



Agricultural Innovation Systems: What Is It?

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Why interest in innovation systems?

Science & technology and development:

- Knowledge intensiveness of development
 - Investments in R&D: infrastructure, research and management capacity, i.e. strengthened research systems
 - Stronger focus on demand & participatory approaches
- increase availability of knowledge, but not necessarily the extent of innovation

From knowledge transfer to knowledge use :

→ Associated with social and economic change – innovation

In addition, changing context:

- Changing context of agricultural development
- Process of knowledge generation and use has been transformed

Changing context of agricultural development

Rapid changes driven by market development:

1. Markets, not production drive agricultural development
2. The economic environment of agriculture has become more dynamic, interconnected and evolutionary – largely due to globalization, also urbanization
3. Rate of change has increased, with a need for more rapid responses – competition, trade rules, technological paradigms, climate, pests and diseases

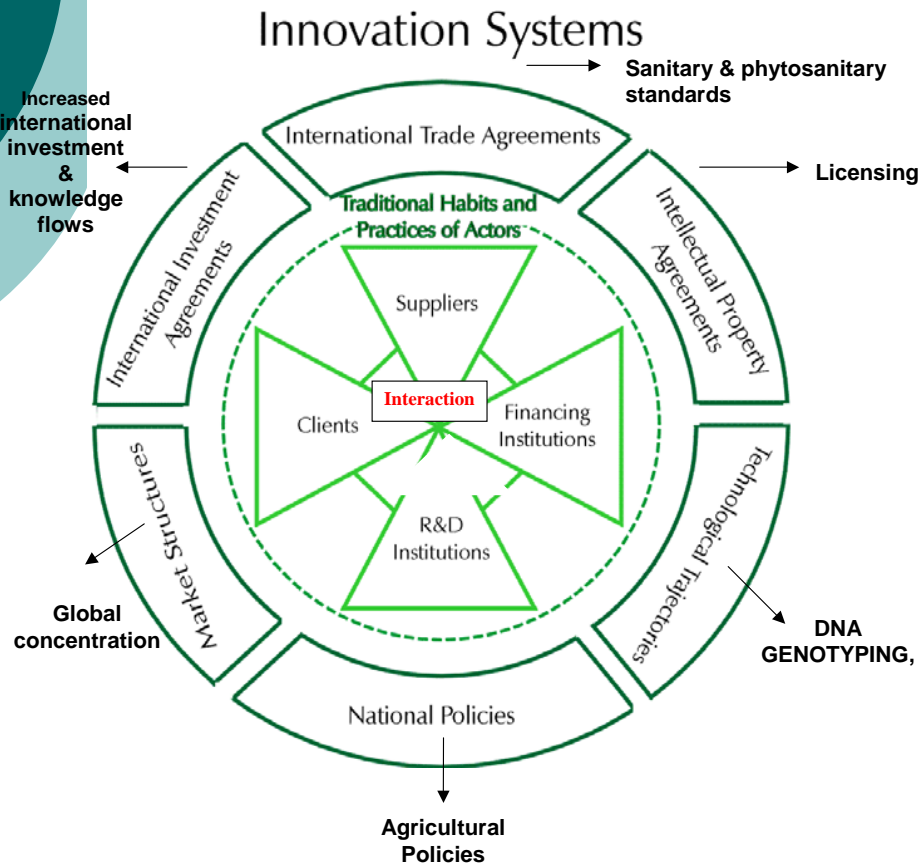
Fundamental changes in knowledge generation and use:

4. The role of the private sector in generating, using and disseminating knowledge has grown
5. ICT has radically changed the accessibility of knowledge and information
6. The knowledge structure of agriculture is changing – eroding the primacy of public agricultural R&D and R&D organizations. Design, packaging, post-harvest, private advisory services
→ Less elite more consultative

What is innovation ?

