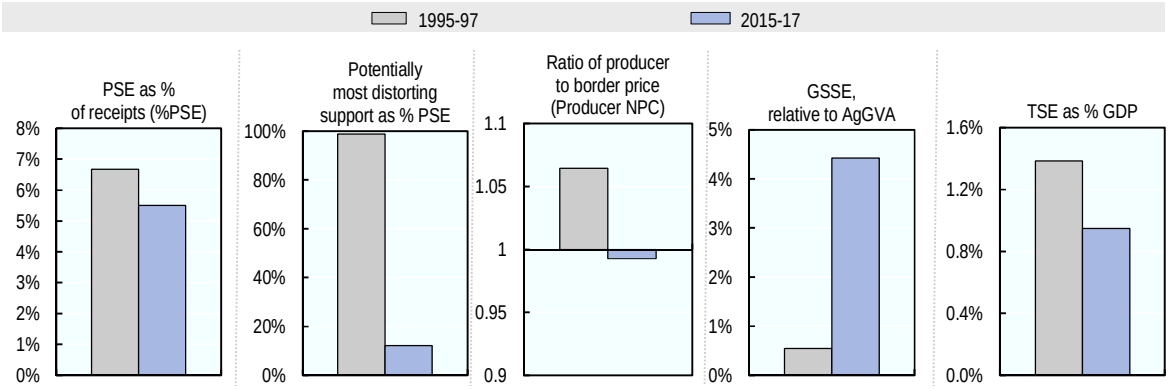
is hence likely to influence farm management decisions, increase pressure on resources and distort markets.

- An important and growing share of payments support farm level long-term development and productivity. This should have a positive effect on the sector. As from 2014, the formation of fixed capital attracts 50% or more of payments, mostly to livestock pedigree programmes.
- The debt restructuring programme initiated in 2013 absorbs higher budgets every year. Any future allocation of public funds and productive resources would be improved by increasing farmers' co-responsibility and a more active use of bankruptcy procedures.
- Support conditional on compliance with administratively specified requirements should be evaluated in light of desired outcomes.
- Increased subsidies for fertiliser and chemicals 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 fewer measures and more transparent attribution conditions should be continued.
- 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.
- 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 needs to be maintained.
- 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. It therefore remains unclear whether, to what degree and how agricultural emissions will be reduced.

Note

[1] Wider price distortions at individual commodity levels offset each other in the aggregate measurement.

Figure 14.1. Kazakhstan: Development of support to agriculture

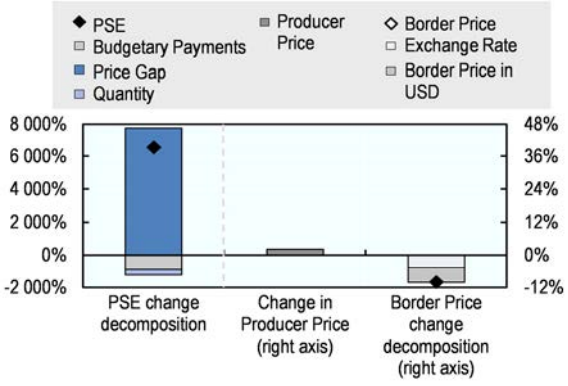


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756780

Support to agricultural producers as measured by the %PSE was estimated to less than 6% of gross farm receipts on average in 2015-17. In 1995-97 nearly all (99%) support was potentially **most distorting** (support based on output and variable input use – without input constraints). This share has gone down to 12% on average in 2015-17. Domestic prices were lower than world prices for crop products and higher than world prices for livestock commodities, resulting in average prices received by farmers at 1% below world prices. **Support to general services** (GSSE) represents 4% of agricultural value added in the most recent period, an increase from less than 1% in 1995-97. 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 was stable at about 1.4%. The share of GSSE in TSE increased from 5% in 1995-97 to 22% in 2015-17. In 2017, the MPS was less negative than in 2016, 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.

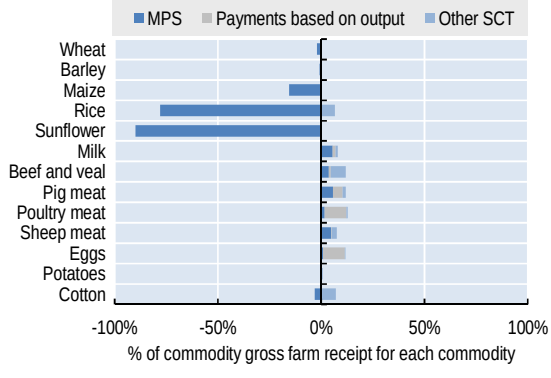
Figure 14.2. Kazakhstan: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756799

Figure 14.3. Kazakhstan: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756818

Table 14.1. Kazakhstan: Estimates of support to agriculture

Million USD

	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**3 944**	**12 710**	**14 861**	**10 723**	**12 547**
***of which:** share of MPS commodities (%)*	74.0	58.5	57.4	58.6	59.4
Total value of consumption (at farm gate)	**3 591**	**12 200**	**14 459**	**10 115**	**12 025**
Producer Support Estimate (PSE)	**274**	**901**	**2 186**	**7**	**511**
Support based on commodity output	270	57	1 135	-708	-256
Market Price Support[1]	270	-55	996	-824	-337
Payments based on output	0	112	139	116	80
Payments based on input use	4	708	829	607	687
Based on variable input use	2	179	227	138	172
with input constraints	0	0	0	0	0
Based on fixed capital formation	2	520	591	462	506
with input constraints	0	0	0	0	0
Based on on-farm services	0	9	11	7	9
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	0	134	219	106	78
Based on Receipts / Income	0	0	0	0	0
Based on Area planted / Animal numbers	0	134	219	106	78
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	3	2	2
Percentage PSE (%)	**6.7**	**5.5**	**13.6**	**0.1**	**3.8**
Producer NPC (coeff.)	**1.06**	**0.99**	**1.08**	**0.93**	**0.98**
Producer NAC (coeff.)	**1.07**	**1.06**	**1.16**	**1.00**	**1.04**
General Services Support Estimate (GSSE)	**12**	**314**	**397**	**260**	**285**
Agricultural knowledge and innovation system	0	39	48	37	34
Inspection and control	11	150	191	119	139
Development and maintenance of infrastructure	1	117	155	93	101
Marketing and promotion	0	4	2	4	5
Cost of public stockholding	0	0	0	0	0
Miscellaneous	0	5	2	6	6
Percentage GSSE (% of TSE)	**4.9**	**21.8**	**15.1**	**37.3**	**22.5**
Consumer Support Estimate (CSE)	**-356**	**203**	**-1 093**	**979**	**723**
Transfers to producers from consumers	-331	-75	-1 042	594	222
Other transfers from consumers	-11	-35	-105	0	0
Transfers to consumers from taxpayers	0	317	47	429	475
Excess feed cost	-13	-4	6	-43	26
Percentage CSE (%)	**-9.7**	**3.2**	**-7.6**	**10.1**	**6.3**
Consumer NPC (coeff.)	**1.10**	**1.00**	**1.09**	**0.94**	**0.98**
Consumer NAC (coeff.)	**1.11**	**0.97**	**1.08**	**0.91**	**0.94**
Total Support Estimate (TSE)	**287**	**1 532**	**2 631**	**696**	**1 271**
Transfers from consumers	342	110	1 147	-594	-222
Transfers from taxpayers	-44	1 457	1 588	1 289	1 493
Budget revenues	-11	-35	-105	0	0
Percentage TSE (% of GDP)	**1.4**	**0.9**	**1.4**	**0.5**	**..**
GDP deflator (1995-97=100)	**100**	**1 025**	**959**	**1 090**	**..**
Exchange rate (national currency per USD)	**67.88**	**296.50**	**221.73**	**342.16**	**325.62**

.. 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 (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758566

Chapter 15. Korea

Support to agriculture

Korea has gradually reduced its support to agriculture over the long term, with modest progress towards more market-oriented policies. Since 2015, all import restrictions on agricultural products are in the form of tariffs and tariff rate quotas. Along with reducing price support, the government has introduced a range of direct payment programmes from the late 1990s, an agricultural insurance scheme from 2005, and a variable payment for rice from 2003.

Total support to agriculture (TSE) as a percentage of GDP has significantly declined from 8.6% in 1986-88 to 1.8% in 2015-17. However, producer support accounted for 52% of gross farm receipts (% PSE) in 2015-17, which is almost three times the OECD average. Most support to farmers is in the form of market price support (MPS), which accounted for 90% of the PSE in 2015-17. The ratio of producer price to border price has declined from 3.3 in 1986-88 to 2.0 in 2015-17. Transfers to individual farmers represented 89% of the TSE in 2015-17. Support to general services (GSSE) accounted for 9% of the Gross Value Added of agriculture. The expenditure on the development and maintenance of infrastructure accounted for 52% of the GSSE.

Main policy changes

Direct payments for farms in less-favoured area per ha were increased in real terms. Variable payments for rice more than doubled compared to the previous year as rice prices declined. A Complementary plan to the 2015 plan was introduced to balance the supply and demand of rice. It includes a reduction in the area of rice paddies, measures encouraging diversification of activities, and measures stimulating demand.

The Agriculture, Rural Community and Food Industry Development plan 2018-22 foresees further adjustments in direct payments programmes along the same lines, in addition to lower coupling of direct payments for rice, stronger cross-compliance in the direct payment scheme, and further expansion of crop insurance programmes. The plan also includes investment support to young farmers, for the integration of digital technology into food and agriculture, and for the promotion of renewable energy generation.

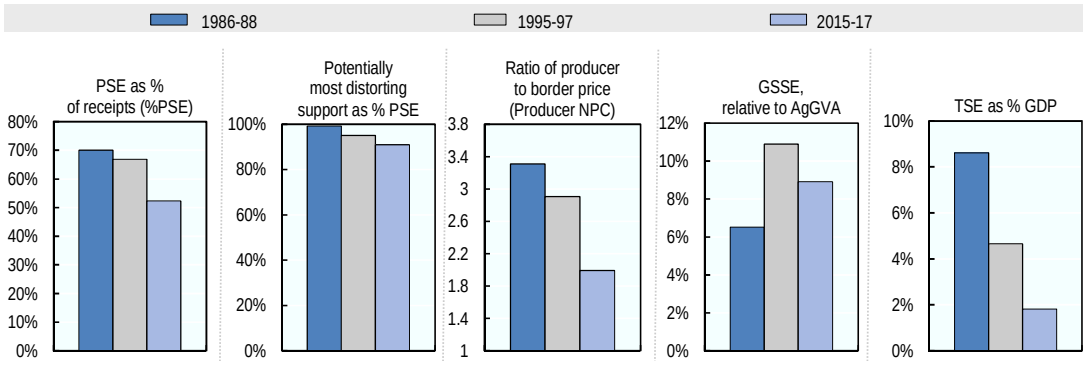
Measures were implemented in 2017, to strengthen procedures for certification of agricultural products, the labelling of products and pest and disease control. The Development plan 2018-22 includes further measures to enhance food safety and traceability in the supply chain.

The Development plan 2018-22 also includes measures to improve rural well-being, such as income support for farmers' retirement and support to infrastructure and access to rural services. Bottom-up policy participation will be strengthened.

Assessment and recommendations

- Reforms of the rice policy should be a priority. The plan to balance the supply and demand of rice is a first step towards a more efficient and sustainable system. Efforts to change production and trade distortive measures that prevent producers from receiving market signals, including a gradual reduction of border protection, should be strengthened.
- The highly fragmented land ownership structure hinders farm consolidation. Inheritance and farmland regulations should be revised to facilitate farm-scale adjustment (OECD, 2018).
- Recent efforts to improve traceability along the food chain and information to consumers should continue as they contribute to a better functioning of the market.
- Further decoupling of direct payments from production decisions and strengthened cross-compliance in the Development plan 2018-22 are expected to reduce distortions and improve environmental performance. For the benefits to materialise, careful design and implementation parameters are required.
- Direct payment schemes targeting explicit societal objectives, such as the provision of environmental services including water management, flood buffering and biodiversity, should be promoted as there remains room for improving the environmental performance of the sector. At the same time, environmental policies should increasingly build on the polluter-pays principle. A multi-dimensional approach to manure management, including regulation, incentive to invest in developing new technology, capacity building and building partnership between stakeholders, would also help reduce the high nutrient surplus per hectare.
- The development of livestock farming increased greenhouse gas emissions from animals and strengthened the need for formulating a roadmap with emission reduction goals and detailed measures to implement the 2030 emission reduction target for the main emission sectors (rice and livestock). Agriculture is expected to contribute to Korean commitments to reduce Greenhouse Gas emissions by 2030..
- The subsidised insurance scheme is being expanded as a tool to help farmers manage risks. It would be useful at this stage to evaluate the performance of the system.
- The Development plan 2018-22 for agricultural policy covers measures to improve rural incomes. It would be more efficient and equitable to adopt a more comprehensive policy approach beyond agricultural policy to address the low-income problem of farm households. Steps could be taken to induce farmers to declare income situation to allow the government to design better-targeted policies to the household income.
- The plan also includes measures to foster the adoption of innovation for sustainable agriculture. Efforts should be made to improve the functioning of the agricultural innovation system as suggested in OECD (2018).
- Finally, it would be timely to review existing agricultural policy instruments to improve their coherence with policy objective to reduce the conflicting incentives generated by different programmes.

Figure 15.1. Korea: Development of support to agriculture

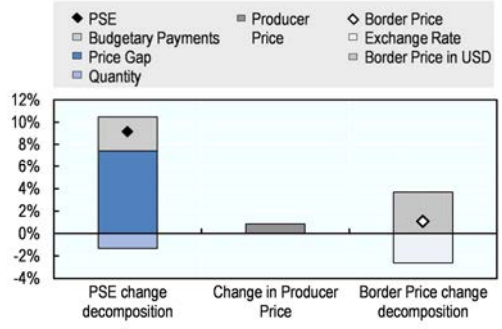


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756894

Support to farmers (%PSE) has declined gradually over the long term. Despite this reduction, support has averaged about 52% of gross farm receipts in 2015-17, almost 3 times the OECD average. The share of potentially **most distorting support** (based on output and variable input use – without input constraints) still dominates at 91% of total support to farmers in 2015-17, well above the OECD average (Figure 15.1). In 2017, the level of support has increased due to higher budgetary payments and MPS; the latter is due to a larger price gap as domestic prices increased more than world prices in absolute terms (Figure 15.2). On average, prices received by farmers were twice the level on world markets as measured by the NPC in 2015-17. The highest NPCs are for soybeans, barley, pig meat garlic and red pepper. Transfers to specific commodities, mainly from MPS, represented 93% of total support to farms in 2015-17. The share of the Single Commodity Transfers (SCT) in commodity gross farm receipts is over 60% for soybeans, barley, pig meat, garlic, red pepper, and milk (Figure 15.3). The expenditures for general services (GSSE) were equivalent to 9% of the agricultural value added in 2015-17, almost 70% higher than the OECD average. More than half the GSSE was spent on the development and maintenance of infrastructure. Total support to agriculture (TSE) as a share of GDP has declined significantly, mainly due to fast growth outside the agricultural sector. At 1.8% in 2015-17, however, it remains 2.5 times higher than the OECD average.

