

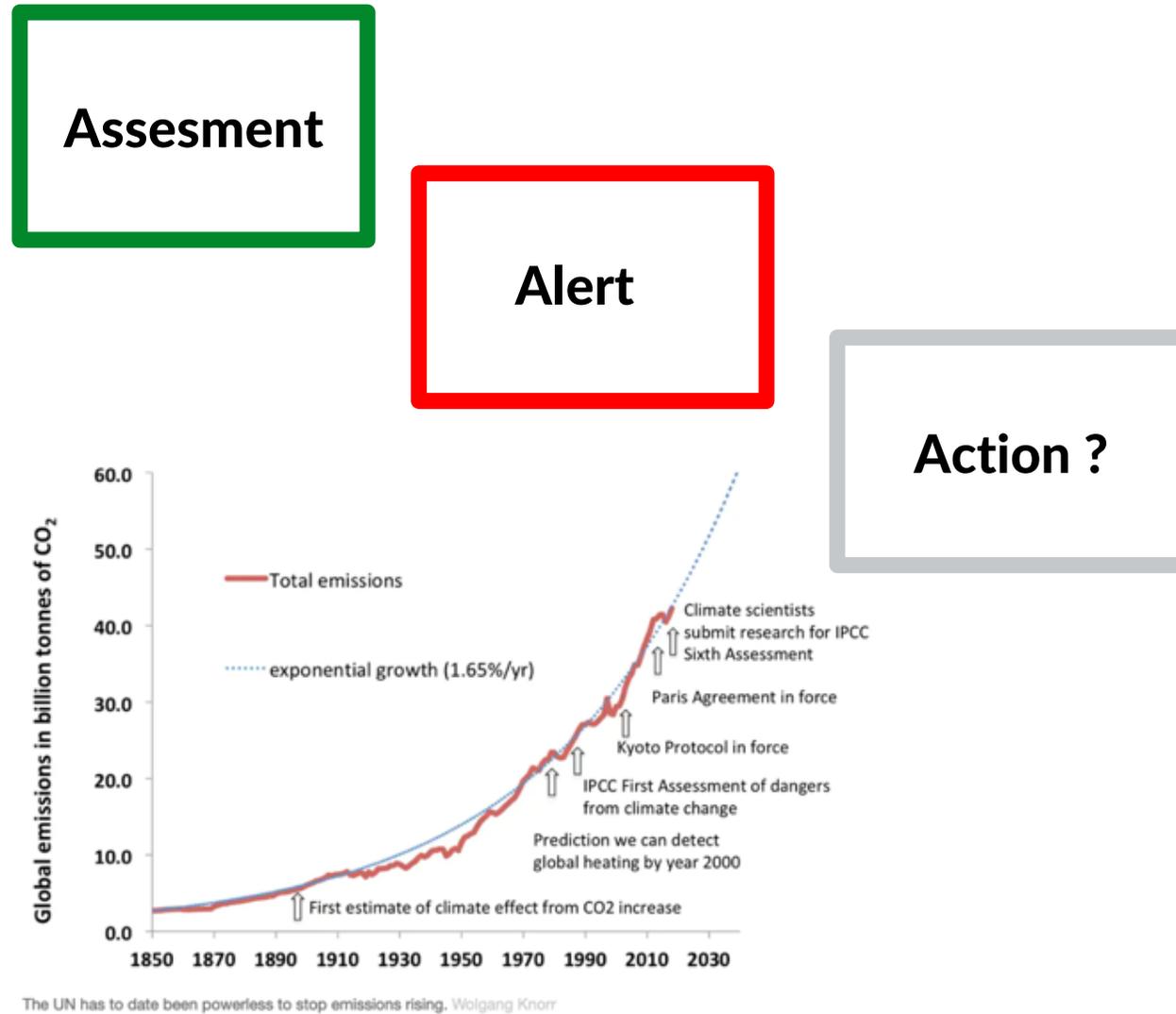
Transition, lock-ins, enablers - A primer



