

Environmental effects of agricultural support policies

Insights from OECD work

Guillaume Gruère

OECD Trade and Agriculture Directorate



Outline of the presentation

1. OECD measurement of agricultural support
2. Effects of agricultural support on the environment
3. Reforms options and trends



1. OECD measurement of agricultural support



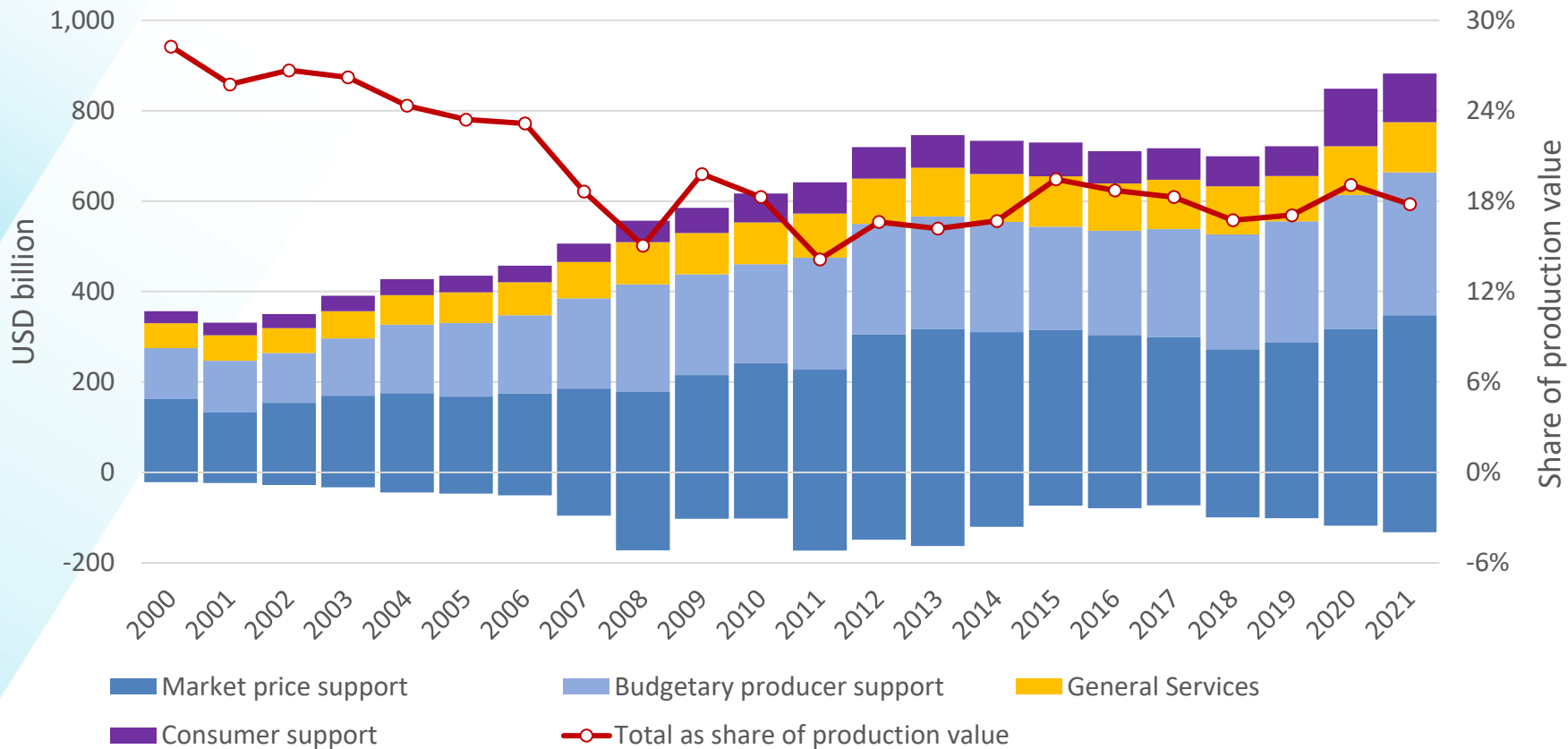
- ▶ **Annual report monitoring support policies in 54 countries** (OECD + EU27 +11 emerging economies)
 - ▶ agricultural policy changes
 - ▶ monetary transfers to the agricultural sector (PSE / CSE)
 - ▶ Annual thematic focus
- ▶ **Edition 2022: Focus on climate change mitigation**
 - ▶ Analysis of climate policies across the 54 countries covered
 - ▶ Assessment of reform needs for climate change mitigation in agriculture

Report and data available at oe.cd/monitoring



Findings: global support to agriculture is increasing

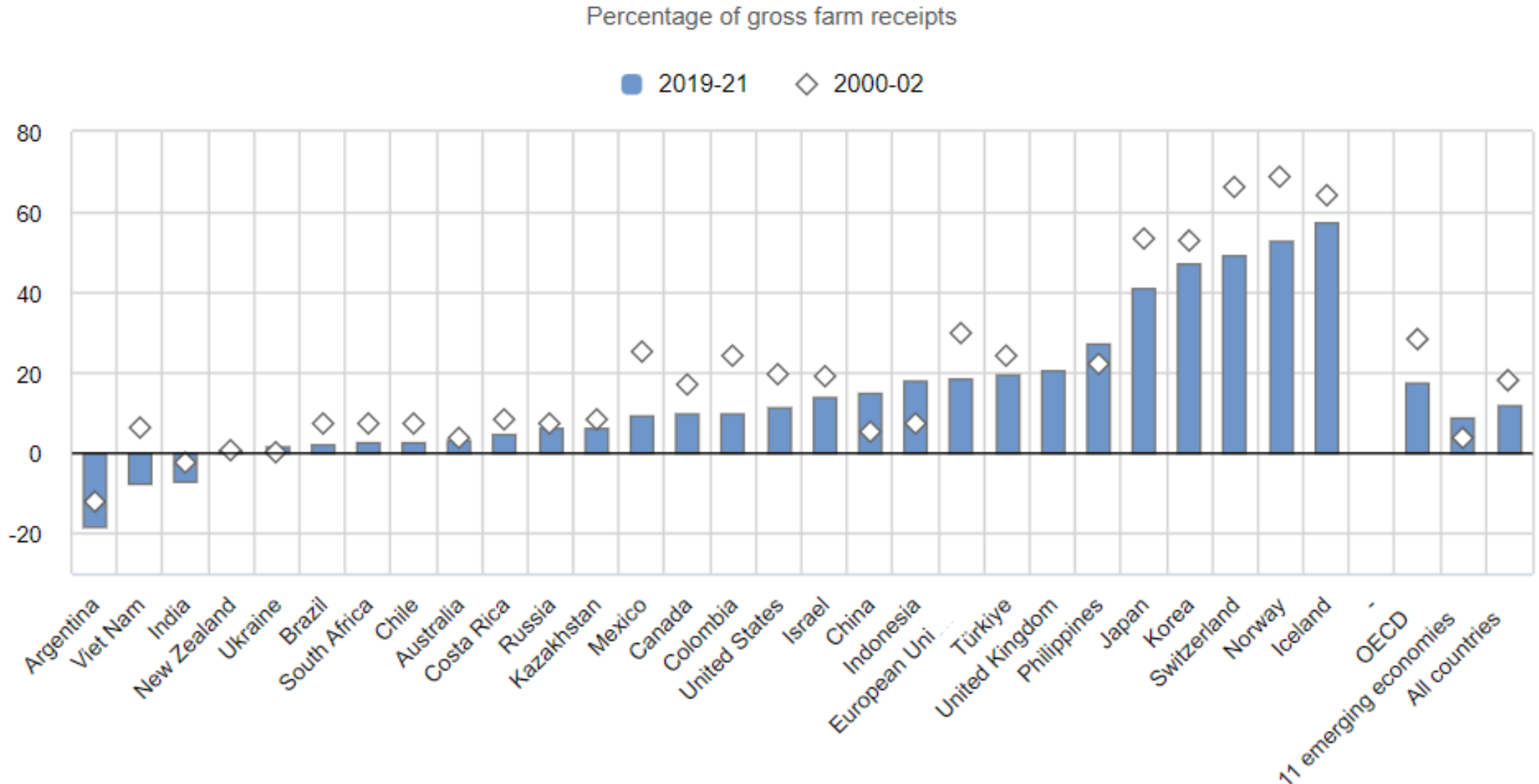
Total support to agriculture: All 54 Countries



