How do food systems change (or not)?

Governance implications for system transformation processes.

Cees Leeuwis (based on a paper with Birgit Boogaard & Kwesi Attah Krah)

Presentation for webinar series 'Innovating and Scaling for Social Transformation in International Food Systems'. Innovation Lab for Horticulture, UC Davis, WUR, USAID, CGIAR

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How do food systems change (or not)?

Governance implications for system transformation processes.

- Thinking about systems

- How do socio-technical systems change?

- Implications for innovation policy

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Systems: interactions in complex wholes resulting in 'emergent properties'

- 'The whole is more than the sum of the parts'

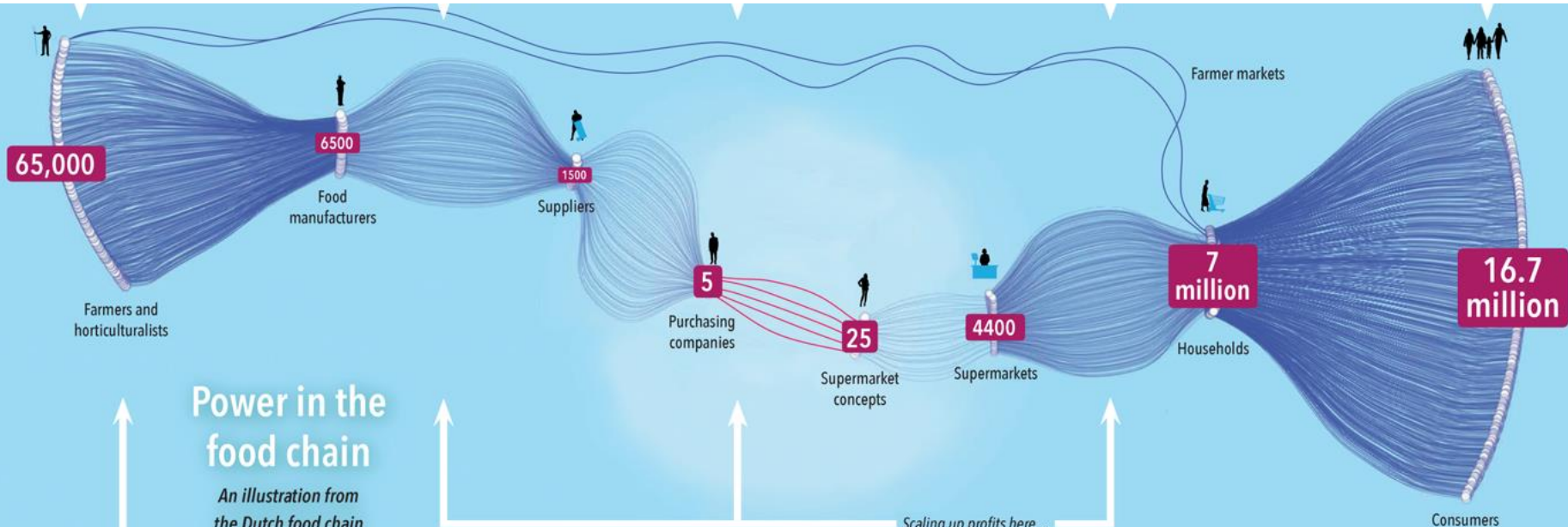- Emergent properties can be <u>desirable</u> or <u>undesirable</u>
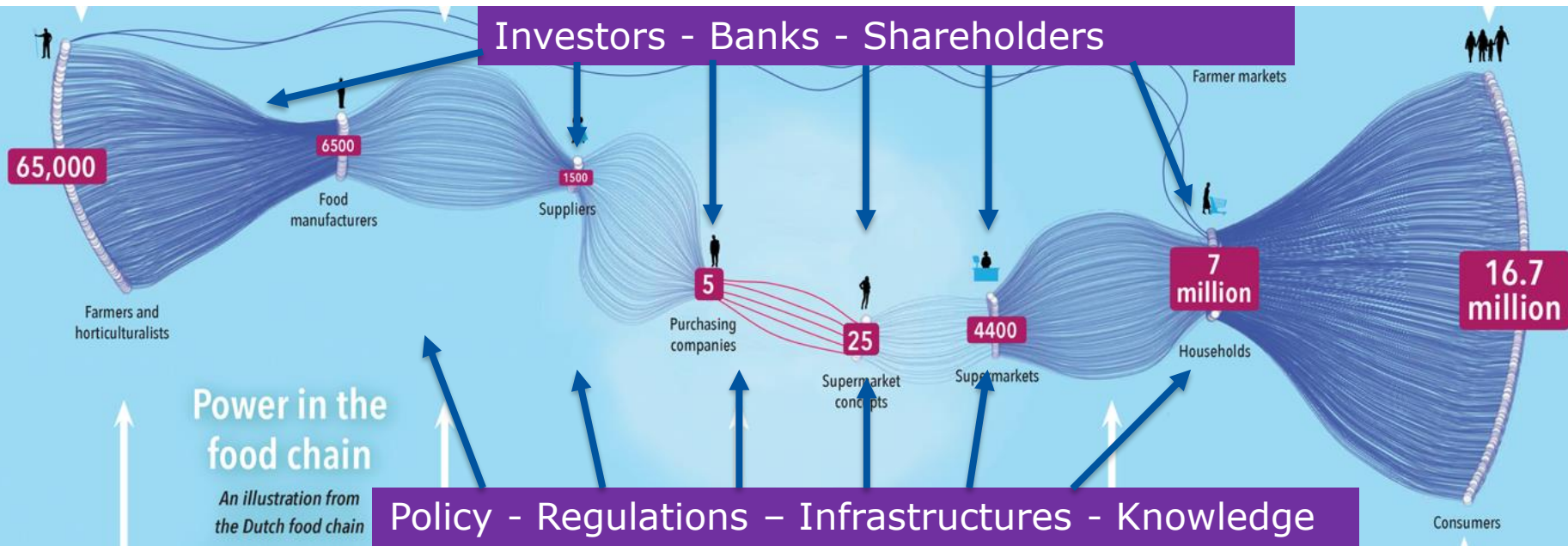

synergy   disergy

Pollution
Climate change
Poverty
Etc

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A food system is more than the value chain

