

Addressing territorial resources to foster agroecological transitions in livestock farming systems

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Animal sector is strongly impacted by climate change, economic instability, environmental pressure and new social expectations. Despite these issues, animal farming have a place in global health through its potential role on soils, ecosystems, agriculture and food systems. For this, major transformations are required. Still, some research works have enlighten promising pathways for such agroecological transitions, around principles such as diversification and interconnection of activities, and embeddedness in local territory, to valorize the diverse local resources.

The territorial resources supporting agroecological transitions combine material (soils, water, ecosystems), technical (equipment, factories), cognitive (training, collective organization), and socioeconomic (supply chains, public policies, local community support, work organization) resources. Analyzing combinations of resources and describing how agroecological systems mobilize them can help supporting agroecological transitions at local scale.

In this communication, we propose to identify the territorial resources mobilized in four case studies for agroecological livestock systems. The case studies are chosen to represent a wide diversity of livestock systems (different levels of self-sufficiency, degree of crop-livestock integration...) and a diversity of natural and socio-economical contexts (PDO label, mountainous or intensive region...). The analysis is based on the diversity of uses of territorial resources and understanding of how the farming systems are embedded in their territories. In the different case studies, we explain how farmers could shift the management the territorial resources: on one hand with determinist innovations and on the other hand toward an open-ended transition. Finally, we propose a transversal framework analysis to discuss to what extent the sets of territorial resources should determine or not the agroecological transitions of livestock systems. Based on this we suggest possible developments for supporting such transitions in different territories.

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Flow

- Context: Livestock farming, Agroecology
- Aims: Fostering transition
- Approach: Our framework
- Cases studies
- Some elements of discussion

A wide diversity of Livestock farming...



... for many opportunities and benefits

But so much Problems...!

Livestock farming are strongly impacted by climate change, economic instability, social expectations and ecological issues



**Land use
competition**



**Feed/food
challenge**



**Biodiversity
loss**



**Deforestation and
land grabbing**

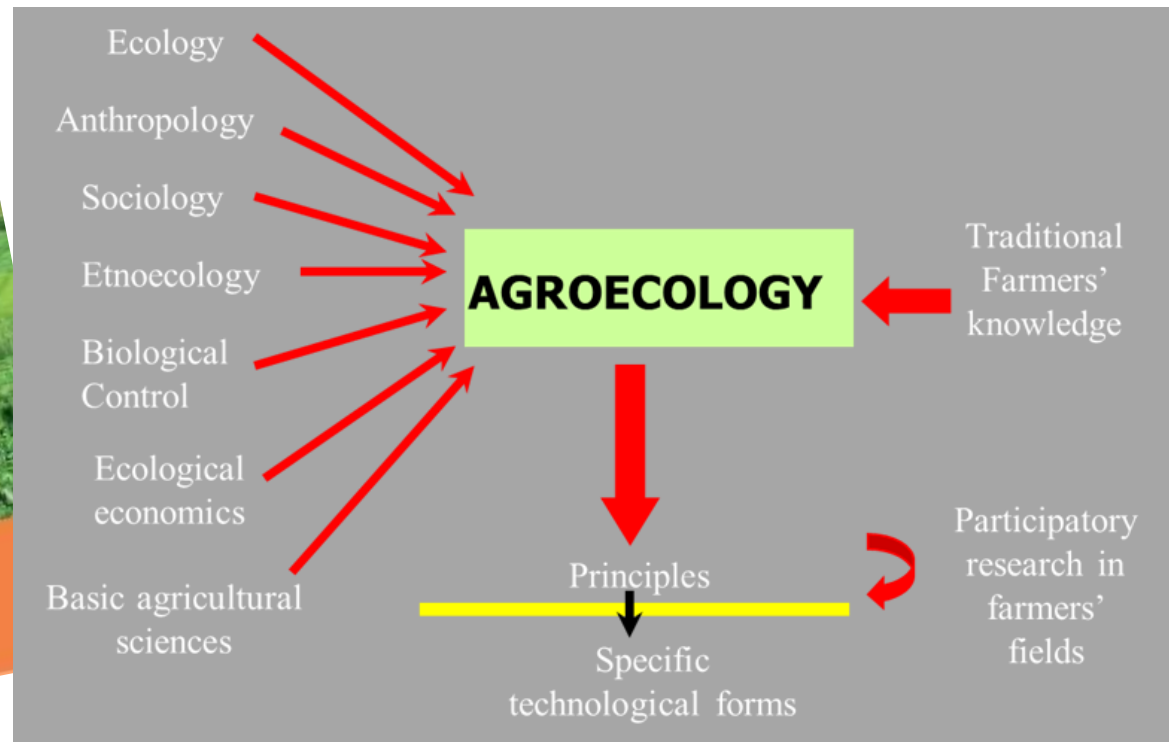
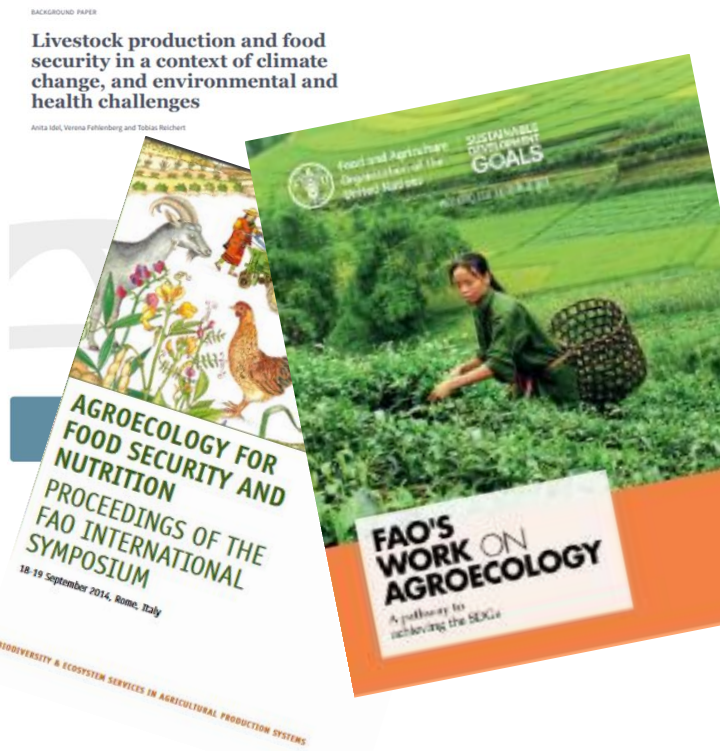


