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## Interactions between agri-chains at local level: a metabolic approach

Myriam Grillot, Sophie S. Madelrieux, Julie Fleuet, Jean-François Ruault, Pauline Marty, Philippe Lescoat

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# BOAT



Research projet  
(2017-2020)



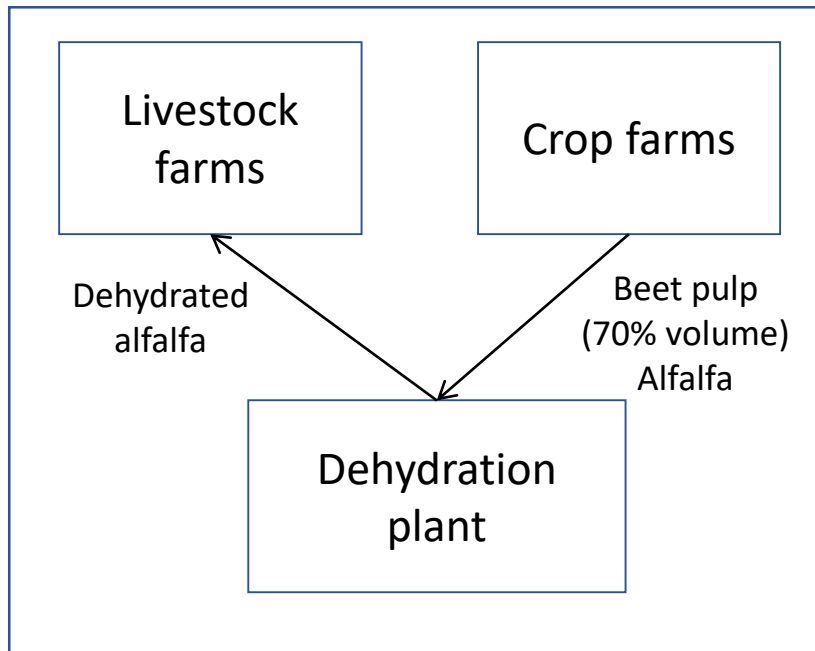
## Interactions between agri-chains at local level: a metabolic approach

Myriam Grillot, Sophie Madelrieux, Julie Fleuet,  
Jean-François Ruault, Pauline Marty, Philippe Lescoat

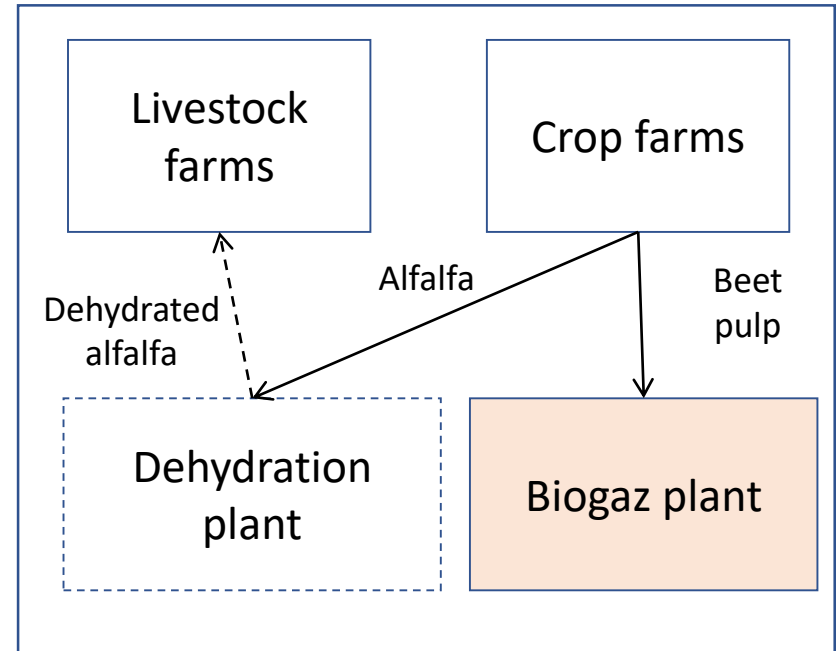
# ➤ Trade-off and synergies between agri-chains