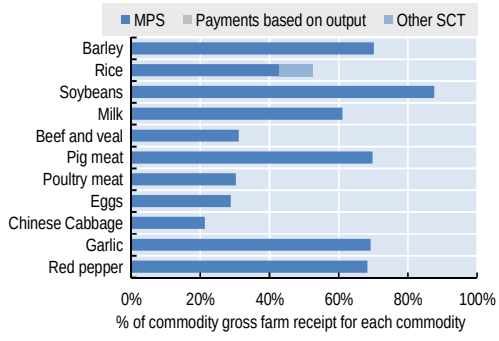
Figure 15.2. Korea: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756913

Figure 15.3. Korea: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933756932

Table 15.1. Korea: Estimates of support to agriculture

Million USD

	1986-88	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**16 985**	**33 089**	**42 357**	**43 294**	**40 790**	**42 988**
of which: *share of MPS commodities (%)*	72.0	64.3	60.5	60.8	61.0	59.6
Total value of consumption (at farm gate)	**17 930**	**36 779**	**52 065**	**50 737**	**51 648**	**53 810**
Producer Support Estimate (PSE)	**12 040**	**23 062**	**23 346**	**23 536**	**21 930**	**24 571**
Support based on commodity output	11 920	21 794	21 095	21 831	19 780	21 673
Market Price Support[1]	11 920	21 794	21 095	21 831	19 780	21 673
Payments based on output	0	0	0	0	0	0
Payments based on input use	90	1 037	494	473	479	529
Based on variable input use	29	159	202	178	186	243
with input constraints	4	12	54	57	55	51
Based on fixed capital formation	57	866	167	166	182	154
with input constraints	0	83	38	30	47	37
Based on on-farm services	4	12	124	128	112	133
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	29	232	986	450	913	1 595
Based on Receipts / Income	29	219	66	76	58	64
Based on Area planted / Animal numbers	0	13	920	374	854	1 531
with input constraints	0	0	42	47	42	38
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	783	758	774
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	783	758	774
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 (%)	**70.0**	**66.9**	**52.3**	**52.3**	**51.1**	**53.5**
Producer NPC (coeff.)	**3.31**	**2.91**	**1.99**	**2.02**	**1.94**	**2.02**
Producer NAC (coeff.)	**3.34**	**3.02**	**2.10**	**2.10**	**2.04**	**2.15**
General Services Support Estimate (GSSE)	**1 066**	**3 351**	**2 774**	**2 916**	**2 712**	**2 693**
Agricultural knowledge and innovation system	67	378	799	820	829	747
Inspection and control	26	75	226	267	191	219
Development and maintenance of infrastructure	467	2 501	1 439	1 515	1 417	1 385
Marketing and promotion	0	14	35	32	34	38
Cost of public stockholding	505	383	275	283	240	303
Miscellaneous	0	0	0	0	0	0
Percentage GSSE (% of TSE)	**8.0**	**12.7**	**10.6**	**11.0**	**11.0**	**9.9**
Consumer Support Estimate (CSE)	**-11 786**	**-23 777**	**-24 614**	**-24 751**	**-23 731**	**-25 361**
Transfers to producers from consumers	-11 638	-21 424	-20 074	-20 821	-18 805	-20 595
Other transfers from consumers	-221	-2 662	-4 574	-3 965	-4 957	-4 800
Transfers to consumers from taxpayers	73	309	34	35	31	35
Excess feed cost	0	0	0	0	0	0
Percentage CSE (%)	**-65.9**	**-64.9**	**-47.3**	**-48.8**	**-46.0**	**-47.2**
Consumer NPC (coeff.)	**2.94**	**2.87**	**1.90**	**1.96**	**1.85**	**1.89**
Consumer NAC (coeff.)	**2.93**	**2.85**	**1.90**	**1.95**	**1.85**	**1.89**
Total Support Estimate (TSE)	**13 179**	**26 722**	**26 154**	**26 488**	**24 674**	**27 300**
Transfers from consumers	11 859	24 086	24 648	24 787	23 762	25 396
Transfers from taxpayers	1 541	5 298	6 080	5 667	5 869	6 704
Budget revenues	-221	-2 662	-4 574	-3 965	-4 957	-4 800
Percentage TSE (% of GDP)	**8.6**	**4.7**	**1.8**	**1.9**	**1.7**	**1.8**
GDP deflator (1986-88=100)	**100**	**187**	**286**	**281**	**286**	**292**
Exchange rate (national currency per USD)	**812.03**	**842.11**	**1 140.84**	**1 131.31**	**1 160.59**	**1 130.64**

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 (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758585

Chapter 16. Mexico

Support to agriculture

Transfers to producers (PSE) accounted for 80% of total support to the agricultural sector in 2015-17, with 11% directed to general services and 9% to provide direct budgetary subsidies to low-income food consumers. General services are focused on large irrigation infrastructure and agricultural knowledge systems – these areas absorbed 80% of total allocations for general services in 2015-17. Relative to agricultural value added, the financing for general services has slightly decreased since the mid-1990s.

Following trade liberalisation and domestic policy reforms in the 1990s, the share of farm gross receipts due to agricultural support (%PSE) decreased from 29% in 1991-93 to 8.8% in 2015-17. The reforms led to a considerable reduction in the most distorting support, such as that based on output and unconstrained use of variable inputs. However, the shift away from the most distorting support was reversed in recent years, with its share in producer support almost doubling since the mid-1990s.

Total support to agriculture was equal to 0.5% of Mexican GDP in 2015-17 (%TSE) – this percentage has significantly declined over time and is currently at the OECD average. Taxpayers provide 85% of these transfers, the remaining 15% coming from consumers. Consumer contribution to agricultural support is due to agricultural prices supported slightly above the international levels (by 2% on average). Market price support was dominated by one commodity: MPS for raw sugar represented 22% of the commodity gross farm receipt.

Main policy changes

Mexico's Agricultural Development Plan for 2013-18 seeks to boost agricultural production, achieve greater self-sufficiency in principal grains and oilseeds, and reach a positive balance in agro-food trade. The implementation of the main programmes under this Plan continued with no major changes. Support schemes for agriculture contracts were halted and payments for price hedging instruments and advancement in the consolidation of information systems continued. In particular, the organic labelling programme that was launched in 2013 continued to expand. A draft regulation to establish a domestic beef grading system is currently under revision.

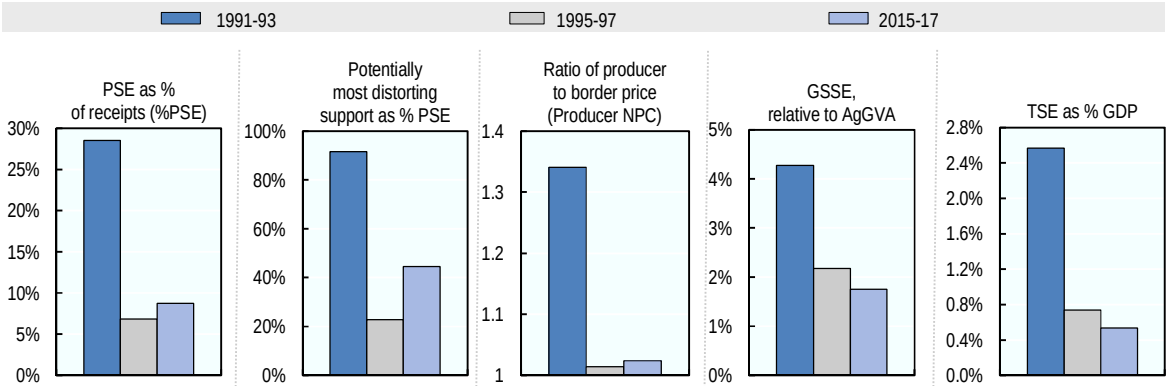
Mexico continued advancing towards the digitalization of the programmes beneficiaries' database, including the geo-referencing of farmland subject to support payments and, more generally, the use of digital technologies. New guidelines for obtaining subsidies for gasoline and diesel purchases for agricultural purposes were published throughout 2017 and they are in a pilot phase. As of March 2018, the fuel subsidy programme had not resumed yet.

Duty-free tariff rate quotas (TRQs) to import beef, lemons, onions, rice and poultry were extended through the end of 2019, mainly due to high domestic prices and shortages of such products. Together with ten more signatories, Mexico signed the Comprehensive and Progressive Agreement for the Trans-Pacific Partnership in March 2018 and Congress ratified it in April 2018.

Assessment and recommendations

- While support to agriculture as a percentage of gross farm receipts and most distorting forms of support significantly decreased since the 1990s, following Mexico's pro-market agricultural policy reforms, particularly distorting forms of support, mainly input-based, have been partly reversed since the 2000s.
- Support linked to variable inputs – subsidies for electricity, insurance and purchase of price hedging contracts – increased. Since 2013, support based on fixed capital with no constraints increased, mostly for covering investment costs in small farms and to promote crop reconversion. A subsidy for fuel used in agriculture, which was planned to be re-instated in 2017, is still under a testing phase.
- While support for general services has been growing since 1990s, redirecting input-linked support towards the provision of public goods, through electricity and roads infrastructure, 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.
- As the Sectoral Development Programme for Agriculture, Fisheries and Food is approaching the end of its implementation, a thorough evaluation of the economic and social impacts of the main policy instruments, such as Productive-PROAGRO, would be timely to contribute to the development of new and revised policy instruments.
- High subsidies for one specific risk management instrument, such as price hedging, should be avoided. Those subsidies are not effective to reduce price volatility, are unstable over time as they are largely affected by exchange rates fluctuations and tend to generate large amounts of income transfers to few producers.
- Phasing-out subsidies to electricity for pumping water would help a more efficient use of water. Direct support could be considered to help farmers adopt practices for more efficient and sustainable use of water, combined with training in good resource management practices and appropriate water pricing.
- Currently, few support programmes require compliance with good environmental practices. Input-based payments and payments based on area could be improved by imposing environmental conditionality. Achieving the country's commitments for 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 more local and regional environmental pressures, including related to water.

Figure 16.1. Mexico: Development of support to agriculture

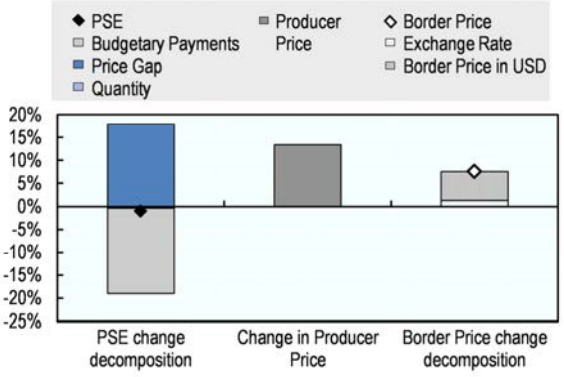


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757008

Support to farmers (%PSE) has declined gradually over the long term. During 2015-17, farm support has been around 8% of gross farm receipts, less than half the OECD average. The share of potentially **most distorting support** has decreased significantly over time due to a decline in market price support (MPS), falling well below the OECD average (Figure 16.1). The level of support slightly decreased in 2017 due to a reduction in budgetary payments, more than offsetting a higher MPS from a larger price gap as domestic prices increased more than world prices (Figure 16.2). Prices received by farmers, on average, were higher than world prices; particularly large differences between 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, milk, dried beans and barley. Other forms of product-specific support are particularly relevant for wheat, maize, sorghum, beef and veal, and coffee. Sugar, sorghum, wheat, soybeans and dried beans had the highest share of SCT in commodity gross farm receipts (Figure 16.3). The expenditures for **general services** (GSSE) relative to agriculture value added were substantially lower than the OECD average.

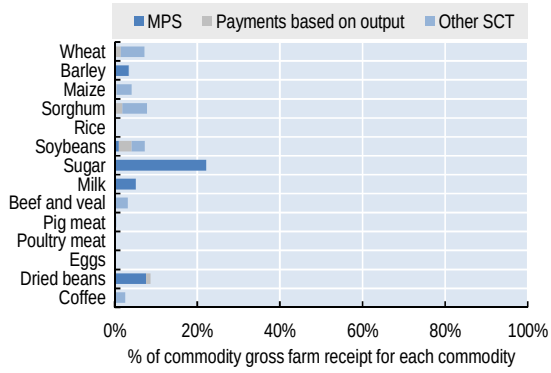
Figure 16.2. Mexico: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757027

Figure 16.3. Mexico: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757046

Table 16.1. Mexico: Estimates of support to agriculture

Million USD

	1991-93	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**28 112**	**24 667**	**51 100**	**52 072**	**48 764**	**52 465**
of which: *share of MPS commodities (%)*	68.7	70.1	67.4	67.9	66.7	67.6
Total value of consumption (at farm gate)	**26 844**	**24 286**	**53 442**	**54 222**	**53 341**	**52 763**
Producer Support Estimate (PSE)	**8 437**	**1 645**	**4 859**	**6 145**	**4 266**	**4 167**
Support based on commodity output	6 990	-89	1 216	1 760	571	1 316
Market Price Support[1]	6 938	-101	1 136	1 606	532	1 269
Payments based on output	52	12	80	154	40	47
Payments based on input use	1 443	785	2 652	3 246	2 676	2 033
Based on variable input use	746	334	955	1 179	874	812
with input constraints	0	0	0	0	0	0
Based on fixed capital formation	545	315	1 312	1 542	1 444	950
with input constraints	0	0	476	450	649	329
Based on on-farm services	152	136	385	525	358	271
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	3	35	229	188	251	248
Based on Receipts / Income	0	13	0	0	0	0
Based on Area planted / Animal numbers	3	22	229	188	251	248
with input constraints	0	0	75	62	87	77
Payments based on non-current A/An/R/I, production required	0	0	763	951	768	570
Payments based on non-current A/An/R/I, production not required	0	915	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	915	0	0	0	0
with commodity exceptions	0	1	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**	**6.9**	**8.8**	**10.9**	**8.1**	**7.5**
Producer NPC (coeff.)	**1.34**	**1.01**	**1.02**	**1.03**	**1.01**	**1.03**
Producer NAC (coeff.)	**1.40**	**1.07**	**1.10**	**1.12**	**1.09**	**1.08**
General Services Support Estimate (GSSE)	**1 048**	**382**	**680**	**847**	**606**	**586**
Agricultural knowledge and innovation system	288	203	363	394	345	350
Inspection and control	0	20	96	80	98	110
Development and maintenance of infrastructure	284	62	209	353	163	112
Marketing and promotion	83	22	11	19	0	14
Cost of public stockholding	392	76	0	0	0	0
Miscellaneous	0	0	0	0	0	0
Percentage GSSE (% of TSE)	**10.1**	**13.3**	**11.2**	**11.1**	**11.3**	**11.1**
Consumer Support Estimate (CSE)	**-6 363**	**234**	**-411**	**-849**	**53**	**-437**
Transfers to producers from consumers	-7 099	-151	-961	-1 455	-464	-963
Other transfers from consumers	-315	-240	-1	0	0	-2
Transfers to consumers from taxpayers	852	610	548	606	511	528
Excess feed cost	199	15	2	0	6	0
Percentage CSE (%)	**-24.5**	**0.4**	**-0.7**	**-1.6**	**0.1**	**-0.8**
Consumer NPC (coeff.)	**1.38**	**1.02**	**1.02**	**1.03**	**1.01**	**1.02**
Consumer NAC (coeff.)	**1.32**	**1.00**	**1.01**	**1.02**	**1.00**	**1.01**
Total Support Estimate (TSE)	**10 337**	**2 637**	**6 087**	**7 598**	**5 383**	**5 281**
Transfers from consumers	7 414	391	961	1 455	464	965
Transfers from taxpayers	3 238	2 486	5 127	6 144	4 919	4 318
Budget revenues	-315	-240	-1	0	0	-2
Percentage TSE (% of GDP)	**2.6**	**0.7**	**0.5**	**0.7**	**0.5**	**0.5**
GDP deflator (1991-93=100)	**100**	**210**	**820**	**775**	**816**	**870**
Exchange rate (national currency per USD)	**3.08**	**7.32**	**17.79**	**15.87**	**18.63**	**18.87**

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 (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758604

Chapter 17. New Zealand

Support to agriculture

Since its reforms of agricultural policies in the mid-1980s, production and trade distorting policies supporting the sector in New Zealand have virtually disappeared, and the level of support for farmers has been the lowest among OECD countries for almost three decades. Practically all prices are aligned with world market prices, with the exceptions of 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 for these products, required for risk products to be allowed for imports.

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. New Zealand also provides support to large-scale off-farm investments in irrigation systems, and over the past decades has significantly increased its agricultural land under irrigation. As a consequence, in recent years, more than 70% of all support was through general services.

Main policy changes

Key policy changes respond to specific problems and thus comprise a set of detailed measures. In particular, these relate to disaster relief, biosecurity risks, and foreign investment in sensitive business assets.

Several medium-scale adverse events in 2017 have triggered additional Government support, including flooding and storm damages as well as a drought in both the North and South Islands. Support was provided for the reparation of infrastructure, including drinking water, storm water, waste water, and river management systems, re-grassing of pastures, re-sowing of crops, clean-up of silt and debris, and Rural Assistance Payments and tax relief measures for affected farmers. Grants were also provided in response to the regions impacted by the Kaikoura earthquake in November 2016, for community projects, professional advisory and recovery related work on farms.

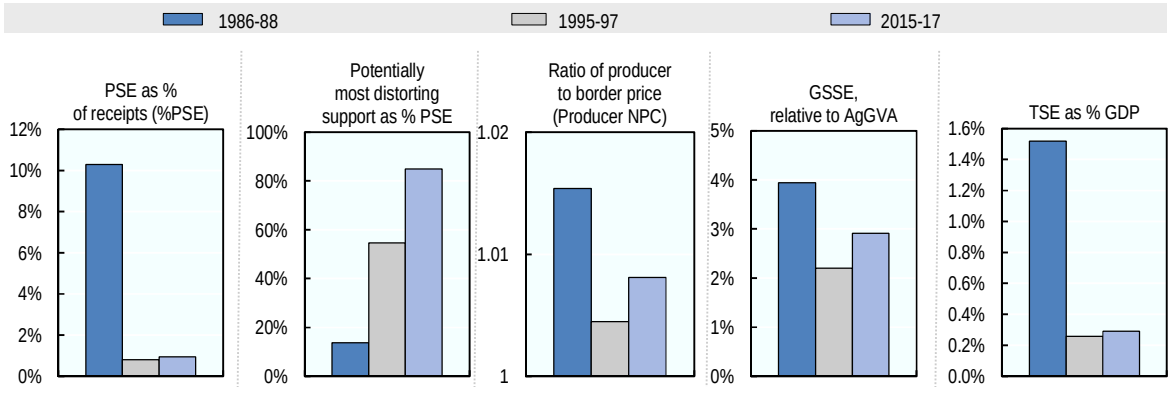
Several measures concern the country's biosecurity risks, including the launch of the Biosecurity 2015 Direction Statement in late 2016, a biosecurity response after the finding of the bacterial cattle infection *mycoplasma bovis* in mid-2017, and the signing of the Government Industry Agreement on Biosecurity Readiness and Response deed by four more industry sectors.