Power in the food chain

An illustration from the Dutch food chain

65,000 — Farmers and horticulturalists

6500 — Food manufacturers

1500 — Suppliers

5 — Purchasing companies

25 — Supermarket concepts

4400 — Supermarkets

7 million — Households

16.7 million — Consumers
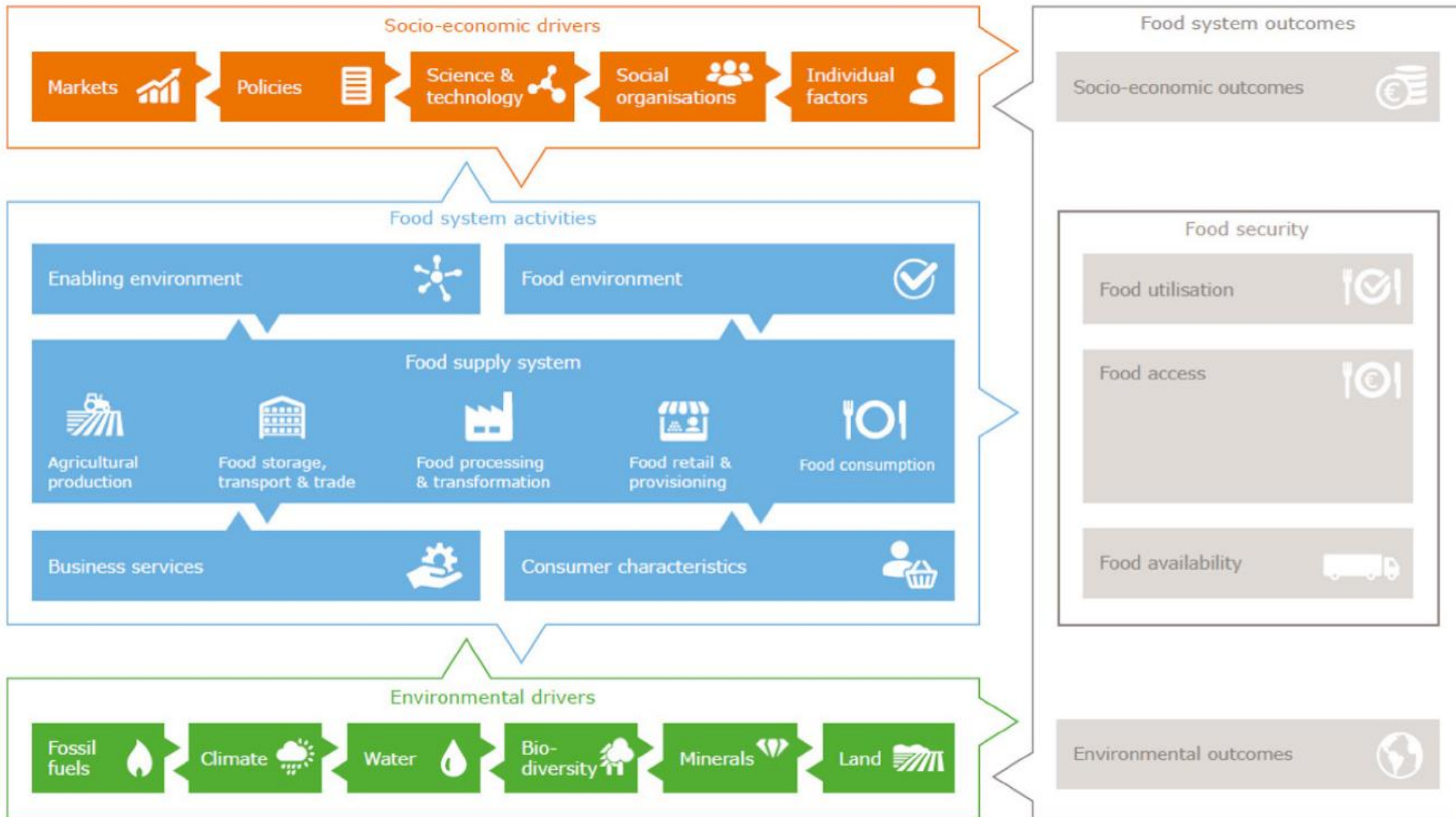
Farmer markets

Scaling up profits here

A food system is more than the value chain

■ Interactions in the value chain are influenced by the dominant 'rules of the game' in and around it

■ Which provides the system with some kind of 'logic'

Investors - Banks - Shareholders

Policy - Regulations – Infrastructures - Knowledge

Power in the food chain

An illustration from the Dutch food chain

65,000 Farmers and horticulturalists

6500 Food manufacturers

1500 Suppliers

5 Purchasing companies

25 Supermarket concepts

4400 Supermarkets

7 million Households

Farmer markets

16.7 million Consumers

An even broader representation

Our current systems increasingly (re)produce & scale undesirable outcomes (disergies)

disergy
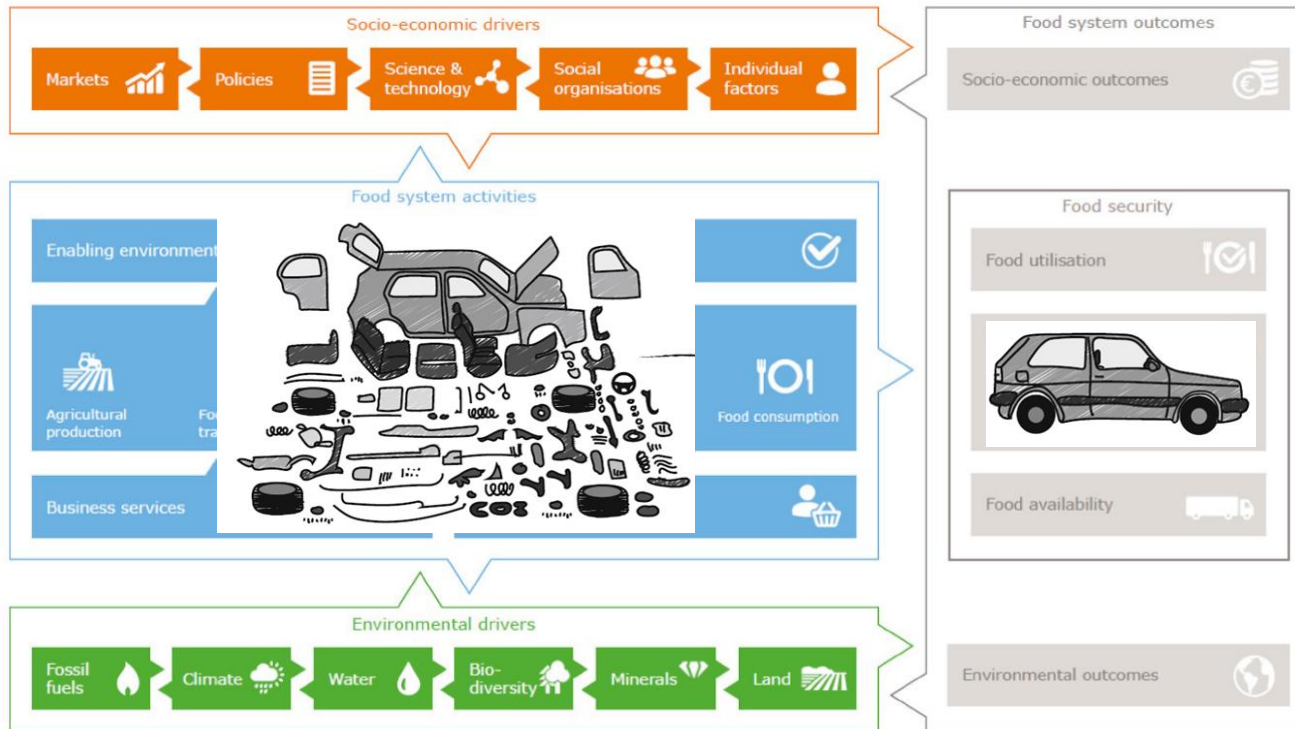
- Pollution
- Poverty
- Climate change
- Polarisation
- Obesity
- Biodiversity loss
- Inequity
- Disease outbreaks

