



World Agricultural Outlook, Risks, and Challenges for the Coming 10 years

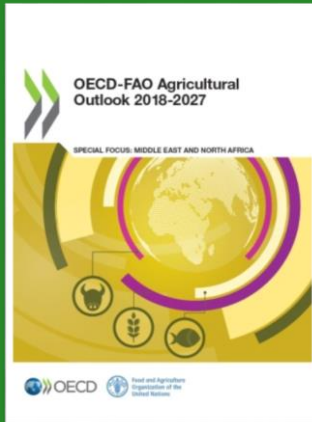
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PRIMAFF Open Seminar
11 December 2018, Tokyo, Japan

Outline of the presentation

Part 1: OECD-FAO Agricultural Outlook

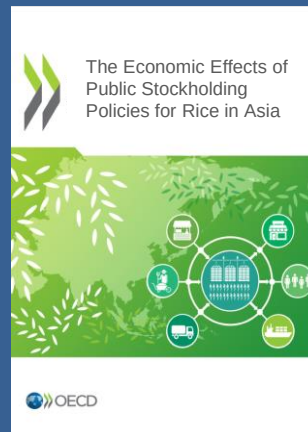


- Prices
- Consumption
- Production
- Trade
- Risks and uncertainties



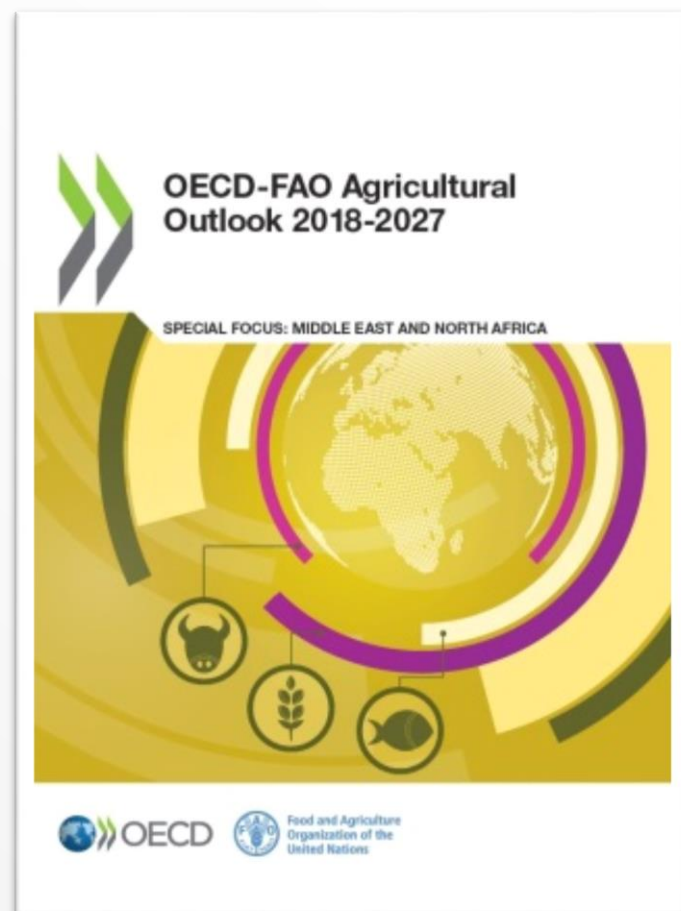
How examine the impacts of these uncertainties?

Part 2: The economic effects of public stockholding policies for rice in Asia



Part 1: OECD-FAO Agricultural Outlook

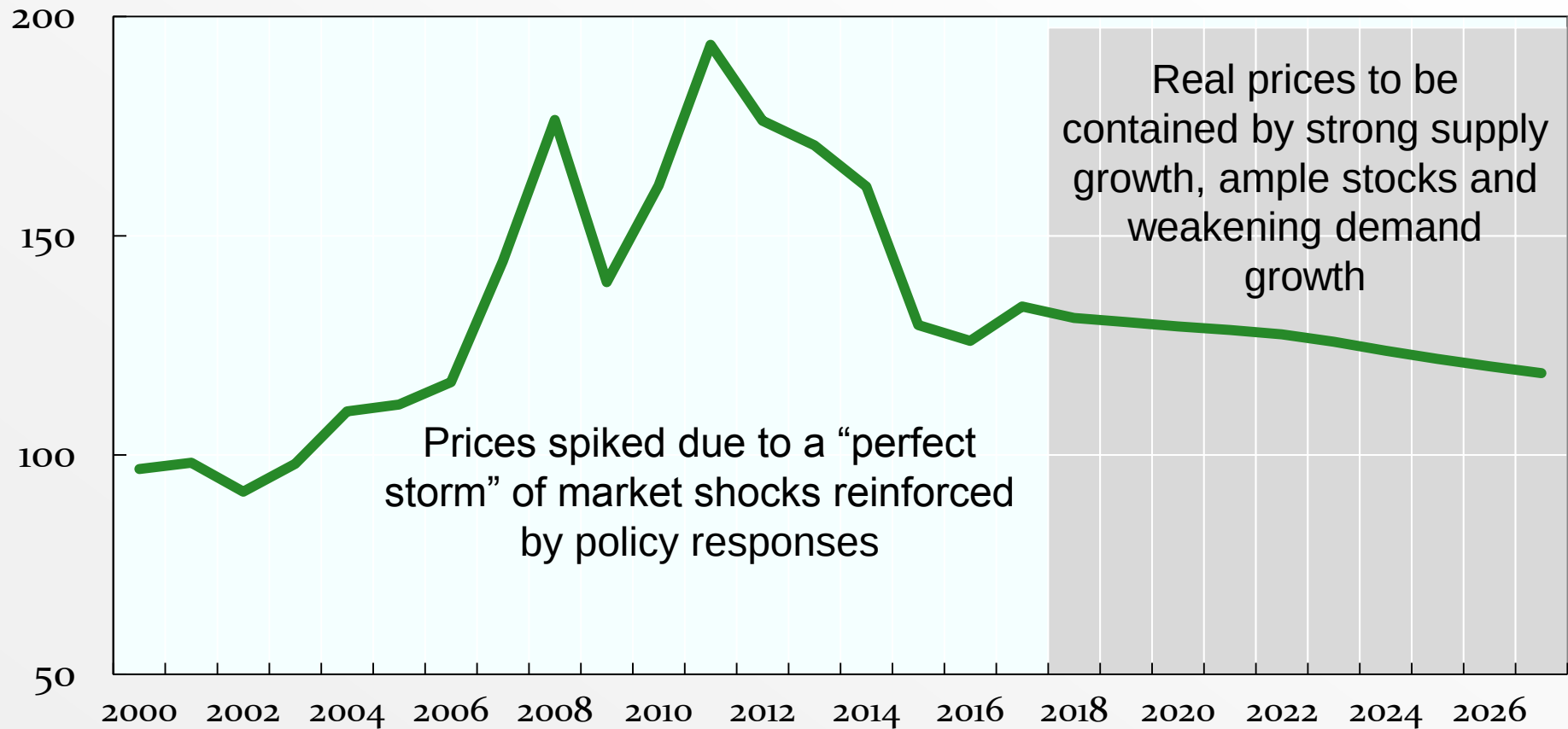
- Joint OECD-FAO report published annually in June/July
- 10 year horizon
- Model based projection validated through global expert consensus
- Major commodities
- Global coverage
- Special theme chapter 2018: Middle East and North Africa



The food price crisis, ten years later...

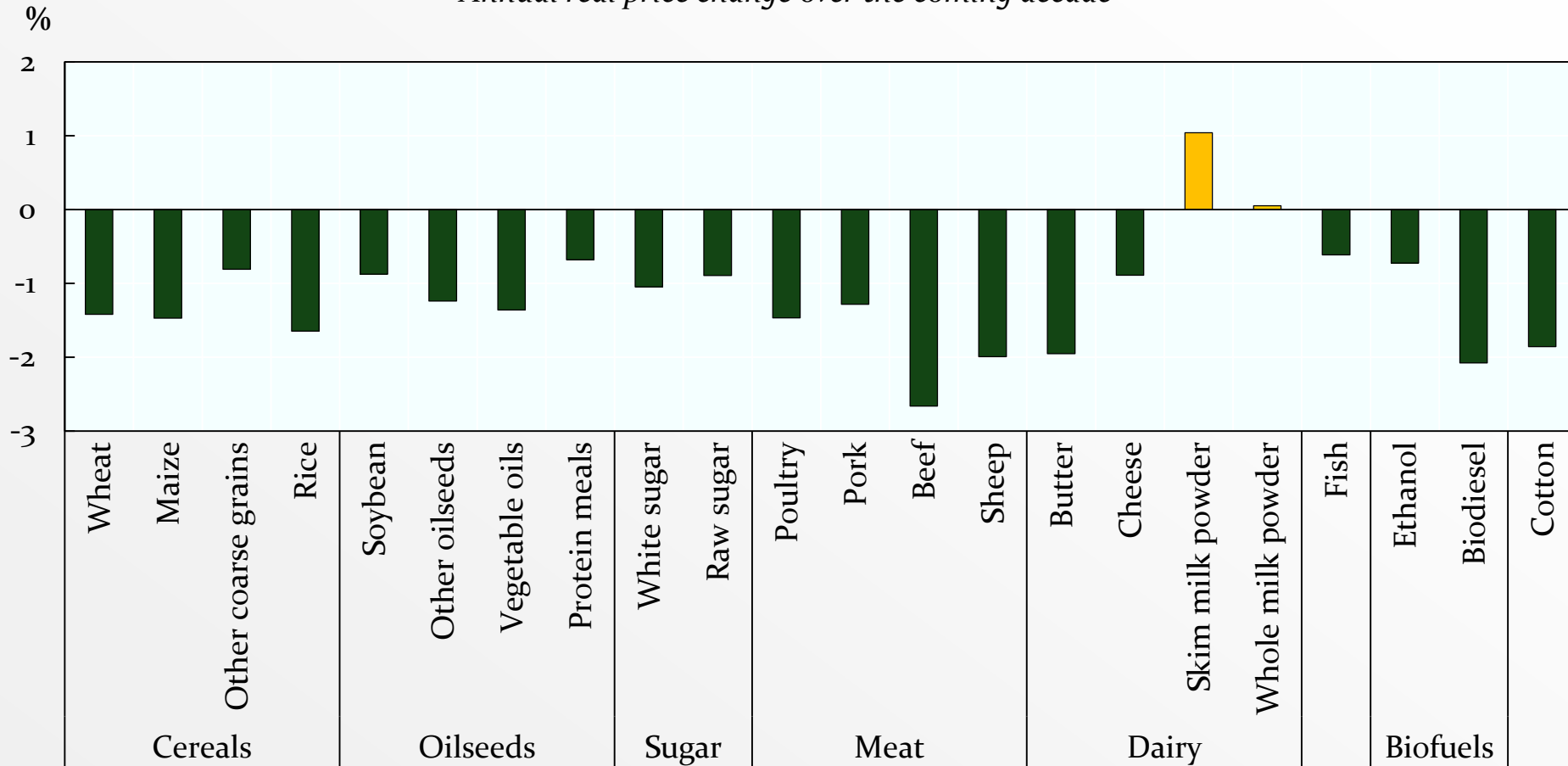
—FAO Food Price Index (real)