- ▶ USD 817 billion per year in 2019-2021
- ▶ Producer support increased until 2021 (USD 611 billion)
- ▶ Increase in consumer support due to crises (USD 100 billion)
- ▶ Support to general services stable (USD 106 billion)
- ▶ Share of OECD countries decreased



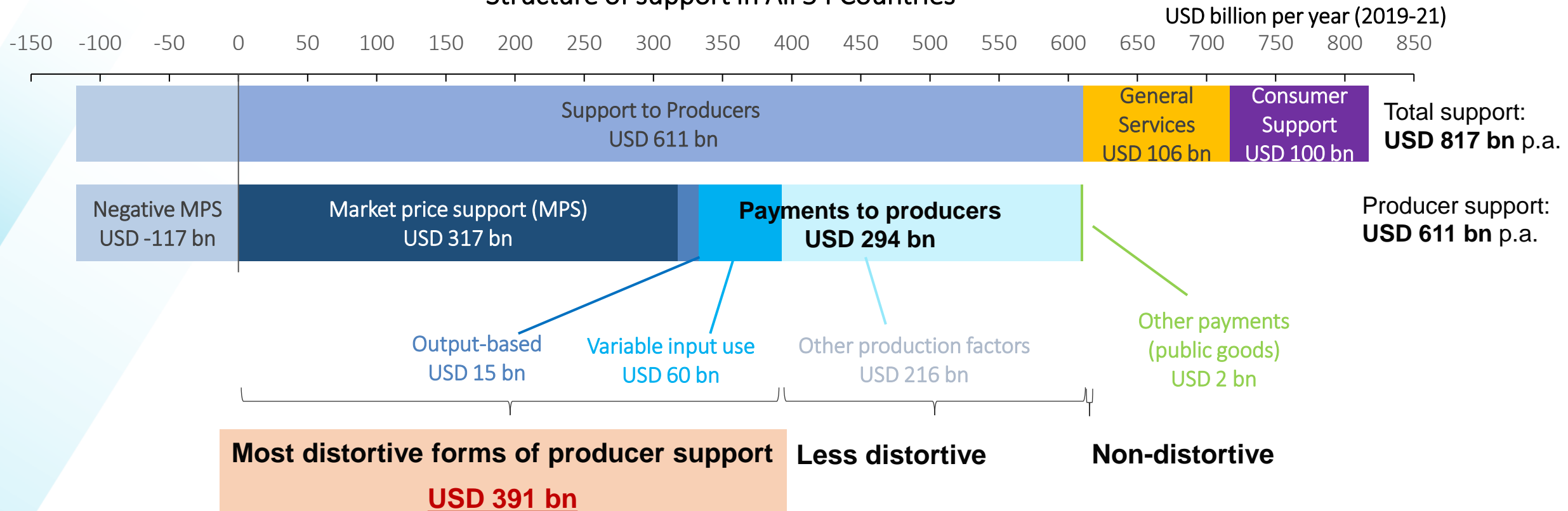
Producer Support Estimate (PSE): in some countries, between 40% and 60% of gross farm receipts are policy-induced





Most agricultural support is provided to individual producers, through market-distortive means

Structure of support in All 54 Countries



2. Effects of agricultural support on the environment

(a) By support categories

OECD publishing

Please cite this paper as:

Henderson, B. and J. Lankoski (2019-05-13), "Evaluating the environmental impact of agricultural policies", *OECD Food, Agriculture and Fisheries Papers*, No. 130, OECD Publishing, Paris.
<http://dx.doi.org/10.1787/add0f27c-en>

OECD Food, Agriculture and Fisheries Papers No. 130

Evaluating the environmental impact of agricultural policies

Ben Henderson
Jussi Lankoski

OECD publishing

Please cite this paper as:

DeBoe, G. (2020-02-05), "Impacts of agricultural policies on productivity and sustainability performance in agriculture: A literature review", *OECD Food, Agriculture and Fisheries Papers*, No. 141, OECD Publishing, Paris.
<http://dx.doi.org/10.1787/6bc916e7-en>

OECD Food, Agriculture and Fisheries Papers No. 141

Impacts of agricultural policies on productivity and sustainability performance in agriculture: A literature review

Gwendolen DeBoe

OECD publishing

Please cite this paper as:

DeBoe, G. (2020-02-04), "Economic and environmental sustainability performance of environmental policies in agriculture", *OECD Food, Agriculture and Fisheries Papers*, No. 140, OECD Publishing, Paris.
<http://dx.doi.org/10.1787/3d459f91-en>

OECD Food, Agriculture and Fisheries Papers No. 140

Economic and environmental sustainability performance of environmental policies in agriculture

Gwendolen DeBoe

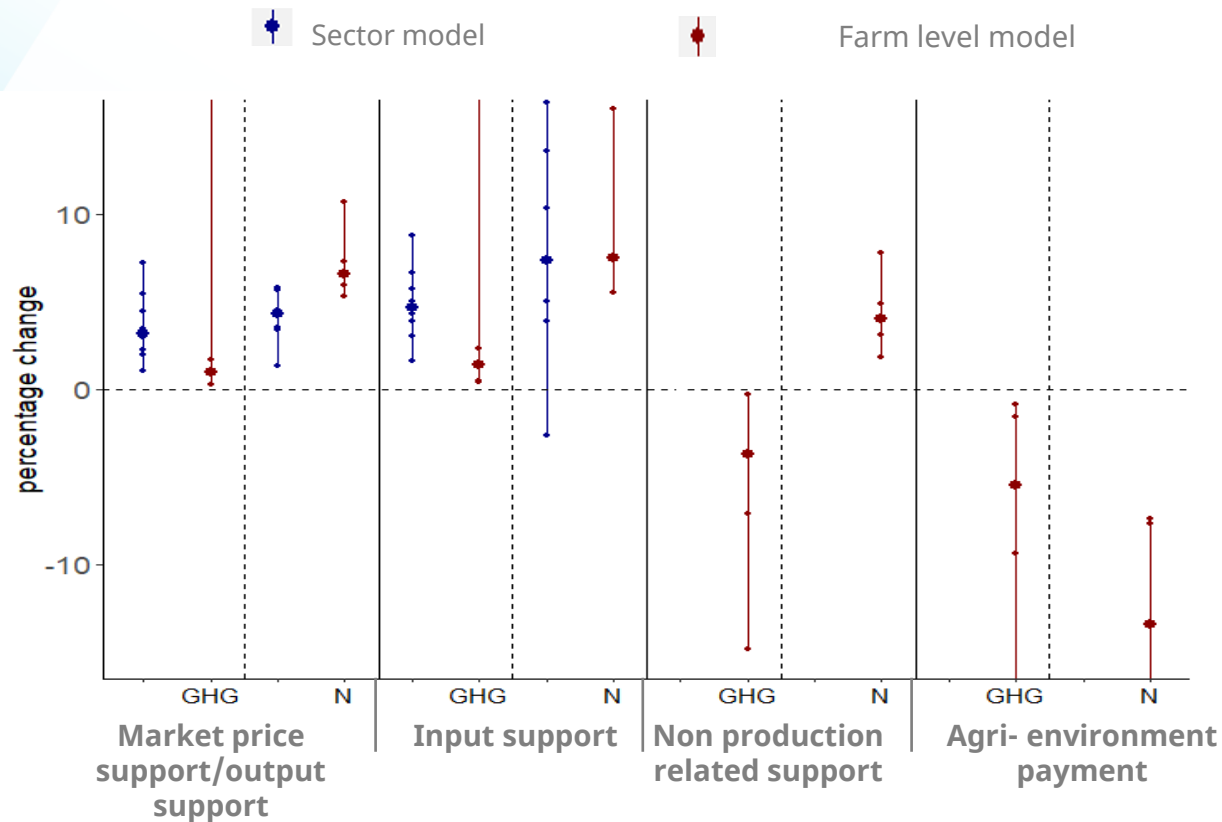
Comprehensive literature reviews, farm & sector level analyses in different countries find that:

- Agriculture support measures that are **most distorting to markets** are also **potentially most harmful to the environment**.
- These categories of measures are:
 - market price support,
 - output subsidies
 - variable input subsidies without constraints
- The effect of some other categories of support varies by measure and context
- The cost-effectiveness of agri-environmental payments varies depending on design options



Example: effects of specific categories of support on GHG emissions and nitrogen balance based on farm level and sector model simulations

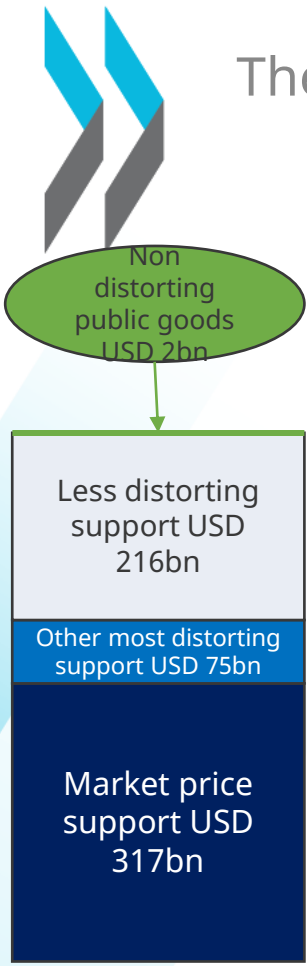
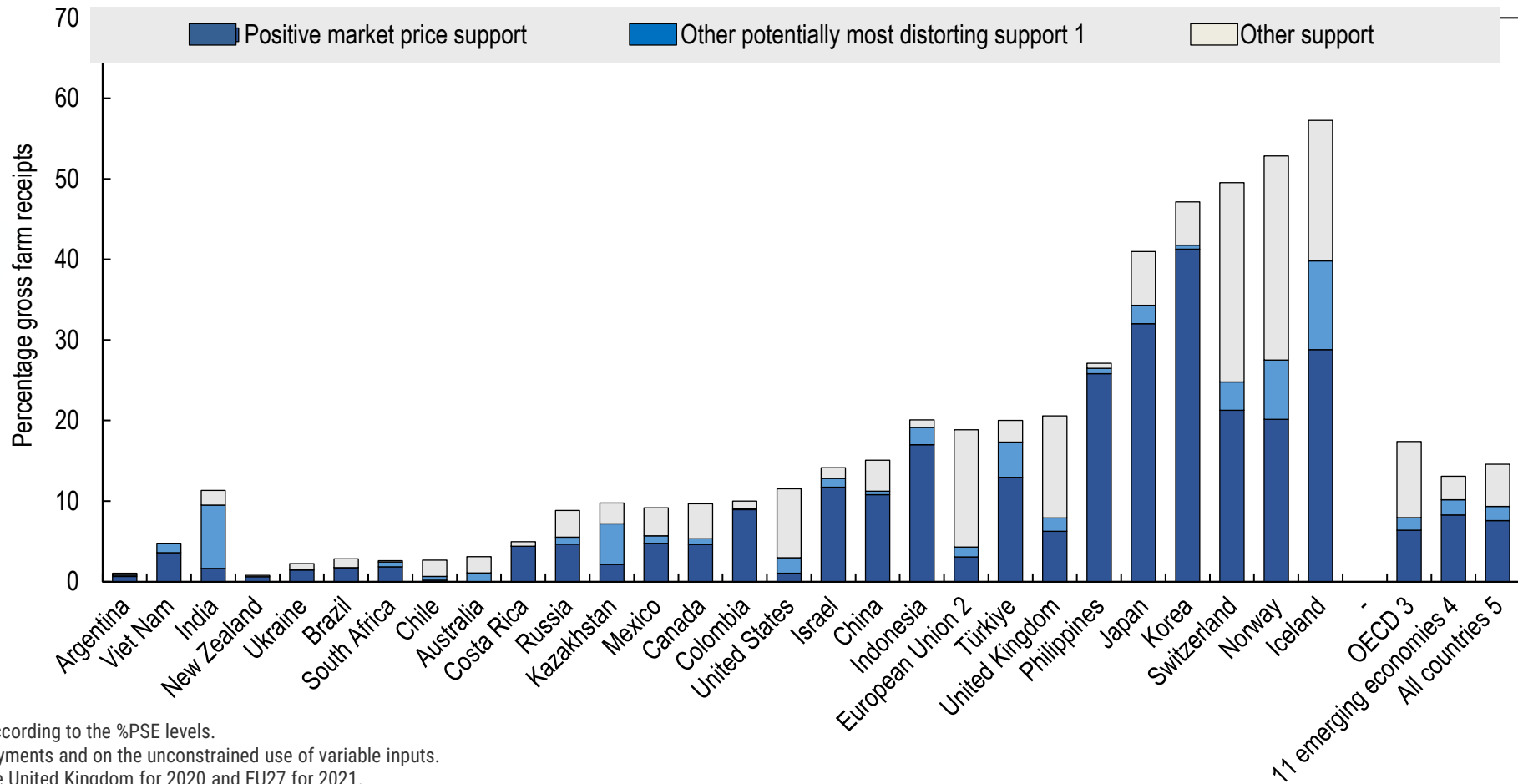
% Change in environmental impacts (GHG, N balance) associated with an increase in agricultural support by 10%



- Most distorting support policies encourage production or input use or prevent changes in cropping or practices.
- The effects of other support policies vary by measure and context
- Providing agri-environmental payments can be effective especially if spatially targeted and tailored and based on environmental performance

The share of potentially most environmentally harmful support varies by country

Proportion of positive most distorting support and other support by country, in percentage of gross farm receipts, 2019-21



Notes: Countries are ranked according to the %PSE levels.

1. Support based on output payments and on the unconstrained use of variable inputs.

2. EU28 for 2019, EU27 and the United Kingdom for 2020 and EU27 for 2021.

3. The OECD total does not include the non-OECD EU Member States.

4. The 11 emerging economies include Argentina, Brazil, China, India, Indonesia, Kazakhstan, the Philippines, Russian Federation, South Africa, Ukraine and Viet Nam.

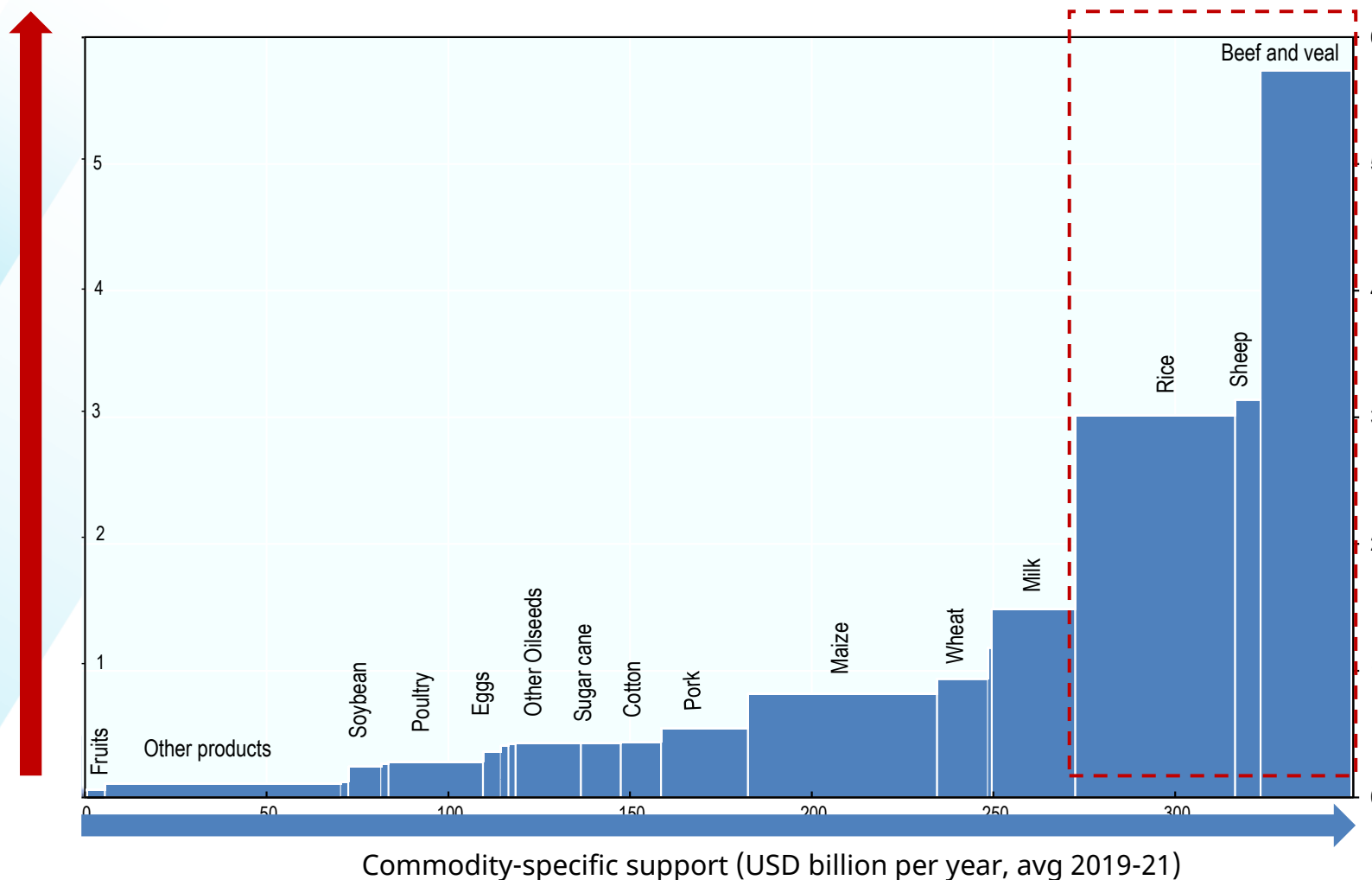
5. The All countries total includes all OECD countries, non-OECD EU Member States, and the emerging economies.