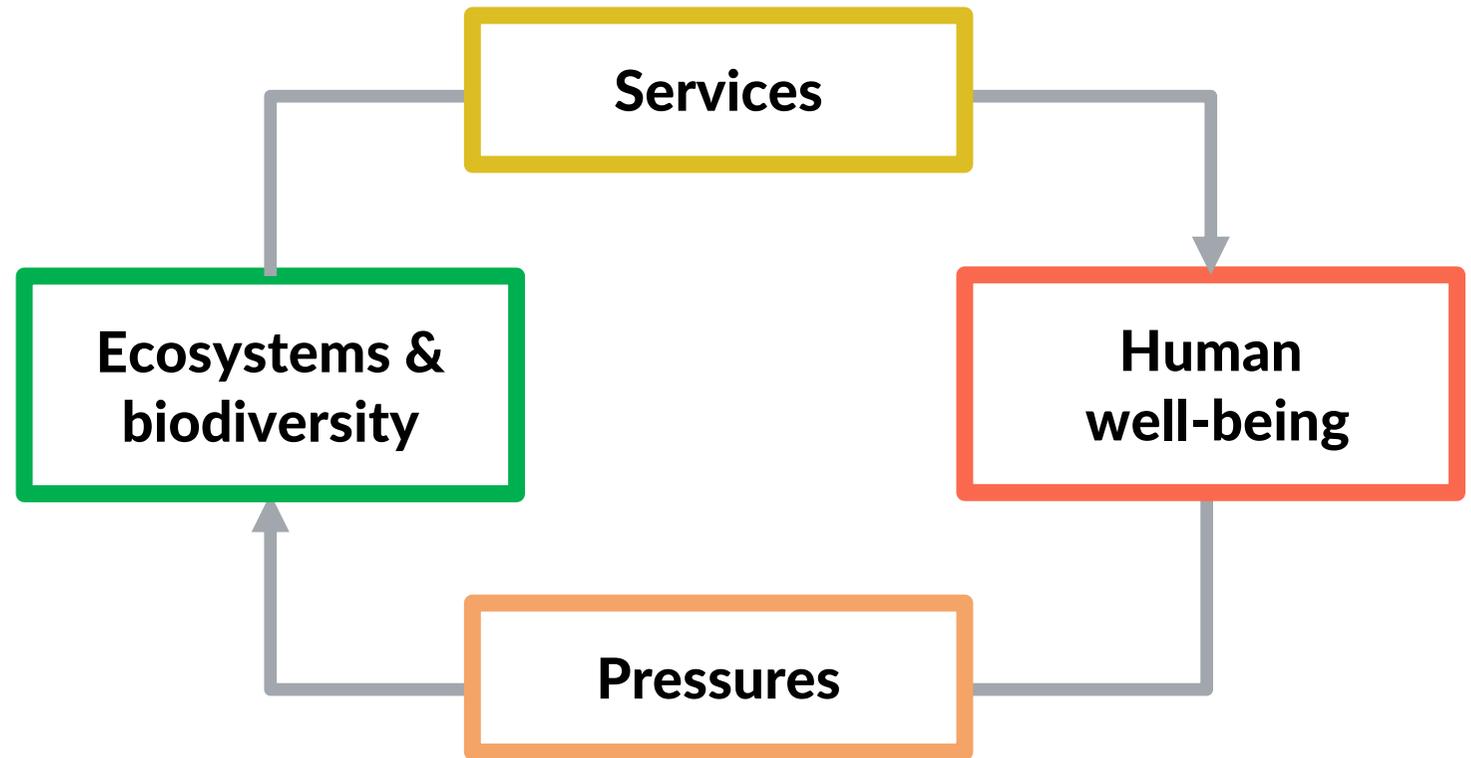
Philippe Baret



A major challenge, a limited set of actions

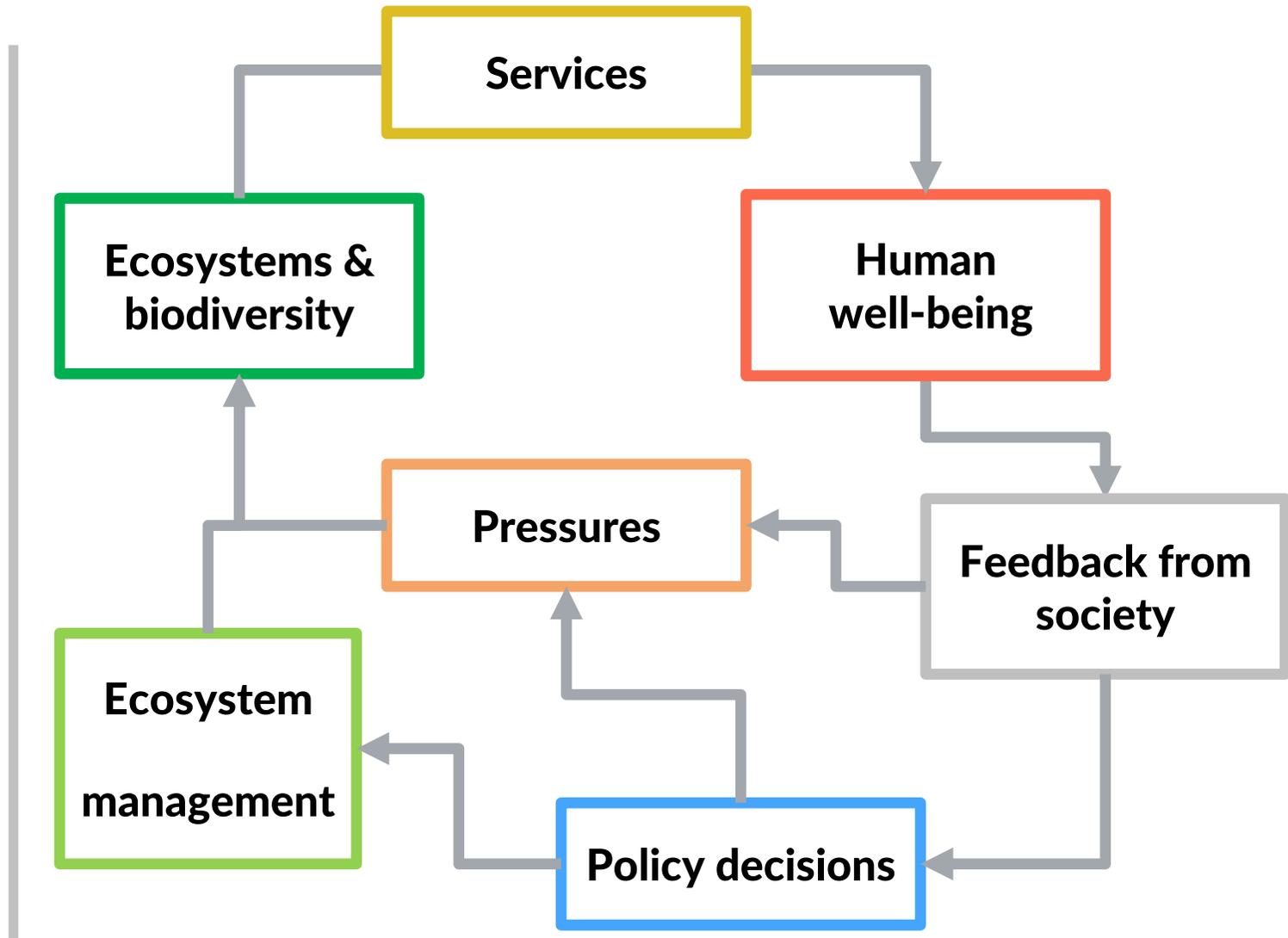


A well known process



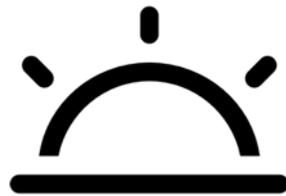
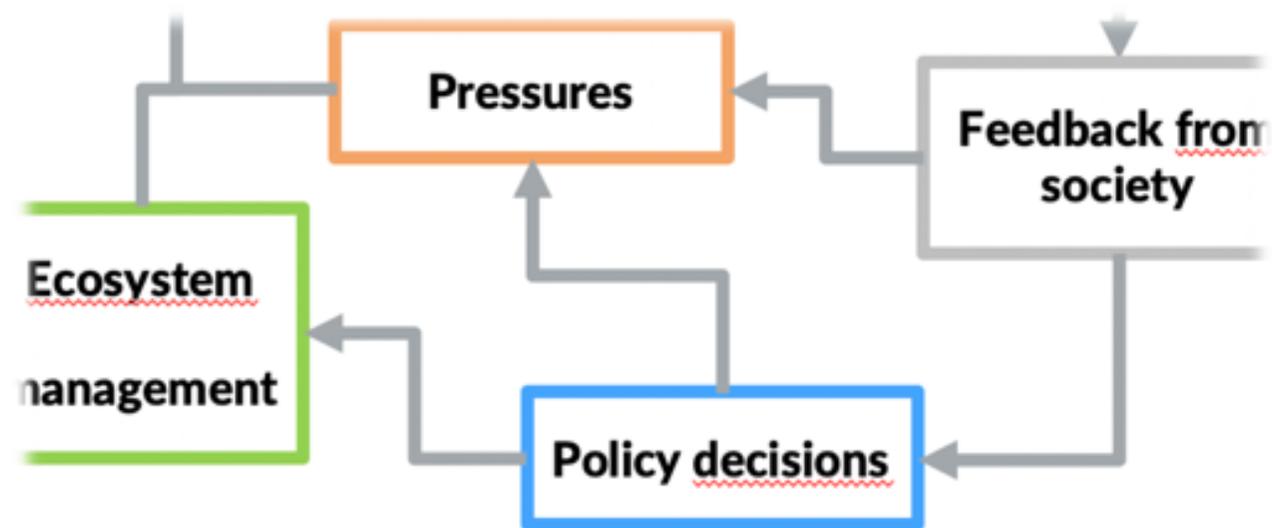
Rob Alkemade
adapted from Haines-
Young & Potschin, 2009

A well known process



Rob Alkemade
adapted from Haines-
Young & Potschin, 2009

A way forward ?



Should we agree on the horizon ?

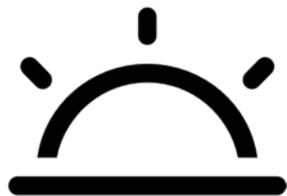


What are the lock-ins ?

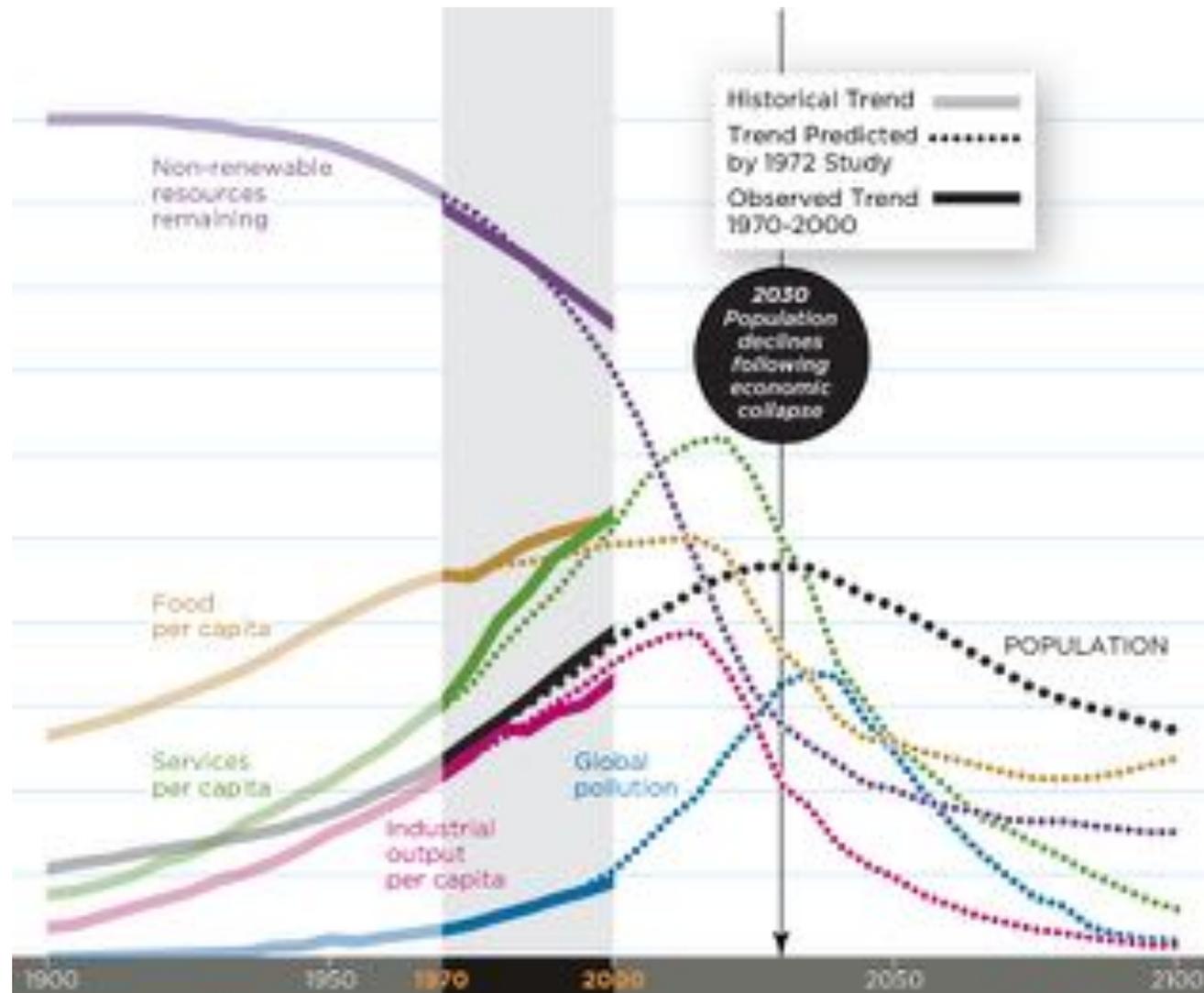


What future ?

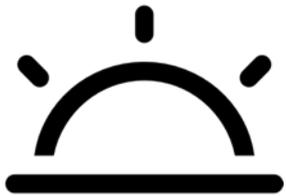
One future ..



Should we agree on the horizon ?

