How can 'innovation thinking' help to transform Food Systems?

Presentation for seminar 'Agricultural Innovation for Development: how to make it more systemic, and why should we?' The Hague, April 17, 2019

Cees Leeuwis, Knowledge, Technology and Innovation group

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How can 'innovation thinking' help to transform Food Systems?

- Outline

- 1. Food Systems as a focal point in Dutch policy

- 2. A reminder: the Dutch fame in 'innovation thinking'.

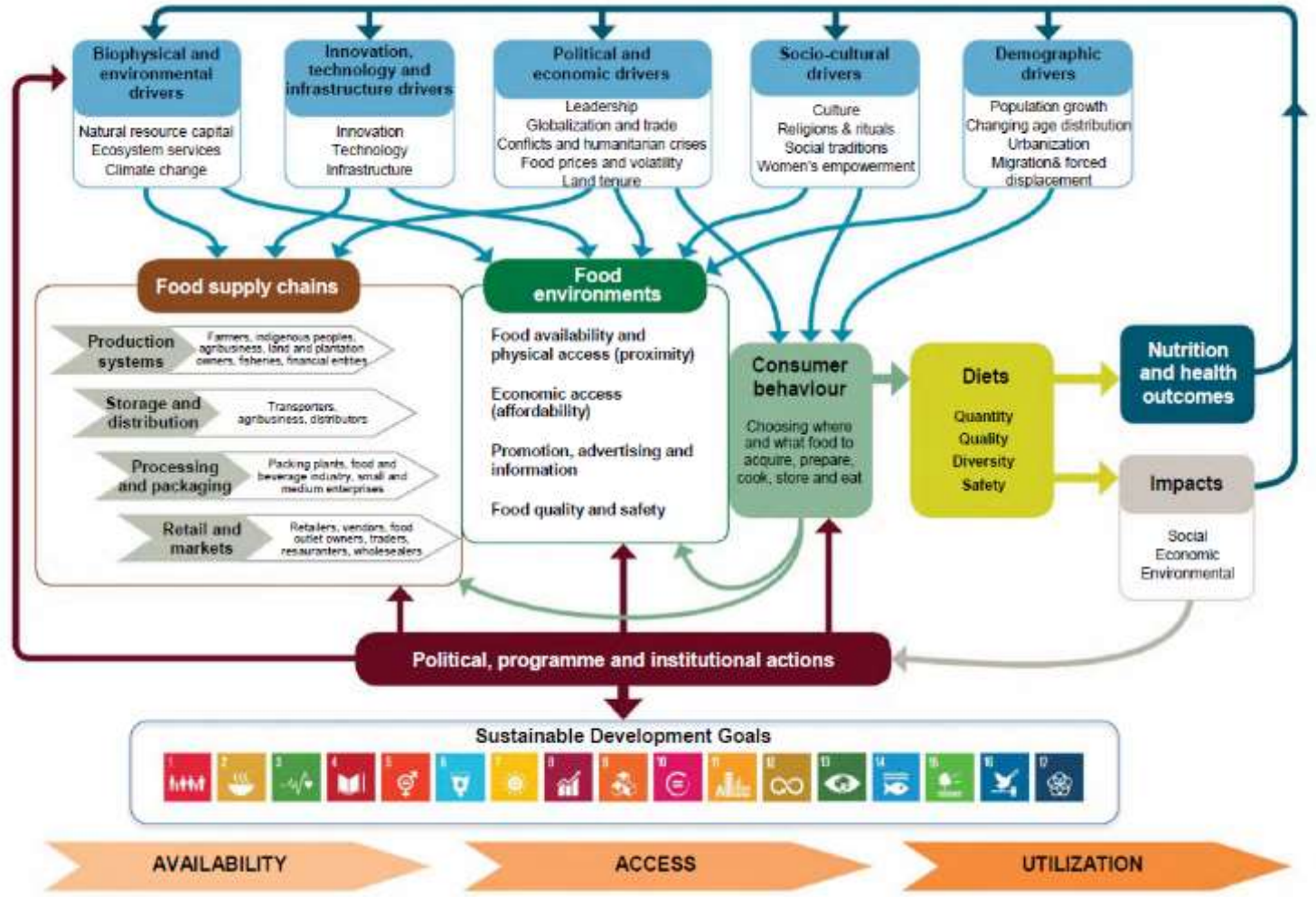
- 3. Integrating Food Systems and 'innovation thinking'?

- 4. Towards process view of system change

A representation of a Food System

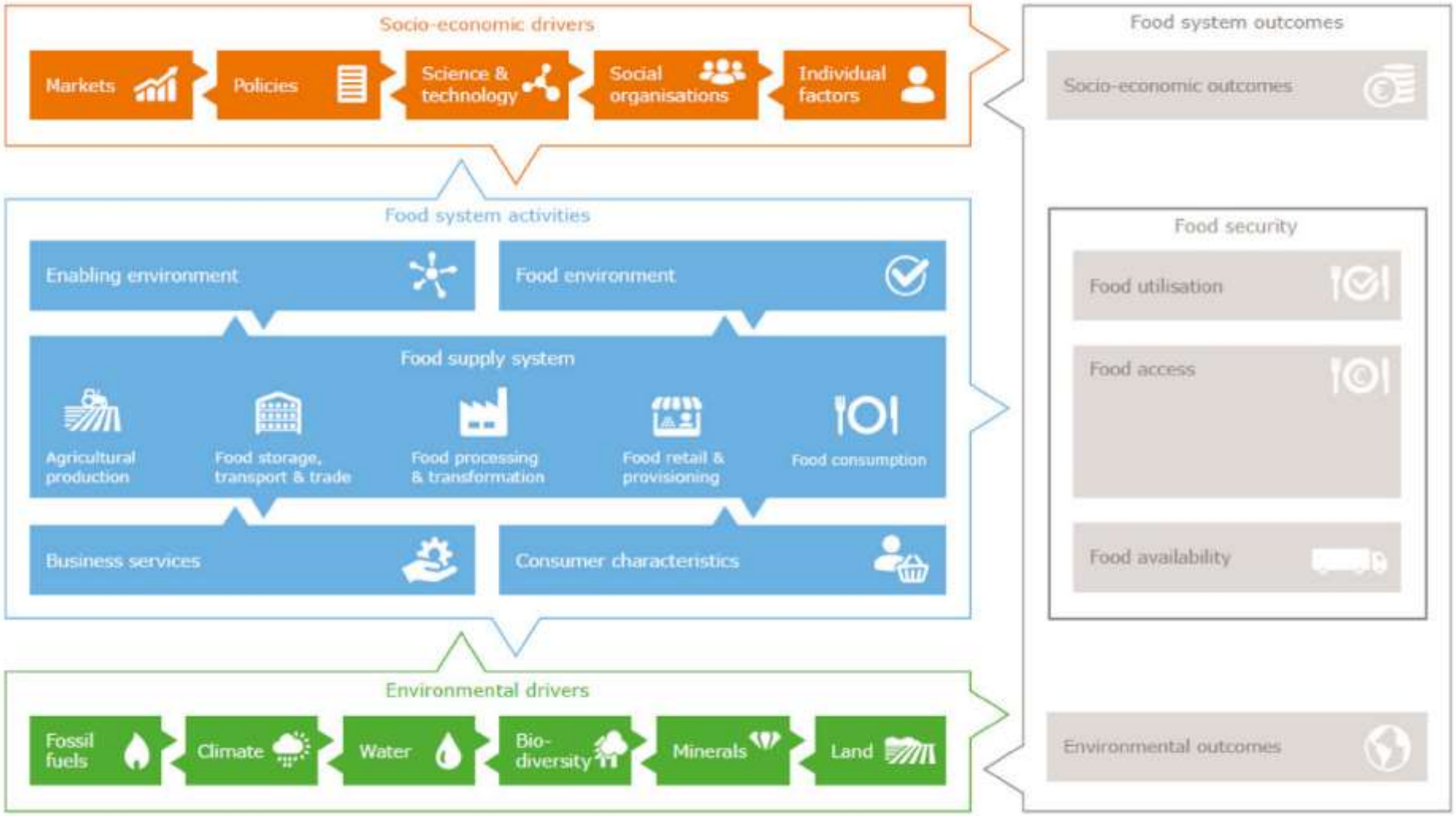
By: High Level Panel of Experts on Food Security and Nutrition (HLPE) / UN Committee on World Food Security (WFS)