*Northern France example: introduction of a biogaz plant*

Initial state



Introduction of a biogaz plant



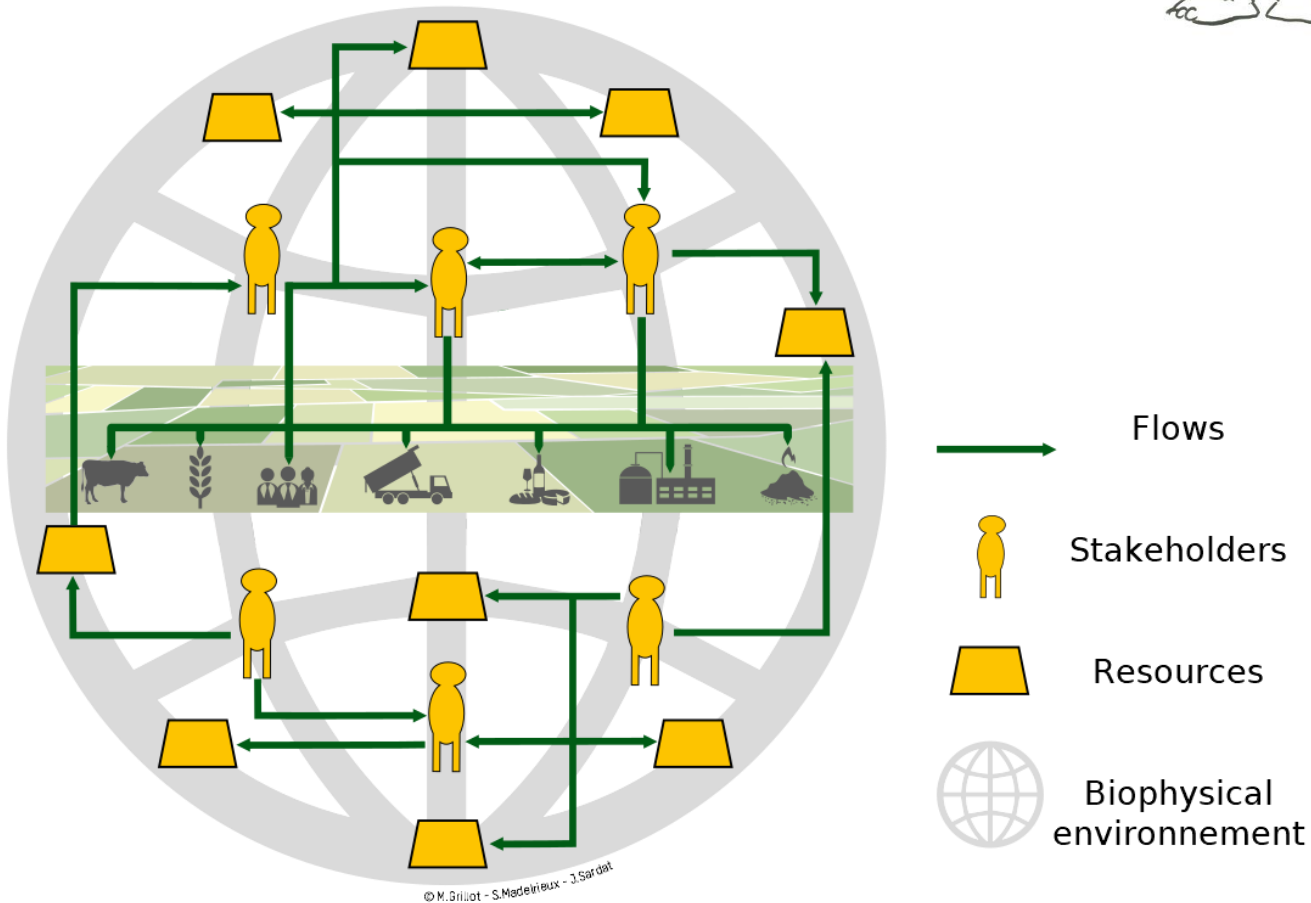
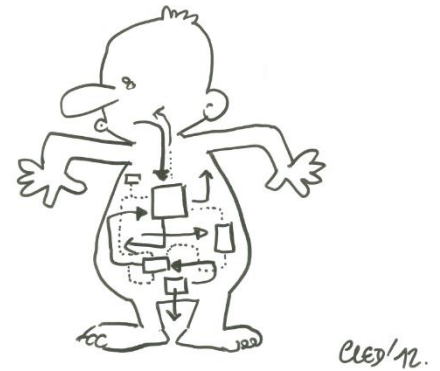
How can we identify trade-offs and synergies between agri-chains?