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The Dutch agro-food system is a case in point

Agri-Food export figures 2017

Total export from the Netherlands
€ 101 billion

Top 5 export products

- Materials and technology € 9.1 billion
- Flowers € 9.1 billion
- Dairy and eggs € 8.9 billion
- Meat € 8.3 billion
- Vegetables € 6.7 billion

Top 3 destinations

🇩🇪	Germany	24.7%
🇧🇪	Belgium	11.2%
🇬🇧	United Kingdom	9.2%

- The Netherlands is the EU's biggest agri-food exporter
- And the second biggest in the world

Source: Nov & Dec 2017 estimates, Wageningen University & Research/Statistics Netherlands

Source: Comtrade

Emerged from post war 'scaling processes'

- Scaling up (or: what is included)
  - 'modern' technologies
  - imported feed compounds
  - enterpreneurship culture
  - emissions
  - farm size (scale enlargement)

- Scaling down (or: what is excluded)
  - biodiversity
  - water quality
  - number of farmers
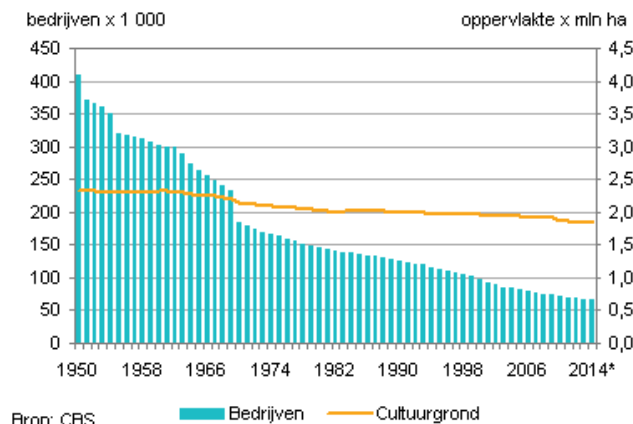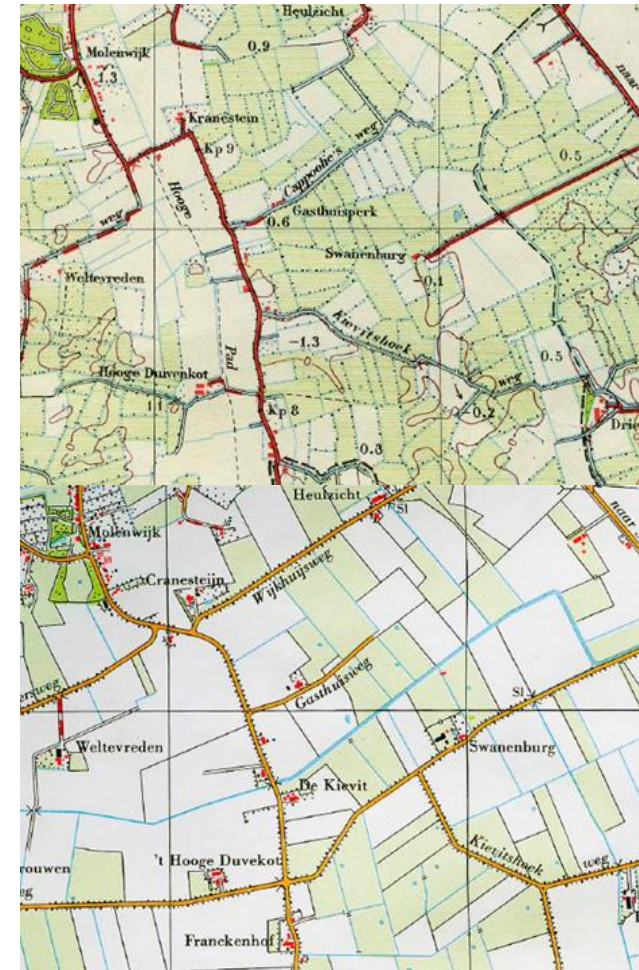
Bron: CBS   ▬ Bedrijven   ▬ Cultuurgrond

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Nitrogen emissions & biodiversity loss