Figure 1 Conceptual framework of food systems for diets and nutrition



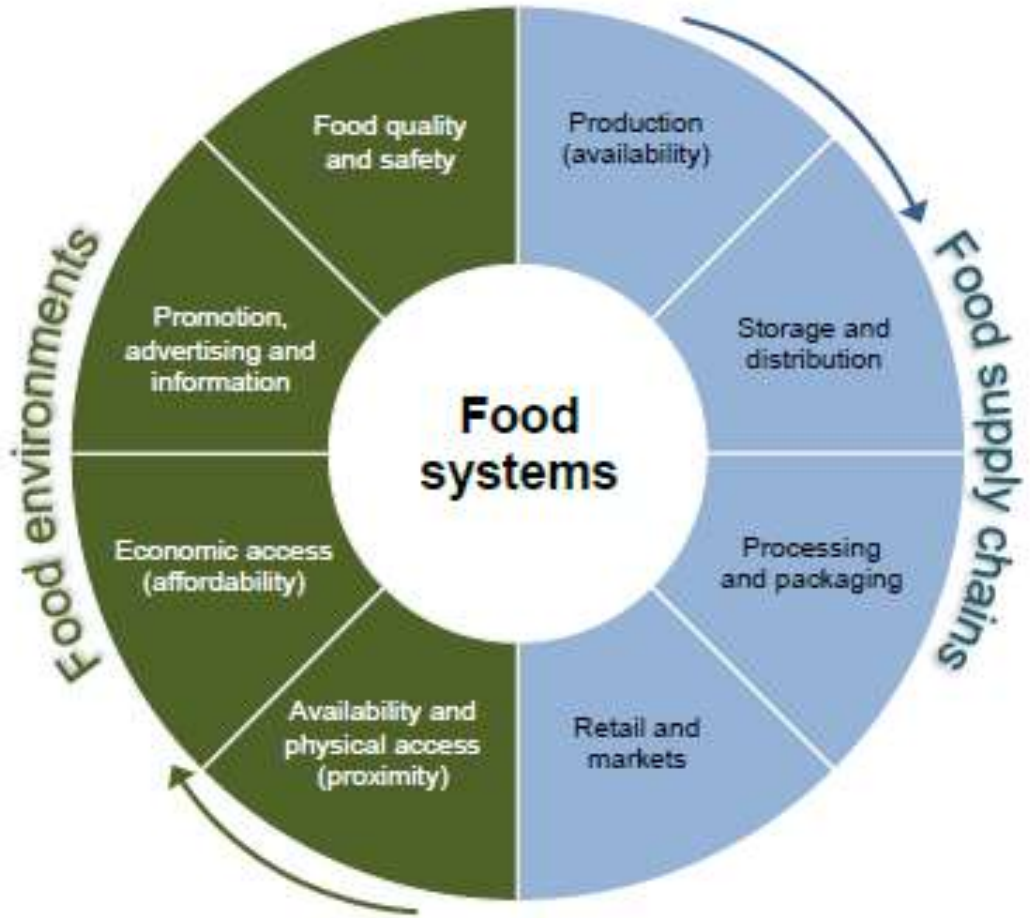
Another representation of a Food System

By: Van Berkum et al., 2018



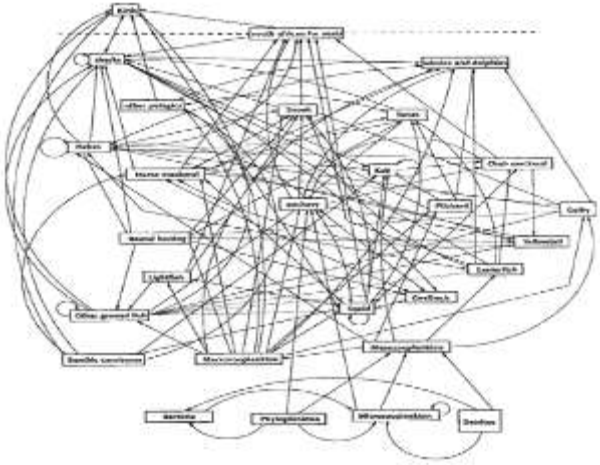
Another representation of a Food System

Figure 3 Food supply chains and food environments



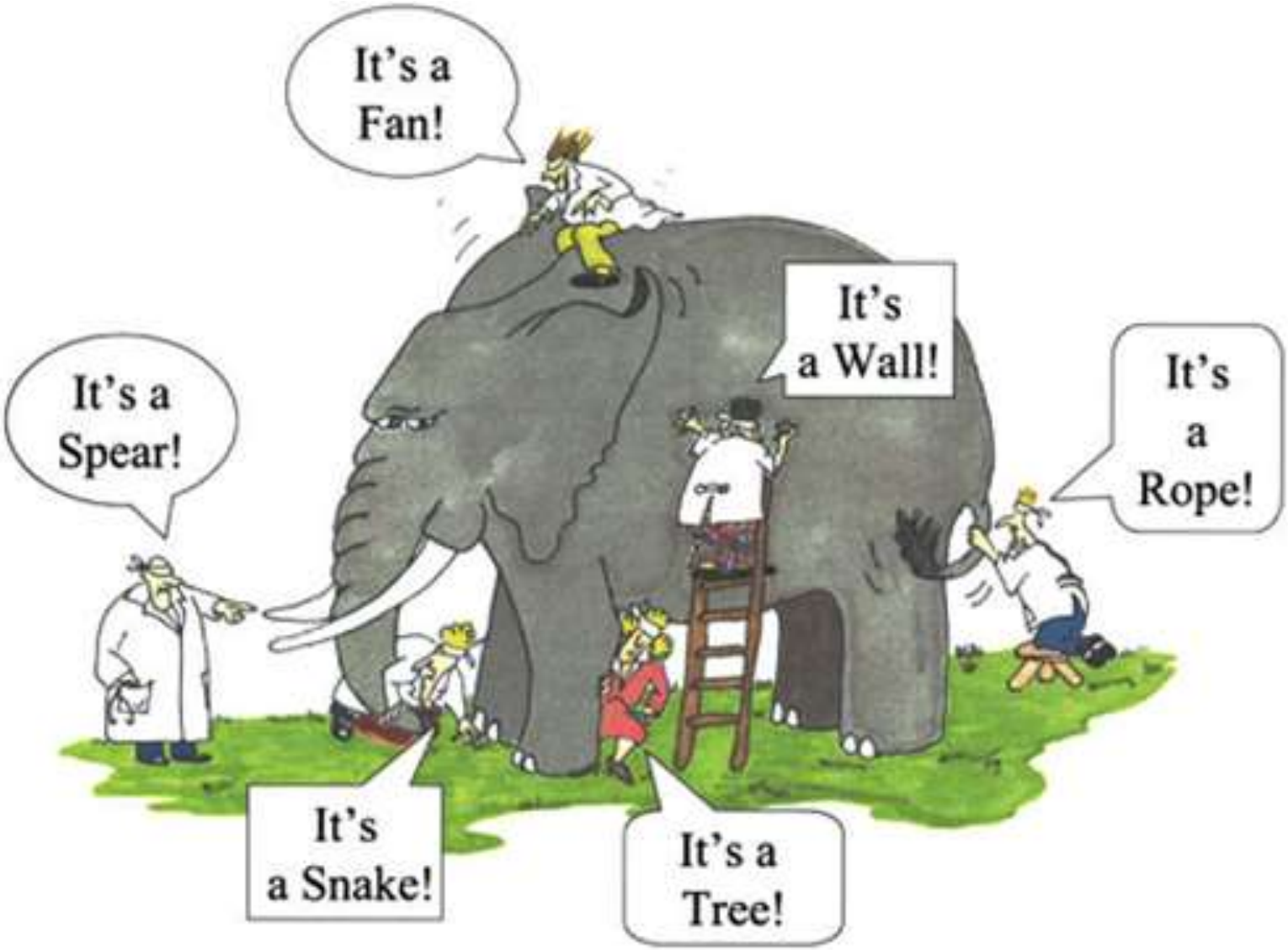
Source: Adapted wheel concept from Ranganathan *et al.* (2016).

What can we learn from this?



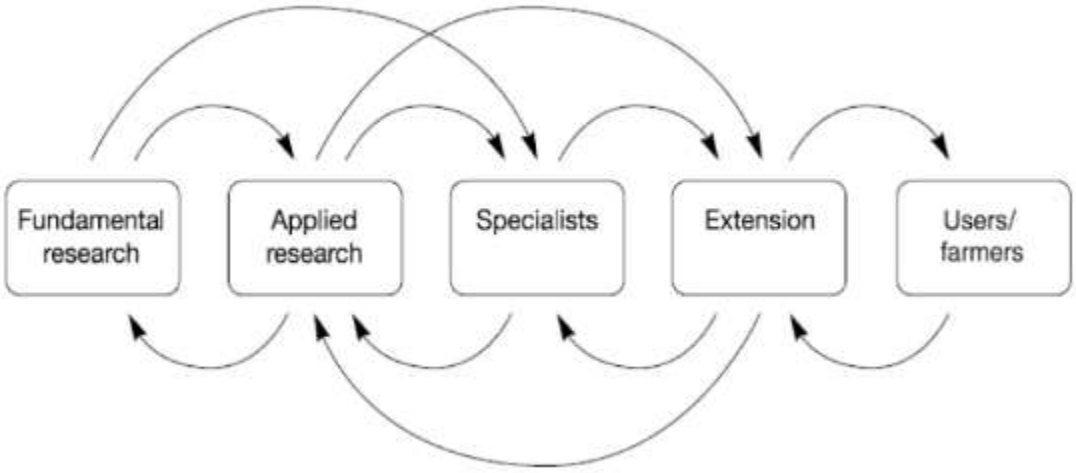
- We are dealing with complex wholes
  - Composed of different entities: Actors, Drivers, Outcomes, Impacts, Activities, Functions, Processes, Behaviours, Chains, Environments, etc.
- We use ‘systems thinking’ to make them more tangible
- We can think about systems in different ways!

