Executive summary

This book aims to improve an understanding of the best policy measures to provide agri-environmental public goods and reduce agri-environmental public bads by looking at the experiences of five OECD countries: Australia, Japan, the Netherlands, the United Kingdom and the United States. A number of questions will be addressed, including: How do these countries define agri-environmental public goods? How do they set agri-environmental targets and reference levels? Which policies do they implement and for which agri-environmental public goods?

Targeted agri-environmental public goods and their priorities vary depending on the country because of, for example, history, culture, climate, and farm systems. Five agri-environmental public goods (soil protection and quality, water quality, water quantity and availability, air quality and biodiversity) are targeted in all the studied countries. Climate change (greenhouse gas emissions and carbon storage) is a targeted agri-environmental public good except in the United States. Agricultural landscapes are targeted agri-environmental public goods except in Australia. Resilience to natural disasters such as flooding and fire are targeted agri-environmental public goods in Japan, the Netherlands and the United Kingdom, but not in Australia and the United States.

Farmers form the largest group of natural resource managers in the world. Farm systems, inputs and practices and agricultural infrastructure (driving forces) affect the provision of agri-environmental public goods (environmental outcomes). Most policy measures target these driving forces, but performance-based policy measures, which target environmental outcomes, are few. Generally speaking, it is easier to target driving forces than outcomes because various factors, including non-agricultural ones, affect the environmental outcomes. Sometimes, targeting driving forces is the only practical option. In addition to policy design and methodological issues, countries also face challenges in obtaining appropriate data and linking environmental outputs to driving forces that policy measures often target.

Farmers can provide agri-environmental public goods without government intervention, and the supply may meet demand. It has been rarely examined, however, as to whether the supply in fact meets demand, although the case study countries have been trying to collect better data on both the demand and supply of agri-environmental public goods. This suggests that governments may intervene in cases where the supply does meet the demand and there are no market failures. There are risks of over-intervention. Where market failure exists, there are cases of insufficient or poor government intervention because of lack of information concerning the extent of market failure.

Cost-benefit analyses generally have not been undertaken due to technical difficulties. Some studies indicate there are cases where the costs of government intervention outweigh the benefits. At present, governments are trying to improve the cost-effectiveness of policy measures.

Environmental targets and reference levels are useful to discuss who should bear the costs for providing agri-environmental public goods, but they are not clearly defined or quantified in most cases. Many financial incentives set reference levels based on current farming practices so that governments are required to pay farmers to adopt sustainable farming practices. In some cases, direct beneficiaries of agri-environmental public goods can be identified. In this case, beneficiaries can bear some of the costs for its provision, thereby reducing the costs of government intervention as well as the farmer's burden. Community-based approaches or collective action can help and such organisations should be included in the discussion of the distribution of burdens.

Many policy measures (especially financial incentives such as agri-environmental payments) target multiple agri-environmental public goods, and each agri-environmental public good is targeted by

multiple policy measures. It is not always clear to what extent a particular policy measure tries to address agri-environmental issues, and to what extent others do so.

Policy measures are complex because of the history of policy development and the involvement of multiple actors (e.g. ministries, central and local governments, stakeholders). Discussion on best policy mixes and co-ordination among actors is still inadequate.

Key recommendations

- Identify environmental externalities from agricultural activities that are important to countries and regions. Ensure that they have the characteristics of non-rivalry and non-excludability, and can be defined as agri-environmental public goods and not as private goods.
- Examine how agriculture can provide agri-environmental public goods, and foster knowledge-building and data-gathering.
- Pay greater attention to analysing demand and supply of agri-environmental public goods. Agri-environmental public goods can be local, regional or global public goods – thus, the examination of market failures associated with agriculture must be done at the appropriate scale.
- Identify to what extent farmers can voluntarily provide agri-environmental public goods without government intervention. Avoid paying farmers who would have improved their environmental performance without government payment, and pay attention to the additionality of a policy measure.
- Take a more rigorous approach in evaluating the benefits and costs of specific policy interventions – and also of non-intervention. Those benefits, to the extent possible, must be evaluated on the basis of the environmental outcomes and not according to the use of particular practices.
- Clearly and appropriately defined reference levels and environmental targets need to be established, and decisions on who bears what share of the costs (farmers, taxpayers, and consumers) should be made, prior to any government intervention.
- Target factors that affect the provision of agri-environmental public goods so as to improve the cost-effectiveness of policy measures. To improve the effectiveness of policy measures, take into account the heterogeneity of farmers and farmland characteristics, target related geographical areas, specific farm types, inputs, practices and infrastructure, and clearly define specific environmental objectives.
- Pay more attention to a wider range of motivations for farmers' actions concerning the environment. Farmers have different perceptions of environmental issues and their preferences and degree of compliance with policy measures differ among them. More research on farmer behaviour is necessary to develop a holistic approach towards agri-environmental public goods.
- Examine innovative approaches, such as auction systems based on environmental outcomes and payments for ecosystem services, undertaken by local governments and private companies. Learn from them to improve the cost-effectiveness of agri-environmental policies.
- Policy makers should choose the appropriate policy instruments by evaluating the trade-offs between environmental effectiveness, economic efficiency, administrative costs and constraints, and other benefits and costs, including consideration of equity and income distribution.
- Develop good policy mixes in order to provide agri-environmental public goods in a cost-effective way. Reviewing current policy measures and examining whether policy measures are not conflicting but creating synergies and bringing additionality is a first step.