

Competitive interactions of biomass uses in the context of energy transition A territorial ecology approach

Living territories

Multiple resources supporting transition to “agroecology territories”

A young researchers' perspective

January 22-24th, 2017, Montpellier, France

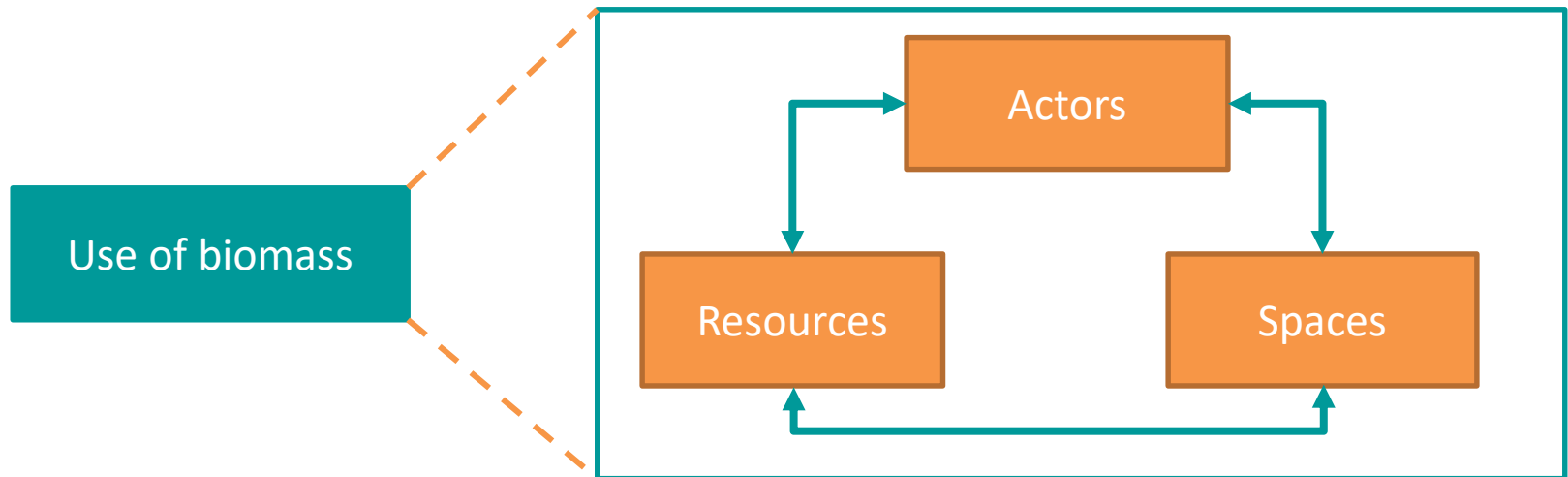
Juliette Cerceau – UMR PACTE (France)

Talking about biomass

AN INTRODUCTION

Biomass, a territorial resource

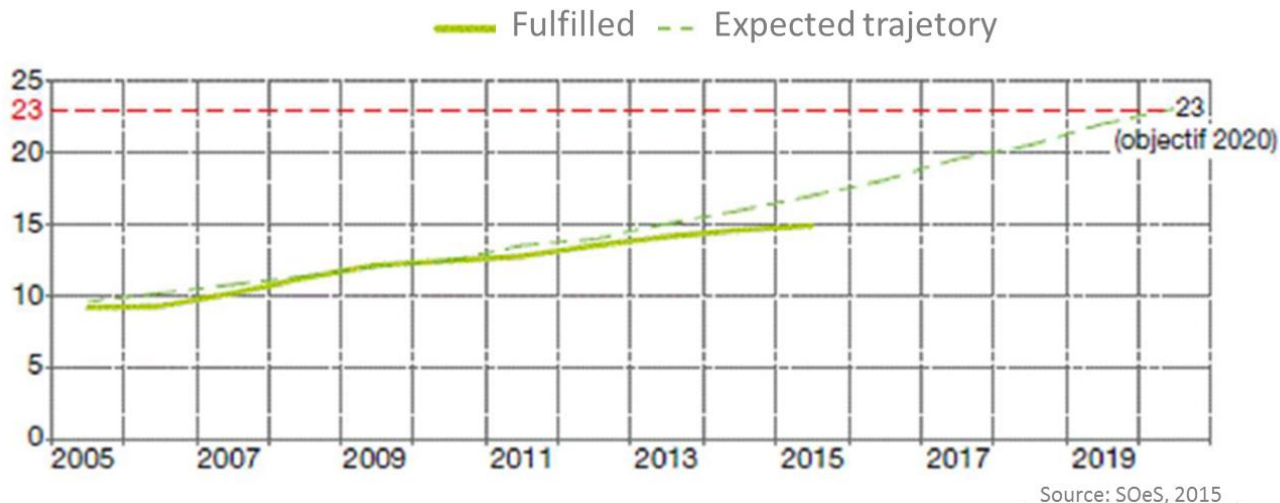
- The use of biomass results can be defined as a **common-pool resource system** resulting from interactions between (human and non human) actors, spaces and resources.