Index 2002-04 = 100



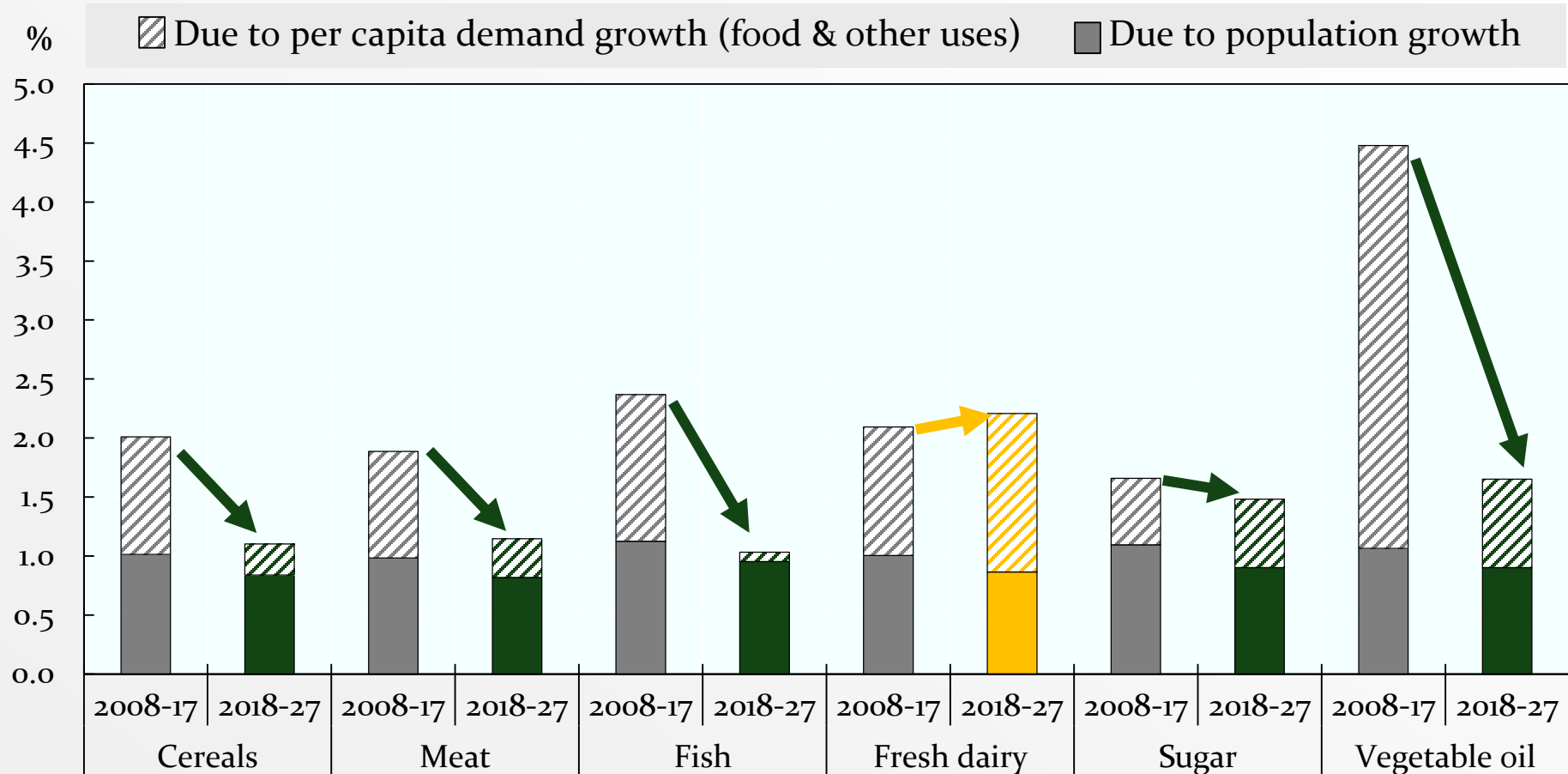
Declining real prices are expected for almost all commodities

Annual real price change over the coming decade



Growth in demand for agricultural commodities slows down – except for dairy

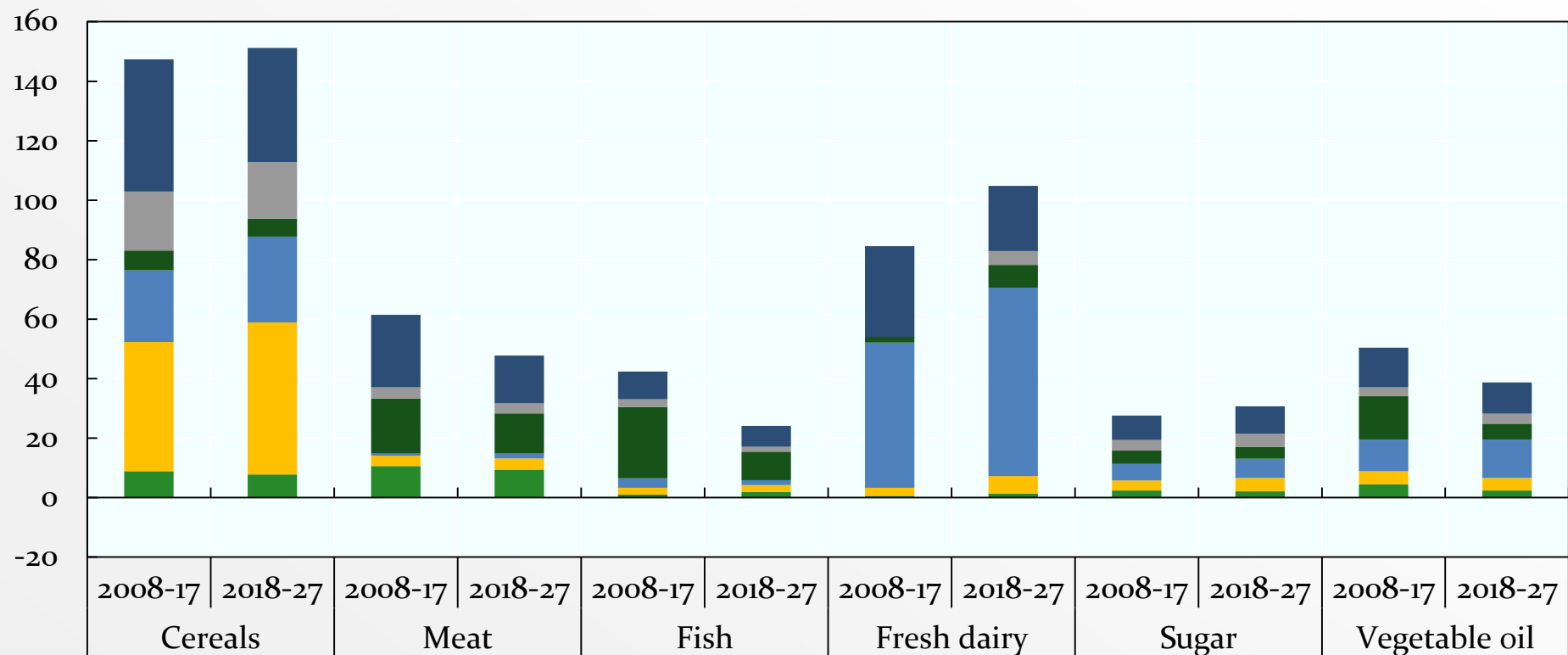
Average annual growth rate in demand (%)



