

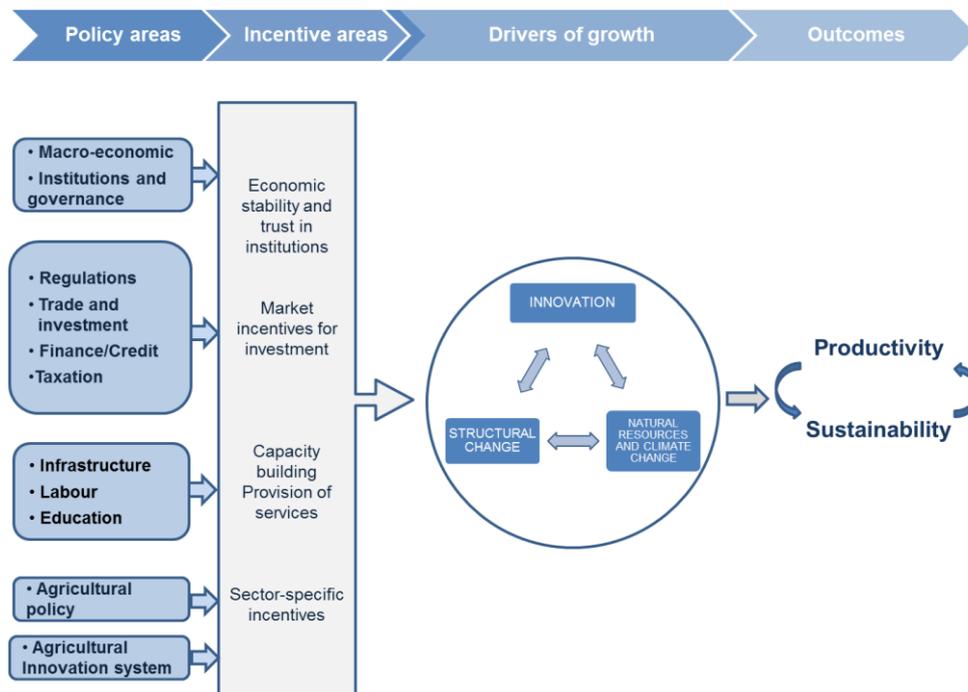
## G20 Framework for Analysing Policies to Improve Agricultural Productivity Growth, Sustainably: Stocktaking 2012-18

### Background

1. The food and agriculture sector is expected to provide healthy, safe and nutritious food for a growing and wealthier world population, feed for increasing farm animal populations, and fibre and fuel for a growing range of industrial uses, without depleting available land, water and biodiversity resources. Governments and the international community recognise that innovation is essential to achieve the productivity growth required to meet these goals, while responding to sustainability and climate change challenges.
2. In June 2011, under the G20 Presidency of France, international organisations, led by the OECD and the FAO, were mandated to identify policy responses to price volatility in food and agriculture markets (IO, 2011). First among their recommendations was the need for governments to take action to strengthen the long term productivity, sustainability and resilience of the food and agriculture system world-wide.
3. This theme was taken up under Mexico's G20 Presidency in 2012 and led to a further report and set of recommendations from the international organisations on the themes of sustainable agricultural productivity growth and bridging the gap for small-family farms (IO, 2012). Considering these recommendations, G20 Leaders asked international organisations to develop a framework to analyse and review policies and “identify best policy options for increasing productivity growth sustainably”.
4. The *Framework for Analysing Policies to Improve Agricultural Productivity, Sustainably* developed by the OECD is an analytical tool that responds to this interest.

### The Framework

5. The Framework identifies innovation, structural change and natural resource use and climate change as the main drivers of productivity and sustainability in food and agriculture (OECD, 2015a). Drawing on existing knowledge, it considers a wide range of policies — general and sector-specific — according to the main channels or incentive areas through which they affect these drivers:
  - Economic stability and trust in institutions (justice, security, property rights), which are essential to attract long-term investment in the economy.
  - Private investment, through a regulatory environment that enables competition, ensures sustainable use of resources, and facilitates the adoption of new technologies; trade that facilitate flows of goods, capital and knowledge; access to finance and tax provisions.
  - Capacity building, including provision of essential public services, which facilitates access to markets and knowledge, and improves skills needed to innovate and improve resource use sustainably.
  - Agricultural policy, which affects farm adjustment, investment and practices.
  - Agricultural innovation policy, i.e. government's role in the agricultural innovation system in providing governance, funds for innovation activities, and incentives for private investment in and adoption of innovation (Figure 1).