This is also true for stakeholders who constitute the system!



A reminder: the Dutch fame in 'innovation thinking'

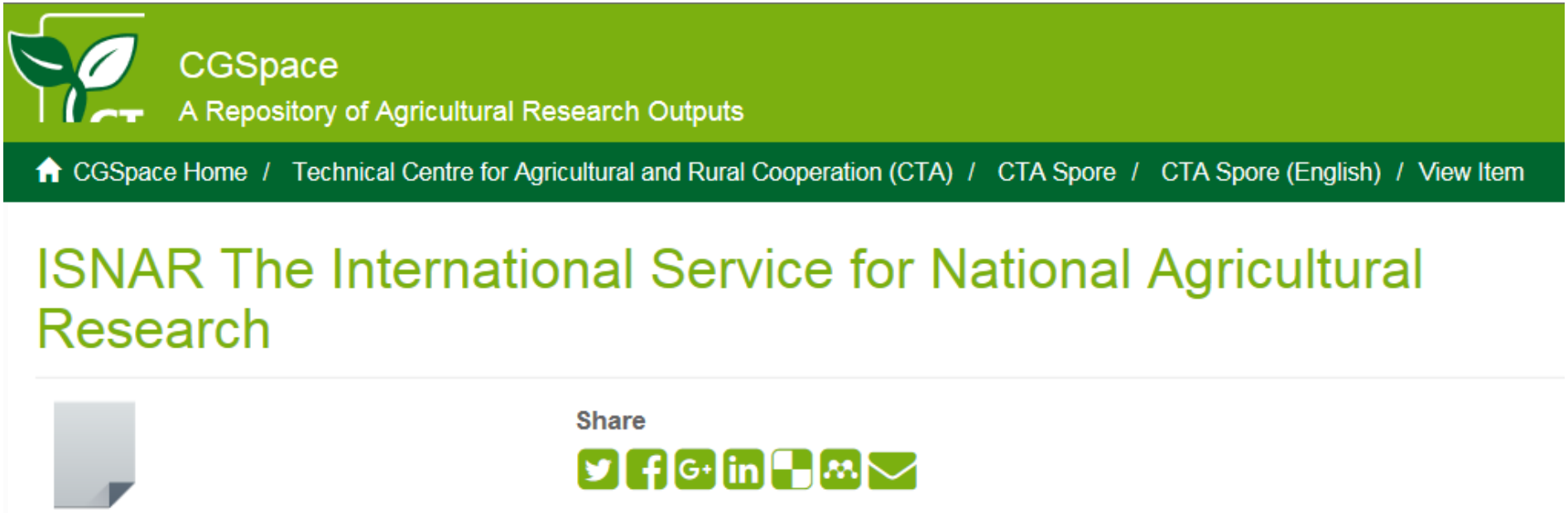
- The EER triptych (Het OVO drieluik) (pre-privatisation)
  - Education, Extension, Research
- AKIS: Agricultural Knowledge and Information Systems



Prof. Niels Röling

A reminder: the Dutch fame in 'innovation thinking'

- The establishment of the 13th CGIAR Centre in The Hague! (1979 – late 1990s?)



A reminder: the Dutch fame in 'innovation thinking'

- Golden Triangle / Dutch Diamond (post-privatisation)

- The Netherlands became world leading in Innovation Studies / Transition Studies

  - Utrecht, Rotterdam, Eindhoven, Amsterdam, Twente, Wageningen, etc.

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A reminder: the Dutch fame in 'innovation thinking'

- The potential and need for 'STI diplomacy'

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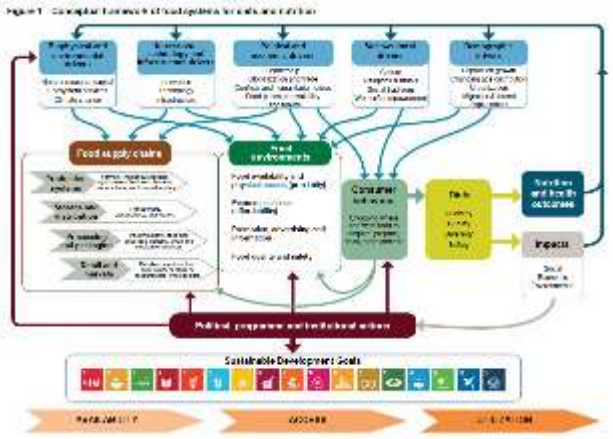
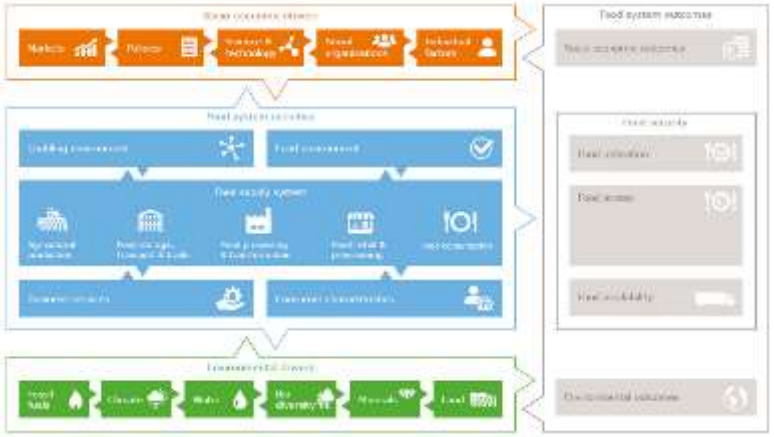
STI Diplomacy - Advancing the internationalisation of science, technology and innovation

The Netherlands is in the top five in the global competitiveness ranking, partly thanks to its innovative strength and the solid international position enjoyed by Dutch science. In order to stay in the top five, the Netherlands will need to remain one step ahead of competing countries. Those countries are not standing still: some of them are investing heavily in science, technology and innovation (STI) and are also making major efforts to support the internationalisation of their STI ('STI diplomacy'), including attracting and retaining talent. It is therefore crucial for the Netherlands to ensure that our

Integrating Food Systems and 'innovation thinking'?

- Asking the question: How do (Food) Systems <u>change</u>?
  - ... we need more than a mental map of a system!
  - ... we need more than analytical understanding too!





Integrating Food Systems and 'innovation thinking'?

- Systems: the whole is more than the sum of the parts

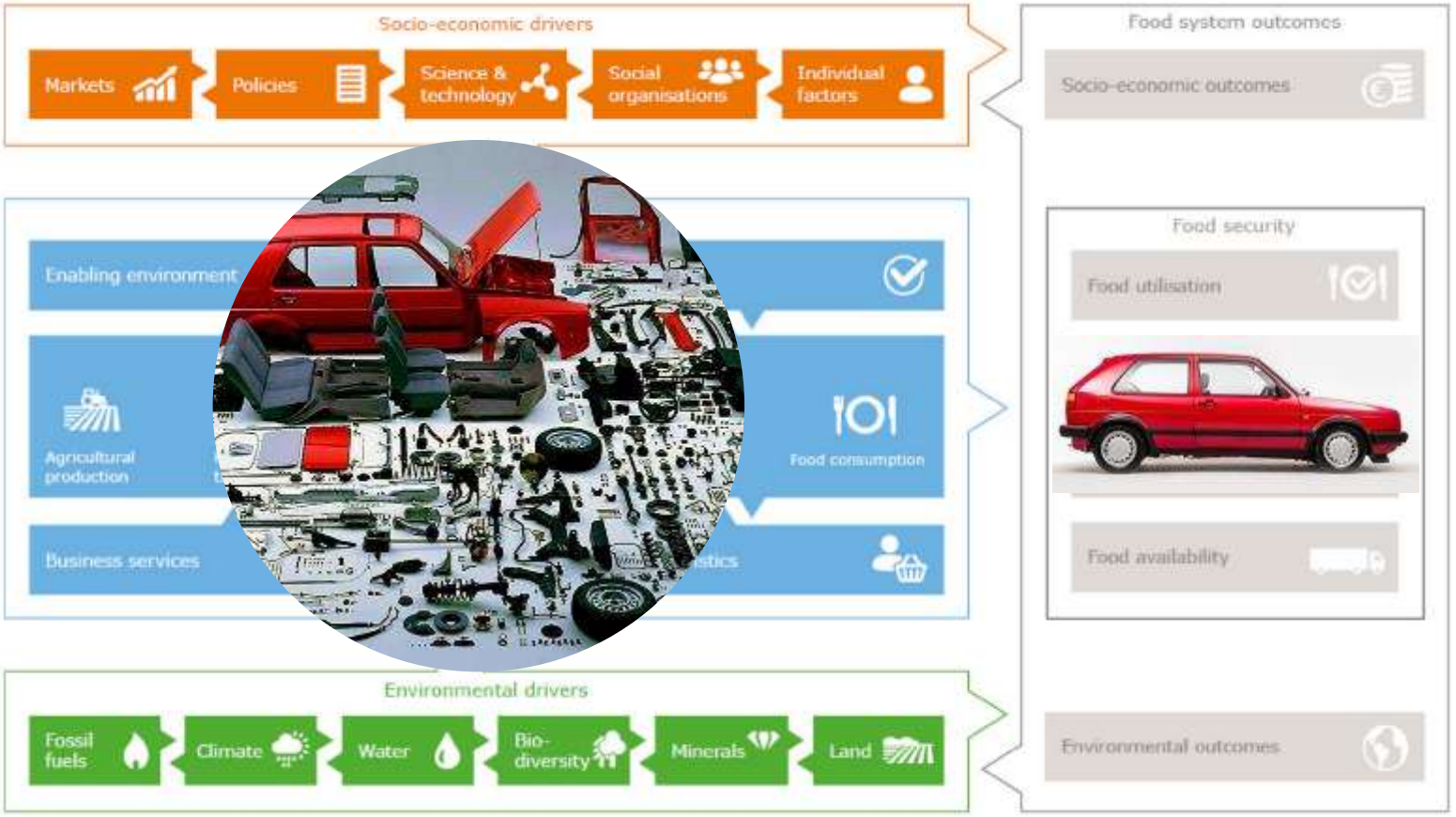
How to foster synergy?