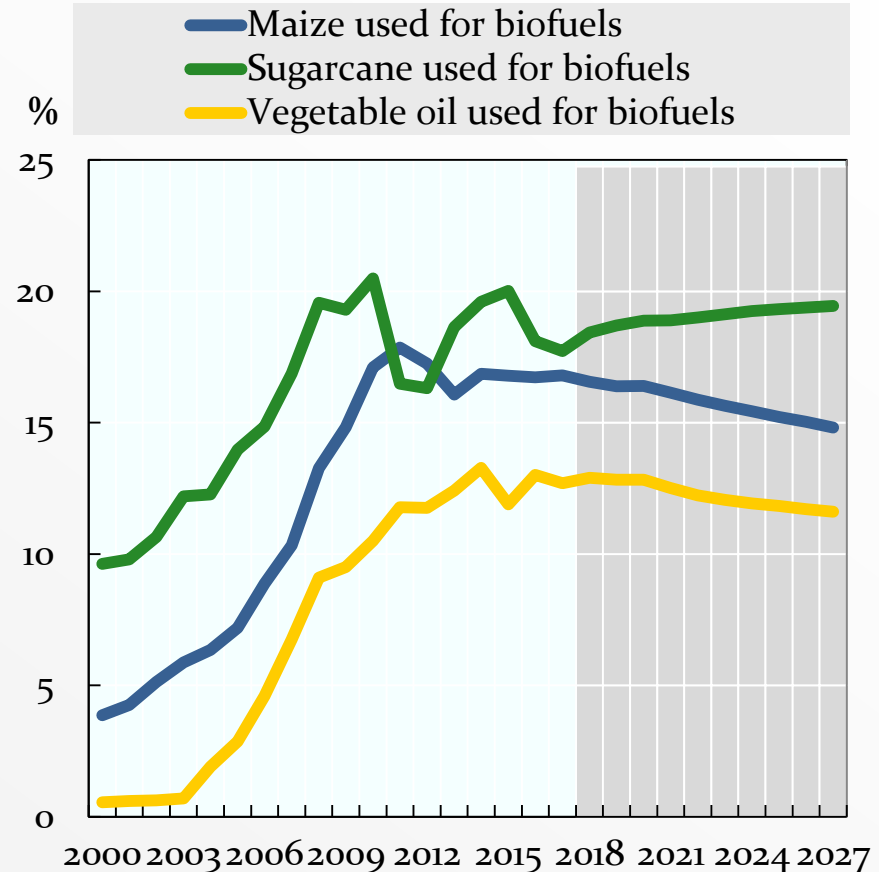
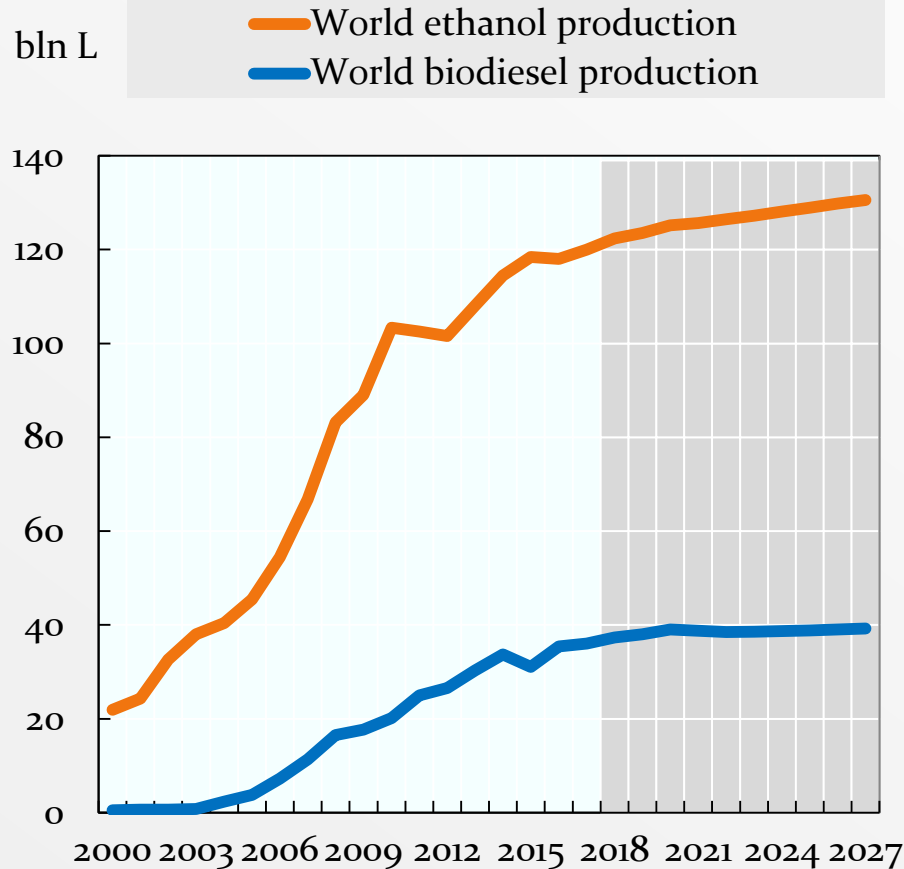
Most additional food demand will come from Sub-Saharan Africa, India and China

Growth in demand (Million tonnes per decade)

Rest of World MENA China India Sub-Saharan Africa OECD



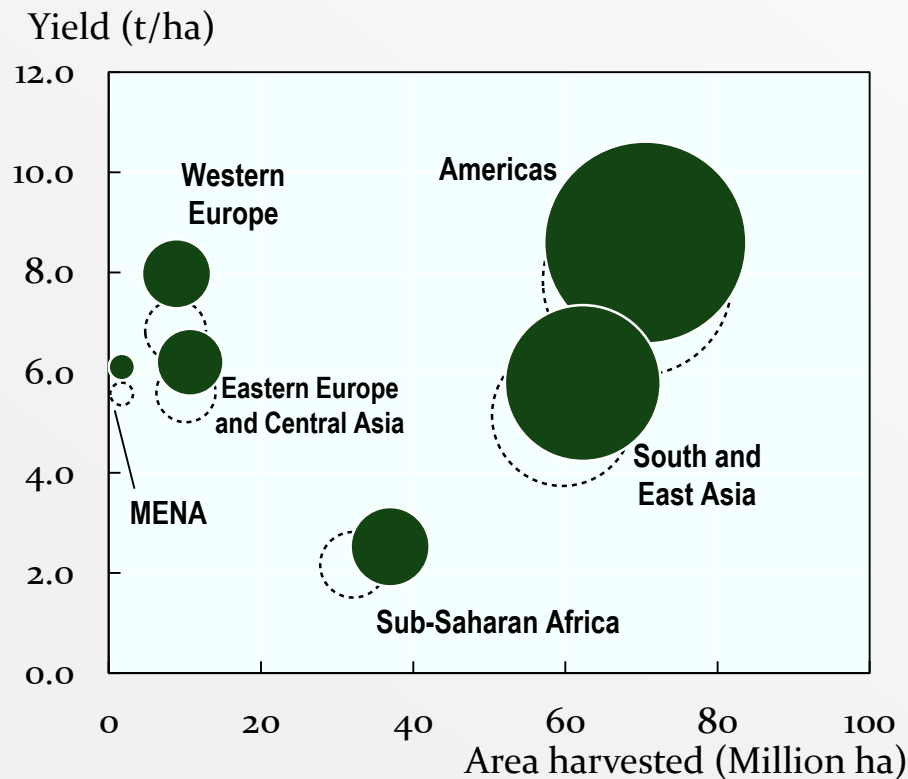
Biofuel growth slows down, reducing the demand growth for feedstocks