**Figure 1. Policy drivers of innovation, productivity and sustainability in food and agriculture**

Source: OECD (2015).

6. To facilitate the application of the framework in the preparation of country reviews, a number of questions have been developed and associated indicators defined to facilitate the collection of relevant information, and help identify policy incentives and disincentives and assess policy outcomes.

7. The draft Framework drew on a framework being developed in parallel for the OECD Committee for Agriculture to analyse the role of the government in fostering innovation in the agricultural and agri-food sectors with a view to assessing the extent to which the policy environment overall is conducive to achieving better productivity growth in a sustained and sustainable way (OECD, 2013). This draft Framework was successfully tested on three pilot country reviews: Australia, Brazil and Canada, with active collaboration between the OECD and national governments.

8. The Framework evolved over time to meet the needs from both the G20 and the OECD Committee for Agriculture, in which many G20 countries participate. The natural resource, climate change and structural change components were strengthened in 2015 (OECD, 2015a). The Framework is continuously improved with experience in implementation in different countries at different stages of development and with different natural endowment, and new evidence on policy impacts.

### Implementation in country reviews

9. To date, seven G20 member countries and five additional OECD countries have been studied in-depth using the Framework (Table 1). These studies are discussed by national authorities in the reviewed countries and, in a formal peer review process under the auspices of OECD's Committee for Agriculture in sessions to which all G20 countries are invited. The reports are agreed and publicly released.

10. The first three country reviews of Australia, Brazil and Canada were conducted on a pilot basis in 2014 and published in 2015 (OECD, 2015c, d, and e). The review of the Netherlands was published soon after using the 2015 version of the Framework, with wider coverage of environmental and climate

change considerations (OECD, 2015b). Reviews of Turkey and the United States were published the following year (OECD, 2016a and b). Reviews of China, Estonia, Korea and Sweden have been, or will be published in 2018 (e.g. OECD, 2018a). The reviews of Latvia, Japan and Viet Nam are on-going and expected to be published in 2019.

11. The Framework has also been used to analyse the Colombian Agricultural Innovation System in the OECD Review of Agricultural Policies in Colombia (OECD, 2015f), and it will also be used to analyse the Argentinian Agricultural Innovation System in the on-going OECD review of agricultural policies in Argentina. Moreover, the Swiss government used the Framework independently to review the extent to which Swiss policies foster agricultural productivity and sustainability. The Framework was also used to take stock of agricultural innovation systems in Association of Southeast Asian Nations (ASEAN) member states, as part of a report that explores a range of agriculture and fisheries-related issues and policies that are important for the region in its efforts to achieve food security (OECD, 2017).

12. Experience with the Framework shows that strong collaboration between OECD and governments is important to successful application and that countries welcome the OECD role in guiding the collection of evidence, providing the broader policy context and cross-country comparison, and drawing policy recommendations. Different models of collaboration have been explored (Table 1). In all cases, the OECD provided the framework questionnaire, common indicators, and general policy information, synthesised the information, and developed the overview and recommendation section.

**Table 1. Implementation models**

Countries	Timeframe	Coordination	Provision of background information
Brazil	2014-15	Embassy in Paris	Ministry and consultants from Embrapa
Australia, Canada	2014-15	Agriculture Ministry	Agriculture Ministry (ABARES, AAFC)
United States	2015-16	Agriculture Ministry	Agriculture Ministry (USDA)
Netherlands	2015	Agriculture Ministry	Consultant report for the government (research institutes)
Turkey	2015-16	Agriculture Ministry	Ministry and consultants; Visiting partner
China	2016-18	Research Institute under State Council	Consultants and cross-ministerial experts
Estonia, Sweden	2017-18	Agriculture Ministry	Research Institute of agricultural economics of the University
Latvia	2017-19	Agriculture Ministry	Research Institute of agricultural economics of the University
Korea	2017-18	Agriculture Ministry	Research Institute under the Ministry
Japan, Viet Nam	2018-19	Agriculture Ministry	Research Institute under the Ministry

