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

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BOAT



Research projet
(2017-2020)



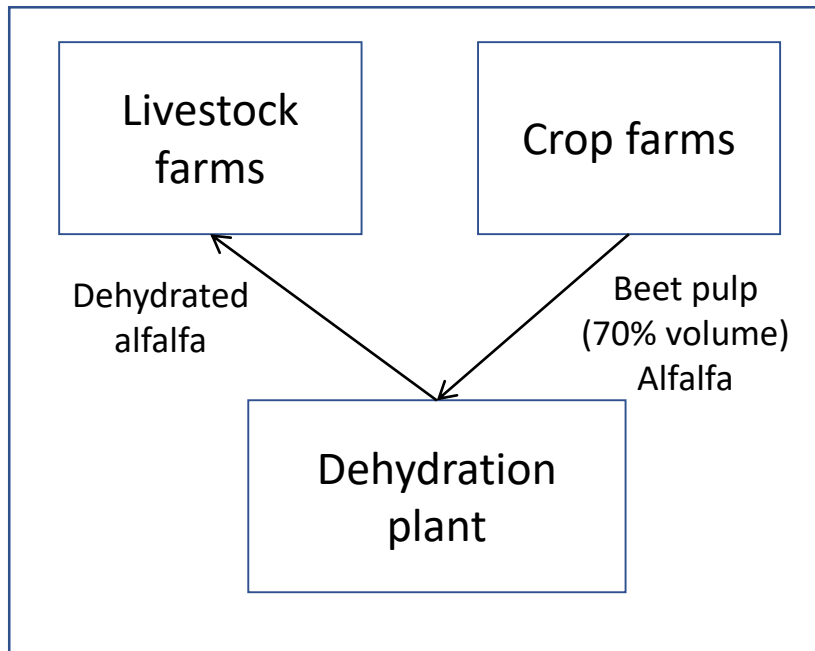
Interactions between agri-chains at local level: a metabolic approach

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

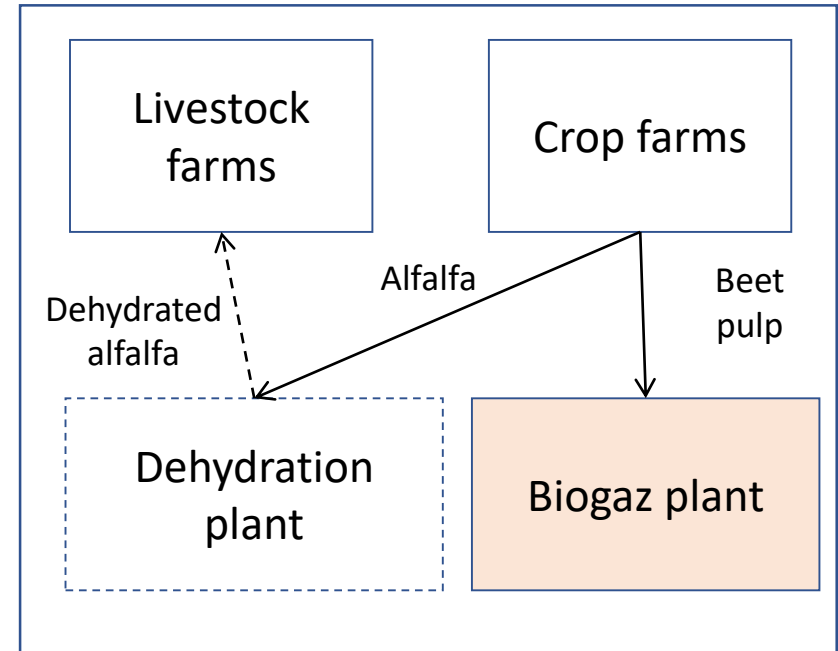
➤ Trade-off and synergies between agri-chains

