



OECD work on food systems

Koen Deconinck
Agro-Food Trade and Markets Division

OECD

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The global food system is facing a daunting triple challenge

1 Food security and nutrition

Feeding a world population that is expected to approach 10 billion by 2050 and providing adequate nutrition

2 Livelihoods and rural development

Providing incomes to more than 500m farmers and others along the food chain, and supporting balanced development

3 Resource use and sustainability

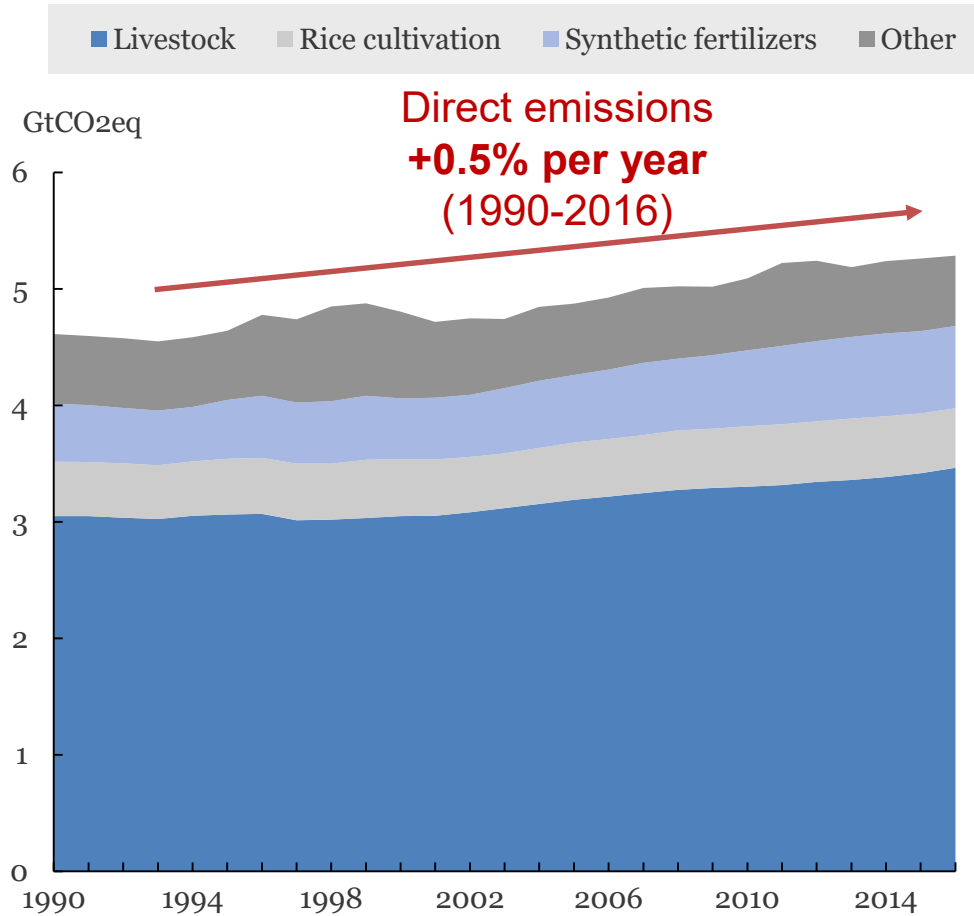
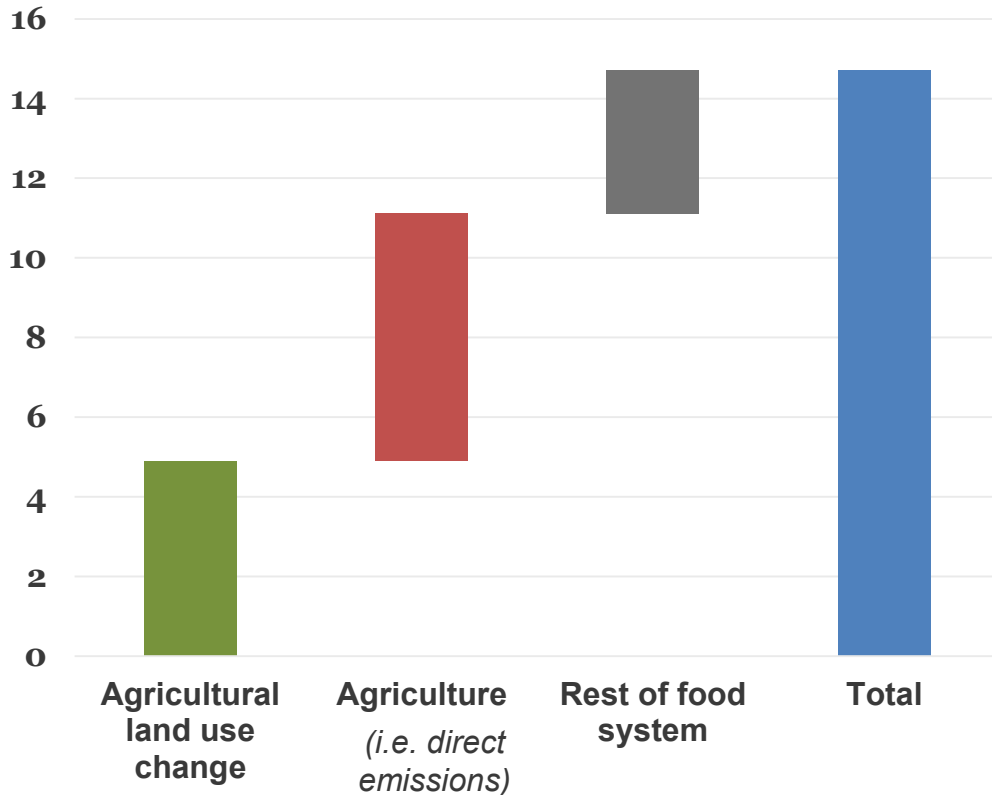
Doing so sustainably, i.e. using essentially the same amount of land and less water, while adapting to climate change and contributing to lower GHG emissions



Agriculture and food will increasingly be expected to contribute to lower global GHG emissions