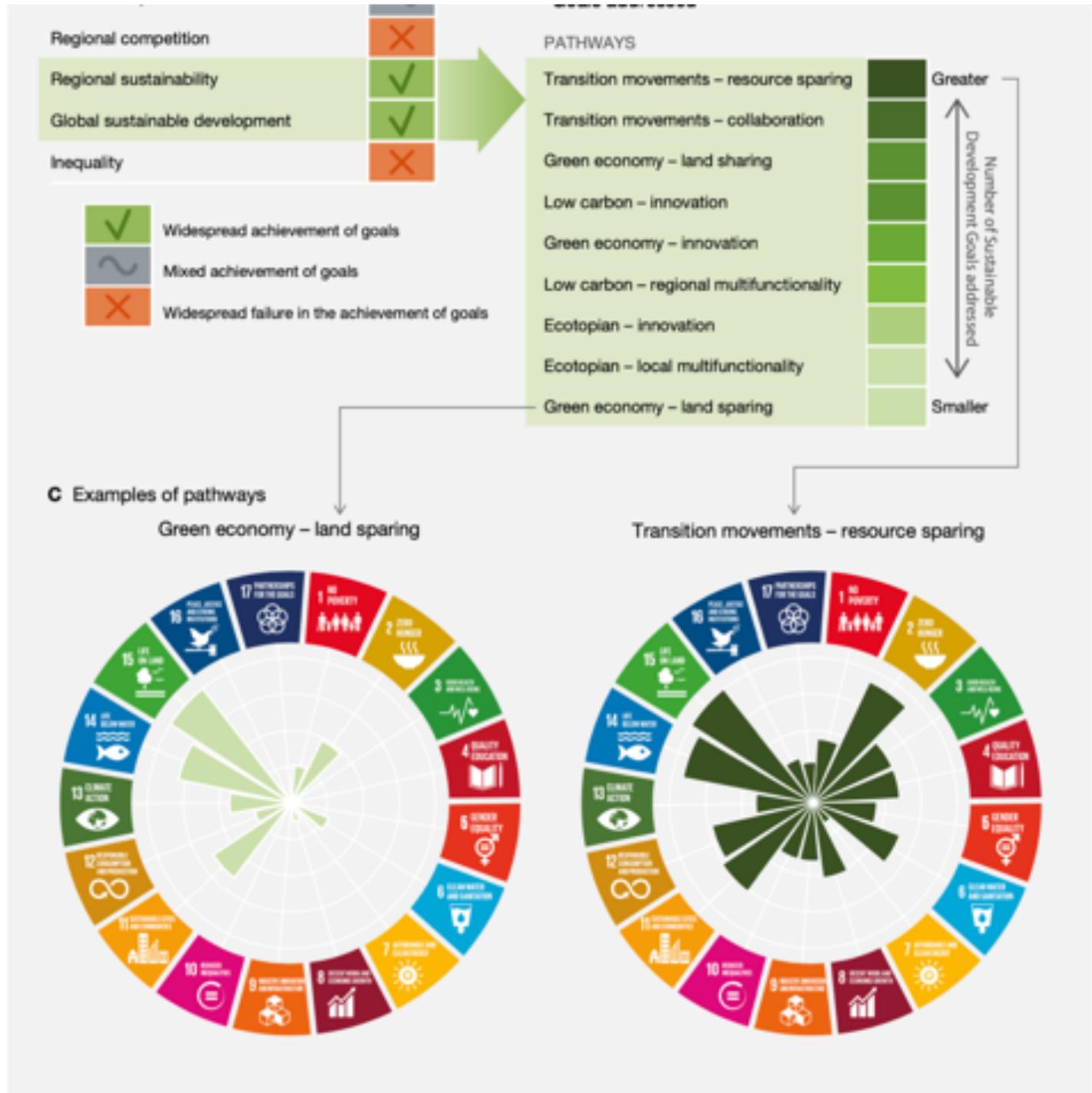


More futures ...



Should we
agree on the
horizon ?

The methodological assessment report on
**SCENARIOS AND MODELS
OF BIODIVERSITY AND
ECOSYSTEM SERVICES**



IPBES report for Europe and Central Asia, 2018

> [About iddri](#)

ABOUT IDDDRI

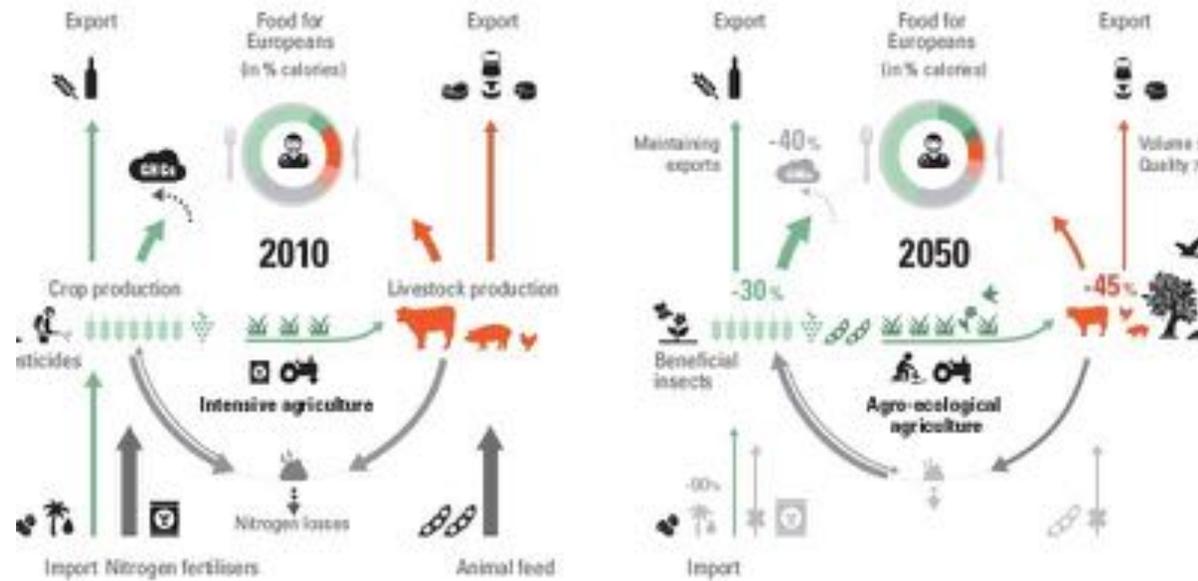
2018 | Agro-ecological scenario for Europe

IDDDRI is developing a 100% agro-ecological scenario for Europe



TYFA

TYFA : A SCENARIO FOR AN AGRO-ECOLOGICAL EUROPE IN 2050



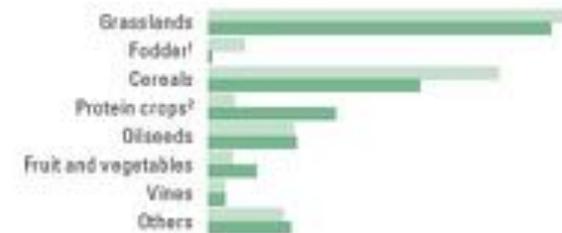
Productions

- Cereals and starchy foods
- Fruit and vegetables
- Protein crops (peas, lentils, etc.)
- Meat, eggs and fish
- Dairy products
- Others



Grasslands

Land use = 2010 = 2050



¹ non-protein; ² grain and fodder

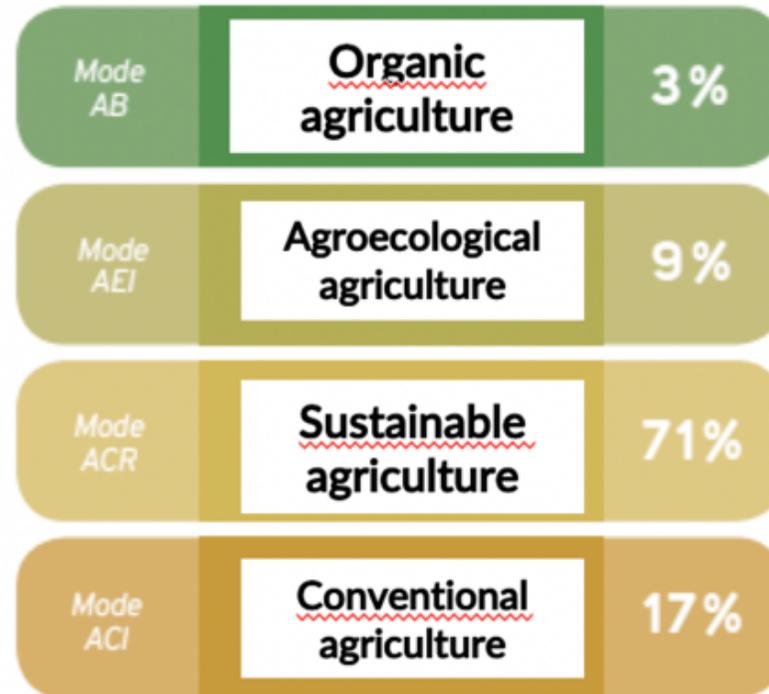
A stylized graphic on the left side of the slide. It features a brown circle at the top with a dark blue horizontal bar extending to the left. Below it is a yellow semi-circle with white dots. Underneath that is a dark blue semi-circle with green wavy lines. At the bottom left is a green semi-circle. In the center, there is a light purple semi-circle containing a dark purple icon of a plant with three leaves and a bulbous base.

Quelles agricultures en 2050 ?

COMPRENDRE
LA SITUATION
ACTUELLE

EXPLORER
DES SCÉNARIOS
POUR L'AVENIR

A typology of systems



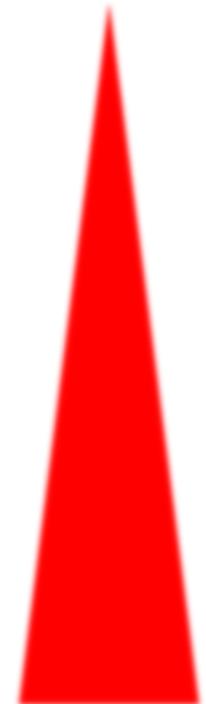
Use of synthetic pesticides

0

2

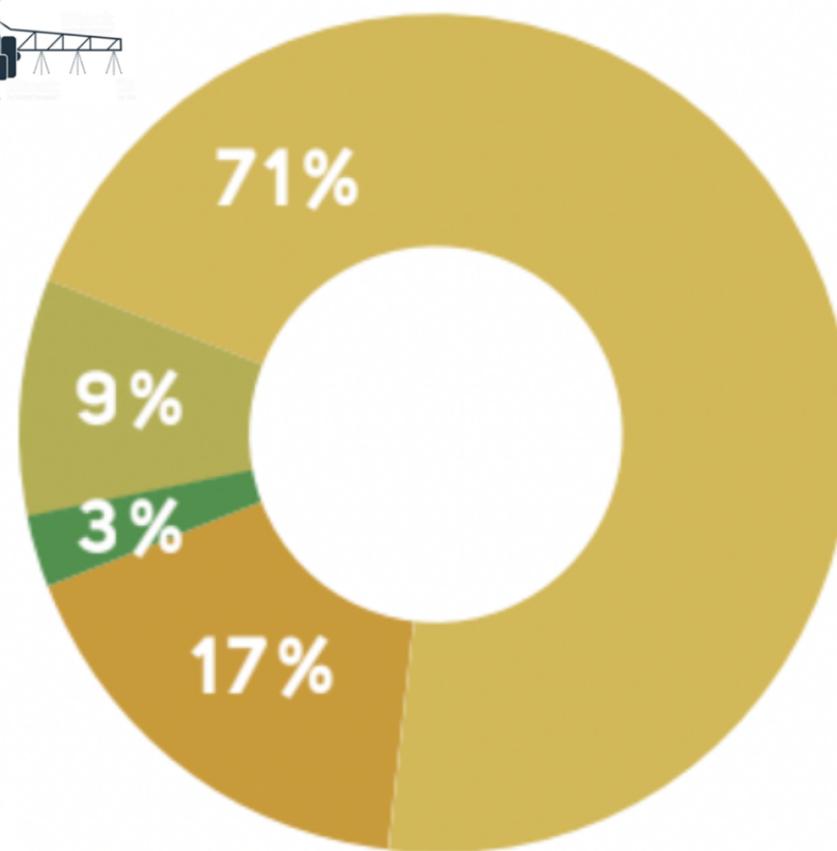
4

6



All Walloon farmers are on the picture
The diversity of practices is acknowledged

