

TEN YEARS FOR AGROECOLOGY IN EUROPE (TYFA)  
WHAT WILL EUROPE'S AGROECOLOGICAL TRANSITION INVOLVE?



# A SCENARIO EXERCISE FOR AND ABOUT AGROECOLOGY

The TYFA—Ten Years for Agroecology in Europe—project seeks to identify whether a transition of European agriculture to agroecology is possible, and under what conditions.

**T**he current European food system is economically efficient, but generates increasing health and environmental externalities, which are becoming irreversible. Firstly, our diets are now too rich and unbalanced, resulting in health care costs to society of more than €70 billion. Secondly, the biodiversity loss, water pollution and soil erosion that are associated with agricultural practices are challenging the very basis of production. For the past ten years, **agroecology has been a proposed solution to address these issues.** However, many actors consider the reduction of production levels which could result from the widespread implementation

of agroecology in the European context to be a problematic concern. These actors advocate the need to increase production further in the context of population growth and from this perspective regard agroecology as, at best, a niche option for a fraction of the population. In this context, the first step of TYFA, the results of which will be made public in September 2018, was to identify the ***feasibility and plausibility of an agroecological Europe on both the agronomic and nutritional level:*** is a fully converted agroecology system functional from an agronomic point of view? Is the level of production obtained sufficient to feed Europeans or even generate a surplus? And if so, under what conditions in terms of the European diet?

# METHODOLOGICAL BACKGROUND

The TYFA project explores the possibility of the extensive roll-out of agroecology on a European scale. Indeed, it is at this level that our food system is largely organized, through the existence of a common market for agricultural and food products and, closely associated with it, the common agricultural policy (CAP).

To test the plausibility of such a scenario, a **quantitative model of the European food system was developed** to simulate its functioning. It connects four essential dimensions:

- land use for crop production;
- animal production;
- end use of production (human food or industrial use);
- and nitrogen flows;

while considering the European food system in the context of worldwide trade.

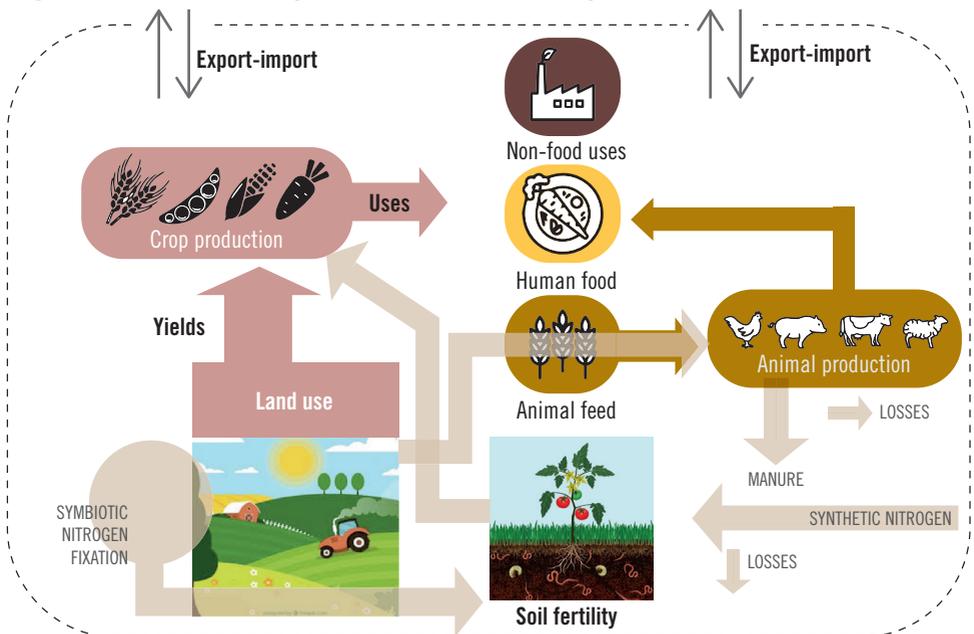
The analysis of the current functioning of the European food system through this prism puts into perspective the claims of those calling for increased

production, and sets the political and agronomical basis of TYFA's approach. Indeed, the very high levels of productivity achieved go hand in hand with unbalanced diets that are too rich in relation to nutritional recommendations, with a 30% calorie overconsumption, and a meat consumption that is nearly double the World Health Organization (WHO)'s recommendations.