**Global
warming**

Agroecology: a new relevant way ?

Agroecological principles based on key ecological processes were proposed to (re)design sustainable farming systems (Altieri, 2002; Dumont et al., 2013; Dumont et al., 2014; Bonaudo et al., 2014)

THINK TANK & RESEARCH



Highlights about AE

- ⦿ Agroecological transition is a way to improve sustainability of the LFS (*Dumont et al., 2013; Bonaudo et al., 2014*)
- ⦿ Agroecology requires to connect practices to the local ecosystems, and make use of different types of resources (*Altieri, 2002*).
- ⦿ The social component of agroecology is a crucial aspect to understand, analyze and accompany agroecological transitions of farming systems (*Wezel et al., 2009*).
- ⦿ Farmers organize different practices as levers for AE transition (*Thénard et al. 2018*)



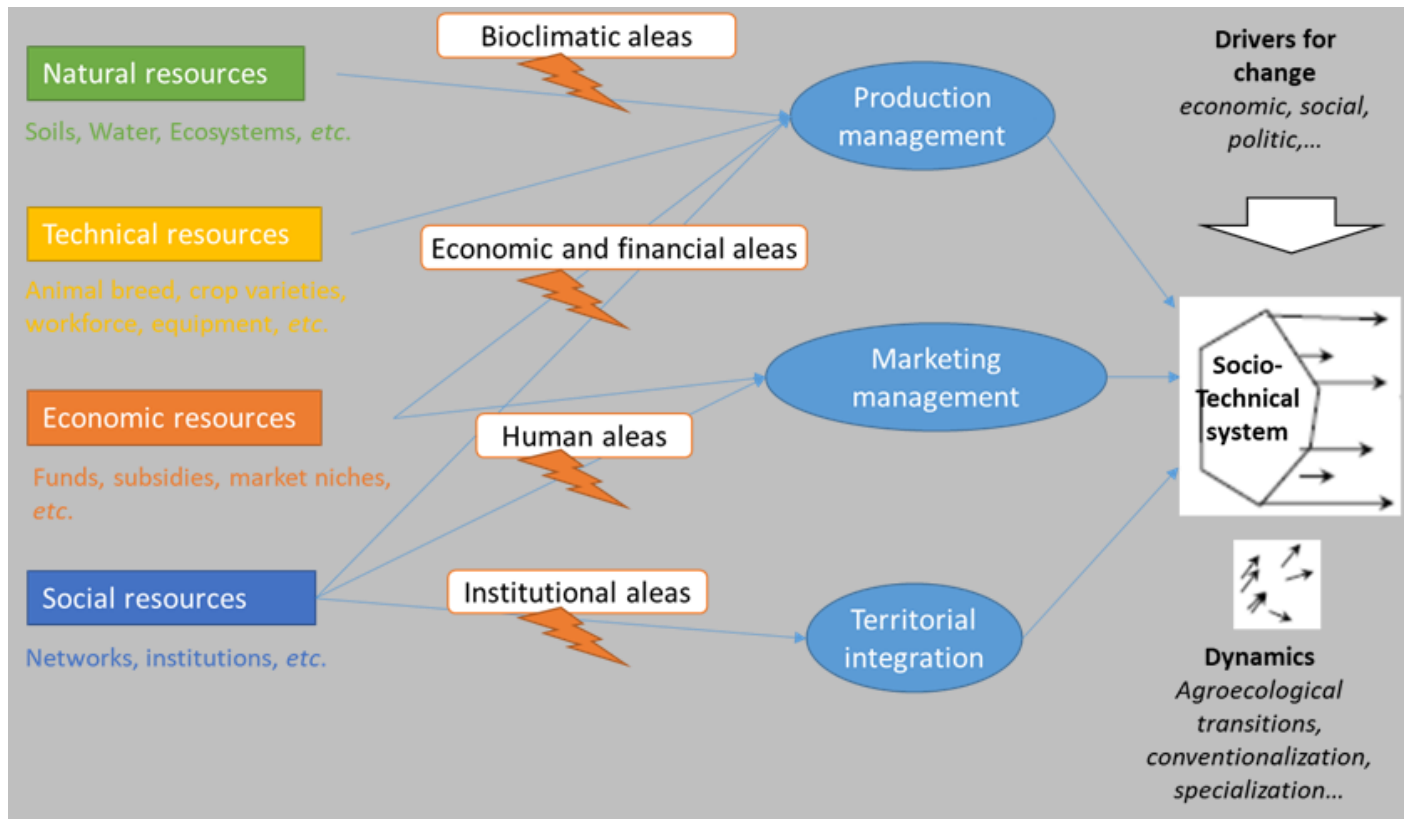
Thénard V. et al, 2019

Approach & Aims

- Approach : inspired by literature, but attempts to translate such analysis of sociotechnical systems' transitions into operational elements allowing a systemic analysis of resources for the development of agroecology.
- Aims: Producing a framework for the analysis of case studies of agroecological transitions in crop-livestock systems, based on the identification of the territorial resources and their roles in the transition.

What are Territorial resources?

- Territorial resources are involved in strategies to pilot the agricultural sociotechnical systems