- The use of biomass must be considered through a **territorial focus**: the representation and the use of a geographical space emerging from the socioecological interactions occurring between actors and their environment.

Biomass, a « common good »

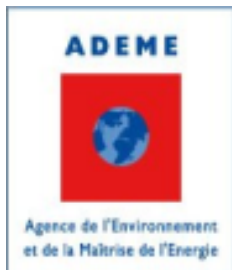
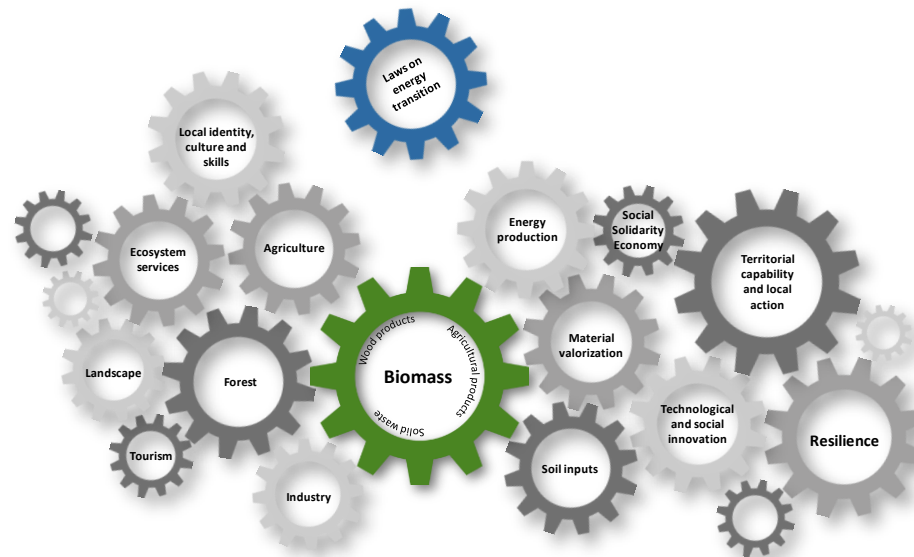
- **There is no unused biomass in socioecosystems:** each new use of biomass consists in a diversion of anterior functions that can have positive or negative feedbacks on the whole system.
- In the context of European and national policies placing a significant **emphasis on biomass to lead the energy transition**, it appears necessary to question the consequences of the biomass diversion for energy purpose.



CAP-BIOTER project (2016-2019)



- CAP-BIOTER project aims to analyze the evolution of territorial systems facing an increased mobilization of biomass generated by political choices in terms of energy transition, through a qualitative assessment of:
 - « **Resilience** » : the capacity of the territory to absorb endogenous and exogenous perturbations on biomass uses generated by the energy transition;
 - « **Capability** » : the capacity of territory to generate innovation and collective actions on the basis of local tangible and intangible resources.