### Return on experience

13. The Framework has been successfully applied to a wide range of countries and yielded policy recommendations to improve countries' productivity and sustainability performance. Reviewed countries differ by size, geography, natural conditions, and economic situation, as well as food and agriculture characteristics, such as share in the economy, trade status, structure and environmental pressures. The reviews triggered in-depth discussion of a diversity of policies, including non-sectoral policies, in the reviewed countries, stimulating the type of cross-ministerial dialogue that is typically quite difficult to arrange. The reviews also encouraged exchanges among G20 and OECD countries about which policies are best able to simultaneously achieve progress in agriculture productivity and sustainability.

14. Reviewed countries welcome the opportunity to discuss the situation of the sector and policy recommendations with a broad range of stakeholders, and to benchmark sectoral and policy

performance. They also use the report to inform the government, staff and stakeholders on opportunities and challenges, state of knowledge and in some countries to showcase the relevance of government analysis on these and related issues. Some countries have reported on the changes implemented following the recommendations.

15. Countries can learn from each other. Improving sustainable productivity growth in agriculture remains a challenge for all countries, even the strong performers, where there is scope for narrowing productivity gaps. Reviewed countries continue to face difficulties improving the environmental performance of agriculture, even though constraints and performance vary widely, as do possible climate change impacts.

16. The reviews improved understanding of drivers of productivity and sustainability and helped identify knowledge gaps. For example, they confirm the importance of innovation as a driver of productivity growth, and sustainability in many cases. Natural resource management and climate change clearly influence the range of possible products and choice of adapted production practices, and thus performance.

17. Lessons drawn from the reviews cover many policy areas. Concerning agricultural innovation systems, innovation policy should aim to make the system more collaborative and demand-driven to enhance performance. Public funds should be primarily targeted to innovations that the private sector does not take up. Those will typically have long-term impacts, e.g. in the sustainability area, and target innovations that relate to creation of positive externalities or avoidance of negative ones. This type of innovation is typically ‘orphaned’ in the private sector. Public-private partnerships (PPPs) can effectively leverage scarce public funds – but good design of PPPs depends on effective sharing of costs and benefits. Efficient agricultural innovation systems need strategic focusing – best done in public-private processes – to identify long term strategies. Not all countries need a full-fledged national system. Regional and international co-operation can be an effective means to obtain innovations needed.

18. The reviews also offer the opportunity to focus on issues and sectors of particular importance to specific countries. Policies related to the use of water were discussed in depth in Australia, China and Turkey, three countries with semi-arid agriculture production areas subject to drought, but each facing different policy challenges. In Australia, the report discussed the need to refocus drought policies from risk coping to preparedness and adaptation. In the case of Turkey, the report recommended improving water allocation mechanisms and the use of water pricing. The report on China discussed the need to review overall water governance and proposed policies for more sustainable use of water and to reduce agriculture pollution. Farm structure was treated in-depth in China and Korea, intensive agriculture and greenhouses in the Netherlands, the importance of Information and Communication Technologies (ICT)<sup>1</sup> in Estonia, regional differences in large countries, or infrastructure improvement in Australia and Brazil.

19. A comprehensive synthesis of the main findings and policy implications from this body of work is underway and will be finalised in the near future. Particular focus will be put on lessons learned which are cross-cutting in nature allowing countries to learn from each other. The synthesis report will also contribute to reflections about how to further develop and strengthen the framework with a view to future applications to G20 and OECD countries.

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<sup>1</sup>. G20 countries discussed the role of ICT in agriculture and asked International Organisations to prepare a report on that subject (IO, 2017).