⇒ How are biomass of agricultural origin managed and used?

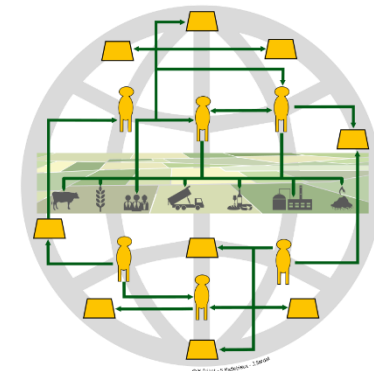


# ➤ Metabolic approach

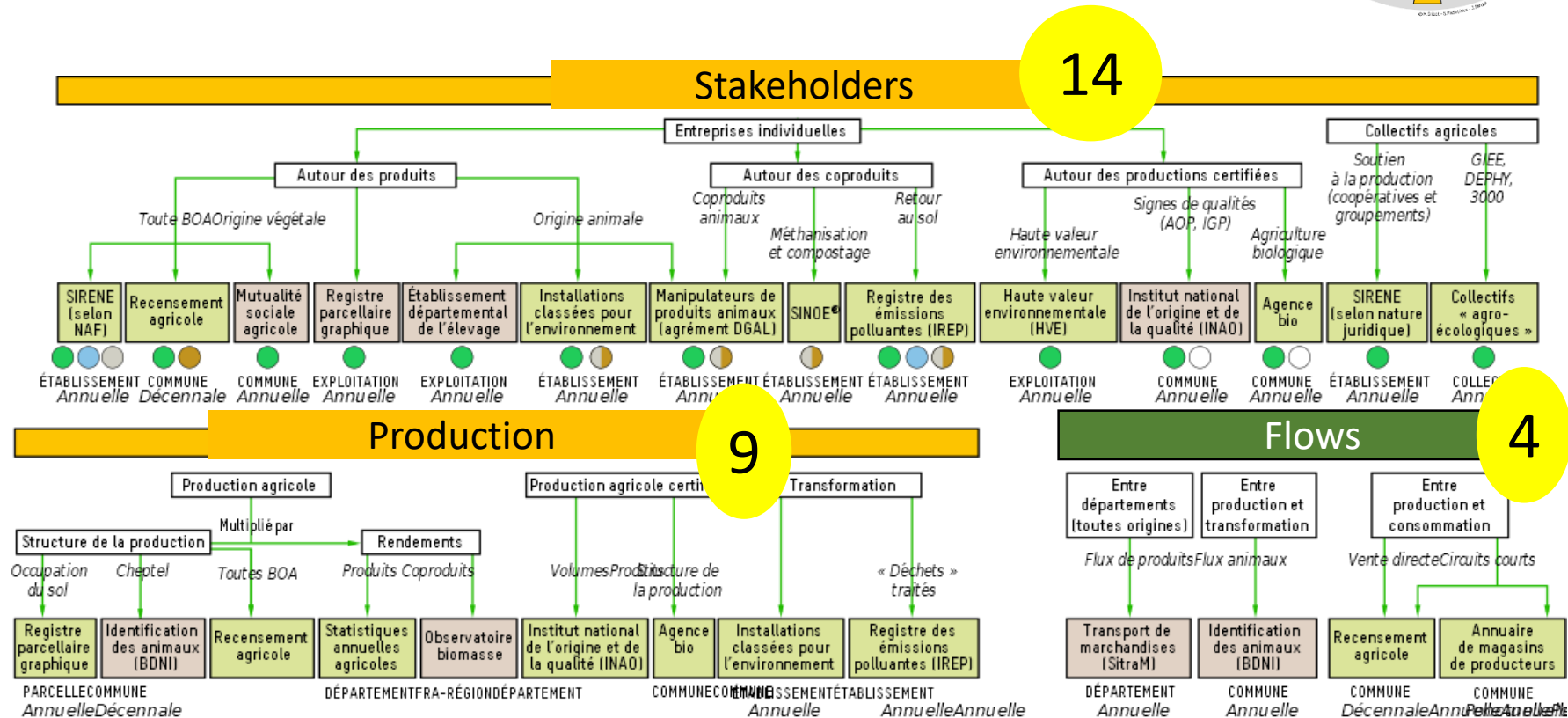
- Quantify resources/production and flows
- Identify stakeholders