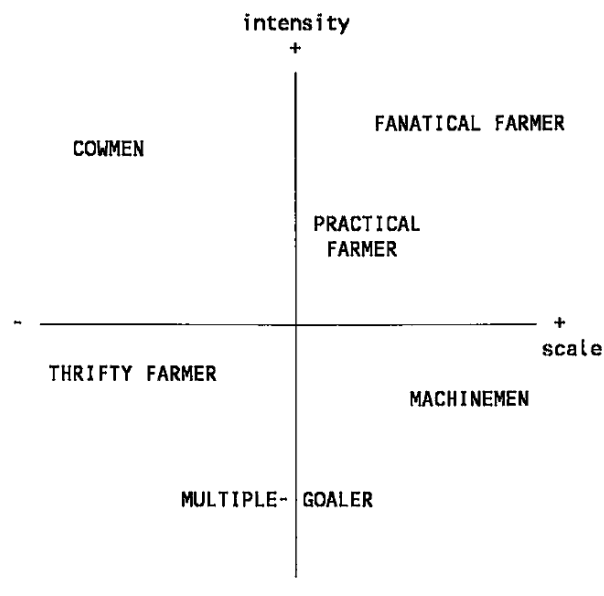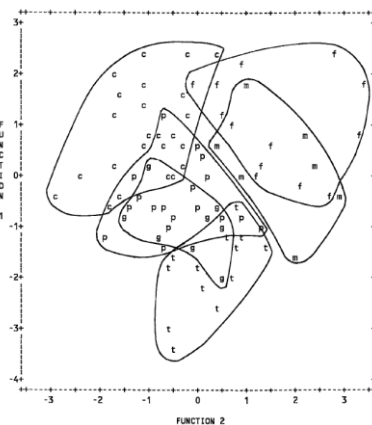| 40%	35%	11%	6.5%	6.5%
Agriculture	From other countries	Industry and shipping	Road traffic	Households
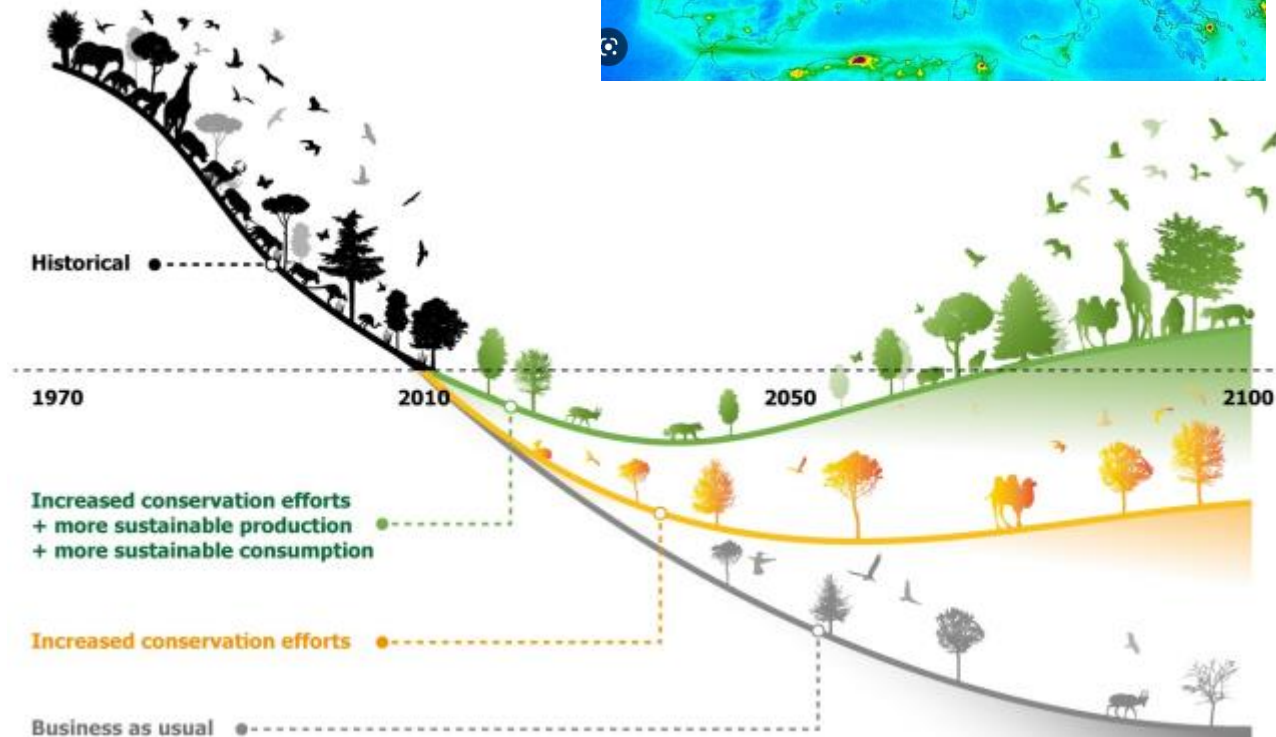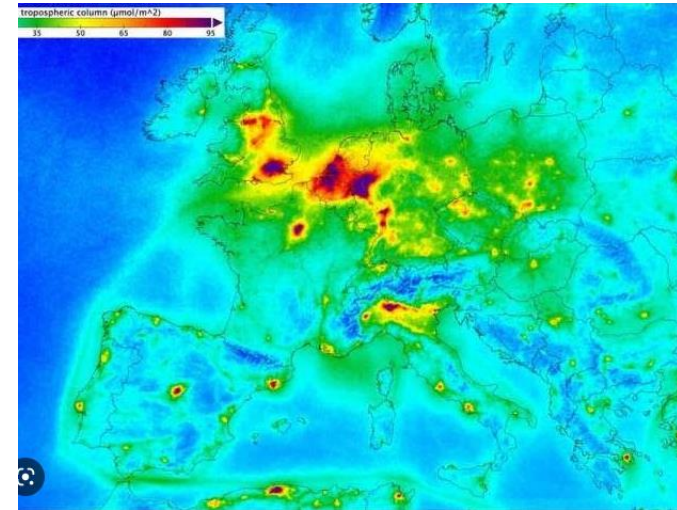
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Large differences among farmers (past and present) in terms of benefits, risks & survival

Types of dairy farmers in 1990

	essence of strategy
Multiple Goaler	self-sufficiency through low external input
Thrifty Farmer	monetary balance
Practical Farmer	practical balance, especially in labour organization
Cowmen	reaching a high milk yield per cow through labour-intensive practices
Machinemen	mass production through labour-extensive practices
Fanatical Farmer	gaining a competitive advantage over others

2023:

mega farms

conventional farms

organic farms

nature inclusive farms

short-chain farms

second-branch farms

regenerative farms

Farmer protest against measures – co-funded by agro-industry

Problems and disergies emerge from market failures – the current market logic

- Some farmers, banks, suppliers, food companies, supermarket chains make <u>large profits</u> …

- … but cause <u>damage</u> to nature, environment, landscape, health, international development.

- This damage is <u>not incorporated</u> in prices in the current market arrangements …

