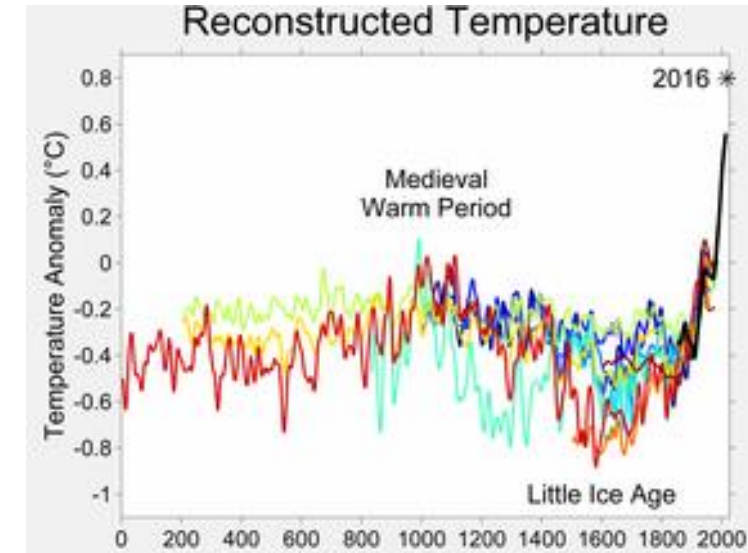


Climate change and new societal expectations: What kind of agro-ecological transition for geographical indications?

A path toward a real change

Filippo Arfini
University of Parma

The «small glaciation» 1300 – 1880 in Europe

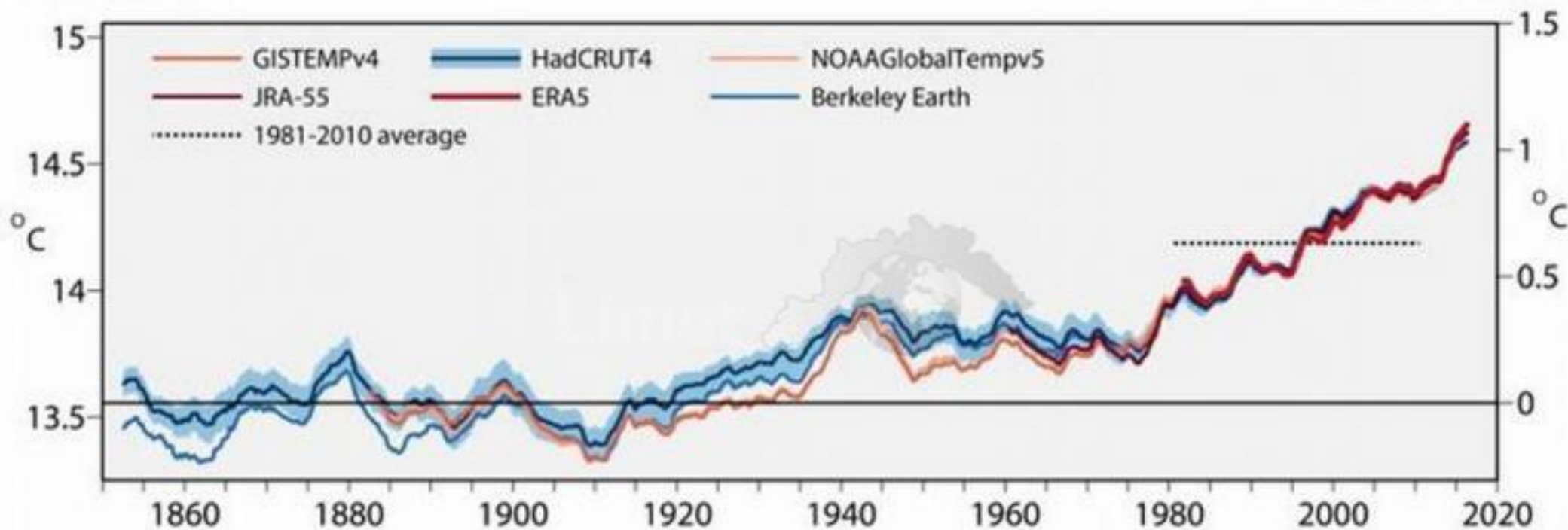


- Production reduction and famine
- Ability of plants and animals to be resilient in territorial micro-climates
- The importance of DNA (genotype) in adapting to climate change.

