



Developing local protein resources in monogastric feeds to promote the agroecological transition

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THE COEXISTENCE OF WILDLIFE AND LIVESTOCK

PORTO – PORTUGAL

4 SEPTEMBER – 9 SEPTEMBER 2022



EAAP 2022

Developing local protein resources in monogastric feeds to promote the agroecological transition

Claire Escande, Myriam Grillot, Vincent Thénard

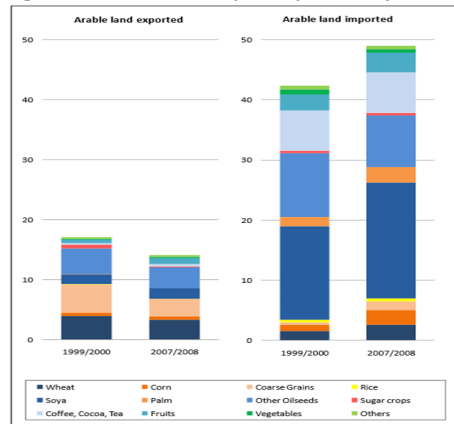
Flow

- Context, aims
- Cases studies
- Approach
- Main results
- Some elements to discuss

Why local protein is a challenge?

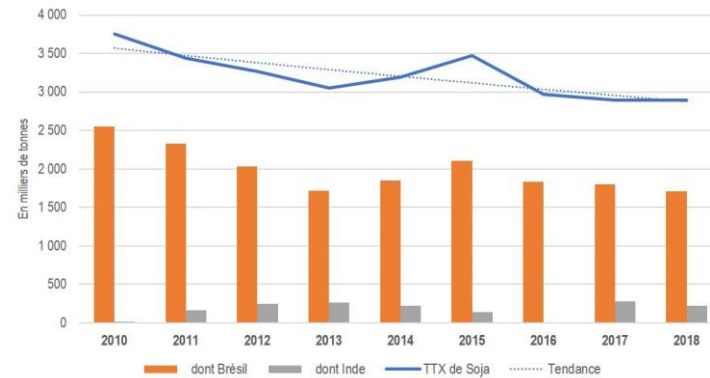
Global Land use

Figure 6: EU arable land virtually traded (in million ha)