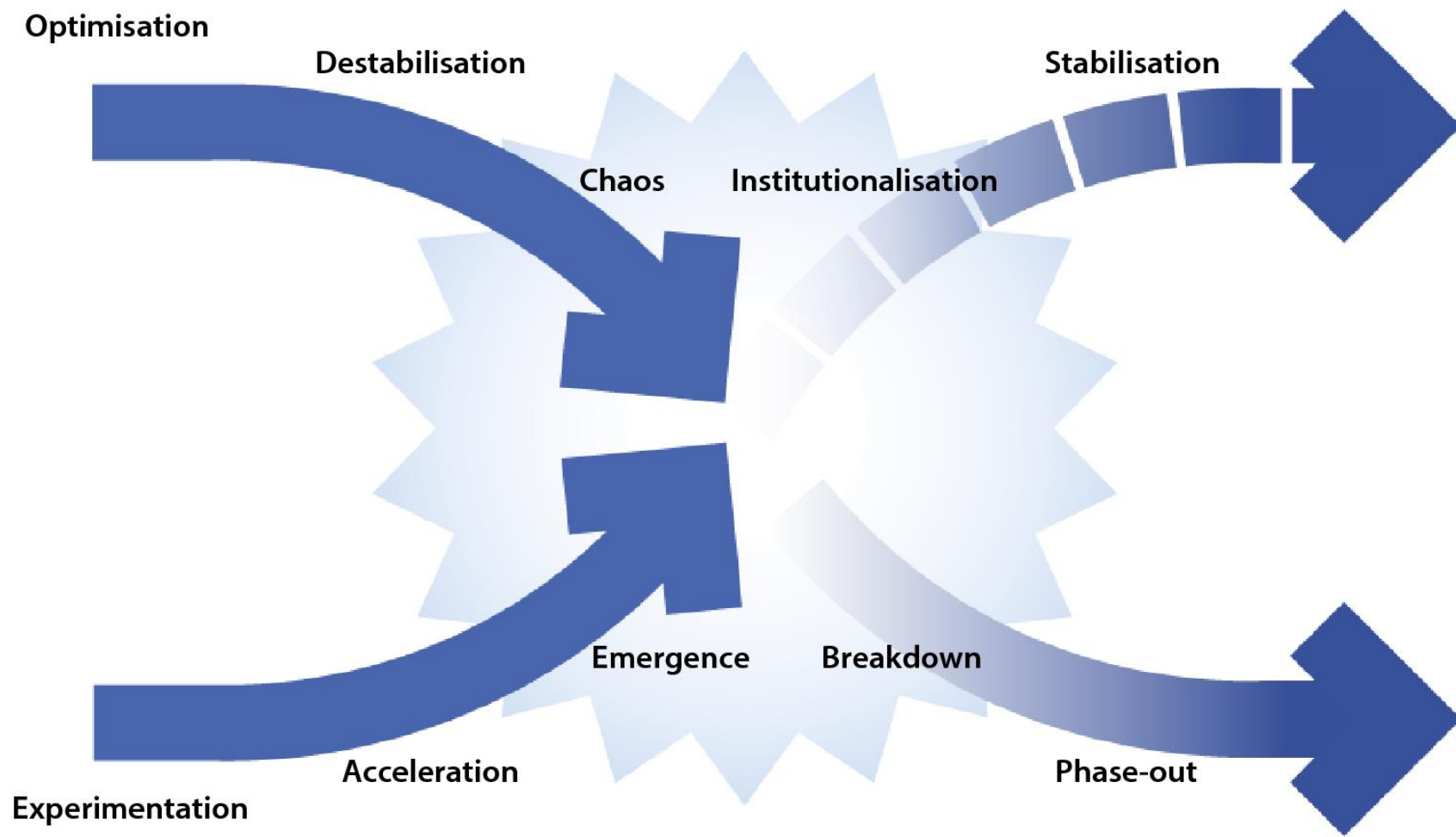- … but are <u>shifted</u> to the public sector …

- … and then back to farmers

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Changing the logic of the system requires innovating 'rules of the game' (institutions)

- Responsible enterpreneurship, shareholding, investment.

- Representation of public interests in companies

- 'True pricing' or minumum prices for sustainable produce

- Compulsory quota for sustainable produce/feedstock

- Import restrictions for unsustainable produce/feedstock

- New commons/cooperation instead of forced competition

- Etc.

# Despite pressure on the system, there is no breakdown, phasing out, institutional change

- Initiatives mostly at farm level, not changing the logic

Optimisation
Destabilisation
Chaos
Institutionalisation
Stabilisation
Emergence
Breakdown
Phase-out
Acceleration
Experimentation

Achieving system change is far from easy! Relevant system features:

- multiple levels and spheres
- multiple valid perspectives on the same system
- competing goals, values and trade-offs
- existing systems are resilient
- no actor in full control

- It is not a matter of simple 'engineering'!
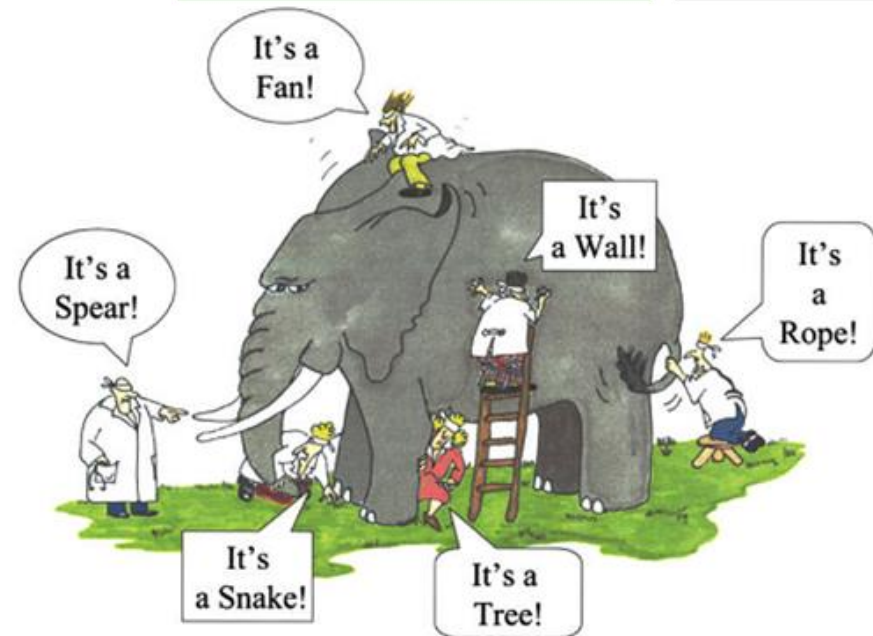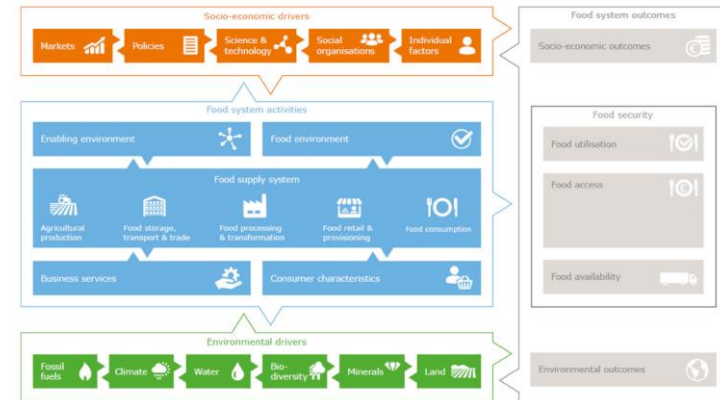
How do systems change? There exist different modes of systems thinking

- *Systems seen as:*
- 'Machines'
- 'Organisms'
- 'Meanings'
- 'Psychic prisons'
- 'Arenas of struggle'
- 'Rules'
- 'Tipping points'