Crop and meat production will increase without major changes in total land use

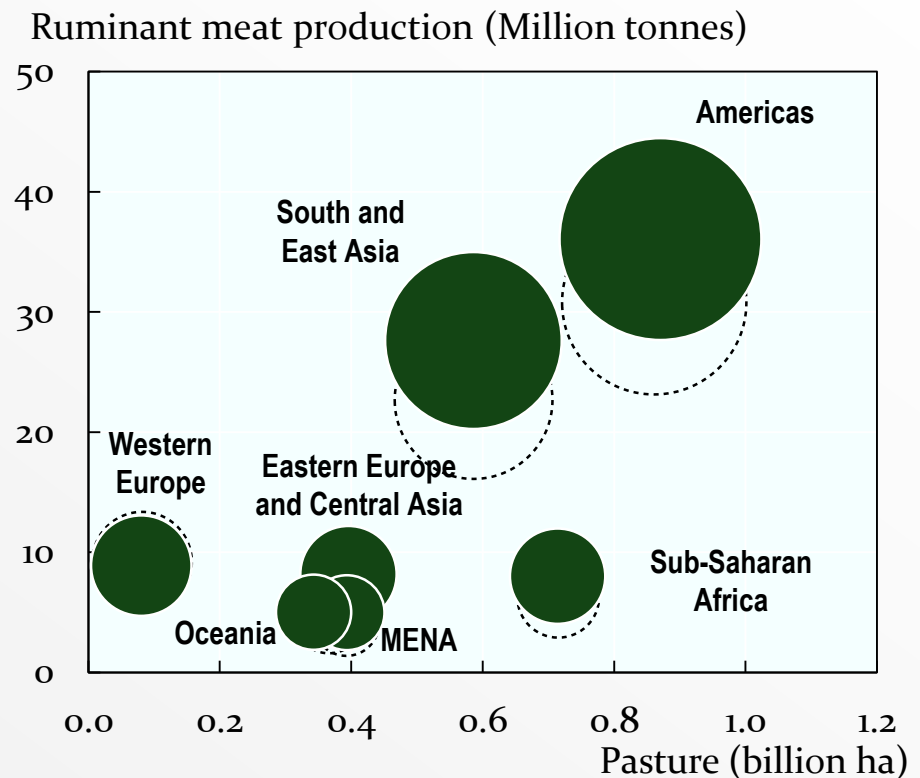
Maize

○ 2015-17 ● 2027



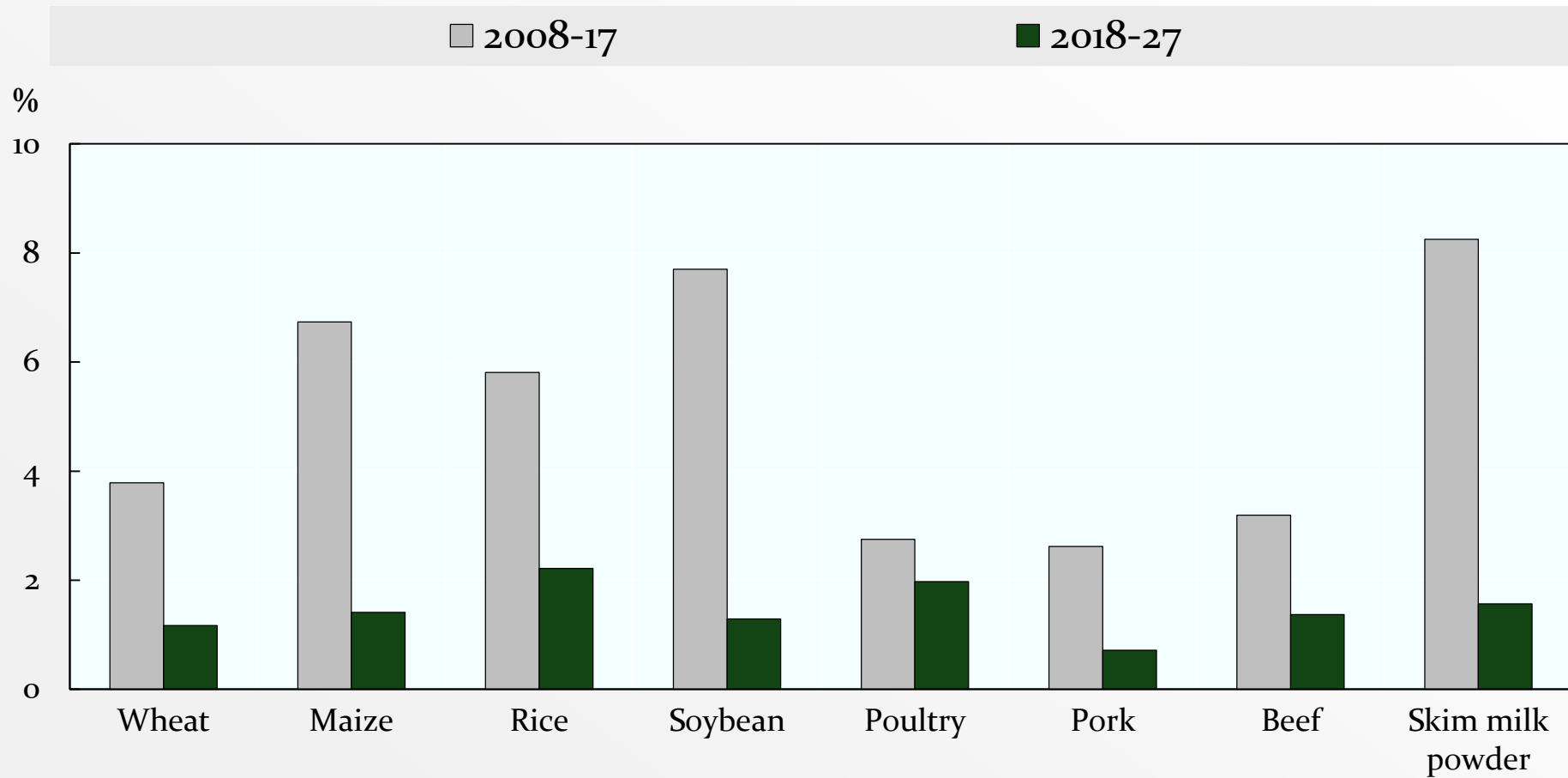
Ruminant meat

○ 2015-17 ● 2027



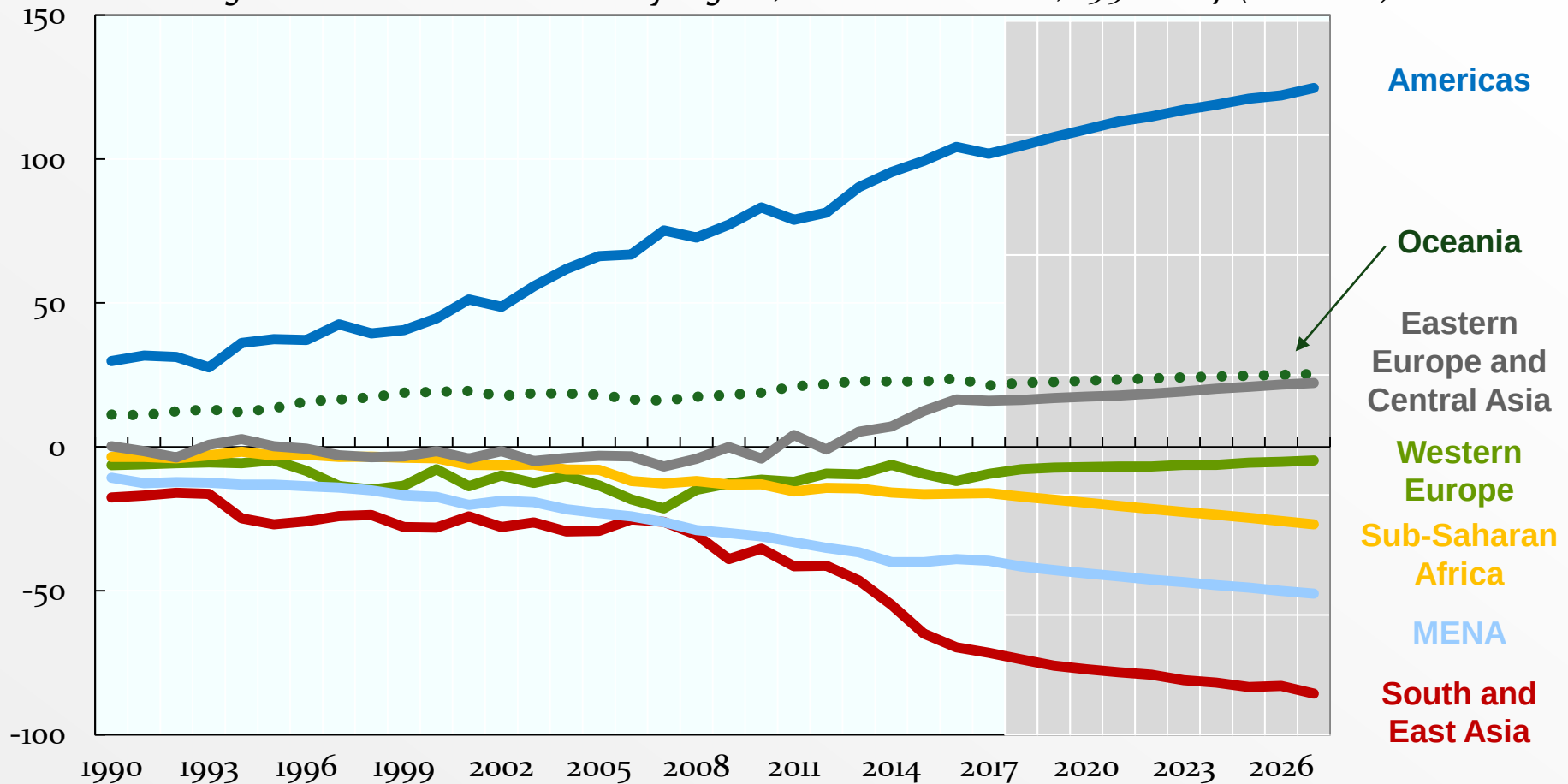
As demand growth slows down, so do agricultural trade volumes

Annual growth rate of trade volumes (%)



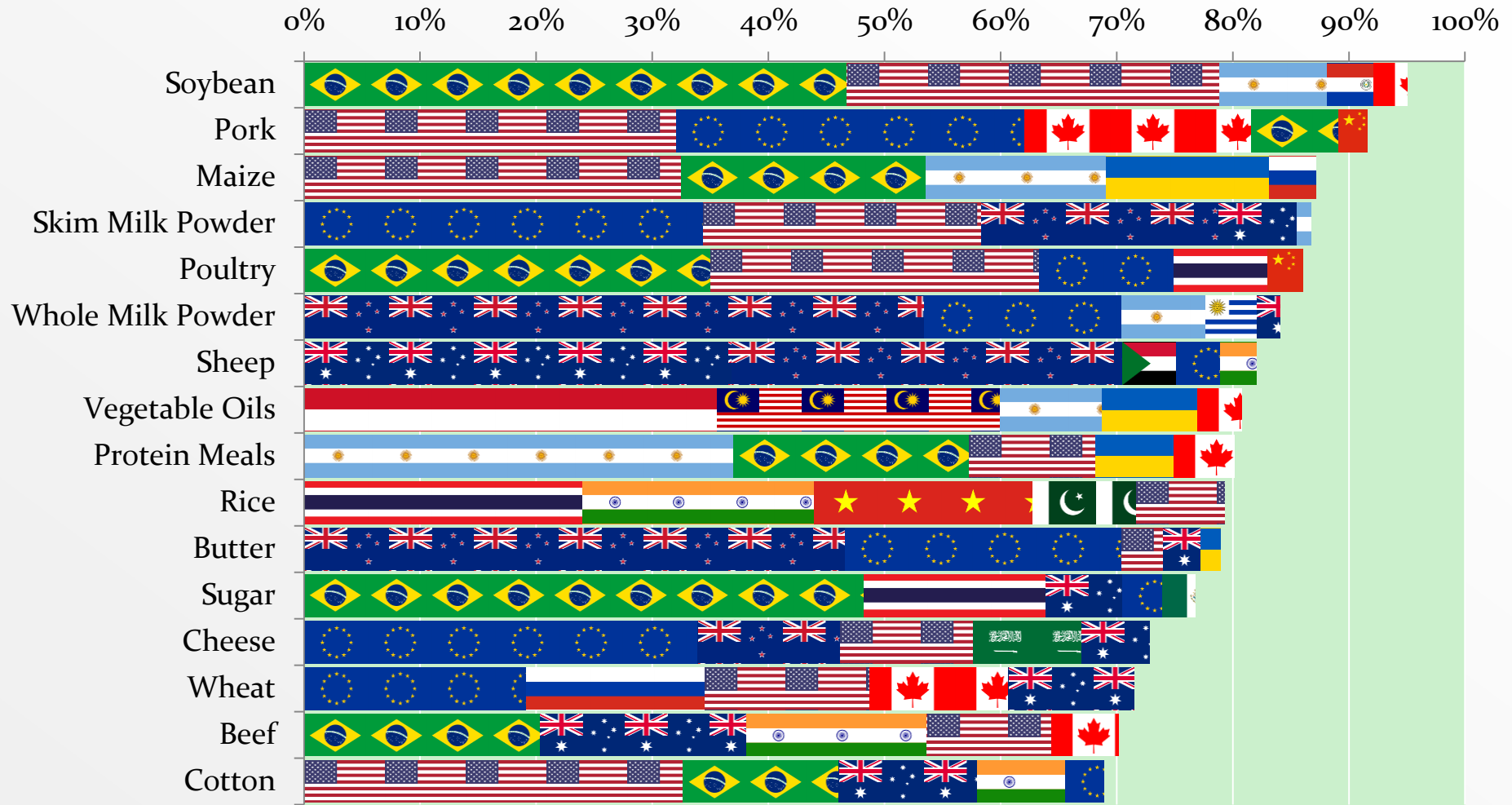
Trade: Specialisation between regions is increasing over time