Since November 2017, foreign investors in New Zealand agricultural land and other sensitive business assets have to get consent through the Overseas Investment office. Before that, this had only been required for investments in sensitive agricultural land.

Assessment and recommendations

- New Zealand's consistently low level of farm support, and in particular of potentially most distorting support, underlines the country's openness and focus of its agricultural sector towards foreign markets and trade.
- New Zealand's Import Health Standards help to ensure the country's biosecurity for imported products and are required for all risk products to be importable. For some livestock products, including eggs, fresh chicken meat and some bee products, no IHS are in place, and these products therefore cannot be imported. While this concerns only a small share of New Zealand's agricultural output, the development of relevant IHS would allow consumers to benefit from additional variety and lower prices in these markets, while ensuring the 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. A 2017 update of the Kiwifruit Export Regulations 1999 has not led to changes in these restrictions, even though these could facilitate participation in Kiwifruit exports by all firms wishing to do so and hence increase competition and efficiency in Kiwifruit trade.
- Agricultural policies in New Zealand rightly focus on key general services, but expenditures for general services relative to the sector's value added are not particularly high when compared to other countries covered in this report. The country's above-average focus on its knowledge and innovation system is appropriate not least given the comparatively low estimates of its sector's total factor productivity growth in the most recent decade for which data is available. The positive development in the capitalisation of farms should help to boost future productivity growth.
- New Zealand's focus on lower GHG emissions from agricultural sources is in line with its commitment in the context of the Paris Agreement on Climate Change. In contrast to many other countries, 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, even though agricultural GHG emissions are neither constrained nor taxed. New Zealand supports a number of research activities aiming at reduced agricultural emissions, however, involving public and private institutions as well as the international community. Similar efforts are also needed to reduce the high Nitrogen and Phosphorus balances which pose a threat to the environment.

Figure 17.1. New Zealand: Development of support to agriculture

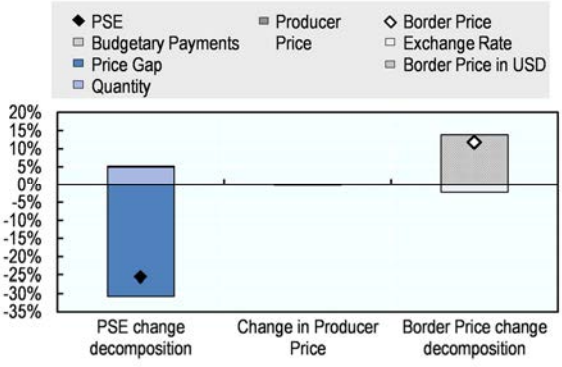


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757122

Support to farmers (%PSE) has declined sharply due to reforms in the mid-1980s, and has remained at levels below 2% of gross farm receipts since 1990. The majority of this (very low) support to producers is provided through potentially **most distorting support**, due to some market price support (MPS) arising from SPS-related import restrictions (Figure 17.1). These create some Single Commodity Transfers (SCT) for poultry meat and eggs, corresponding to 15% and 25% of commodity-specific gross farm receipts, respectively (Figure 17.3). Apart from those, domestic prices are aligned with world market prices, resulting in an average price ratio between domestic and reference levels of less than 1.01. Overall, the Total Support to agriculture represents less than 0.3% of GDP, with most of the support to the sector provided for general services, mainly focusing on the knowledge and information system and on biosecurity-related measures (Figure 17.1). In 2017, the low level of support to farmers has decreased by a quarter as the SPS-related market price support has declined. While average domestic prices remained unchanged, the reduced MPS was almost exclusively due to a rise in average world market prices (Figure 17.2).

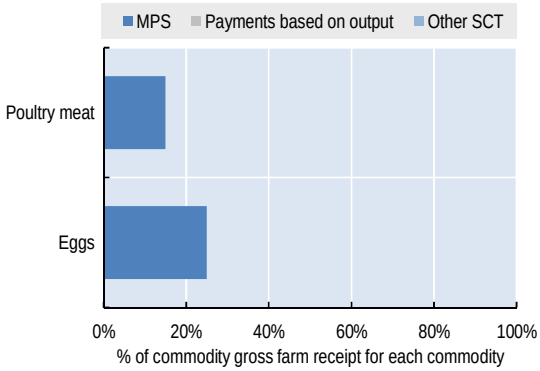
Figure 17.2. New Zealand: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757141

Figure 17.3. New Zealand: Transfer to specific commodities (SCT), 2015-2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757160

Table 17.1. New Zealand: Estimates of support to agriculture

Million USD

	1986-88	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**4 067**	**6 463**	**16 364**	**14 586**	**16 448**	**18 058**
of which: *share of MPS commodities (%)*	72.1	72.1	72.6	70.9	72.9	74.0
Total value of consumption (at farm gate)	**985**	**1 557**	**2 678**	**2 641**	**2 619**	**2 775**
Producer Support Estimate (PSE)	**429**	**53**	**155**	**127**	**191**	**145**
Support based on commodity output	60	29	131	106	168	121
Market Price Support[1]	58	29	131	106	168	121
Payments based on output	1	0	0	0	0	0
Payments based on input use	179	24	22	21	22	21
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	24	22	21	22	21
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	26	0	2	0	2	3
Based on Receipts / Income	26	0	2	0	2	3
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 (%)	**10.3**	**0.8**	**0.9**	**0.9**	**1.2**	**0.8**
Producer NPC (coeff.)	**1.02**	**1.00**	**1.01**	**1.01**	**1.01**	**1.01**
Producer NAC (coeff.)	**1.11**	**1.01**	**1.01**	**1.01**	**1.01**	**1.01**
General Services Support Estimate (GSSE)	**119**	**120**	**378**	**374**	**379**	**381**
Agricultural knowledge and innovation system	60	78	181	183	189	170
Inspection and control	31	29	136	127	134	148
Development and maintenance of infrastructure	27	13	61	64	56	63
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)	**20.8**	**69.4**	**70.9**	**74.7**	**66.4**	**72.4**
Consumer Support Estimate (CSE)	**-53**	**-24**	**-110**	**-87**	**-144**	**-98**
Transfers to producers from consumers	-53	-24	-110	-87	-144	-98
Other transfers from consumers	0	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 (%)	**-5.6**	**-1.6**	**-4.1**	**-3.3**	**-5.5**	**-3.5**
Consumer NPC (coeff.)	**1.06**	**1.02**	**1.04**	**1.03**	**1.06**	**1.04**
Consumer NAC (coeff.)	**1.06**	**1.02**	**1.04**	**1.03**	**1.06**	**1.04**
Total Support Estimate (TSE)	**548**	**173**	**532**	**501**	**570**	**526**
Transfers from consumers	53	24	110	87	144	98
Transfers from taxpayers	495	149	423	414	426	428
Budget revenues	0	0	0	0	0	0
Percentage TSE (% of GDP)	**1.5**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**
GDP deflator (1986-88=100)	**100**	**128**	**194**	**190**	**194**	**198**
Exchange rate (national currency per USD)	**1.71**	**1.50**	**1.43**	**1.43**	**1.44**	**1.41**

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 (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758623

Chapter 18. 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. The principal policy instruments supporting agriculture include border measures, budgetary payments and domestic market regulations.

The Total Support Estimate to agriculture (TSE) was slightly less than 1% of GDP in recent years. Support to farmers (PSE) accounts for 57% of gross farm receipts, which is 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 5% of TSE – and mostly finance the agricultural knowledge and innovation system.

Market price support (MPS), mainly due to border protection, still remains the main component of support to farmers, and its share in support to farms has been reduced by only 2 percentage points between 1986-88 and 2015-17. While the share of potentially most production and trade distorting support has declined, it still represented most of the support in recent years. Support that is based on individual commodities (mainly market price support) represents 60% of support to farmers and is relatively evenly distributed among commodities. Effective prices received by producers are on average 84% above world market prices.

Main policy changes

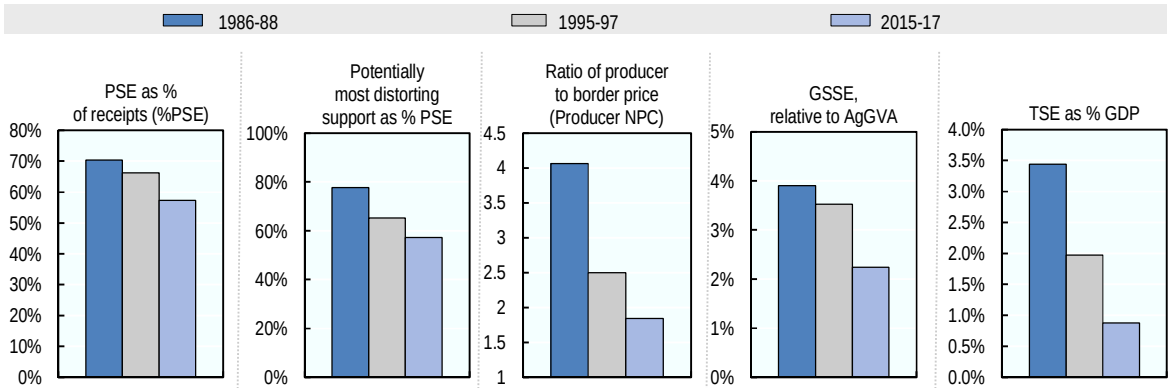
In the White paper, released in December 2016, plans to reform agricultural policies are being considered. The White paper was discussed in the Parliament in April, but the government did not obtain a majority. The government aims to enhance the efficiency and competiveness of the sector by reducing and simplifying the number of support programmes, while maintaining the overall system of market regulation.

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 in the OECD area. There is considerable scope for accelerating the pace of reforms in order to achieve stated goals at less 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 agricultural sector.

- The limited reforms agreed by the Parliament in April 2017, such as the commitment for some simplification in support measures and the rule changes on milk quota, are steps towards enhancing the efficiency and reducing policy-related transaction costs and should be accelerated.
- Environmental taxation, which is a core pillar of Norway's efforts to reduce non-ETS greenhouse gas (GHG) emissions and in tackling other environmental issues, should be considered for agriculture, along with other market-based climate mitigation measures. Efforts to identify measures for reducing emissions from agriculture are important.
- 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 18.1. Norway: Development of support to agriculture

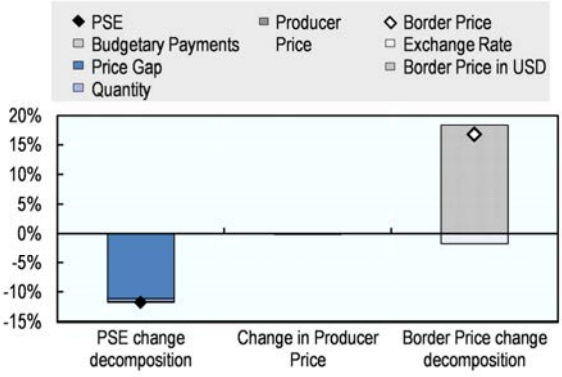


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757236

Support to farmers (%PSE) has declined gradually over the long term. In 2015-17, support has been around 57% 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 over time, but it is still more than half of farmers support (Figure 18.1). Market price support is the main component of the most distorting support. The level of support in 2017 has decreased mainly due to higher border prices in USD, particularly for butter (Figure 18.2). Effective prices received by farmers, on average, were 1.8 times higher than world prices in 2015-17. Single Commodity Transfers (SCT) accounted for 39% of the total PSE. The share of the SCT in the commodity gross receipts is higher than 30% for all commodities, exempt for sheep meat and eggs (Figure 18.3). The expenditures for **general services** (GSSE), mainly on knowledge and infrastructure, relative to agriculture value added were in line with OECD average. **Total support to agriculture** as a share of GDP has declined significantly over time. About 92% of the total support is provided to individual farmers (PSE).

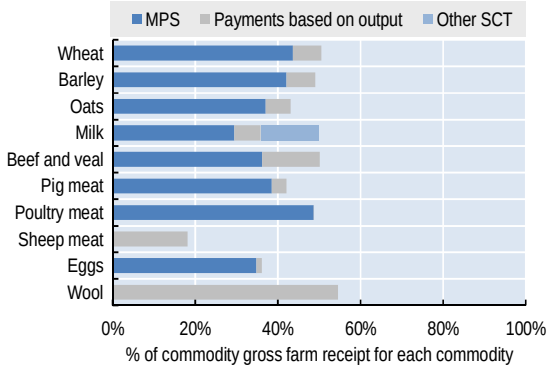
Figure 18.2. Norway: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757255

Figure 18.3. Norway: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757274

Table 18.1. Norway: Estimates of support to agriculture

Million USD

	1986-88	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**2 533**	**2 760**	**3 775**	**3 752**	**3 780**	**3 794**
***of which:** share of MPS commodities (%)*	73.3	77.5	74.6	75.3	74.1	74.3
Total value of consumption (at farm gate)	**2 610**	**2 746**	**3 861**	**3 868**	**3 847**	**3 869**
Producer Support Estimate (PSE)	**2 801**	**2 910**	**3 132**	**3 262**	**3 235**	**2 899**
Support based on commodity output	2 027	1 814	1 705	1 770	1 840	1 505
Market Price Support[1]	1 354	1 276	1 445	1 532	1 581	1 221
Payments based on output	673	539	260	238	259	284
Payments based on input use	250	145	166	165	165	169
Based on variable input use	149	83	89	89	86	91
with input constraints	0	0	0	0	0	0
Based on fixed capital formation	91	51	67	65	69	68
with input constraints	0	0	0	0	0	0
Based on on-farm services	11	11	10	11	10	10
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	524	946	901	952	876	874
Based on Receipts / Income	0	0	96	106	95	87
Based on Area planted / Animal numbers	524	946	805	846	780	787
with input constraints	371	738	645	680	627	627
Payments based on non-current A/An/R/I, production required	0	0	352	368	345	343
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	5	8	8	8	8
Based on long-term resource retirement	0	0	0	0	0	0
Based on a specific non-commodity output	0	5	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**	**66.3**	**57.3**	**59.5**	**59.5**	**53.0**
Producer NPC (coeff.)	**4.06**	**2.50**	**1.84**	**1.91**	**1.97**	**1.68**
Producer NAC (coeff.)	**3.37**	**2.97**	**2.34**	**2.47**	**2.47**	**2.13**
General Services Support Estimate (GSSE)	**129**	**148**	**163**	**164**	**157**	**166**
Agricultural knowledge and innovation system	74	84	98	95	95	105
Inspection and control	5	26	36	33	39	37
Development and maintenance of infrastructure	29	16	19	27	15	15
Marketing and promotion	21	18	9	9	9	9
Cost of public stockholding	0	3	0	0	0	0
Miscellaneous	0	0	0	0	0	0
Percentage GSSE (% of TSE)	**4.1**	**4.7**	**4.8**	**4.7**	**4.5**	**5.3**
Consumer Support Estimate (CSE)	**-1 333**	**-1 261**	**-1 512**	**-1 588**	**-1 631**	**-1 317**
Transfers to producers from consumers	-1 660	-1 366	-1 551	-1 639	-1 661	-1 352
Other transfers from consumers	-138	-84	-126	-99	-155	-125
Transfers to consumers from taxpayers	220	82	94	91	100	90
Excess feed cost	244	107	71	59	84	70
Percentage CSE (%)	**-55.8**	**-47.4**	**-40.1**	**-42.0**	**-43.5**	**-34.8**
Consumer NPC (coeff.)	**3.22**	**2.12**	**1.77**	**1.82**	**1.89**	**1.62**
Consumer NAC (coeff.)	**2.26**	**1.90**	**1.67**	**1.73**	**1.77**	**1.53**
Total Support Estimate (TSE)	**3 150**	**3 140**	**3 388**	**3 517**	**3 492**	**3 155**
Transfers from consumers	1 797	1 450	1 677	1 738	1 816	1 476
Transfers from taxpayers	1 490	1 774	1 837	1 878	1 831	1 803
Budget revenues	-138	-84	-126	-99	-155	-125
Percentage TSE (% of GDP)	**3.4**	**2.0**	**0.9**	**0.9**	**0.9**	**0.8**
GDP deflator (1986-88=100)	**100**	**128**	**264**	**263**	**260**	**268**
Exchange rate (national currency per USD)	**6.88**	**6.62**	**8.25**	**8.06**	**8.40**	**8.27**

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 Norway are: wheat, barley, oats, milk, beef and veal, sheep meat, wool, pig meat, poultry and eggs.

Source: OECD (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758642

Chapter 19. Philippines

Support to agriculture

The level of support to farmers in the Philippines – as measured by the share of policy-driven transfers from consumers and taxpayers in gross farm revenues (%PSE) – averaged 26% in 2015-17. This is higher than the OECD average of 18% and one of the highest among all Emerging Economies covered by this report.

Market price support (MPS) is the dominant form of support to Philippine producers. It is strongly focused on rice producers. The MPS for rice accounted for 42% of the total value of MPS and 41% of the total value of Producer Support Estimate in 2017. In addition to rice, substantial levels of support are provided to sugarcane and animal products, in particular through high import tariffs. The high level of MPS comes with an implicit taxation of consumers and the food processing industry, averaging 26% of the value of consumption in 2015-17 (%CSE).

Expenditures on general services as a ratio of agricultural value added have increased in recent years. These mainly focus on the development of infrastructure, in particular for irrigation systems and – increasingly – for extension programmes.