- *Change & governance strategy:*
- Engineer & optimise towards a goal
- Re-balance and adapt
- Dialogue, learning, agreement
- Shock therapy
- Coalition building, competition
- Change incentives
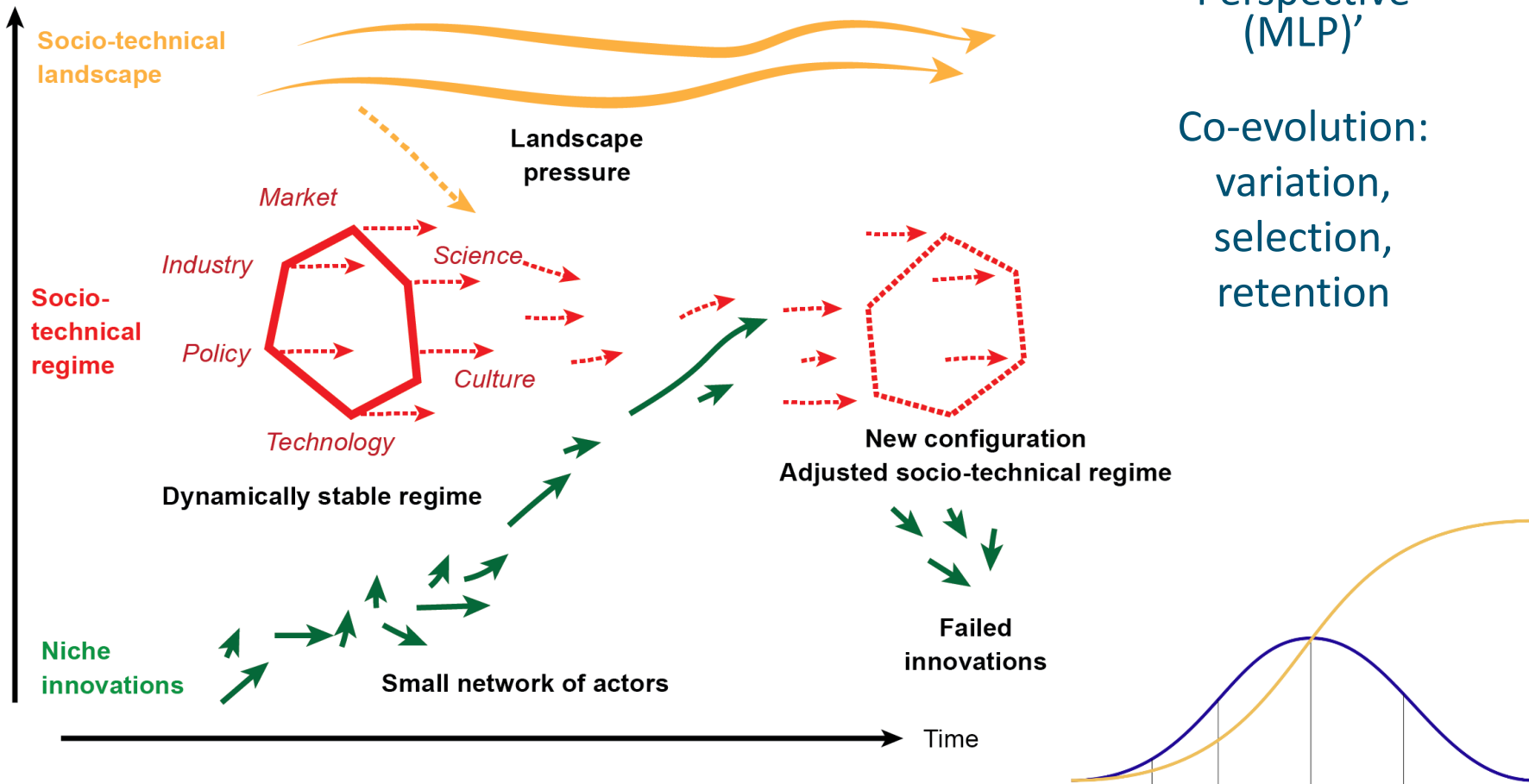- Learning- and negotiation-based building of discourse coalitions

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What do we know about how system transformations in have happened in the past?

A historical perspective on system innovation (Geels, 2002)
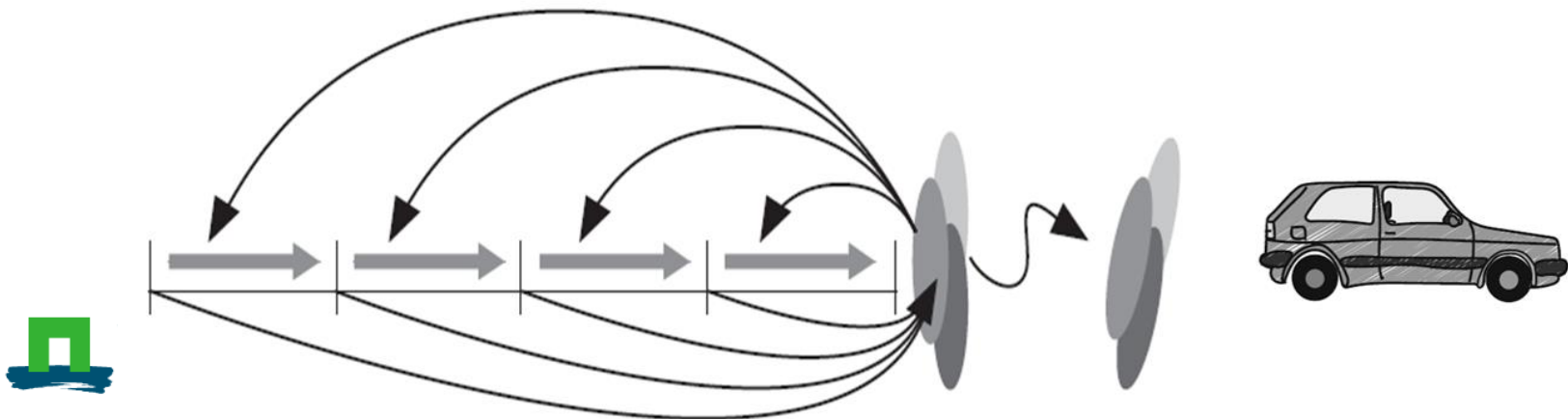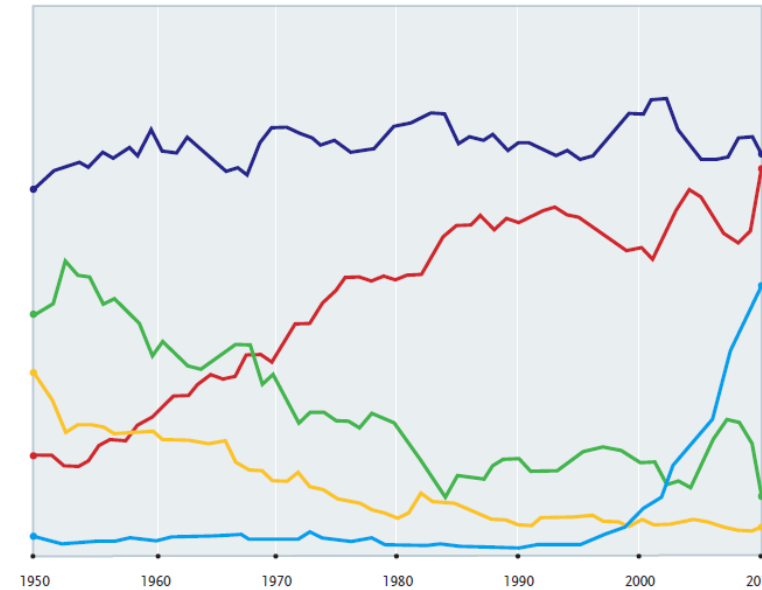