Agricultural trade balances by region, in constant value, 1990-2027 (bln USD)



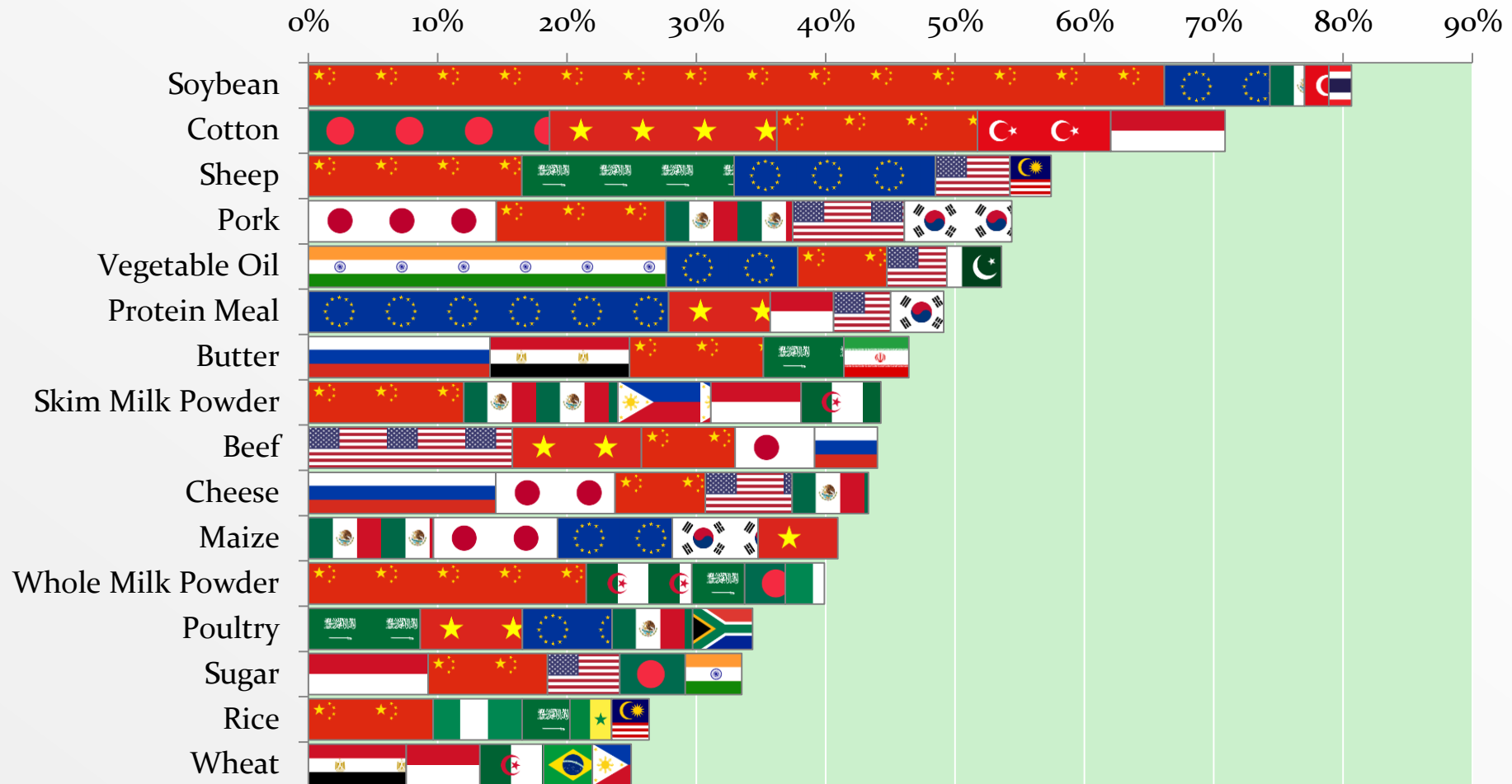
Exporter concentration remains high

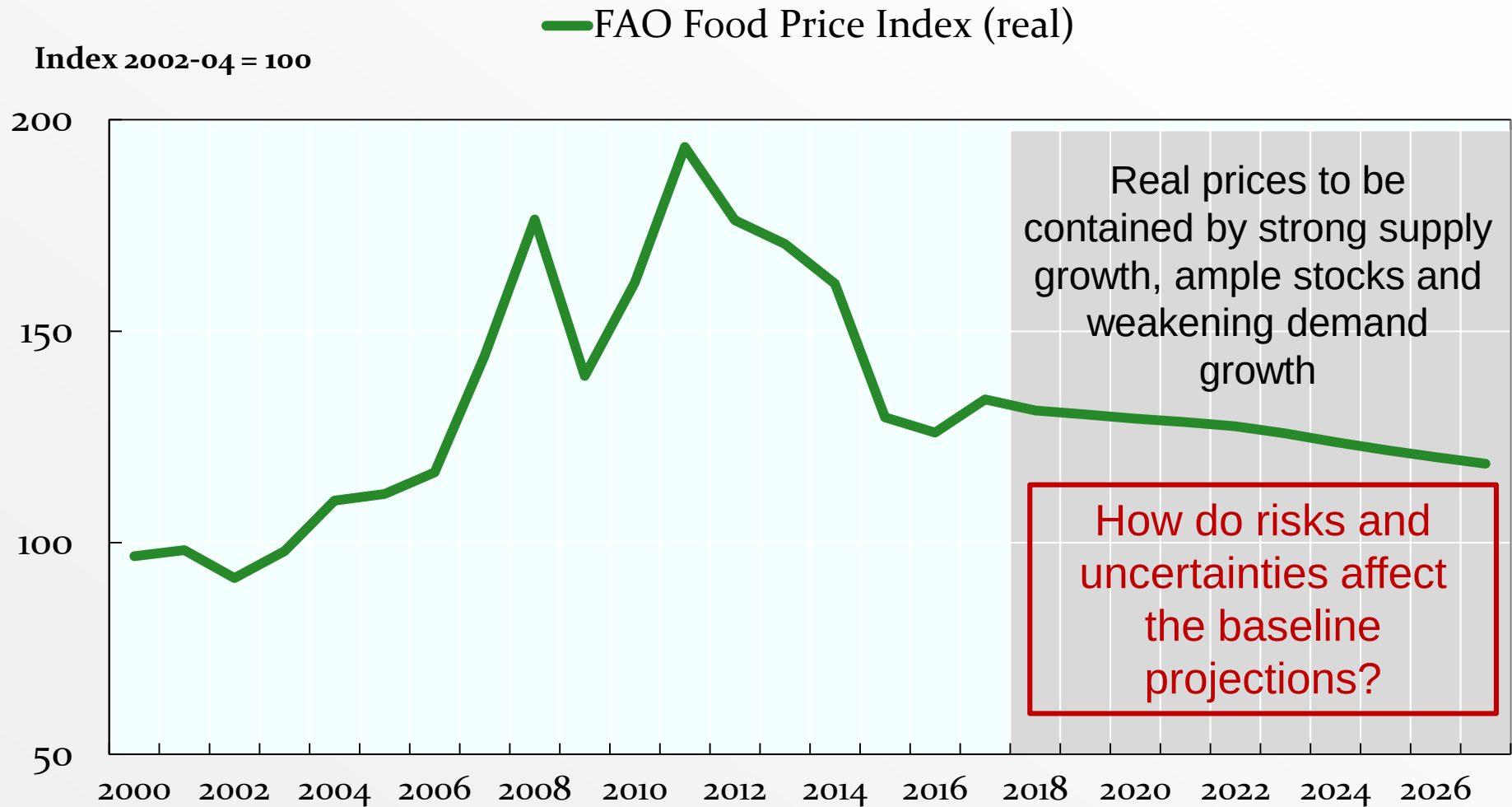
Export shares of top 5 exporters in 2027, by commodity



Importer concentration less pronounced – except for some products

Import shares of top 5 importers in 2027, by commodity





Agricultural markets are always uncertain

	Structural	Policy
Demand	Income growth	- Biofuel policies - Food and health policies
Supply	- Oil prices - Pests and diseases - Climate risk - Potential of precision agriculture	Regulation of new plant breeding techniques
Trade	Emergence of new market players	- Trade disputes - Bilateral and regional trade agreements (CTTP, NAFTA, Brexit)