Climate change in the history

Global 60-month average
temperature

Increase above
pre-industrial baseline



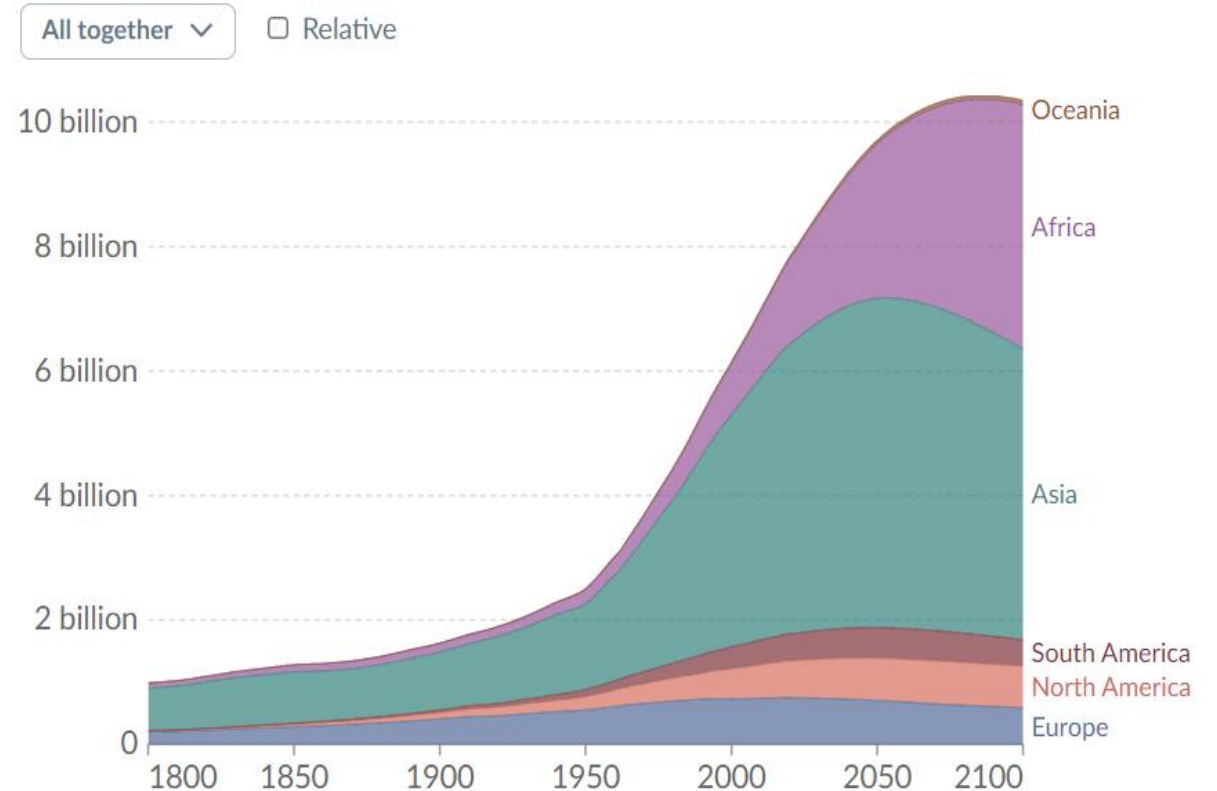
- Climate change affects yields, productivity, product quality and thus production costs and access to food;
- Production techniques (farm management and yields) are climate-sensitive;
- In human history, genetic selection was driven by the «adaptation» criteria generating ecotypes and «local varieties»;
- In recent years, humans have started to select their species according to the productivity criteria to meet the food needs of the world's growing population that consumes food in quantity and quality

- Improving the quality of life
- Having plenty of food in quantity and quality
- Consuming more meat
- Having healthy and wholesome food
- Having a clean and sustainable environment...
- **Have cake and eat it!**

Population by world region

Historic estimates with future projections based on the [UN medium-fertility scenario](#).