'The Multi-Level Perspective (MLP)'

Co-evolution: variation, selection, retention

What kind of processes to support?
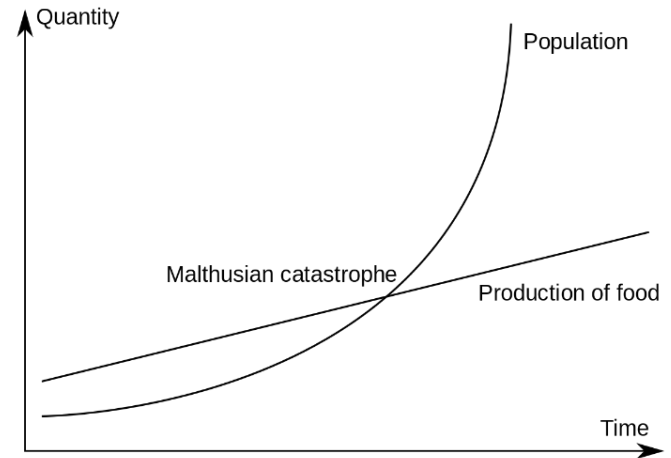## Analysis of landscape trends and visioning

- Past trends
- Future projections
- Overlapping long term goals
- Desired properties
- Visioning
- Backcasting

What kind of processes to support?
Creating landscape level pressures

- Advocacy campaigns

- Support pressure groups

- Creating urgencies

- Imposing deadlines

What kind of processes to support?
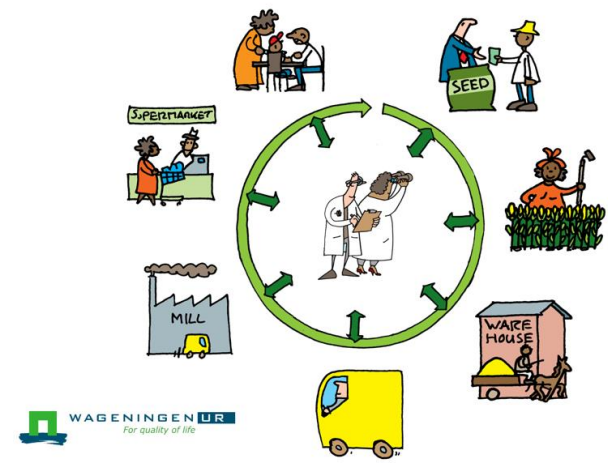## **Creating and supporting variation**

Alternative 'rules of the game':

- Joint technical experimentation

market incentives
regulations
taxation
business models
pricing systems
land tenure
cooperative models
certification

- Joint institutional experimentation
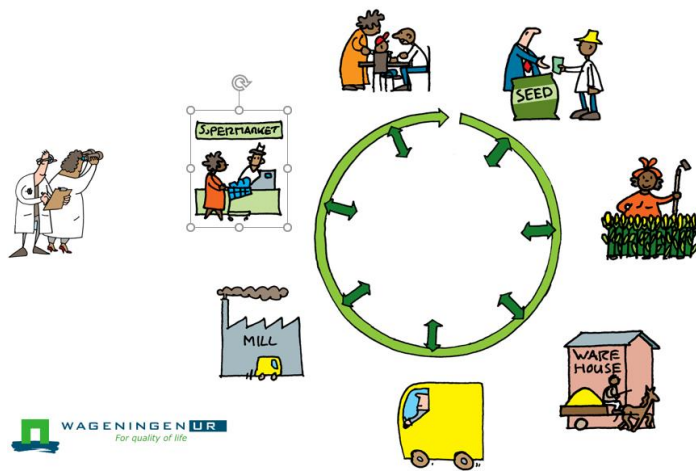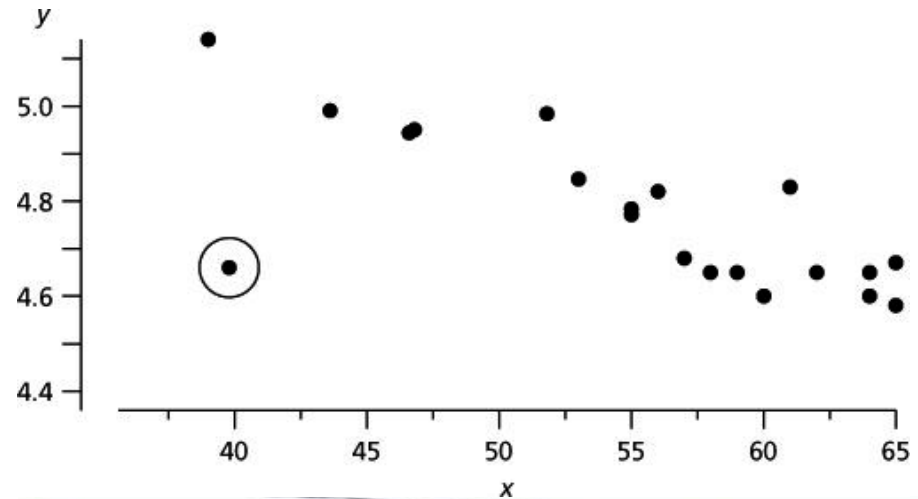
From:
Research FOR
Transformation
to
Research IN
Transformation