Food and agriculture is **21-37%** of total anthropogenic GHG emissions

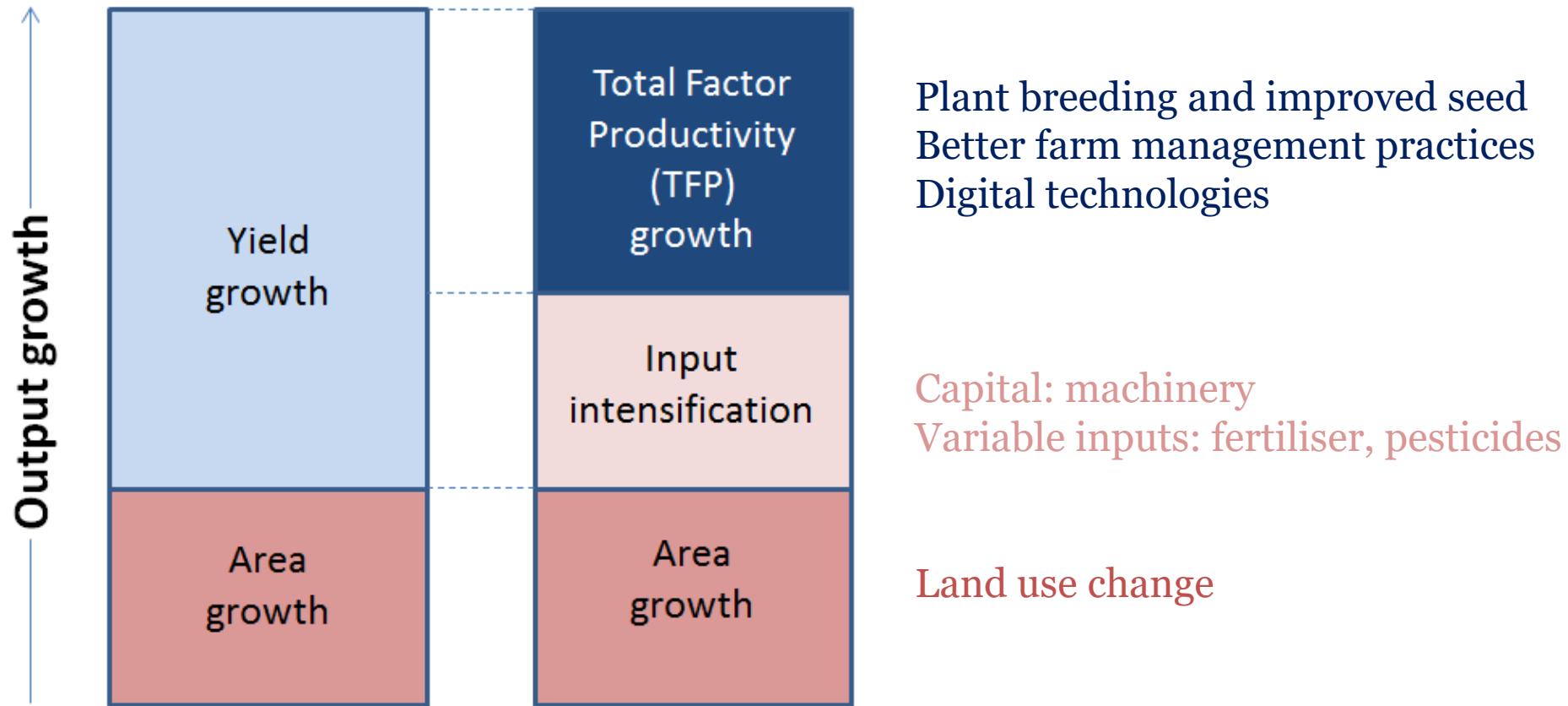
Gigatonnes CO₂ equivalent per year, 2007-16



- Global crop production: **+2.5% per year**
- Global livestock production: **+1.9% per year**