Our World
in Data

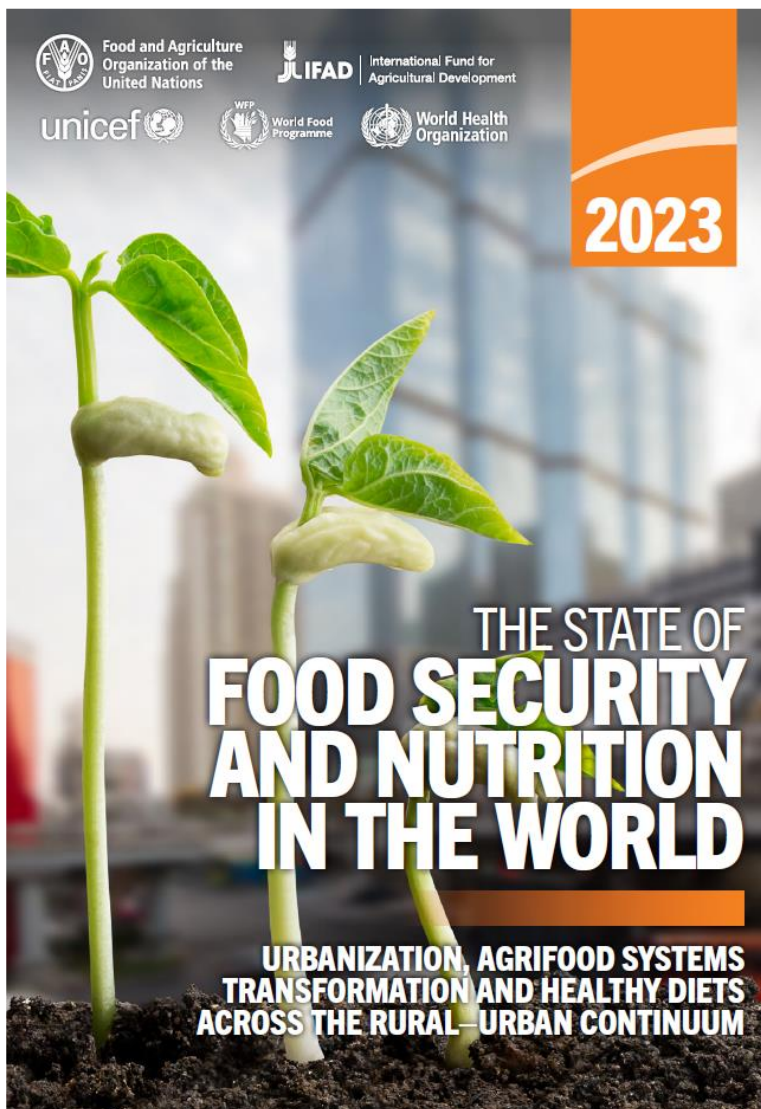


Source: HYDE (2017); Gapminder (2023); UN (2022)

Note: Historical country data is shown based on today's geographical borders.

OurWorldInData.org/population-growth/ • CC BY

The big questions



Can agroecology be the solution?

Is there a link between agroecology and GI systems?

How do we include agroecology principles in food systems?