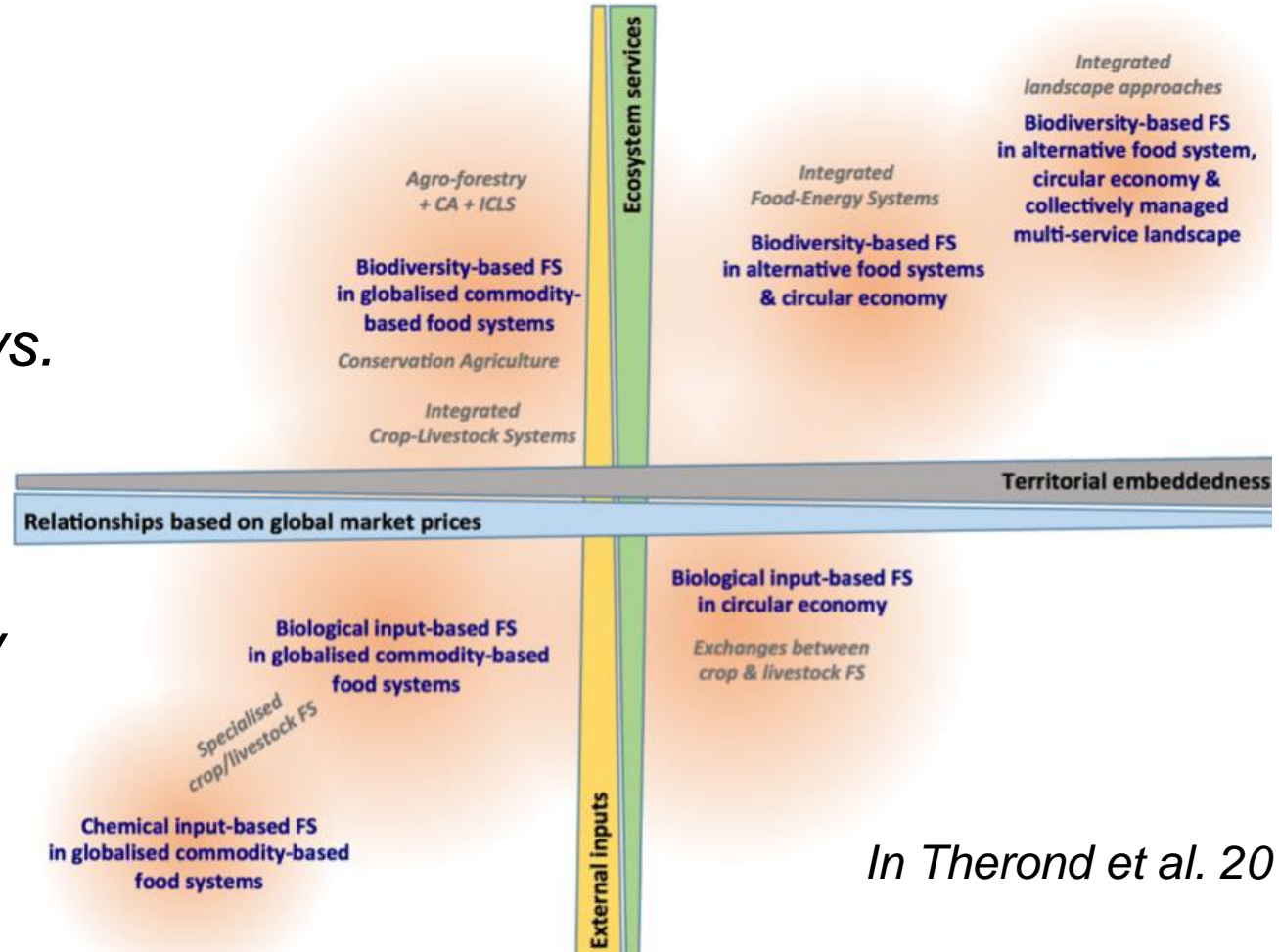
- Other types of resources, beyond natural, technical or cognitive ones, are also necessary.

For which Agricultural models?

- Agricultural models define changes and utilisation dynamics for territorial resources

X: Market vs. Territory

Y: Input vs. biodiversity

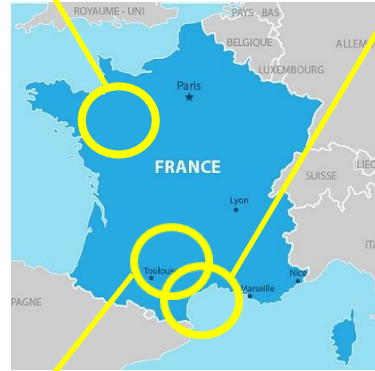


In Therond et al. 2017

Linking territorial resources and Agricultural model

- ◎ Four criteria to explain mobilization of biodiversity in production process
 - diversity of types of land used in production
 - diversity of animal species that are raised;
 - type of animal breed and mode of selection;
 - contribution of production systems to the management of natural areas or specific ecosystems.
- ◎ Four criteria to define territorial embeddedness
 - diversification of activities;
 - product transformation and local commercialization;
 - local purchase of inputs & collective dynamics at local level;
 - governance and shared values.