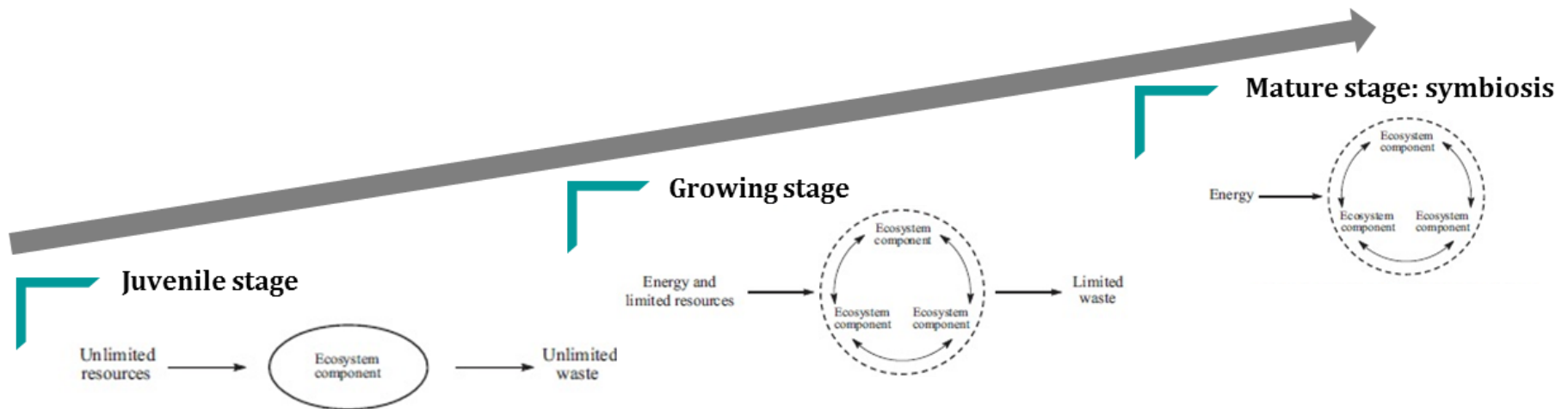


Understanding competitive interactions of biomass uses

A TERRITORIAL ECOLOGY APPROACH

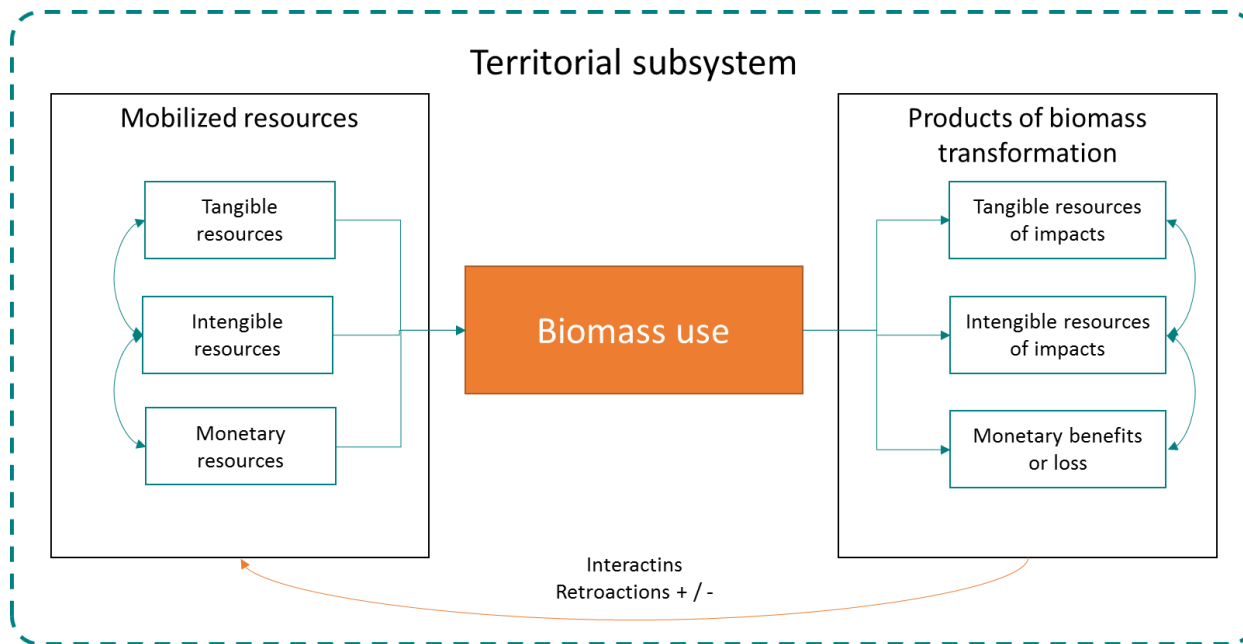
Territorial ecology, a specific point of view on biomass issues

- Territorial ecology questions the nature of **interactions occurring between human beings and their environment**, within a contextualized and localized area.
- Borrowing ecological principles and concepts, it proposes to **analyze the territorial dynamics and trajectories by focusing on the circulation of tangible and intangible flows** between human societies and the biosphere.