Northern France example: introduction of a biogaz plant

Initial state



Introduction of a biogaz plant



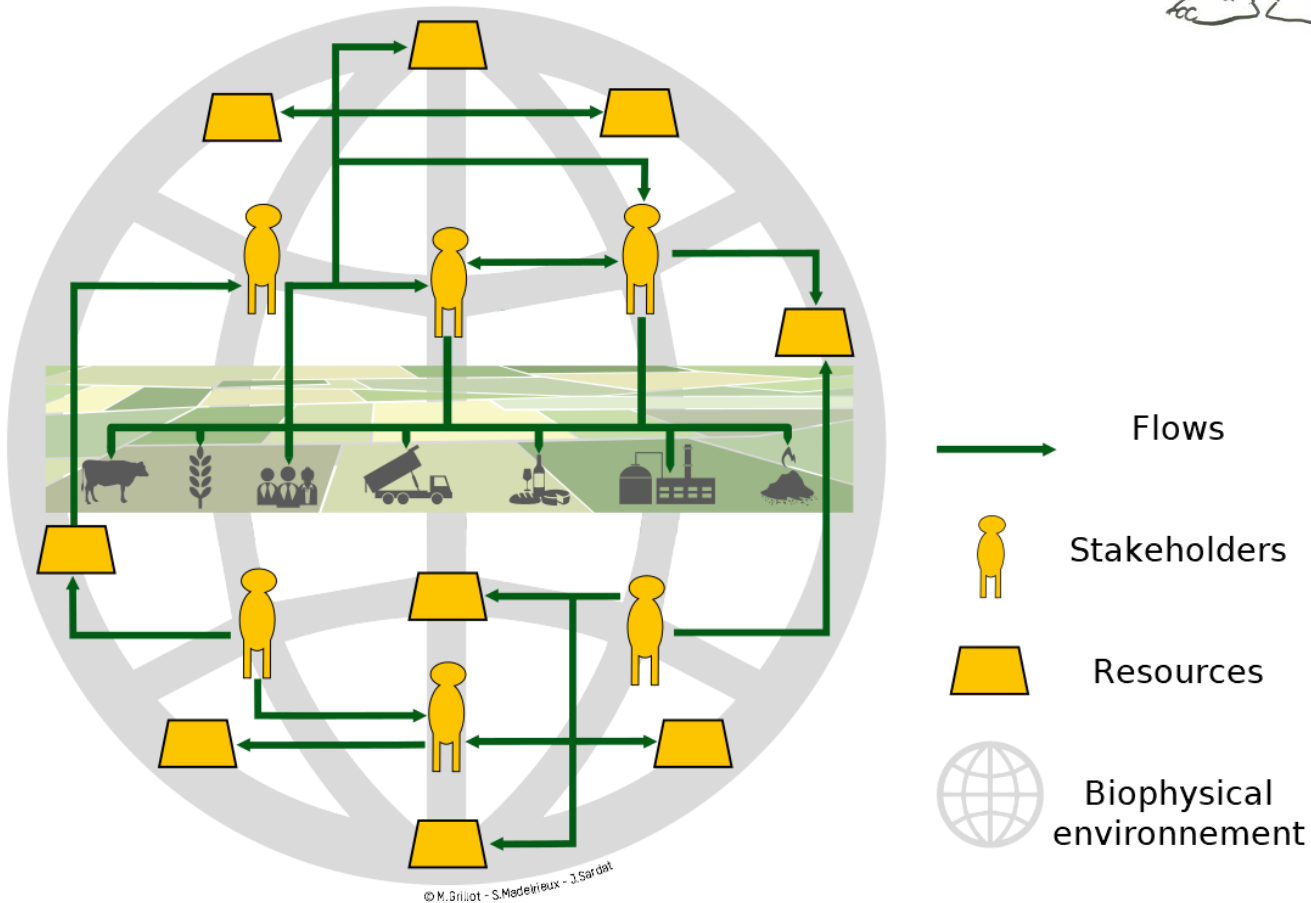
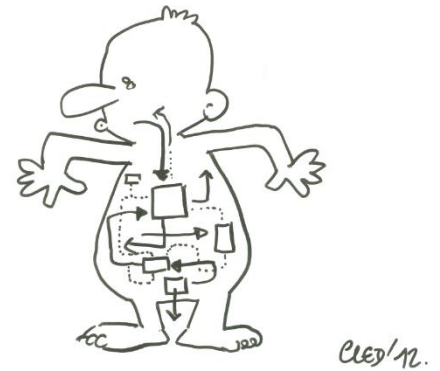
How can we identify trade-offs and synergies between agri-chains?

