

Global Insights into Agricultural Innovation Systems

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RIRG Webinar: 25 years of social science for agricultural innovation- insights for challenges

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RIRG: key player in agricultural innovation systems (AIS) research

Knowledge and innovation systems

We aim to understand and improve agricultural innovation systems. This includes research on knowledge production, learning and innovation systems; institutional arrangements and innovation system governance, social implications of technological developments; building and engaging communities of practice; collaboration and collective action in Australia and internationally.

- So what are some of the points of discussion emerging globally as regards AIS?



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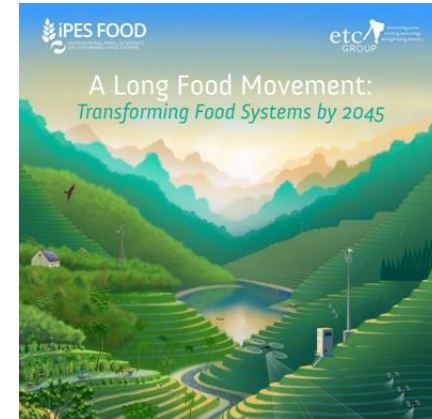
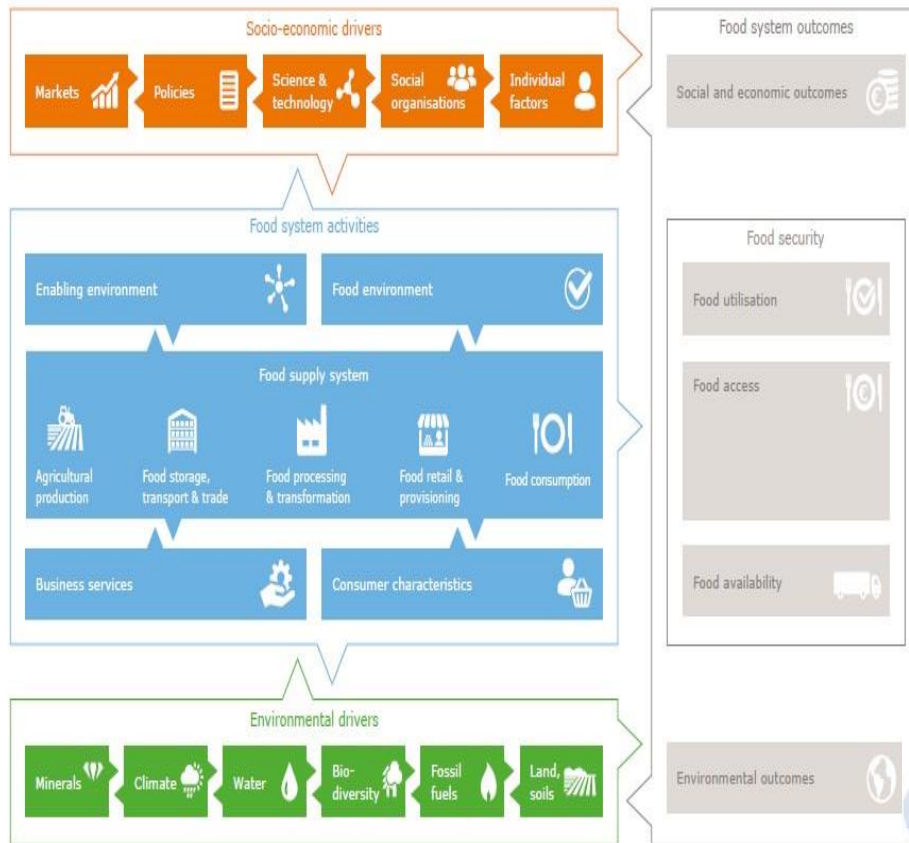


