Executive summary

Farmers have a long record of adapting to climate change. The evolving nature of the present changes could, however, have a significant impact on agriculture that will challenge farmers to adapt even further as regards land use and production practices. Moreover, agriculture is expected to reduce its GHG emissions and to offset CO_2 emissions from other sectors through carbon sequestration. These actions are closely related to farm management practices. It is therefore important to understand how the cultural and social factors (education, information, traditional local practices) in addition to policy incentives facilitate or hinder the implementation of adaptation and mitigation actions. Such an understanding is critical as many potential win-win options are not adopted. Drawing on the experiences of OECD countries, this report identifies policy options that would contribute to a sustainable and resilient agricultural sector in the context of climate change.

Research has shown that behavioural factors influence the outcome of policy incentives in that they can either complement or constrain the effects of policies. Thus, it is important to consider farmer behaviour when seeking to improve both the environmental effectiveness and cost-effectiveness of policies. The environmental outcome of policy instruments is usually much lower than their potential due to institutional, educational, social and political constraints. Policy incentives, education and information, and consistency and compatibility with traditional local practices, all play a determining role in the actual outcome.

Four main policy implications emerge from this analysis.

1. **A holistic approach is needed**. An agricultural sector that can contribute to GHG mitigation and adaptation to climate change is likely to require a combination of policy instruments and other mechanisms, such as habits, cognition and norms which can influence farmer behaviour.

2. **Behavioural change should be understood at the local level**. In order to deal with spatial heterogeneity, it is important that policy recognises

that performance of different policy instruments varies over both landscape and farmers.

3. **"Nudging" could be a useful approach to guide policy**. "Nudging" implies a small change in the social context that alters behaviour without forcing anyone to do anything. An example of a nudge approach is "visualisation" policies such as eco-labelling (carbon footprinting). This approach encourages farmers to establish what they need to do, and allows their efforts to be conveyed to consumers through labelling.

4. **Forming networks of farmers or working collectively can play an important role**. Social norms – or social capital – could potentially influence collective action (various forms of group activity) of farmers. Collective options should be given serious consideration as an alternative to the market or to regulation in addressing many agricultural and natural resource problems. As both adaptation and mitigation are closely linked to public benefits (shared value), strategies to encourage farmer co-operation have been a feature of government policy.

Behavioural economics has important implications as regards environmental policy. Traditional policy instruments are sometimes insufficient and government policy could potentially deal with more than market failure, justifying actions by governments in relation to behavioural failure. Although the extent of behavioural failure has not been tested enough with respect to its impact on agricultural practices and policy instruments, more attention needs to be paid to a wider range of motivations for farmers' actions concerning the environment. Given the fact that behavioural economics is a relatively recent branch of economics, more research and empirical evidence is required so that the insights gained can be of further use in policy making.