⇒ How are biomass of agricultural origin managed and used?



➤ Metabolic approach

- Quantify resources/production and flows
- Identify stakeholders



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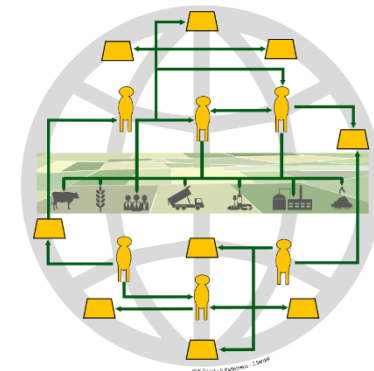


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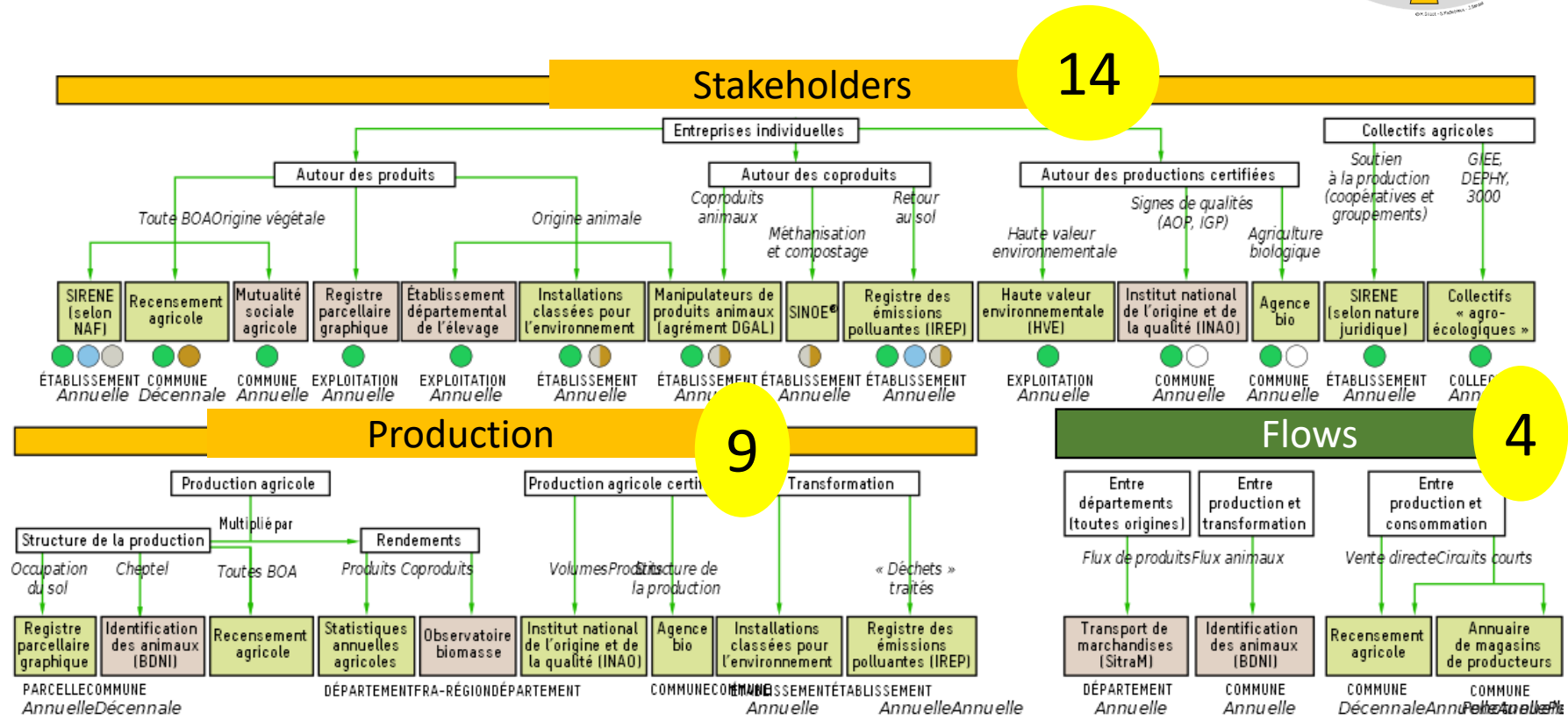
Interactions between agricultural value chains at local level
14/04/2022 IFSA conference – GRILLOT et al.

