



# Assessing the multiple services provided by livestock: *a French case-study*



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64th EAAP Annual Congress – Session 22a  
27th August 2013



# 1. Study rationales and objectives

- Contribution of livestock to food security
- But also an essential 'actor' in rural areas
- Lack of knowledge on non-market production

➔ Need to better know the multiple services provided by livestock to inform policy makers and society

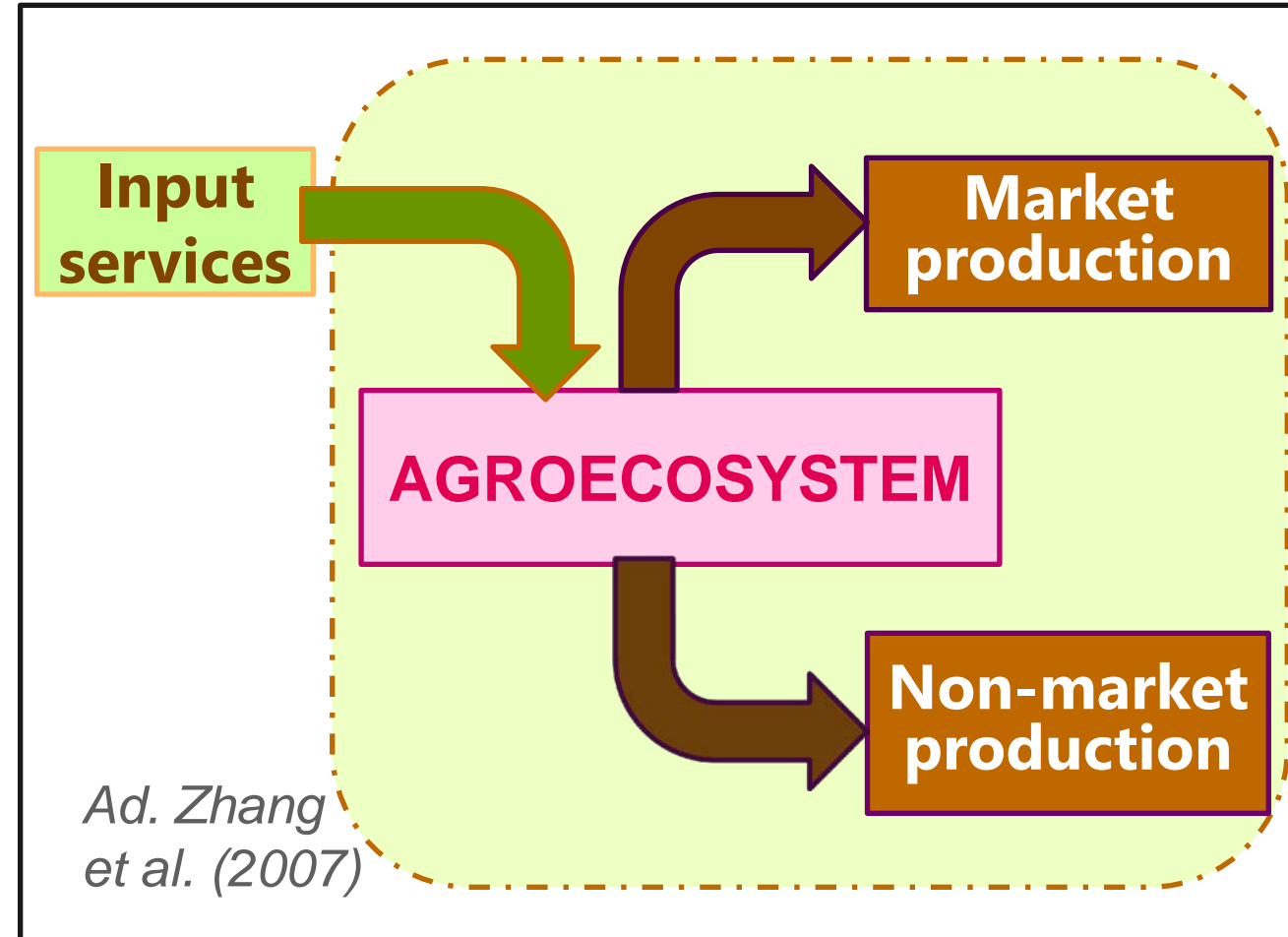
## Objective of the study:

Assessing the services provided by livestock through quantitative indicators.