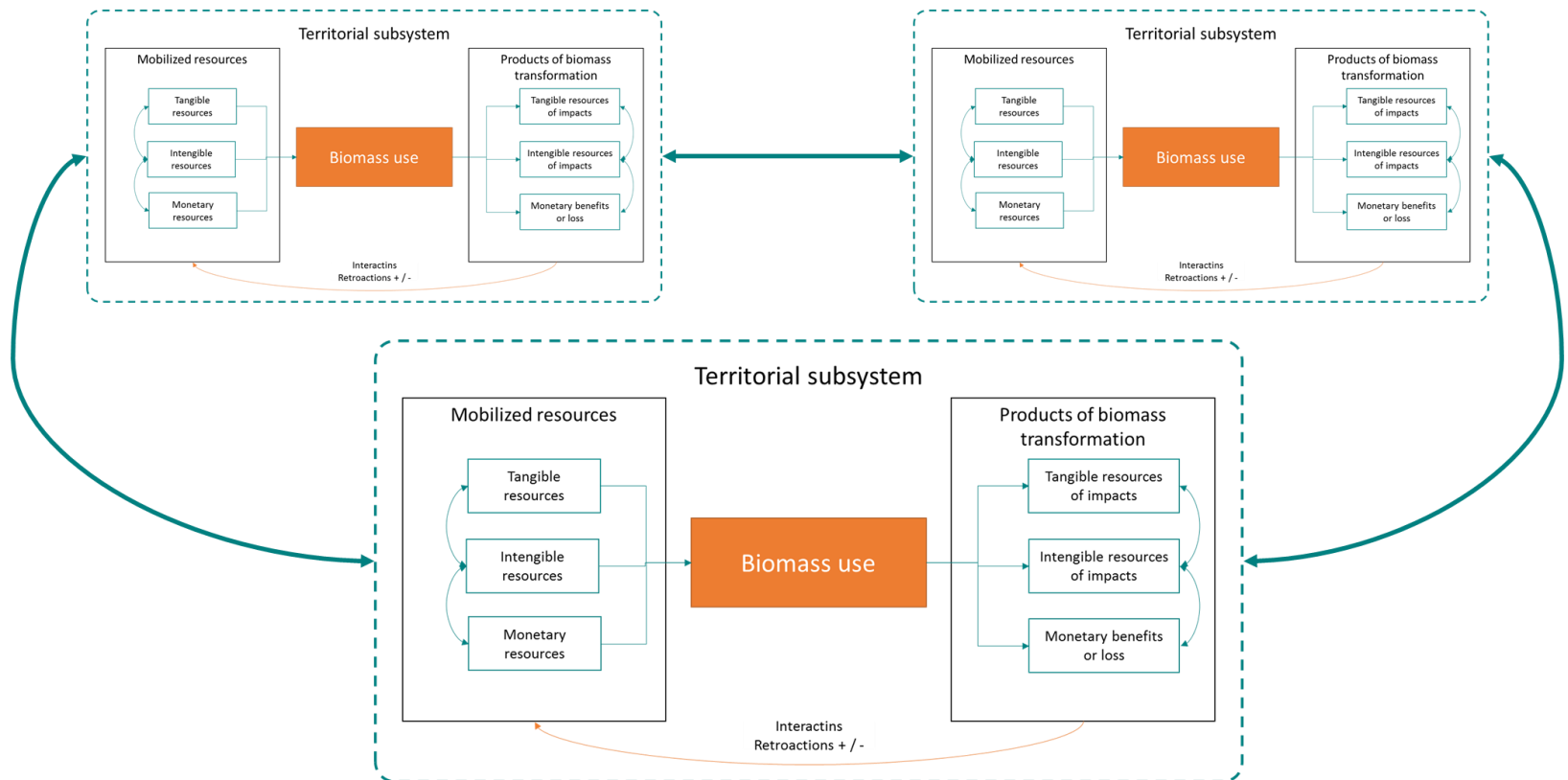
Territorial metabolism

- A method for **participatory design of territorial biomass use system** based on local territorial knowledge (semi-directive interviews, focus groups)
- A diagnosis of **interactions and retroactions processes** at work with biomass use



Territorial symbiosis

- An identification of **collaborative or competitive interactions between the different uses of biomass**