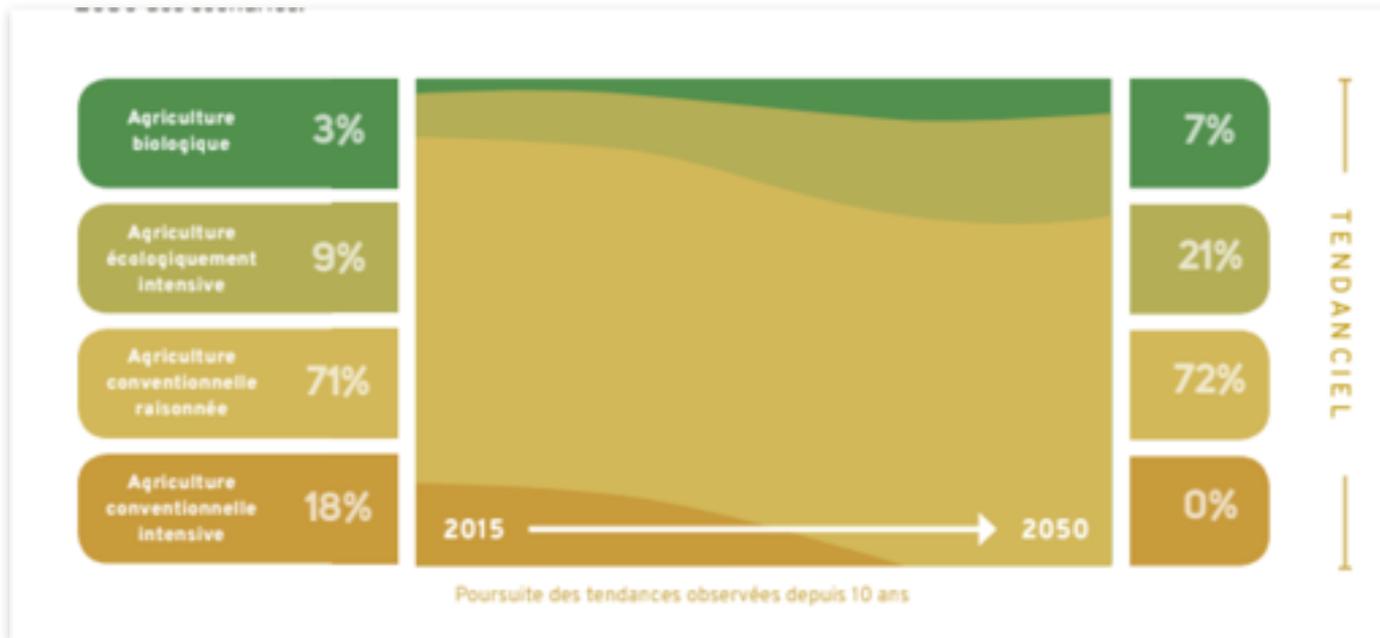
Share of farming systems



Mode AB	Organic agriculture	3%
Mode AEI	Agroecological agriculture	9%
Mode ACR	Sustainable agriculture	71%
Mode ACI	Conventional agriculture	17%