# Step 1: use existing data bases



- Open-access
- Restricted access



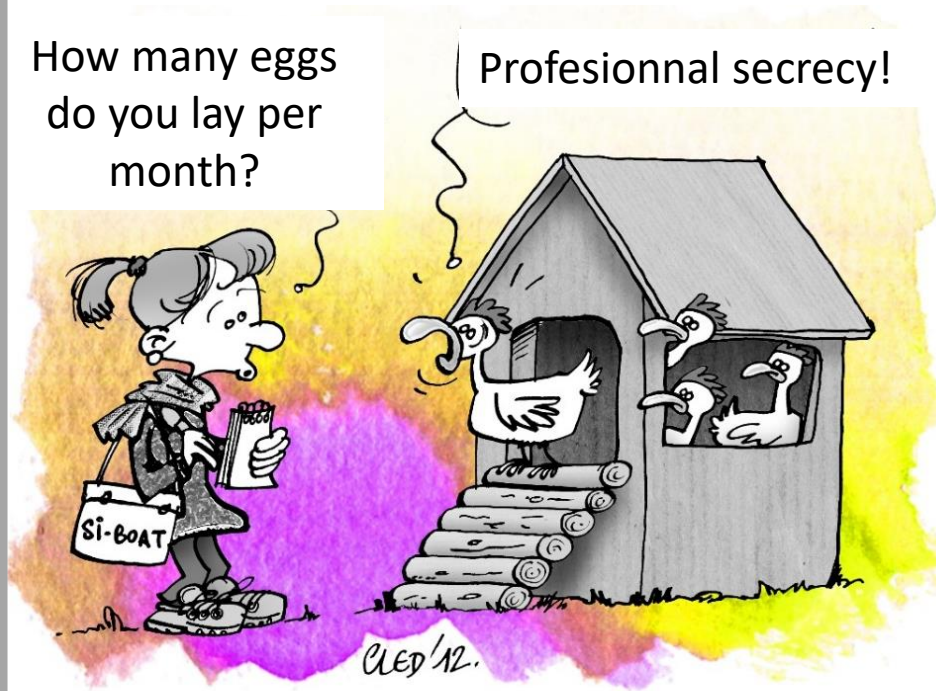
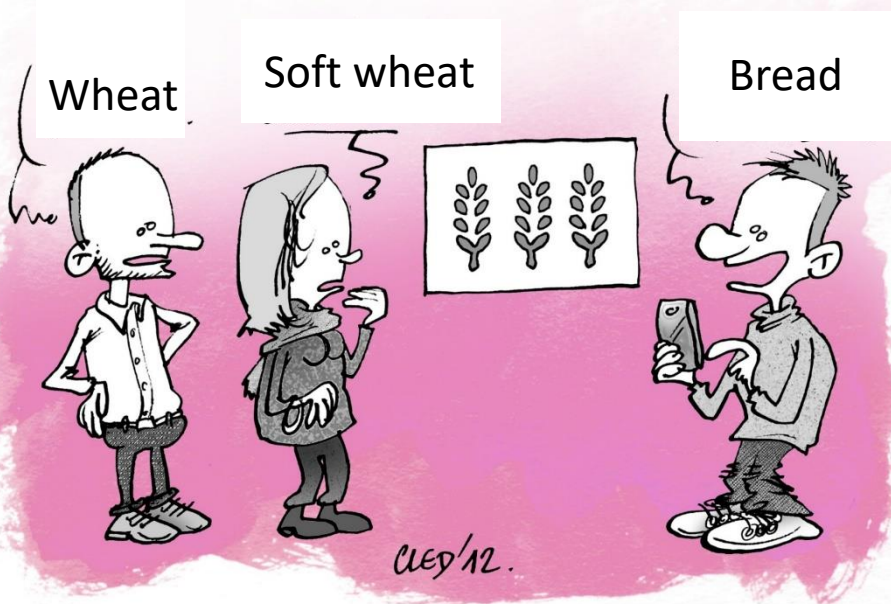
Grillot et al. 2021