Case studies



Modelling territorial resources

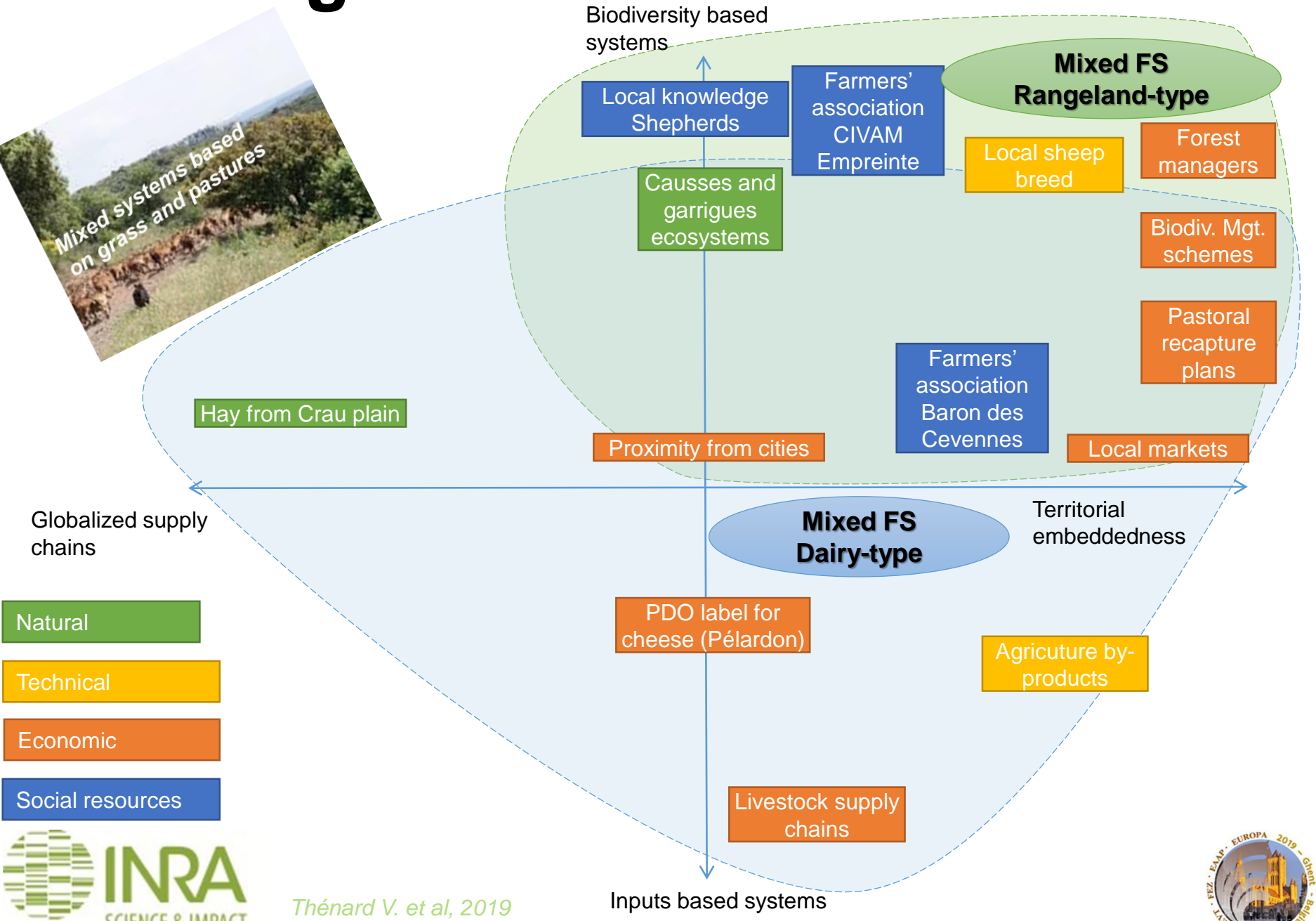
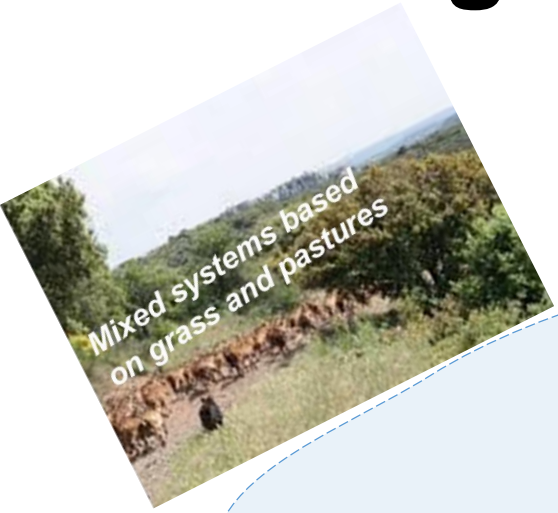
For each Case-Study

- Defining for resources:

- The position on the biodiversity-based vs. inputs-based axis;
- The position on the territory embeddedness vs. globalized supply chains axis.