The overall cost of support, through market price support and budgetary transfers, to the Philippine agricultural sector was high at 3.2% of GDP in 2015-16. It was nearly five times the OECD average during the same period and one of the highest across all countries measured.

Main policy changes

Crop insurance has expanded significantly in recent years. Approximately 15% of farmers received subsidised insurance in 2017 and the government plans to increase coverage to 20% in 2018.

To increase support for rice producers, the government abolished the Irrigation Service Fee paid by farmers to cover operational and maintenance costs of the irrigations systems as from 2017.

According to an agreement with the WTO in 2012, the Philippines had committed to discontinue quantitative restrictions (QR) on rice imports in June 2017. However, in May 2017, the Philippines issued an executive order extending tariff concessions in exchange for continuing QRs until end-2020 or until Congress amends the existing local law, the Agricultural Tariffication Act of 1996.

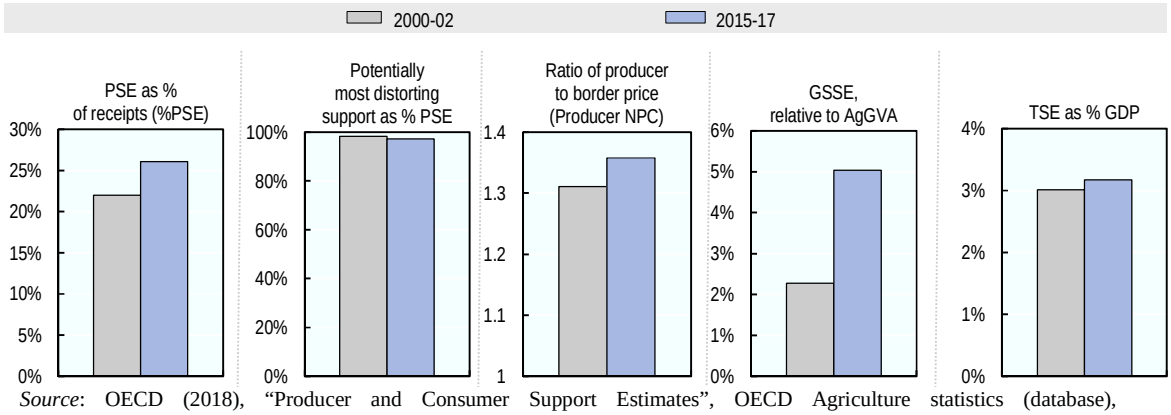
Assessment and recommendations

- The Philippines' key agricultural policy objectives focus on food security and poverty alleviation through guaranteeing a stable supply of staple food at

affordable prices. The goal of self-sufficiency in rice has driven a range of policy measures supporting rice producers – in contrast to diversification towards higher value commodities typical of other countries in the region – while contributing to the undernourishment of poor households that are net rice consumers. The Philippines could improve the country's food security through policies such as: diversification of production, consumption and income by removing commodity-specific incentives; gradual removal of restrictions on rice imports; and transformation of the National Food Authority's (NFA) into a market-neutral agency managing emergency stocks.

- 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 resilient decision-making on the farm. Lastly, farmer awareness should be increased by sharing information about local conditions, future projections and adaptive solutions.
- The Philippines' agricultural sector's total factor productivity growth is slower than the world average and slower than in most countries in the region. This is the result of decades of underinvestment (or, in some cases, mis-directed 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 total factor 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 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 19.1. Philippines: Development of support to agriculture

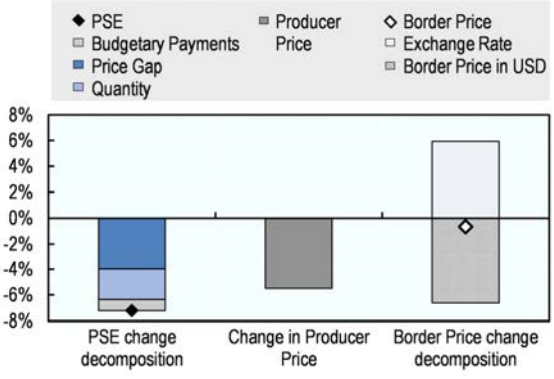


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757350

Support to farmers (%PSE) was 26% in 2015-17, 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 19.1); however, a slight decline can be noted from 2016 to 2017 due to a smaller price gap between domestic prices and world prices (Figure 19.2). 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**, explain almost the total value of support to producers. On average, prices received by farmers were 36% higher than world prices in 2015-17 (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 2015-17 (Figure 19.3). Expenditures for **general services** (GSSE) relative to agricultural value added more than doubled from 2000-02 to 2015-17 (Figure 19.1). A dominant share of these expenditures is allocated to infrastructure, in particular on investment in irrigation systems. **Total support to agriculture** as a share of GDP was 3.2% in 2015-17 – one of the highest across all countries covered by the OECD support indicators.

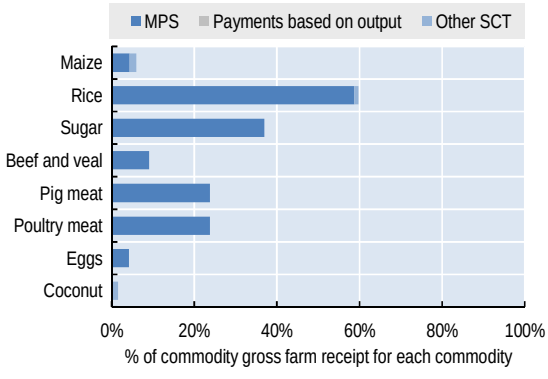
Figure 19.2. Philippines: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757369

Figure 19.3. Philippines: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757388

Table 19.1. Philippines: Estimates of support to agriculture

Million USD

	2000-02	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**9 727**	**28 869**	**30 114**	**29 278**	**27 214**
***of which:** share of MPS commodities (%)*	89.2	88.0	88.1	88.5	87.4
Total value of consumption (at farm gate)	**9 951**	**30 842**	**31 563**	**31 000**	**29 964**
Producer Support Estimate (PSE)	**2 163**	**7 633**	**8 298**	**7 791**	**6 811**
Support based on commodity output	2 090	7 285	7 853	7 451	6 553
Market Price Support[1]	2 090	7 285	7 853	7 451	6 553
Payments based on output	0	0	0	0	0
Payments based on input use	69	344	442	337	254
Based on variable input use	36	138	189	108	117
with input constraints	0	0	0	0	0
Based on fixed capital formation	32	206	253	229	137
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	4	4	4	4
Percentage PSE (%)	**22.0**	**26.1**	**27.2**	**26.3**	**24.8**
Producer NPC (coeff.)	**1.31**	**1.36**	**1.34**	**1.38**	**1.35**
Producer NAC (coeff.)	**1.28**	**1.35**	**1.37**	**1.36**	**1.33**
General Services Support Estimate (GSSE)	**244**	**1 473**	**1 432**	**1 450**	**1 536**
Agricultural knowledge and innovation system	56	288	239	284	341
Inspection and control	14	44	34	41	55
Development and maintenance of infrastructure	155	950	976	922	951
Marketing and promotion	6	72	62	90	65
Cost of public stockholding	12	95	93	89	101
Miscellaneous	1	24	27	23	23
Percentage GSSE (% of TSE)	**10.1**	**16.2**	**14.7**	**15.7**	**18.4**
Consumer Support Estimate (CSE)	**-2 261**	**-8 080**	**-8 395**	**-8 320**	**-7 526**
Transfers to producers from consumers	-2 316	-7 603	-7 677	-8 041	-7 091
Other transfers from consumers	-147	-757	-563	-802	-905
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	201	279	-155	522	470
Percentage CSE (%)	**-22.6**	**-26.2**	**-26.6**	**-26.8**	**-25.1**
Consumer NPC (coeff.)	**1.33**	**1.37**	**1.35**	**1.40**	**1.36**
Consumer NAC (coeff.)	**1.29**	**1.35**	**1.36**	**1.37**	**1.34**
Total Support Estimate (TSE)	**2 408**	**9 106**	**9 730**	**9 241**	**8 347**
Transfers from consumers	2 463	8 359	8 240	8 842	7 996
Transfers from taxpayers	92	1 503	2 053	1 200	1 256
Budget revenues	-147	-757	-563	-802	-905
Percentage TSE (% of GDP)	**3.0**	**3.2**	**3.3**	**3.0**	..
GDP deflator (2000-02=100)	**100**	**168**	**167**	**169**	..
Exchange rate (national currency per USD)	**48.96**	**47.80**	**45.51**	**47.49**	**50.40**

.. 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 (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758661

Chapter 20. Russian Federation

Support to agriculture

Around 86% of total support to agriculture (TSE) in 2015-17 was provided to producers individually (PSE), with the rest directed to general services for agriculture (12%) 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 support to producers (74%) 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, however, disguises strong variations in support across commodities: it represents a mix between the border protection for imported livestock products and sugar, and the implicit 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 funding.

Total support to agriculture (TSE) was equal to 0.8% of GDP in 2015-17. This percentage is three times lower than it was in the mid-1990s, largely reflecting GDP growth and the declining GDP share of the agricultural sector. Taxpayers provide 41% of total support transfers, the remaining 59% 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 10% (%CSE) in 2015-17.

Main policy changes

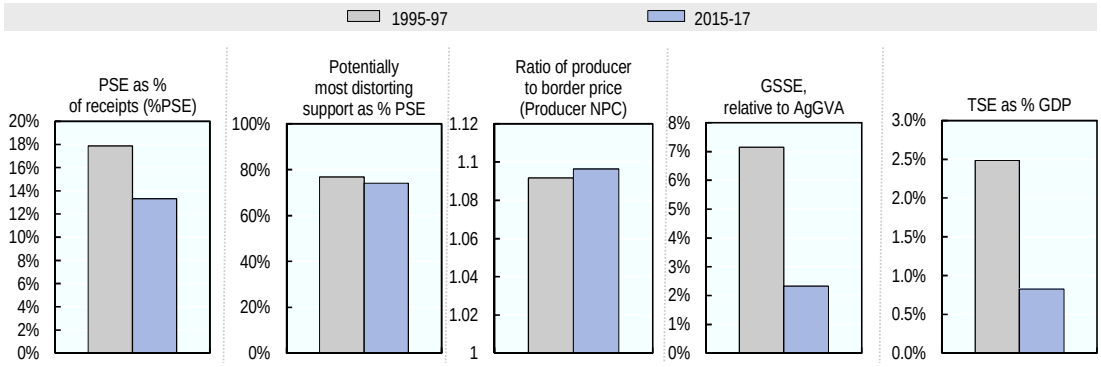
In 2017, further amendments were made to the State Programme for the Development of Agriculture for 2013-20. A new sub-programme was created for the development of the agricultural export potential. Previous sub-programmes were regrouped under broader headings and a range of subsidies consolidated to simplify the implementation and provide greater flexibility to the regions in prioritising the use of funds. In 2018, the State Programme is to broadly maintain previous year's parameters, both in terms of structure and spending. Following the second consecutive high grain crop, tariffs for transportation of grain between country regions were reduced. This measure adds to the temporary waiver of wheat export duty introduced in the previous season. Conditions for intervention purchases of dry milk and butter were announced, but no interventions made as prices remained above the minimum levels. Previously, interventions were carried out only for grains. For the first time, a list of regions with unfavourable conditions for agricultural production was published. The ban on agro-food imports from a number of countries imposed in 2014 was extended until end-2018. As one of the parties to the

Treaty on the Eurasian Economic Union (EAEU), the Russian Federation ratified a new EAEU Customs Code and adopted a number of new EAEU regulations in SPS and technical regulation areas.

Assessment and recommendations

- The ongoing State Programme for Development of Agriculture for 2013-20 is aimed at boosting the agricultural production and agro-food import substitution. The political context since the mid-2010s 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, with emphasis on sanitary and phytosanitary (SPS) improvements and market research and promotion. These improvements may contribute to raising the quality standards of local products and to tapping into external demand for agro-food staples, as well as niche and organic products.
- Domestic policy has traditionally concentrated on increasing the flows of financial resources into agriculture. The strengthened orientation at self-sufficiency has emphasised support to investments in import competing sectors, including new priorities, such as horticulture, agro-marketing and food distribution infrastructure. These investment priorities and underlying investment projects warrant a comprehensive assessment in terms of economic and financial feasibility.
- Development of domestic seed production and pedigree livestock breeding are also in the focus with the aim of reducing dependence on imports of these agricultural inputs as part of the self-sufficiency orientation. The success of these efforts will depend, among other things, on long-term stability of relevant R&D financing and international cooperation.
- Steps were taken to rationalise the budgeting of support spending and the transfer of funds from the federal centre to regions; regional governments received greater flexibility in allocating the spending across different supports. This may reduce administration costs of support and facilitate a more efficient use of funds. However, the budget rationalisation did not involve changes in the list of potentially available types of support.
- Overall, distorting subsidies and import protection 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 R&D, knowledge transfer, infrastructure, plant and livestock health systems.
- While consecutive targeted programmes directed resources for rural development, but much remains to be done to improve living conditions in rural areas to increase sector's human capital.

Figure 20.1. Russia: Development of support to agriculture

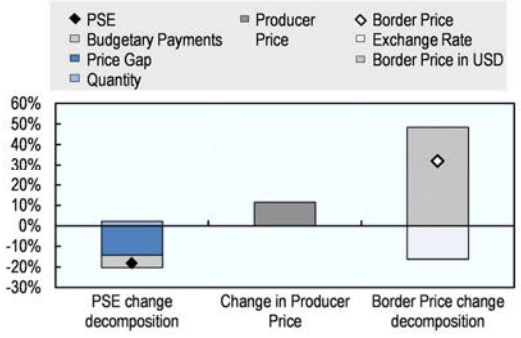


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757464

Support to farmers (%PSE) was at 13% of producer gross receipts in 2015-17, below the OECD average and below the level observed in 1995-97 (18%). The share of potentially **most distorting support** – based on output and unconstrained input use – decreased only slightly from 77% to 74% of the total PSE between 1995-97 and 2015-17 (Figure 20.1). The total value of producer support fell by 18% in the most recent year, largely due to the reduced market price support as domestic prices increased less strongly than border prices. The effect of decreased market price support on the PSE was amplified by some reduction in budgetary transfers (Figure 20.2). Prices received by farmers were on average 10% above those observed on world markets in 2015-17 (NPC), compared to 9% in 1995-97. This aggregate NPC, however, disguises border protection for livestock products and sugar and taxation of exported grains and oilseeds. Products receiving the highest commodity-specific support relative to the value of commodity (%SCT) are milk (28%), sugar (25%), and beef and veal (23%). Grains and oilseeds are implicitly taxed (Figure 20.3). The share of Single Commodity Transfers (SCT) in the PSE was 72% in 2015-17. The expenditures for **general services** (GSSE) fell relative to the sector's value added – they were equivalent to 2.3% in 2015-17, less than a third of that percentage in 1995-97 (7.2%). This partly reflects the growth of agricultural output value as production has been recovering from low levels in the mid-1990s. **Total support to agriculture** (TSE) as a % of GDP decreased from 2.5% in 1995-97 to 0.8% in 2015-17, largely being a result of the GDP growth.