## ➤ Step 1: use existing data bases facing...

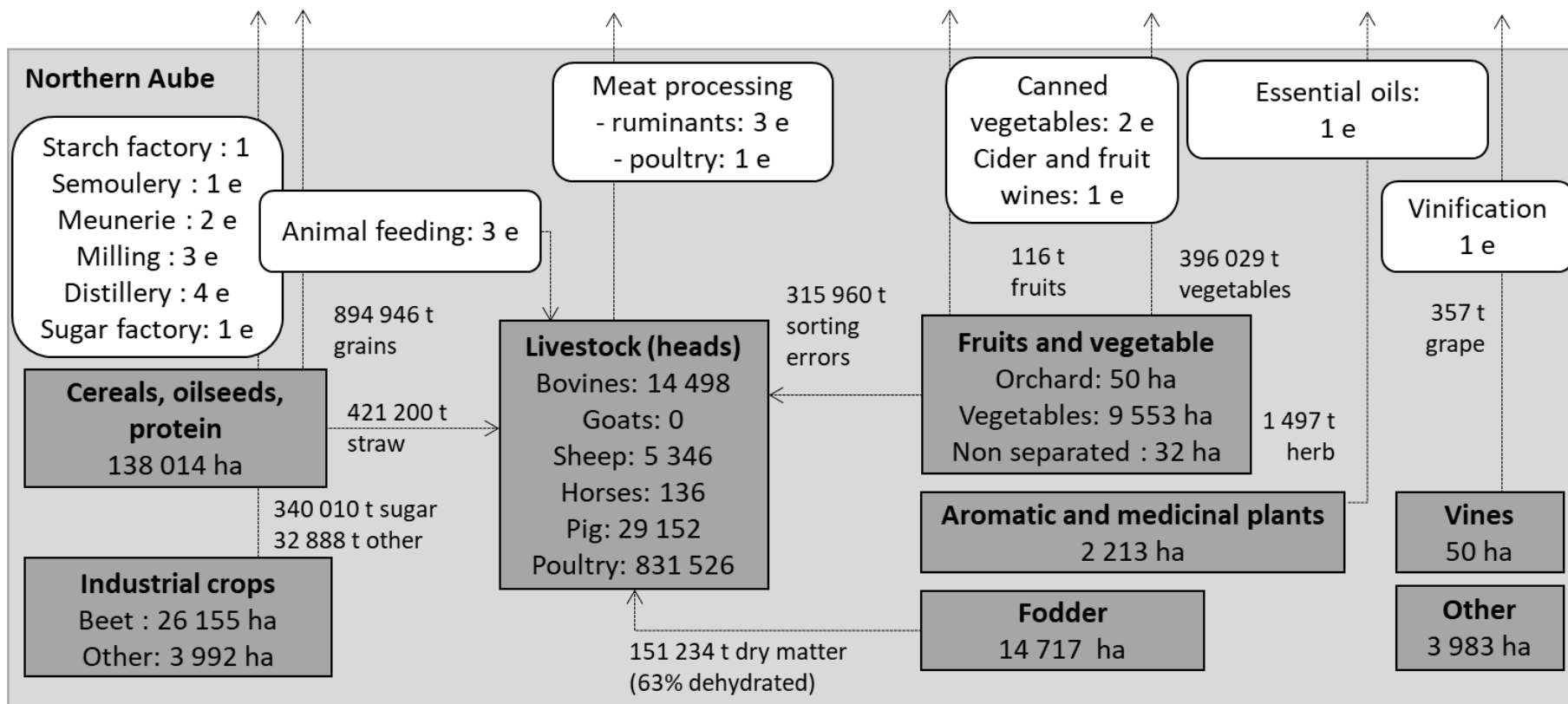
Various nomenclatures / units, etc.