## Communication and publication

### *G20 related events*

- During the G20 Mexican Presidency, the OECD presented the innovation Framework at the first MACS in Guadalajara and Tequila, Mexico on 24-27 September 2012.
- Draft Framework presented to the Mexican G20 Presidency in November 2012 by OECD.
- During the G20 Australian Presidency, a G20-OECD Workshop took place on 6 March 2014 in Canberra. The OECD presented the Framework and representatives from the three pilot countries presented national productivity-sustainability challenges and policy responses.

### *Country reviews publications*

- Seven OECD publications: Australia, Brazil, Canada and the Netherlands in 2015, Turkey and the United States in 2016, and Estonia in 2018.
- China, Korea and Sweden forthcoming in 2018.
- Japan, Latvia and Viet Nam on-going and planned for 2019.

### *Presentation of findings from country reviews*

20. Main findings and policy recommendations were discussed with the government and stakeholders in most countries during the preparation of the reviews or for the launch of publications. For example:

- Presentation of the Dutch review to the Minister of Agriculture in The Hague on 26 November 2015, followed by a Seminar with stakeholders to discuss implementation of the recommendations.
- Presentation of policy insights from Australia, Brazil, Canada and the Netherlands on improving innovation for a more productive and sustainable agriculture, OECD-ATPC-ICTSD workshop on agro-food trade and food security, 19 October 2015, Beijing. [www.oecd.org/tad/events/workshop-agro-food-trade-and-food-security-china-2015.htm](http://www.oecd.org/tad/events/workshop-agro-food-trade-and-food-security-china-2015.htm)
- Presentation of the US review and main findings from all country reviews available at a Farm Foundation Forum in Washington DC, on 19 September 2017. [www.farmfoundation.org/](http://www.farmfoundation.org/)
- Presentation of the Estonia Review to the Parliament and round table to discuss recommendations with the government and the stakeholders in Tallinn, on 13 February 2018.

### *OECD meetings*

- Discussion in working parties and in the Committee for Agriculture at G20 level. Delegates to these meetings strongly support this work, which was rated as high impact and high quality in the general OECD review process.

## Main challenges

### *Strengthening the analytical base*

21. More analytical work is needed to support the Framework and country reviews, either as part of an individual review to study a specific issue, or as part of horizontal studies. The Framework relies on economic and environmental sciences, as well as empirical evidence to link policy incentives to drivers of productivity and sustainability, and link drivers to outcomes. While some pathways are relatively well documented, such as the role of regulations and research in innovation and the contribution of innovation to productivity, others are less clear. Policy coherence, in particular, was identified as an area requiring more work. Several projects on-going at the OECD are expected to contribute to strengthening

the framework. They include work on farm level drivers of productivity performance, analysis of innovation systems, the role of taxation, the environmental impact of agricultural policies, and trade-offs between productivity, sustainability, natural resource use and climate change adaptation and mitigation.

22. Despite on-going efforts, information on productivity and sustainability performance is often limited, in particular at the farm or firm level, and difficult to compare across countries. This calls for investment in methods to develop “Metrics of Sustainable Agricultural Productivity” to enhance the analytical framework and to allow international benchmarking of productivity and sustainability performance of agriculture. Similarly, measurement of policy efforts, outcomes and impact need to be pursued. For example, a number of indicators are available at the economy-wide level, but coverage at the sector-level is often weak or missing. It is thus difficult to evaluate the extent to which general policies apply to and affect agriculture and food (e.g. taxation, regulatory and environmental stringency, labour policy, education, innovation).

### *Implementation process*

23. **Defining a sustainable business model:** The models of cooperation with reviewed countries and cost-sharing have evolved over time and vary by country, depending on resources and capacity. In most country reviews, the costs of implementation were shared between the OECD and the reviewed country. National contributions can be financial or in-kind (provision of information, visiting partner). In some cases, OECD countries provided voluntary funding for other reviewed countries or exceptional resources were available from OECD funding mechanisms. OECD involvement in the implementation of country reviews has been generally significant and highly appreciated by reviewed countries. This places a limit on the number of countries that can be reviewed in parallel.

24. The coverage and structure of **future country reviews** will continue to evolve and the analytical basis to be strengthened. While maintaining basic coverage and comparability across country reviews, a more modular approach could be envisaged. Moreover, the Framework and implementation process could be adapted for countries with less capacity (statistics, analysis, funding).