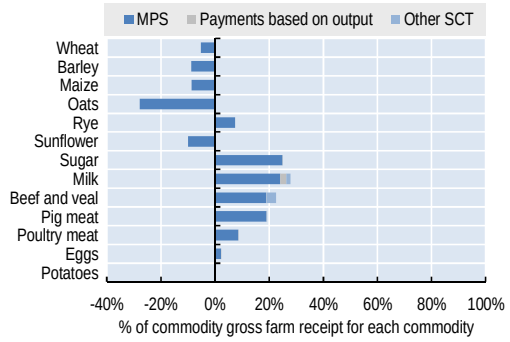
Figure 20.2. Russia: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757483

Figure 20.3. Russia: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757502

Table 20.1. Russia: Estimates of support to agriculture

Million USD

	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**39 322**	**71 479**	**69 559**	**67 732**	**77 147**
***of which:** share of MPS commodities (%)*	80.5	83.2	84.1	82.3	83.3
Total value of consumption (at farm gate)	**48 261**	**71 617**	**70 371**	**67 298**	**77 183**
Producer Support Estimate (PSE)	**7 857**	**9 944**	**9 477**	**10 492**	**9 864**
Support based on commodity output	3 518	6 735	5 845	7 419	6 941
Market Price Support[1]	2 592	6 407	5 498	7 068	6 657
Payments based on output	926	328	348	351	285
Payments based on input use	4 017	2 474	2 818	2 235	2 368
Based on variable input use	2 427	633	1 001	458	438
with input constraints	0	0	0	0	0
Based on fixed capital formation	1 560	1 779	1 752	1 725	1 859
with input constraints	0	0	0	0	0
Based on on-farm services	31	62	65	51	71
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	0	489	668	510	289
Based on Receipts / Income	0	28	82	1	0
Based on Area planted / Animal numbers	0	461	586	509	289
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	322	246	146	328	265
Percentage PSE (%)	**17.9**	**13.3**	**12.9**	**14.7**	**12.3**
Producer NPC (coeff.)	**1.09**	**1.10**	**1.08**	**1.12**	**1.09**
Producer NAC (coeff.)	**1.22**	**1.15**	**1.15**	**1.17**	**1.14**
General Services Support Estimate (GSSE)	**1 846**	**1 388**	**1 613**	**1 192**	**1 359**
Agricultural knowledge and innovation system	241	471	556	391	464
Inspection and control	159	243	374	166	189
Development and maintenance of infrastructure	303	284	248	271	334
Marketing and promotion	23	19	13	21	22
Cost of public stockholding	0	60	64	52	64
Miscellaneous	1 118	311	357	291	286
Percentage GSSE (% of TSE)	**19.8**	**11.9**	**14.1**	**10.0**	**11.9**
Consumer Support Estimate (CSE)	**-3 600**	**-7 487**	**-7 125**	**-7 868**	**-7 468**
Transfers to producers from consumers	-2 191	-6 331	-5 455	-6 895	-6 644
Other transfers from consumers	-1 002	-1 083	-1 480	-883	-885
Transfers to consumers from taxpayers	3	238	340	187	188
Excess feed cost	-410	-311	-529	-277	-127
Percentage CSE (%)	**-8.5**	**-10.5**	**-10.2**	**-11.7**	**-9.7**
Consumer NPC (coeff.)	**1.08**	**1.12**	**1.11**	**1.13**	**1.11**
Consumer NAC (coeff.)	**1.09**	**1.12**	**1.11**	**1.13**	**1.11**
Total Support Estimate (TSE)	**9 705**	**11 571**	**11 430**	**11 872**	**11 411**
Transfers from consumers	3 193	7 414	6 936	7 778	7 529
Transfers from taxpayers	7 514	5 239	5 974	4 977	4 767
Budget revenues	-1 002	-1 083	-1 480	-883	-885
Percentage TSE (% of GDP)	**2.5**	**0.8**	**0.8**	**0.9**	**0.7**
GDP deflator (1995-97=100)	**100**	**2 198**	**2 107**	**2 183**	**2 305**
Exchange rate (national currency per USD)	**5.16**	**62.21**	**61.26**	**67.05**	**58.33**

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 (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758680

Chapter 21. South Africa

Support to agriculture

South Africa reduced its support to agriculture during the 1990s and support to farms has remained below 5% of gross farm receipts since 2010. In 2015-17, support to agriculture was below 3% of gross farm receipts. Total support estimate to agriculture (TSE) was around 0.3% of GDP in 2015-17 and direct support to farms (PSE) represented around 60% of the total support, the remaining 40% financing general services beneficial to the sector.

Market price support and payments based on input use are the most important components of support to farmers. 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. 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 GSSE categories is targeted towards creating an enabling environment for the small scale farming sector that has emerged following the land reform.

Main policy changes

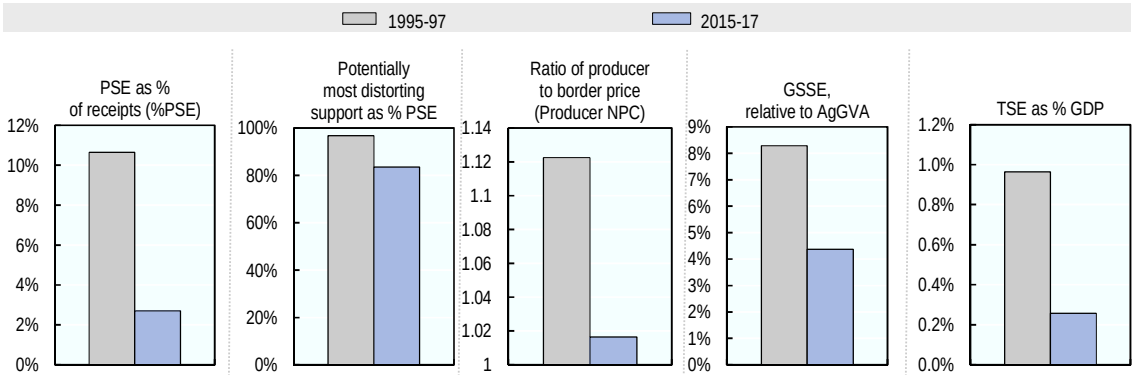
Most of the policy measures and direct payments continue to be targeted to the smallholder sub-sector. The Government provides post settlement assistance, including production loans to new and upcoming farmers (mostly operating on redistributed or restituted land).

There were several policy changes targeted to enhance the redistribution of land within the land reform. In May 2016, South Africa passed a bill that allows the compulsory purchase of land in the public interest. The bill, approved by parliament, enables the state to pay for land at a value determined by a government official and then expropriate with an administratively fixed compensation 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 new policy approach called *Strengthening the Relative Rights of People Working the Land*. This initiative is directed towards empowerment of farm workers through a model that positions farm workers to become part owners in agricultural operations alongside the existing farm owners. The most recent political decision was the vote of the Parliament in March 2018 in favour of legislation that allows for the expropriation without compensation of the commercial farms owned by white farmers. In order to be applied in practice, 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 contributed to a substantial reduction in total support to agriculture and of its distortive effects on production and trade and to an enhanced efficiency of the commercial farming sector and more 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 emerging commercial farmers). The main challenge continues to be implementing and effectively targeting support programmes that are tailored to the needs of emerging farmers. From the recent discussions around the land reform (land redistribution), stakeholders appear to disagree on which form of farming is to be targeted as the desired outcome of land reform (commercial farming, small scale farming for proximity markets, subsistence farming, etc.), and on the resulting adjustment of the relevant forms of support both through direct support to farms and in form of creation of enabling environment (general services).
- To strengthen the capacity and efficiency of programmes assisting incoming entrepreneurs into commercial farming, the early 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 white 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.
- In any case, the pace of land reform should be closely linked to the development of the enabling environment (education and training, adequate infrastructure, marketing channels, etc.) for the beneficiaries of land reform. 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.

Figure 21.1. South Africa: Development of support to agriculture

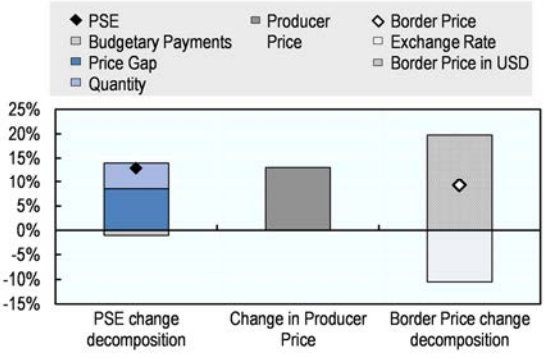


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757578

Support to farmers (%PSE) declined substantially in the second half of the 1990s and has remained low since then. In the most recent period support has been below 3% of gross farm receipts, well below the OECD average. The share of potentially **most distorting support** remains high, as most support is provided in the form of MPS and input subsidies (Figure 21.1). 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, due to both an increase in the price gap and quantity produced. The larger price gap reflects domestic prices increasing more than world prices. The increase in the border price was due to higher prices in USD, which was partly offset by the exchange rate effect (Figure 21.2). Prices received by farmers were, on average, slightly above world prices; most products are aligned to world prices, although 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 21.3). Overall, SCT represent 60% 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. Around 60% of the total support is provided to individual farmers (PSE).

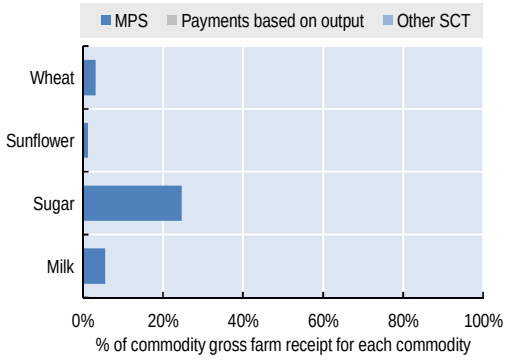
Figure 21.2. South Africa: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757597

Figure 21.3. South Africa: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757616

Table 21.1. South Africa: Estimates of support to agriculture

Million USD

	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**8 900**	**18 449**	**17 452**	**17 050**	**20 844**
***of which:** share of MPS commodities (%)*	74.0	74.0	75.6	71.3	75.0
Total value of consumption (at farm gate)	**8 351**	**18 292**	**17 654**	**18 254**	**18 967**
Producer Support Estimate (PSE)	**970**	**515**	**821**	**322**	**402**
Support based on commodity output	930	308	594	133	197
Market Price Support[1]	930	308	594	133	197
Payments based on output	0	0	0	0	0
Payments based on input use	15	184	186	169	195
Based on variable input use	8	123	119	114	137
with input constraints	0	0	0	0	0
Based on fixed capital formation	7	58	65	54	56
with input constraints	1	0	0	0	0
Based on on-farm services	0	2	2	2	2
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	25	24	41	20	10
Based on Receipts / Income	23	24	41	20	10
Based on Area planted / Animal numbers	3	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 (%)	**10.6**	**2.7**	**4.6**	**1.9**	**1.9**
Producer NPC (coeff.)	**1.12**	**1.02**	**1.04**	**1.01**	**1.01**
Producer NAC (coeff.)	**1.12**	**1.03**	**1.05**	**1.02**	**1.02**
General Services Support Estimate (GSSE)	**518**	**315**	**346**	**288**	**310**
Agricultural knowledge and innovation system	443	127	137	118	126
Inspection and control	34	54	67	43	52
Development and maintenance of infrastructure	41	108	112	103	109
Marketing and promotion	0	26	30	24	23
Cost of public stockholding	0	0	0	0	0
Miscellaneous	0	0	0	0	0
Percentage GSSE (% of TSE)	**34.7**	**38.3**	**29.7**	**47.2**	**43.6**
Consumer Support Estimate (CSE)	**-965**	**-303**	**-650**	**-138**	**-121**
Transfers to producers from consumers	-906	-280	-585	-133	-121
Other transfers from consumers	-97	-23	-64	-6	0
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	38	0	0	0	0
Percentage CSE (%)	**-11.3**	**-1.6**	**-3.7**	**-0.8**	**-0.6**
Consumer NPC (coeff.)	**1.13**	**1.02**	**1.04**	**1.01**	**1.01**
Consumer NAC (coeff.)	**1.13**	**1.02**	**1.04**	**1.01**	**1.01**
Total Support Estimate (TSE)	**1 488**	**830**	**1 168**	**610**	**712**
Transfers from consumers	1 003	303	650	138	121
Transfers from taxpayers	582	550	582	477	591
Budget revenues	-97	-23	-64	-6	0
Percentage TSE (% of GDP)	**1.0**	**0.3**	**0.4**	**0.2**	**0.2**
GDP deflator (1995-97=100)	**100**	**392**	**368**	**393**	**413**
Exchange rate (national currency per USD)	**4.18**	**13.59**	**12.76**	**14.70**	**13.31**

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 (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758699

Chapter 22. Switzerland

Support to agriculture

Switzerland has progressively reduced its support to agriculture but the change in the level of support is relatively moderate, while the changes in the structure of support are more pronounced. Support to farms (PSE) remains high in terms of its share on gross farm receipts and is three times above the OECD average. Total support to agriculture (TSE) was around 1% of GDP in 2015-17 and is dominated by direct support to farms (PSE). Support based on output (including market price support) is the most important element of the support although its share in the total support to farms has been reduced over time in favour of area payments and other, less coupled forms of support. 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.

One of the main components of support provided to Swiss farming is market price support (MPS) resulting from important trade barriers applied at the border. Over the analysed period, the MPS has been reduced from 80% to around 50% of total support to farmers. Also the level of price distortions has been significantly reduced, although domestic prices were on average 60% above world prices in 2015-17. Switzerland also provides significant direct payments to farms (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 farmers in the 1980s, it has increased to around 50% in current years. Most of these payments are currently in the form of payments per area to secure food supplies, 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.

Main policy changes

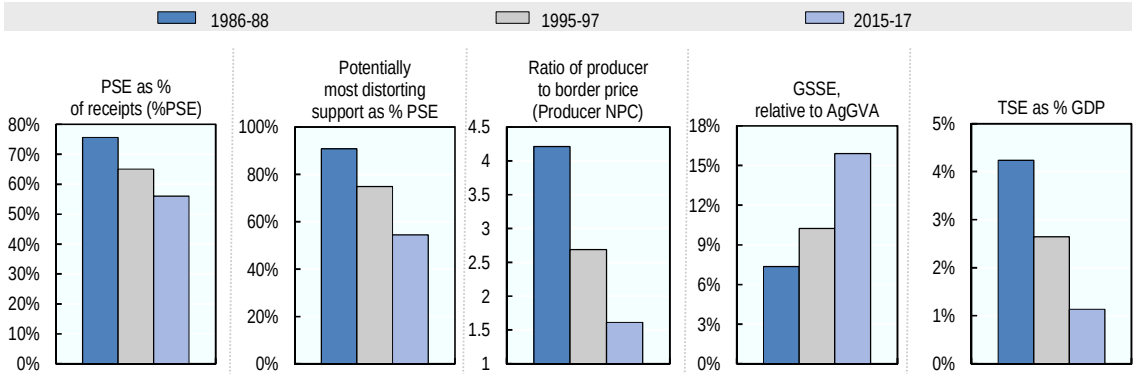
The policy framework adopted for the period 2014-2017 was extended, by a decision of the Parliament, without any particular changes for the period 2018-21 (*Politique agricole* 2018-2021 – PA 2018-21). Overall, the spending budgeted for 2018-21 was reduced by 1.7% compared to 2014-17. The main change was a 30% reduction for the financial envelope *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.

From 2017 on, the Ordinance on Swissness (*HasLV*) came into force. It defines the conditions that have to be fulfilled in order to use the Label “Swiss” and the use of the label of the Swiss cross. It is designed to better inform the consumers on the origin of the products.

Assessment and recommendations

- Security of food supply should be sought through a more competitive agriculture rather than by direct payments. The removal of milk price controls and milk quotas had a potential to increase competitiveness and better allocate resources. However, the fact, that the initially private contracts setting A,B,C prices and related quantities of delivered milk are made compulsory for all producers from 2013 and will be maintained 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.
- Continued reductions of import barriers and the elimination of the export subsidies to processed products are the next steps to further reduce the burden to consumers and interference with markets.
- Much, but not all, of Swiss farming occurs in difficult natural conditions and support policies maintain production where it would not otherwise occur. A better distinction could be made, though, 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.
- Switzerland has made some progress in reducing environmental pressures from agriculture. However, it failed to meet some other environmental objectives and nutrient surpluses (particularly Nitrogen) remain comparatively high. For some objectives such as sustainable use of resources and animal welfare the existing regulations could be made more stringent by incorporating the current cross compliance requirements (or some of their elements) into mandatory regulation.
- Switzerland has decided to maintain the system of direct payments applied in 2013-17 also for the period 2018-21. As far as payments to farmers are concerned, for developing the post 2021 policies, focus should be put on further developing a set of better targeted direct payments to meet the various societal concerns and in parallel to further reduce border protection in order to meet the declared (and sometimes conflicting) objectives at the lowest costs to consumers and taxpayers. Further development of the consumer information system related to issues such as environment and animal welfare should also contribute to address some market failures.
- To meet its engagements in the Paris Agreement on Climate Change, Switzerland is developing a policy which sets also specific targets for agriculture. In December 2017, the Swiss Federal Council adopted a message to revise its climate policy for 2021-2030 to reduce its emissions in 2030 by 50% compared to the 1990 level. Reductions of agricultural emissions as currently being discussed and including both agricultural production and consumption would be an important contribution to achieving the overall abatement commitments.

Figure 22.1. Switzerland: Development of support to agriculture

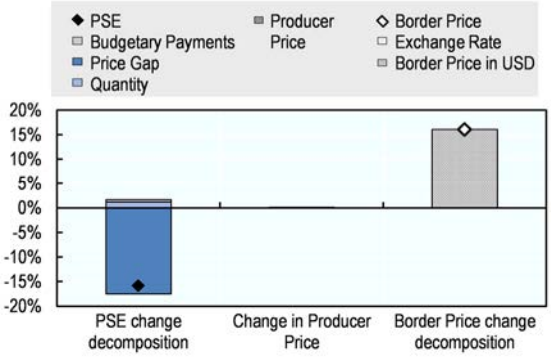


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757692

Support to farmers (%PSE) has declined gradually over the long term. In the 2015-17 period support has been around 55% of gross farm receipts, three times higher than the OECD average. The share of potentially **most distorting support** has decreased over time due to a decline in market price support (MPS) and border protection, but still stands at around half of the support (Figure 22.1). The level of support has declined from 2016 to 2017 mainly due to the reduction of MPS. The decrease in MPS results from a lower price gap as domestic prices remained stable and world prices declined mainly due to a reduction of USD border prices (Figure 22.2). Prices received by farmers were higher than world prices (by 60% on average); price support varies between commodities with the highest price gaps for poultry and eggs. MPS is the main component of Single Commodity Transfers (SCT): poultry and eggs also had the highest share of SCT in commodity gross farm receipts (Figure 22.3). Overall, SCT represent 55% 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).