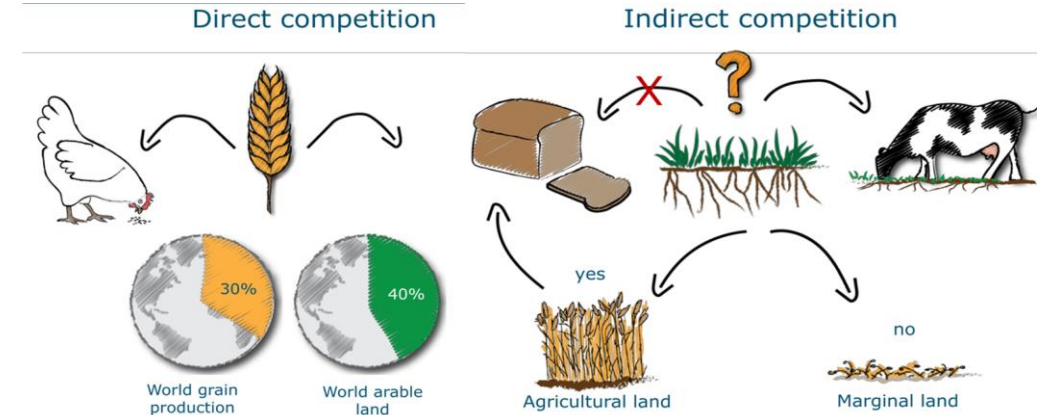


Source: Witzke & Noleppa, 2010

Economic dependency



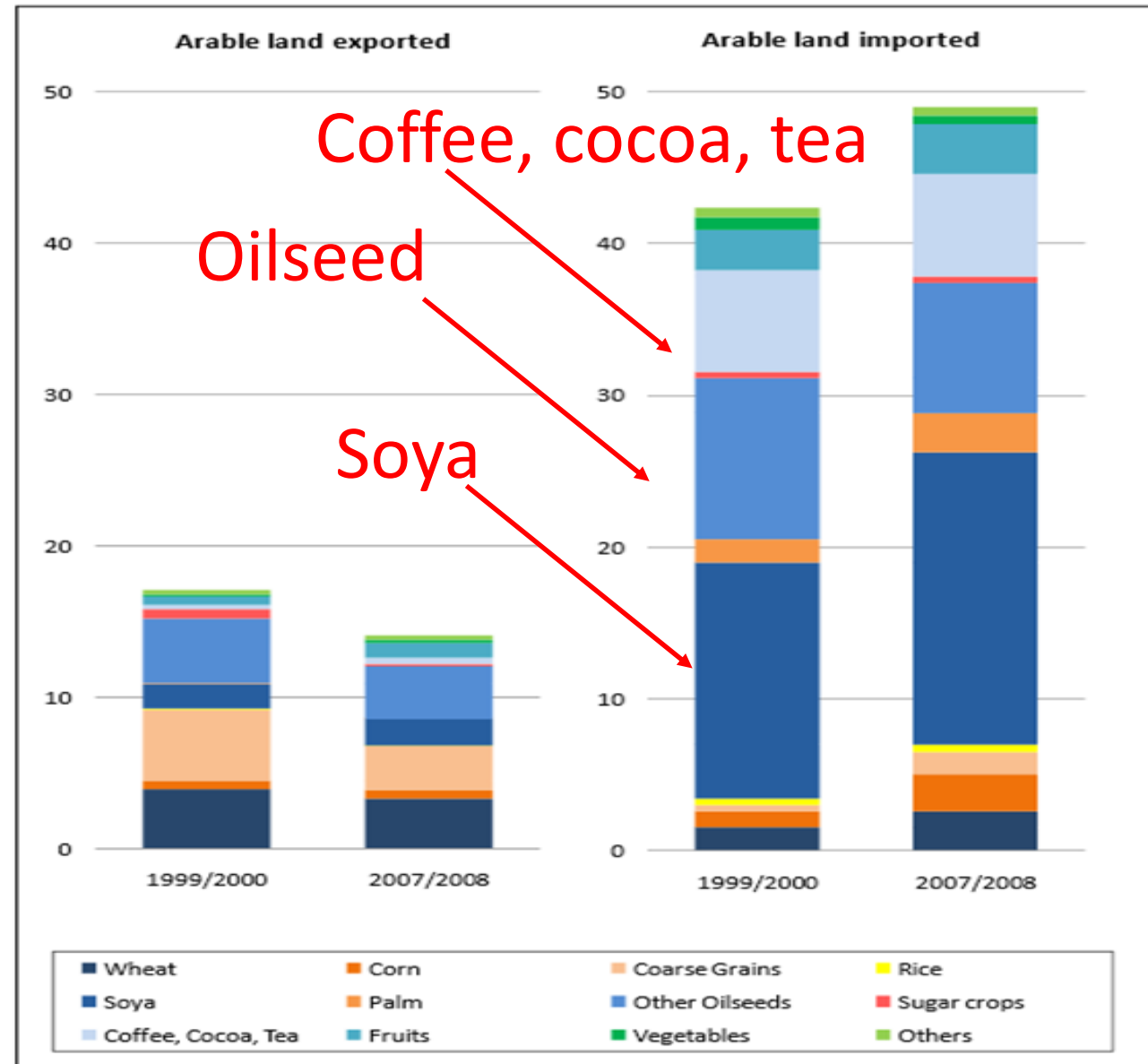
Feed/Food competition



Global land use

European agriculture is dependent on the production of other land...

