

Evidence on the Potential of Agroecology in Europe



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What is agroecology?

Food and Agriculture Organization of the United Nations
(FAO)

- "The Ten Elements of Agroecology"
- The report of a FAO High-Level Panel of Expert (HLPE) on food security and nutrition (13 Principles)

Agroecology Europe

www.agroecology-europe.org

Agroecology Europe aims to analyze, design, develop and promote the transition towards agroecology-based farming and food systems in Europe and throughout the world.

It intends to place agroecology high on the European agenda of sustainable development of farming and food systems.





Reforming the Common Agricultural Policy of the European Union in the Context of the *Green Deal*

The Position of Agroecology Europe

March 2020

Ecological strategy of agroecology

- Replacing fossil fuels by ecosystem services provided by biodiversity
- Investing in biodiversity at all levels



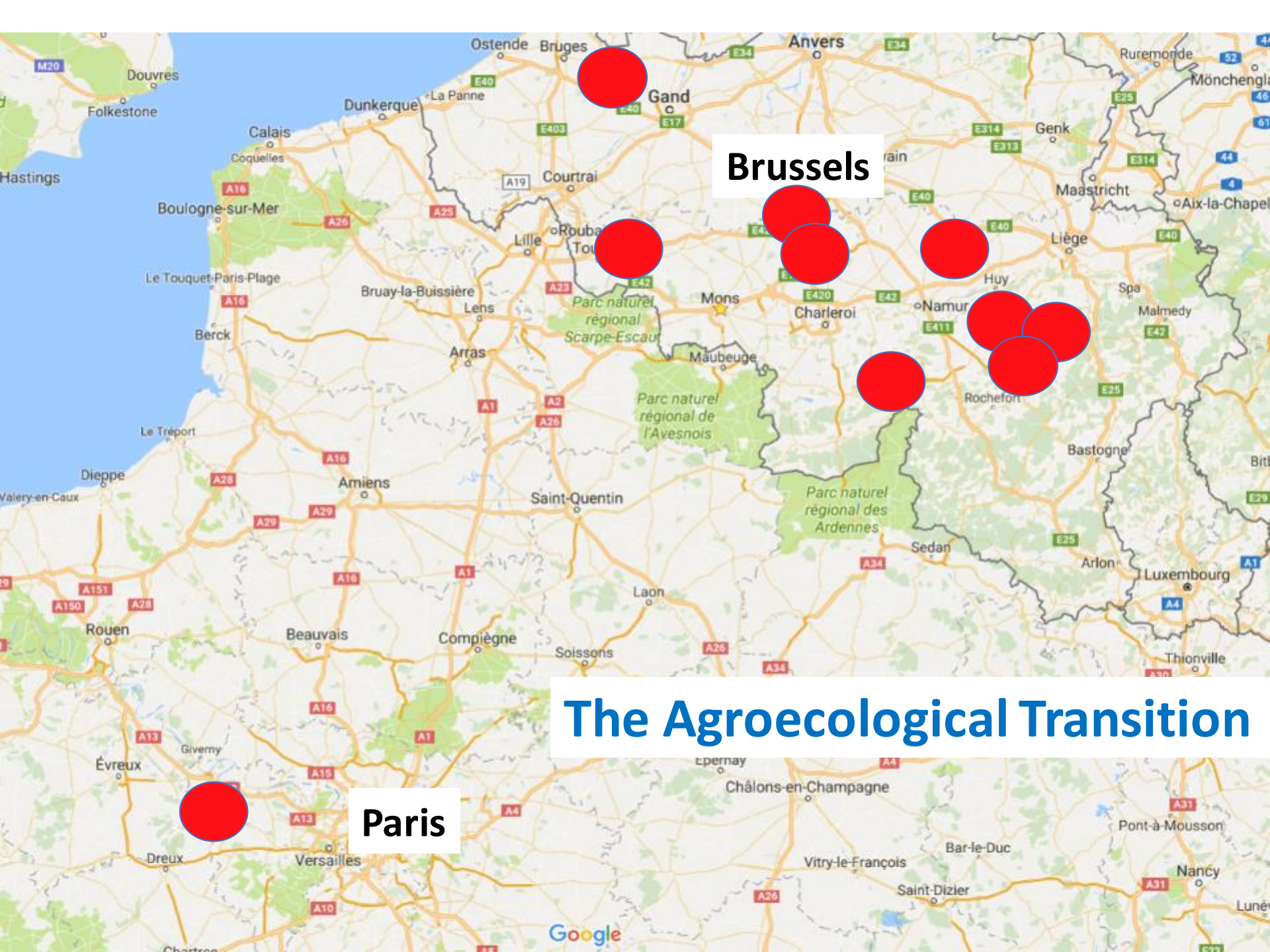
Ecological strategy of agroecology

- Relying on local resources
 - = endogenous soil fertility
 - ≠ massive use of commercial inputs
- Intensive in observations, thinking and knowledge



Two practical examples:

- 1. The Agroecological Transition Project**
- 2. The Velghe Farm**



Brussels

Paris

The Agroecological Transition

Place and importance of grasslands




Temporary grasslands:

- Carbon sequestration
- Restoration of soil fertility, structure and life
- Important nitrogen fixation
- Weed control



Long and diverse crop rotations

Alternance of legume and non-legume crops

Years						
1	2	3	4	5	6	7
Temporary grassland Lucerne - cocksfoot	Temporary grassland Lucerne - cocksfoot	Spelt or Wheat or Triticale	Temporary grassland Clover – Ryegrass	Cereal mixture or Brewery barley	Faba bean – clovers	Vegetables or Hemp
		Temporary grassland sowing	Composted FYM	Biomax	Biomax Composted FYM	Temporary grassland sowing
						

Crop / livestock integration

Mixed farming

Biomax = Maximum biomass and biodiversity



Rolling biomax and sowing crops in one single operation



A high biomass in October + weed control



Triticale sown in a white clover sward



Pest suppressive ecological infrastructures

Role of herbaceous strips

➤ Natural enemies of crop pests and **wildlife**



Organic bred wheat