Source: OECD (2022), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), <https://doi.org/10.1787/agr-pcse-data-en>.



(B) Environmental effects by product specific support: the case of GHG emissions

Emission intensity (kg CO₂/USD)



USD 361 billion per year in transfers to specific commodities, driving higher domestic GHG emissions

USD 76 billion of commodity-specific support across all countries for beef and veal (USD 25 bn), sheep and goat meat (USD 7 bn), and rice (USD 44 bn), all having high emission intensities

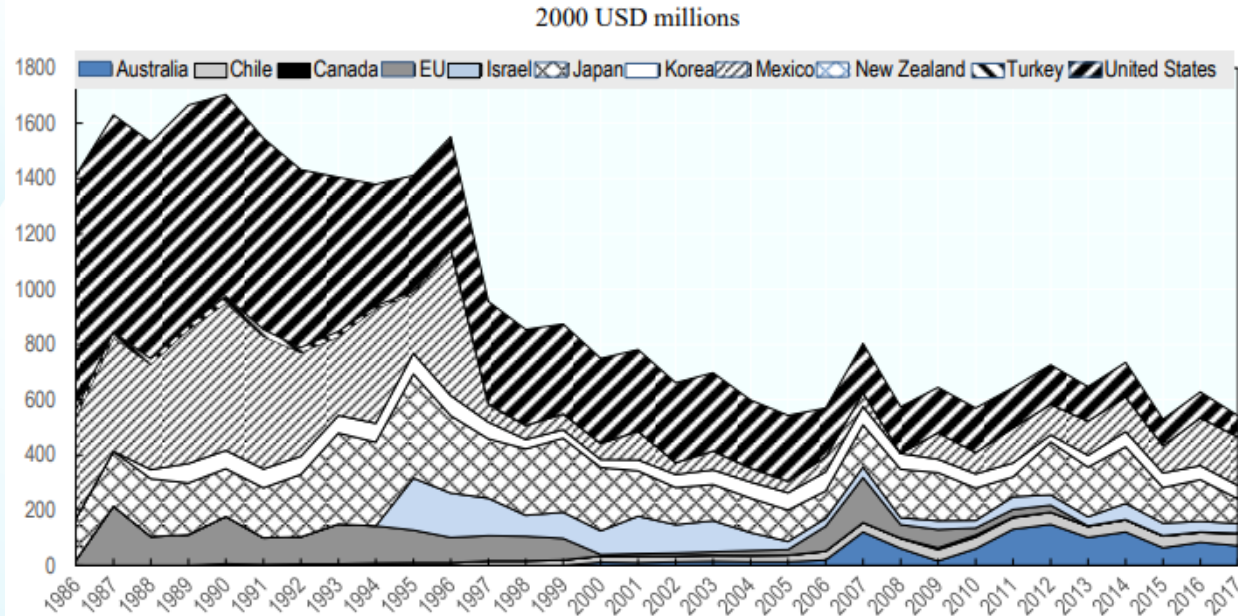
From a climate perspective, this corresponds to a transfer equivalent of USD 22, USD 31 and USD 115 per tCO₂eq



3. Reforming options and trends

(A) Reducing potentially most environmentally harmful support

Figure 8. Irrigation support has been declining in OECD countries (1986-2017)



Note: Water pricing subsidies are not accounted for if not declared in the PSE database.

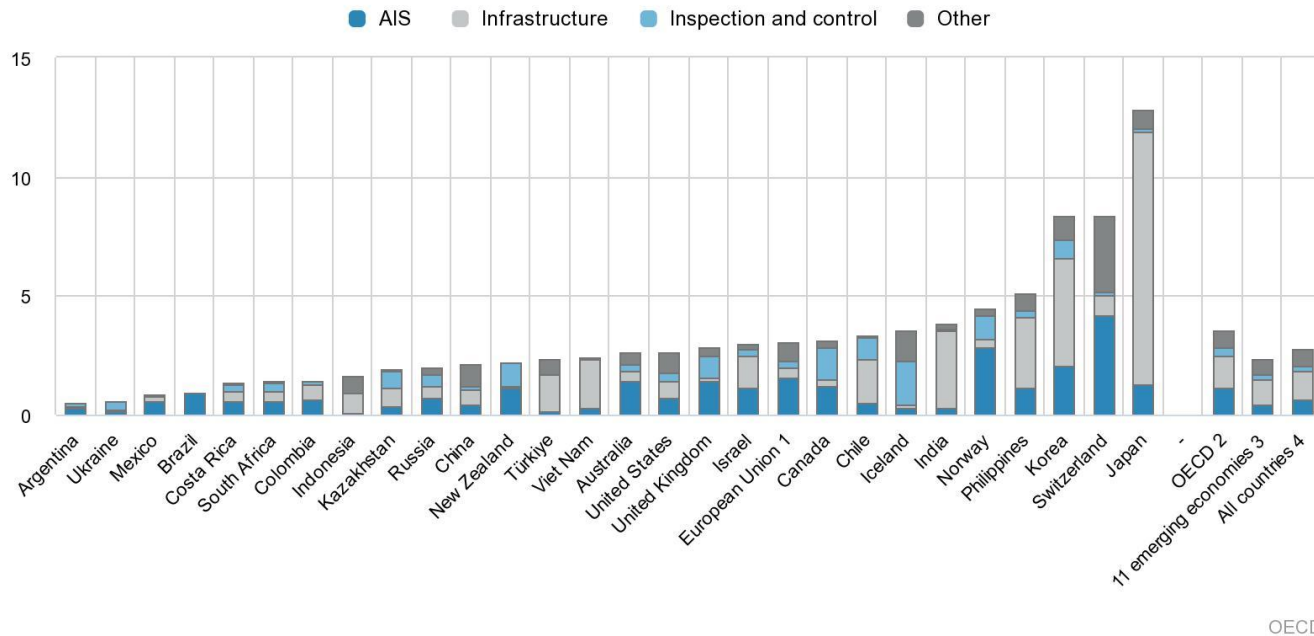
Source: Derived from OECD (2018_[90]), irrigation-related PSE transfers in the category of input payments (PI).

