

Foreword

Agricultural Innovation Systems (AIS) are key to improving the economic, environmental and social performance of the agri-food sector. The long-term positive impact of agricultural research and development (R&D) on productivity growth is well established, and technologies and practices can help improve the sustainability of natural resource use. In recognition of their potential contribution to challenges facing the agri-food sector, AIS are the subject of renewed attention from policy makers.

In the last two decades, a number of countries have reviewed their national AIS and have engaged in reforms to improve its relevance to users' demand and broader policy priorities, as well as its cost-efficiency. The focus of reforms has been to strengthen co-ordination and governance, develop interactions within the system, and with other fields of innovation, improve cross-country co-operation, and strengthen mechanisms for the diffusion of innovation.

More recently, market developments, in particular high food prices, have focused attention on global challenges for agriculture and AIS. Agricultural production will need to increase faster to meet higher and more diverse demand for food, feed, fibre and fuel from a growing and wealthier population as well as for the development of bio-based, non-food products. Meeting these demands sustainably will require further increases in agricultural productivity and efficiency in the use of natural resources — land, water, biodiversity — in a context of growing competition between agriculture and other uses for finite land and water resources, and uncertainties associated with climate change. This will require changes in production methods, including the adoption of technological and other innovations, at every step of the agri-food chain.

The role of AIS in improving agricultural productivity and sustainability and the need to reinforce international efforts and co-operation to respond to global challenges such as food security and climate change is recognised at the international level (e.g. FAO, 2012; World Bank, 2006 and 2012).

In 2011 and 2012, agricultural innovation was discussed at G20 and G8 meetings, in the context of agricultural, development and food security themes. In the 2011 Action Plan on Food Price Volatility and Agriculture, G20 Agricultural Ministers “agree(d) to strengthen agricultural research and innovation through our (their) national agricultural systems, the CGIAR (Consultative Group on International Agricultural Research) and the Global Forum on Agricultural Research (GFA)” (agriculture.gouv.fr/IMG/pdf/2011-06-23_-_Action_Plan_-_VFinale.pdf). In 2012, the Mexican G20 Presidency asked International Organisations (IO) to prepare a report on “Sustainable Productivity Growth and Bridging the Gap for Small Family Farms”. The IO report (G20, 2012) includes a number of recommendations on how to improve AIS which have been endorsed in the report of G20 Agricultural Vice-Ministers. In particular, agricultural Vice-Ministers agreed to “Undertake further analysis of current national approaches and best policy practices to increase sustainable agricultural productivity growth. As an initial step, and without creating new institutions, [they] call(ed) on the FAO, OECD and other relevant IOs to propose a consistent framework for analysis for [their]

consideration before the end of 2012.” In response to this request and in consultation with other international organisations, the OECD has undertaken further analysis to develop a framework for analysis to identify best policy approaches to increasing agricultural productivity growth sustainably.

This report contains an overview of agricultural innovation systems, outlining the main issues and trends (Part I), and develops a framework to analyse the role of government in fostering the creation and adoption of innovation in the agricultural and agri-food sector, i.e. primary agriculture, upstream and downstream industries (Part II). This framework adapts the agricultural and agri-food sector the OECD innovation strategy (OECD, 2010a, b; Box 1.4). It takes into account the specificities of innovation in agriculture, such as the impact of agricultural, environmental and rural policy, and the issues of adoption by farmers of innovations created upstream, and discusses measurement of innovation at the sector level. Previous OECD work on agricultural innovation (available at www.oecd.org/agriculture/policies/innovation), general innovation and green growth provided useful information. These include the following.

- OECD (2012a), *Improving Agricultural Knowledge and Innovation Systems: OECD Conference Proceedings*, OECD Publishing, dx.doi.org/10.1787/9789264167445-en.
- Country responses to a questionnaire on their Agricultural Knowledge Systems (AKS) institutions regarding its organisation, objectives, priorities and outcomes, as well as its internal/external networking and co-operation (Annex A).
- OECD (2012b), *Agricultural Policy Monitoring and Evaluation 2012: OECD Countries*, OECD Publishing, dx.doi.org/10.1787/agr_pol-2012-en.
- Interagency Report to the Mexican G20 Presidency, co-ordinated by the FAO and the OECD, on “Sustainable Productivity Growth and Bridging the Gap for Small Family Farms” (G20, 2012).
- OECD (2010a), *OECD Innovation Strategy: Getting a Head Start on Tomorrow*, OECD Publishing. Available at: www.oecd.org/innovation/strategy.
- OECD (2010b), *Ministerial report on the OECD Innovation Strategy: Innovation to strengthen growth and address global and social challenges: Key Findings*, available at: www.oecd.org/dataoecd/51/28/45326349.pdf.
- OECD (2010d), *Climate Change and Agriculture: Impacts, Adaptation and Mitigation*, OECD Publishing.
- OECD (2011b), *OECD Green Growth Studies: Food and Agriculture*, OECD Publishing. dx.doi.org/10.1787/9789264107250-en.
- OECD (2013), *Policy instruments to support Green Growth – Main report*, OECD Publishing, Paris, *forthcoming*.

Catherine Moreddu is the author of this report, which was declassified by the OECD Working Party on Agricultural Policies and Markets in March 2013.



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