- A new way of thinking, with great implications for sector development & growth, livelihood development and poverty reduction
→ Innovation system approach
- Besides technical change & novelty, innovation combines technical, institutional, organisational and other sorts of change → focus on capacity, performance & interaction
- Innovation is often about local creative imitation usually through many small improvements (in technology, processing, organizational management, etc) and a continuous process of upgrading
- Innovation can be triggered by: the market, policy changes, research – often multiple interacting triggers

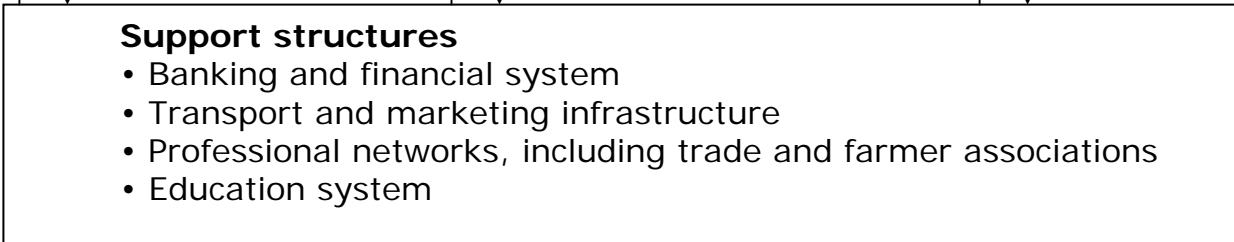
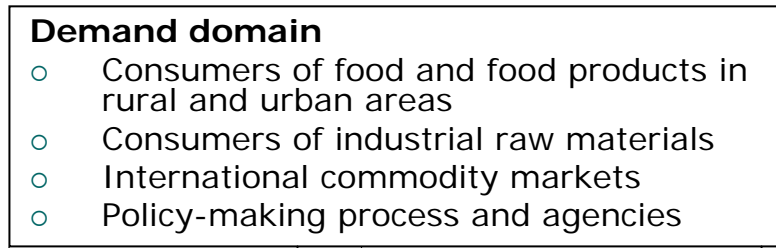
What is an innovation system?



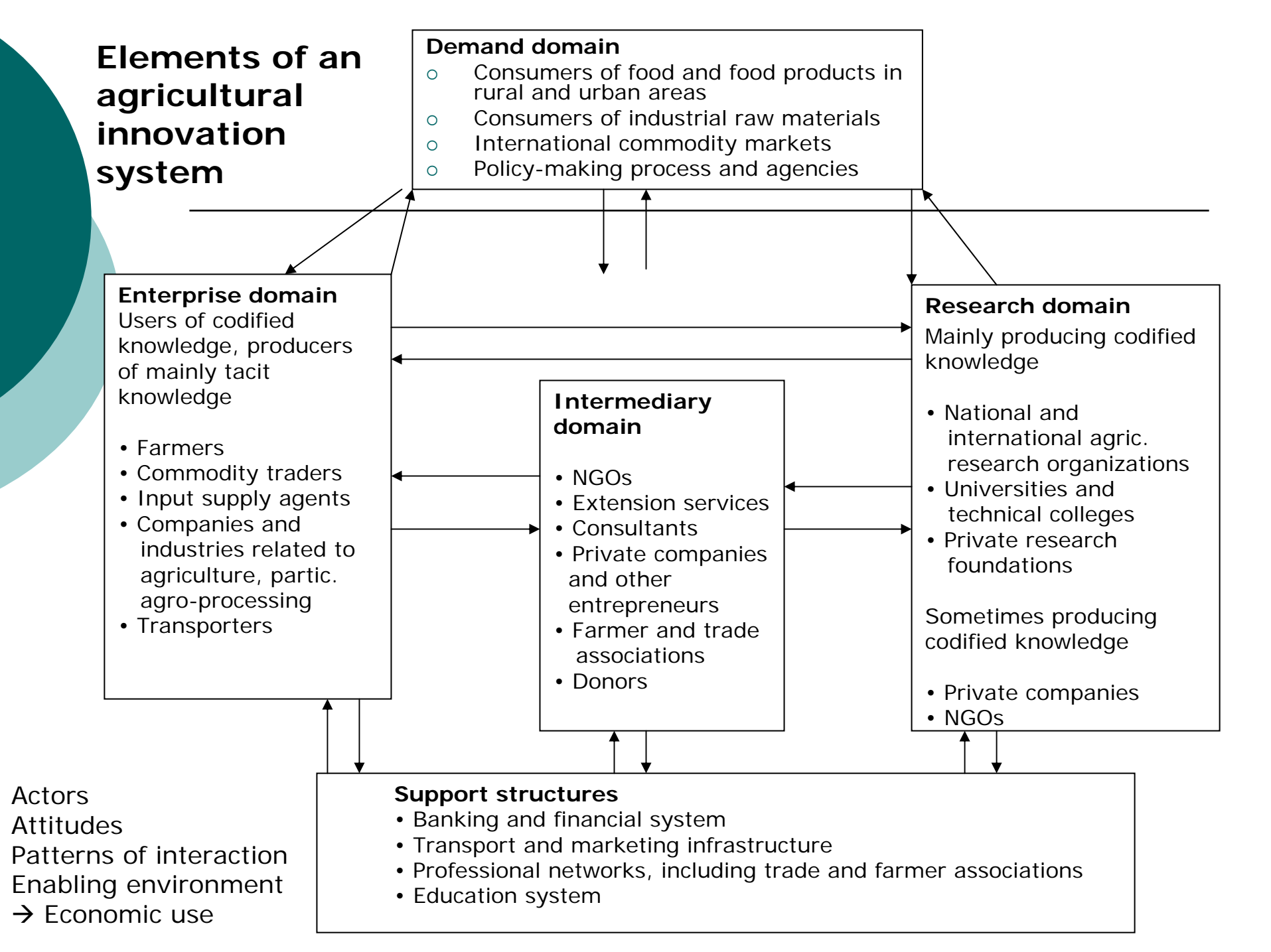
All the actors and their interactions involved in the production and **use of knowledge**, and the rules and mechanisms - institutional and policy context that shapes the processes of knowledge access, sharing and learning.