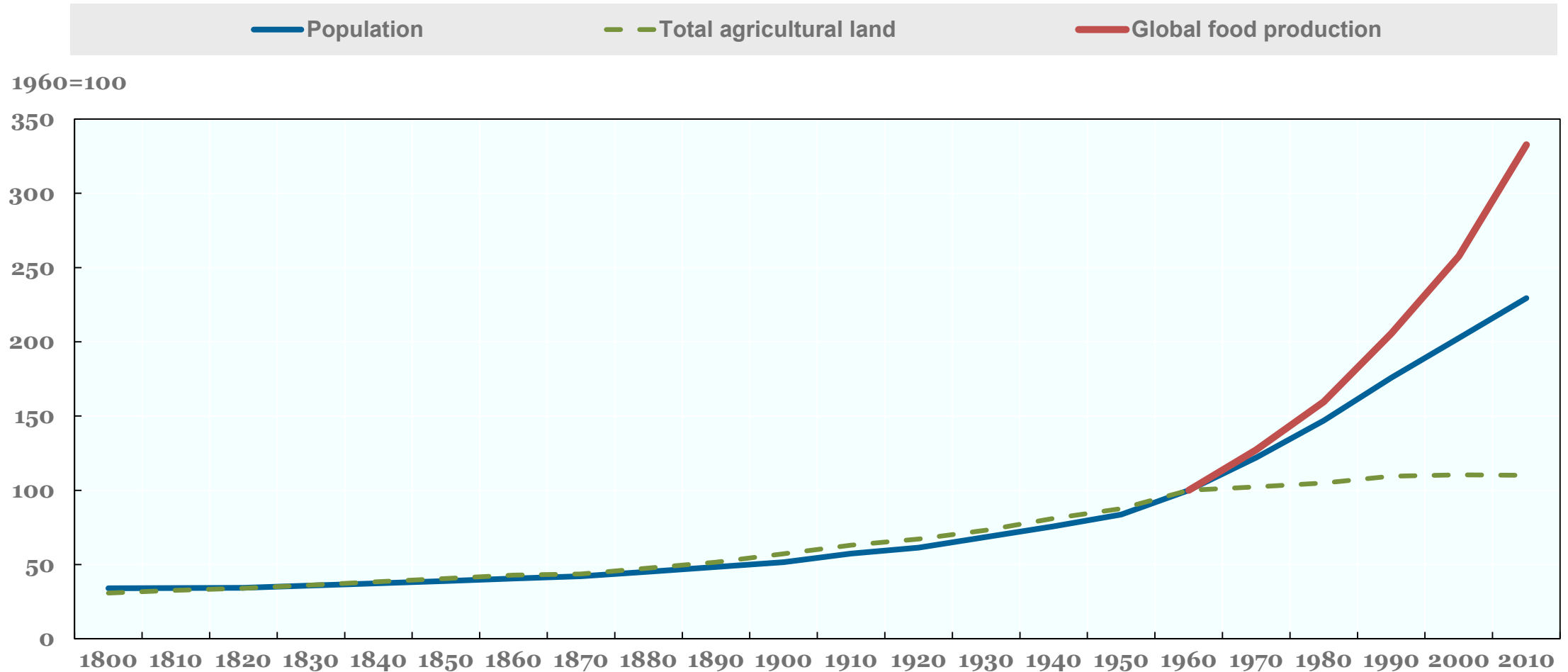


Production growth will need to come from improved productivity





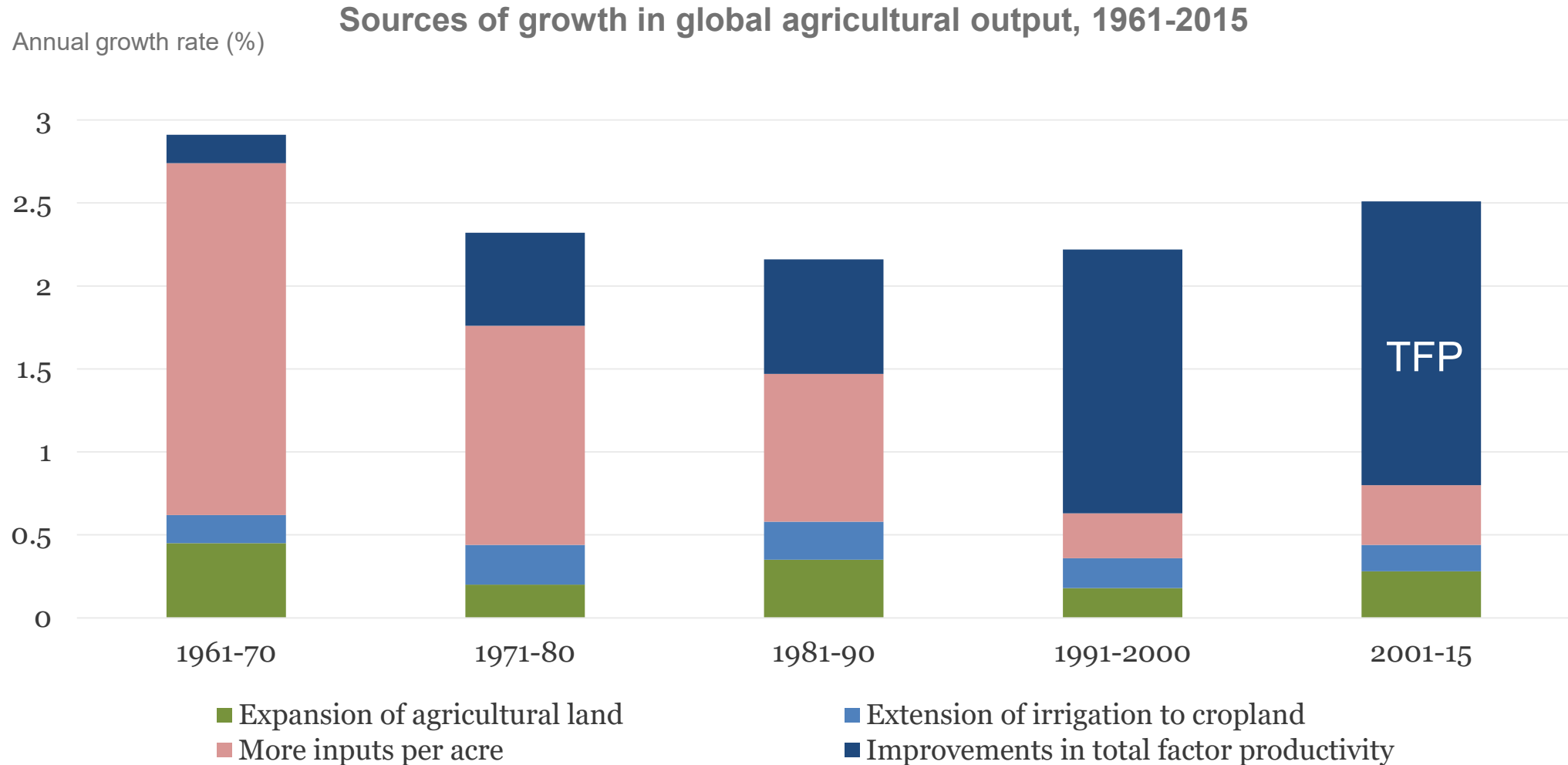
Imagine what would have happened to land use if productivity had not increased!



Source: Population data from Maddison's historical statistics for 1820-1940; UN Population Division for 1950-2030; 1800 and 1810 extrapolated from Maddison. Agricultural (crops and pasture) land data for 1800-2010 from the History Database of the Global Environment (HYDE 3.2), Klein Goldewijk et al. (2017). Global agricultural production data for 1960-2010 from FAOSTAT (Net Agricultural Production Index).