1 + 1 = 3

- How do systems develop 'emergent properties' that are more desirable?

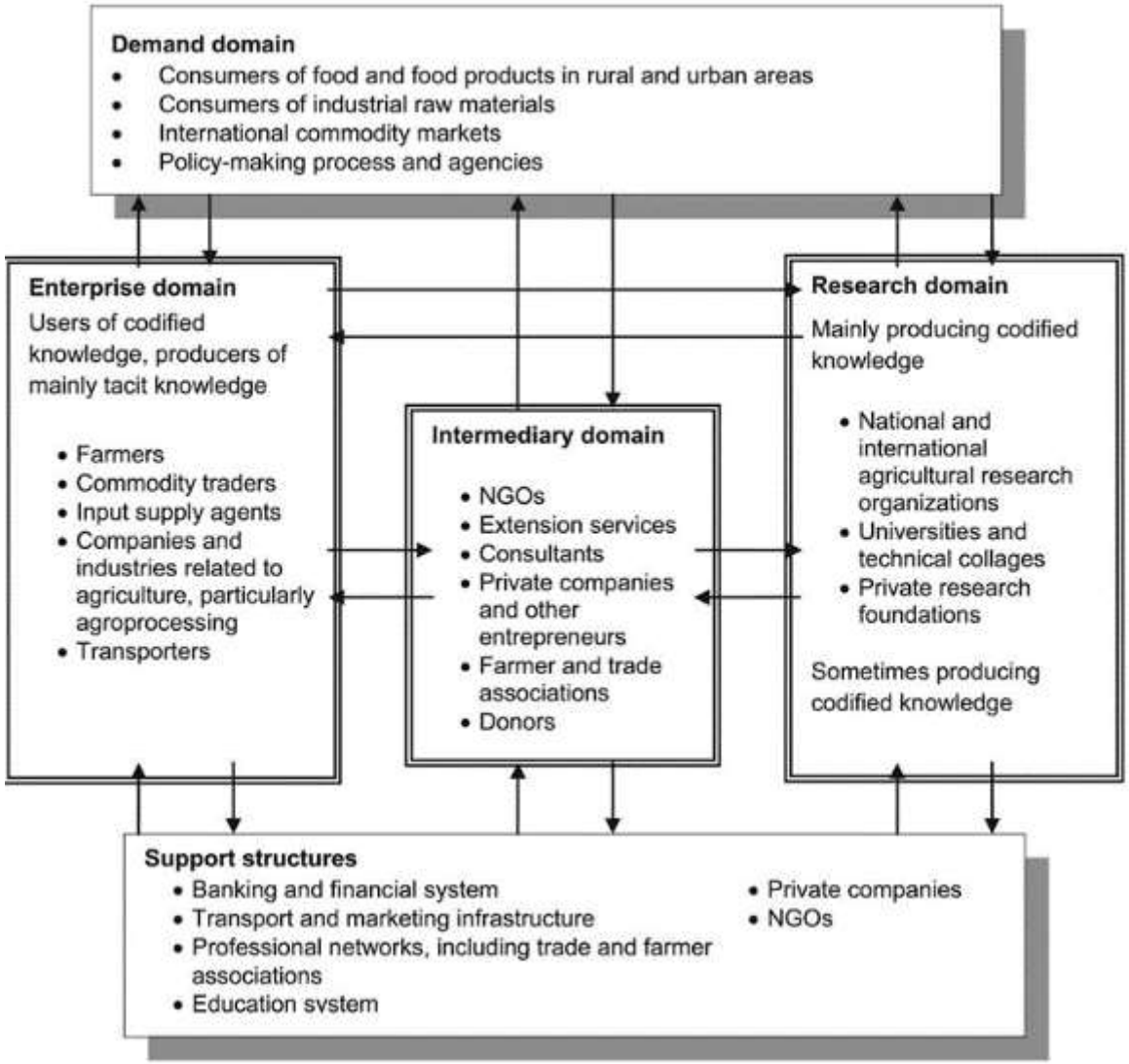
Integrating Food Systems and 'innovation thinking'?

- How do systems develop 'emergent properties' that are more desirable?



Different views on how systems change: An infrastructural view (World Bank)

- 'What is needed is an organisational infrastructure for innovation'



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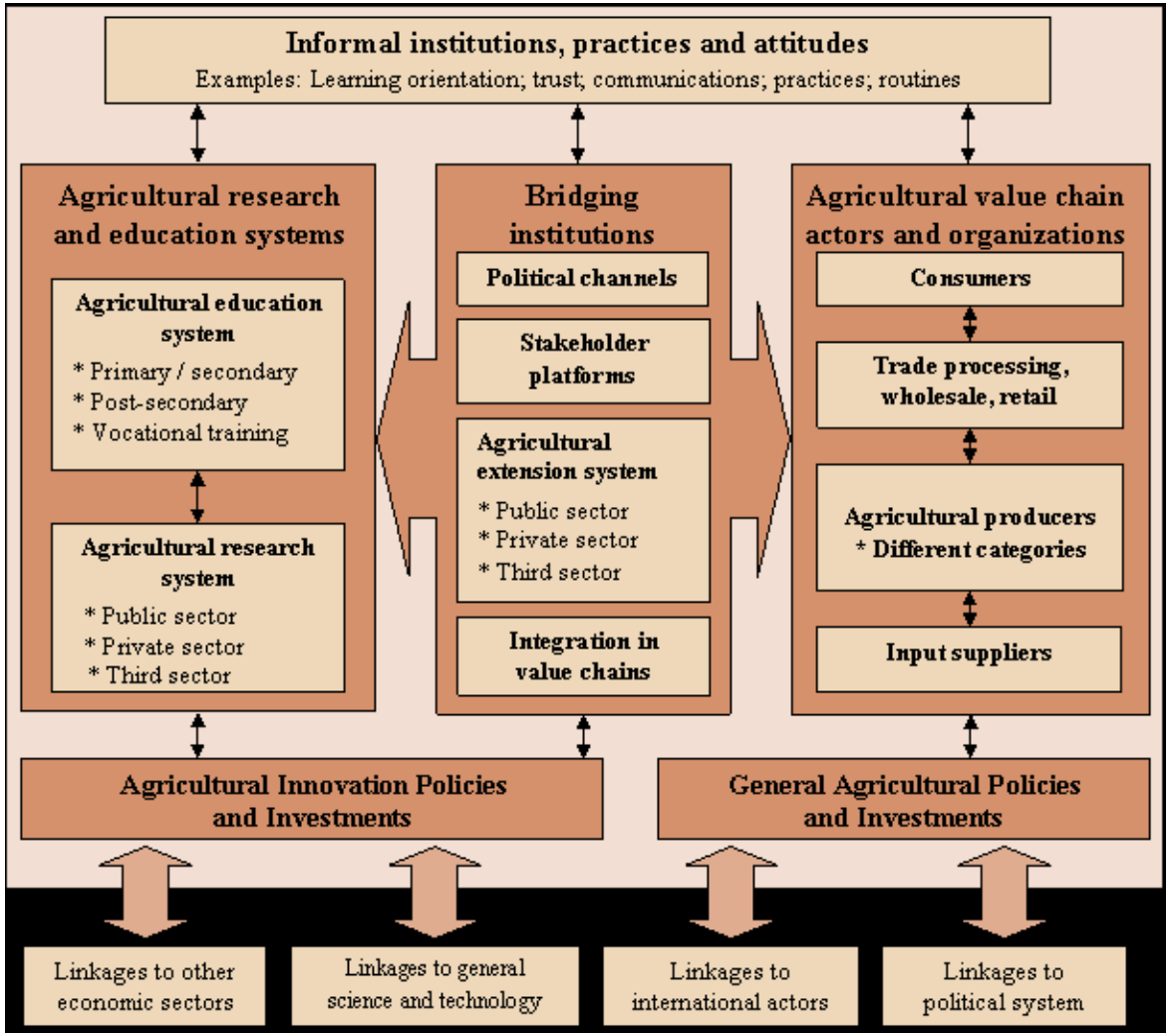
Different views on how systems change: An slightly less infrastructural view (FAO)

- 'You also need governance of innovation:
  - policies
  - investments
  - rules
  - incentives'



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Different views on how systems change: A functional view (Hekkert et al.)