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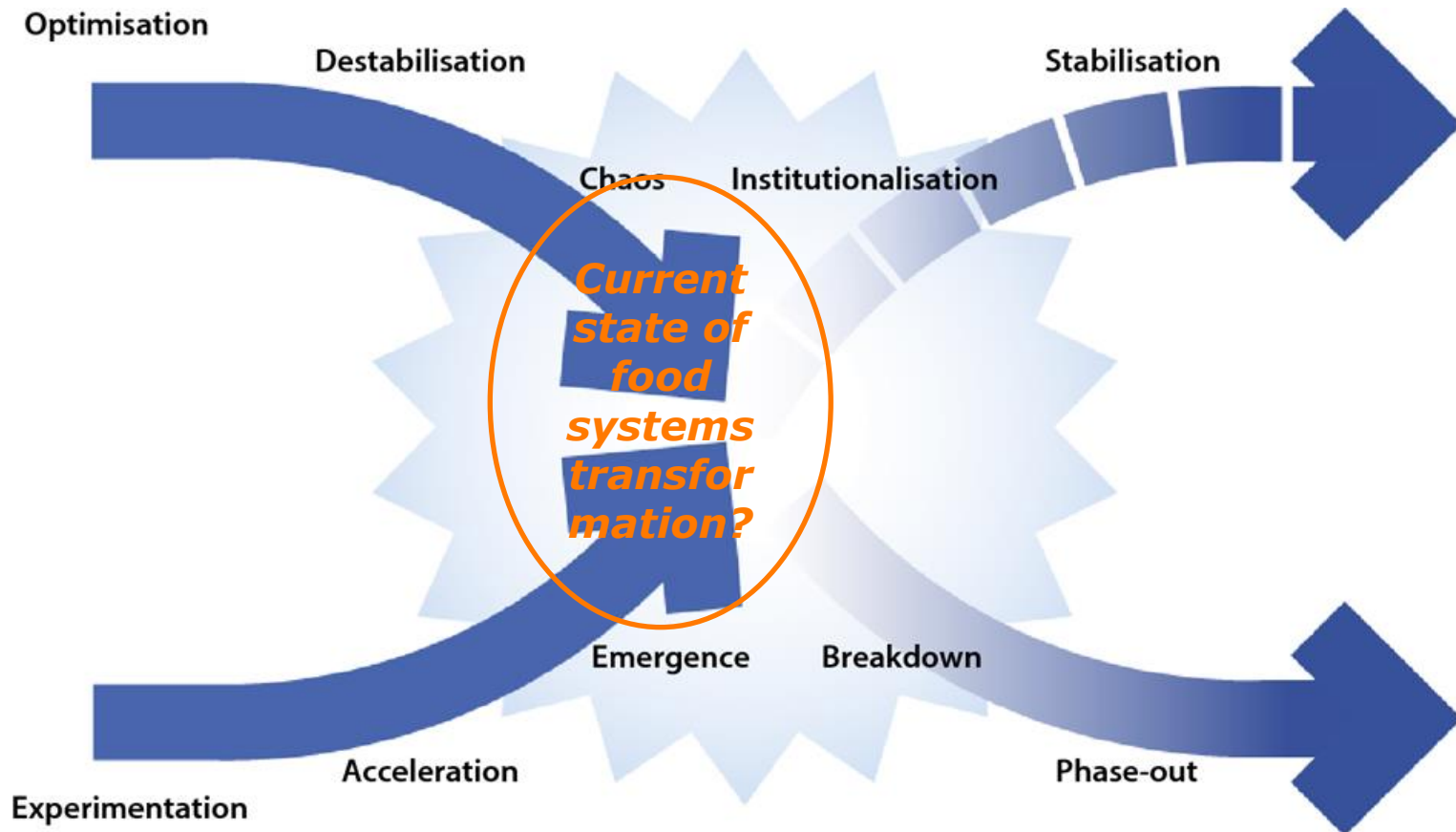