More on socio metabolic research: Haberl et al. 2019

Step 1: use existing data bases



- Open-access
- Restricted access



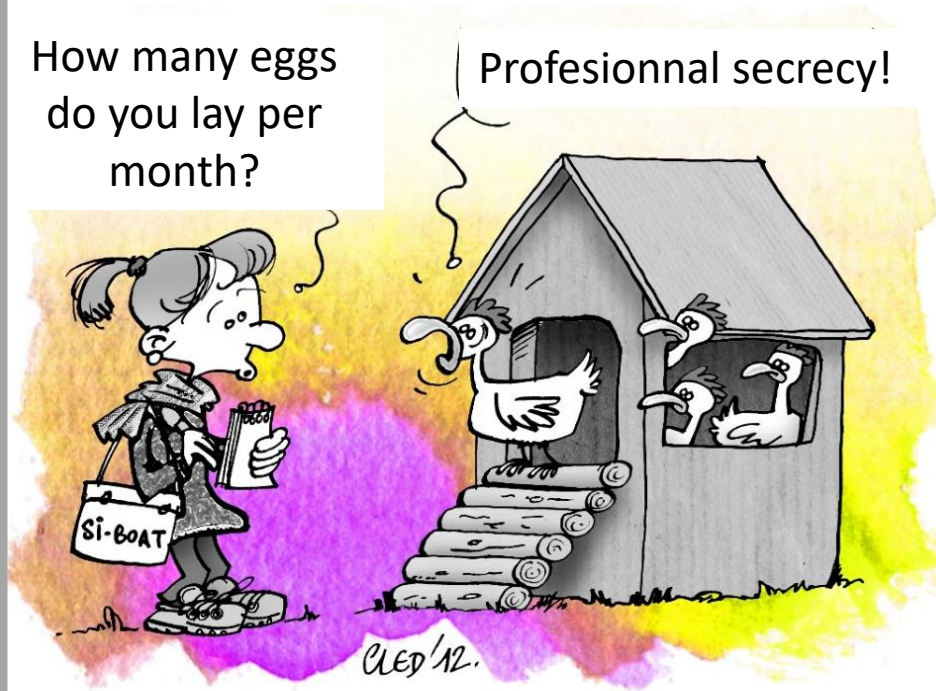
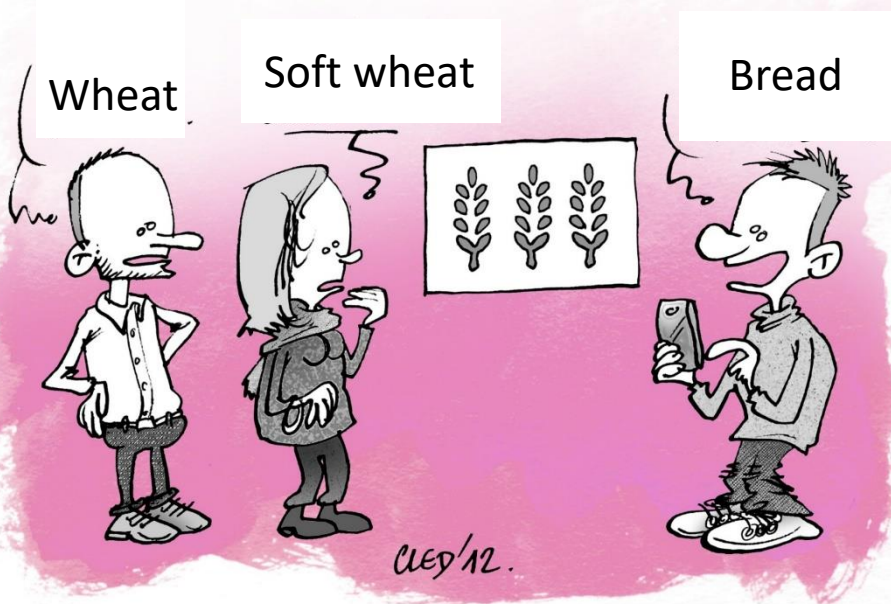
Grillot et al. 2021



