GREEN GROWTH IN AGRICULTURE AND RURAL INNOVATION SYSTEMS – ISSUES AND CHALLENGES FOR POLICY

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OECD's 8th Rural Development Policy Conference,
3-5 October, 2012
Krasnoyarsk, Russian Federation

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BETTER POLICIES FOR BETTER LIVES

Outline of my presentation

- **Context**
  - Why focus on agriculture?
  - The green growth imperative
- **Innovation Systems**
  - Concept , features, examples
- **Good policy practices**
- **Some policy questions**
- **OECD work**

Context

Why agriculture?

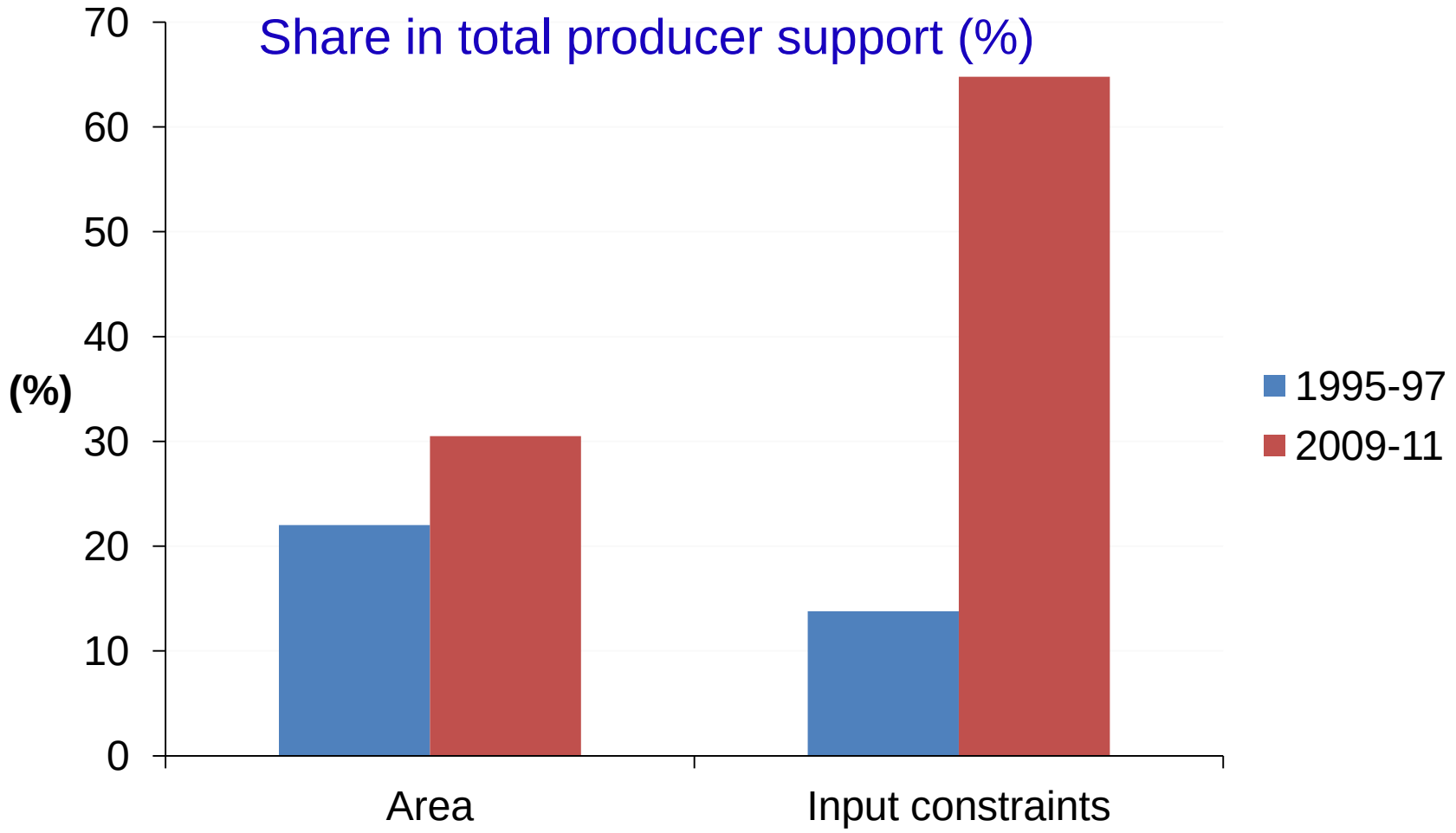
- Consensus:
  - Rural ≠ agriculture and
  - Agriculture ≠ rural

- … but agriculture is a critical source of key rural assets (food, water, land, ecosystem services, renewable energy, etc.) and of supply- and demand-based rural innovations.