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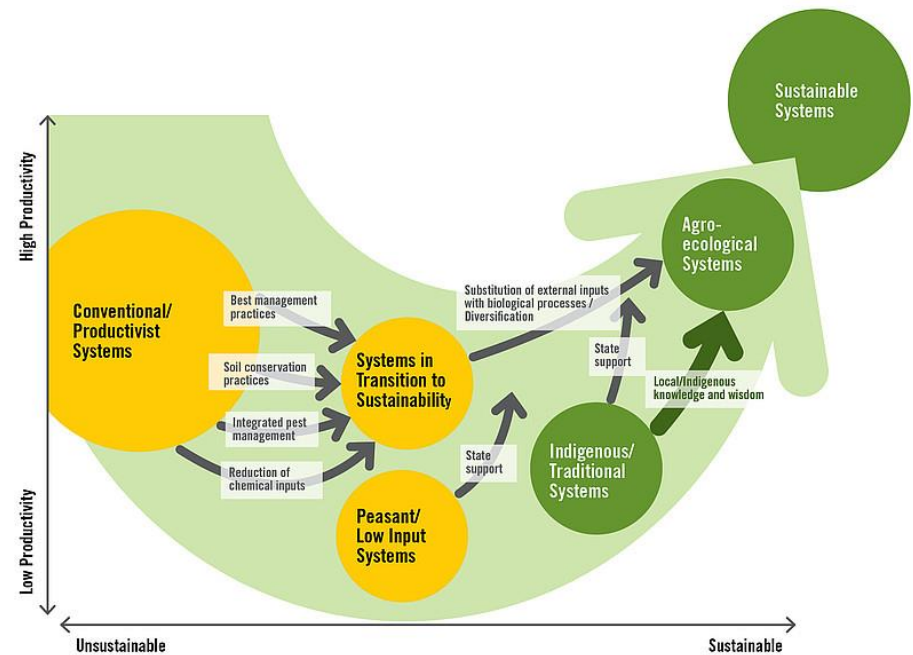
Agrifood systems transformation in focus



The X-curve of transformation



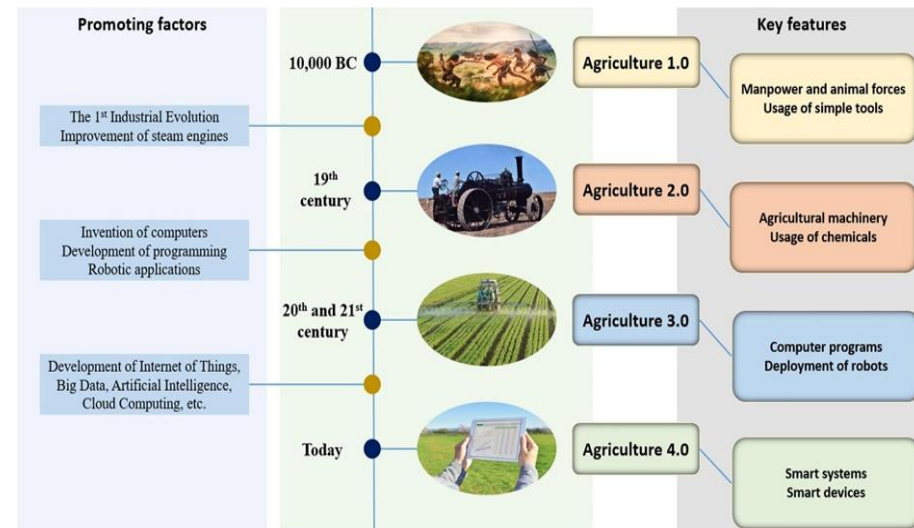
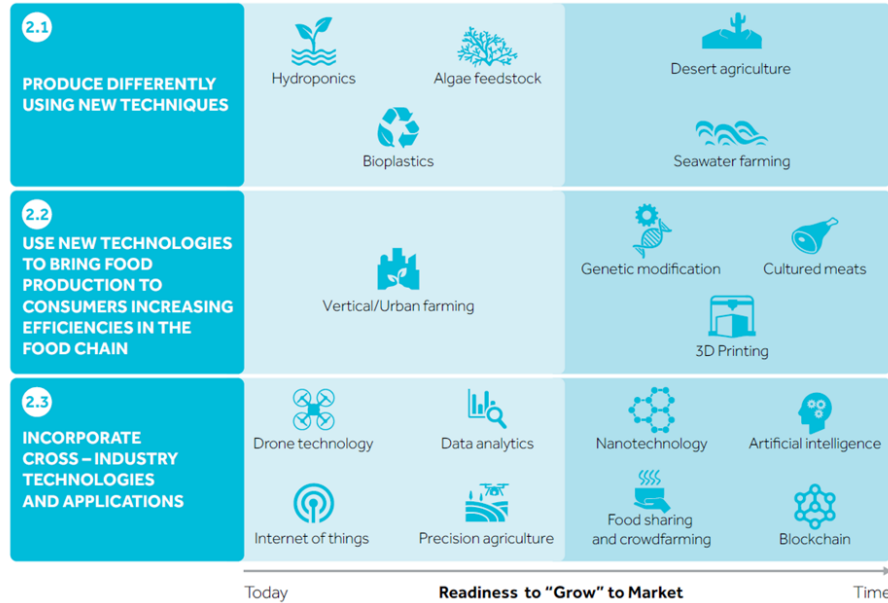
Regenerative agriculture, agroecology, nature-inclusive agriculture, etc.