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

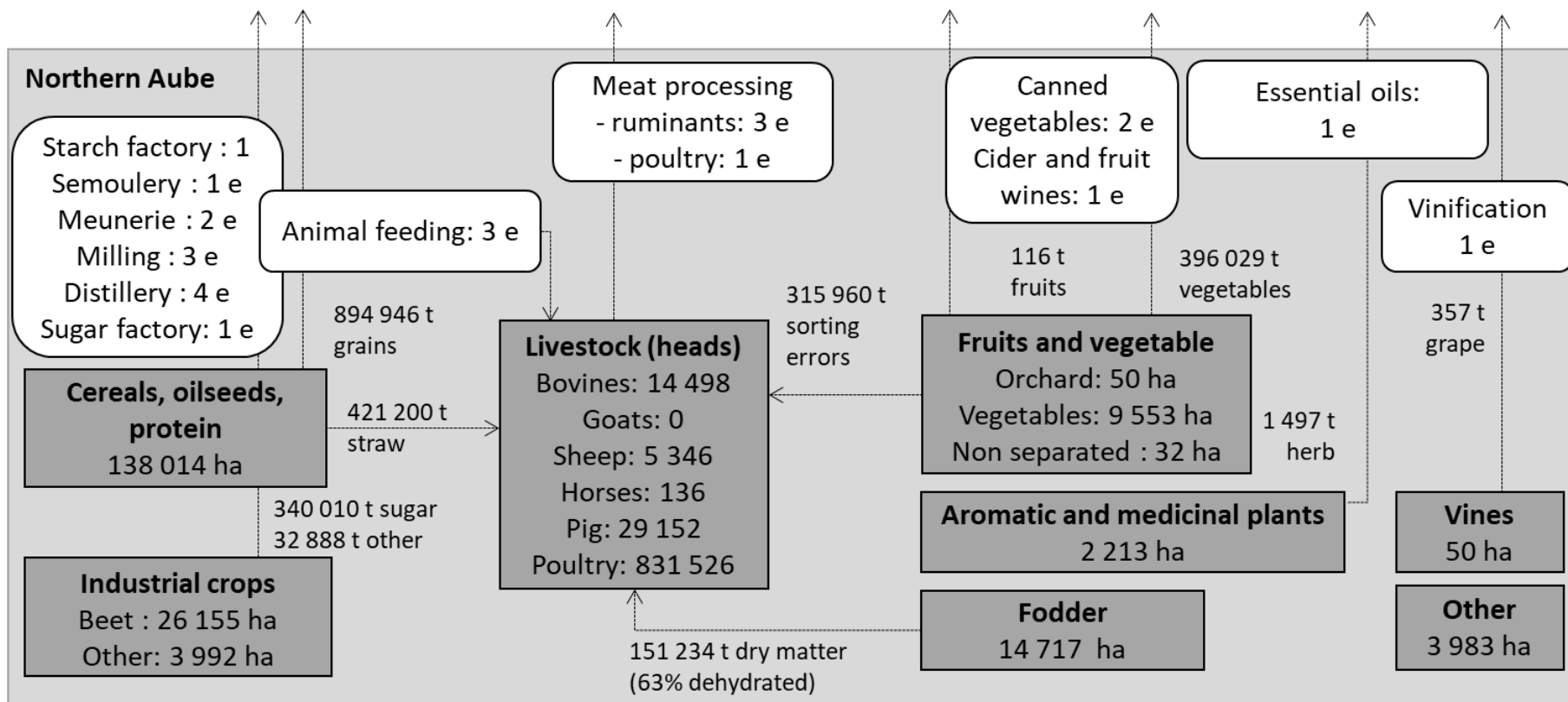
Various nomenclatures / units, etc.