The Agroecological principles

Improve resource efficiency



- Recycling
- Input reduction

Strengthen resilience



- Soil Health
- Animal Health
- Biodiversity
- Synergies
- Economic diversification

Secure Social Equity



- Co creation knowledge
- Social value and diets
- Fairness
- Connectivity
- Land and natural resources governance
- Participation

Improve resource efficiency



- Recycling
- Input reduction

Strengthen resilience



- Soil Health
- Animal Health
- Biodiversity
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Secure Social Equity



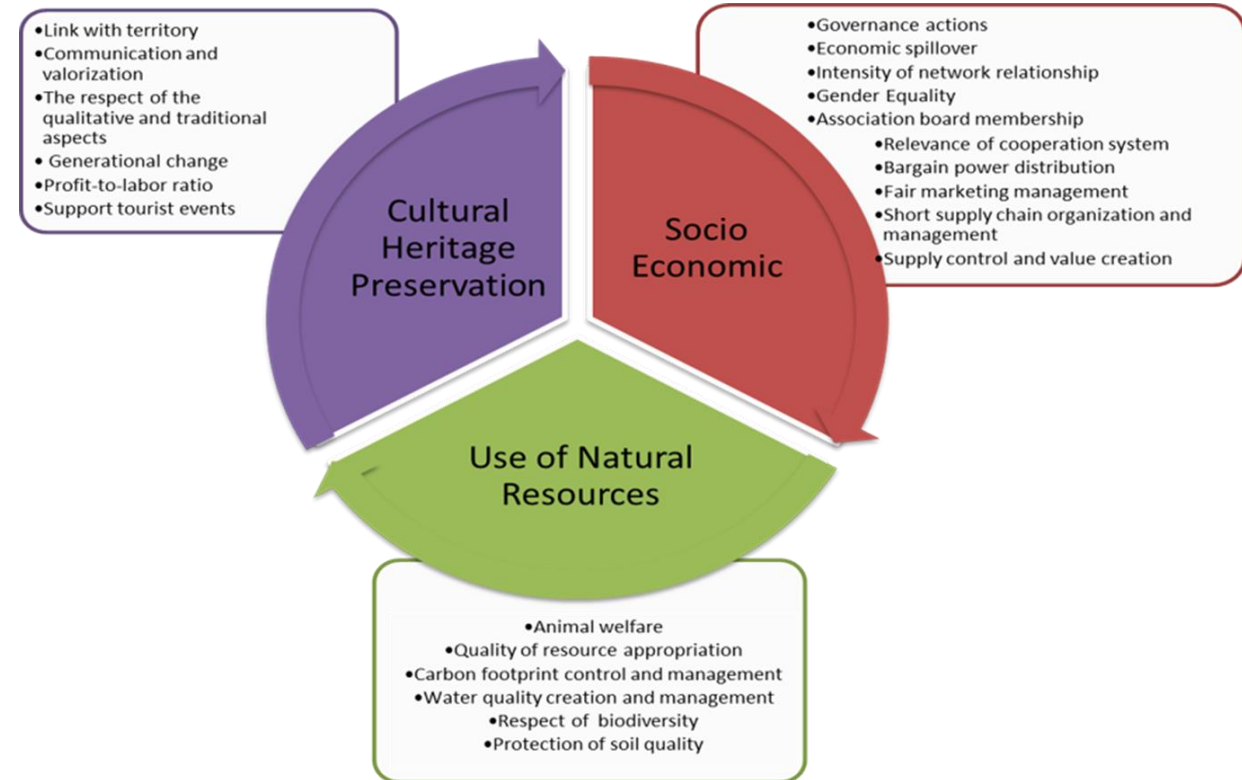
- Co creation knowledge
- Social value and diets
- Fairness
- Connectivity
- Land and natural resources governance
- Participation

<input checked="" type="checkbox"/>	Real link
<input checked="" type="checkbox"/>	Potential link

Similarities Between AE and GIs

Approaches, tools and value	Agroecology	GIs system
Territorial based	+++++	+++++
Cultural heritage-based	+++++	+++++
Use of local natural resources	+++++	+++++
Use of code of specification		+++++
Bottom up governance	+++++	+++++
Value chain relationship	++	+++
Quality control	++	+++++
Reputation mechanism	++	+++++
Consumers relationships (local)	+++++	++
Public goods generation	+++++	+++++
Socio-economic spillover	++	+++++