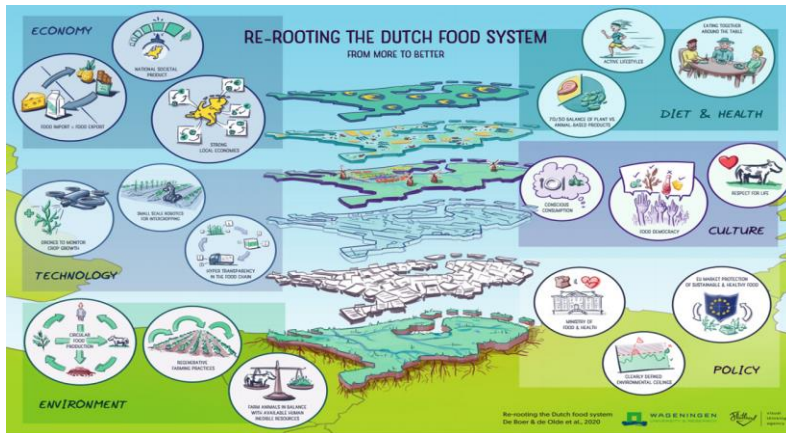
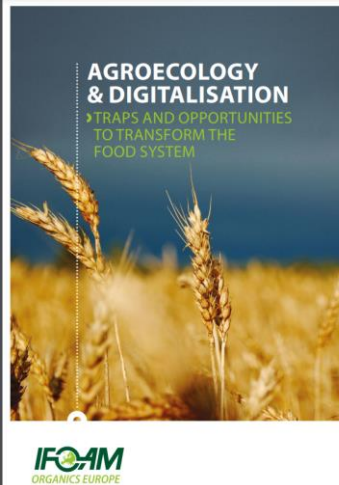
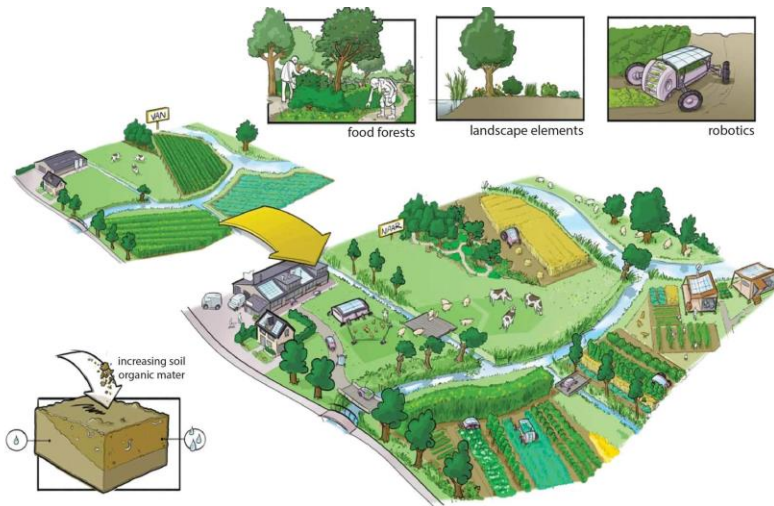
Source: Latin America and the Caribbean, Summary for Decision Makers, p. 9