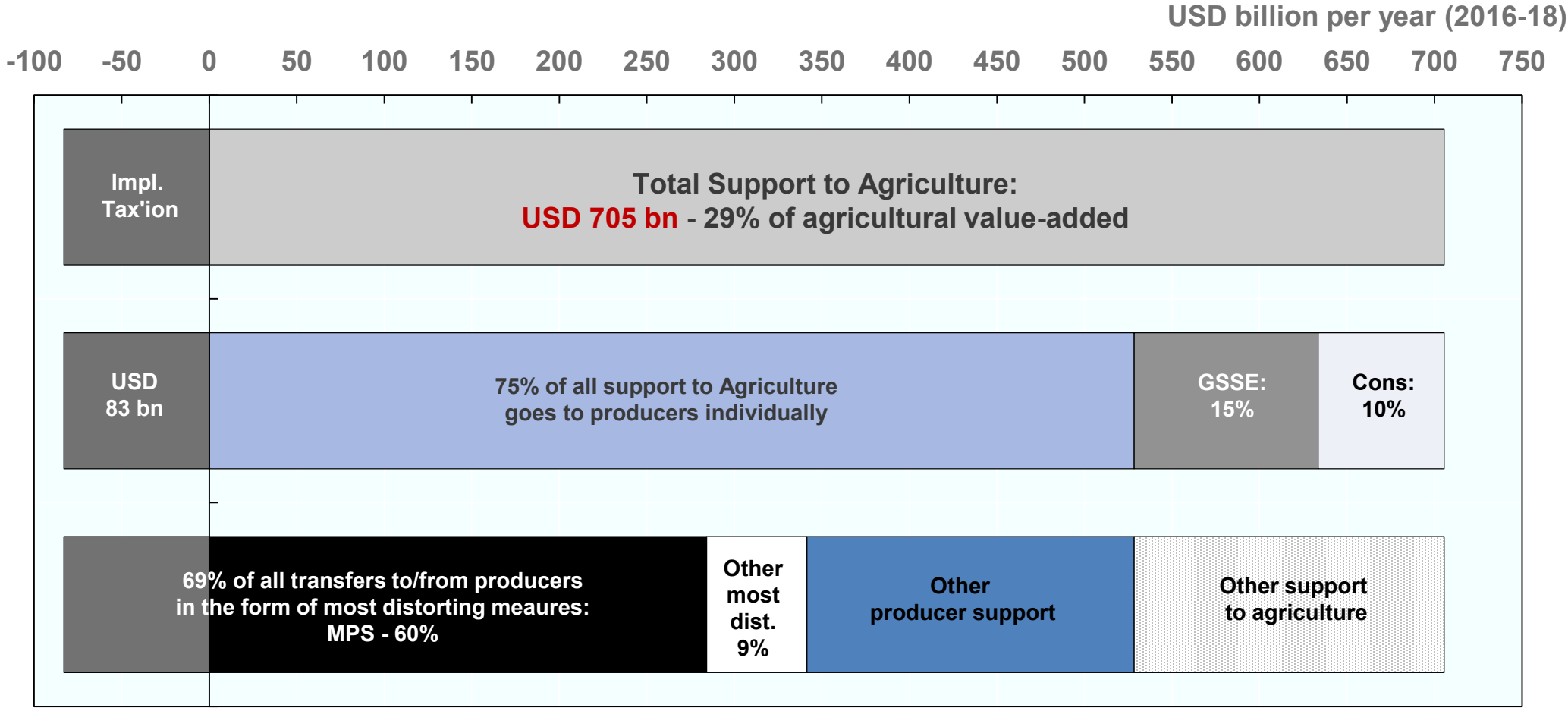


For the past 30 years, efficiency gains have accounted for the majority of output growth





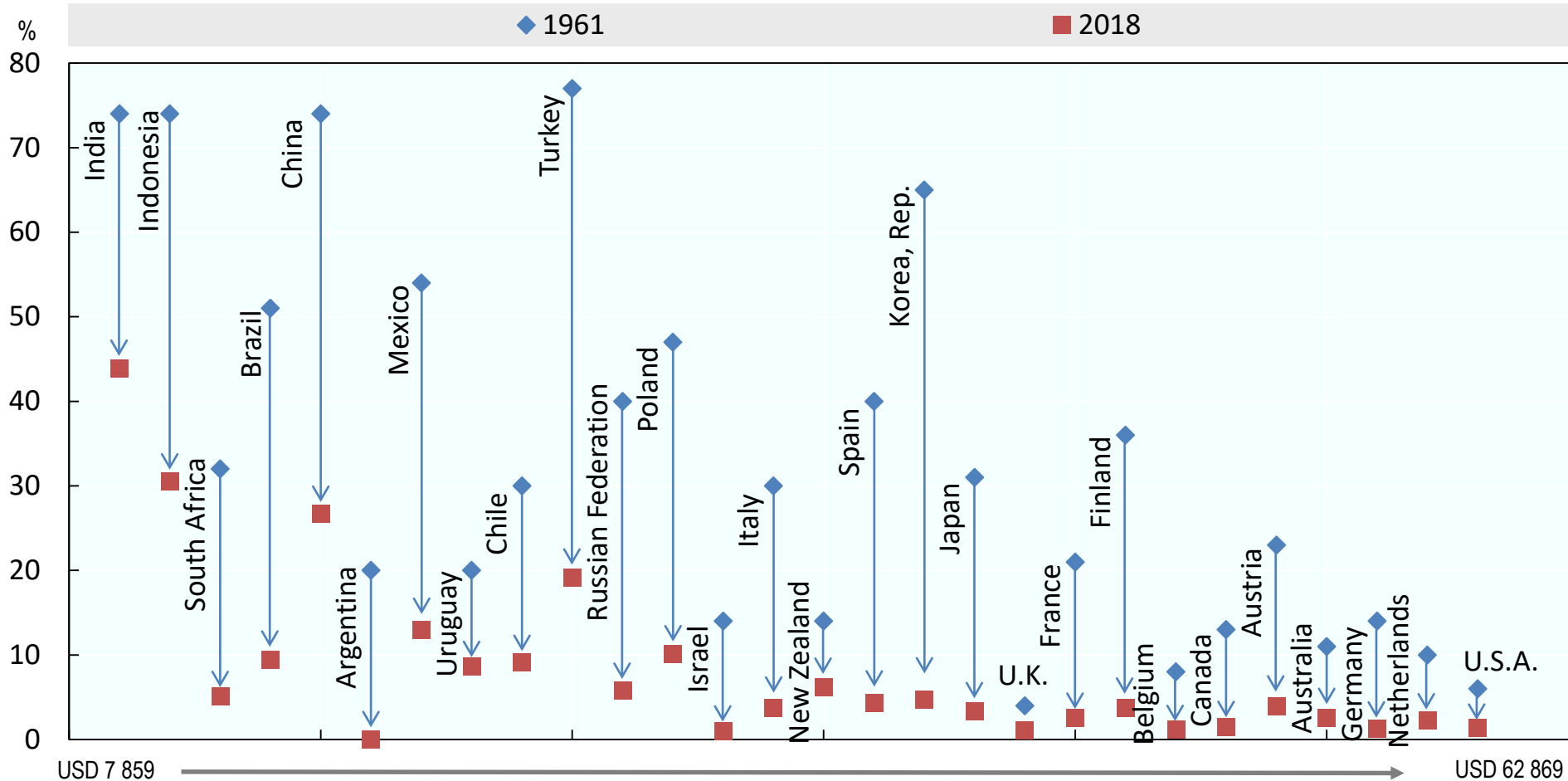
But support to agriculture is still provided in ways that are economically inefficient and environmentally harmful