Source: author elaboration



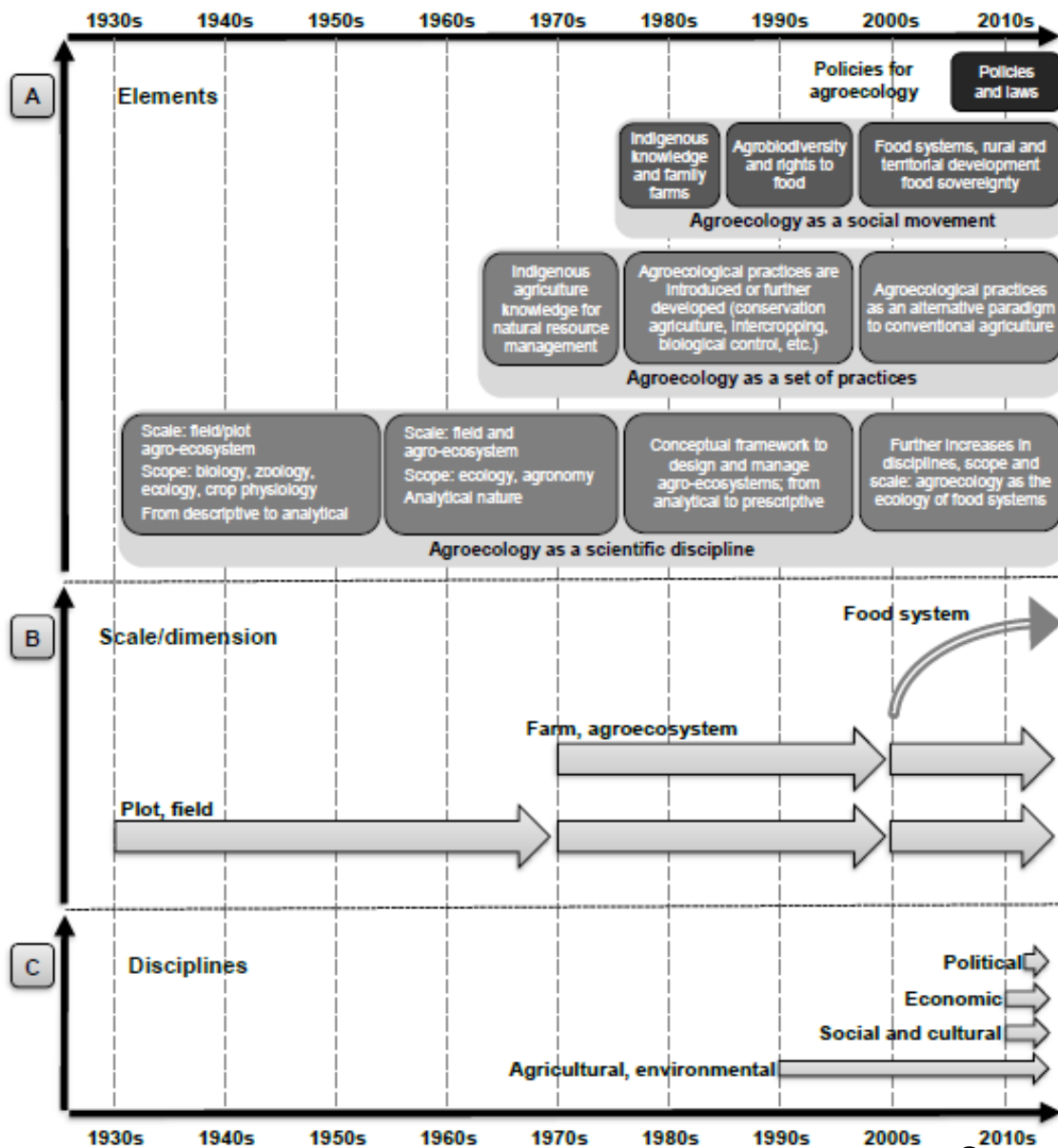
Source: <https://www.strength2food.eu/>

Agroecological and Public Goods Indicators

AE principles	PG Indicators	PG category
1. Recycling	Governance actions- sustainability and corporate mission	SE
	Quality of resource appropriation	NR
2. Input reduction	Carbon foot print control and management	NR
	Quality of resource appropriation	NR
	Water quality creation and management	NR
3. Animal health	Animal health	NR
	Animal stress from freedom	NR
4. Soil health	Protection of soil quality- soil quality	NR
5. Biodiversity	Respect of ecosystem biodiversity	NR
	Respect of species biodiversity	NR
	Respect of genetic biodiversity	NR
6. Synergies	Protection of soil quality- soil quality	NR
7. Economic diversification	Fair marketing management- segmentation of product	SE
	Support touristic events	CHP
	Contribution to local economy	SE
8. Co-creation of knowledge	Respect of the qualitative and traditional aspects	CHP
	Educational activities for producers and consumers	CHP
	Education-Professional training on the FQS	CHP

9. Social value and diets	Gender Equality-role of women	SE
	Link with territory-Historical elements and sustainability	SE
	Productive system reaction to generational change	SE
	Communication activities-external communication	CHP
10. Fairness	Product distinctiveness	CHP
	Governance actions-updating rules democratically	SE
	Governance actions-manage of conflicts and dispute	SE
	Gender Equality-role of women	SE
	Role of cooperatives in the value chain governance	SE
	Bargain power distribution	SE
11. Connectivity	Fair marketing management	SE
	Short value chain organisation and management	SE
	Intensity of network relationship	SE
12. Land and natural resource governance	Governance actions-Strategies or actions (research projects)	SE
	Governance actions- sustainability and corporate mission	SE
	Governance actions-monitoring system	SE
	Governance actions-accounting for sustainable and good m	SE