Agriculture 4.0 technologies

MAP OF TECHNOLOGIES AND MATURITY



Hybrid transition pathways



Education & Research
Programmes Results

Home > Wizards and Prophets meet each other >

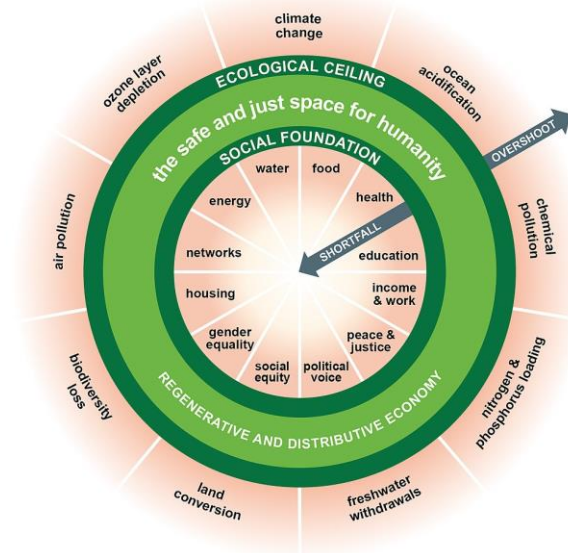
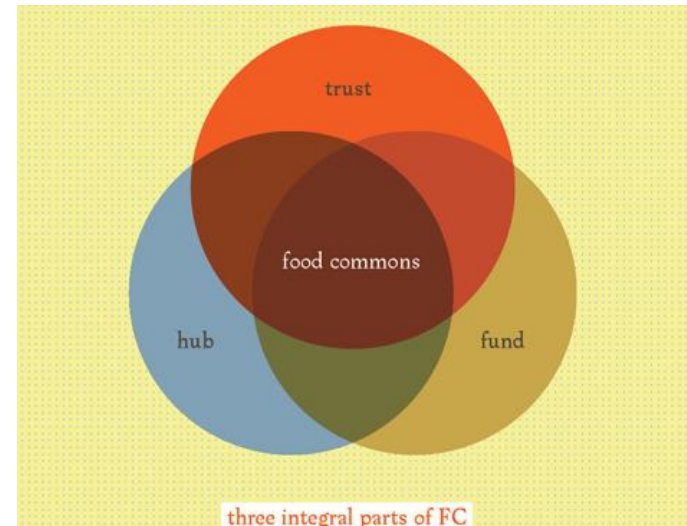
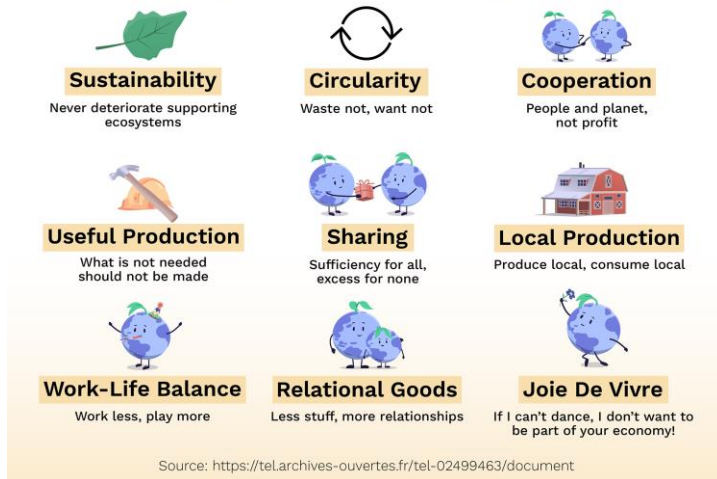