This situation results in particular from an intensification of livestock systems, which are based on a massive importation of animal feed in the form of soy from Latin America—which contributes to deforestation. Thus, today it can be said that the world feeds Europe, much more than the other way round—with EU net imports equivalent to nearly 35% of its useful agricultural land.

Based on this analysis of the current food system, and drawing on a vast literature on the development of agroecological systems, the key points of an agroecological Europe have been identified, from which the TYFA scenario has been built.

## Logical structure of the quantitative model developed in TYFA



# CENTRAL ELEMENTS OF AN AGROECOLOGICAL EUROPE TESTED IN TYFA

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1.

Healthy diets: reduced consumption of animal products and increased consumption of fruit, vegetables and vegetable protein

- Adherence to current nutritional guidelines
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2.

Stop importation of soybean and palm oil

- End deforestation caused by imports
  - Protein and oil-protein crops are essential components for maintaining the fertility of agroecological systems
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3.

Abandonment of pesticides

- Consideration of human and environmental health issues according to the precautionary principle, given the impossibility of defining a safe dosage and to monitor the systemic effects of active ingredients and adjuvants
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4.

Abandonment of synthetic fertilizers

- Difficult to use without pesticides (see 3) and absence of references on systems without pesticides but with fertilizers
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5.

Maintenance of permanent grassland areas, all farmed extensively

- Unfertilized permanent grasslands support biodiversity and provide nitrogen from spontaneous legumes
  - Grass-fed meat and milk production is richer in  $\Omega 3$ , essential for a balanced diet
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6.

Extensification of ruminant farms

- Derives from points 1, 4 and 5. Ruminants are essential for maintaining permanent grasslands and managing fertility. Animal welfare issue
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# PROJECT MILESTONES, PUBLICATIONS AND PARTNERS

The TYFA project is carried out under IDDRI's "European Agriculture" initiative, in partnership with ASca consultancy. The Charles Léopold Mayer Foundation for the Progress of Humankind has financed it since its inception.

The first phase of the project and the agronomic modelling was monitored by an expert committee composed of researchers and research professors from INRA, AgroParisTech and ITAB.

The TYFA study was also partially completed as part of a collective discussion in preparation for the European Food and Farming Forum (€EU3F), held in Brussels on May 29th-30th 2018 ([www.eu3f.com](http://www.eu3f.com))

2013-2014

Construction and maturation of the project, discussed with different actors (civil society, academic community and decision makers) working at the interface between agriculture and environment at the European level

2015-2016

Scientific and political framing around two aspects:

- Politically: the agroecological transition in Europe cannot come from a number of territorialized initiatives; a change in institutional frameworks is required.<sup>1</sup>
- Methodologically: forward-looking debate must be isolated from the productivity imperative.<sup>2</sup>

2017-2018

Agronomic modelling of the "European farm" to address TYFA's agronomic and nutritional priority issues.

September 2018

**Public presentation of the agronomic modelling results at a high-level event in Paris.**

2018-2019

Coupling of agronomy/economy and the development of a transition trajectory to shed light on:

- the economic impacts of the TYFA scenario: food costs, producer income;
- the possible agroecological transition pathways, from a societal and political point of view (societal changes, public policies to be implemented, cost and financing of the transition).

1. Moraine, M., Lumbroso, S. & Poux, X., (2016). *A comprehensive outlook on the diversity of agroecological initiatives in Europe*. Paris, IDDRI-ASca, 53 p.

2. Poux, X., Lumbroso, S., Aubert, P.-M. & Treyer, S. (2016). *Advancing agroecology in Europe through a scenario exercise: a political and methodological framework*. IDDRI Issue Brief, 13/16, 4 p.