# 1. Study rationales and objectives

- We defined a service as  
*« a contribution provided by livestock to human beings »*
  - Two types of services :  
input services/output services
- We considered output services



# 1. Study rationales and objectives

Assessing the services provided by livestock through quantitative indicators.

A case –study : France

**A**

**B**

*Hypothesis: Services are interdependent and form sets of services.*

**→ Existence of contrasted types of service sets?**

*Hypothesis: Types of service sets are influenced by regional drivers.*

**→ Link between types of service sets and regions?**



# 2. Methodology

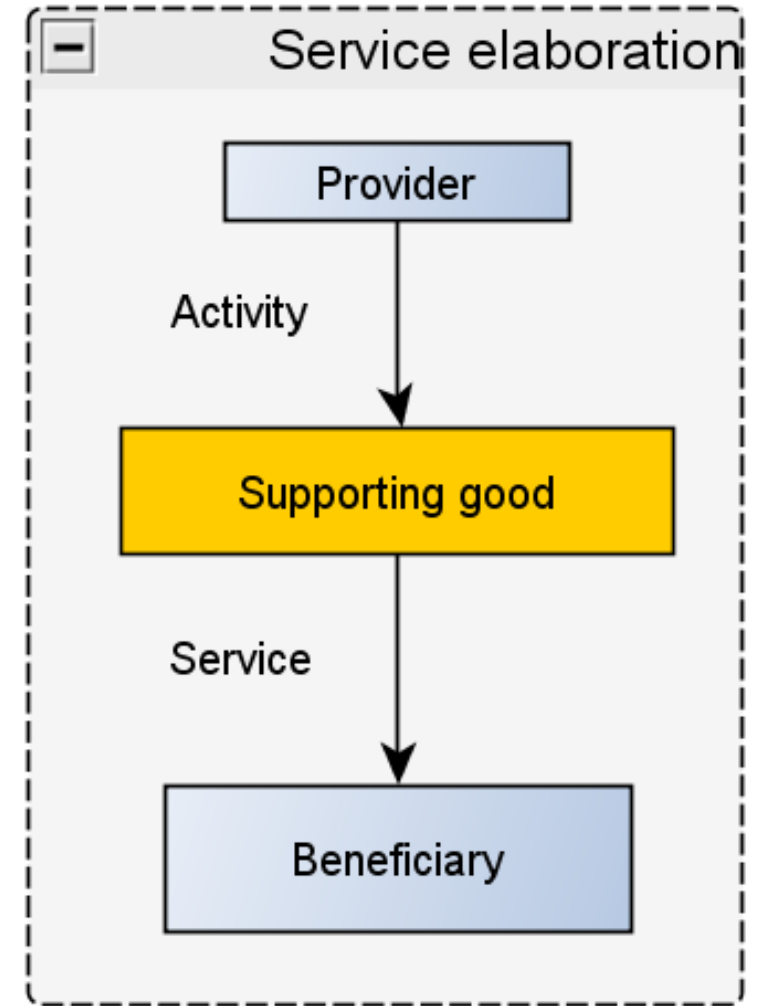
## 1. Identification of the French set of services