Drivers of innovations

- Changing policy environment
- More regulations in place

EU: Payments to farmers made on the basis of area and input constraints



Drivers of innovations

- Changing policy environment
- More regulations
- Shifting towards demand-oriented sector
  - *from farmers to rural entrepreneurs*
- Slowing productivity gains
- Resource constraints
- Environmental pressures

Risks in not going green: shocks to food supply

Pressures on natural capital

By 2030, business as usual:

Food production +35%

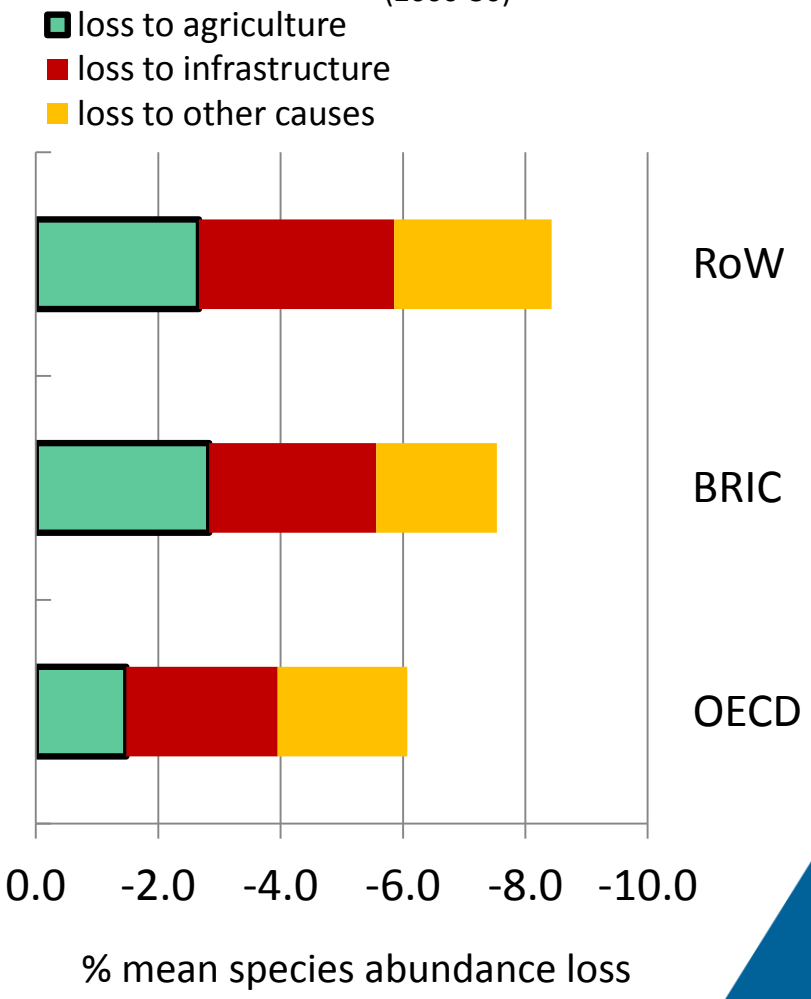
Land +9%

Land at risk of erosion + 17%

Water scarcity +30%

Biodiversity loss

(2000-30)



Source: OECD

The need for green growth

➢ ***Business as usual is not an option!***

1. We need ***Growth ….***

   ➢ current sources of economic growth are placing unsustainable pressures on the natural resource base ⇒ economic and social burdens ⇒ high costs of inaction

2. … and it *needs to be **Green**:*

   ➢ increasing productivity in a sustainable way

   ➢ **Focus on fostering innovation that can give rise to new sources of economic growth**

Innovation Systems

Innovation Systems: The Concept

Set of distinct institutions which jointly and individually contribute to the development and diffusion of new technologies and which provide the framework within which governments form and implement policies to influence the innovation process. As such, it is a system of interconnected institutions to create, store and transfer the knowledge, skills and artefacts which define new technologies (Metcalfe, 1995).

Origins

- Limited ability of economic models that relied on linear assumptions about R&D leading to innovation
- Initially discussed in terms of national systems of innovation
- Now in terms of sectors, including rural and agriculture

Key features

➢ *"R&D turns money into knowledge; innovation turns knowledge into value"*

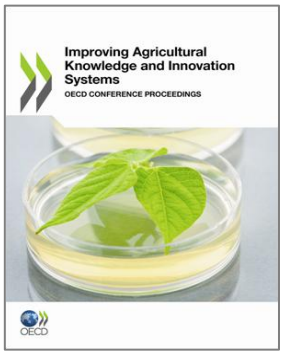
- *Focus on innovation:*
  - ➢ Research **for** Development rather than R**&**D
- More attention to users' demand
- Central role of institutions and stakeholder involvement
- Linkages between partnerships and networks for learning and acquiring knowledge
- Very context –specific and dynamic

Agricultural Innovation Systems

Source: Andy Hall, 2009.