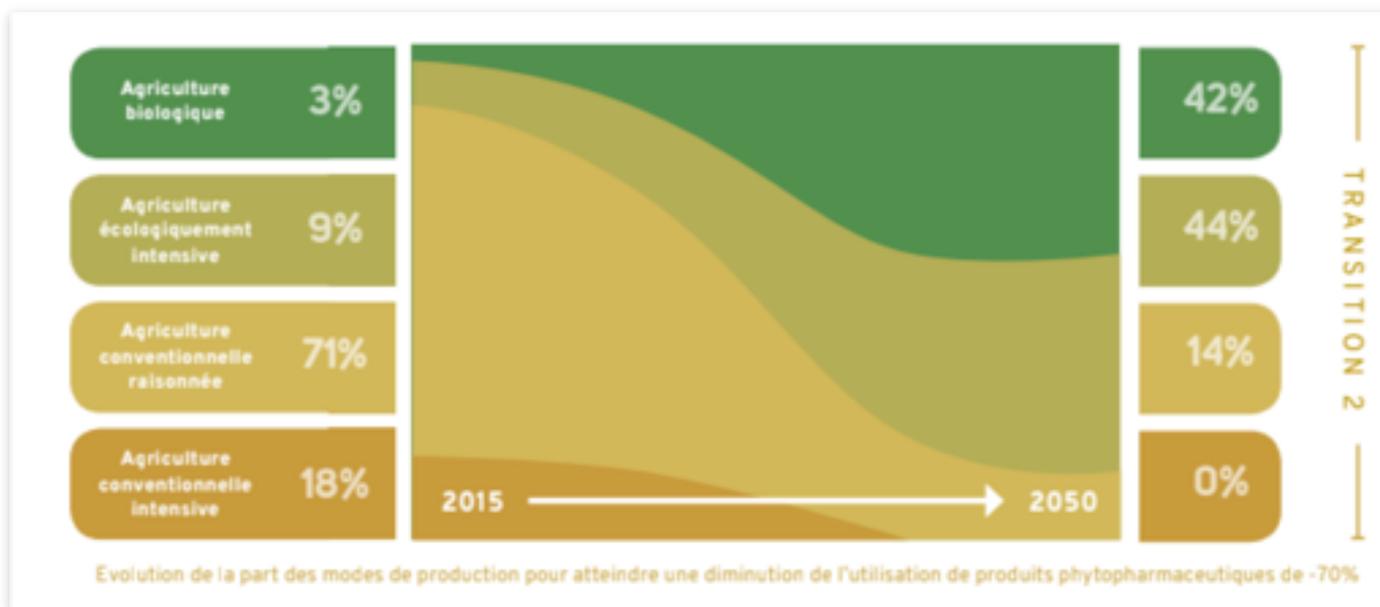


www.scenagri.be



BUSINESS AS USUAL

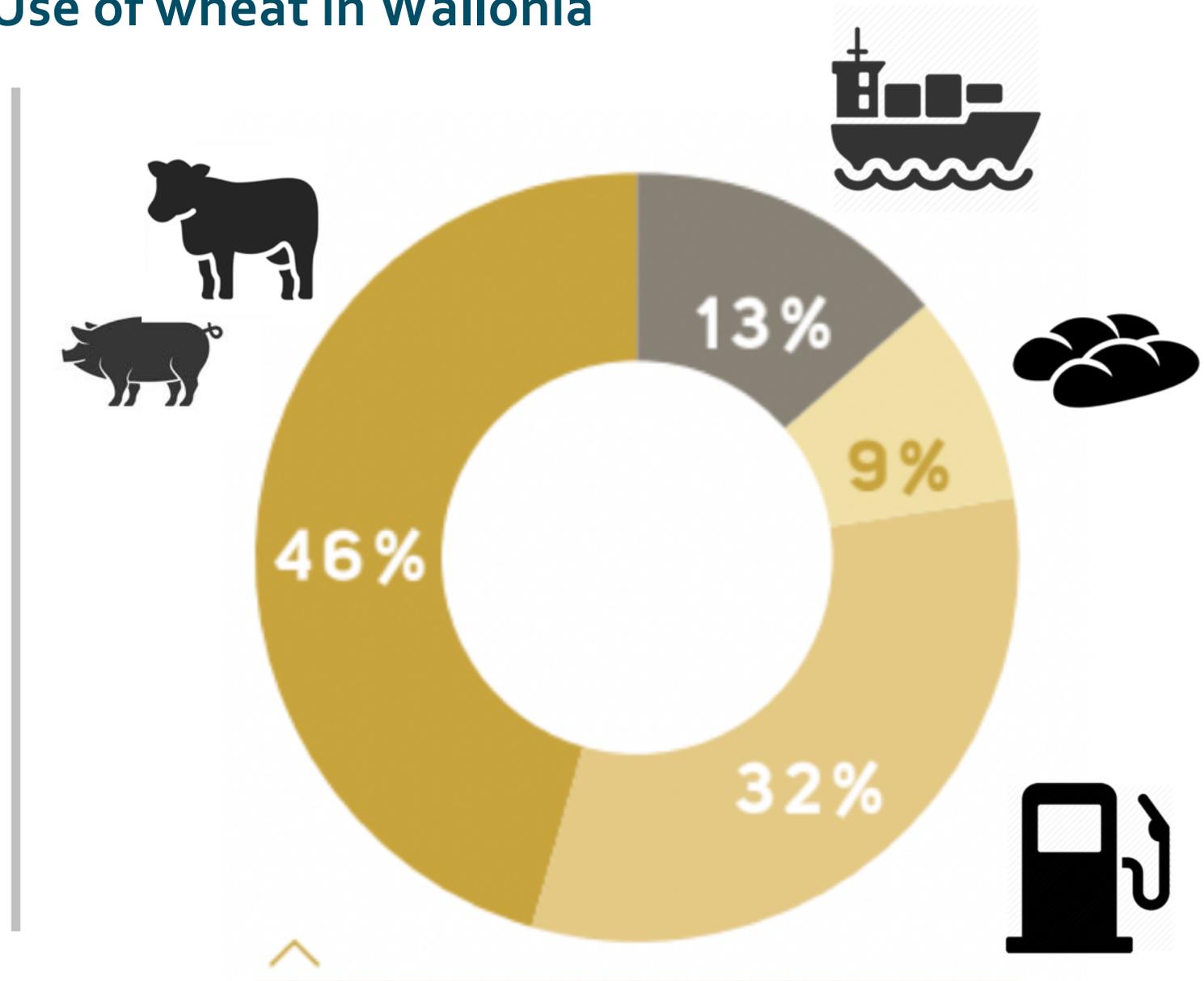
**- 18 %
pesticide use**



TRANSITION

**- 67 %
pesticide use**

And food ? Use of wheat in Wallonia



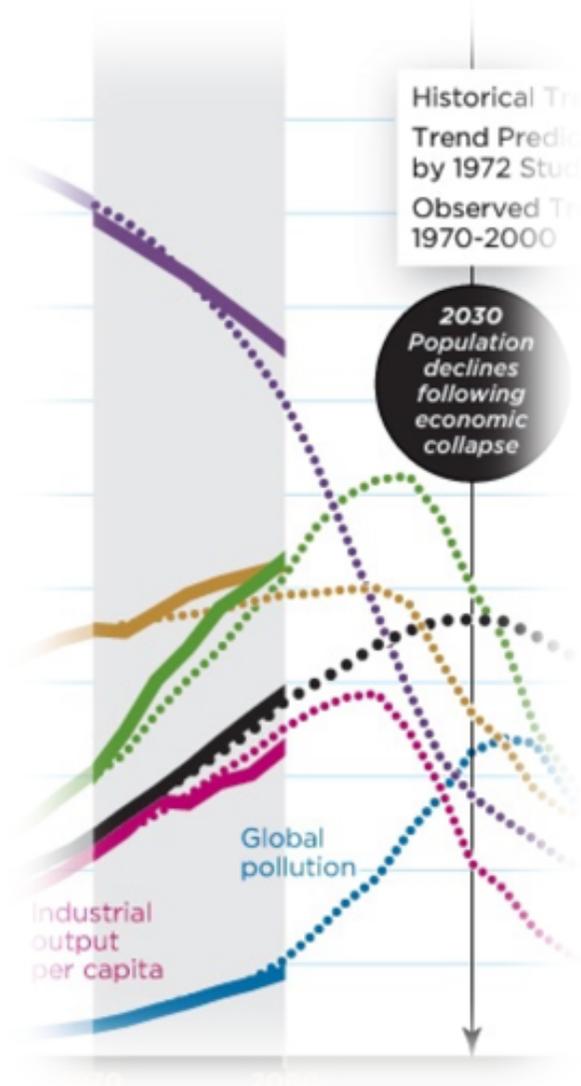
Greenpeace's study

GHG emissions (kt CO2e)

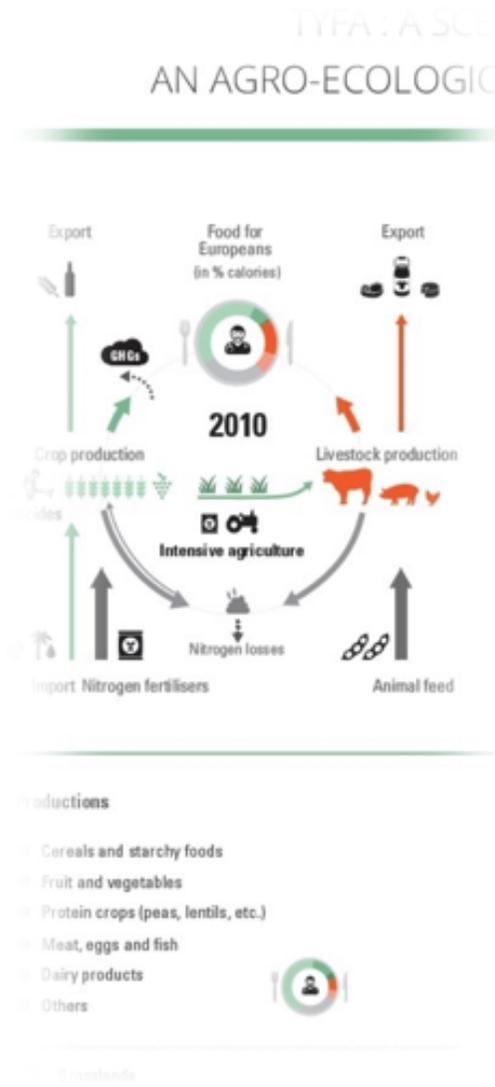
	Total	For nat. consump.	For export
	4.705	1.803	2.902
	766	485	281
	587	539	48
	4.658	3.450	1.208
	3.134	1.984	1.150
	13.850	8.260	5.590
		60%	40%
			

About 40% of the livestock sector's GHG emissions can be attributed to livestock products which are exported.

WORLD Economy



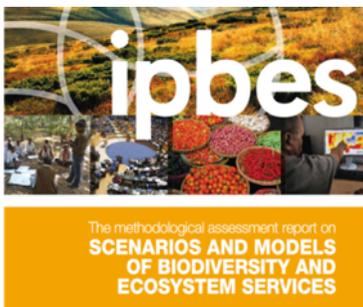
EUROPE Agriculture



WALLONIA Cereal crops



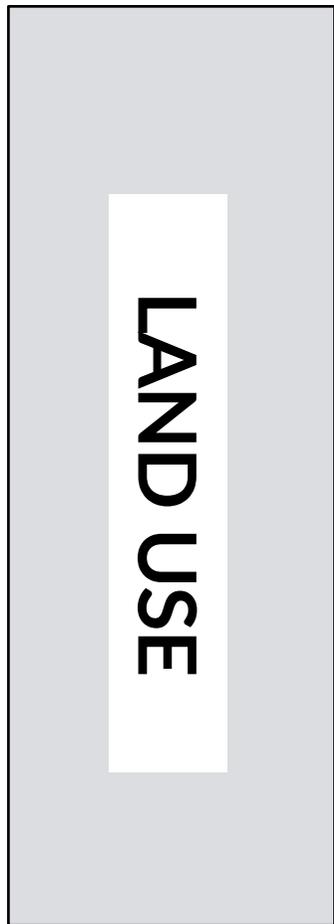
A matter of scale



WORLD
Economy

EUROPE
Agriculture

WALLONIA
Cereal crops



Impact on

World level
decision makers



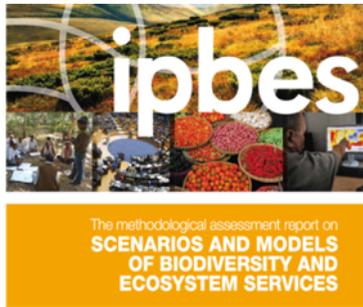
European
Common Policy



Regional policy
Farmers

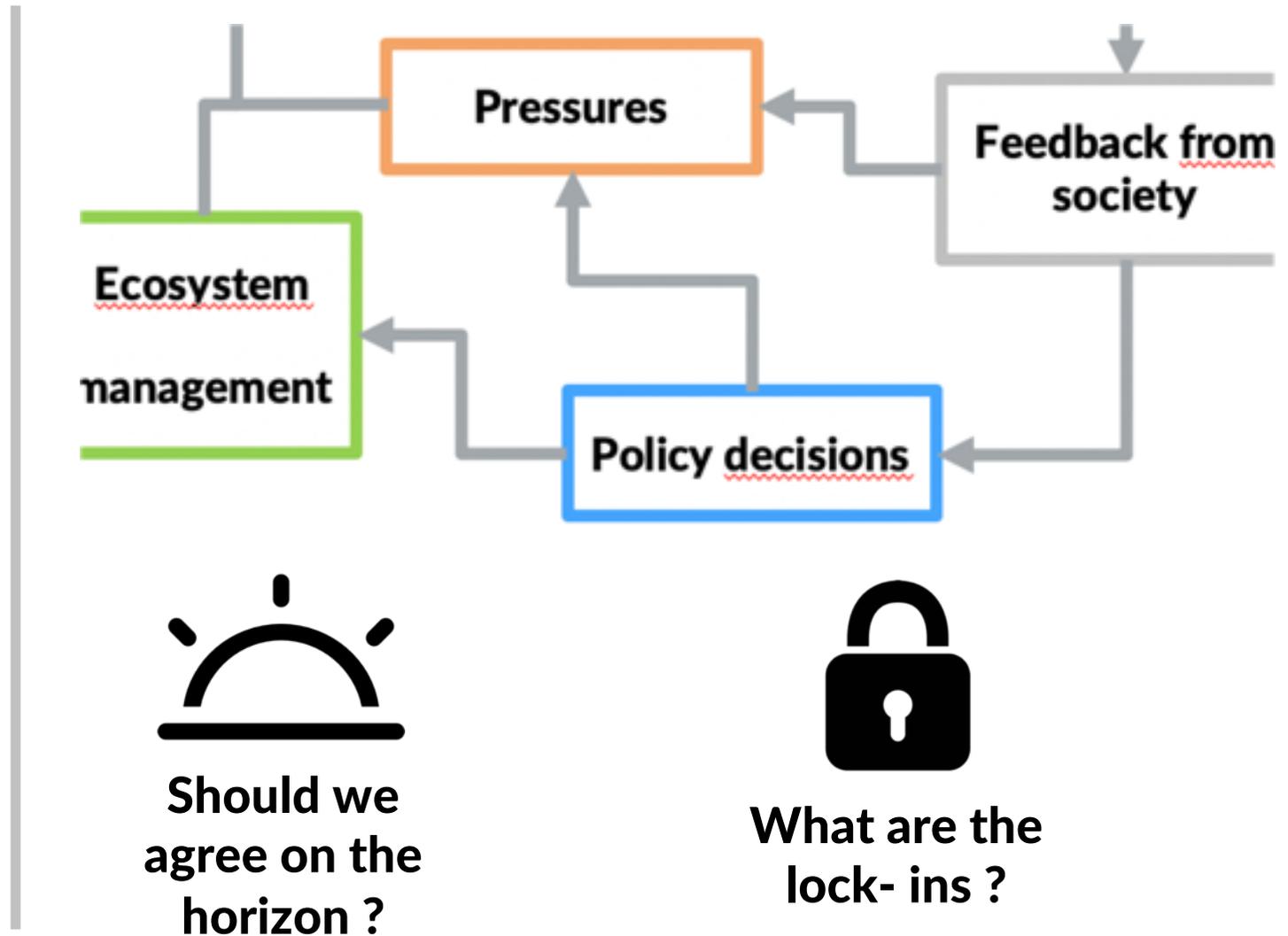


A matter of scale



The challenge is to articulate scales and make them cross-fostering

A way forward ?