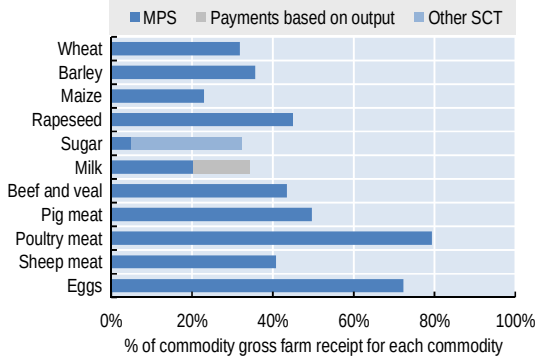
Figure 22.2. Switzerland: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757711

Figure 22.3. Switzerland: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757730

Table 22.1. Switzerland: Estimates of support to agriculture

Million USD

	1986-88	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**7 966**	**9 086**	**8 811**	**8 884**	**9 035**	**8 514**
of which: *share of MPS commodities (%)*	63.2	59.6	56.6	56.5	54.2	59.1
Total value of consumption (at farm gate)	**9 379**	**10 312**	**10 067**	**10 153**	**10 458**	**9 590**
Producer Support Estimate (PSE)	**6 739**	**7 175**	**6 909**	**7 339**	**7 269**	**6 119**
Support based on commodity output	5 834	5 280	3 693	4 094	4 086	2 900
Market Price Support[1]	5 807	5 215	3 393	3 789	3 788	2 603
Payments based on output	27	64	300	304	297	298
Payments based on input use	358	319	151	137	142	174
Based on variable input use	289	242	68	69	68	68
with input constraints	0	140	0	0	0	0
Based on fixed capital formation	46	61	83	68	75	106
with input constraints	0	0	24	18	25	28
Based on on-farm services	23	16	0	0	0	0
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	392	929	945	950	936	947
Based on Receipts / Income	10	0	0	0	0	0
Based on Area planted / Animal numbers	382	929	945	950	936	947
with input constraints	217	809	898	905	889	900
Payments based on non-current A/An/R/I, production required	18	444	1 077	1 092	1 068	1 071
Payments based on non-current A/An/R/I, production not required	0	0	160	185	164	130
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	160	185	164	130
with commodity exceptions	0	0	0	0	0	0
Payments based on non-commodity criteria	0	47	696	680	694	714
Based on long-term resource retirement	0	0	0	0	0	0
Based on a specific non-commodity output	0	47	696	680	694	714
Based on other non-commodity criteria	0	0	0	0	0	0
Miscellaneous payments	137	156	187	201	178	182
Percentage PSE (%)	**75.6**	**65.1**	**56.0**	**59.0**	**58.1**	**50.9**
Producer NPC (coeff.)	**4.21**	**2.69**	**1.61**	**1.73**	**1.70**	**1.44**
Producer NAC (coeff.)	**4.10**	**2.86**	**2.27**	**2.44**	**2.39**	**2.04**
General Services Support Estimate (GSSE)	**431**	**461**	**742**	**761**	**733**	**731**
Agricultural knowledge and innovation system	110	129	368	372	367	365
Inspection and control	9	11	13	13	12	13
Development and maintenance of infrastructure	80	65	88	98	85	81
Marketing and promotion	29	35	63	64	62	63
Cost of public stockholding	66	65	41	39	41	42
Miscellaneous	137	156	169	174	166	166
Percentage GSSE (% of TSE)	**5.5**	**5.4**	**9.7**	**9.4**	**9.2**	**10.7**
Consumer Support Estimate (CSE)	**-6 459**	**-5 763**	**-3 870**	**-4 259**	**-4 333**	**-3 019**
Transfers to producers from consumers	-5 843	-5 452	-3 134	-3 531	-3 502	-2 369
Other transfers from consumers	-1 458	-1 318	-767	-758	-859	-683
Transfers to consumers from taxpayers	700	829	5	5	5	5
Excess feed cost	141	178	26	26	23	29
Percentage CSE (%)	**-74.3**	**-60.8**	**-38.4**	**-42.0**	**-41.5**	**-31.5**
Consumer NPC (coeff.)	**4.49**	**2.91**	**1.63**	**1.73**	**1.72**	**1.47**
Consumer NAC (coeff.)	**3.89**	**2.55**	**1.62**	**1.72**	**1.71**	**1.46**
Total Support Estimate (TSE)	**7 870**	**8 465**	**7 655**	**8 105**	**8 006**	**6 855**
Transfers from consumers	7 301	6 770	3 901	4 290	4 361	3 053
Transfers from taxpayers	2 027	3 013	4 521	4 573	4 504	4 486
Budget revenues	-1 458	-1 318	-767	-758	-859	-683
Percentage TSE (% of GDP)	**4.2**	**2.6**	**1.1**	**1.2**	**1.2**	**1.0**
GDP deflator (1986-88=100)	**100**	**125**	**138**	**138**	**137**	**138**
Exchange rate (national currency per USD)	**1.58**	**1.29**	**0.98**	**0.96**	**0.99**	**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 (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758718

Chapter 23. Turkey

Support to agriculture

Despite a series of ambitious reforms since the late 1990s, the level of farm support in Turkey, while varying from year to year, has remained higher than the average for the OECD area and stood at 25% during 2015-17. Most distorting forms of support dominate as Market Price Support (MPS) accounts for 81% of the producer support in 2015-17. The level of price distortions has remained higher than the OECD average: domestic prices remain on average 28% above world prices in 2015-17.

The other important elements of producer support are payments based on output and variable input use, which account for 9% of producer support. Payments based on commodity output have increased since the decoupled direct payments were abolished in 2009. The main instrument of direct payments to farms in Turkey is deficiency payments ("premium payments"), which is designed to cover the difference between the target price and market price of the product. The target price is calculated based on production and marketing costs. These payments are provided for the products that are in short domestic supply, such as oilseeds and grains. 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 8% of producer support in 2015-17.

As for the General Services Support Estimate (GSSE) the main element is financing the development and maintenance of infrastructure, which accounts for approximately 72% of the GSSE expenditure. While expenditure for the agricultural knowledge and innovation system grew in the last decade, the share in GSSE expenditure remains around 5% in 2015-17. Total support estimate to agriculture (TSE) averaged 2% of GDP in those most recent years.

Main policy changes

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 the Ministry of Food, Agriculture and Livestock (MoFAL) took over the responsibility to administer the marketing regulations in 2017.

The "basin-based support programme" differentiated the payment rates in 941 basins, as opposed to 30 basins in the former programme. Each county with agricultural production is identified as a separate basin now. Eligible crops are determined by basin based on ecological and production conditions. In total, 21 eligible products are expected to be 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

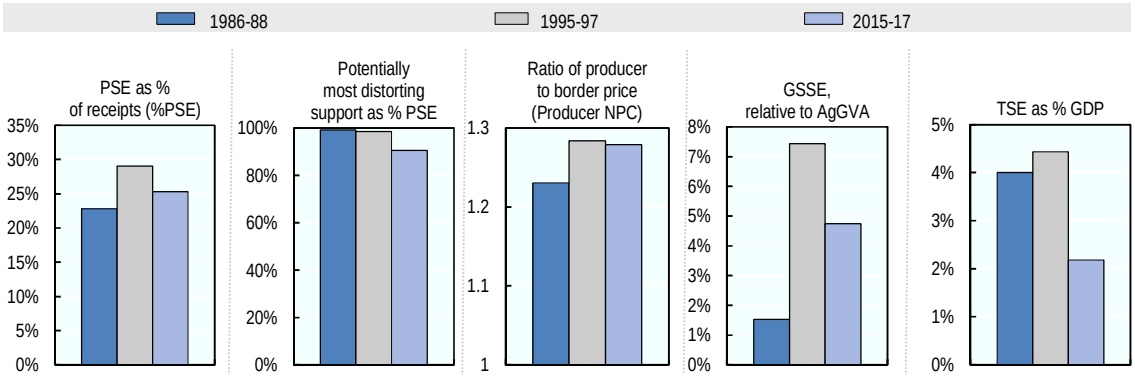
patterns to follow ecological conditions and to increase the production of crops that are short in supply, while decreasing excess supply in some other crops.

The coverage of the support to agricultural insurance has been extended to more products and risks. In 2018, the coverage of the programme is extended to the production loss of barley, rye, oat and triticale due to drought, frost, hot winds, heat waves, excess moisture and excessive precipitation in addition to currently covered wheat. The coverage is also extended to orchards and vineyards from 2018. In addition, as of 2018, a 5% discount under all branches of agricultural insurance has been provided to female and young farmers. In 2017, 1.64 million agricultural insurance policies were issued with TRY 864 million (USD 237 million) of government support to the insurance premium.

Assessment and recommendations

- Turkey has made progress in the last decade towards strengthening the agricultural sector's legal and institutional framework. Among the four state owned marketing boards for agricultural products, the former Sugar Authority and the Tobacco and Alcohol Market Regulatory Authority are closed in 2017. However, the reform to reduce the role of state owned marketing boards should continue.
- Since 1986-88 policy efforts aimed at improving market orientation have been variable. There have been 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 (%PSE) in 2015-17 remained at around 25%, which is higher than the OECD average.
- Reorientation of agricultural policy from supporting production towards improving agricultural productivity and adding more value should continue while considering sustainable use of natural resources.
- A re-orientation of agricultural policies should allow producers to react flexibly to market conditions. 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 policies targeted to environmental policy objective 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 less than 1% of total support to agriculture.

Figure 23.1. Turkey: Development of support to agriculture

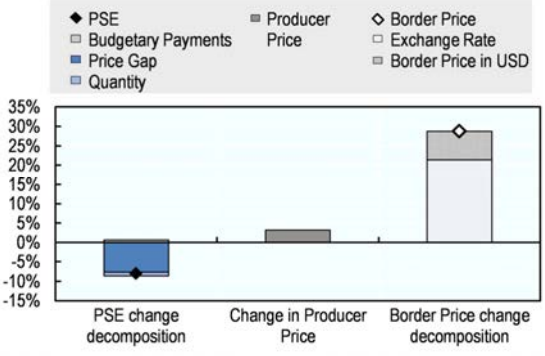


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757806

Support to farmers (%PSE) has been fluctuating with no clear long-term trend. In 2015-17, support has been around 25% of gross farm receipts, which is above the OECD average. The share of potentially **most distorting support** has decreased slightly over time due to decline in market price support (MPS) and border protection, but still accounts for more than 90% of producer support (Figure 23.1). In 2017, the level of support has decreased due to lower MPS. The decrease in MPS results from a smaller price gap as domestic prices increased less than world prices (Figure 23.2). Effective prices received by farmers, on average, were 28% higher than world prices; large differences between commodities persist with domestic prices for beef and veal, potatoes, sunflower, and poultry meat being more than 50% above world prices. MPS is the main component of Single Commodity Transfers (SCT): beef and veal, potatoes, sunflower, and poultry meat, but also cotton and barley had the high share of SCT in commodity gross farm receipts (Figure 23.3). Overall, SCT represent 90% of the total PSE. The expenditures for **general services** (GSSE), mainly on development and maintenance of infrastructure, relative to agriculture value added were similar to the OECD average. **Total support to agriculture** as a share of GDP has declined significantly since the mid-1990s. More than 85% of the total support is provided to individual farmers (PSE).

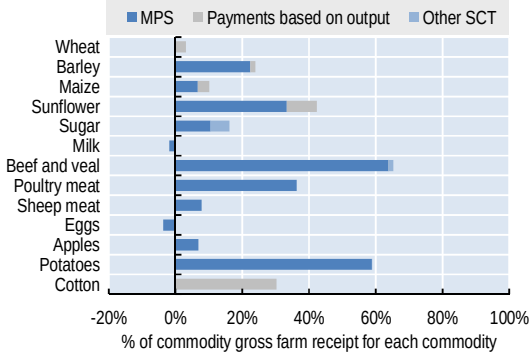
Figure 23.2. Turkey: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757825

Figure 23.3. Turkey: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757844

Table 23.1. Turkey: Estimates of support to agriculture

Million USD

	1986-88	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**18 343**	**26 585**	**59 875**	**63 279**	**60 407**	**55 940**
***of which:** share of MPS commodities (%)*	55.0	73.6	70.3	72.9	71.3	66.8
Total value of consumption (at farm gate)	**14 003**	**22 587**	**42 036**	**44 734**	**41 744**	**39 630**
Producer Support Estimate (PSE)	**4 326**	**8 079**	**16 013**	**17 015**	**17 607**	**13 418**
Support based on commodity output	3 441	5 992	14 013	15 111	15 350	11 579
Market Price Support[1]	3 430	5 900	13 027	14 085	14 360	10 637
Payments based on output	11	92	986	1 026	990	942
Payments based on input use	885	2 035	771	587	917	809
Based on variable input use	850	1 962	504	458	529	526
with input constraints	0	0	0	0	0	0
Based on fixed capital formation	19	63	259	121	380	277
with input constraints	0	0	0	0	0	0
Based on on-farm services	16	10	7	8	8	7
with input constraints	0	0	0	0	0	0
Payments based on current A/An/R/I, production required	0	52	1 229	1 317	1 341	1 030
Based on Receipts / Income	0	0	220	194	233	234
Based on Area planted / Animal numbers	0	52	1 009	1 123	1 108	796
with input constraints	0	0	164	149	156	187
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	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 (%)	**22.8**	**29.0**	**25.3**	**25.7**	**27.7**	**22.8**
Producer NPC (coeff.)	**1.23**	**1.28**	**1.28**	**1.29**	**1.32**	**1.24**
Producer NAC (coeff.)	**1.30**	**1.41**	**1.34**	**1.35**	**1.38**	**1.30**
General Services Support Estimate (GSSE)	**313**	**2 856**	**2 643**	**2 852**	**2 687**	**2 389**
Agricultural knowledge and innovation system	46	46	139	138	123	156
Inspection and control	51	73	27	41	38	3
Development and maintenance of infrastructure	22	572	1 915	1 937	2 164	1 645
Marketing and promotion	95	2 069	561	737	362	584
Cost of public stockholding	0	0	0	0	0	0
Miscellaneous	99	96	0	0	0	0
Percentage GSSE (% of TSE)	**7.0**	**26.6**	**14.2**	**14.4**	**13.2**	**15.1**
Consumer Support Estimate (CSE)	**-3 125**	**-5 552**	**-9 622**	**-10 919**	**-9 951**	**-7 995**
Transfers to producers from consumers	-3 114	-5 401	-9 656	-11 016	-9 965	-7 988
Other transfers from consumers	-54	-238	-41	-47	-70	-7
Transfers to consumers from taxpayers	0	0	0	0	0	0
Excess feed cost	43	86	76	143	84	0
Percentage CSE (%)	**-22.8**	**-25.4**	**-22.7**	**-24.4**	**-23.8**	**-20.2**
Consumer NPC (coeff.)	**1.30**	**1.35**	**1.30**	**1.33**	**1.32**	**1.25**
Consumer NAC (coeff.)	**1.30**	**1.34**	**1.29**	**1.32**	**1.31**	**1.25**
Total Support Estimate (TSE)	**4 638**	**10 935**	**18 656**	**19 867**	**20 294**	**15 807**
Transfers from consumers	3 168	5 638	9 698	11 063	10 035	7 995
Transfers from taxpayers	1 524	5 535	9 000	8 851	10 329	7 819
Budget revenues	-54	-238	-41	-47	-70	-7
Percentage TSE (% of GDP)	**4.0**	**4.4**	**2.2**	**2.3**	**2.4**	**1.9**
GDP deflator (1986-88=100)	**100**	**13 840**	**642 481**	**594 025**	**641 339**	**692 080**
Exchange rate (national currency per USD)	**0.00**	**0.09**	**3.13**	**2.72**	**3.02**	**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 Turkey are: wheat, maize, barley, sunflower, sugar, potatoes, tomatoes, grapes, apples, cotton, tobacco, milk, beef and veal, sheep meat, poultry and eggs.

Source: OECD (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758737

Chapter 24. Ukraine

Support to agriculture

Support to agriculture has been quite variable over the past three decades, largely reflecting changes in market price support (MPS). Since 2013, support to farmers has been negative as budgetary payments in the form of tax benefits and input support, and price protection for imported commodities, only partly offset the implicit taxation through negative MPS on exported ones. On average, producer prices are below world price levels, but price protection differs significantly across commodities, with prices for most meat commodities, and until recently for sugar, above reference price levels.

Since 2012, Ukraine has significantly cut its expenditures on general services both in absolute terms and relative to the size of the sector; general services expenditures are now equivalent to 1.1% of agricultural value added, less than a quarter of the level during the mid-1990s. Support to general services is mainly used for agricultural schools and for inspection and control services.

Main policy changes

Most of Ukraine's domestic policies have remained unchanged in 2017, but a major shift was undertaken by abolishing the VAT accumulation system. This system had allowed agricultural producers to accumulate a share of VAT from product sales for the purpose of purchasing agricultural inputs. In 2017, it was temporarily replaced by a "development subsidy" proportional to the VAT for a subset of agricultural commodities, which also could be used for the purchase of agricultural production inputs. However, the amount of support provided through the development subsidy was much smaller than that provided through the previous system.

Specific support was also provided to the livestock and fruits, wine and berry sectors. These subsidies were given for breeding animals, planting material, machinery, equipment and storage capacity, but also as debt repayments under different programmes of previous years.