- 'We need to make sure that critical functions are fulfilled'

Functional analysis

Innovation system functions

F1	Knowledge development
F2	Entrepreneurial activities/commercial experimentation
F3	Knowledge diffusion/ exchange in networks
F4	Mobilizing resources
F5	Market formation
F6	Guidance of the search
F7	Creation of legitimacy

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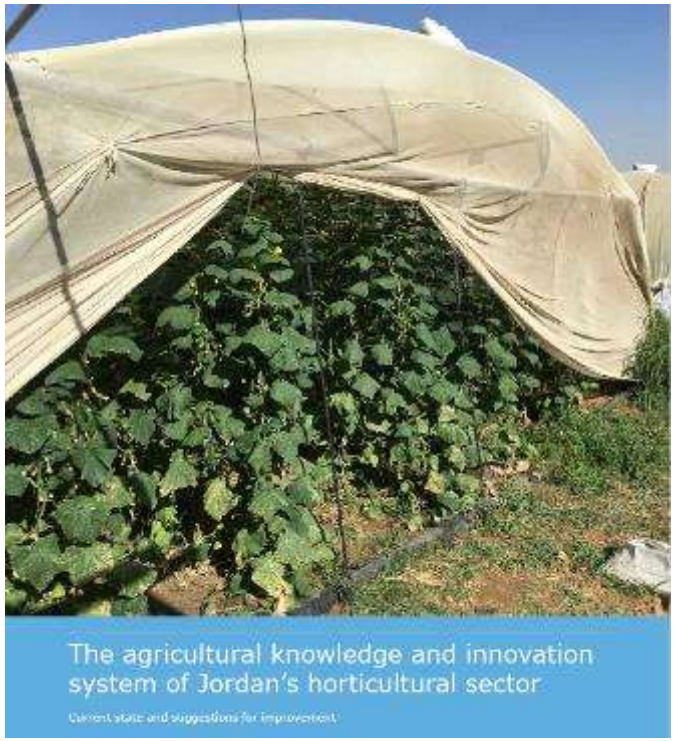
Interesting to note ....

- We have done many studies of 'innovation ecologies' across the world:
  - 8 countries scientific analysis
  - 25 rapid appraisals

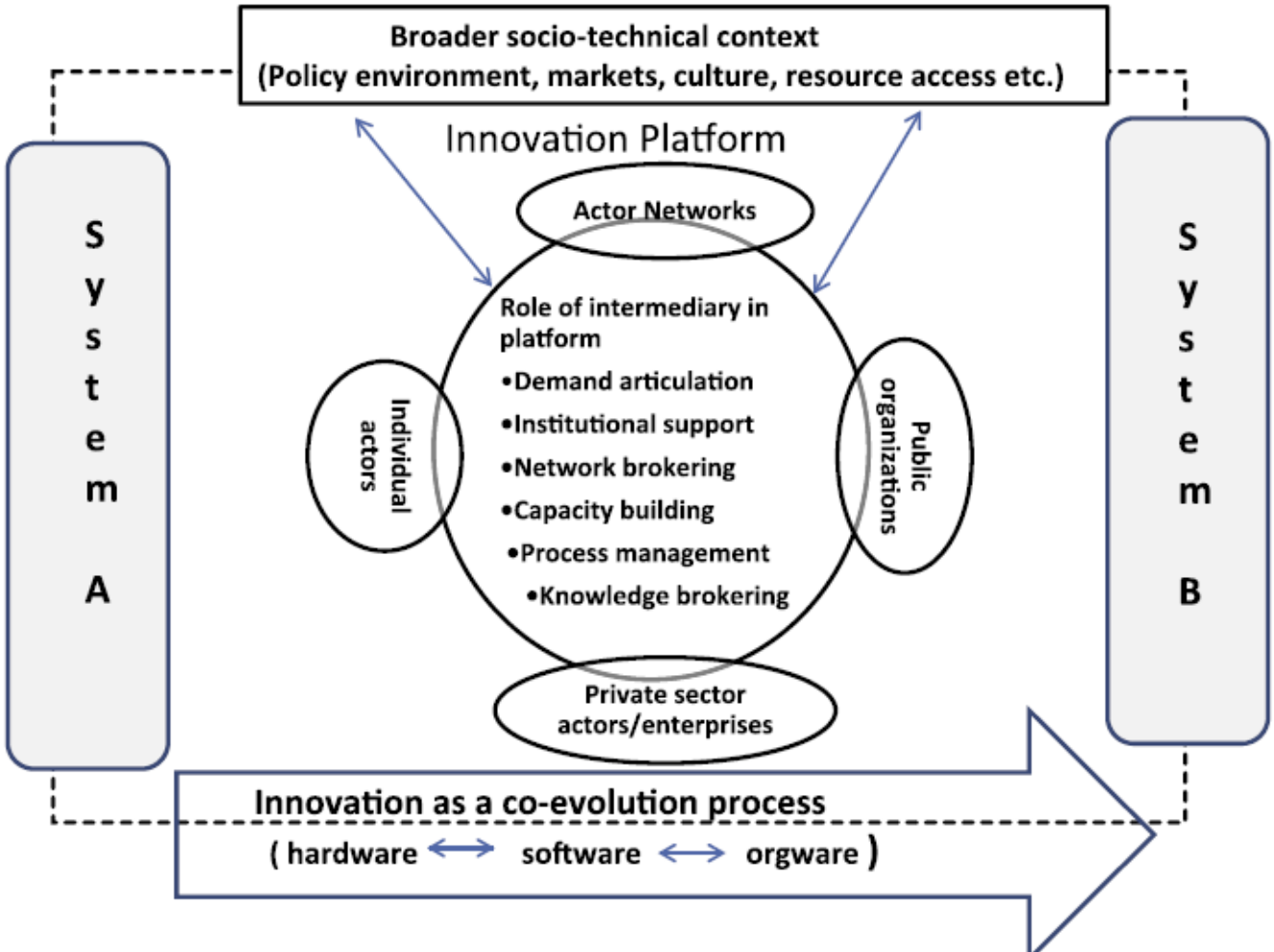
Rapid Appraisal of Agricultural Innovation Systems (RAAIS)



- But we have hardly studied the 'post-privatization' Dutch 'innovation system'

Different views on how systems change: A dynamic process view (Kilelu, Klerkx et al.)

- 'Invest in a process'

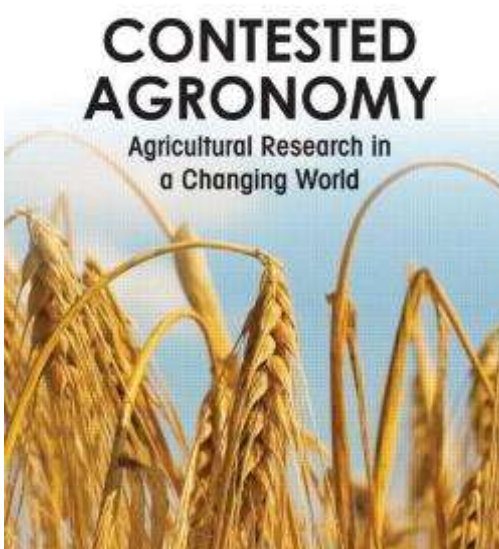


What kind of processes to support?
In situations where:

- Multiple stakeholders are inter-dependent; cannot change alone

- No stakeholder is in control !