News

Wizards and Prophets meet each other

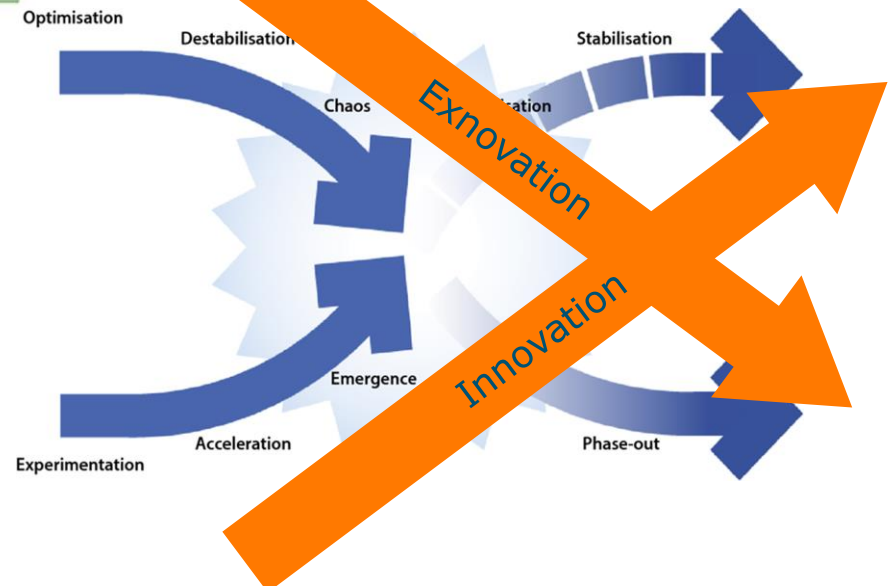
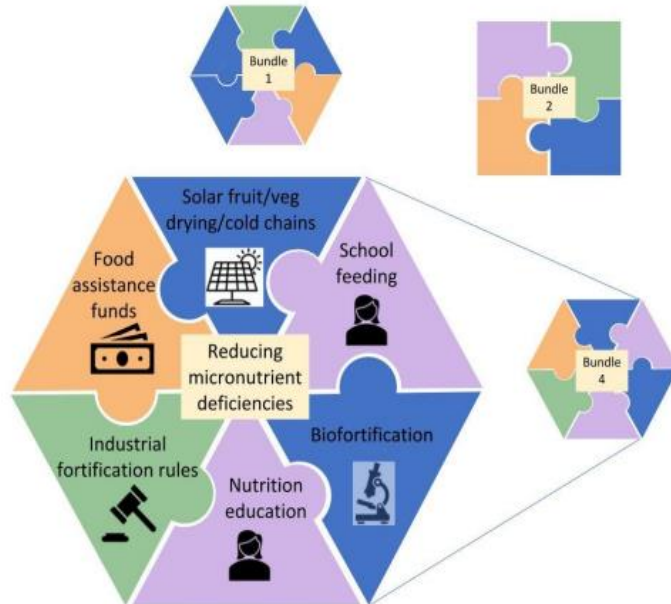
Different socio-economic perspectives also

Principles of Degrowth



Innovation and exnovation

Socio-technical innovation bundles



Towards Agricultural Innovation Systems 4.0?

AIS 1.0

AIS 2.0

AIS 3.0

... towards AIS 4.0?