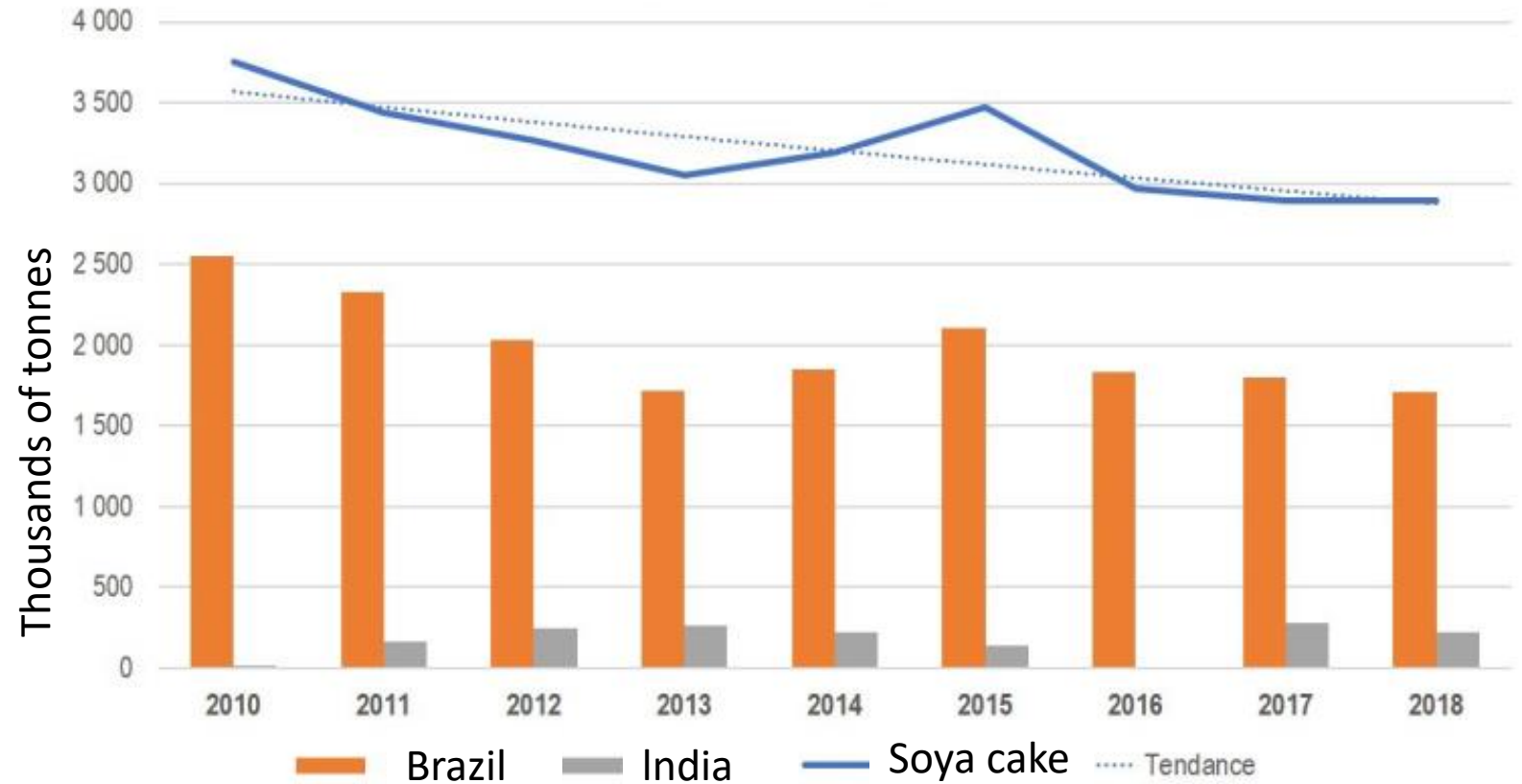
Figure 6: EU arable land virtually traded (in million ha)



Economic dependency



Soybeans and soy cake are an important protein-feed for animal production in Europe, in France