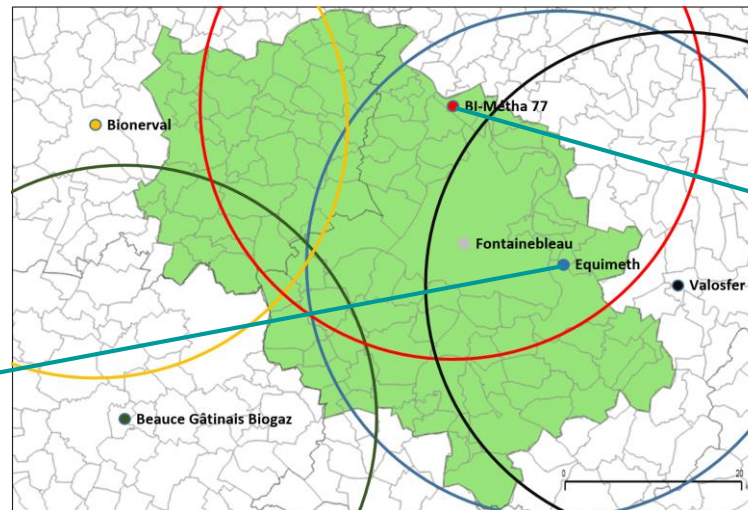
Adressing the impacts of methanation projects in Fontainebleau-
Gâtinais Biosphere Reserve

AN ILLUSTRATION

Fontainebleau-Gâtinais, a French biomass reserve

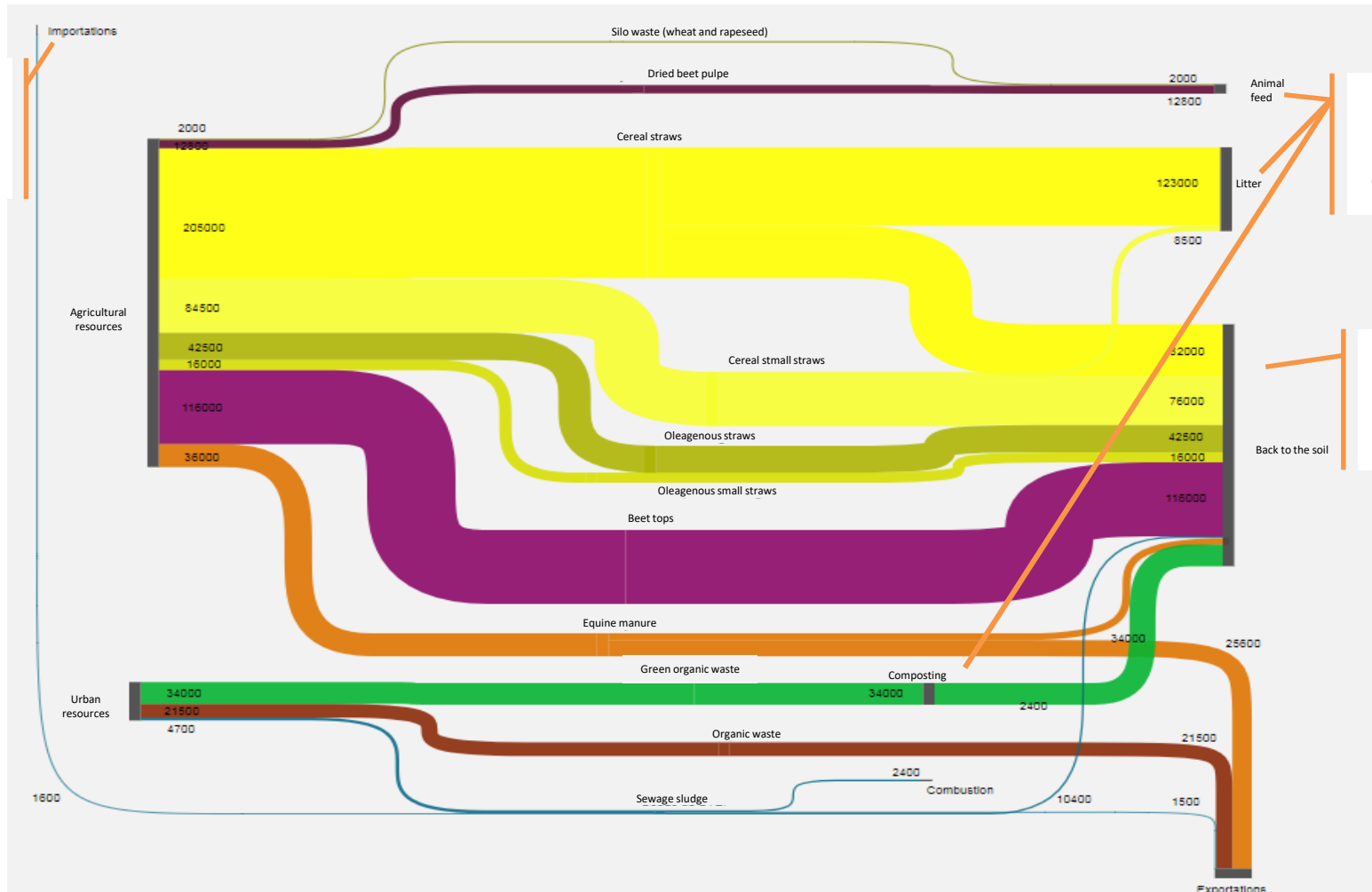


- A French biosphere reserve dedicated to sustainable development
- More than 87% of the land cover is composed of agricultural areas and forests
- An area at the interface of 5 territorial methanation projects fed by mutisource biomass (agricultural residues, agroindustrial wastes, urban waste water)
- The need to understand the impact of these projects on existing biomass uses (animal feeding, land recovery, etc.)