GRAZIARO



The Velghe Farm

**Mixed farm integrating annual arable crops,
temporary and permanent grasslands
and a dairy cow herd**

Péruwelz (Wallonia, Belgium), West of Belgium

Jean-Marie (father) and Arnaud (son)



Jean-Marie (father) and Arnaud (son)



Farm evolution

First phase: Farm size enlargement, intensification and specialization

- Size enlargement
- Specialization and intensification

Second phase: diversification, production cost reduction and self-sufficiency increase

- Diversification of activities
- Adoption of sustainable farming practices
- Enhancement of the environment
- Production cost reduction by self-sufficiency increase

Third phase: product processing, short and local marketing chain

- Decreasing number of dairy cows, milk yield per cow and total milk volume
- Targeting quality (fatter milk of Normande breed)
- Processing part of milk for making cheese + other dairy products
- Marketing in short and local chain in the farm shop
- Creating jobs on the farm: 1 → 4

Spinash crop



Modern free-stall cow barn



Milking robot



Barn hay drying





Reward



A scenic landscape photograph. In the foreground, there is a green grassy field with some brown patches. A large, thin tree trunk stands on the right side. In the middle ground, a dense field of yellow flowers stretches across the frame. Behind the flowers is a line of trees with green and some autumn-colored foliage. The sky is overcast and grey. The text "THANK YOU" is overlaid in yellow at the bottom.

THANK YOU

Case van der Ploeg et al. 2019	Criteria	AE compared to average
Netherlands, 'farming economically'	Labour income/100 kg of milk	+ 110%
Netherlands Centre for Research in Dairy Farming (PR)	Employment generated at volume of production of 800,000 kg of milk	+ 100%
France, grassland-based farming	Family income/family worker	+ 73%
Germany, low concentrate feeding	Income per dairy cow	+ 60%
Italy, Rossa reggiana	Income per hour	+ 15%
Poland, dairy farming	Income according to level of self-provisioning for feed and fodder (0 compared to 51-99)	+ 53%
Ireland, beef and milk	Gross margin per hectare	> in the order of 75-80% in a 3-4 year period
UK, sheep farming	Gross Value Added/ewe	+ 10%
Spain, Mediterranean crops	Gross Value Added	+ 35%
Portugal, vine growing	Fossil energy consumption/ha	- 30%