- Dynamics are partially un-predictable



- Transformation is likely to be contested

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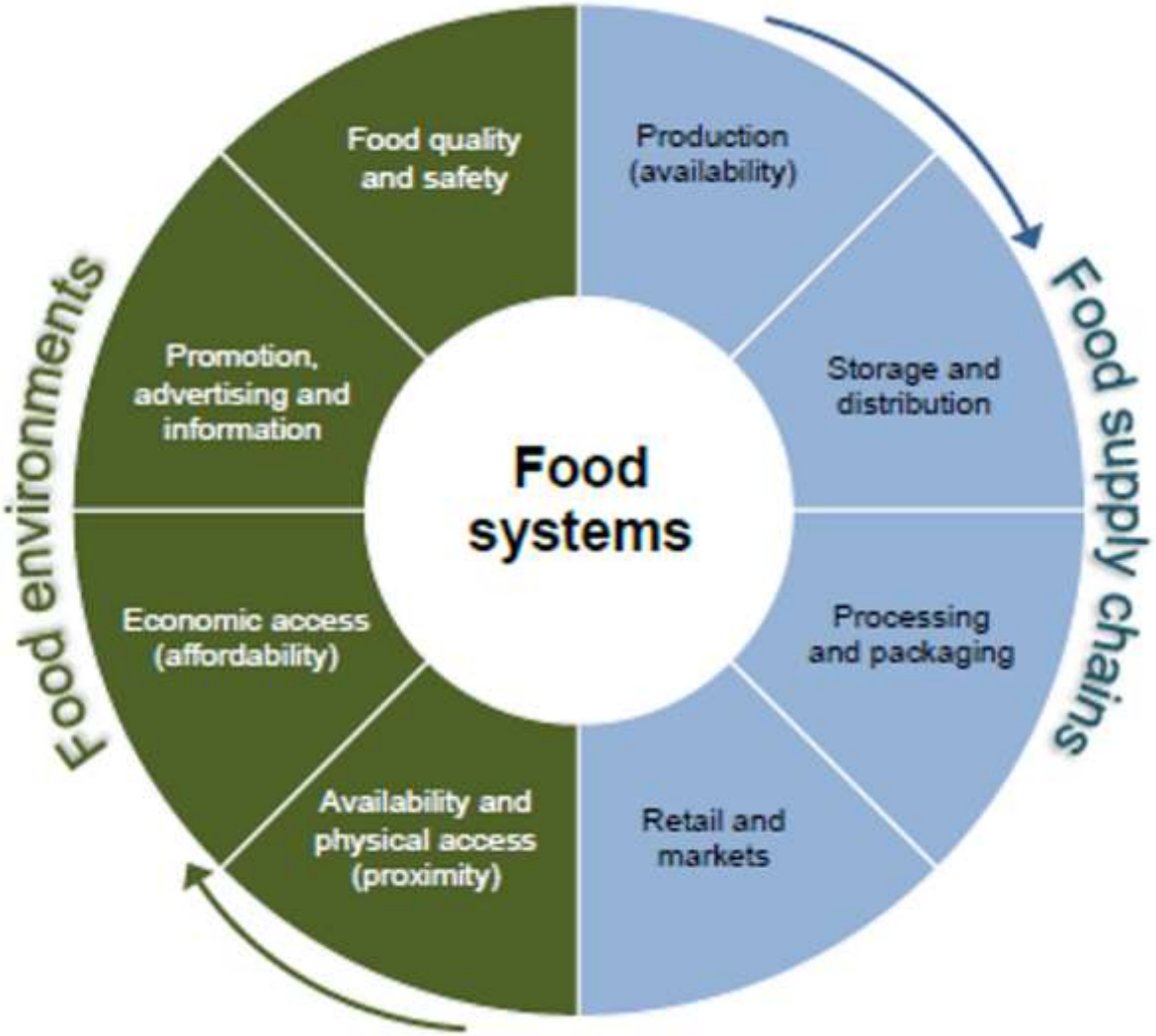
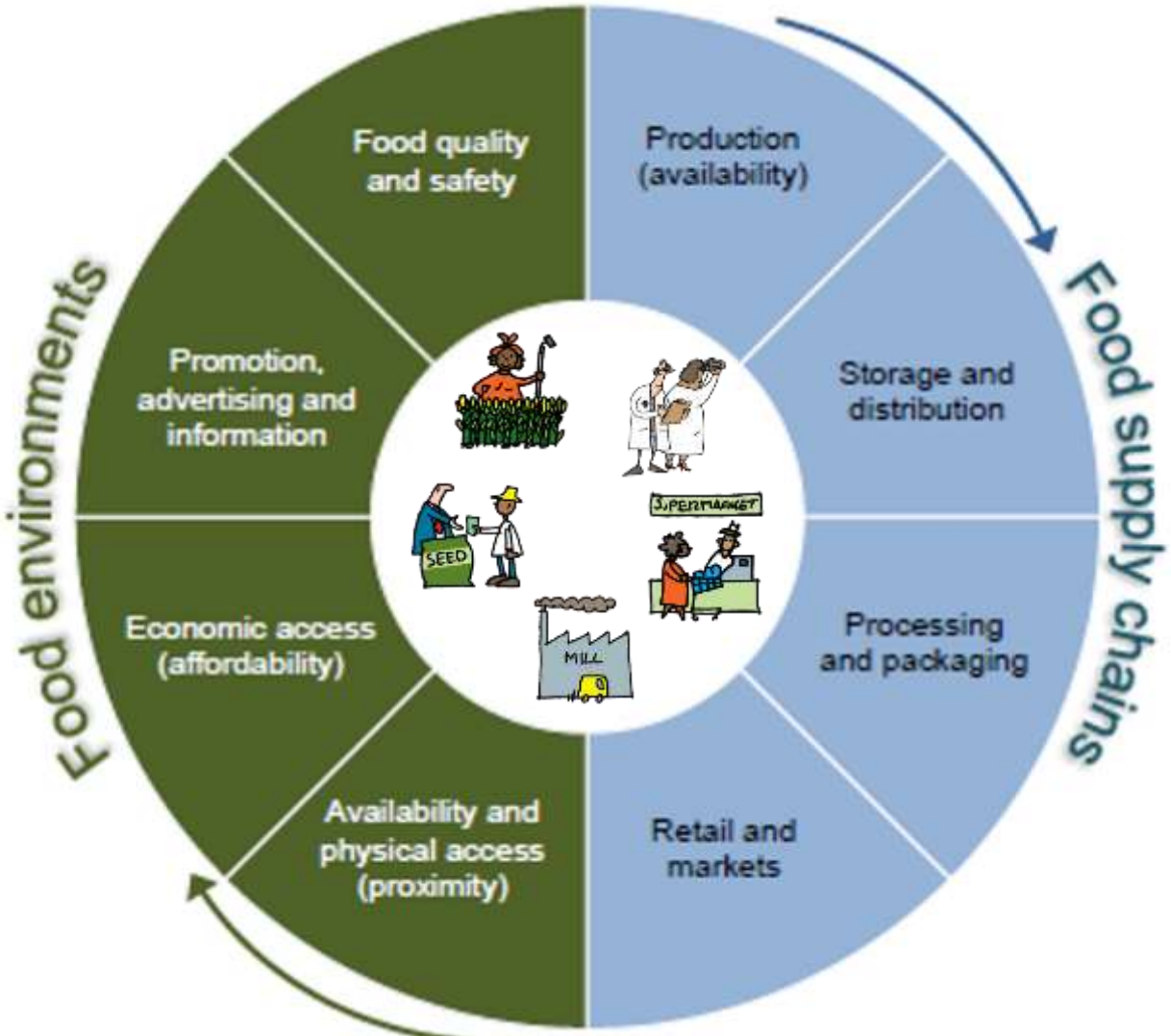
From: outside observation and understanding of the system (FOR Development)



To: collaborative observation, understanding and action in the system (IN Development)

- The only people that can change the system are the people that are in the system!



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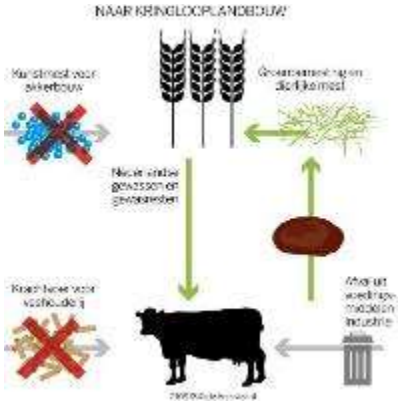
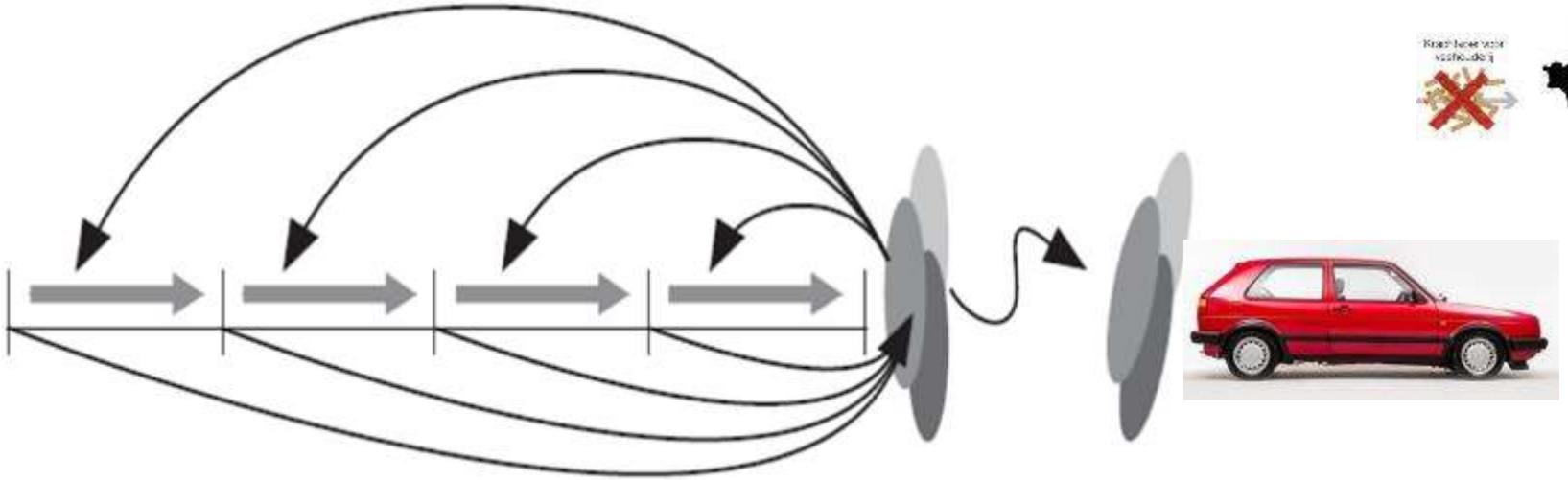
What kind of processes to support?