More than one culprit ...



What are the
lock- ins ?



STOP
MONSANTO

Sprayed to death

THE ECONOMIC JOURNAL

MAY 1996

The Economic Journal, 106 (May), 521–542. © Royal Economic Society 1996. Published by Blackwell Publishers, 108 Cowley Road, Oxford OX4 1JF, UK and 238 Main Street, Cambridge, MA 02142, USA.

SPRAYED TO DEATH: PATH DEPENDENCE, LOCK-IN AND PEST CONTROL STRATEGIES*

Robin Cowan and Philip Gunby

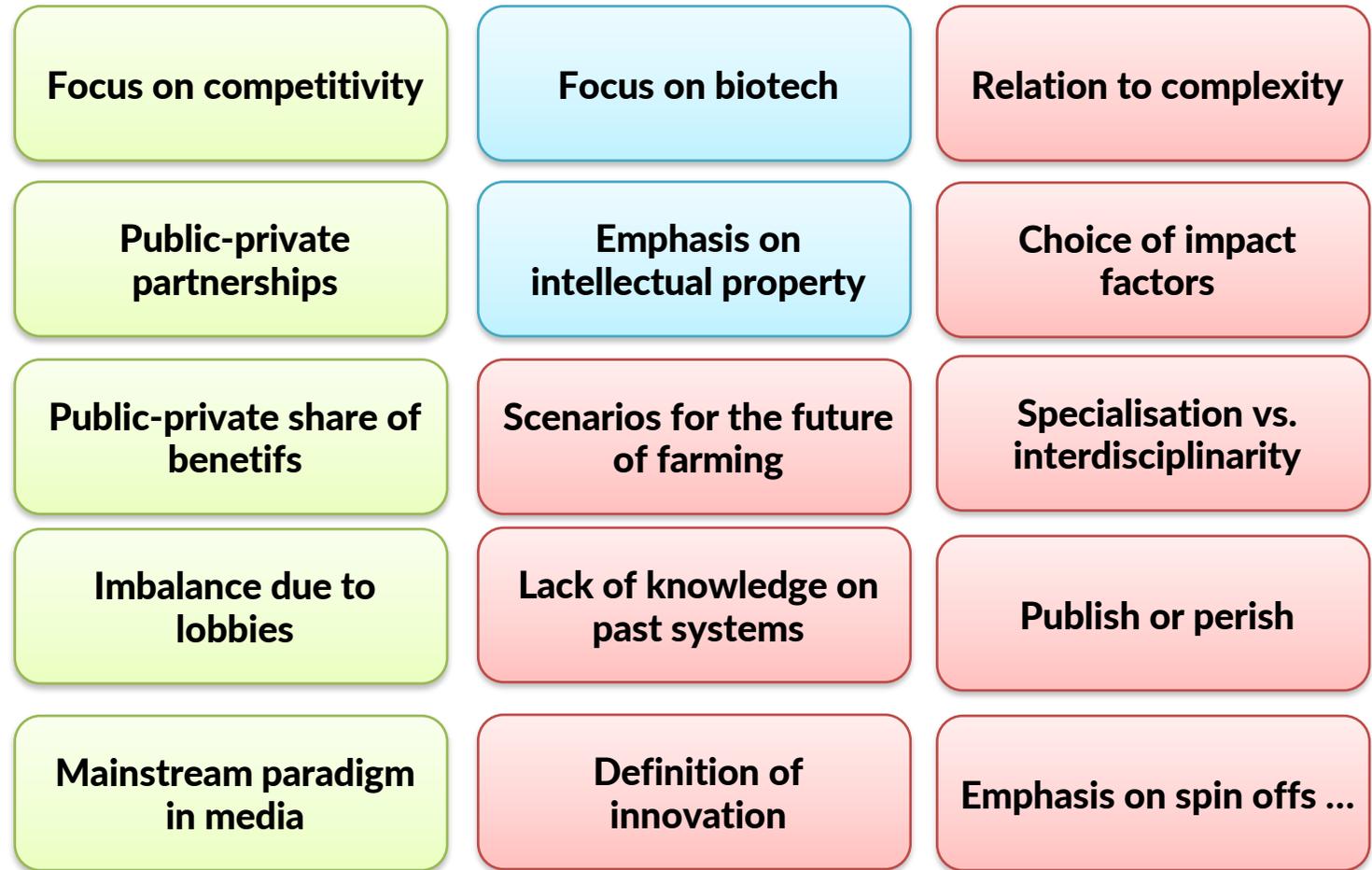
The existence of path dependence in the economy raises the possibility that economic processes may be subject to considerable inertia. Features common in creating path dependence – the existence of increasing returns, self-reinforcement, and uncertainty about the merits of different actions – exist in the case of agricultural pest control. We can see that early choices tend to be reinforced, and that it becomes difficult to dislodge a technology, sometimes even when there is a crisis. Furthermore, as is common in path dependent phenomena, to

Cowan & Gunby, 1996

The image is a vertical split composition. The left half shows a landscape with a green field in the foreground, several trees with autumn-colored leaves in the middle ground, and a body of water in the background under a hazy sky. The right half is a close-up, slightly blurred shot of tall, green, grass-like crops, possibly wheat or barley, with a soft bokeh effect in the background.

A system level approach
Agroecology or GM crops

Lock-ins are multifactorial



Vanloqueren & Baret,
Research Policy, 2009

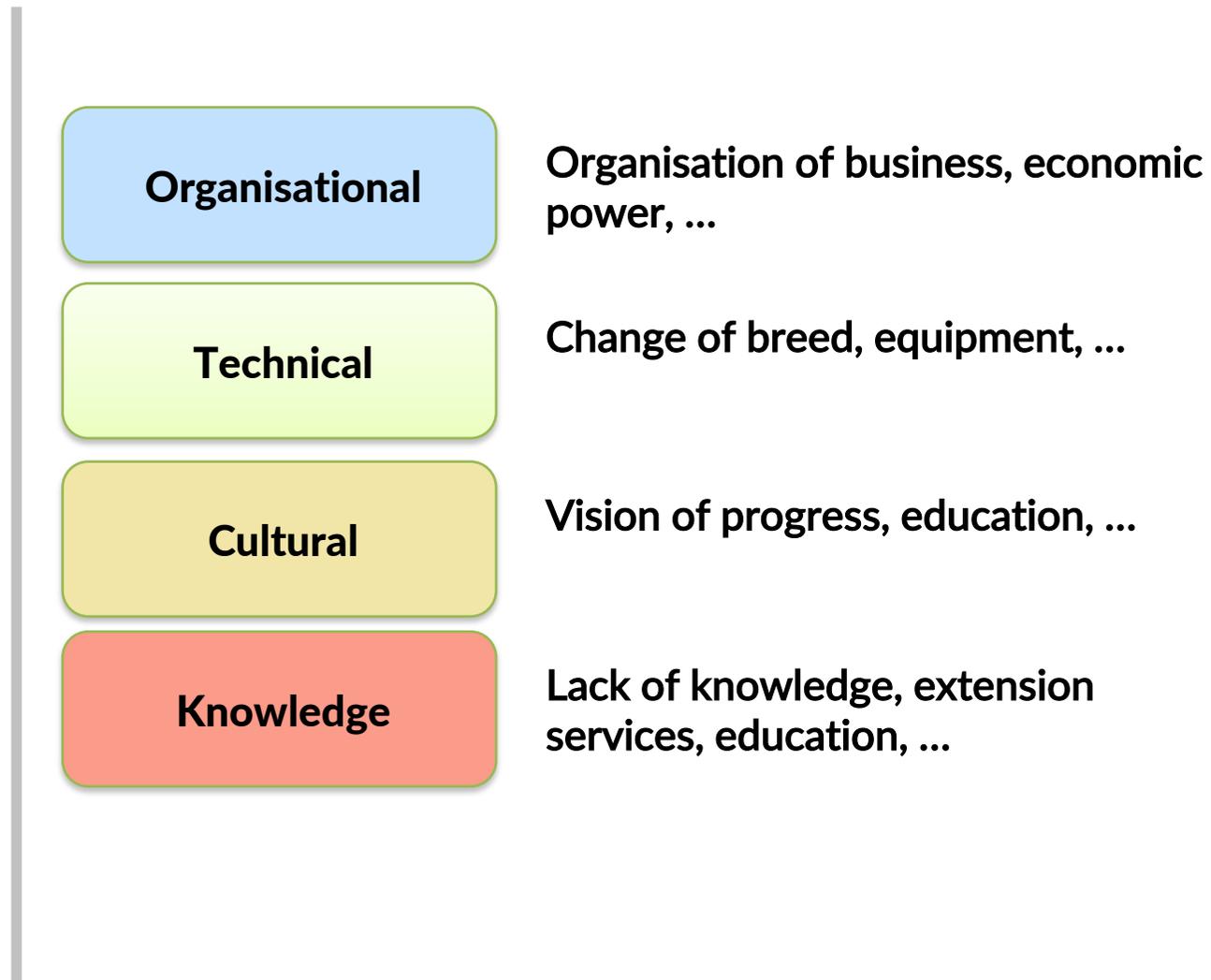
Lock-in are creating imbalance between innovation paradigms

1. Genetic engineering is not a “wrong” pathway of innovation.
2. But “de facto” it impedes the development of alternative solutions based on agroecological engineering.
3. The process of innovation is not “problem driven” but it mainly driven by competition between paradigms

