MEETING THE CHALLENGES FACING THE AGRICULTURAL SECTOR: WHAT ROLE CAN THE GREEN GROWTH AGENDA PLAY?

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Outline of presentation

• Context
  ➢ key challenges facing agriculture

• What does green growth imply in addressing these challenges?
  ➢ Policy and monitoring progress challenges

• Key lessons
What are the key challenges facing the agricultural sector?
Good prospects for agriculture...

- Growing food demand
- Higher real prices
Prices to remain higher than the years preceding the 2007-08 price spike

Index (2012-14=100)

- Cereals
- Dairy
- Meat
- Oilseeds
... but agriculture is facing a multitude of challenges

- **Old issues that remain relevant**
  - Income support
  - Price stability
  - Competitiveness

- **New and emerging challenges**
  - Food security
  - Sustainable use of natural resources
  - Climate change
  - Changing consumer demands
  - Innovations – 4th industrial revolution
Business as Usual is not an option

Figure 8: Projected losses in food production due to climate change by 2080.

Projected changes in agricultural productivity 2080 due to climate change, incorporating the effects of carbon fertilisation:

-50%  -15%  0%  +15%  +35%  No data

2080

Risks in not going green: shocks to food supply

Pressures on natural capital

By 2030, business as usual:

- Food production +35%
- Land +9%
- Land at risk of erosion + 17%
- Water scarcity +30%

Source: OECD
What does green growth imply in addressing the challenges facing the agricultural sector?
The Green Growth Agenda – Key characteristics

• No necessary conflict between growth and environment in the long run
• Tool to achieve sustainable development
• Focus on fostering innovation, investment and competition that can give rise to new sources of economic growth
• Coherence of policies
Green Growth in agriculture means

• providing enough food, feed, fibre and fuel for 9 billion people in 2050...

• ...with greater pressure on land, water, energy and biodiversity resources - and the impact of climate change...

• ...and the need to limit the harmful and enhance the beneficial environmental impacts and reduce waste in the food supply chain

➢ So productivity has to rise faster than population and income, while reducing environmental footprints – “sustainable intensification”...

➢ ... Increasing productivity in a sustainable manner – from R&D, innovation, to uptake all along the food supply chain, while addressing social concerns.
Policies that mutually reinforce *green and growth* –

- Increasing productivity in a sustainable manner
  - Investing in knowledge generation (R&D, innovation)
  - Investing in knowledge creation – training, advisory and extension services
  - Investment and trade

Policies specifically aimed at *greening growth*

- Market-based instruments
  - Agri-environmental payments, environmental taxes, etc.
- Non-market instruments
  - Regulation, voluntary agreements, technical assistance

- But a lot of green is not priced..
The monitoring progress challenge

You can’t manage what you don’t measure

• If governments are going to pursue policies designed to promote green growth, they need indicators that can:
  ➢ raise awareness
  ➢ measure progress
  ➢ identify potential opportunities and risks
## The monitoring progress challenge: four dimensions

<table>
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<tr>
<th>Dimension</th>
<th>Indicators</th>
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| **1. The environmental and resource productivity of the economy**         | - Carbon and energy productivity  
|                                                                             |   - Resource productivity: materials, nutrients, water  
|                                                                             |   - Multi-factor productivity  |
| **2. The natural asset base**                                              | - Renewable stocks: water, forest, fish resources  
|                                                                             |   - Non-renewable stocks: mineral resources  
|                                                                             |   - Biodiversity and ecosystems  |
| **3. The environmental dimension of quality of life**                      | - Environmental health and risks  
|                                                                             |   - Environmental services and amenities  |
| **4. Economic opportunities and policy responses**                        | - Technology and innovation  
|                                                                             |   - Environmental goods and services  
|                                                                             |   - International financial flows  
|                                                                             |   - Prices and transfers  
|                                                                             |   - Skills and training  
|                                                                             |   - Regulations and management approaches  |
| **Socio-economic context and characteristics of growth**                  | - Economic growth and structure  
|                                                                             |   - Productivity and trade  
|                                                                             |   - Labour markets, education and income  
|                                                                             |   - Socio-demographic patterns  |
What progress are we making?
Green growth is gaining importance ....