- Three main policy reform options: (1) the elimination; (2) the gradual reduction; or (3) the decoupling of subsidies from production
- Duration and compensation can matter for environmentally harmful reform success and irreversibility (among other)
- Effective environmental regulations may be needed to prevent possible land use change in the case of multi-country border measure reforms



(B) Redirecting or introducing subsidies to improve agriculture's environmental performance

Figure 2.16. Composition of General Services Support Estimate, 2019-21
Percentage of agricultural value of production

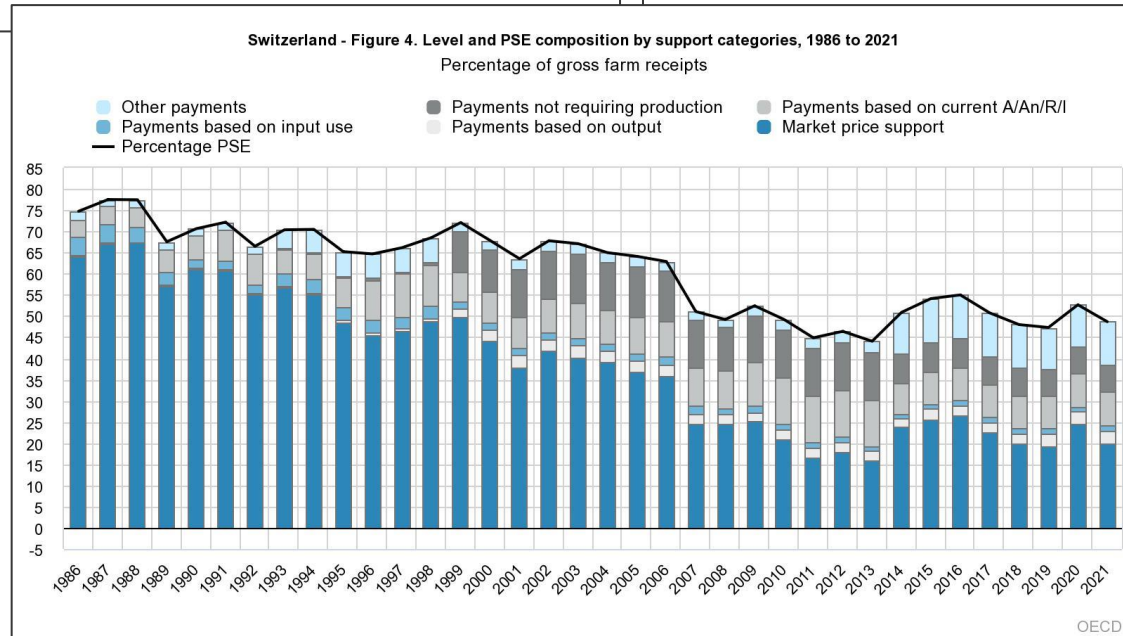
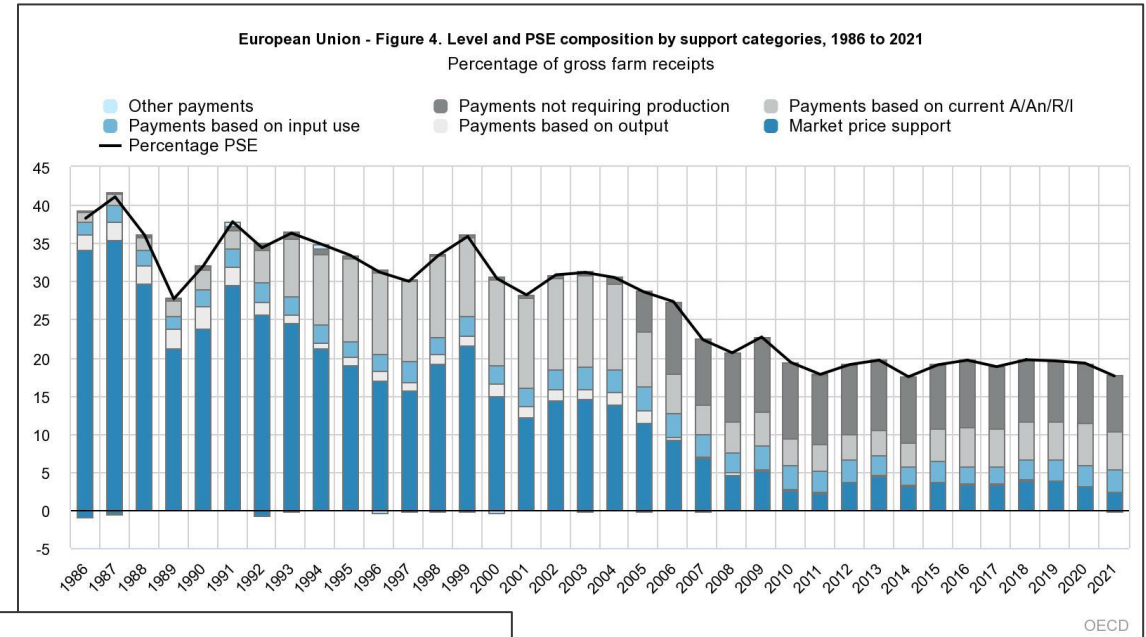
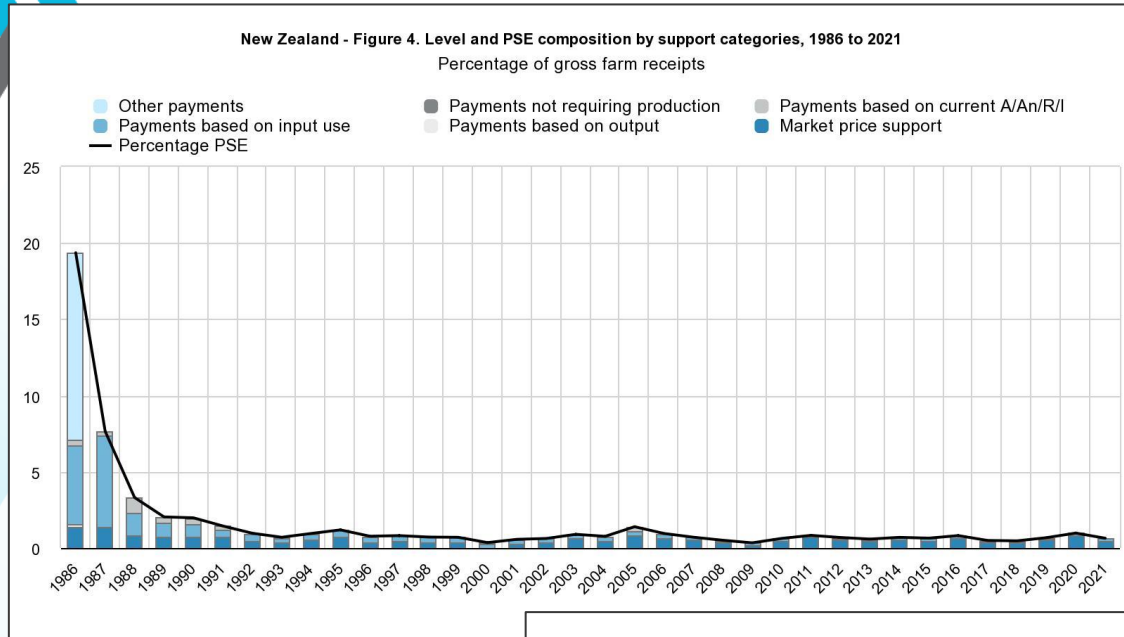


- Targeted and well designed **agri-environmental payments** that reward public goods (forthcoming publication on GHG emissions)
- Invest in **general service** that can enable better functioning of the sector and accelerate efforts towards sustainable agricultural productivity growth.

FAO-OECD Outlook (2022):

- Average agricultural productivity must increase by 28% from 2022 to 2031 for the world to meet SDG2, while simultaneously keeping agricultural emissions on track to reach the Paris Agreement targets.
- This is more than triple the increase in productivity recorded in the last decade.