Technology transfer - linear model

Knowledge
and
Information
system
perspective

Complex
adaptive
system
perspective

Directionality
Diversity
Distribution
Democracy

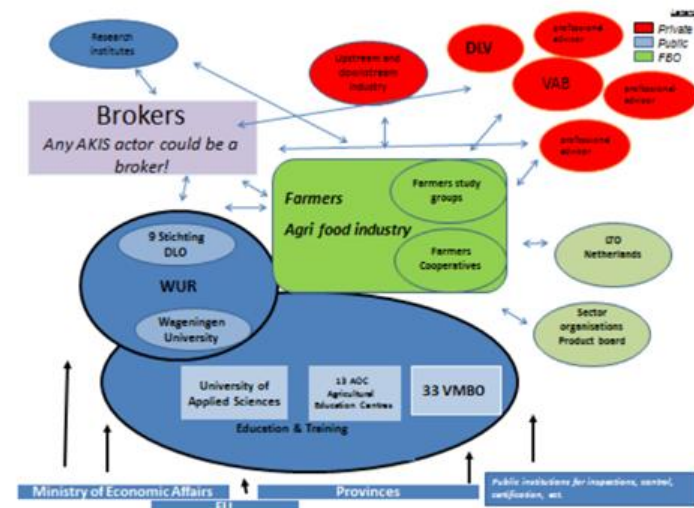


Figure 1: Overview and interaction of the main Dutch AKIS actors
Source: Caggiano, 2014

4D framework

- **Directionality:** What directions are different transformation pathways headed in?
- **Diversity:** Is there a sufficient diversity of transformation pathways?
- **Distribution:** Who stands to gain or lose from current or proposed transition pathways, or alternatives?
- **Democracy:** is there equity of opportunity for voice and inclusion?



Research and action gaps

1. What is the *diversity* of new players that have come in under influence of digitalization and other Agriculture 4.0 technologies? And how do we deal with them?
2. The issue of *diversity of directions* in Agriculture 4.0: what sorts of innovation and exnovation for food systems transformation are supported? How does this change balance of power, what is the *distribution* of impacts?
3. The recognition of who has agency and to what extent is there *democracy* in AIS 4.0: who is included in innovation and what is the role of non-humans in this respect?



New players in AIS 4.0

Australian Agri-Food Tech Map

v1.5 updated May 2022
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Bridging the gaps between innovation, investment, and business

Written by AgThentic in collaboration with



SUSTAIN the Australian food network About ▾

We build healthy & sustainable food systems

The think & do network of citizen farmers, researchers, policy experts and community connectors on a mission to transform food.