Quantitative metabolism: the example of methanisable biomass today

High local autonomy



Existing chain local chain values

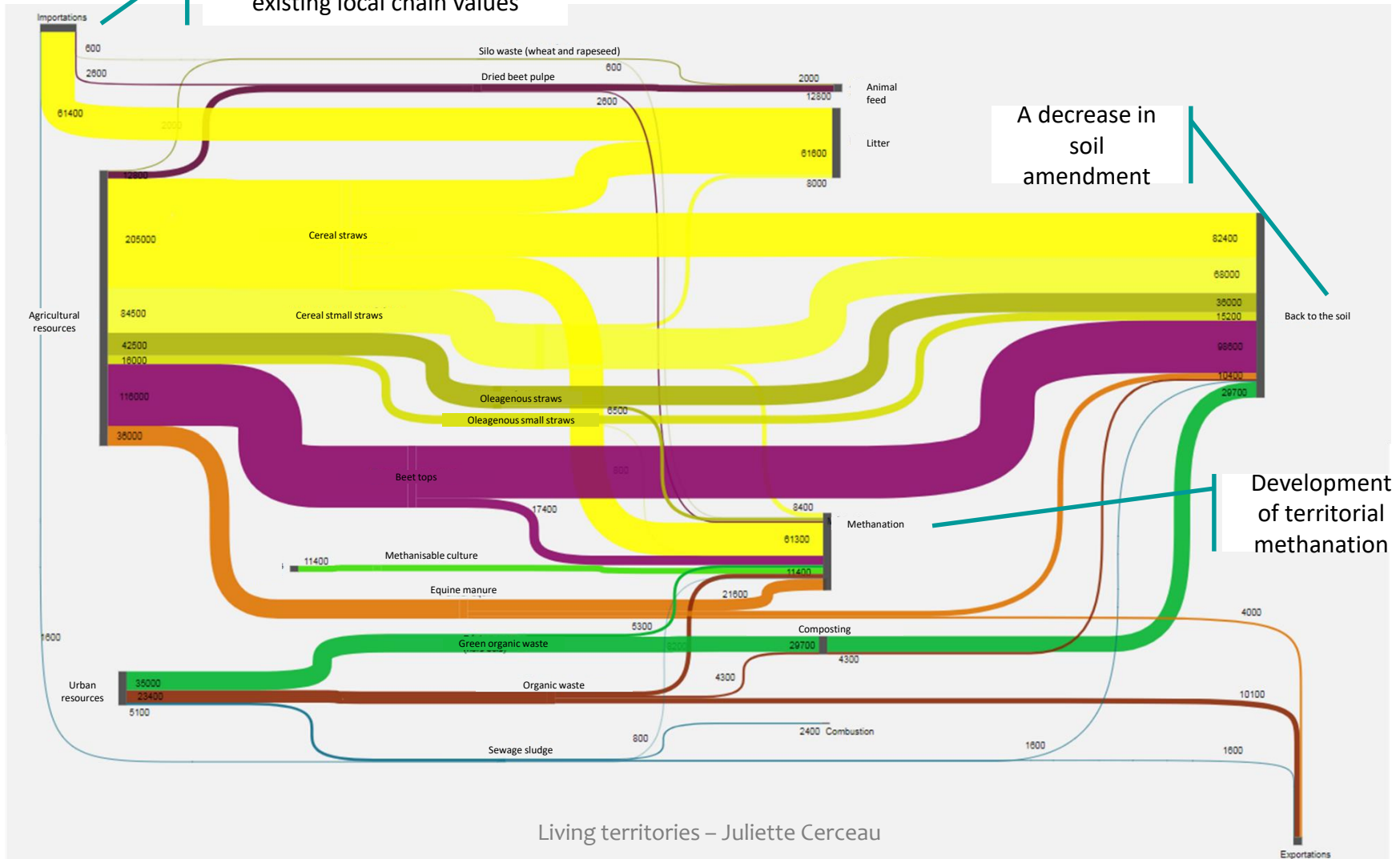
A massive « back to the ground » strategy