	Protection of soil quality- land quality	NR
13. Participation	Water quality creation and management	NR
	Role of cooperatives in the value chain governance	SE
	Bargain power distribution	SE
	Participation to board association	SE

Figure 2 Historical evolution of Agroecology



Food Systems innovation

Agroecology is a process of transformation which starts from the **field** and ends with the **consumers** involving all the **agents of the chain** and the **governance institutions!**



Source HLPE, 2019

Sources: (A) adapted from Silici (2014), based on Wezel et al. (2009) and Wezel and Soldat (2009); (B) adapted from Wezel et al. (2009).

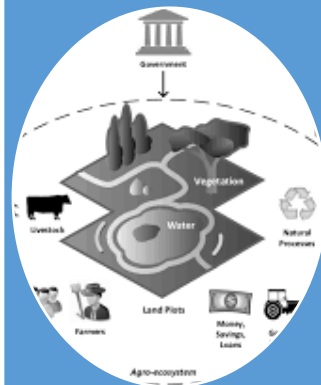
The transition phase



Level 1 Increase efficiency of input use and reduce use of costly, scarce or environmentally damaging inputs



Level 2 Substitute conventional inputs and practices with agroecological alternatives



Level 3 Redesign agroecosystems



Level 4 Reconnect consumers and producers through the development of alternative food networks



Level 5 Build a new global food system based on participation, localness, fairness and justice

Incremental
agriecosystem

Transformational Food System

From agroecology to the GI system, the step is short.
It is just a question of will!

Agroecology principles can be incorporated into the GI systems, but:

- **GIs must leave** the “productivity” driver in favour of the “climatic-resilience” driver;
- **Consumers should perceive** the “agroecological” attribute as part of the extrinsic quality of GI products;
- **The producers should prove** the impact on sustainability and the generation of public good;
- **GI institutions** (GI-Consortia and GI-Interbranch Organisations) **should change the Code of Specification**, introducing binding rules concerning using genetic resources and agronomic and husbandry practice

Thank you for your attention!

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