• Specific, quantifiable and time-bound targets are mostly reported in the areas:
  ➢ Reduce energy use and improve efficiency
  ➢ Increase the share of renewable energy
  ➢ Increase land under organic farming
  ➢ and, to a lesser extent, reduce the use of harmful pesticides

• Most objectives and targets are driven by international agreements

• Recognition of the need for investment in agricultural R&D
Progress with decoupling GHG emissions from production growth in several countries

![Graph showing carbon productivity growth in agriculture vs. agricultural GDP growth for various countries.](image-url)
Ranking agricultural support to farmers by potential environmental impact: OECD area

![Chart showing agricultural support over time, divided into potentially most environmentally harmful, least harmful, and other categories. Increased support in 2002, 2003, and 2008, followed by a decrease.
Agricultural knowledge generation in total support to agriculture (%)
... but confusing evidence on MFP
Key lessons
Key lessons

• Moving towards a greener growth model for agriculture is challenging, will involve trade-offs as well as synergies and will vary across countries and over time.

• It’s often difficult to overcome obstacles to implementation and the challenge is to provide concrete implementable policy advice, measure progress, and learn from experiences across countries/regions and businesses.
Key lessons

• Focusing on improving productivity in a sustainable manner is a *sine qua non* of a green growth strategy for agriculture

• Green growth provides new paradigm for research and innovation: **R for D** rather than **R&D**

• But measuring productivity in monitoring progress towards green growth entails several conceptual and methodological challenges to be addressed

• ... and empirical evidence is confusing
Thank you for listening!

Visit our website: www.oecd.org/agriculture/greengrowth

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Green Growth framework

Enabling conditions
- Balanced tax structures
- R&D and innovation policy
- Competition
- Infrastructure investment
- Openness to trade and FDI

Key policy tools
- Pricing of pollution and resource use
- Subsidy reform
- Regulatory and policy predictability
- Support to basic research and emerging technologies
- Governance of natural assets

Major environmental issues
- Water scarcity
- Climate change
- Health impacts of pollution
- Biodiversity loss

Promoting transition
- Skills and labour market adjustment
- Distributional and competitiveness concerns
- Science and technology cooperation
- Development assistance
- Management of global public goods

Measurement agenda
- Productivity of resource use
- Physical evolution of the natural asset base
- Environmental quality of life
- Opportunities arising from environmental considerations
- Evolution of policy and social responses
- Promoting efforts consistent with international standards
Framework for green growth indicators

Natural asset base
Economic activities
Consumption
  - Households
  - Governments
Investments
Economic activities
  - Outputs
    - Income
    - Goods & services
    - Residuals
  - Production
    - Multi-factor productivity
    - Inputs
      - Labour
      - Capital
      - Resources
      - Energy & raw materials
        - water, land, biomass, air
Amenities, health & safety aspects
Pollutants
- waste
Service functions
- Sink functions
Resource functions

For executive summary

Policy functions
- measures
- opportunities

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Australia: The Rural Research and Development Corporation Model

• Partnership between the Australian government and the agriculture, forestry and fishery industries
• It commissions and manages targeted research and fosters uptake and adoption based on identified needs and priorities
• Funding can be targeted either to production (on-farm) or processing (off-farm)
• Fund projects that have a mix of both public good and private industry good-components
New Zealand: Public-Private Partnerships

- **Primary Growth Partnership:** Provides investment in research and innovation to boost sustainable productivity growth to primary, forestry and food sectors
- **Sustainable Farming Fund:** Partnership with land managers and local community to promote agri-environmental innovation and research in the country