Quantitative metabolism: the exemple of methanisable biomass by 2030

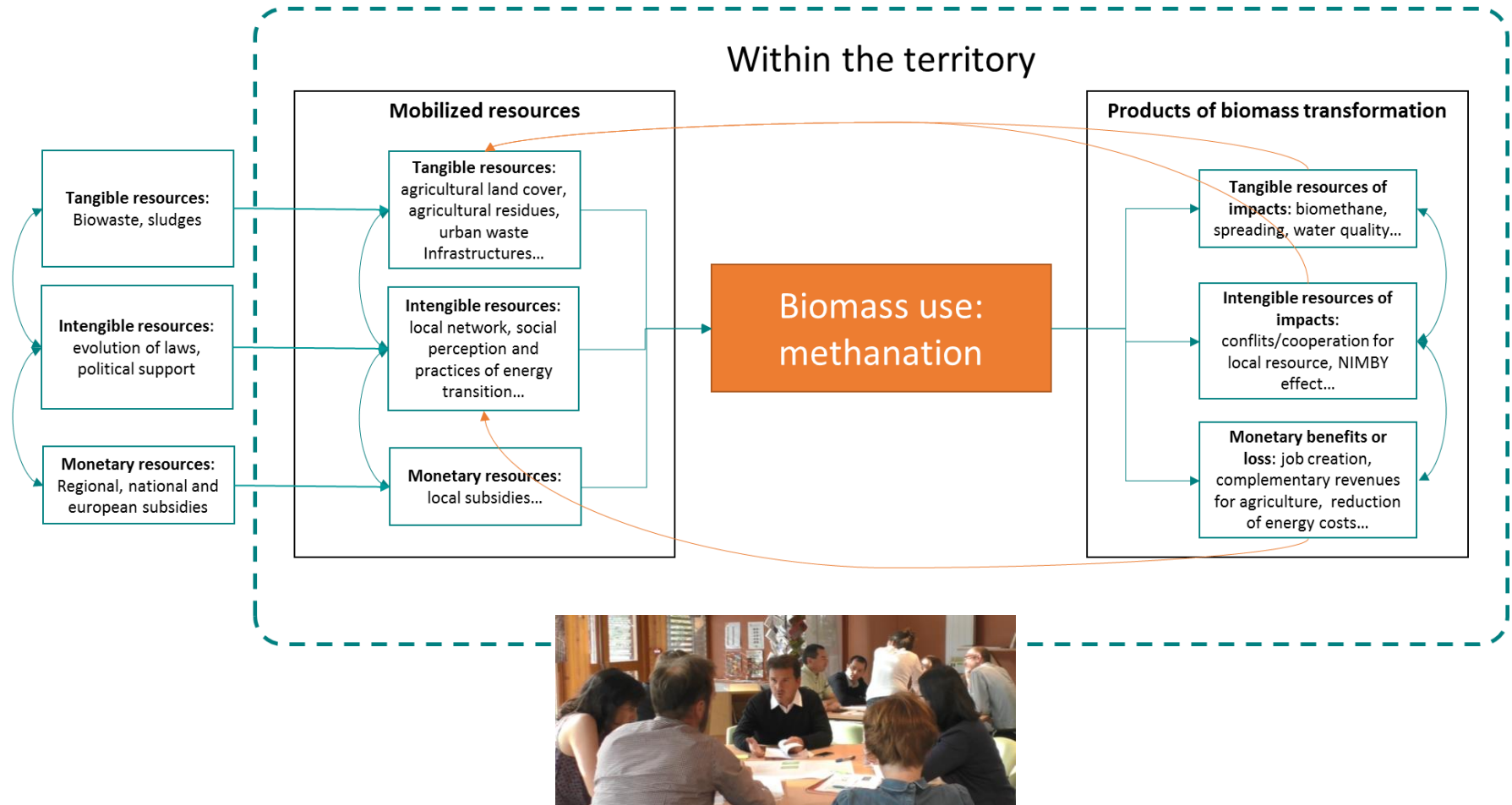
An increased dependency of existing local chain values