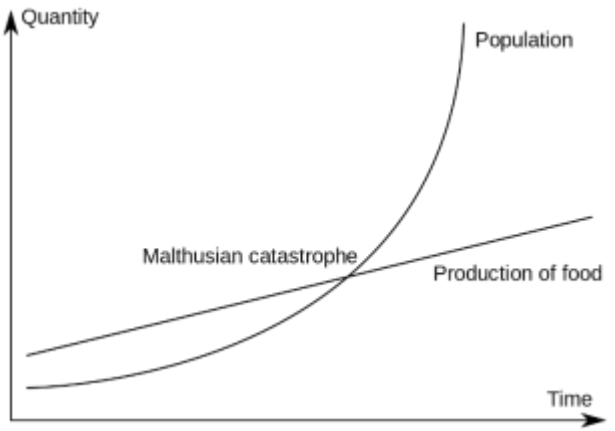
- Eventually: Visioning desirable futures
  - Identify overlapping long term goals
  - Backcasting





What kind of processes to support?

- Increasing pressure on the system
  - Trend and scenario analysis
  - Awareness raising
  - Advocacy campaigns
  - Imposing deadlines
  - Creating urgencies



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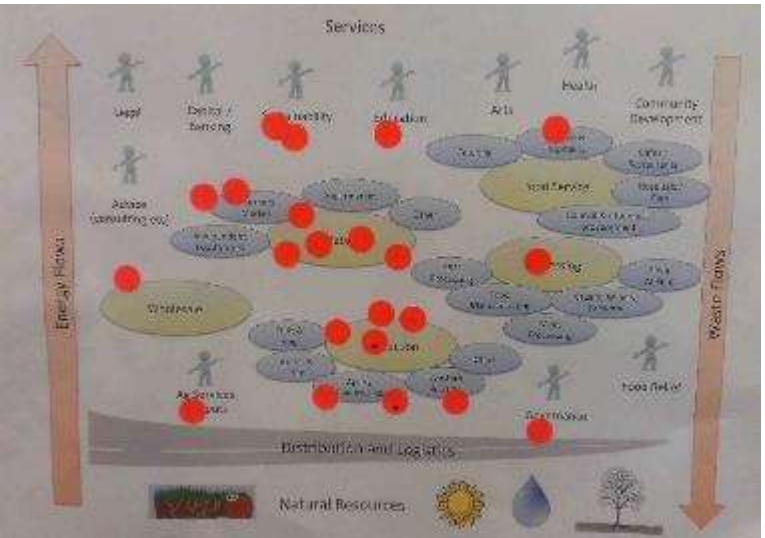
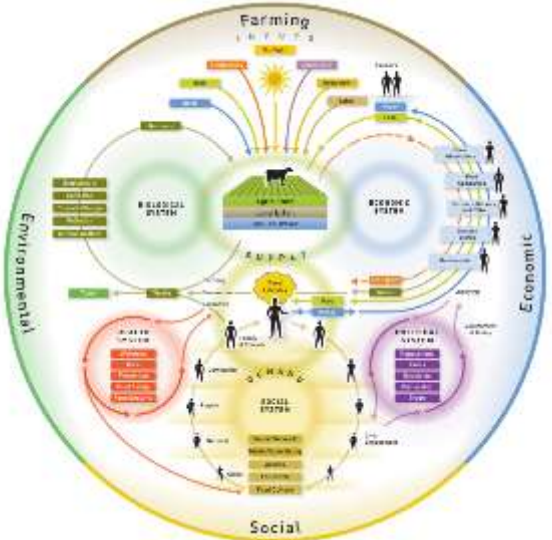
What kind of processes to support?

- Enhancing feelings of interdependence
  - Participatory analysis of the system
  - Visualising interdependencies



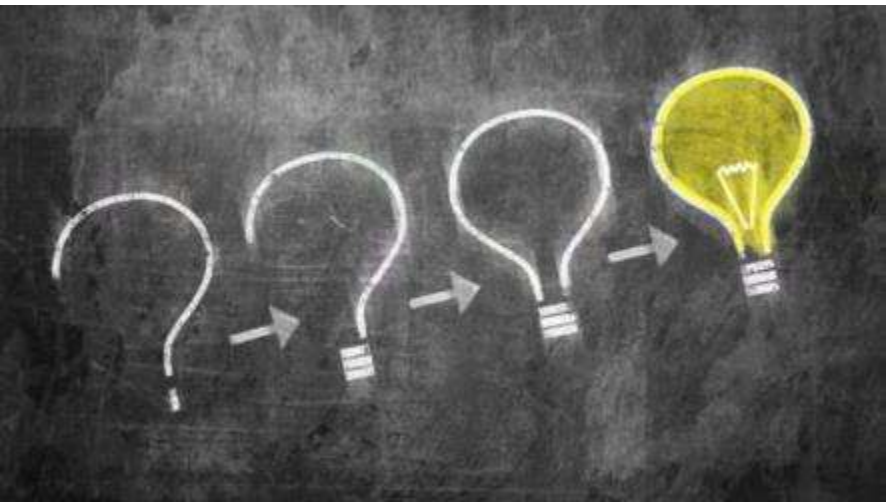


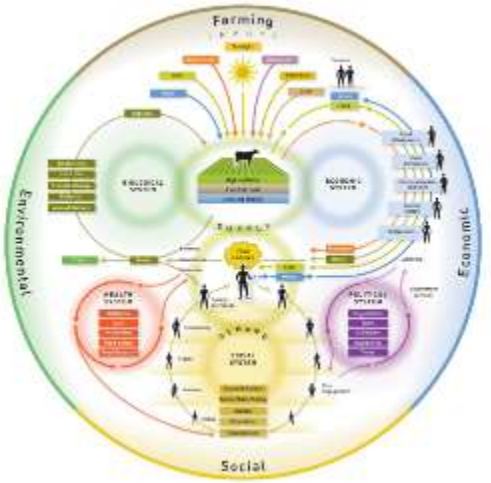
What kind of processes to support?

- Enhancing mutual understanding
  - exchange of perspectives
  - meeting with each others reality

What kind of processes to support?

- Explicate uncertainties / perceived risks that prevent people from changing
  - translate towards researchable questions
  - demand-articulation