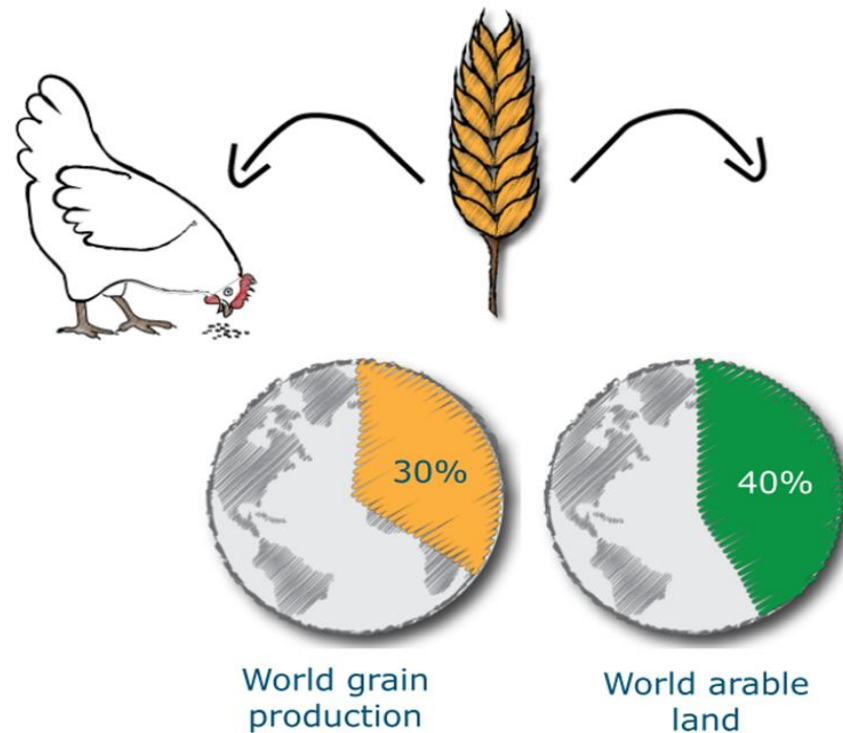


Soybean imports by France

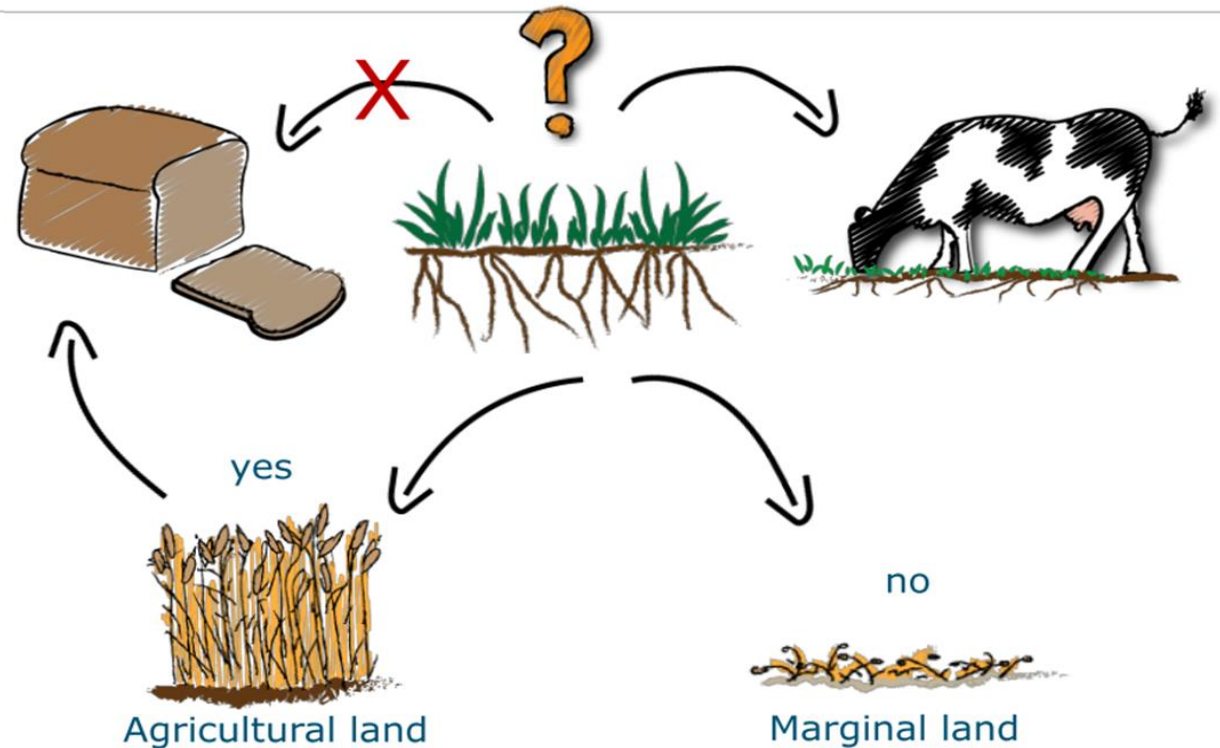


Feed/Food competition

Direct competition



Indirect competition



Agroecological challenge

Issue and highlights of Agroecology transition

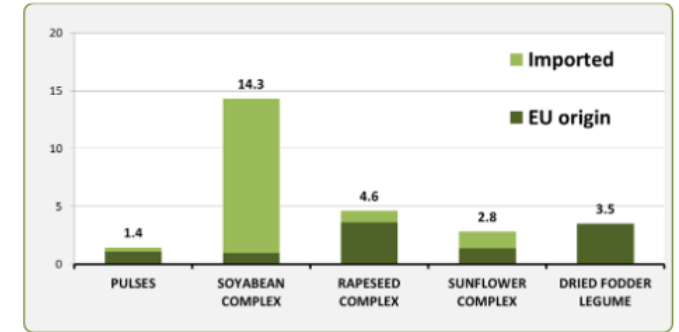
- ⦿ Agroecological transition is a way to improve sustainability of the LFS
(Altieri, 2002; Dumont et al., 2013; Bonaudo et al., 2014)
- ⦿ Feed Self-sufficiency (FSS) can be considered as a driver of agroecological transition *(Dumont et al., 2013)*
- ⦿ Some farmers combine different resources included natural grassland to increase their farm's feed self-sufficiency *(Thénard et al. 2014, 2015, 2016)*



Agroecological challenge

Protein self-sufficiency is on the agenda for the next few years in the EU, in France and in Occitania...

Graph 1 2016/17 EU use of proteins and their sources (in million tonnes of crude protein)



Source: EU Commission. "Complex" includes meals, seeds and beans



Brussels, 22.11.2018
COM(2018) 757 final

REPORT FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT

on the development of plant proteins in the European Union

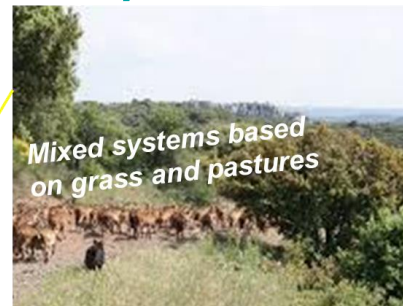
Graph 8 Agricultural European Innovation Partnership – linking H2020 to the CAP



Legumes have benefitted from research projects at different scales. Building on previous projects tackling breeding issues related to biotic/abiotic stresses, food/feed uses and environmental assets of legumes, the on-going H2020 projects are looking at transition paths to sustainable and competitive legume-based production systems and value chains in the EU, as well as breeding strategies and food characteristics.

Agroecological challenge

Many opportunities to present works about sel-sufficiency in herbivorous systems



And what about granivores ?



Developing local protein resources in monogastric feeds



Case study: mixed farming region



- Mainly arable crops
- + Residual livestock (granivores)
- + Local knowledge of mixed farming
- + Potential of protein crop production

How to increase protein self-sufficiency?