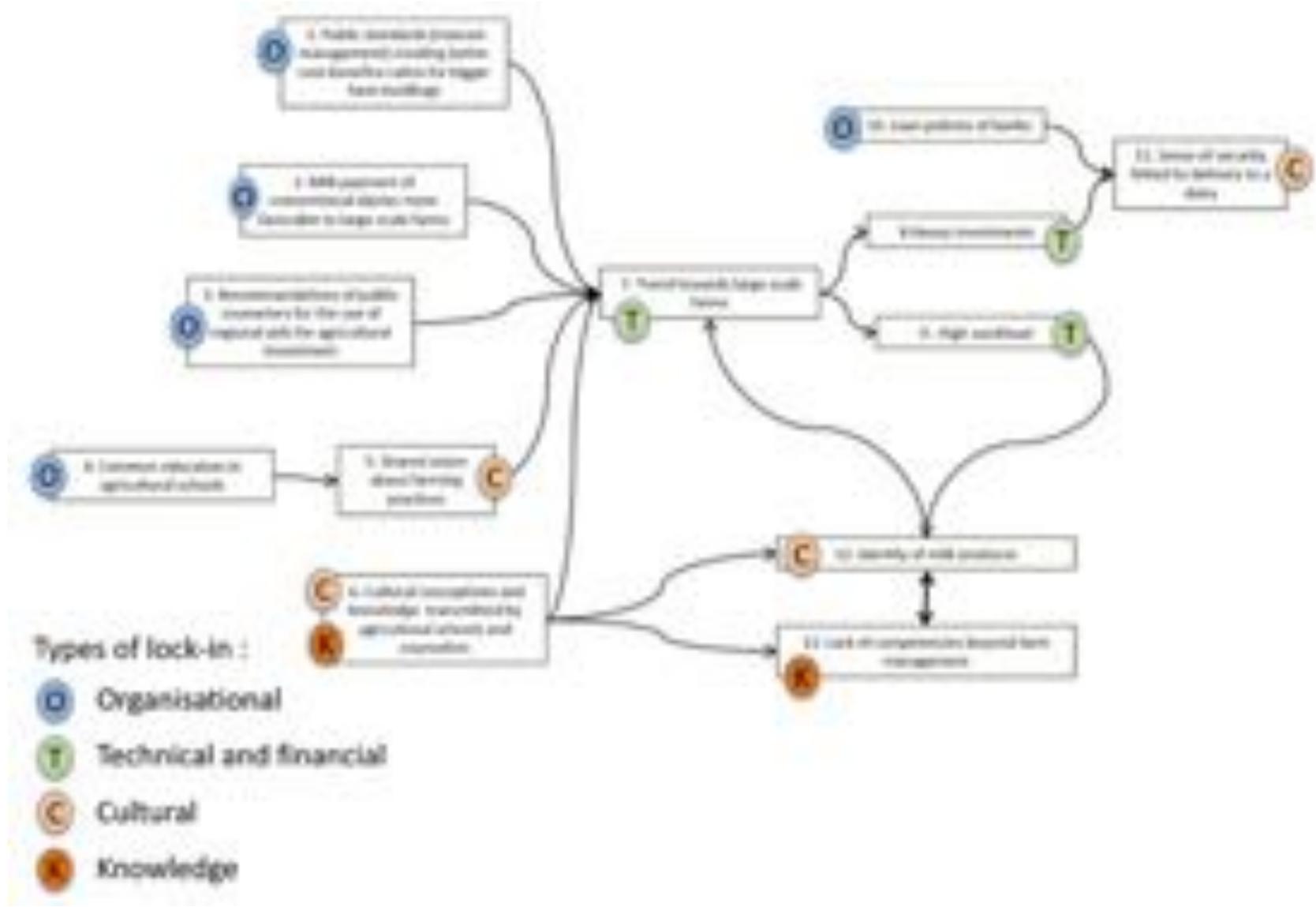
A farmer's level approach
**Why dairy farmers are not
changing of practices**



Factors impeding change towards more sustainable systems



These factors are in interaction



De Herde et al,
Sustainability, 2019

Diversification's lock-ins



Morel et al,
under review

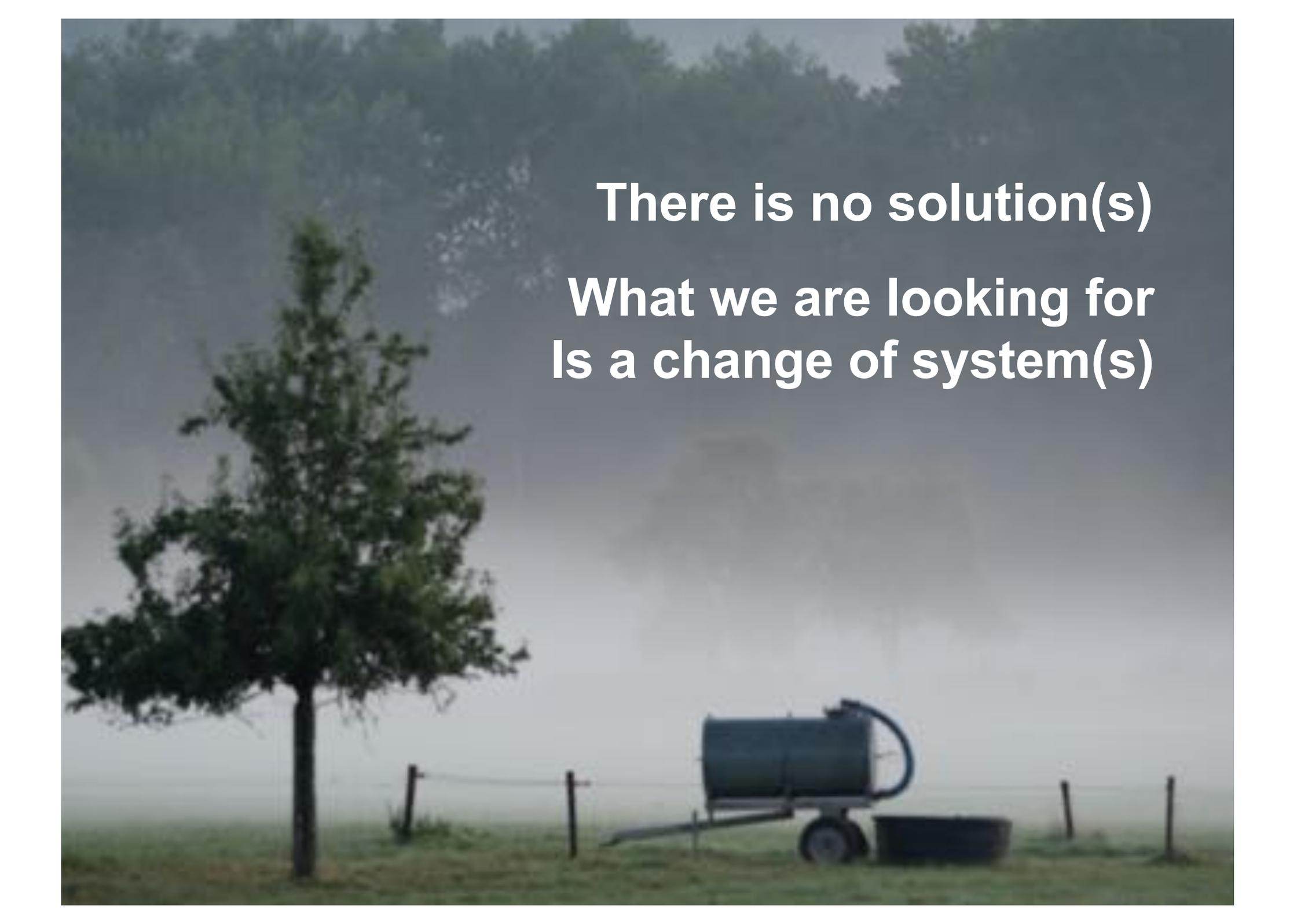
Barriers to crop diversification		Code	Nb	W	O	H
Agricultural production	Lack of technical knowledge and references	K Tec	21			
	Lack of economic knowledge and references	K Eco	16		0	
	Need of investment for adapted machinery	Machin Invest	13	0		0
	Lack of technical knowledge and references about impacts on sustainability	K Sustain	12		0	
	Profitability is low, problematic or uncertain	Profit	11	0		
	Uncertainties, risks and variability of agronomic performances	Uncert Perf	10			
	Lack of technical knowledge about the impact on farming system and design	K Syst	9			
	Lack of information because of problems with advisory context	Advice	9			
	Current situation is still profitable on the short term	Current	9			
	Constraints in labour organisation (period, volume), mental or physical load	Work	9		0	
	Barriers related to CAP*, environmental or sanitary regulations	Reg	9			
	Lack of adapted plant varieties in the local context	Varieties	8			
From harvest to retail	Need of innovation in machinery for field activities	Machin Innov	8		0	
	Low agronomic performances (yield, quality)	Perf	8			
	Increased complexity for management and decision-making	Complex	8			
	Cultural barriers, confrontation with farming practices of parent's generation	Trad	7			
	Cognitive frame and ways of thinking need to be changed	Cogni	6			
	Seeds are hard or expensive to get	Seeds	5			
	Farmers' lack of awareness about issues linked to specialisation	Awar Farm	5		0	
	Lack of available or adapted phytosanitary solutions	Phyto	3		0	
Market	Volumes are too limited in a given area to be profitably or easily collected	Coll Vol	16		0	
	Equipment for screening, cleaning, drying or storing requires investment	Pre ProInvest	11			0
	Equipment for processing requires investment	Process Invest	11			
	Competition on the global market with crops produced cheaper elsewhere (for processors or retailers)	Compet	9			0
	Equipment for screening requires investment	Screen Invest	8			0
	Equipment for processing requires innovation	Process Innov	5			
	Regulations issues around sanitary, quality and purity aspects	Qualsan	5			
	Equipment for cleaning, drying or storing requires innovation	Pre ProInnov	4			0
	Administrative, fiscal or accounting issues	Admin	4			
	Equipment for screening requires innovation	Screen Innov	3			
Traders are reluctant to support solutions which may reduce inputs that they sell	Input	3				
Dealing with diversification products brings higher costs	Cost	3				
Coordination between value chain actors	Need to raise consumer's awareness or bad visibility of diversification benefits	Awar Comm	17	0		
	Uncertain or unstable market	Uncert Mark	14			
	No pre-existing or very limited market	Exist Mark	13			
	Doubts about willingness of consumers to pay more for diversification products	Willing	9			
	No ensured and/or fair sharing of added value between actors	Price	17			0
	No ensured or limited volumes to buy/sell products or establish secure contracts	Quant	12			0
	Duration of contracts not enough to secure farmers in taking risks and investing	Dura	10			
	Limited or no cooperation between innovative farmers	Orga	8		0	
	Individualistic mentality and lack of trust between farmers limit collective action	Indiv	7			
	Unbalanced power in bargaining between farmers and traders	Power	7		0	
Finding suitable contracts to address issues related to variability in production (flexibility, sharing risks and reducing control costs)	Variab	7				
Lack of communication between value chain actors	Comm	6				
No ensured quality of products to be bought, sold or to establish secure contracts	Qual	4				
No ensured reciprocal benefits in partnership (especially for land arrangements)	Benef	4				

Why actors are not changing their practices

1. Actors are part of complex social systems
2. Farmers have a limited agency
3. Change may be expensive and complex
4. Messages are contradicting each other

Any solution ?