The global food system has seen a drastic livelihoods transformation in just a few decades...

Agriculture's share of total employment, 1961-2018

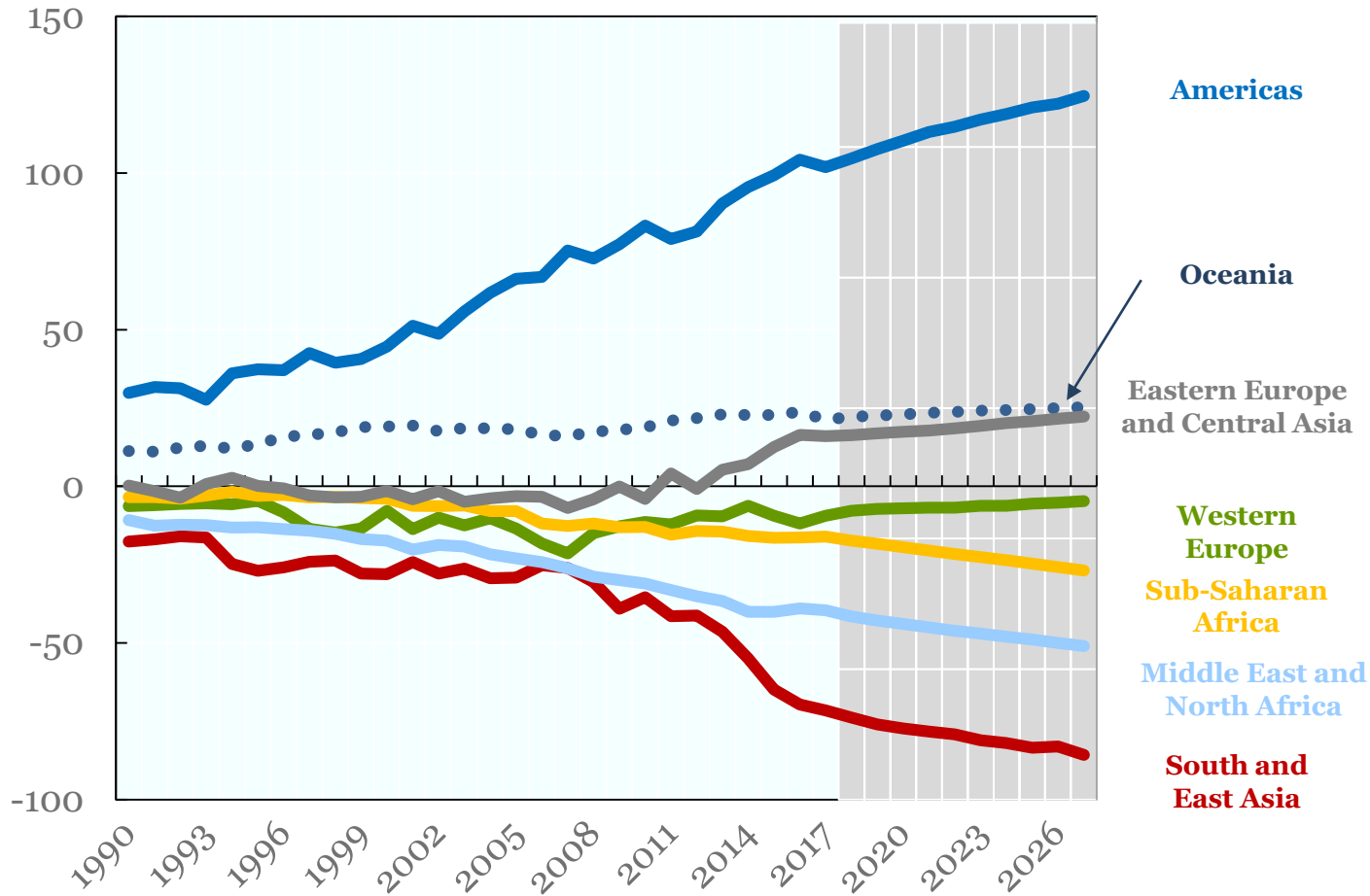


Countries ranked by GDP per capita, current USD PPP, 2018



Open markets are increasingly important for food security...

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



The regions experiencing population and demand growth are not those where supply can be increased sustainably

Trade acts as a buffer to domestic shocks and – on balance – reduces price volatility



... but poor nutrition won't be solved simply through increasing food availability

