

## *Chapter 1*

### **Green growth and agriculture**

*Green growth has been identified as an alternative global growth trajectory, and in many countries economic sectors are being scrutinised for the extent to which they offer growth potential that is environmentally benign and socially beneficial. This introductory chapter provides a concise discussion of the concept of green growth and its relation to agriculture, and explains the objective of the report, which is to provide a synthesis of the policy instruments that OECD member countries have adopted in order to achieve their green growth objectives in agriculture.*

Green growth has been identified as an alternative global growth trajectory, and in many countries all economic sectors are being scrutinised for the extent to which they offer growth potential that is environmentally benign and socially beneficial (OECD, 2011a, 2011b; EC, 2011a; 2011b; Hallegatte et al., 2012). Green growth policies have emerged as a central element in the policy discourse relating to the recovery from the financial and economic crisis, reflecting the idea that environmental goals can be attained while stimulating a viable and competitive economy.

The need for green growth arises because a “business-as-usual” path does not fully account for environmental limits and social concerns. Green growth focuses on the interface between the environment and the economy, and new sources of economic growth that are consistent with resilient ecosystems. The OECD’s Green Growth Strategy defines an economic development path that is consistent with long-run environmental protection, using natural resources within their carrying capacity, while providing acceptable living standards and poverty reduction in all countries.

Green growth aims at combining a cleaner economy with a stronger economy. It means fostering economic growth and development, while ensuring that natural assets continue to provide the resources and environmental services on which the well-being of societies relies. Thus, a green growth strategy would yield a “double dividend” effect — higher growth with lower environmental impact — by improving the efficiency of resource use and increasing investments in natural capital to drive economic growth.<sup>1</sup> In that context, several sources of green growth can be distinguished (Box 1.1).

Responding partly to the global economic downturn and partly in recognition of the increasingly apparent biophysical limits to growth, including energy costs, the green growth agenda represents a renewed focus on the fundamental drivers of growth, including the re-examination of the use of factors of production, environmental innovation, and the removal of policy distortions. In contrast to the previous environment-development view – embodied, for example, in the “environmental Kuznets curve”<sup>2</sup> message of grow first and make environmental investments later – the green growth paradigm suggests that going green can be not only compatible with growth, but also a source of growth (OECD, 2011a).

Essentially, green growth has two implications: the requirement that existing resources are used as productively as possible but without impairing their future productive potential or provoking further environmental degradation, and preferably in ways that are consistent with reducing existing negative environmental impacts. Green growth also requires that there should be, over time, a sustained increase in the productive potential of existing resources and where possible an expansion in the total resources available for satisfying human wants.

Green growth implies policies that either incrementally reduce resource use per unit of value added (*relative decoupling*) or keep resource use and environmental impacts stable or declining while the economy is growing overall (*absolute decoupling*). Green growth has recently become an over-arching policy objective in several countries.

More specific to agriculture, an OECD report (OECD, 2011c) summarises similar elements of sector-specific green growth in terms of:

- Increased resource use efficiency – increasing production relative to inputs used
- Well-functioning markets and provision of the right pricing signals
- Establishment of well-functioning property rights.

### Box 1.1. Sources of green growth

Green growth has the potential to address economic and environmental challenges and open up new sources of growth through the following channels:

- **Productivity.** Incentives for greater efficiency in the use of resources and natural assets: enhancing productivity, reducing waste and energy consumption and making resources available to highest value use.
- **Innovation.** Opportunities for innovation, spurred by policies and framework conditions that allow for new ways of addressing environmental problems.
- **New markets.** Creation of new markets by stimulating demand for green technologies, goods, and services; creating potential for new job opportunities.
- **Confidence.** Boosting investor confidence through greater predictability and stability around how governments are going to deal with major environmental issues.
- **Stability.** More balanced macroeconomic conditions, reduced resource price volatility and supporting fiscal consolidation through, for instance, reviewing the composition and efficiency of public spending and increasing revenues through the pricing of pollution.

It can also reduce risks of negative shocks to growth from:

- **Resource bottlenecks** which make investment more costly, such as the need for capital-intensive infrastructure when water supplies become scarce or their quality decreases (e.g. desalination equipment). In this regard, the loss of natural capital can exceed the gains generated by economic activity, undermining the ability to sustain future growth.
- **Imbalances** in natural systems also raise the risk of more profound, abrupt, highly damaging, and potentially irreversible, effects – as has happened to some fish stocks and as could happen with damage to biodiversity under unabated climate change. Attempts to identify potential thresholds suggest that in some cases – climate change, global nitrogen cycles and biodiversity loss – these have already been exceeded.

Source: OECD (2011), *Towards Green Growth*, OECD Green Growth Studies, OECD Publishing, doi: [10.1787/9789264111318-en](https://doi.org/10.1787/9789264111318-en)

The agricultural sector faces challenges in adapting to an economic environment oriented towards green growth. With projected demand expected to grow strongly, agriculture has to continue to increase productivity, economise on the use of increasingly scarce resources and adapt to climate change. At the same time, it needs to be able to contribute to improving environmental quality.

A green-growth strategy for the food and agriculture sector aims to ensure that enough food is provided, efficiently and sustainably, for growing population. This means increasing production, while managing efficiently scarce natural resources, such as water; reducing the carbon intensity and adverse environmental impacts throughout the food chain; enhancing the provision of environmental services, such as carbon sequestration, flood and drought control; and conserving biodiversity (OECD, 2011c).

