

## Innovation, agricultural productivity and sustainability

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- The food and agriculture sector needs to achieve higher productivity and sustainability to respond to increasing and changing global demand for food, feed, fuel and fibre without damaging natural resources.
- Well-functioning markets and a sound and stable regulatory and policy environment are key to harnessing evolving market opportunities .
- Governments can act on sector and non-sector policy levers to influence in a coherent manner innovation, structural change, natural resource use and climate change, which drive sustainable productivity growth along the entire agro-food supply chain.
- Governments should reorient agriculture policy towards long-term productivity and sustainability objectives, make agriculture innovation systems more responsive to sectoral needs.

### What's the issue?

The food and agriculture sector is expected to provide healthy, safe and nutritious food for a growing and wealthier world population, without depleting available land, water and biodiversity resources, while coping with a changing climate. While productivity growth has been the main source of agricultural production growth

recently, productivity growth has declined in several large agricultural producing G20 countries (Figure). At the same time, despite encouraging trends on the sustainability performance of agriculture in many of these countries, each of them still faces environmental challenges which may worsen with climate change.

Annual growth in agriculture total factor productivity in reviewed countries: a mixed picture



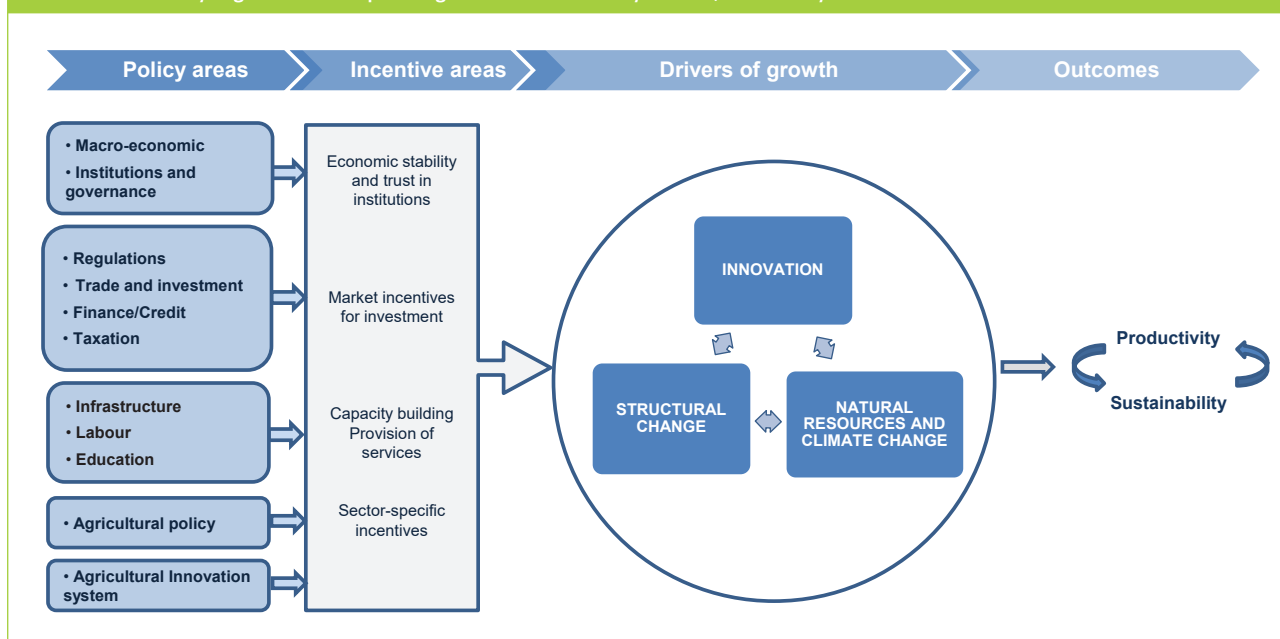
1. EU28 and OECD averages. 2. 1991-2000 data are not available for Estonia and Latvia.

Source: USDA (2018), Economic Research Service, International Agricultural Productivity (accessed January 2018).



## Agricultural productivity and innovation

### Framework for Analysing Policies to Improve Agricultural Productivity Growth, Sustainably



### What should policy makers do?

Following a call from the Mexican G20 Presidency in 2012, the OECD developed a framework to analyse the extent to which the overall policy environment is conducive to achieving higher agricultural productivity growth, sustainably. The framework identifies innovation, structural change, natural resources and climate change as drivers of productivity and sustainability. The whole range of macro-economic, institutional, and sectoral policies in the economy will influence these drivers and, in turn, outcomes.

To date, twelve in-depth country reviews have been completed by applying this framework: Australia, Brazil, Canada, the People's Republic of China, Estonia, Japan, Korea, Latvia, the Netherlands, Sweden, Turkey, and the United States. Analysis of agricultural policies in Argentina and Colombia also draws on this framework, as does a national review of Swiss policies.

Conclusions from these reviews and related OECD work has helped identify crosscutting policy recommendations to improve the sector's productivity and sustainability performance.

- Governments should first roll back agriculture policies that retain farmers in uncompetitive and low-income activities, harm the environment, stifle innovation, slow structural and generational change and weaken resilience. Agriculture policy could then focus on specific incentives and services to improve the sector's long-term productivity and sustainability.
- Second, governments should make the agriculture innovation system more responsive to sectoral needs, to increase the impact of public funding. This

often requires more effective governance systems, including for improving collaboration across all stakeholders in the food and agriculture sector and ensuring effective advisory services are widely available. Public agricultural R&D funding should complement private research, and governments should encourage private sector contributions to R&D, including through public-private partnerships. Given the shared interest in furthering agriculture innovation, governments should also facilitate international R&D co-operation.

- Third, governments should ensure a stable and enabling policy and regulatory environment to facilitate investment, and the development of infrastructure and skills capacity meeting sectoral needs. Well-functioning markets and a sound regulatory and policy environment are key to harnessing evolving market opportunities.
- Finally, governments should improve overall policy coherence to build trust and increase policy effectiveness and efficiency for the whole agro-food supply chain.



#### Further reading

- OECD (2019), *Innovation, Productivity and Sustainability in Food and Agriculture*, [https://issuu.com/oecd.publishing/docs/innovation\\_productivity\\_and\\_sustai](https://issuu.com/oecd.publishing/docs/innovation_productivity_and_sustai)
- OECD Food and Agricultural Reviews, <https://doi.org/10.1787/24114278>