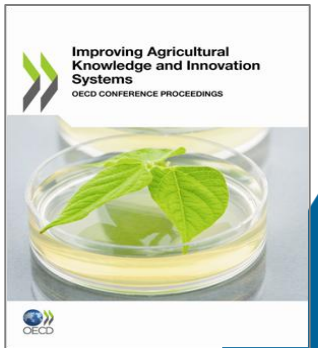
Some lessons from Agricultural Innovation Systems (1)

- While countries and international organisations generally acknowledge the benefits of moving towards an innovation system approach, and experiences so far have been positive, this move is taking place at a different pace across countries



Some lessons from Agricultural Innovation Systems (2)

- Large differences across OECD countries, but common trends
- Consolidation to create regional poles, grouping various institutions
- Stronger links with other sectors (e.g. rural development)
- Stronger private/public integration, including projects
- Increasing private research, but public funds still important
- Pluridisciplinary



Some lessons from Agricultural Innovation Systems (3)

- Education, training and extension
  - Very diverse extension systems across countries
  - More diverse services (e.g. technical assistance for implementation of agricultural policy)
  - Agriculture per se is not attracting sufficient number of students and needs to be better tailored to the needs of the labour market

Advisory services in OECD countries

	Main institutions	Source of funds	Countries
State-run	Public organisations at regional and national level	Wholly financed from public funds	Belgium, Italy, Greece, Slovenia, Sweden, Germany's Southern regions, Spain, Portugal, Luxembourg, Japan, United States
Public Private Service	Increasingly provided by private consultant firms	Farmers partly or wholly pay for services; centralised and decentralised	Canada, Ireland, Czech Republic, Poland, Slovak Republic, Hungary, Estonia, Australia, Chile
Farmers Organisations	Farmers' organisations	Membership fees and payments by farmers	Austria, France[1], Denmark, Finland, North-West regions of Germany, Norway
Commercial	Commercial firms or private individuals	Payment through project implementation or grants	England, Netherlands, North-East regions of Germany, New Zealand

EU: The European Innovation Partnerships (EIPs)

- New approach to innovation
- Focus on improved governance arrangements to accelerate adoption of research findings
- EIP on *Agricultural Productivity and Sustainability* seeks to:
  - Improve co-ordination between the actors involved, and
  - Establish “operational groups”

Australia: *The Rural Research and Development Corporation Model*

- Unique to Australia
- 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 Land Management and Climate Change Plan of Action*: Partnership with land managers and local government to address climate change issues

The Dutch Enterprise Policy – Top-sector approach

- Government initiative to boost growth and innovation in nine top priority sectors, in which the Netherlands excels globally: agro-food; horticulture and propagating stock; high-tech; energy; logistics; creative industries; life sciences; chemicals; and water.
- Core to the top-sector approach is collaboration among researchers, entrepreneurs and government (the golden triangle).
- The government does not make proposals, but asks companies and scientists to join an action agenda.

UK: Public-Private Partnerships

The Green Food Project

- Joint initiative between government and stakeholders (e.g. industry and environmental partners) to achieve sustainable intensification of the whole food chain (e.g. reduce GHGs, waste and water use, and improve biodiversity and soil quality)
- Five sectors examined: wheat, dairy, bread, curry and geographical areas

The Global Research Alliance on Agricultural Greenhouse Gases

- Launched in 2009
- More than 30 member countries around the world
- Voluntary network set up to increase international co-operation, collaboration and investment in agricultural GHG research
- Five scientific groups (paddy rice, livestock, croplands, soil carbon, and inventory and measurement cross-cutting group)

The Knowledge-based Bio-economy Forum

- Science and Technology Co-operation Agreement among Australia, Canada, New Zealand and the EU Commission
- Enhance policy dialogue and scientific co-operation.
- Food, agriculture and biotechnology are priorities
- 4 themes: food and health (AUS); non-food bio-based products (Canada); sustainable agriculture (NZ); fisheries and aquaculture (EU)

Good Policy Practices

Enabling environment

- Securing appropriate framework conditions
  - Develop human capital (educational reform)
- Building an innovation culture
  - Funding greater use of benchmarking and diagnostic tools
- Enhancing technology diffusion
  - Co-financing of technology uptake via PPPs
- Promoting networking and clustering
  - Brokering and procurement policies
  - Competition among regions for funding cluster initiatives
  - Co-funding of centres of excellence

Enabling environment

- Leveraging R&D
  - Sustain technological opportunities in the long run
    - ✓ Increased public spending on basic R&D
  - Increase economic return from public research
    - ✓ Public-Private- Partnerships
    - ✓ Technology foresight for policy setting
- Improving policy making
  - Enhance policy coherence
  - Improve policy evaluation
    - ✓ Making evaluation obligatory
    - ✓ Developing new methodologies

Some Policy Questions

Some policy questions

- How to overcome institutional inertia?
- How to ensure that networks act as facilitators and not barriers to change?
- One-size-fits all “solutions” may not work, but how can be tailored and affordable responses can be developed?
- How can the monitoring and evaluation of rural innovation systems best be performed?

OECD Work

OECD work

- Green Growth project
  - Policy instruments to support green growth in agriculture
- Innovation project
  - Innovation framework
  - Farm-level analysis

Thank you for listening!

Visit our website:

www.oecd.org/agriculture/greengrowth

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Further reading

R&D in total support to agriculture (%)