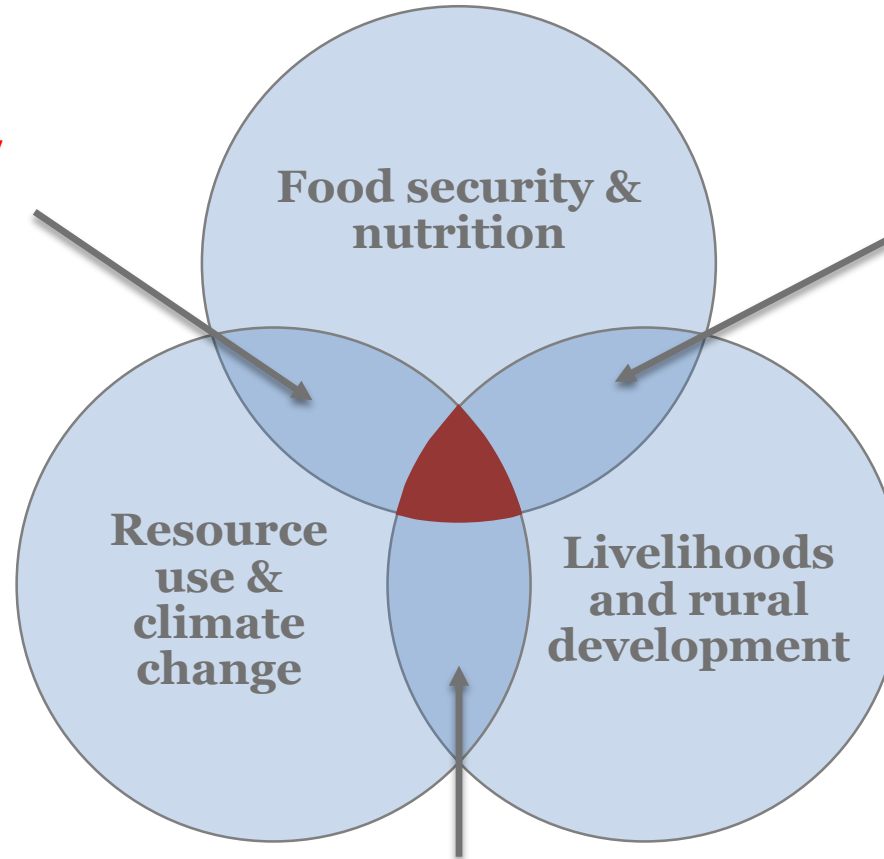
- Even when food prices were low, more than 800 million people were undernourished – **food availability is not enough to end hunger**
- A rising burden of overweight and obesity around the world – **no country has succeeded in reversing the trend of rising obesity**
- A **triple burden** of under-nourishment, over-nourishment and micronutrient deficiencies in many developing countries
- Poor nutritional outcomes are not just about food: other causes are inadequate sanitation, poor maternal and child care, disease (e.g. HIV)
- A clear need for a **multi-pronged approach** to nutrition:
 - Education and advice; soft and hard regulatory measures (e.g. on product composition); arguably fiscal measures [OECD, 2019]



What makes matters complicated are the synergies and trade-offs between these challenges

Lower livestock numbers
versus protein availability
Healthy diets and lower
emissions

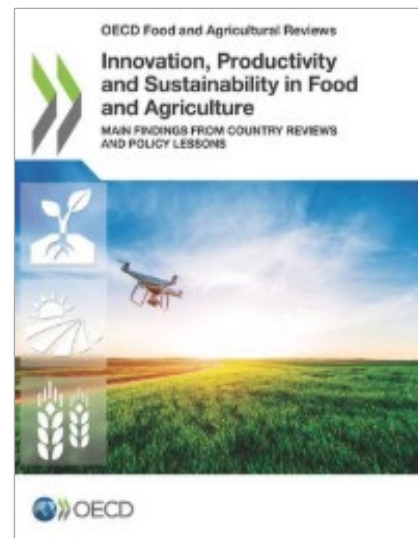
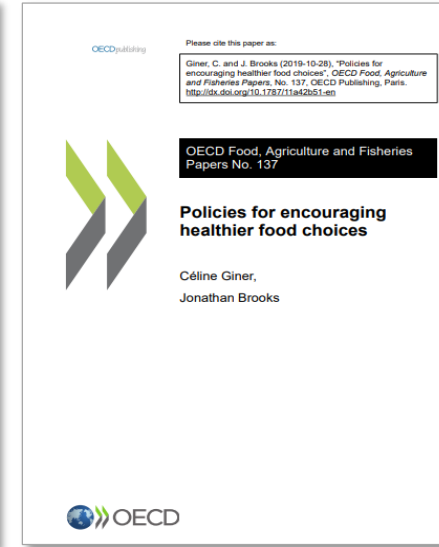
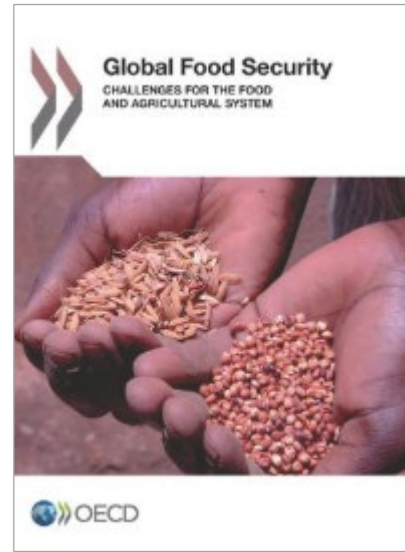
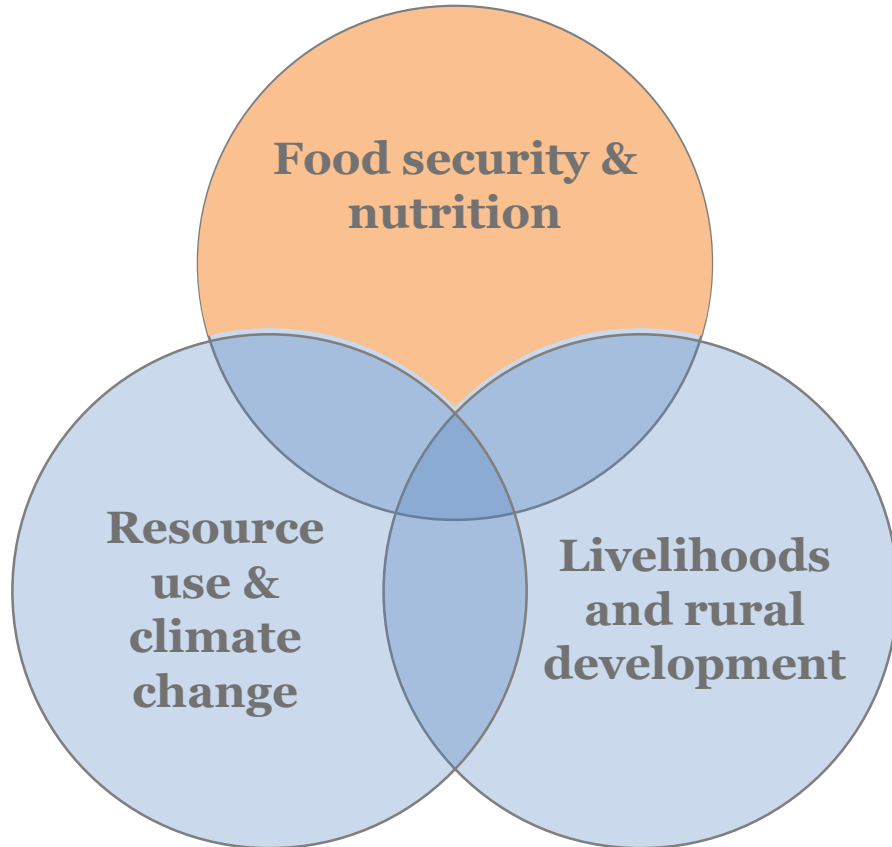
Higher farm incomes versus
lower consumer prices
Income generation
and food security