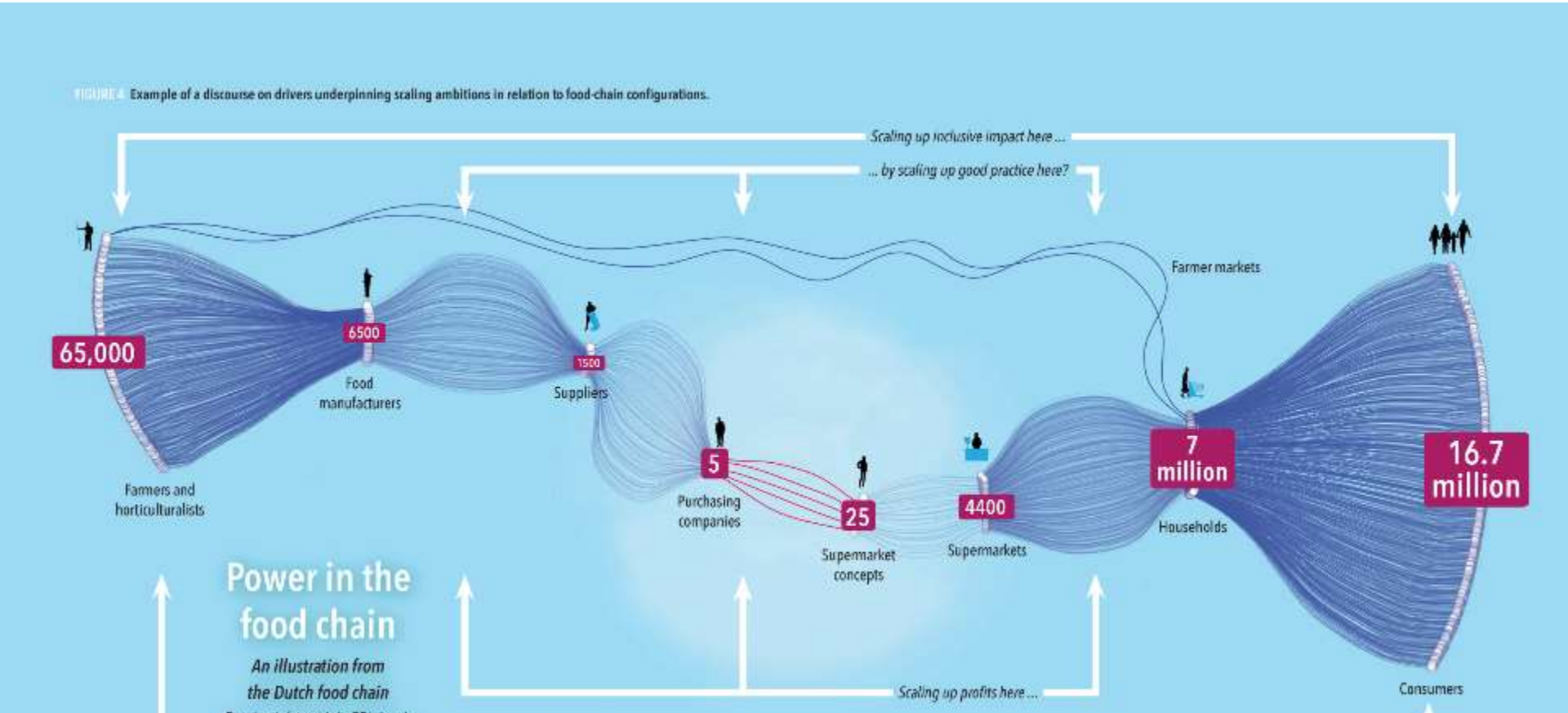




What kind of processes to support?

- Identifying bottlenecks and leverage points for change

  - Where is the power in the system?



What kind of processes to support?

- Creating variation: sufficient alternative options
  - joint technical experimentation
  - identify existing technical diversity

What kind of processes to support?

- Creating variation: sufficient alternative options
  - joint institutional experimentation: formal and informal rules
  - identify existing institutional diversity

- credit modalities
- policy and legislation
- licencing
- business models
- pricing systems
- land tenure / security
- labour organisation

What kind of processes to support?

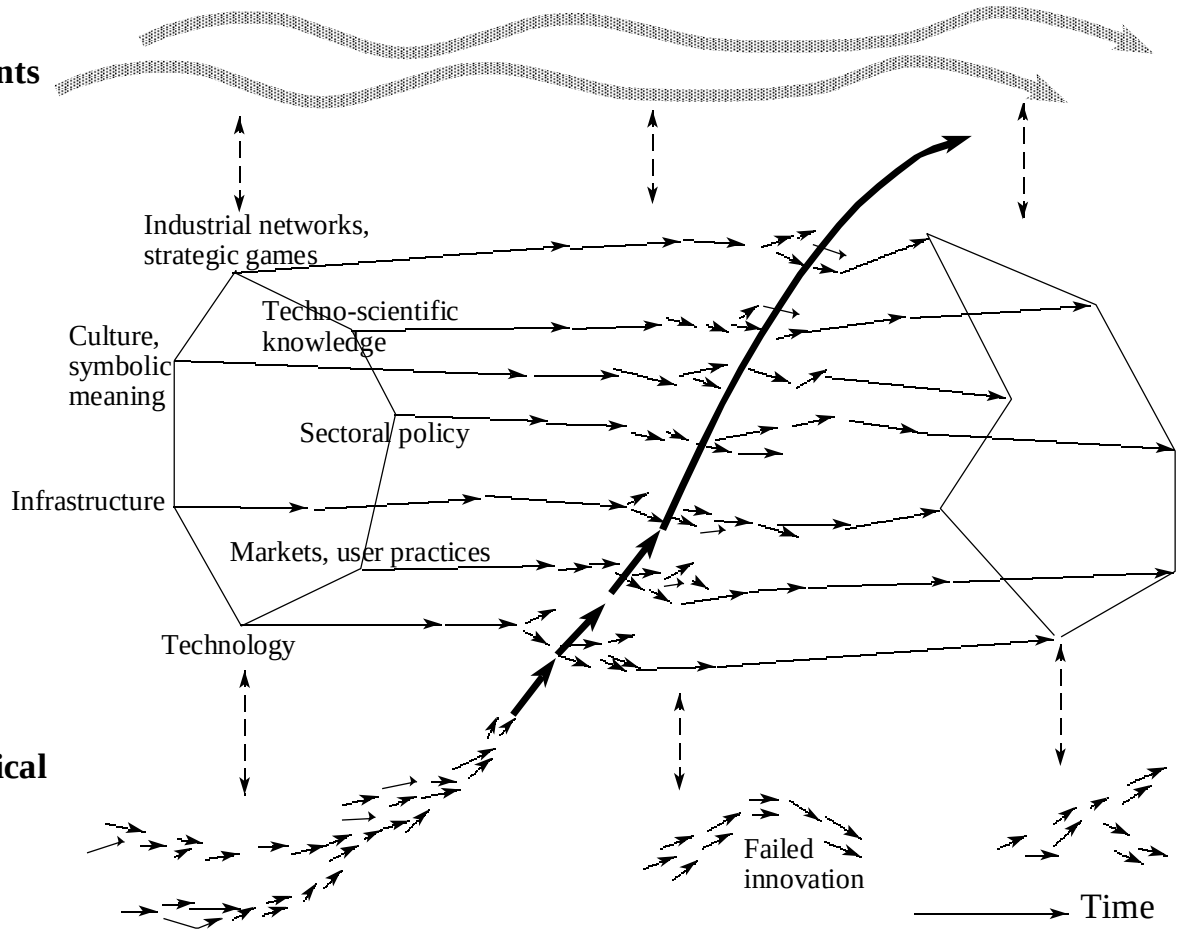
- Conflict management
  - Coalition formation around options
  - Organising contexts for negotiation

What kind of processes to support?

- Conflict management
  - Coalition formation around options
  - Organising contexts for negotiation

This process view is in line with a historical view (Geels) on how systems change

- 'put pressure'
- 'learn and build coalitions'
- 'organise variation / experimentation'



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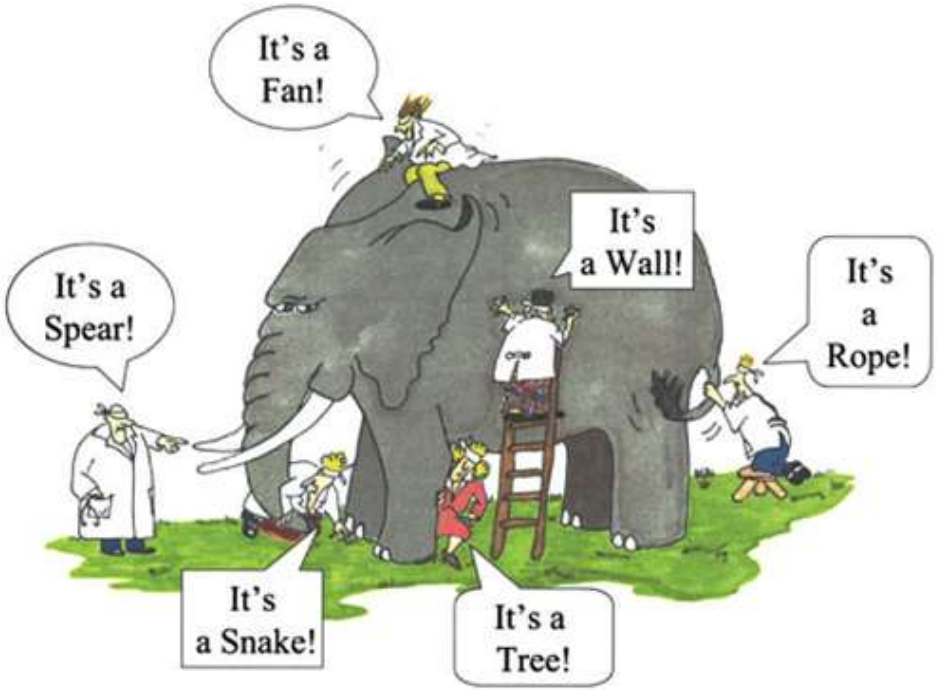
Concluding remarks

- Innovation thinking helps to foster Food System change
    - through: infrastructures, functions and processes
- Supporting people to understand and change their system in an action research mode
- Even without them calling it a 'Food System'!



Thank you for your attention!