Data availability, statistical and professional confidentiality



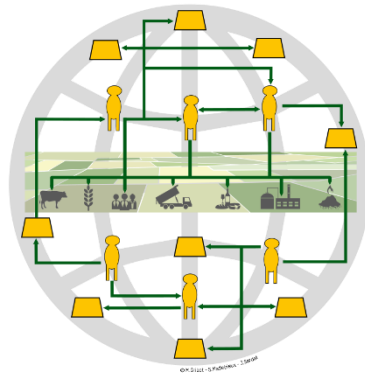
➤ Step 1: use existing data bases

Make hypotheses through « a proto-metabolism »

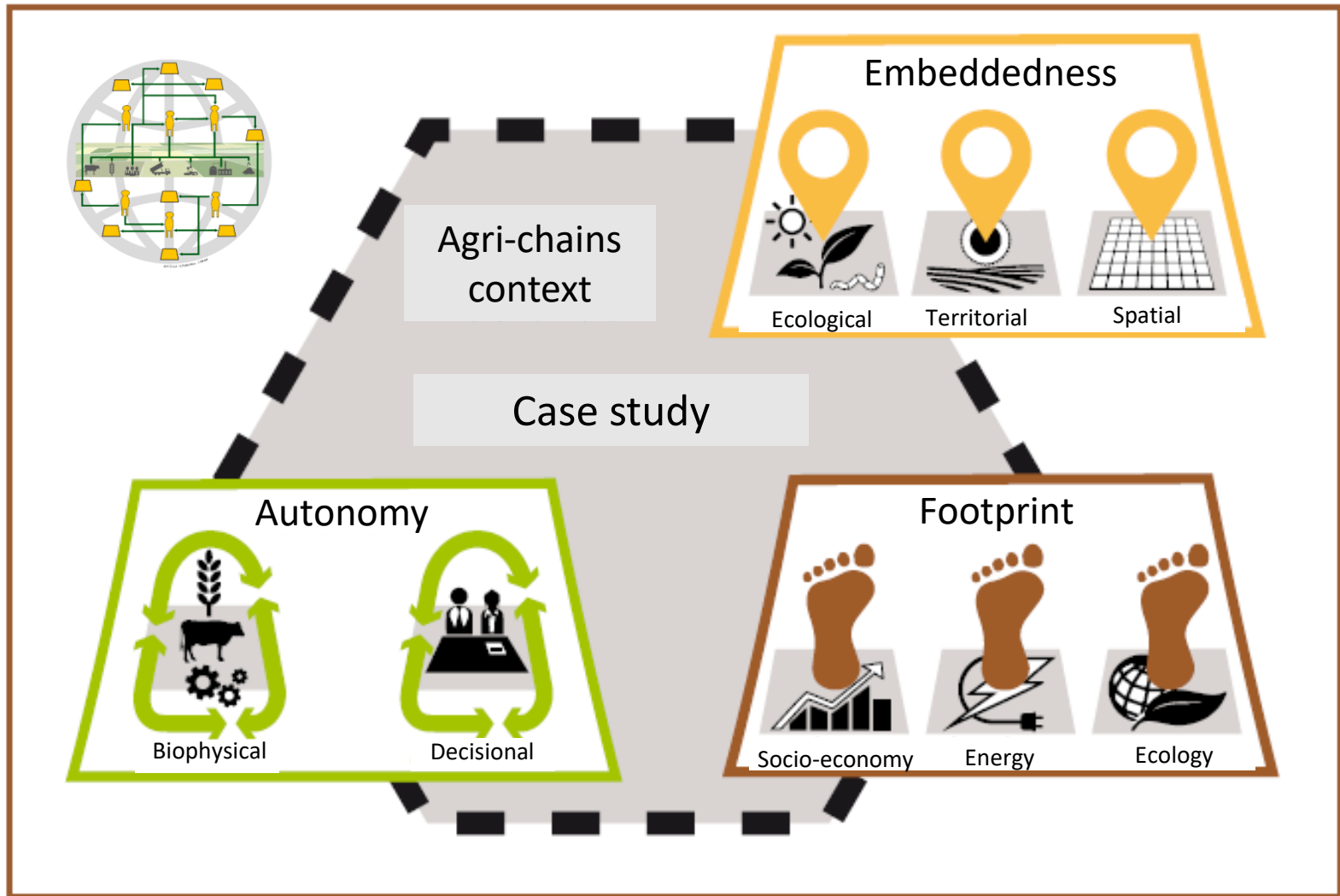


➤ Step 2: field interviews

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