Pricing natural resources versus farm incomes
Paying for public goods

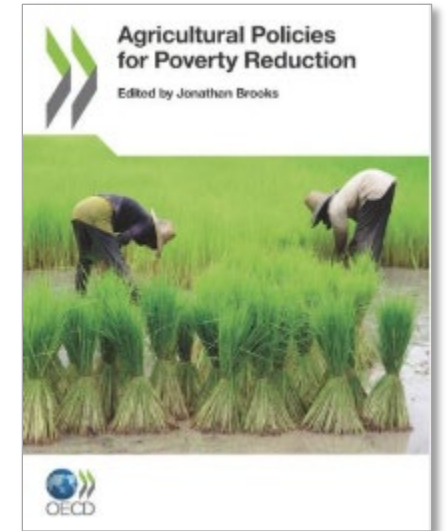
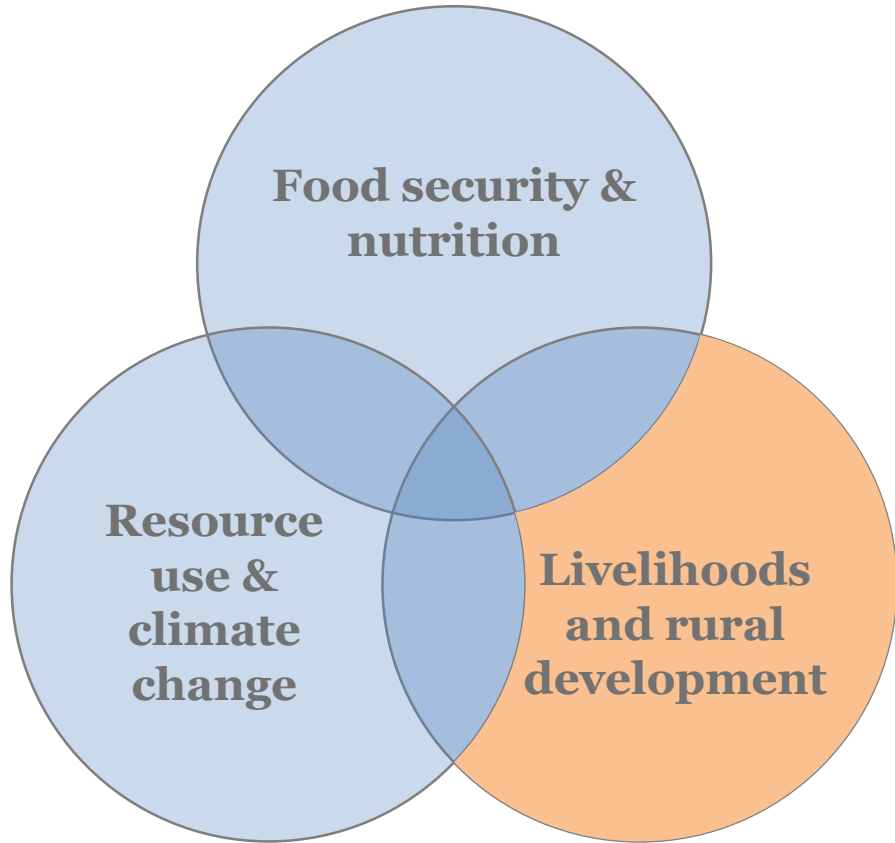