A participatory approach

Current challenges → a drastic change of Livestock farming Systems

But

→ The agroecological transition

complex process

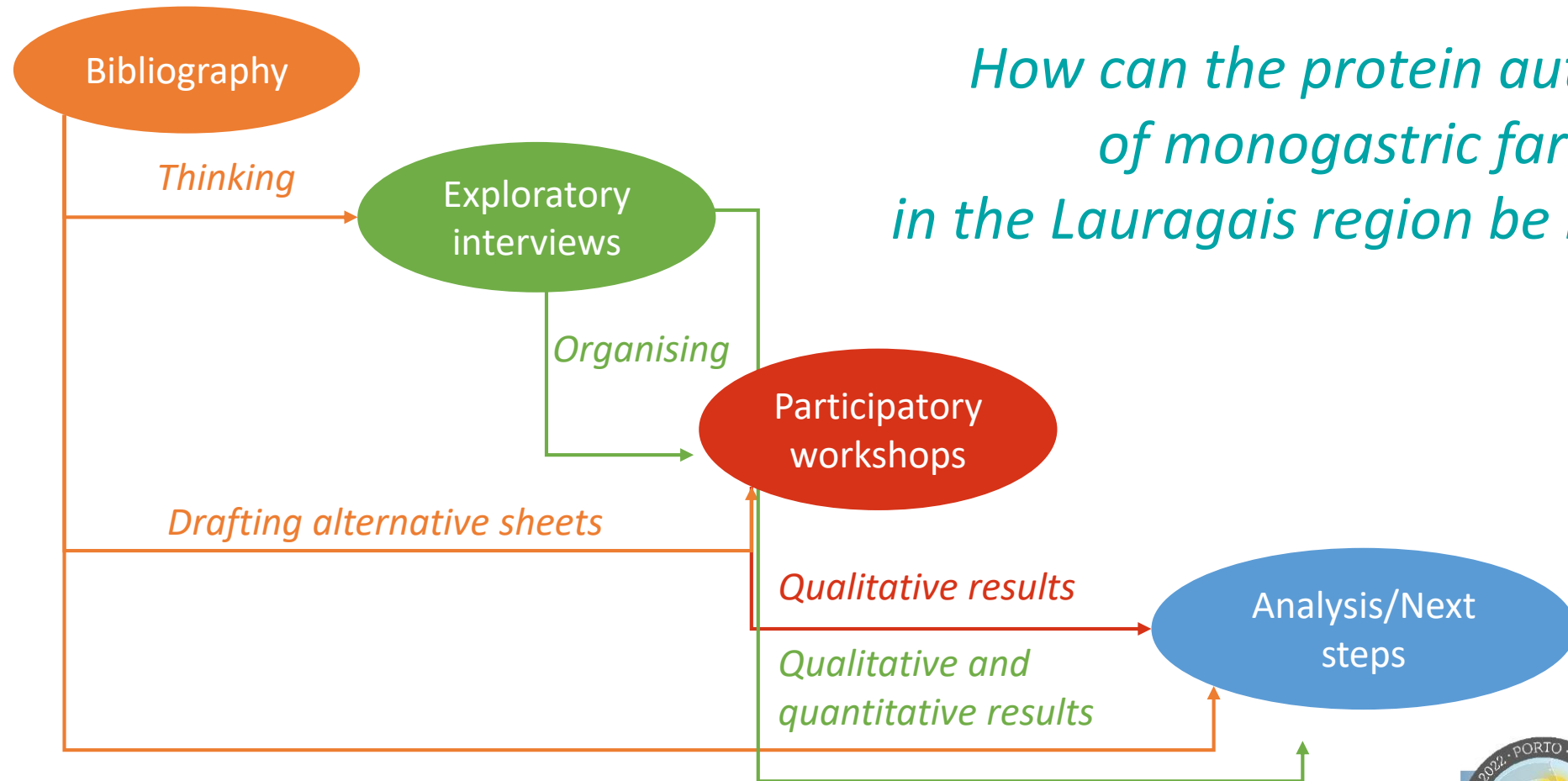
undefined paths

To achieve such changes, it is necessary to involve farmers in co-designing innovations and encouraging their adoption

→ Participatory approach relevant to analyze SES/ STS



A participatory approach



*How can the protein autonomy
of monogastric farms
in the Lauragais region be improved?*

Main results

Exploratory
interviews

- 8 « pigs » farmers
- 7 « Poultry » farmers
- 1 « Pigs&Poultry » farmer
- Farmers' practices:
- 10 farms make feed on the farm (FAF) including cereals produced on farm
- 6 farmers supplied protein feed by buying a nitrogen supplement
- 4 farms supplied protein feed by producing the protein-rich raw material themselves (soya or peas)

Some obstacles to protein autonomy expressed during the interviews :

- ✓ Need for support or advice on farming techniques (new crops, new diet, etc.).
 - ✓ Difficulties in substituting soybean meal in rations:
it is an ideal nutritional component.
- ✓ Few support from cooperatives to small farmers in direct sales



Main results

Participatory
workshops

5 farmers
4 advisors



Workshop 1

**Overview and presentation of
alternatives to imported
soybean meal**

- Sharing feeding alternatives
- Thinking collectively towards protein self-sufficiency
 - Identifying benefits & disadvantages