Data availability, statistical and professional confidentiality



# ➤ Step 1: use existing data bases

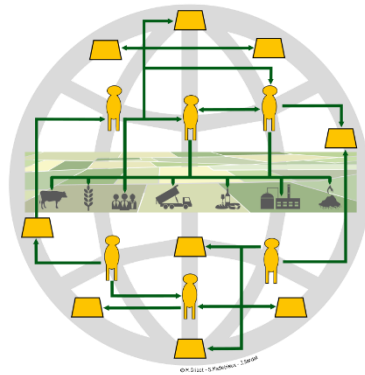
Make hypotheses through « a proto-metabolism »



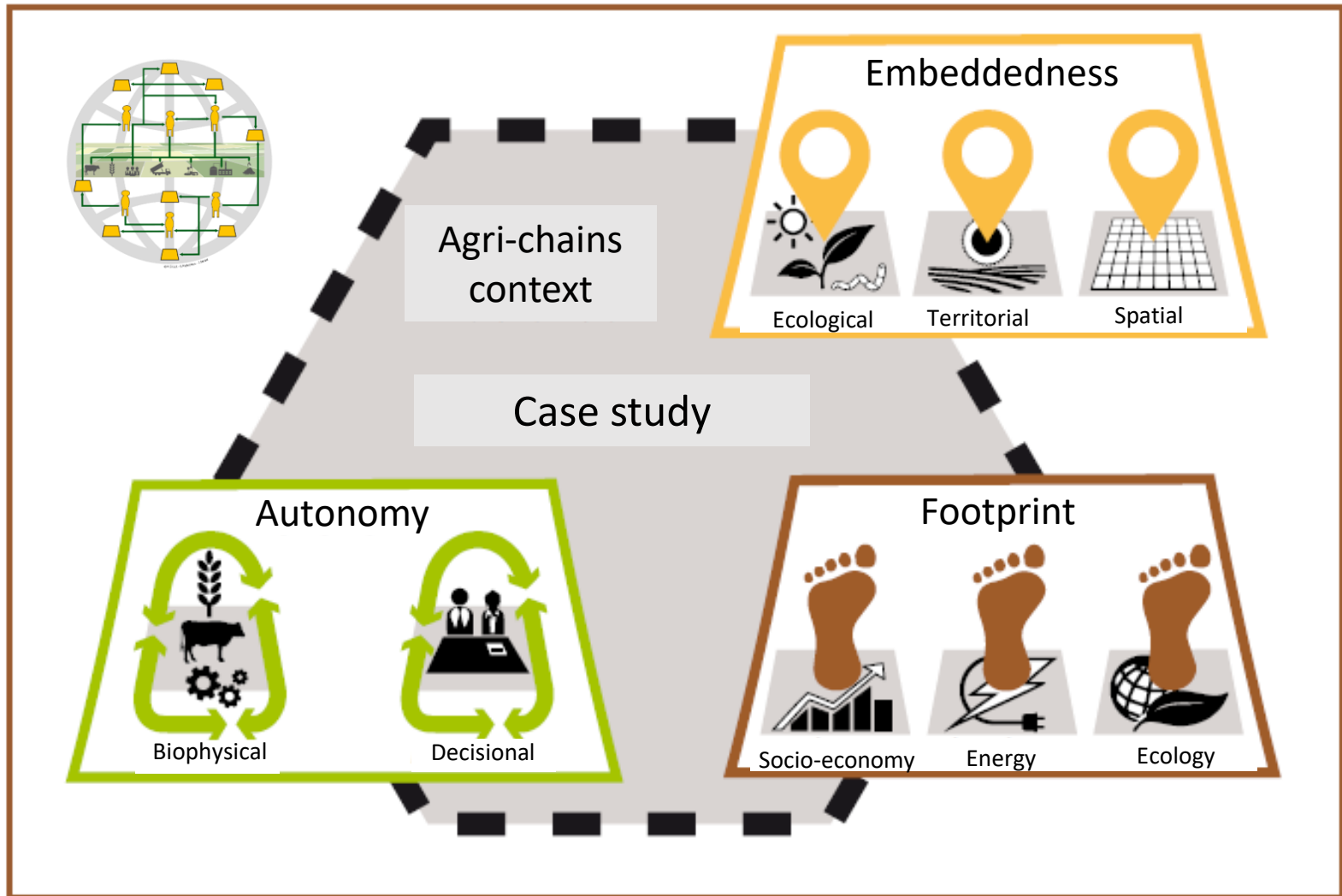


## ➤ Step 2: field interviews

Consolidate the knowledge on agri-chains metabolism  
Semi structured interviews with a large set of stakeholders  
To obtain a « consolidated » metabolism