A decrease in soil amendment

Development of territorial methanation



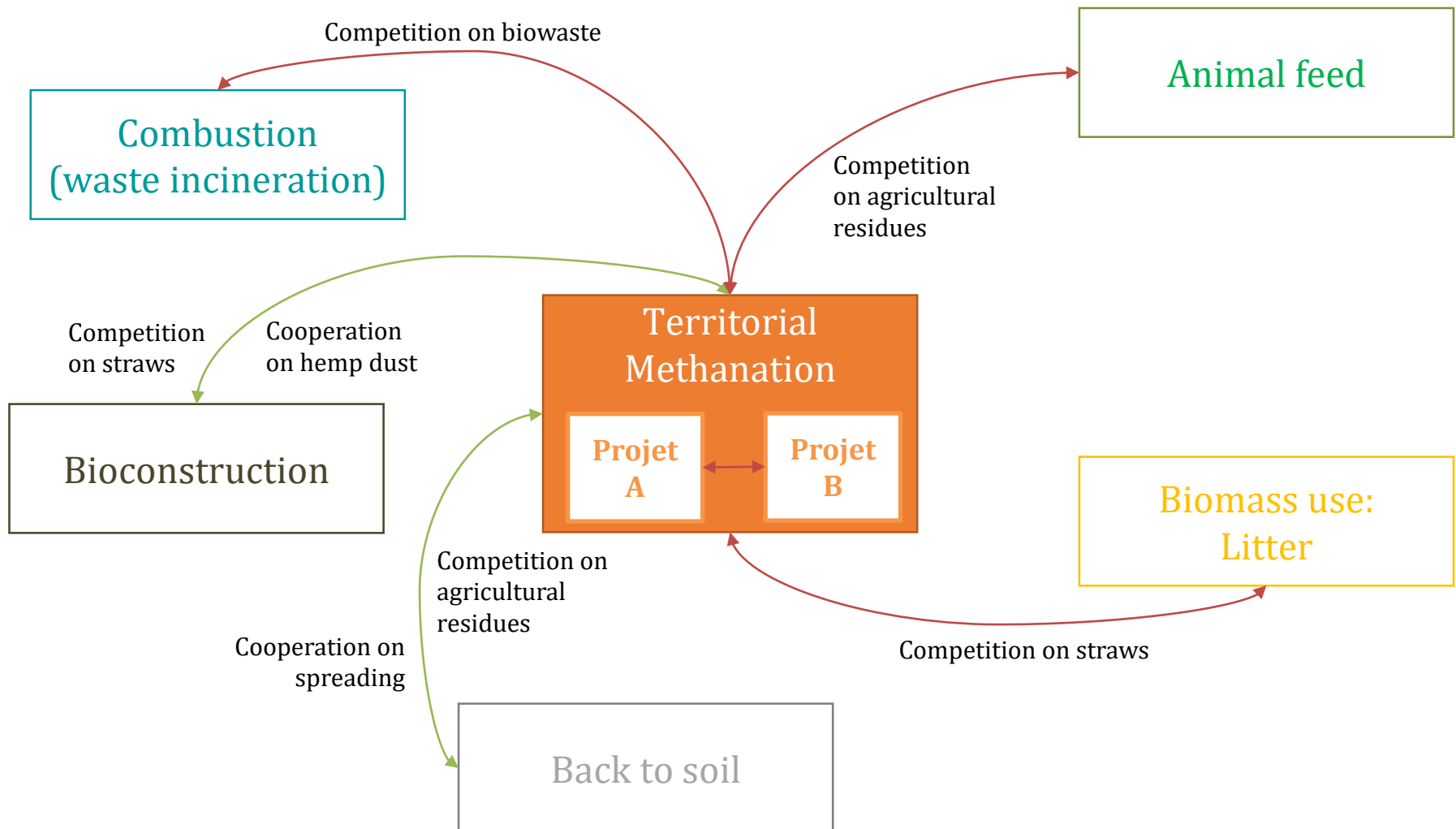
Simplified qualitative metabolism: the exemple of methanisable biomass



Questioning territorial capability

CONCLUSION

Territorial symbiosis: cooperation and competition upon local methanisable biomass



A growing territorial capability for local agriculture ?

- The energy transition context and the reconfiguration of local biomass circulation and sharing among local stakeholders encourage biomass producers to imagine new local strategies:
 - Toward a complementarity between the different biomass production and uses at the farm level
- “There may be a renewed complementarity between biomass, cereals and breeding... that is to say a polyculture to find. And we even see the movement on young grain farmers who say: “for me a farm, there are animals. There are fields, there are animals”.*
- Toward a reappropriation of local production and use of biomass

“Farmers wanted to recover the benefit of their work”

“They decided to no longer work as before and to take charge of their own destiny”

Thank you for your attention !



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