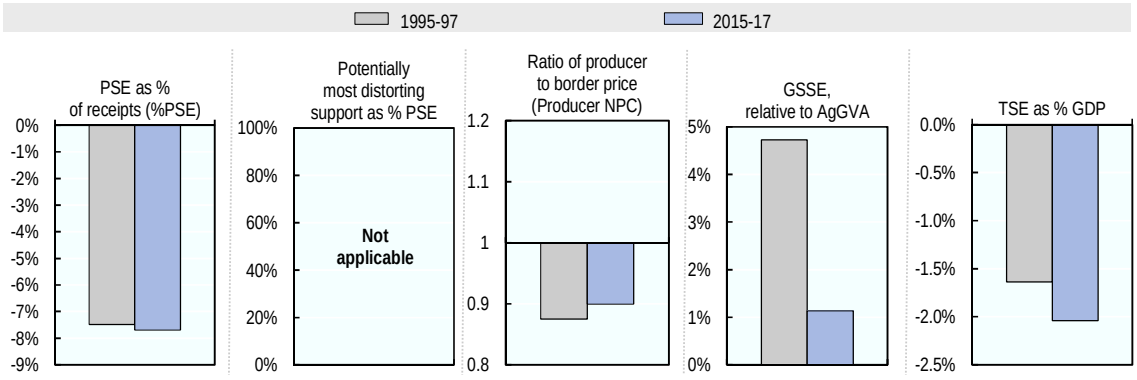
The budget of the new State Service for Food Safety and Consumer Protection, established and operational since 2016, was increased by more than half, but funding for the country's veterinary and phytosanitary services remains low compared to expenditures before 2015.

In the context of the European Union-Ukraine Deep and Comprehensive Free Trade Area, additional EU autonomous trade preferences for Ukraine came into effect in 2017. For a duration of up to three years, these preferences increase duty-free import quotas for agricultural products from Ukraine to the European Union. The Canada-Ukraine Free Trade Agreement came into force in 2017 and provides for an eventual elimination of import tariffs on the vast majority of bilateral trade, including agro-food trade.

Assessment and recommendations

- Producer prices in most of Ukraine's export oriented crop sectors, as well as for milk, are maintained substantially below world price levels. While formal export restrictions and levies are no longer applied, Memoranda of Understandings between the Government and main associations of grain exporters on maximum export volumes continue to reduce domestic producers' opportunities to participate in international markets. Such restrictions are trade distorting and reduce the profitability and international competitiveness of the country's most efficient agricultural sectors. While the EU-Ukraine DCFTA should reduce the resulting negative market price support to some degree, Ukraine should take additional steps to facilitate exports, including continued investments into the logistics and transportation system in line with growing export volumes.
- Abolishing the VAT accumulation system, which indirectly supported the purchase of production inputs, should increase the efficiency in the sector. While its temporary replacement by the "development subsidy" is little more efficient than its predecessor as it is equally linked to VAT receipts and also used by farmers for various production inputs, it is limited in the sectoral coverage and smaller in size. Ensuring well-functioning input markets, including for agricultural credits, remains key for improving farmers' access to agricultural inputs.
- Land market rigidities continue to be in place with the extension of the moratorium on the sale of agricultural land. Overcoming these rigidities will be important for improving the economic viability and efficiency of the sector.
- Over the last decade, Ukrainian agriculture has benefited from an impressive growth in total productivity, but capital stocks continue to deteriorate, likely caused by economic and political uncertainties. A return to macroeconomic and political stability will be critically important for maintaining and developing a productive agricultural sector.
- Signatory to the 2015 Paris Agreement on Climate Change, Ukraine's Nationally-Determined Contribution (NDC) commits the country to GHG emissions in 2030 not exceeding 60% of its 1990 levels, including from agriculture and other land use sectors. No specific net-emission target has yet been set for the agricultural sector. With agriculture responsible for 12% of national GHG emissions, specific targets and related policy action will be important for achieving the overall target.
- Financial constraints following the economic depression of 2014-15 continue to limit Ukraine's expenditures for general services, which are among the lowest across the set of countries covered by this report. Sanitary and phytosanitary inspection and control is a key service to the export-oriented sector, and progress towards compliance with EU SPS requirements remains a priority.
- Ukraine's exposure to high weather variability is likely to be exacerbated by climate change. The sector therefore also requires both a well-functioning and sufficiently funded knowledge and innovation system, including an extension service providing location-specific information and advice, and an effective risk management system which should involve all relevant stakeholders.

Figure 24.1. Ukraine: Development of support to agriculture

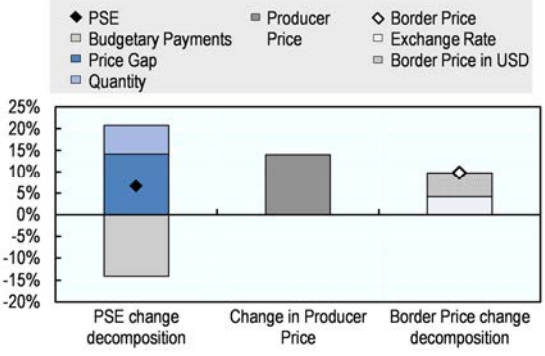


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933757920

Support to farmers (%PSE) has been continuously negative for five years at levels similar to those observed on average during the 1995-97 period. This implicit taxation of the sector is caused by negative market price support for most exported products. As a consequence, the average level of producer prices is almost 10% below that of the reference prices: the Nominal Rate of Protection (NRP) was 0.9 for the 2015-17 average (Figure 24.1). The level of support has increased (i.e. has become less negative) in 2017 despite lower budgetary support: on average, prices received by farmers have come closer to the reference prices due to both higher world market prices and the continued devaluation of the Hryvnya, even though producer prices have increased as well (Figure 24.2). Single Commodity Transfers mirror the MPS across commodities, with grains, sunflower seed, sugar and milk being implicitly taxed while meat and eggs show SCTs of between 4% and 13% of their commodity gross farm receipts (Figure 24.3). The expenditures for **general services** (GSSE) have significantly fallen and represented a mere 1.1% of agriculture value added, well below the values of most other countries represented in this report and much lower than two decades earlier. Consequently, **total support to agriculture** is dominated by the negative PSE and was worth -2% of GDP during 2015-17.

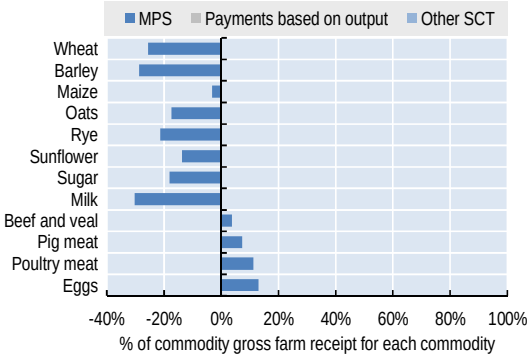
Figure 24.2. Ukraine: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757939

Figure 24.3. Ukraine: Transfer to specific commodities (SCT), 2015-2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933757958

Table 24.1. Ukraine: Estimates of support to agriculture

Million USD

	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**13 085**	**26 848**	**25 701**	**26 354**	**28 488**
of which: *share of MPS commodities (%)*	87.7	81.8	81.4	82.3	81.8
Total value of consumption (at farm gate)	**9 090**	**15 876**	**16 042**	**16 171**	**15 415**
Producer Support Estimate (PSE)	**-1 169**	**-2 112**	**-2 016**	**-2 278**	**-2 043**
Support based on commodity output	-1 814	-2 720	-3 129	-2 799	-2 234
Market Price Support[1]	-1 823	-2 720	-3 129	-2 799	-2 234
Payments based on output	9	0	0	0	0
Payments based on input use	324	547	930	521	191
Based on variable input use	232	537	929	520	161
with input constraints	0	0	0	0	0
Based on fixed capital formation	79	10	1	1	30
with input constraints	0	0	0	0	0
Based on on-farm services	12	0	0	0	0
with input constraints	0	0	0	0	0
Payments based on current A/An/R/I, production required	322	61	183	0	0
Based on Receipts / Income	322	61	183	0	0
Based on Area planted / Animal numbers	0	0	0	0	0
with input constraints	0	0	0	0	0
Payments based on non-current A/An/R/I, production required	0	0	0	0	0
Payments based on non-current A/An/R/I, production not required	0	0	0	0	0
With variable payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
With fixed payment rates	0	0	0	0	0
with commodity exceptions	0	0	0	0	0
Payments based on non-commodity criteria	0	0	0	0	0
Based on long-term resource retirement	0	0	0	0	0
Based on a specific non-commodity output	0	0	0	0	0
Based on other non-commodity criteria	0	0	0	0	0
Miscellaneous payments	0	0	0	0	0
Percentage PSE (%)	**-7.5**	**-7.7**	**-7.5**	**-8.5**	**-7.1**
Producer NPC (coeff.)	**0.87**	**0.90**	**0.88**	**0.90**	**0.92**
Producer NAC (coeff.)	**0.93**	**0.93**	**0.93**	**0.92**	**0.93**
General Services Support Estimate (GSSE)	**303**	**121**	**115**	**110**	**139**
Agricultural knowledge and innovation system	76	71	80	66	68
Inspection and control	24	39	27	35	55
Development and maintenance of infrastructure	190	3	2	2	5
Marketing and promotion	3	1	1	1	1
Cost of public stockholding	0	2	1	2	3
Miscellaneous	10	5	3	4	8
Percentage GSSE (% of TSE)	..	..	..	..	..
Consumer Support Estimate (CSE)	**1 950**	**1 701**	**1 813**	**1 903**	**1 387**
Transfers to producers from consumers	2 010	1 970	2 215	2 116	1 578
Other transfers from consumers	148	0	-1	1	0
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	-209	-268	-401	-213	-191
Percentage CSE (%)	**19.6**	**10.7**	**11.3**	**11.8**	**9.0**
Consumer NPC (coeff.)	**0.82**	**0.89**	**0.88**	**0.88**	**0.91**
Consumer NAC (coeff.)	**0.84**	**0.90**	**0.90**	**0.89**	**0.92**
Total Support Estimate (TSE)	**-866**	**-1 991**	**-1 901**	**-2 168**	**-1 904**
Transfers from consumers	-2 158	-1 970	-2 214	-2 117	-1 578
Transfers from taxpayers	1 144	-21	314	-52	-326
Budget revenues	148	0	-1	1	0
Percentage TSE (% of GDP)	**-1.6**	**-2.0**	**-2.1**	**-2.3**	**-1.8**
GDP deflator (1995-97=100)	**100**	**2 094**	**1 929**	**2 260**	..
Exchange rate (national currency per USD)	**1.72**	**24.66**	**21.84**	**25.55**	**26.60**

.. 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 (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758756

Chapter 25. United States

Support to agriculture

The level of support provided to agricultural producers in the United States has been consistently below the OECD average. Market price support (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 and, to a lesser extent, increases in input payments. Reflecting the fact that many agricultural policies are counter-cyclical to market prices, the level of budgetary support is inversely related to market price developments. As a result, 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.

The United States' producer support estimate (PSE) declined from 12% of gross farm receipts in 1995-97 to below 10% in 2015-17, although producer support increased in the late 1990s to early 2000s. The share of potentially most distorting support has fallen to 32% in 2015-17, and is well below the OECD average. On average, prices received by farmers in 2015-17 were 3% higher than those observed in world markets, largely as a result of MPS for milk, sugar, and to a lesser extent sheep meat. Producer prices of other commodities are mostly aligned with border prices. Payments requiring production are important because of the emphasis on farm insurance and risk management. 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) have increased and were equivalent to 4.4% of agricultural value added in 2015-17, slightly below the OECD average.

Main policy changes

The Bipartisan Budget Act (BBA), enacted on 9 February 2018, included significant revisions to cotton and dairy programmes that take effect with the 2018 crop year. Seed cotton base acres will be established and eligible for payments under the *Agriculture Risk Coverage* and *Price Loss Coverage* programmes after the BBA authorised seed cotton as a covered commodity. The BBA revised the *Margin Protection Program for Dairy Producers* (MPP-Dairy) by reducing lower tier premiums and increasing the production history eligible for those premiums as well as calculating payments on a monthly rather than a bimonthly basis. The BBA also implemented a number of measures to provide disaster assistance to producers affected by hurricanes and wildfires in 2017.

Other policy changes were made to programmes that make direct payments to cotton and dairy producers. A second *Cotton Ginning Cost Share* programme was authorised to provide assistance to cotton producers to help cover cotton ginning costs for the 2017 crop year. USDA announced a revision to the implementation of MPP-Dairy, which allows producers previously enrolled in the programme to opt out for the 2018 coverage year.

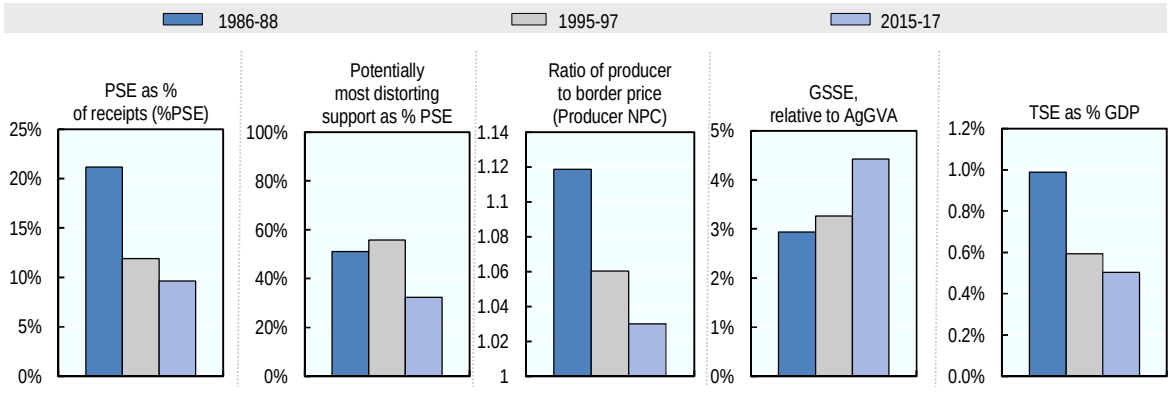
The 2017 Tax Cuts and Jobs Act, enacted on 22 December 2017, reformed the US corporate and individual income tax structure. A number of provisions will affect agricultural producers, beginning 2018. For farmers, few of whom have organised their businesses as corporations, the most significant change will be the increased deduction for business income reported as individual income (pass-through businesses) and the provisions for income from co-operatives.

Most provisions of the 2014 Farm Act are scheduled to expire with the end of the 2018 programme year. The House and Senate Agriculture committees began work on a new farm bill as early as 2016 in some cases and continued with listening sessions in field locations and hearings in Washington, DC, throughout 2017. Development of legislation and floor debate is expected to take place in 2018.

Assessment and recommendations

- Levels of producer support and border protection have decreased substantially since 1986-88. However, low levels of support since 2002 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 farmers when they are in need. However, 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. As a first step, it will be necessary to ensure that information is available to develop actuarially fair and competitive premiums. Risk management instruments should also be evaluated to ensure that they do not transfer risk to the public budget which should be borne by farmers.
- While established environmental 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 newer programmes like the Regional Conservation Partnership Program are well targeted to providing intended environmental benefits at a local level.
- Farm programmes continue to support farm incomes. The long-term effects of these programmes on incentives to make sustainable improvements in agricultural productivity and efficiency should be assessed to guide changes to US farm programmes in future farm bills.

Figure 25.1. United States: Development of support to agriculture

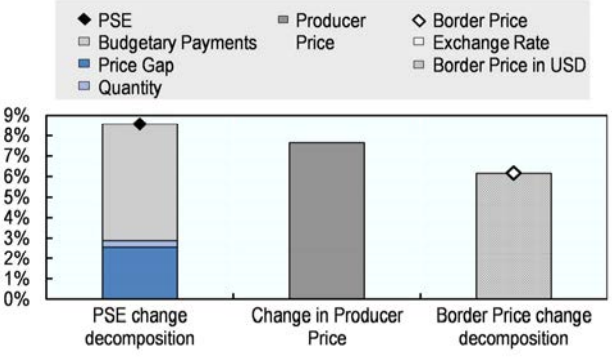


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933758034

Support to farmers (%PSE) has declined from 11.9% of gross farm receipts in 1995-97 to 9.6% in 2015-17, although support levels were as high as 25% in the late 1990s to early 2000s. The share of potentially **most distorting support** has fallen to 32% in 2015-17, well below the OECD average and lower than levels in 1995-97 (Figure 25.1). Expenditures for **general services** (GSSE) are increasing and were equivalent to 4.4% of agricultural value added in 2015-17, up from 3.3% in 1995-97. **Total support to agriculture** as a share of GDP represented 0.5% of GDP in 2015-17. In 2017, 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 increased by more than world prices (Figure 25.2). On average, prices received by farmers were 3% higher in 2015-17 than those observed in world markets. This largely results from market price support for milk, sugar, and sheep meat, as producer prices of other commodities are mostly aligned with border prices (Figure 25.3). Single commodity transfers (SCT) accounted for 46% of producer support in 2015-17. SCTs account for the highest share of farm receipts for sugar, milk, cotton, and sheep meat.