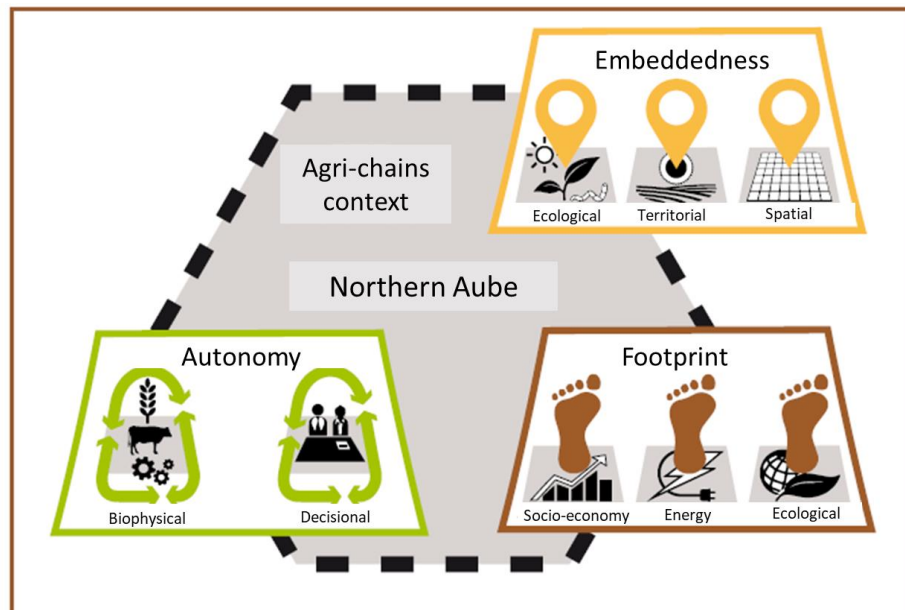
# ➤ Grid of analysis to evaluate agri-chain metabolism



# ➤ Ex. Northern Aube



UAA (2020)	176 512 ha
Farms (2010)	1 434 farms



## Mostly crop production

5 over 10 signs of quality and origin dedicated to livestock productions

## Few organic farms

53% of fodder areas dedicated to dehydration (mainly alfalfa)

## High imports of fertilizers (organic and synthetic)

High exports of barley and beet semi-processed

Livestock products processed outside of the territory

De-centralized headquarters

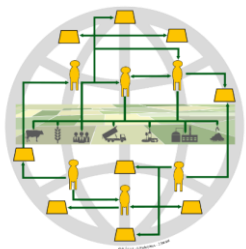
High levels of nitrate in the environment  
**+500% agricultural enterprises producing electricity since 2018**