A photograph of a rural landscape. On the left, a single, dark green tree stands in a grassy field. In the center-right, a blue cylindrical water tank is mounted on a metal trailer with a single wheel. A black bucket sits on the ground next to the trailer. A wooden fence with wire runs across the middle ground. The background is a vast, flat field under a heavy, grey, overcast sky. The overall mood is somber and desolate.

There is no solution(s)
What we are looking for
Is a change of system(s)



Revolution



Transition

The transition theory framework



**SOCIO-TECHNICAL
LANDSCAPE**

Global trends

media, youth4climate, activists

**SOCIO-TECHNICAL
REGIME**

Present dominant systems

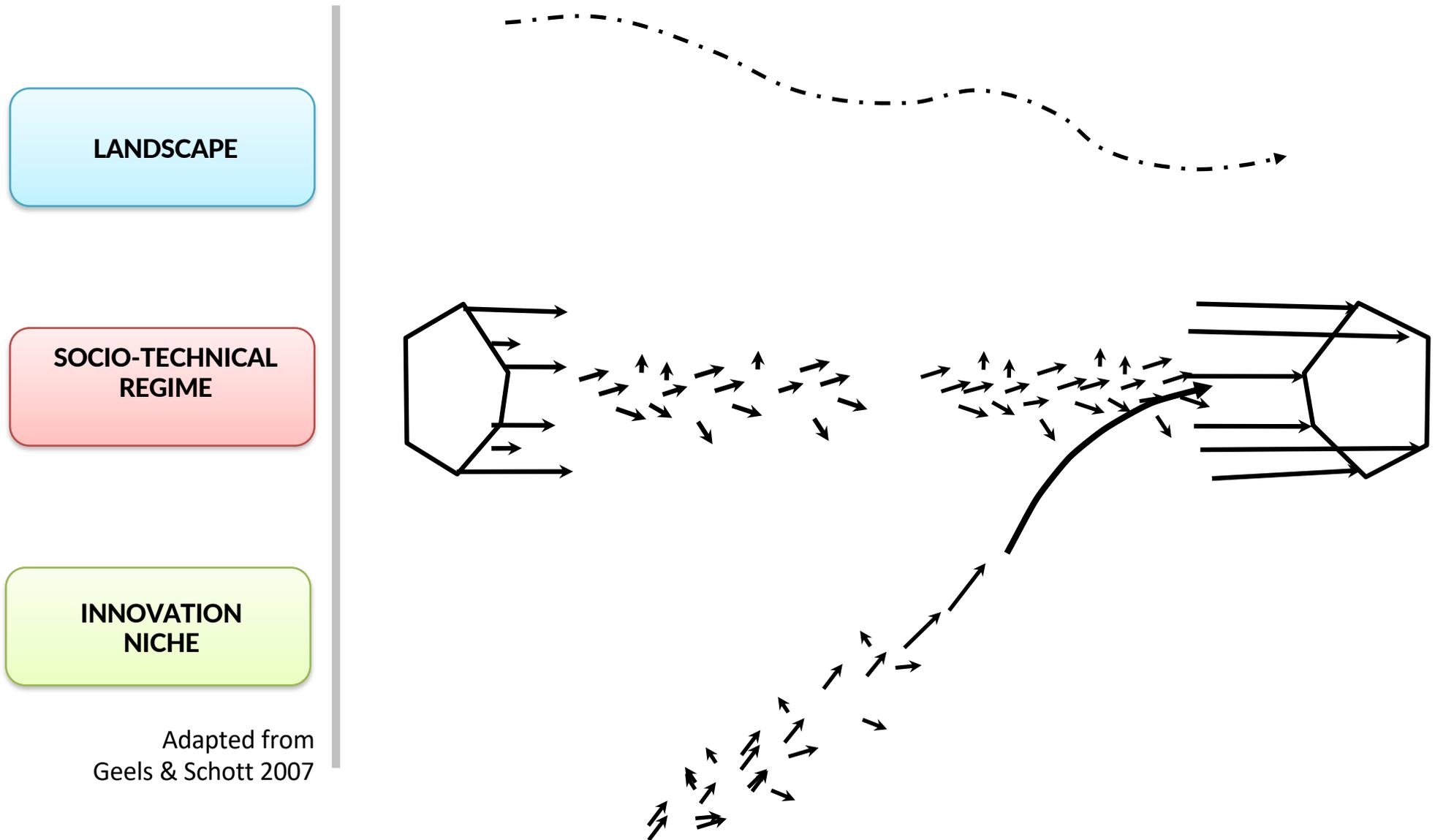
mainstream agri-food systems

**INNOVATION
NICHE**

Alternative propositions

organic farming, agroecology,...

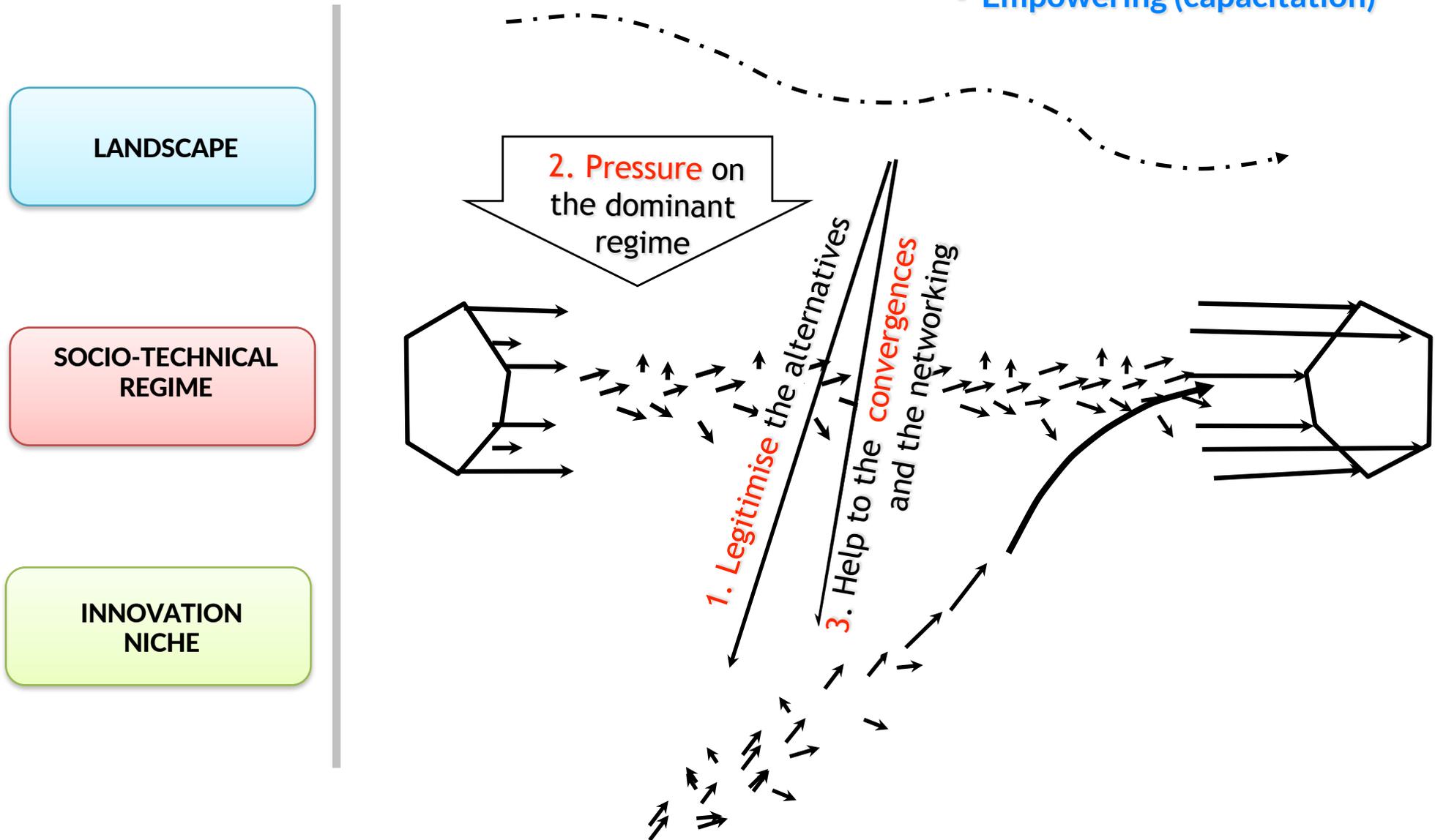
The transition framework



Adapted from
Geels & Schott 2007

Mode of action

- Protecting alternatives
- Learning
- Networking
- Empowering (capacitation)



Having an impact

- 1. Climate, biodiversity are key challenges for our societies**
- 2. Societies are made of actors in interaction**
- 3. A participative debate on options and scenarios is a major political issue**
- 4. Scenarios should be articulated at different scales**
- 5. Lock-ins are also a matter of science**
- 6. Transition theory provides a framework for fostering change**

**More social justice is good for
both biodiversity and climate**

**Our challenges are both
ecological and social**



Thanks to

Clémentine Antier

Anton Riera

Gaëtan Vanloqueren

Timothée Petel

Véronique De Herde

Wallon Region

FNRS

H2020

SOS Faim

Greenpeace

www.philagri.net

www.scenagri.be





Musée L
Louvain-la-Neuve