Gradual evolution of agricultural policies shows different reform patterns: 3 examples

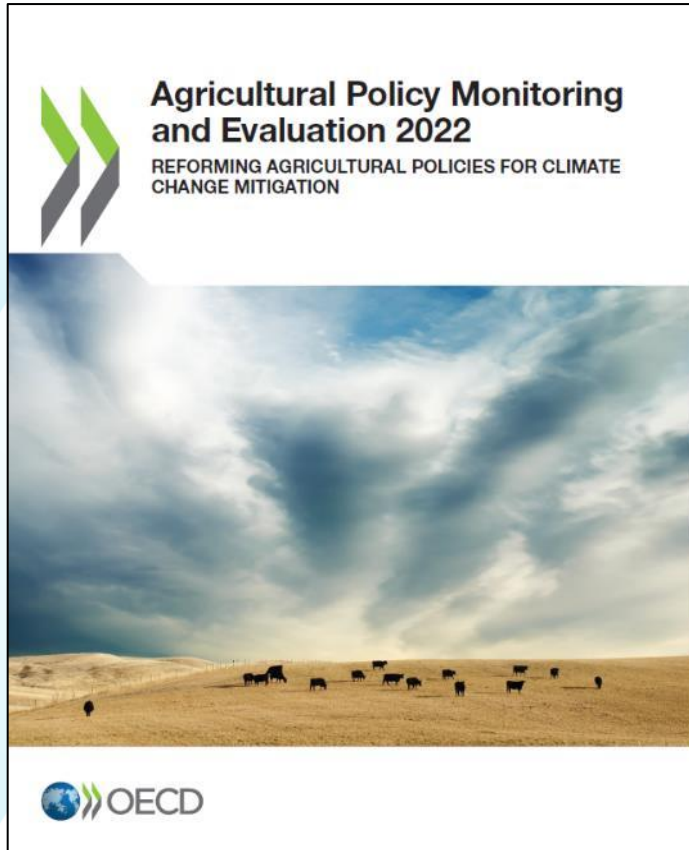


OECD

OECD



Read the OECD Agricultural Policy Monitoring and Evaluation 2022 report on our website and get in touch



oe.cd/monitoring



tad.contact@oecd.org



[@OECDagriculture](https://twitter.com/OECDagriculture)

Stay tuned: the next edition of the OECD Agricultural Policy Monitoring and Evaluation, focusing on climate-change adaptation, will be launched on **30 October 2023!**

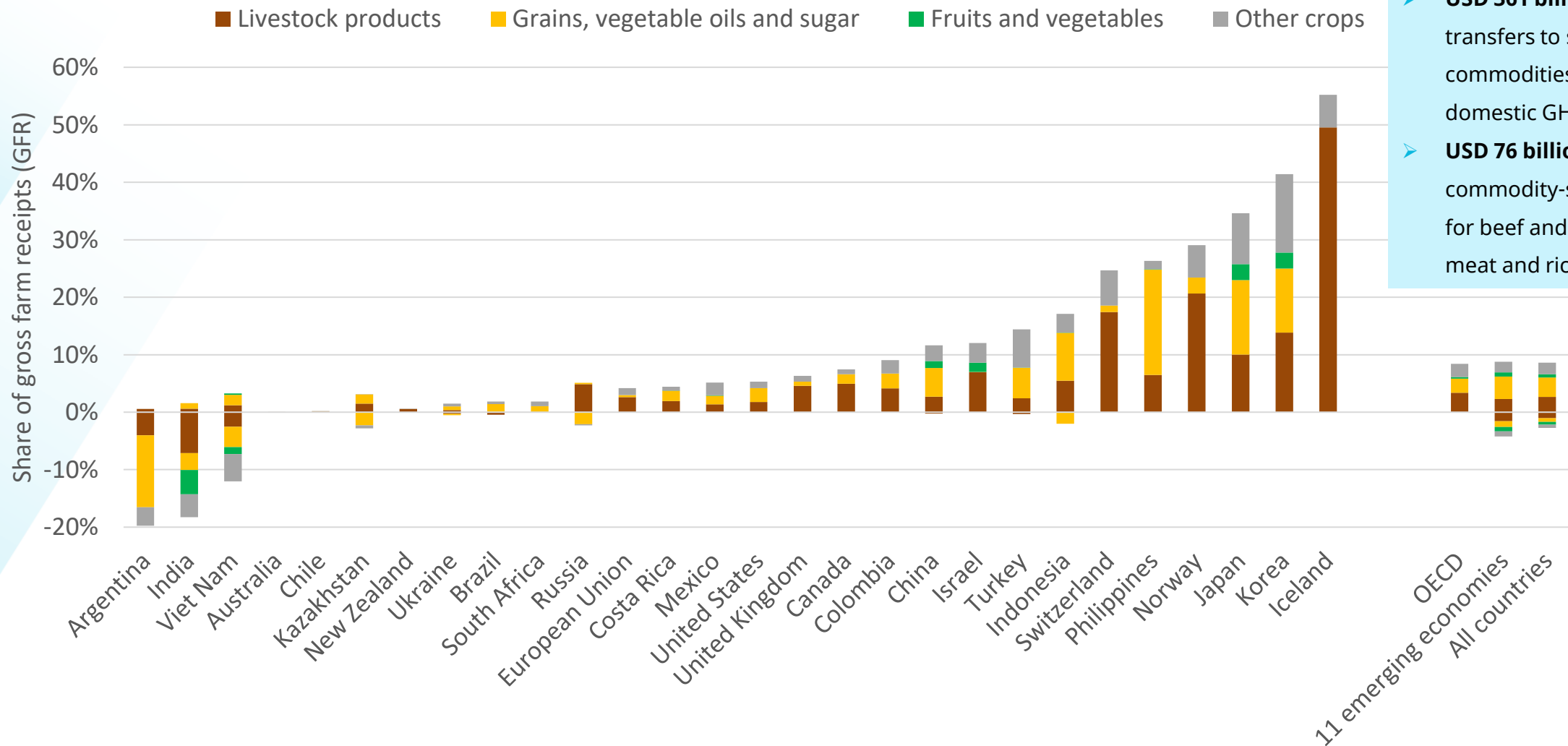


Additional slides (1)

Additional figures from the PSE database 2022



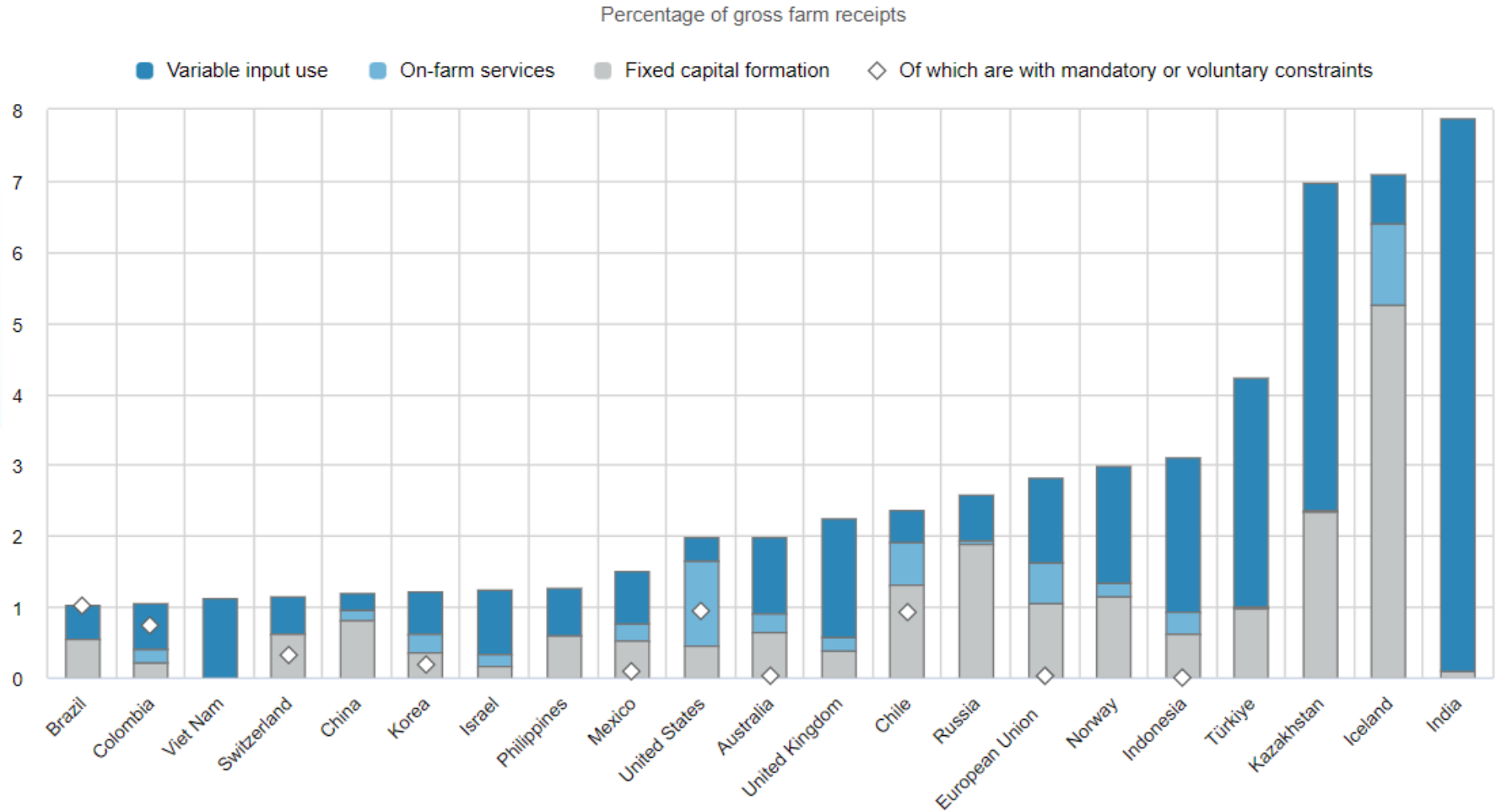
Current policies provide significant support to commodities with high emissions intensities