### *Follow-up and communication:*

- Countries continue to ask to be reviewed.
- Feed-back on impact of the reviews would be informative. The monitoring of implementation of the recommendations could be envisaged or reviews could be updated to evaluate policy changes.
- The sharing of best practices focusing on specific policy areas (e.g. risk management, extension services) or issues (e.g. adoption of innovation, structural change, skills adaptation) could be the theme of specific reports or events.

### **Next steps:**

- Findings from the synthesis report underway could be presented during the G20 Agricultural Deputies meeting in Buenos Aires on 26-27 July 2018, or to Ministers on 28 July.
- Further development of the framework and strengthening of the analytical basis are ongoing.
- More reviews could be envisaged in the work programme of the OECD Committee for Agriculture for 2019-20.
- Feed-back from G20 countries to the OECD on the value of the exercise is welcome.

## References

- IO (2017), *Information and Communication Technology (ICT) in Agriculture*, A Report to the G20 Agricultural Deputies, prepared by the Food and Agriculture Organization of the United Nations (FAO) with inputs from the International Food Policy Research Institute (IFPRI), and the Organization of Economic Cooperation and Development (OECD), [www.fao.org/3/a-i7961e.pdf](http://www.fao.org/3/a-i7961e.pdf)
- 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. Available at: [www.oecd.org/tad/agriculturalpoliciesandsupport/50544691.pdf](http://www.oecd.org/tad/agriculturalpoliciesandsupport/50544691.pdf).
- IO (2011), *Price Volatility in Food and Agricultural Markets: Policy Responses*, Policy Report including contributions by FAO, IFAD, IMF, OECD, UNCTAD, WFP, the World Bank, the WTO, IFPRI and the UN HLTF, [www.oecd.org/tad/agricultural-trade/48152638.pdf](http://www.oecd.org/tad/agricultural-trade/48152638.pdf).
- OECD (2018a), *Innovation, Agricultural Productivity and Sustainability in Estonia*, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264288744-en>
- OECD (2018b), *Innovation, Agricultural Productivity and Sustainability in China*, OECD Publishing, Paris (forthcoming).
- OECD (2018c), *Innovation, Agricultural Productivity and Sustainability in Sweden*, OECD Publishing, Paris (forthcoming).
- OECD (2018d), *Innovation, Agricultural Productivity and Sustainability in Korea*, OECD Publishing, Paris (forthcoming).
- OECD (2017), "Enhancing food security by improving agricultural innovation systems in ASEAN", in *Building Food Security and Managing Risk in Southeast Asia*, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264272392-9-en>.
- OECD (2016a), *Innovation, Agricultural Productivity and Sustainability in Turkey*, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264261198-en>.
- OECD (2016b), *Innovation, Agricultural Productivity and Sustainability in the United States*, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264264120-en>.
- OECD (2015a), Analysing policies to improve agricultural productivity growth, sustainably: Draft Framework, May, [www.oecd.org/tad/agricultural-policies/Analysing-policies-improve-agricultural-productivity-growth-sustainably-may-2015.pdf](http://www.oecd.org/tad/agricultural-policies/Analysing-policies-improve-agricultural-productivity-growth-sustainably-may-2015.pdf).
- OECD (2015b), *Innovation, Agricultural Productivity and Sustainability in the Netherlands*, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264238473-en>.
- OECD (2015c), *Innovation, Agricultural Productivity and Sustainability in Australia*, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264238367-en>.
- OECD (2015d), *Innovation, Agricultural Productivity and Sustainability in Brazil*, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264237056-en>.
- OECD (2015e), *Innovation, Agricultural Productivity and Sustainability in Canada*, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264238541-en>.
- OECD (2015f), *OECD Review of Agricultural Policies: Colombia 2015*, OECD Publishing, Paris. DOI: <http://dx.doi.org/10.1787/9789264227644-en>.
- OECD (2013), *Agricultural Innovation Systems: A Framework for Analysing the Role of the Government*, OECD Publishing. <http://dx.doi.org/10.1787/9789264200593-en>.