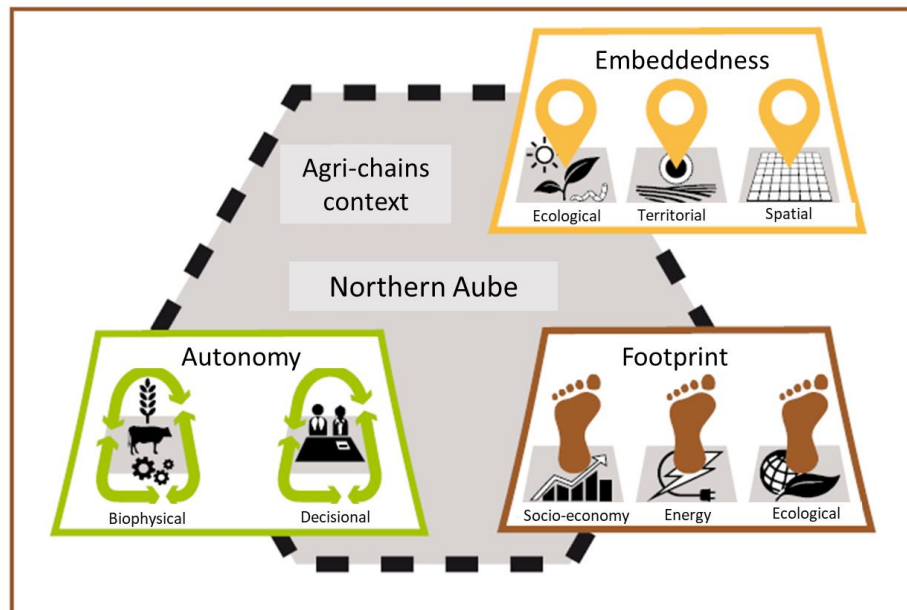
➤ Grid of analysis to evaluate agri-chain metabolism



➤ 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

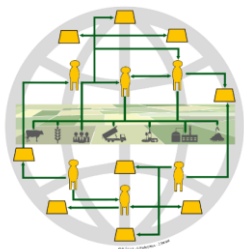
High levels of nitrate in the environment
+500% agricultural enterprises producing electricity since 2018