Missions driving AIS 4.0



Nationally committing to mission-oriented model

Why Australia should not abandon mission-oriented innovation



Anne-Maree Dowd Impact management | Strategic planning and performance

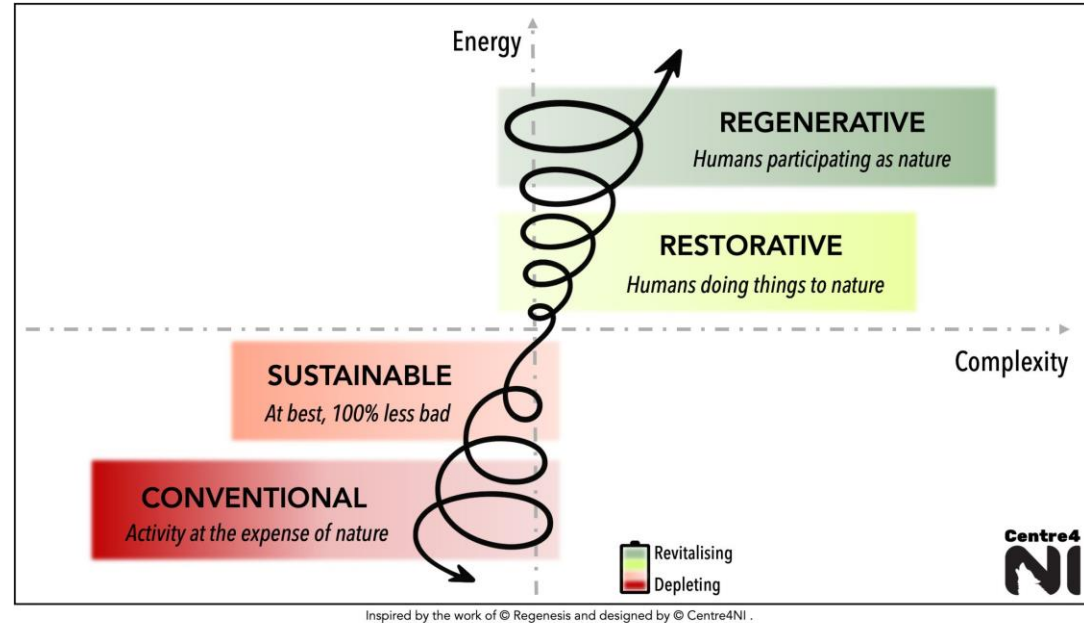
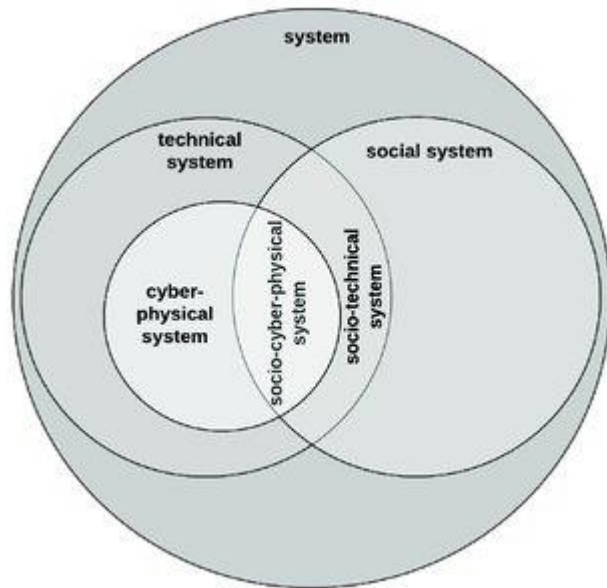
November 20, 2025



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Non-humans in AIS 4.0



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Should you put 'nature' on your board?

Natural hair care brand Faith in Nature has legally given 'nature' a seat at the boardroom table - should other companies follow suit?

What does AIS 4.0 mean for extension?

■ New categories of advisors:

- Related to digitalization (Digiwork: technology intermediaries/digi specialists)
- Dedicated 'transformation advisors'
- Alternative forms of agriculture (urban agriculture, permaculture, vertical farming)
- Specialized in social issues (mental health, succession advisors, 'transition pain' related to exnovation)
- LLM based tools

■ Emerging challenges

- Cognitive overload and work burden
- Overreliance on digital? Platform overload
- Risk of 'advisory bubbles' and misinformation



Work ahead

HOME ABOUT MEMBERS PROJECTS CONTACT

A Systems Thinking Approach to Australian Agriculture

AgriFutures® Australia

Project Summary

AgriFutures Australia, in partnership with Grains Research & Development Corporation (GRDC), has appointed the Australian AgriFood System Alliance to deliver a landmark project examining how systems thinking can be applied to strengthen Australia's agrifood innovation ecosystem. The project will explore how agriculture and food can work more effectively with other national priority sectors such as energy, mining, defence, health, and technology to address complex, interconnected challenges and unlock system-level change. By building on the strengths of Australia's existing R&D structures and fostering cross-industry collaboration, the initiative aims to position the agrifood sector as a driver of economic, environmental, and social transformation across the nation.

TrustedSite

- Plenty of research and action to do for the next 25 years of RIRG!