→ Framework : Provider/ Supporting good/ Beneficiary

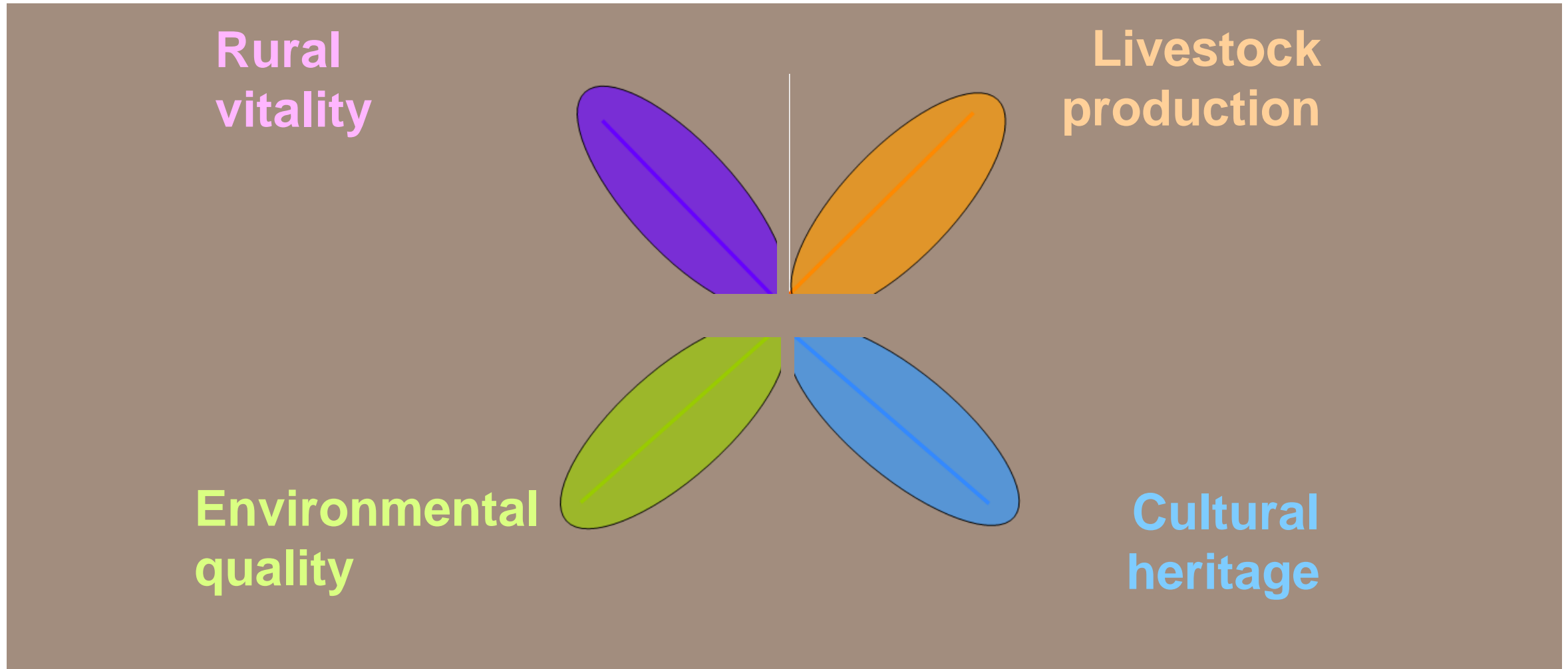
*(Aznar, 2002)*

## 2. Selection of indicators to quantify each service

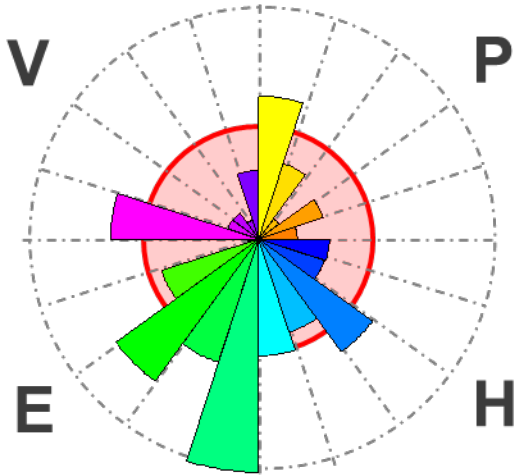
## 3. Sets of services typology through multivariate analysis *(Raudsepp-Hearne et al., 2010)*