*Increasing policy
uncertainties are adding
to market risks*



Risk

- Can predict possibility of future outcome (variance known)
- Can be parametrized

Uncertainty

- Cannot predict possibility of future outcome (variance unknown)
- Cannot be parametrized

Medium-term Agricultural Outlook

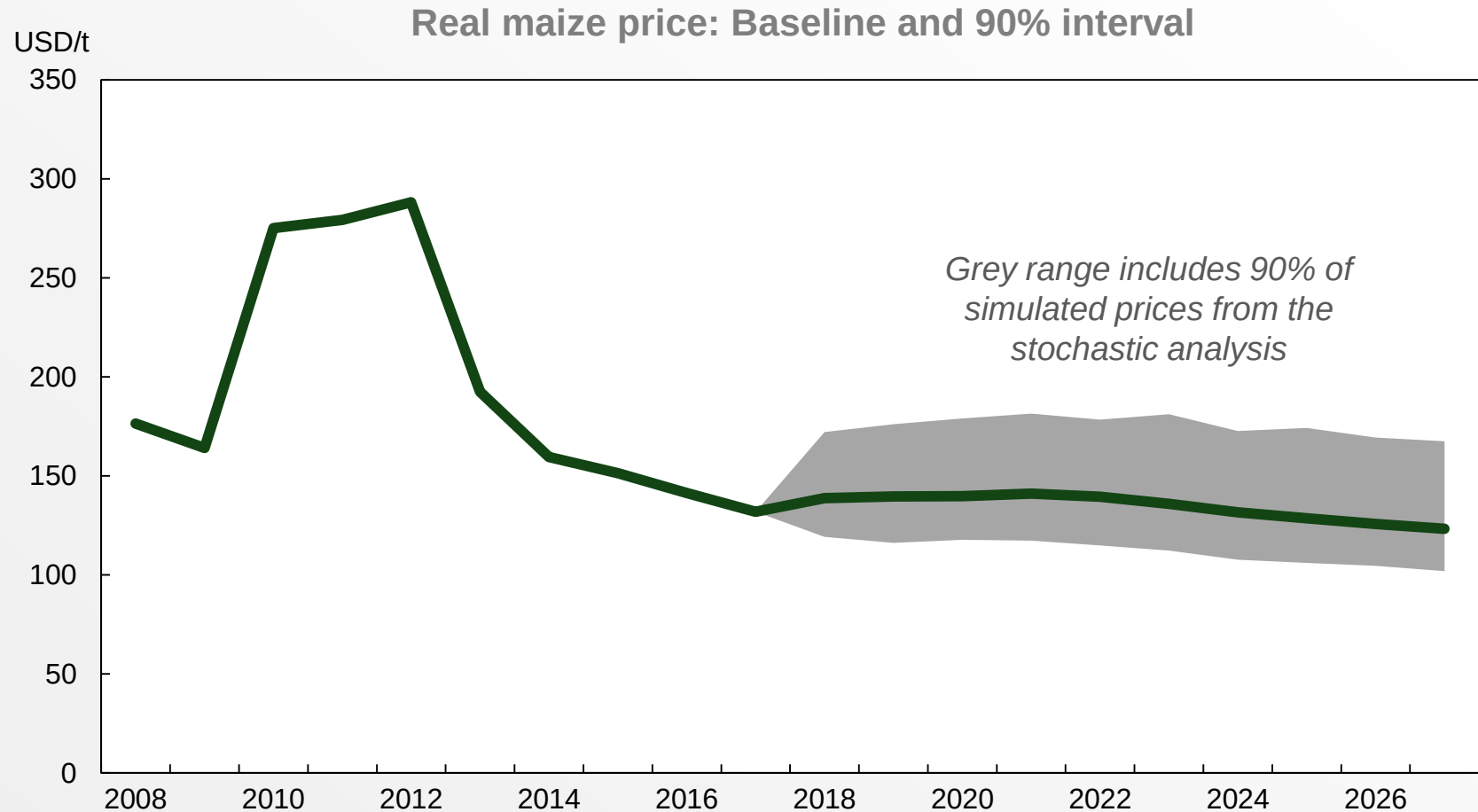
Analysed using partial stochastics

Partial: does not capture all sources of variability that can affect agricultural markets

Stochastic analysis: estimation of possible *future* variations based on *historical* variations for key agricultural and macroeconomic drivers



Despite downward trend, risk of temporary price increases remains



Risk

- Can predict possibility of future outcome (variance known)
- Can be parametrized

Medium-term Agricultural Outlook

Analysed using partial stochastics

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Uncertainty

- Cannot predict possibility of future outcome (variance unknown)
- Cannot be parametrized

Medium-term Agricultural Outlook

Analysed using scenarios

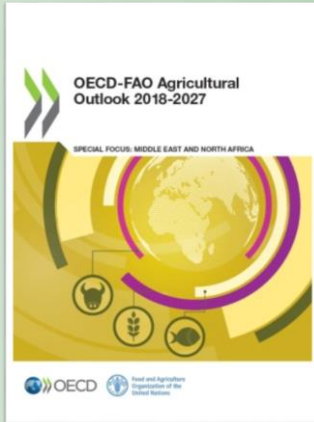
Examples of scenarios:

- Impact of export tax by large exporter
- Impact of change in public stockholding policies



Outline of the presentation

Part 1: OECD-FAO Agricultural Outlook

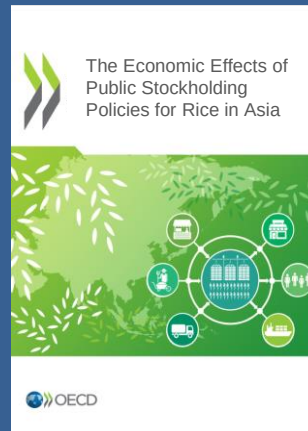


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How examine the impacts of these uncertainties?

Part 2: The economic effects of public stockholding policies for rice in Asia





Why examine public stockholding policies?

- Since the 2007-08 food price crisis, public stockholding policies have regained popularity.
- Public stockholding programmes are considered as policy tools that can be deployed to:
 - shield consumers from food price spikes
 - provide more stable domestic prices for both producers and consumers
- However, these programmes may also have additional and unintentional impacts on domestic and international markets, depending on how they function and the scale of intervention.

- This report: what are their market impacts over the medium term?
- Focus on: public stockholding programmes for rice in Asia



This report



- 8 Asian countries: Bangladesh, China, India, Indonesia, Japan, Korea, Philippines, and Thailand
- 2 parts:
 - Part 1: In-depth review of the functioning of public stockholding programmes
 - Part 2: Examine the medium-term markets impacts



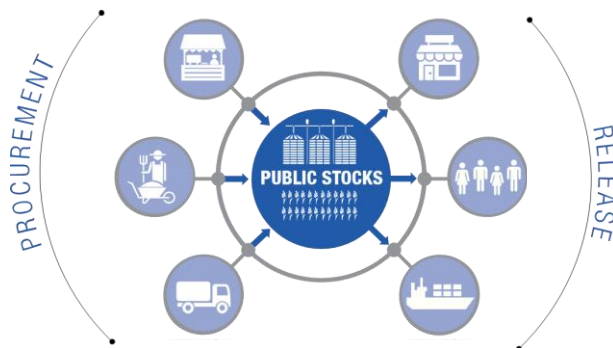
Part 1: Review functioning of public stockholding programmes

Approach: comparable across countries

➤ Organize review around 5 questions:

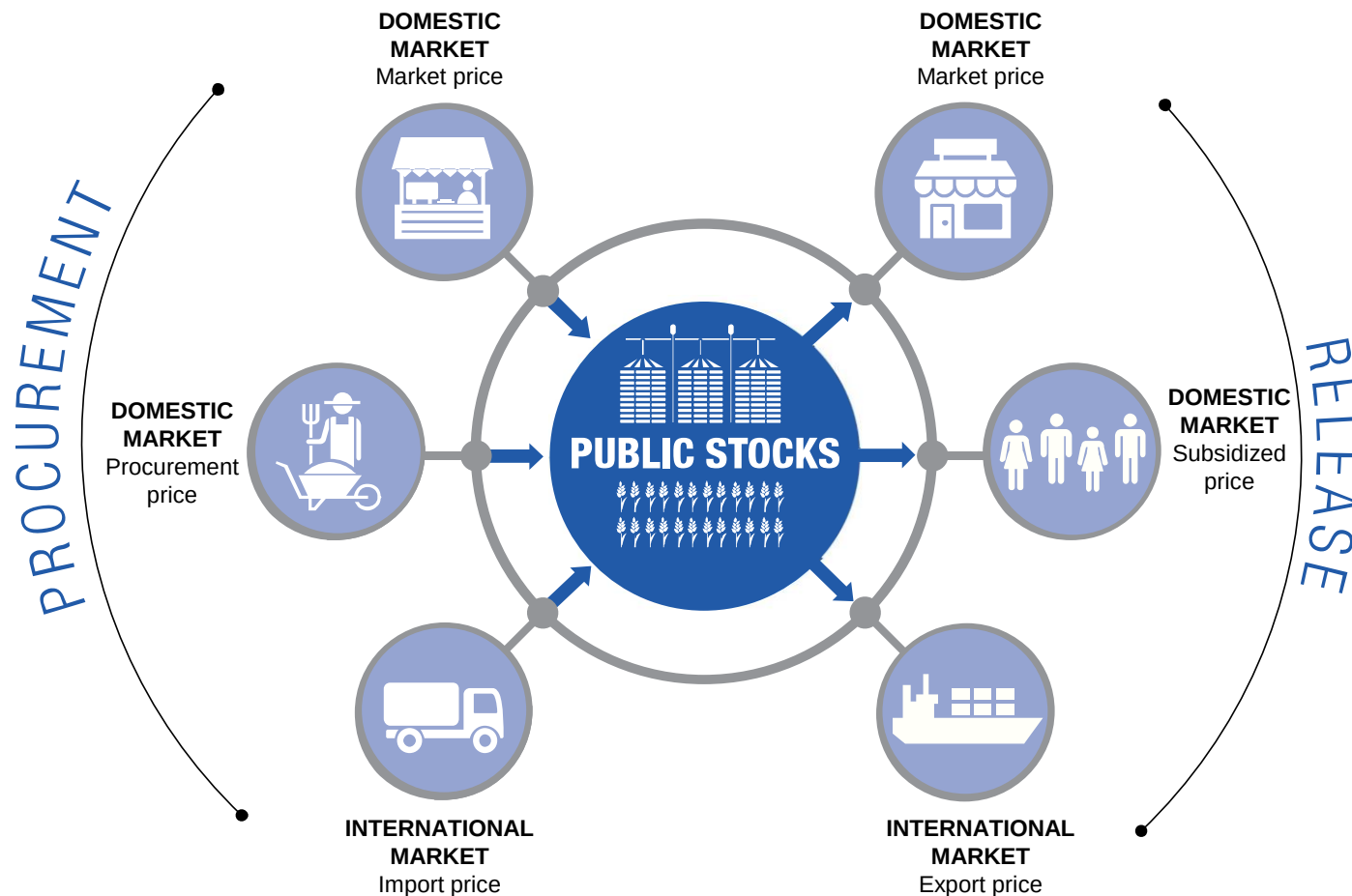
1. Which agencies are in charge of public stocks?
2. What are the main purposes for keeping public stocks of rice?
3. How does the country acquire rice for its public stocks and at which prices?
4. How does the country release rice from its public stocks and at which prices?
5. Are there any trade restrictions in place?