Increase in jobs in agricultural supply sector



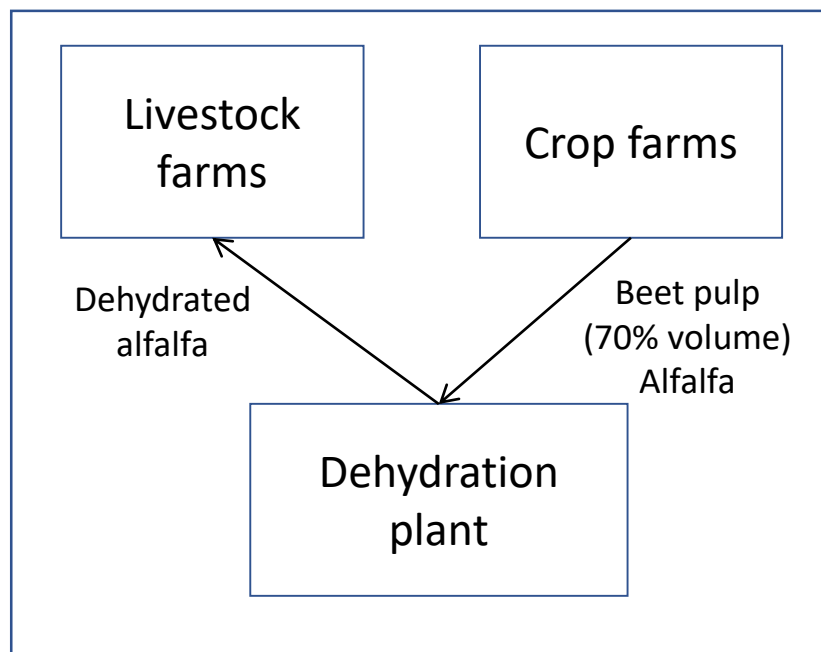
INRAE

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

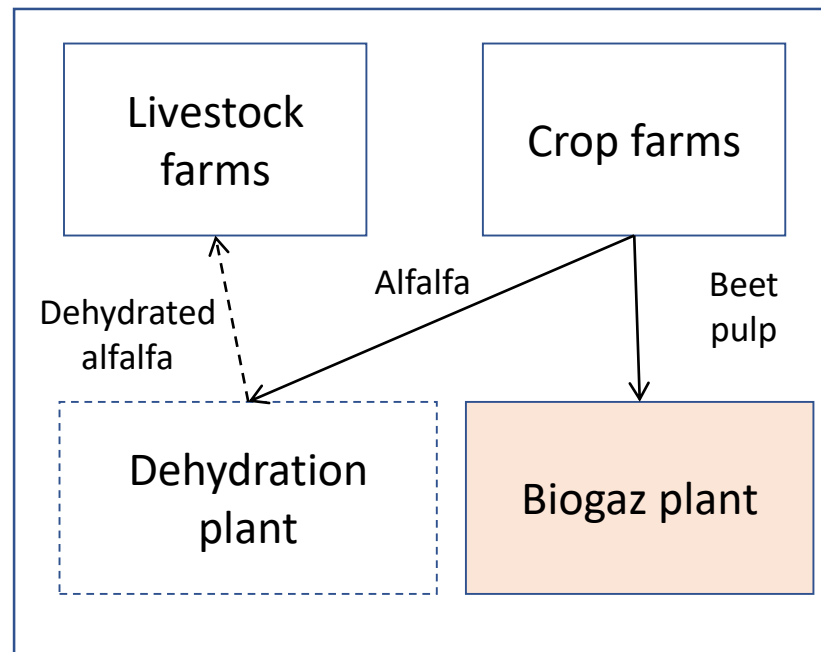


Northern France example: introduction of a biogaz plant

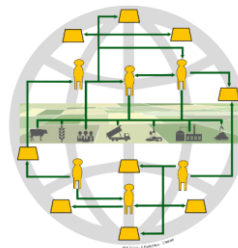
Initial state



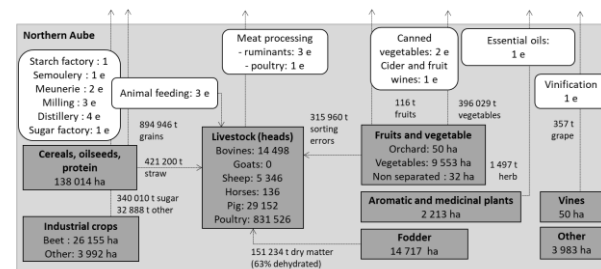
Introduction of a biogaz plant



➤ 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