What kind of processes to support?
Capturing & supporting existing diversity

- Existing initiatives

- Local solutions

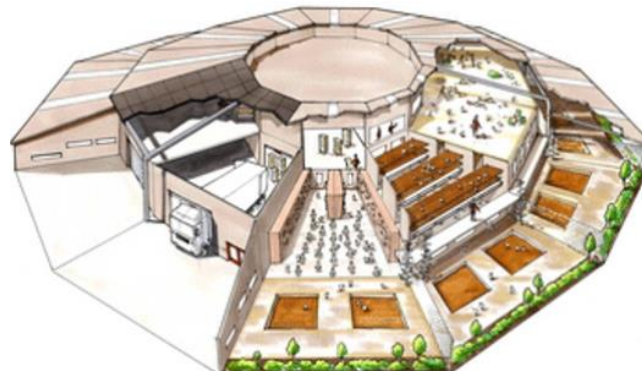- Positive deviants

- Self-organisation

What kind of processes to support?
Temporary protection of niche initiatives

- Investments

- Insurance

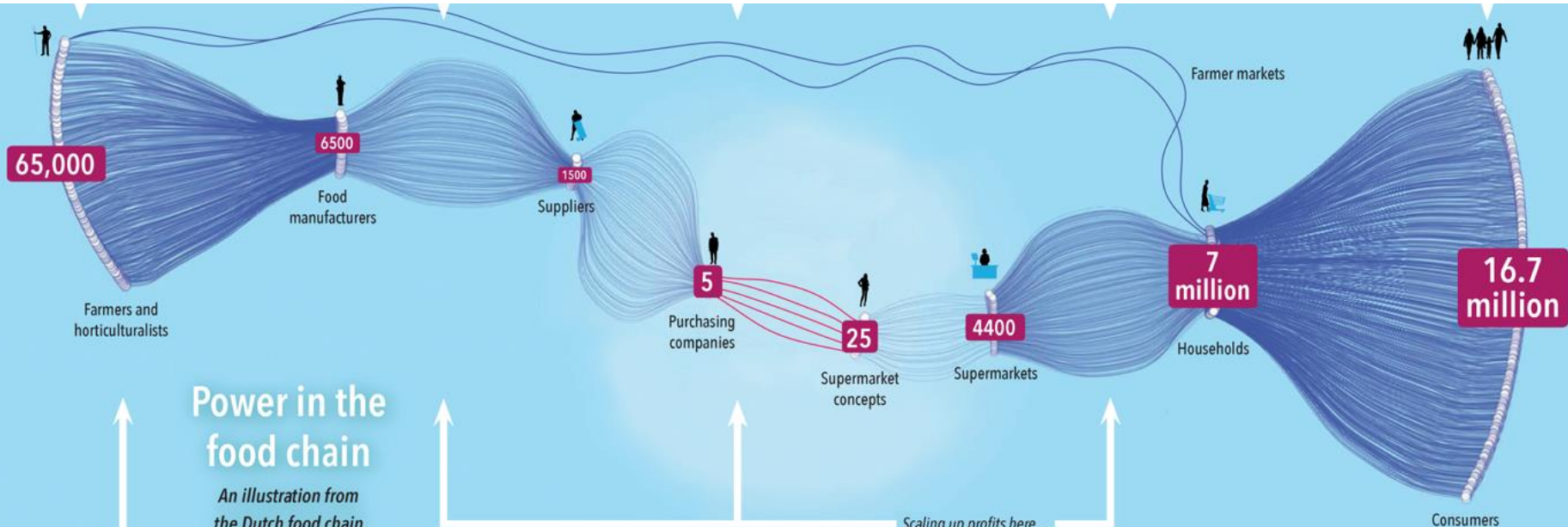- Safe space for learning from 'failure'

= Allowing initiatives to mature and compete

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What kind of processes to support?
Identifying plausible leverage points

- Where is the power? What are key bottlenecks?

- What changes have leverage over others?

Power in the food chain

An illustration from the Dutch food chain

Farmers and horticulturalists — 65,000
Food manufacturers — 6500
Suppliers — 1500
Purchasing companies — 5
Supermarket concepts — 25
Supermarkets — 4400
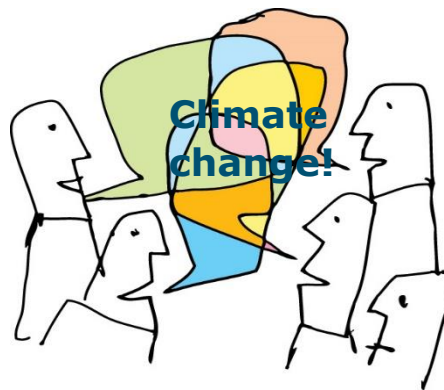Households — 7 million
Consumers — 16.7 million
Farmer markets

What kind of processes to support?
Building (discourse) coalitions

- Enrolling parties who feel interdependent

- Conflict management & collaborative research

- Developing & sharing narratives

Connecting to existing initiatives and movements

Climate change!

Concluding remarks:
Transformative change in complex systems cannot be planned or predicted in detail

■ From a 'rational planning' and 'engineering' logic to:

- communicating directions
- continuous learning in society around options
- navigating conflict: continuous negotiation/mediation
- building (discourse) coalitions
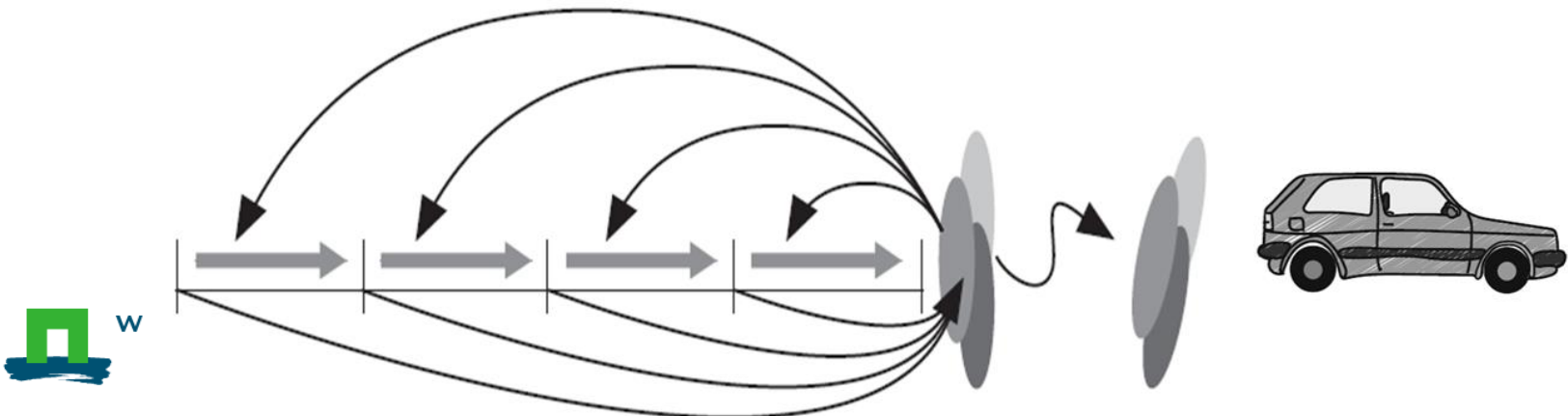
Concluding remarks:
Government policy has a key role to play

- Policy must innovate itself if transformation is the aim
  - provide direction
  - reduce uncertainty
  - institutional experiments
  - use as leverage
  - put pressure

- We cannot rely on the private sector to protect public interests

CGIAR
OPEN FOR BUSINESS

Pathways to strengthen CGIAR's responsible engagement with the private sector

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Thank you for
your attention!

Discussion question

- What 'disergies' and 'system failures' do we see in the international development sector?

- What 'rules of the game' may need to change? What institutional innovations might be needed?

- Who should act? Who can put pressure on the system?

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