➤ Generalize the process of acquisition and release of rice from public stocks



Part 1: Review functioning of public stockholding programmes

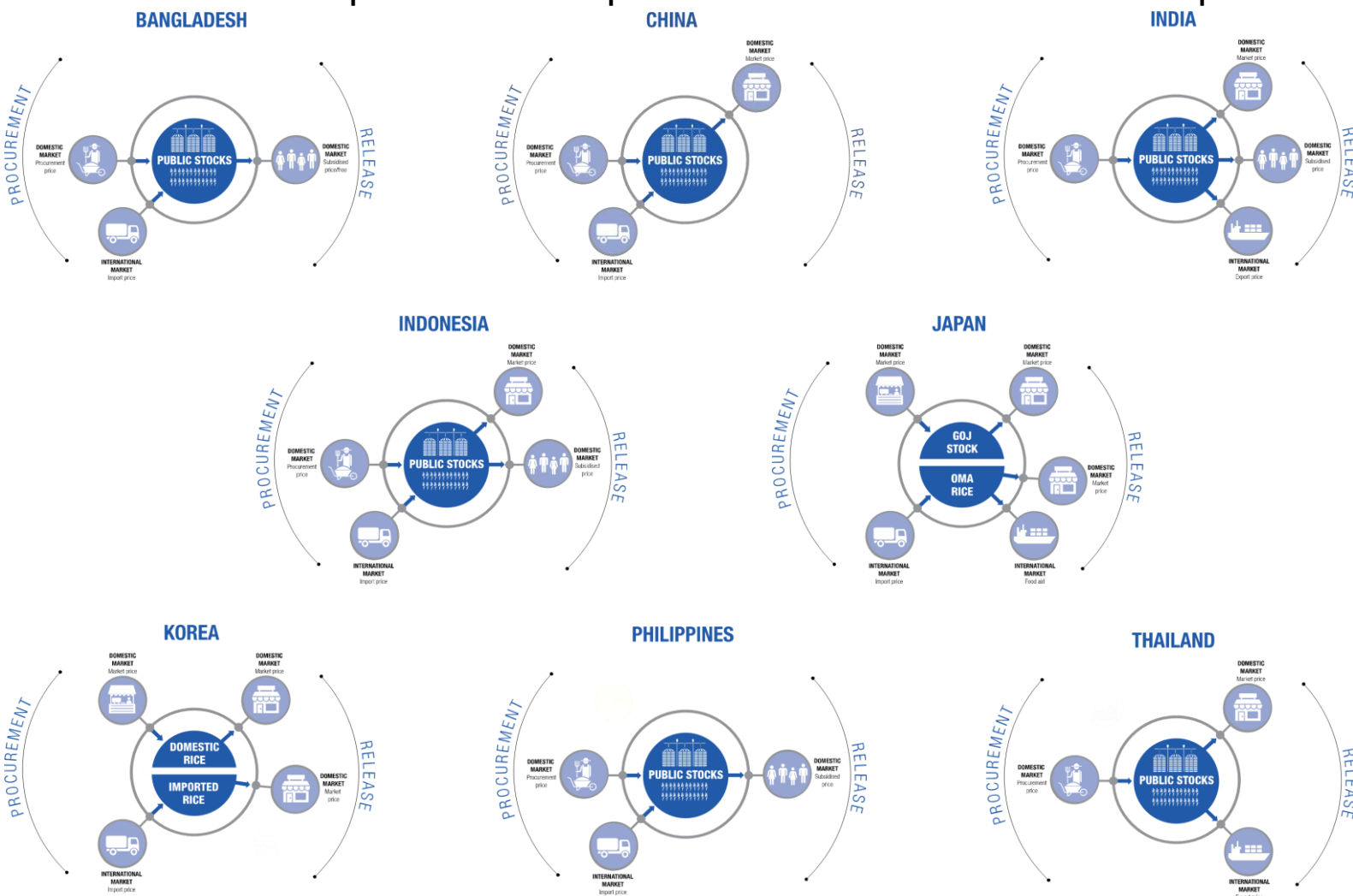
Generalization of the process of acquisition and release of rice from public stocks





Part 1: Review functioning of public stockholding programmes

Generalization of the process of acquisition and release of rice from public stocks



Note: situation until 2014 for Thailand and up to and including 2016 for the other countries



Part 2: Medium-term market impacts of alternative public stockholding strategies

“What would happen to domestic and international markets over the medium term (2018-2030) if all eight countries set their public stock levels of rice to either a low or high level at the same time?”

- Motivation: periods of high (low) prices or price volatility can motivate countries to behave in the same way (e.g. 2007-08)
- Establish bounds to global market impacts that derive from changes in public stock policies across the region
- Compare three scenarios:
 - **Baseline scenario**: “business as usual” – assume no changes in policies and macro-economic environment during 2018-2030
 - **Low-level scenario**: set public stock norm to 2 weeks of national consumption by 2020
 - **High-level scenario**: set public stock norm to 3 months of national consumption by 2020
- Transition period towards low-level/high-level scenarios: 3 years (2018-2020)



Impact analysis

Market impacts on:

- Procurement
- Private stocks
- Prices
- Availability
- Public expenditure

Impact of a global production shock



Key findings

Relative impacts vary by country, but there are several common trends:



Short-term

Effects of changing public stockholding policies are **more pronounced during the transition period** when countries adjust their public stocks to the new levels than during the remainder of the projection period.



Medium-term

Changing stockholding policies can have **structural impacts over the medium term** on overall procurement, domestic and international prices, availability, private stock levels, and public expenditure.



Shock

In the event of a **global production shock**, the immediate impacts on prices and availability are less severe if countries hold larger public stocks than if they hold smaller ones, but keeping low levels of public stocks enables faster recovery towards the no-shock situation



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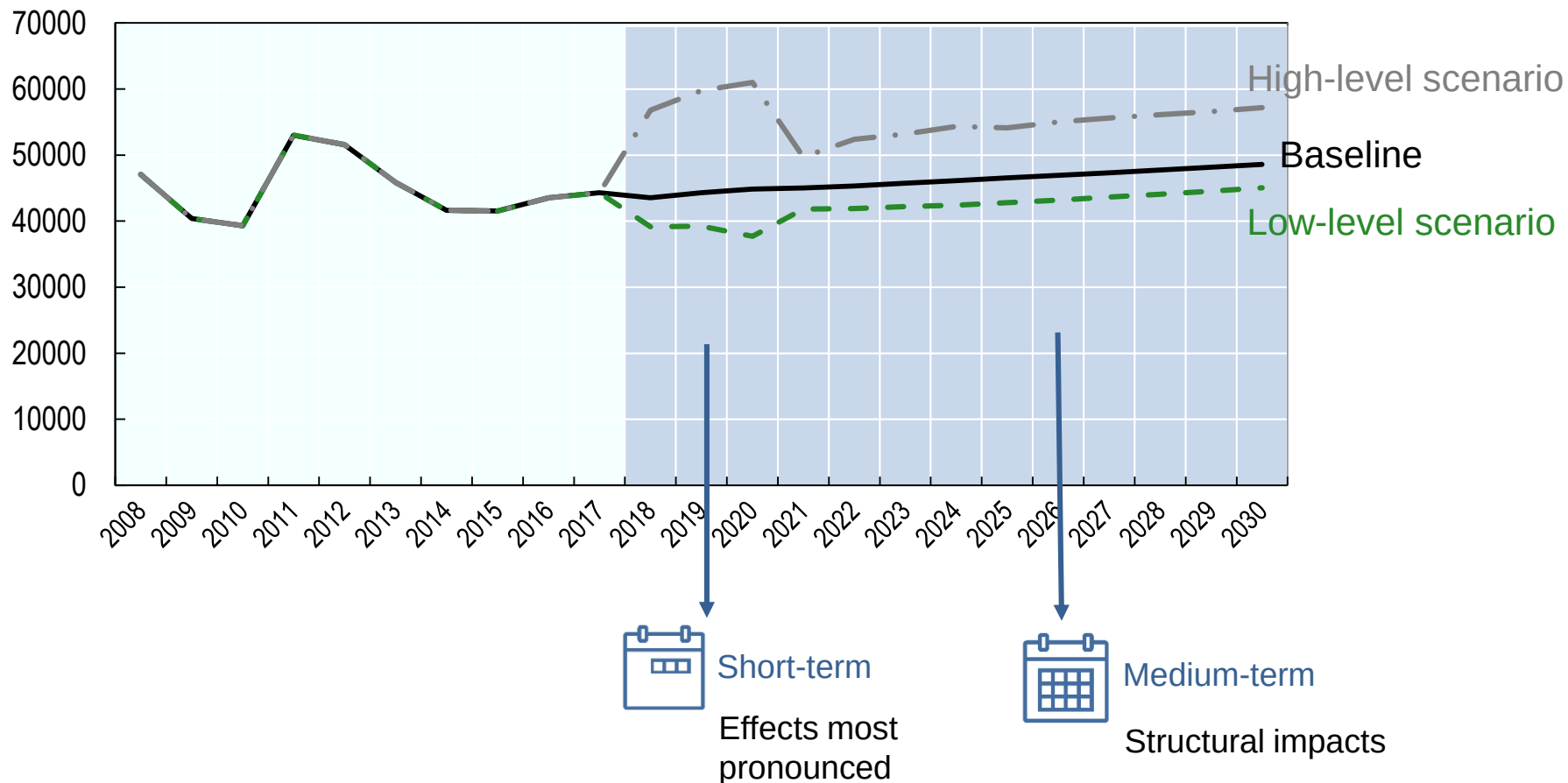
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Impact on procurement