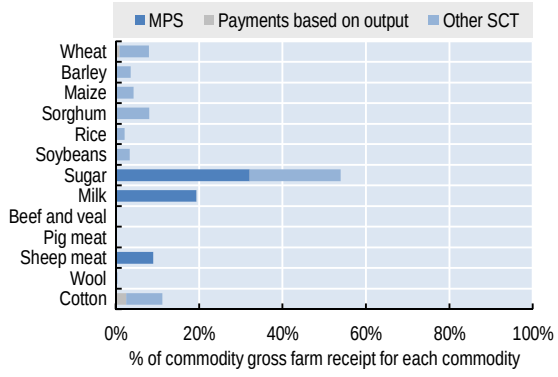
Figure 25.2. United States: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933758053

Figure 25.3. United States: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933758072

Table 25.1. United States: Estimates of support to agriculture

Million USD

	1986-88	1995-97	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**143 469**	**200 325**	**368 129**	**376 171**	**355 501**	**372 716**
of which: *share of MPS commodities (%)*	78.3	76.5	76.5	76.7	76.2	76.7
Total value of consumption (at farm gate)	**121 087**	**162 235**	**289 063**	**300 654**	**274 263**	**292 274**
Producer Support Estimate (PSE)	**35 337**	**25 617**	**38 105**	**38 225**	**36 485**	**39 606**
Support based on commodity output	15 114	11 487	10 785	10 451	10 494	11 409
Market Price Support[1]	12 003	11 336	10 506	10 036	10 215	11 267
Payments based on output	3 111	151	279	415	279	142
Payments based on input use	7 061	6 641	8 374	8 739	8 293	8 090
Based on variable input use	3 697	3 088	2 161	2 367	2 040	2 075
with input constraints	739	264	610	661	583	586
Based on fixed capital formation	1 233	554	1 590	1 670	1 572	1 527
with input constraints	1 233	537	1 544	1 605	1 536	1 492
Based on on-farm services	2 131	2 999	4 624	4 702	4 681	4 489
with input constraints	349	543	1 345	1 176	1 412	1 447
Payments based on current A/An/R/I, production required	12 231	1 825	9 561	8 795	8 716	11 173
Based on Receipts / Income	912	721	2 002	1 833	2 152	2 021
Based on Area planted / Animal numbers	11 319	1 104	7 559	6 962	6 564	9 152
with input constraints	2 565	595	7 554	6 952	6 558	9 150
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	338	3 824	7 449	8 327	7 011	7 009
With variable payment rates	0	0	7 275	7 808	7 008	7 008
with commodity exceptions	0	0	7 275	7 808	7 008	7 008
With fixed payment rates	338	3 824	174	519	3	1
with commodity exceptions	0	3 824	0	0	0	0
Payments based on non-commodity criteria	592	1 839	1 936	1 912	1 970	1 925
Based on long-term resource retirement	592	1 839	1 916	1 897	1 948	1 904
Based on a specific non-commodity output	0	0	0	0	0	0
Based on other non-commodity criteria	0	0	19	16	22	20
Miscellaneous payments	0	0	0	0	0	0
Percentage PSE (%)	**21.2**	**11.9**	**9.6**	**9.5**	**9.6**	**9.9**
Producer NPC (coeff.)	**1.12**	**1.06**	**1.03**	**1.03**	**1.03**	**1.03**
Producer NAC (coeff.)	**1.27**	**1.14**	**1.11**	**1.10**	**1.11**	**1.11**
General Services Support Estimate (GSSE)	**3 108**	**4 239**	**9 525**	**8 691**	**9 413**	**10 471**
Agricultural knowledge and innovation system	1 129	1 479	2 277	2 283	2 212	2 334
Inspection and control	372	559	1 251	1 200	1 269	1 285
Development and maintenance of infrastructure	13	27	3 364	2 590	3 351	4 151
Marketing and promotion	495	654	1 290	1 279	1 235	1 355
Cost of public stockholding	0	52	13	8	16	16
Miscellaneous	1 100	1 468	1 330	1 331	1 330	1 330
Percentage GSSE (% of TSE)	**6.4**	**8.8**	**10.1**	**9.3**	**10.2**	**10.9**
Consumer Support Estimate (CSE)	**-2 630**	**6 157**	**34 515**	**35 328**	**35 035**	**33 181**
Transfers to producers from consumers	-11 699	-11 146	-10 307	-9 786	-10 100	-11 036
Other transfers from consumers	-1 314	-1 143	-1 630	-1 617	-1 407	-1 866
Transfers to consumers from taxpayers	10 089	18 437	46 452	46 731	46 542	46 084
Excess feed cost	294	8	0	0	0	0
Percentage CSE (%)	**-2.4**	**4.3**	**14.2**	**13.9**	**15.4**	**13.5**
Consumer NPC (coeff.)	**1.12**	**1.08**	**1.04**	**1.04**	**1.04**	**1.05**
Consumer NAC (coeff.)	**1.02**	**0.96**	**0.88**	**0.88**	**0.87**	**0.88**
Total Support Estimate (TSE)	**48 534**	**48 292**	**94 083**	**93 647**	**92 440**	**96 161**
Transfers from consumers	13 013	12 288	11 937	11 403	11 507	12 902
Transfers from taxpayers	36 835	37 147	83 775	83 861	82 340	85 125
Budget revenues	-1 314	-1 143	-1 630	-1 617	-1 407	-1 866
Percentage TSE (% of GDP)	**1.0**	**0.6**	**0.5**	**0.5**	**0.5**	**0.5**
GDP deflator (1986-88=100)	**100**	**128**	**186**	**183**	**185**	**189**
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 (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758775

Chapter 26. Viet Nam

Support to agriculture

The level of support provided to Viet Nam's agriculture sector fluctuates at very low levels, largely driven by changes in market price support (MPS). Producer support as a share of receipts varies across commodities. While producers of import-competing commodities, such as maize, sugar cane and beef, benefit from tariff protection, producers of several exported commodities are implicitly taxed. This results in a negative overall producer support estimate (PSE) in some years. 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.

In 2015-17, Viet Nam's producer support estimate (PSE) was slightly negative at –0.9%, despite a return to positive support in 2017. Support for general services for the agricultural sector is dominated by expenditure on the development and maintenance of 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 negative MPS. In 2017, the TSE was positive at 0.7% of GDP.

Main policy changes

In 2018, Viet Nam will introduce a fee for irrigation services under a new Law on Irrigation. According to the new law, irrigation service fees should include management costs, operation and maintenance expenses, depreciation charges, and other reasonable actual costs, and allow for profits matching those of the market. Decrees and circulars are currently under development that will outline the rate and type of fees.

The Government introduced a number of incentives and policies to promote the development of high-tech agriculture. In particular, state-owned commercial banks were directed to allocate at least VND 100 trillion (USD 4.4 billion) to a lending programme for high-tech, clean agriculture that offers interest rates 0.5% to 1.5% lower than market interest rates.

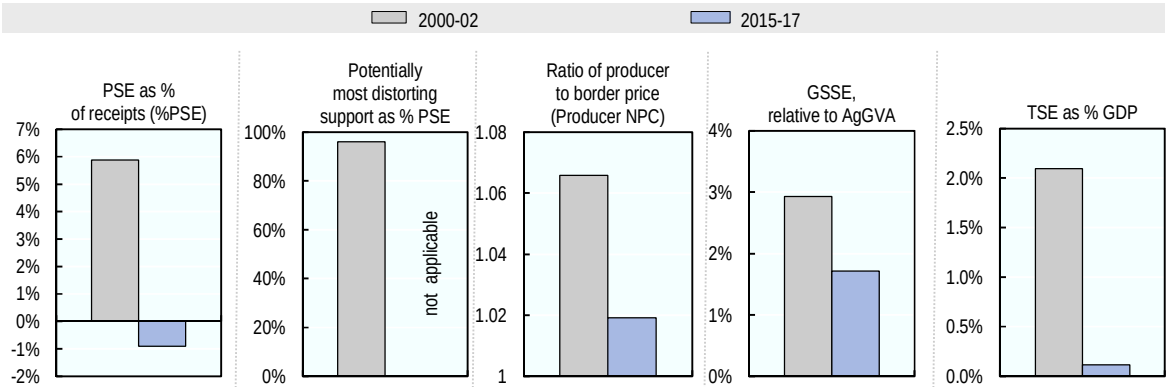
In June 2017, the Prime Minister approved a rice export development strategy for 2017-2020, with a vision to 2030, which aims to develop new markets and asks the rice industry to reorganise production and focus on improving quality. Also in 2017, the Ministry of Industry and Trade (MOIT) began drafting a new decree on rice export activities to replace Decree No. 109/2010/ND-CP on rice export business. The revision is

expected to remove bottlenecks for rice traders, especially small-and medium-sized enterprises.

Assessment and recommendations

- In the last two years, Viet Nam has implemented a number of reforms that will enable improvements in the competitiveness and sustainability of the agro-food sector. In particular, the easing of restrictions on rice exporters will help to improve the competitiveness and quality of rice exports. Introducing a fee for irrigation services will encourage greater water use efficiency.
- However, domestic and international conditions should become more challenging going forward. Agriculture is affected by Viet Nam's deeper integration into the global economy, for example, as tariffs within preferential trade agreements are reduced. Moreover, 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 larger farms and to focus attention on quality and higher value products.
- 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. Moreover, the scope of compulsory land conversions should be limited and compensations for such conversions should be based on open market land prices. To limit the scope of social conflicts and corruption in the land administration, participatory land use plans could be encouraged and direct transactions between land users without state involvement should be allowed.
- To 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 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 26.1. Viet Nam: Development of support to agriculture

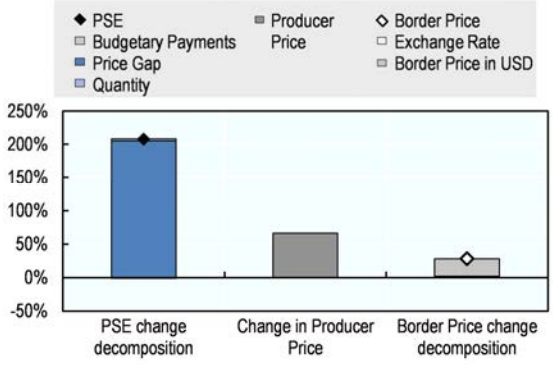


Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933758148

Support to farmers (%PSE) was -0.9% in 2015-17, implying an implicit overall taxation, compared to a relatively low, but positive level of support in 2000-02. Due to a negative market price support for the majority of commodities, the value of potentially **most distorting support** was also negative in 2015-17. Therefore, its share in total PSE is not shown (Figure 26.1). Expenditures for **general services** (GSSE), which focus largely on irrigation systems, were equivalent to 1.7% of agricultural value added in 2015-17, among the lowest across countries covered by this report, and down from 2.9% in 2000-02. **Total support to agriculture** as a share of GDP has declined significantly over time. The level of support increased significantly in 2017, as positive MPS for some commodities offset negative MPS for others. This increase in MPS resulted from a larger price gap, as domestic prices increased by more than world prices (Figure 26.2). On average during 2015-17, effective prices received by farmers (including output payments) were 2% higher 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 26.3).

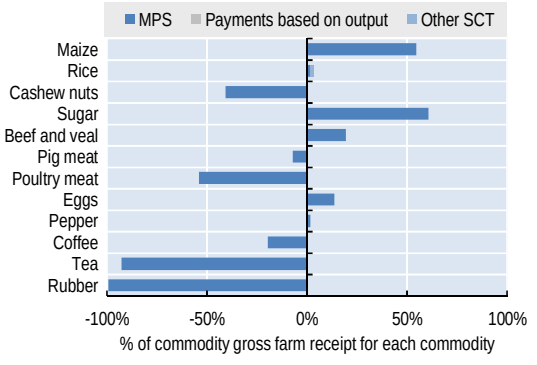
Figure 26.2. Viet Nam: Decomposition of change in PSE, 2016 to 2017



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933758167

Figure 26.3. Viet Nam: Transfer to specific commodities (SCT), 2015-17



Source: OECD (2018), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), http://dx.doi.org/10.1787/agr-pcse-data-en.

StatLink http://dx.doi.org/10.1787/888933758186

Table 26.1. Viet Nam: Estimates of support to agriculture

Million USD

	2000-02	2015-17	2015	2016	2017p
Total value of production (at farm gate)	**8 570**	**41 266**	**40 590**	**41 244**	**41 965**
of which: *share of MPS commodities (%)*	82.3	71.7	72.3	72.2	70.6
Total value of consumption (at farm gate)	**7 483**	**36 891**	**36 762**	**37 981**	**35 930**
Producer Support Estimate (PSE)	**518**	**-392**	**-1 229**	**-908**	**960**
Support based on commodity output	396	-855	-1 769	-1 340	545
Market Price Support[1]	396	-855	-1 769	-1 340	545
Payments based on output	0	0	0	0	0
Payments based on input use	101	251	324	220	208
Based on variable input use	101	250	324	220	207
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	212	216	212	208
Based on Receipts / Income	0	0	0	0	0
Based on Area planted / Animal numbers	0	212	216	212	208
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**	**-0.9**	**-3.0**	**-2.2**	**2.3**
Producer NPC (coeff.)	**1.07**	**1.02**	**0.98**	**0.99**	**1.03**
Producer NAC (coeff.)	**1.06**	**0.99**	**0.97**	**0.98**	**1.02**
General Services Support Estimate (GSSE)	**224**	**612**	**739**	**544**	**554**
Agricultural knowledge and innovation system	23	86	86	83	89
Inspection and control	4	3	3	3	3
Development and maintenance of infrastructure	190	475	607	410	408
Marketing and promotion	1	1	1	1	1
Cost of public stockholding	5	47	41	46	53
Miscellaneous	0	0	0	0	0
Percentage GSSE (% of TSE)	**30.4**	**263.9**	**..**	**..**	**36.6**
Consumer Support Estimate (CSE)	**-605**	**-2 932**	**-1 806**	**-2 989**	**-4 002**
Transfers to producers from consumers	-604	-1 637	-490	-1 117	-3 302
Other transfers from consumers	-22	-1 937	-2 014	-2 653	-1 142
Transfers to consumers from taxpayers	0	0	0	0	0
Excess feed cost	22	641	698	782	443
Percentage CSE (%)	**-8.0**	**-8.0**	**-4.9**	**-7.9**	**-11.1**
Consumer NPC (coeff.)	**1.09**	**1.11**	**1.07**	**1.11**	**1.14**
Consumer NAC (coeff.)	**1.09**	**1.09**	**1.05**	**1.09**	**1.13**
Total Support Estimate (TSE)	**742**	**220**	**-490**	**-364**	**1 515**
Transfers from consumers	626	3 573	2 505	3 771	4 445
Transfers from taxpayers	137	-1 417	-980	-1 482	-1 788
Budget revenues	-22	-1 937	-2 014	-2 653	-1 142
Percentage TSE (% of GDP)	**2.1**	**0.1**	**-0.3**	**-0.2**	**0.7**
GDP deflator (2000-02=100)	**100**	**244**	**364**	**368**	**..**
Exchange rate (national currency per USD)	**15 000.33**	**22 332.84**	**21 917.73**	**22 365.42**	**22 715.36**

.. 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 (2018), "Producer and Consumer Support Estimates", *OECD Agriculture statistics* (database). doi: dx.doi.org/10.1787/agr-pcse-data-en

StatLink http://dx.doi.org/10.1787/888933758794

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

The OECD is a unique forum where governments work together to address the economic, social and environmental challenges of globalisation. The OECD is also at the forefront of efforts to understand and to help governments respond to new developments and concerns, such as corporate governance, the information economy and the challenges of an ageing population. The Organisation provides a setting where governments can compare policy experiences, seek answers to common problems, identify good practice and work to co-ordinate domestic and international policies.

The OECD member countries are: Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The European Union takes part in the work of the OECD.

OECD Publishing disseminates widely the results of the Organisation's statistics gathering and research on economic, social and environmental issues, as well as the conventions, guidelines and standards agreed by its members.

OECD PUBLISHING, 2, rue André-Pascal, 75775 PARIS CEDEX 16
(51 2018 06 1 P) ISBN 978-92-64-30234-1 – 2018

Agricultural Policy Monitoring and Evaluation 2018

This report is the 31st in the series of OECD reports that monitor and evaluate agricultural policies across countries, and the 6th report to include all 35 OECD countries, the 6 non-OECD EU Member States and a set of emerging economies: Brazil, the People's Republic of China, Colombia, Costa Rica, Kazakhstan, the Philippines, the Russian Federation, South Africa, Ukraine and Viet Nam. This annual report is a unique source of up-to-date estimates of support to agriculture and uses a comprehensive system of measuring and classifying support to agriculture – the Producer and Consumer Support Estimates (PSEs and CSEs), the General Services Support Estimate (GSSE) and related indicators. These estimates provide insight into the increasingly complex nature of agricultural policy and serve as a basis for OECD's agricultural policy monitoring and evaluation. Detailed data and documentation for the calculation of support are available on line www.oecd.org/agriculture/PSE.

Comprehensive country chapters and the Statistical Annex containing detailed background tables with indicators of agricultural support are available in electronic form at the publication website http://dx.doi.org/10.1787/agr_pol-2018-en.

OECD*publishing*
www.oecd.org/publishing

ISBN 978-92-64-30234-1
51 2018 06 1 P