Governments have at their disposal a wide range of instruments for achieving green growth in agriculture (Table 1.1). In general, no one instrument or type of instrument can be singled out as more appropriate or efficient. The optimal mix of policy instrument depends on the objective to be achieved, and the environmental, economic, social and political context in which the instrument will operate.

Appropriate policies for moving agriculture closer to meeting the conditions for green growth need careful design and continuous monitoring. Policies across and within the different pillars of green growth can be either mutually enhancing (synergetic) or conflicting

(trade-offs). For example, energy subsidies aimed at raising the adoption of irrigated agriculture and policies to increase charges for water use, with the aim of preventing aquifer depletion, work against each other in terms of producer incentives and result in neither policy objective being achieved. This complexity underlines the importance of policy coherence.

**Table 1.1. Green growth toolkit for food and agriculture**

<b>Green growth policies</b>	
<b>Environmental regulations and standards</b>	<p>Enact and enforce controls on excessive use of agrochemicals and fertilisers in production</p> <p>Strengthen rules and standards for water, soil quality, and land management</p> <p>Improve enforcement of environmental regulations and standards and certification from the farm-gate to the retail sector</p>
<b>Support measures</b>	<p>Decouple farm support from commodity production levels and prices</p> <p>Remunerate provision of environmental public goods (such as biodiversity, carbon sequestration, and flood and drought control) beyond reference level and closely targeted to environmental outcomes<sup>1</sup></p> <p>Target environmental outcomes where feasible, otherwise target production practices favourable to the environment</p> <p>Target public investments in green technologies</p>
<b>Economic instruments</b>	<p>Price inputs to reflect scarcity value of natural resources</p> <p>Impose charges/taxes on use of environmentally-damaging inputs</p> <p>Implement trading schemes for water rights and carbon emissions</p> <p>Address policy constraints (governance, etc.) in less developed economies</p>
<b>Trade measures</b>	<p>Lower tariff and non-tariff barriers on food and agriculture products bearing in mind the potential impact on environmental concerns such as biodiversity and sustainable resource use</p> <p>Eliminate export subsidies and restrictions on agricultural products</p> <p>Support well-functioning input and output markets</p>
<b>Research and development</b>	<p>Increase public research on sustainable food and agricultural systems</p> <p>Promote private agricultural R&amp;D through grants and tax credits</p> <p>Undertake public/private partnerships for green agricultural research</p>
<b>Development assistance</b>	<p>Allocate more development aid for environmentally sustainable initiatives, in food and agriculture</p> <p>Raise profile of agriculture in Poverty Reduction Strategies</p> <p>Allocate more funding for agriculture in Aid for Trade projects</p>
<b>Information, education, training and advice</b>	<p>Increase public awareness for more sustainable patterns of consumption such as via eco-labelling and certification</p> <p>Incorporate sustainable approaches in training, education and advice programmes throughout the entire food chain</p>

1. Reference levels define the minimum level of environmental quality that farmers are obliged to provide at their own expense and differ from country to country, depending on property rights and legal systems (OECD [2010]), *Environmental Cross-compliance in Agriculture*, OECD Publishing, Paris, [oe.cd.org/tad/sustainableagriculture/latestdocuments/3](http://oe.cd.org/tad/sustainableagriculture/latestdocuments/3)

Source: OECD (2011), *Food and Agriculture*, OECD Green Growth Studies, OECD Publishing, doi: [10.1787/9789264107250-en](https://doi.org/10.1787/9789264107250-en)

The objective of this report is to provide a synthesis of the various policy instruments used by OECD governments to achieve green growth objectives in agriculture, based primarily on material provided by governments in response to the following questions:

- Is there a consensus among policy makers in your country on a strategy to develop and implement policies and encourage private initiatives on “Green Growth” (or similar term, such as “the Green Economy”) for the agro-food sector?
- What are the principal green growth-type policies applied to the agro-food sector that are currently in place in your country (such as government expenditures on green infrastructure, incentives for private investment in green agro-food sectors, targeted subsidy reform, pricing of pollution and natural resources, public procurement, education and training, environmental footprint labelling and traceability of foods)?
- To what extent have these policies been implemented as part of a specific green growth (or similar) strategy with the establishment of policy targets and monitoring mechanisms (such as for improved resource-use efficiency, reduction in greenhouse gas emissions, job creation, share of renewable energy in total energy)?

The report is structured as follows: Chapter 2 discusses the overall approach that countries are taking towards establishing a green growth strategy in agriculture, including strategic objectives (i.e. broad strategic policy goals that are neither quantifiable nor have a specific time-limit) and targets (i.e. quantifiable policy goals with a designated timeframe). It also discusses the implementation of the OECD framework for monitoring progress towards green growth in agriculture.

Chapters 3 and 4 discuss the various policy instruments used. These instruments have been grouped along the lines of the framework used in the OECD report, *A Green Growth Strategy for Food and Agriculture* OECD (2011b). It should be noted that various policy instruments often form part of a policy package and contribute to more than one aspect of green growth and they could therefore simultaneously be classified under different categories.

Chapter 5 presents a compilation of country experiences of policies and initiatives designed to achieve green growth in agriculture.

Finally, Chapter 6 offers some tentative conclusions that emerge from this discussion.

## Notes

1. The double dividend effect does not apply a priori to all sectors and the effects depend on the nature of substitution between human capital and technology, and the stock of natural resources. For a discussion of the so-called “double dividend” or Porter Hypothesis see Xepapadeas and de Zeeuw (1999).
2. See, for example, Stern (2004).

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