- Multiple knowledge bases, research but also others
- Central: capacity to innovate in changing environments -- a dynamic adaptive capacity.
- Interactive process shaped by an institutional (attitudes and practices) and policy context
→ Affects the ways actors and organisations behave.
Contextual and locally specific.

Elements of an agricultural innovation system



Actors
Attitudes
Patterns of interaction
Enabling environment
→ Economic use



Role of R&D and advisory services?

- Traditional R&D and extension systems are necessary but not sufficient alone to respond to these trends and demands, and enable agricultural innovation
- A balance between:
 1. **An institutional environment** that is conducive to the flow of knowledge, to collaboration, experimentation and implementation of innovations – **put into economic use, for livelihood and growth**
 2. A well articulated **demand** for new knowledge and technology. Producers, traders and others must be able to express their demand and must be in a capacity to adapt and adopt new knowledge and technology
 3. The effective **supply** of new knowledge and technology, from the public research system, but also from other sources, such as indigenous knowledge, private sector research and transfers from abroad.

Importance of innovation capacity – challenges for design & implementation

- Key issues: adaptive capacity, interaction, linkages, inclusion ... however:
 - Linkage and patterns of interaction often weak or absent
 - Attitudes and practices are a major obstacles so even where, e.g. competition requires collaboration it doesn't take place.
 - Policy space for interventions that promote interaction needed
- Since lack of interaction causes:
 - limited access to new knowledge;
 - weak articulation of demand for research and training;
 - weak technological and institutional learning;
 - weak integration of social and environmental concerns;
 - and weak access to sources of financing for innovation
- Essential to build capacity for fostering and learning to respond to continuous challenges
- Organization of rural stakeholders
- Enabling environment



Catching up with 'field' reality

- **Innovation approach** builds on the earlier R&D approaches while emphasizes linkages among actors and processes
- It can offer a new framework for analysing the roles of S&T, actors, interaction, etc
- No universally applicable blueprints for interventions
→ diagnosis of strengths and weaknesses associated with actors, attitudes, interaction, enabling environment
- It can be effective in identifying missing links, strengths, etc → interventions that improve the innovative performance of the sector



Benchmarking tool

To the next presentation....

Thank You