- **USD 361 billion per year** in transfers to specific commodities, driving higher domestic GHG emissions
- **USD 76 billion per year** of commodity-specific support for beef and veal, sheep meat and rice production



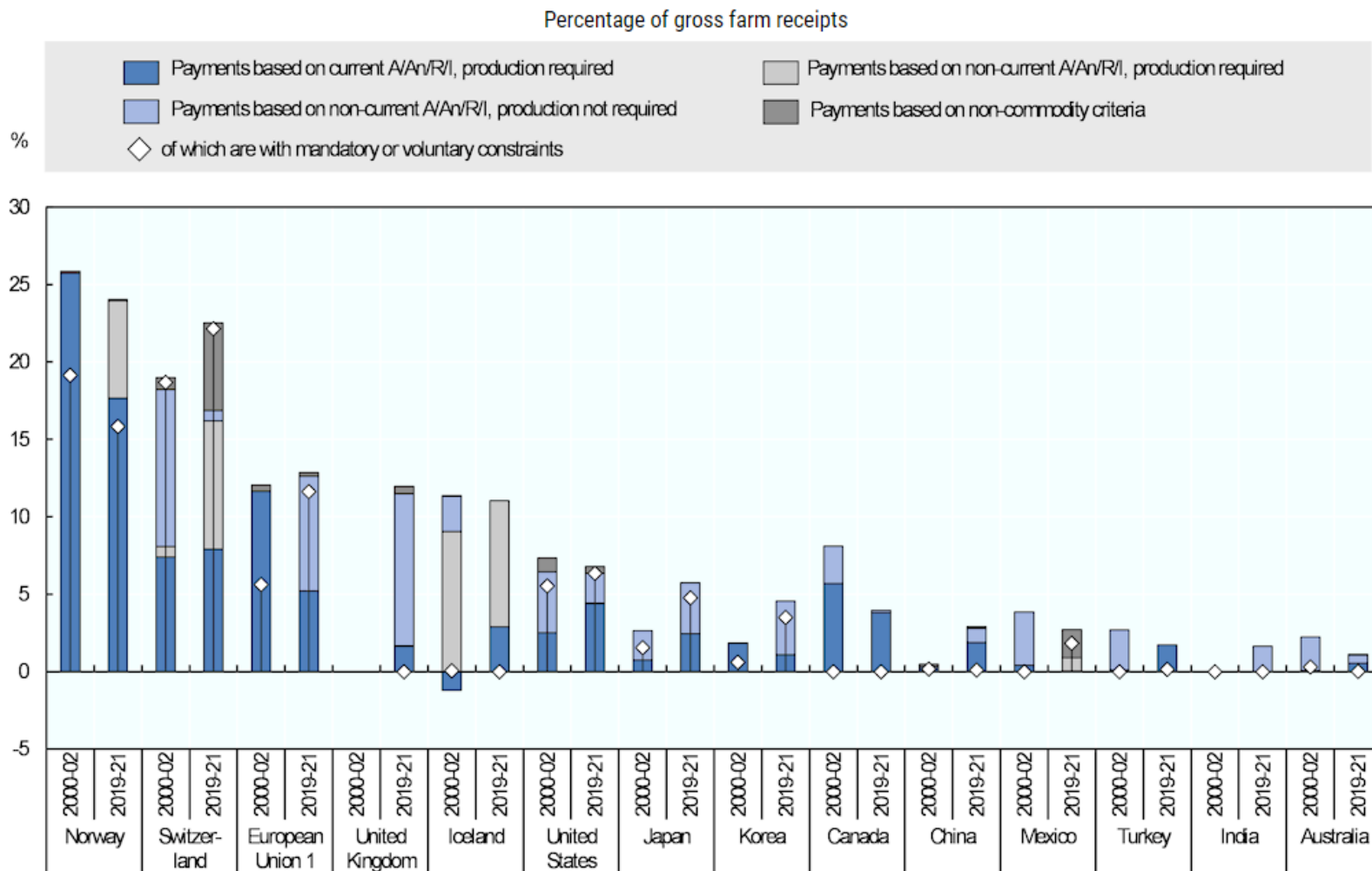
Support for variable inputs without constraints amounts to USD 58 billion per year





Changes in support less coupled to production

Figure 2.14. Use and composition of support that is less coupled to production, selected countries, 2000-02 and 2019-21



Notes: Figure presents countries having share of payments based on area, animal numbers, farm receipts or farm income and on non-commodity criteria above 1% for 2019-21 period. Countries are ranked according to the total share of payments for 2019-21.

1. EU15 for 2000-02, EU28 for 2019, EU27 and the United Kingdom for 2020 and EU27 for 2021.

Source: OECD (2022), "Producer and Consumer Support Estimates", OECD Agriculture statistics (database), <https://doi.org/10.1787/agr-pcse-data-en>.











Additional slides (2)

Key findings from two studies on reforming agriculture and water policies (2018-2019)

- Lessons from past reforms
- Pathways to reforms



A “deep dive” into selected reforms in OECD countries

Country	Reform	Primary area of action	
		Water quantity	Water quality
	Murray-Darling Basin reforms	X	
	Water Framework Directive	X	X
	Nitrates Directive		X
	Water pricing in agriculture	X	
	Manure management program		X
	Catchment schemes		X
	Conservation Reserve Program		X
	Regional Conservation Partnership Program	X	

Additional reforms discussed : water right reforms (Chile), water quality trading (New Zealand), water pollution policies (Denmark), groundwater regulation (California), storage and irrigation investments (Turkey and Chile)



Lessons from past reforms on agriculture and water:

several factors positively influence the adoption of water and agricultural reforms

	Political factors	Economic Factors	Environmental factors	Path dependency factors	Design of reform
Contextual (exogenous) factors	-Mounting public pressure - Opportunistic political window on environmental policies -Environmental oriented government majorities	-Stable macro-economic situation	- Environmental pressures: major droughts, Aquifer and lake depletion, eutrophication, erosion, odour - Impact and costs of pollution	- Past programmes to build on* - Framing regulations* -Funding from existing policy programmes* -Flexibility of governance systems*	
Controlled (endogenous) factors	-Reforms included in the electoral platform of incoming government - Coalition of the willing			- Past programmes to build on* - Framing regulations* -Funding from existing policy programmes* -Flexibility of governance systems* -Regular adjustment of policies - Evaluations of past policies	- Awareness of stakeholders, , participation of stakeholders in discussion. -Review mechanisms or adaptive management -Engaging with trusted 3 rd party - Long time for reform development -Promised increased water security; - Transition payments - Paying farmers - Voluntary programmes