4 farmers
1 advisor



Workshop 2

















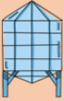







**Design of protein self-sufficient
systems**

- Building farmer-specific perspectives



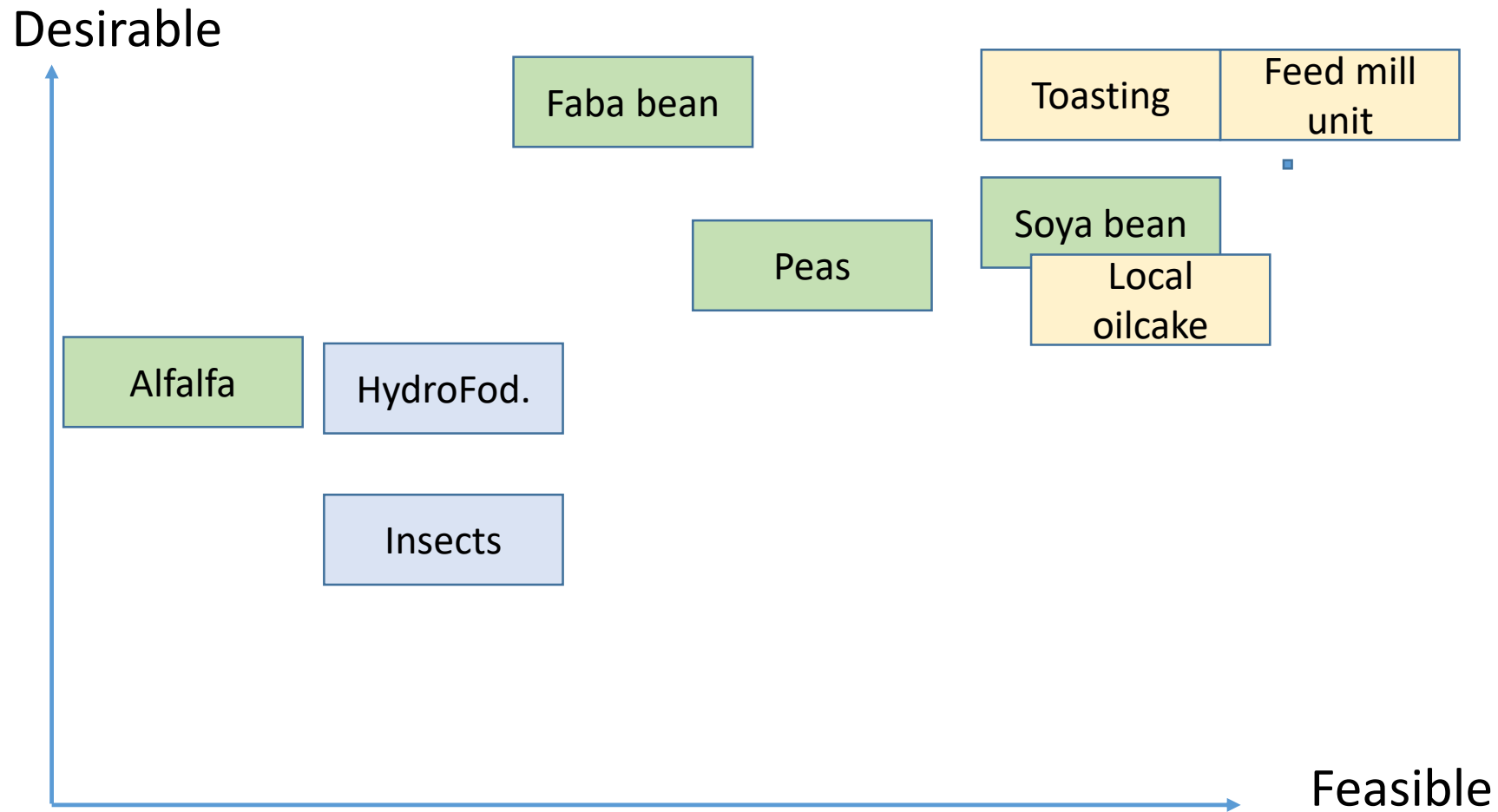
Main results

Participatory
workshops

	Benefits	Disadvantages
Peas	 PROTEINES	
Faba bean	 PROTEINES	
Soya bean	 PROTEINES	
Alfalfa		 PROTEINES
Hydroponic fodder		 
Sprouted cereals		
Insects		 
Local oilcake by pressing		 
Feed mill units		  
Toasting	 PROTEINES 	