Work on food security and nutrition



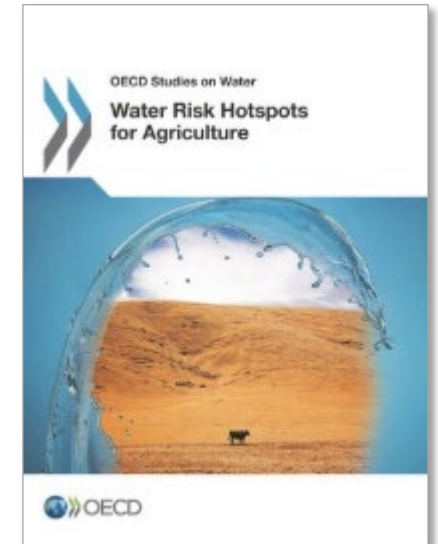
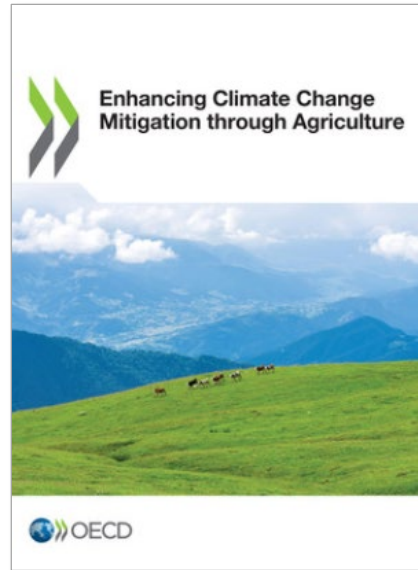
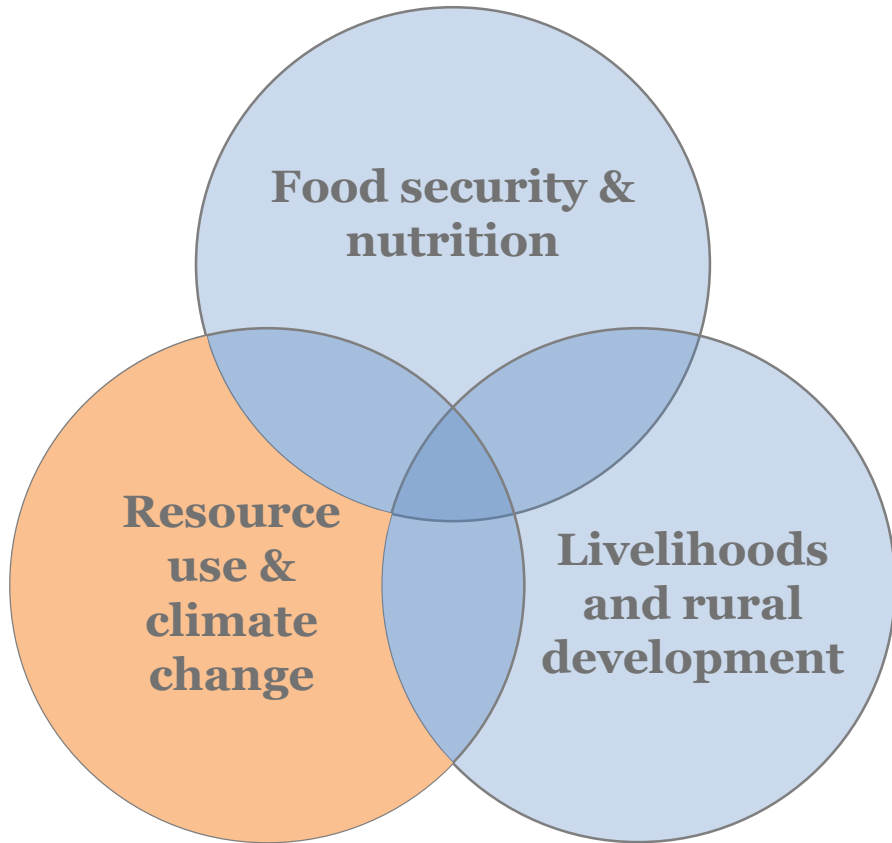


Work on livelihoods



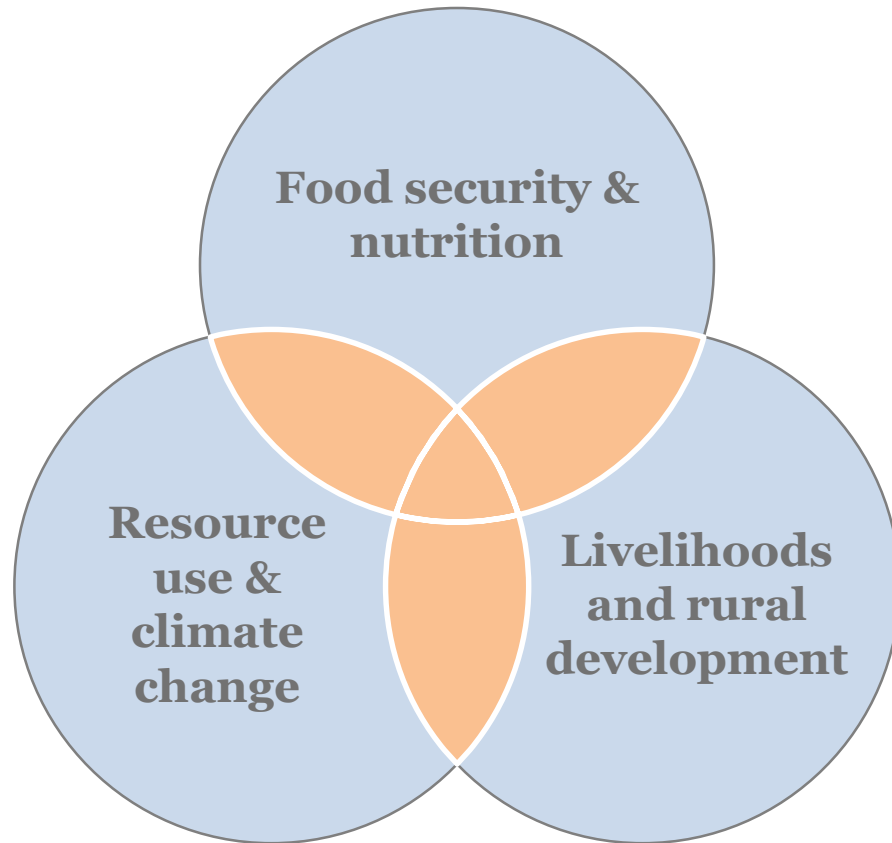


Work on resource use and climate change





How should policymakers create coherent policies when faced with trade-offs and synergies?



Some priorities can be pursued independently via **targeted** policies

A food systems approach becomes important when there are **major spill-overs** across policy areas

What does it involve?

Calibration of policies
(e.g. “sustainable diets”)

Mediation of policy-trade offs
(e.g. livestock livelihoods vs emissions)



Ongoing work will consider how **policy coherence** can be improved

Substance

Policymakers need to understand the magnitude of synergies and trade-offs and the need for **calibration** of policies

Scenario analysis will inform this: e.g. how “sustainable” are “healthier” diets?

Process

Policies need to:

- (i) redress gaps between beliefs and the evidence base;
- (ii) provide coordination across different policy communities;
- (iii) achieve social acceptance for the policies that prioritise one objective over another (**mediation**)

Three case studies will be used to examine how countries are addressing these issues: seeds (upstream), livestock, processed food (downstream)



Thank you!

Ellie Avery (ellie.avery@oecd.org)

Jonathan Brooks (jonathan.brooks@oecd.org)

Koen Deconinck (koen.deconinck@oecd.org)