Increase in jobs in agricultural supply sector



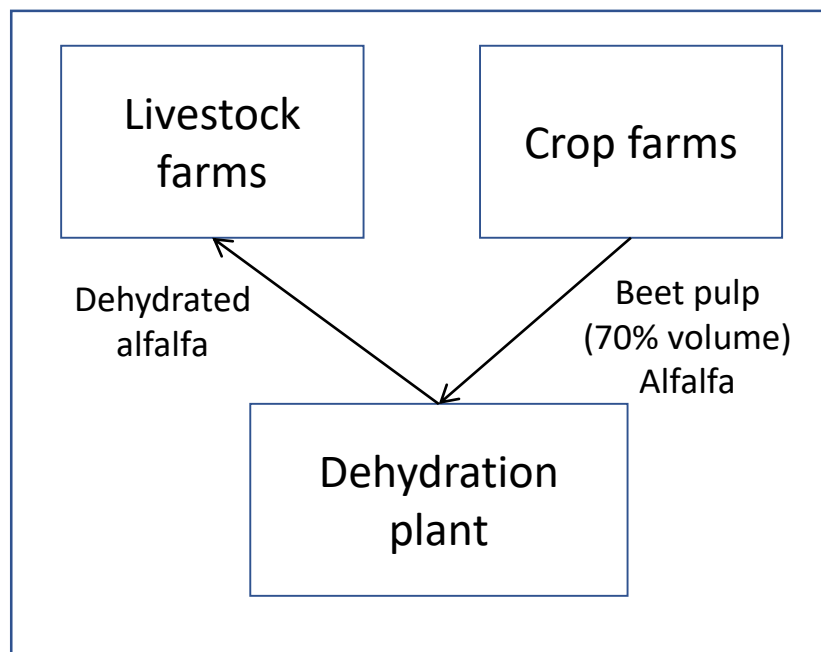
**INRAE**

# ➤ And... trade-off and synergies between agri-chains

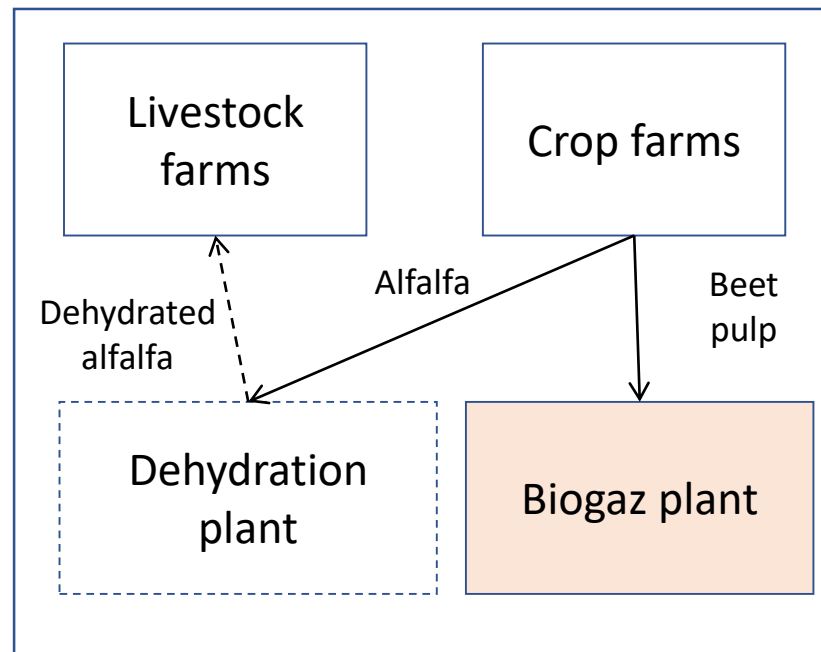


*Northern France example: introduction of a biogaz plant*

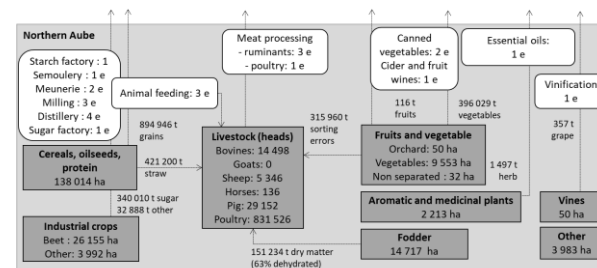
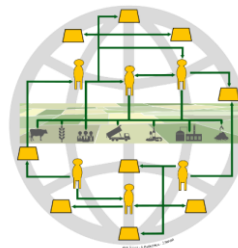
Initial state



Introduction of a biogaz plant



## ➤ Conclusion



- Iterative process

- Proto-metabolism to enrich the field work
- Field work to consolidate the agri-chain metabolism

- Stimulate discussions with stakeholders

- Organize workshop to foster exchanges between stakeholders on strategic prospective

Marty et al. 2021

Thank you for your attention



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Interactions between agricultural value chains at local level  
14/04/2022 IFSA conference – GRILLOT et al.

myriam.grillot@inrae.fr

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