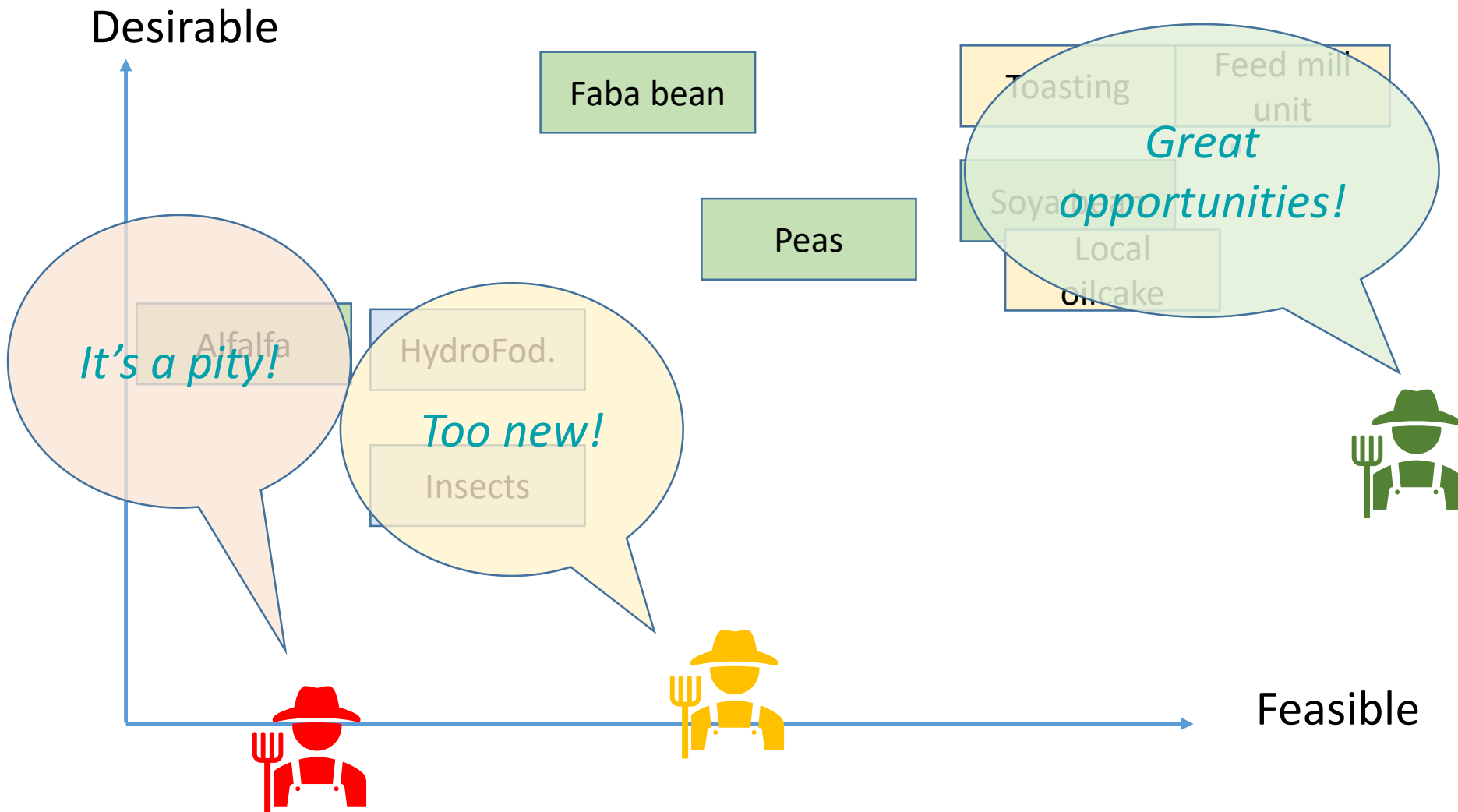
Main results

Participatory
workshops



Main results

Participatory
workshops



Wrap-up

Identified avenues for action

- Integrating the stakeholders in the sectors in the search for protein autonomy
- TAP (Transformed Animal Proteins): calling on the French public authorities after the EU has allowed them
- Benefit from aid for protein autonomy (CAP, regional policy,...)
- Intensify and develop interactions between farmers



Take-home messages

- Alternatives to soy cake exist, they need to be improved
- Direct sales farmers are motivated, the next step is to involve the pork and poultry sectors on a regional scale.
- New integrated crops need support and exchange between farmers.
- Protein self-sufficiency is a good thing for the transition to agro-ecology and a way to adapt LFS to climate change



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Obrigado, Thanks !