Notes: Bold font highlights some of the factors that are prevalent among most review reforms,* Denotes factors that may be controllable or exogenous depending on the context



Navigating pathways to reform water policies in agriculture

- Study developed a theory of change, and applied to selected water and agriculture policy instruments
- Analysis based on wide review of literature, and consultation with policy and economic experts→ **Two international workshops**

OECD-European Commission (DG AGRI) workshop
Pathways to policy change on water in agriculture



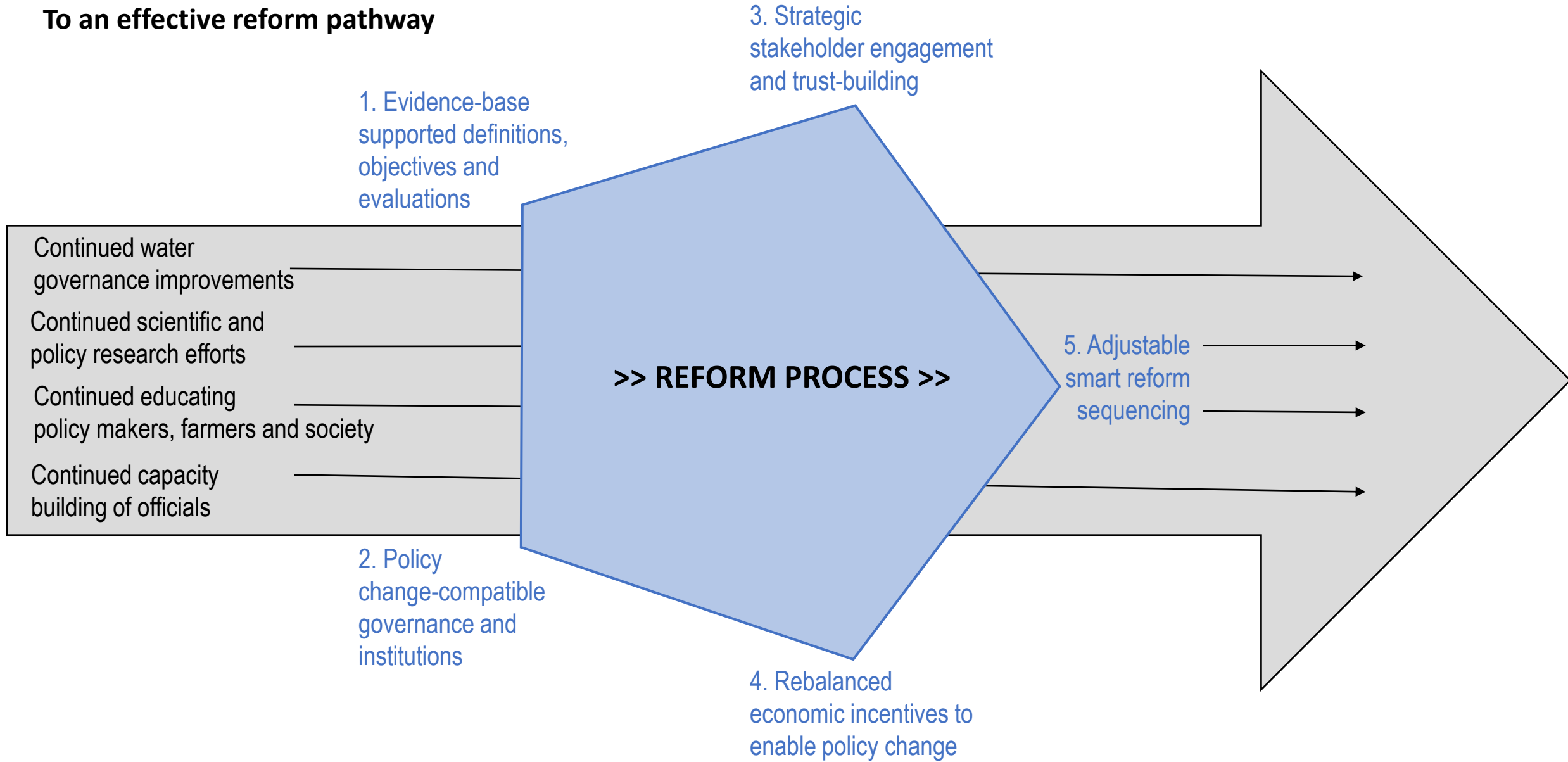
Brussels, February 20-21 2018

OECD & World Bank (Global Water Practice) workshop
Facilitating policy change towards sustainable water use in agriculture



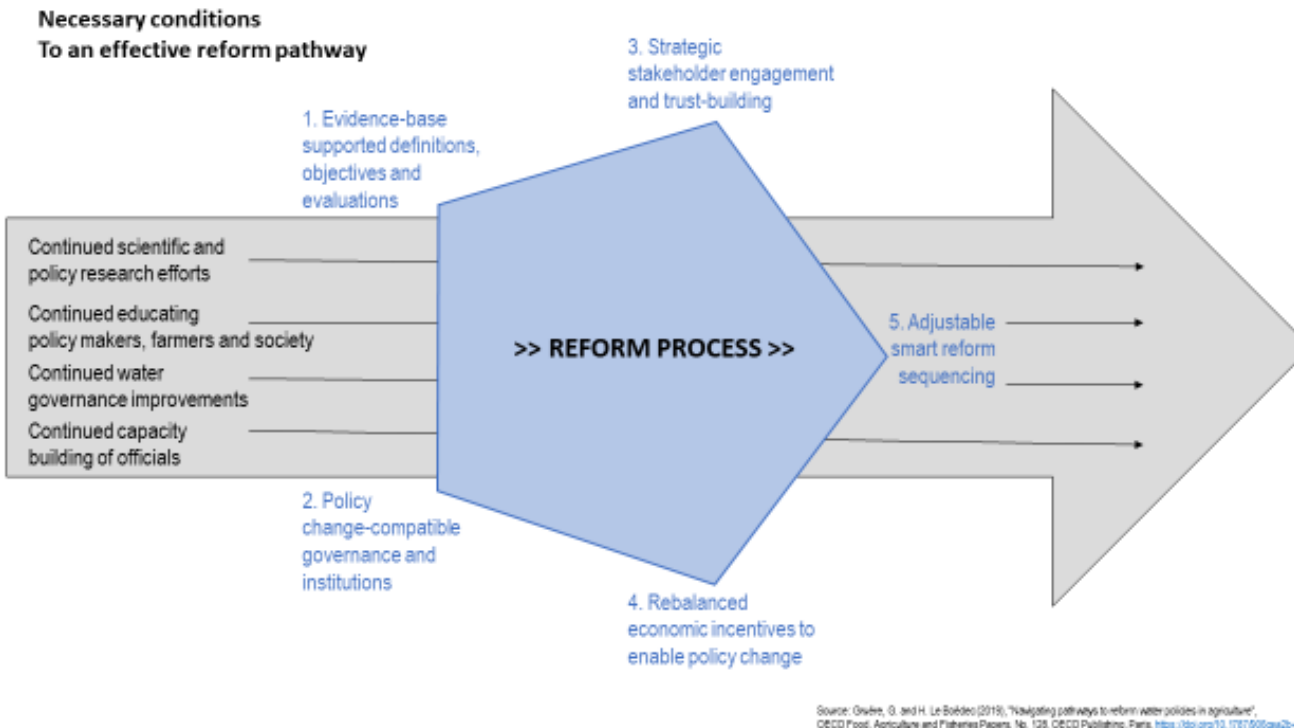
Washington DC, May 29-30 2018

Necessary conditions To an effective reform pathway





Application to the case of removing subsidies that negatively impact water resources



Applying the 5 reform conditions to the removal of subsidies that negatively impact water resources	
Evidence-base supported definitions, objectives and evaluations	Running a diagnostic, experimenting scenarios
Policy change-compatible governance and institutions	Revisiting the legal framework, addressing governance failures
Strategic stakeholder engagement and trust-building	Dialogue on options, building trust to overcome resistance
Rebalanced economic incentives to enable policy change	Considering transitory compensation under the decoupling option
Adjustable smart reform sequencing	Running pilots and experiments Adapting pace of compensations