Aggregate procurement by all countries except China

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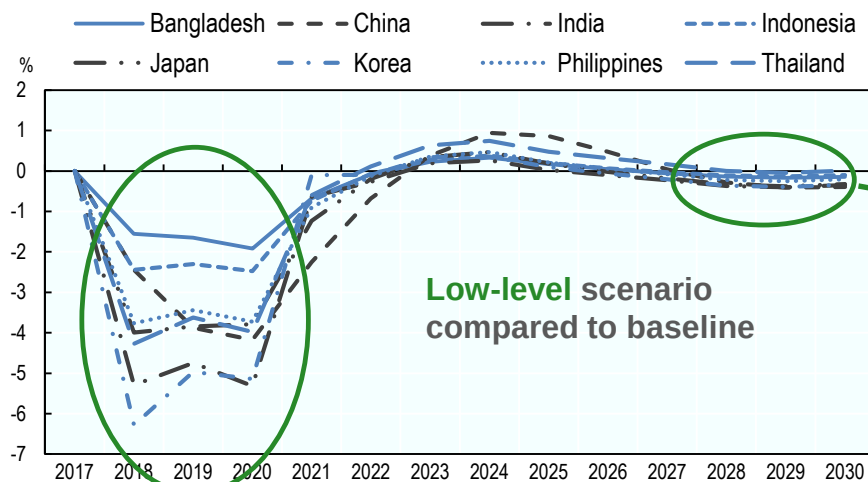
Note: Shaded area indicates projection period 2018-2030

Source: OECD simulations



Impact on domestic producer prices

Percentage change compared to baseline scenario, 2017-2030



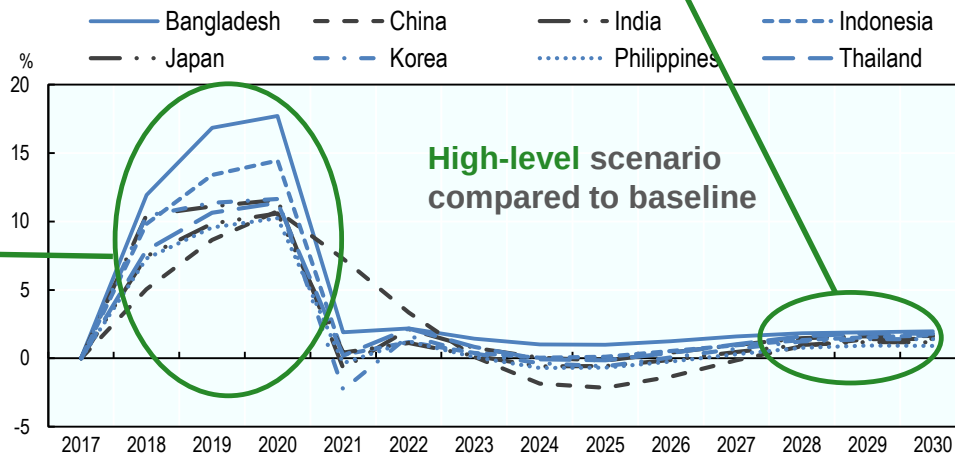
Medium-term

Structural impacts



Short-term

Effects most pronounced





Key findings

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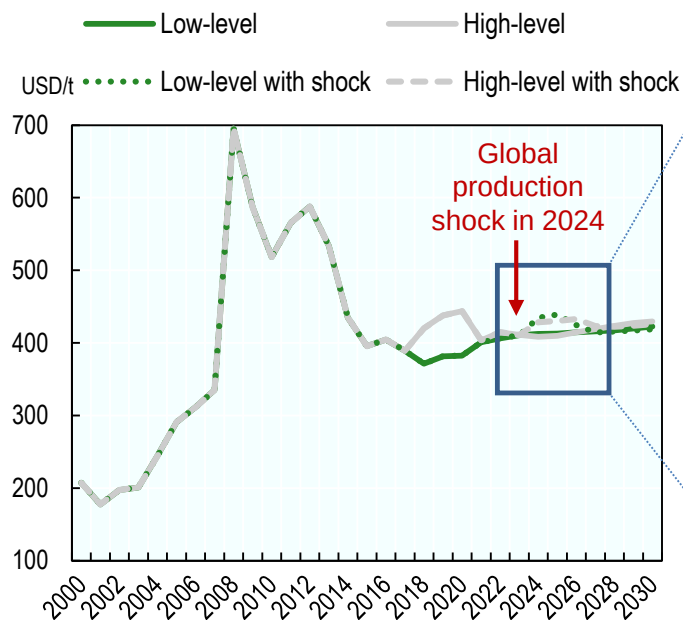
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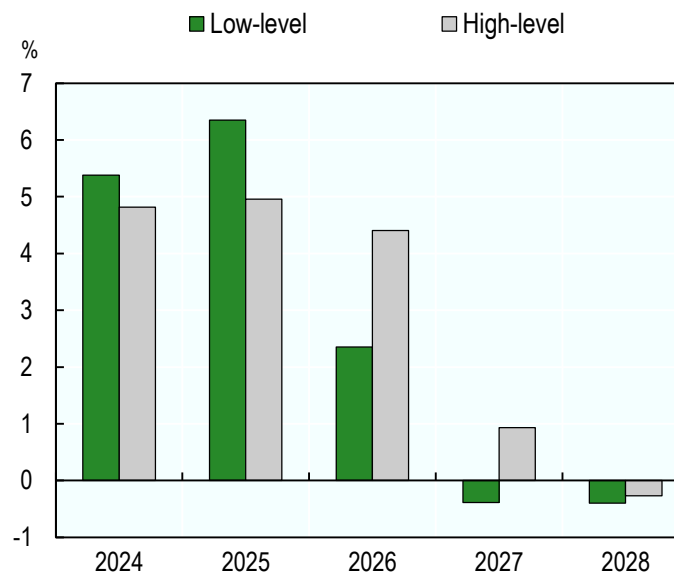
Impact of a global production shock

Impact of a 3% global production shock in 2024 on the world price of rice under the low- and high-level scenario

Global prices under low- and high-level scenario, without and with shock, 2000-2030



Percentage change under low- and high-level scenario with shock compared to a situation without shock, 2024-2028



- Immediate impacts less severe if larger public stocks
- Faster recovery if smaller public stocks



Policy recommendations

When considering a **consistent change (increase or decrease)** in the levels of public stocks, governments should take into account that:

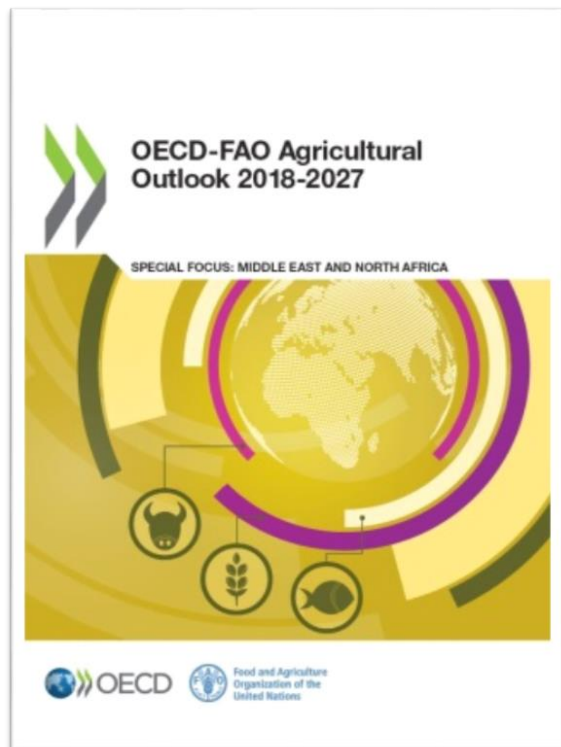
- the impacts are not limited to the **short term**; there can also be persisting structural impacts over the **medium term**,
- this not only affects **domestic** markets, but can also have spillover effects in **international** markets,

When considering a **consistent increase** in the levels of public stocks, governments should take into account that this

- raises fiscal **costs**
- discourages **private sector** engagement in stockholding activities



More information



Further information on the Agricultural Outlook
www.agri-outlook.org

Both publications are available on OECD iLibrary
<https://www.oecd-ilibrary.org/>

For questions or inquiries
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