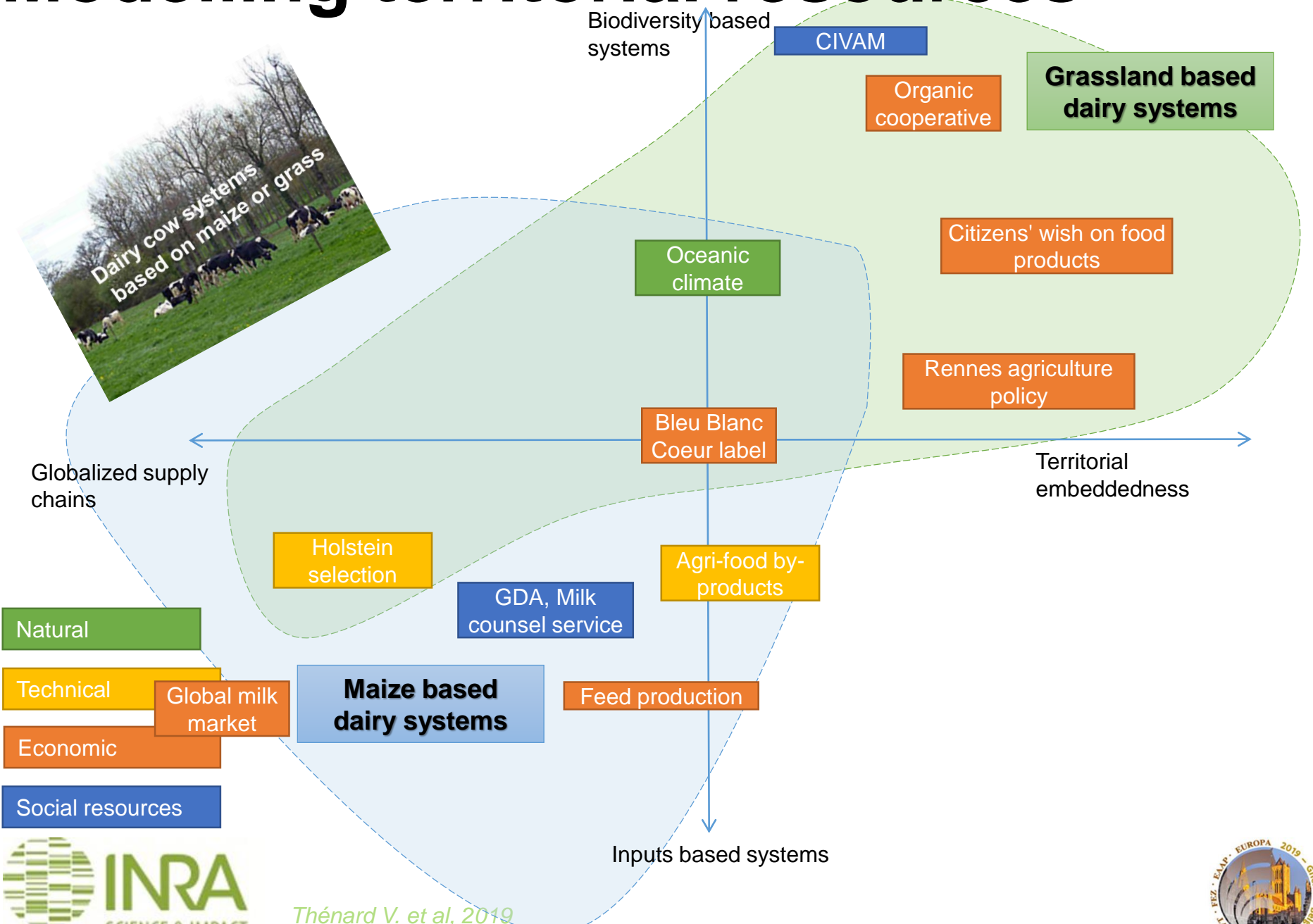
- Representing the specific combinations of resources mobilised by the different farming systems.

Modelling territorial resources



Thénard V. et al, 2019

Modelling territorial resources



- Natural
- Technical
- Economic
- Social resources

Which management of territorial resources toward transition?

- In the different case studies, we can explain how farmers could shift the management of territorial resources.
- On one hand farmers can implement transition with determinist innovations (milk counsel service, organic label, pastoral plan, ...).
- on the other hand farmers enforce changes toward an open-ended transition (use local resources, feed production, genetics choice,...).

Perspective and next step

To conclude:

- Analysis of territorial resources could explain agroecological transitions
- This framework proposes an analysis of territorial resources combined by farmers for transition.
- Also, with this framework, we suggest developments for supporting agroecological transitions of livestock farming systems in different territories. These transitions could be explain as deterministic or open-ended.

*For more data and details : [Agroecological transitions, between determinist and open-ended visions.](#)
Collective book project eds. D. Magda – C. Lamine.*



*Please think
going agroecologist !*

*Thank you for your
attention*