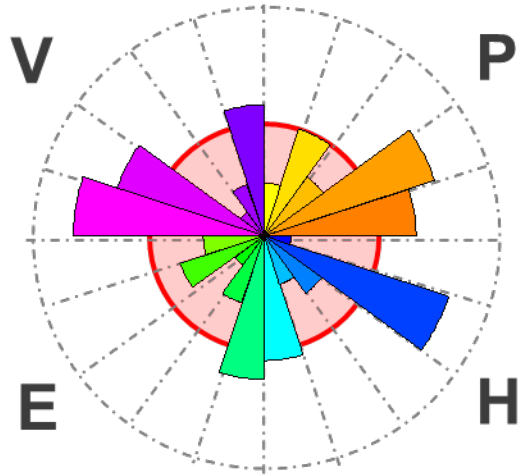
# 3.1. Results - Set of services quantified



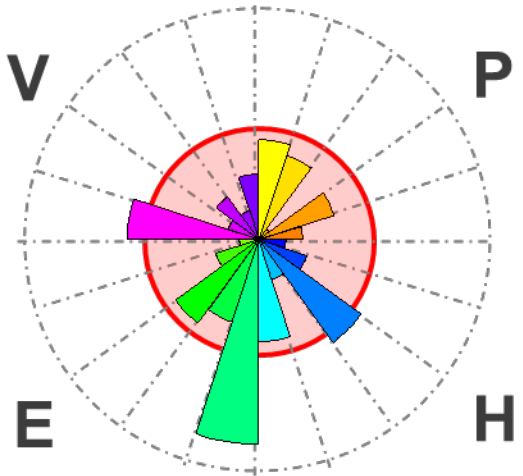
## 3.2. Results - Types of service sets



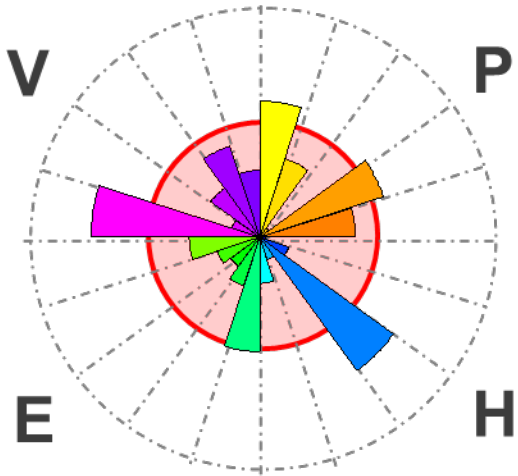
High level of environmental & heritage services



High level of production & vitality services



Moderate level of environmental & heritage services



Moderate level of production & vitality services

- Each sector = a service
- Quantification of each service
- Normalisation on a 0-1 scale

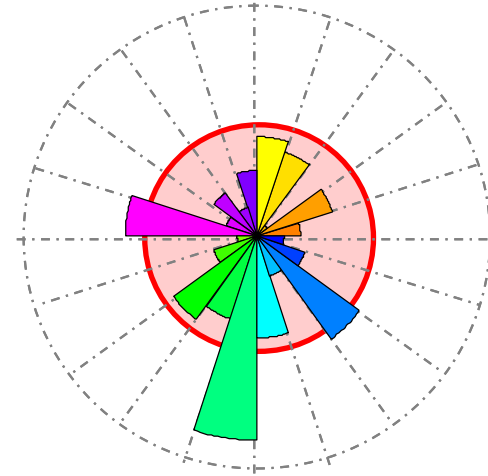
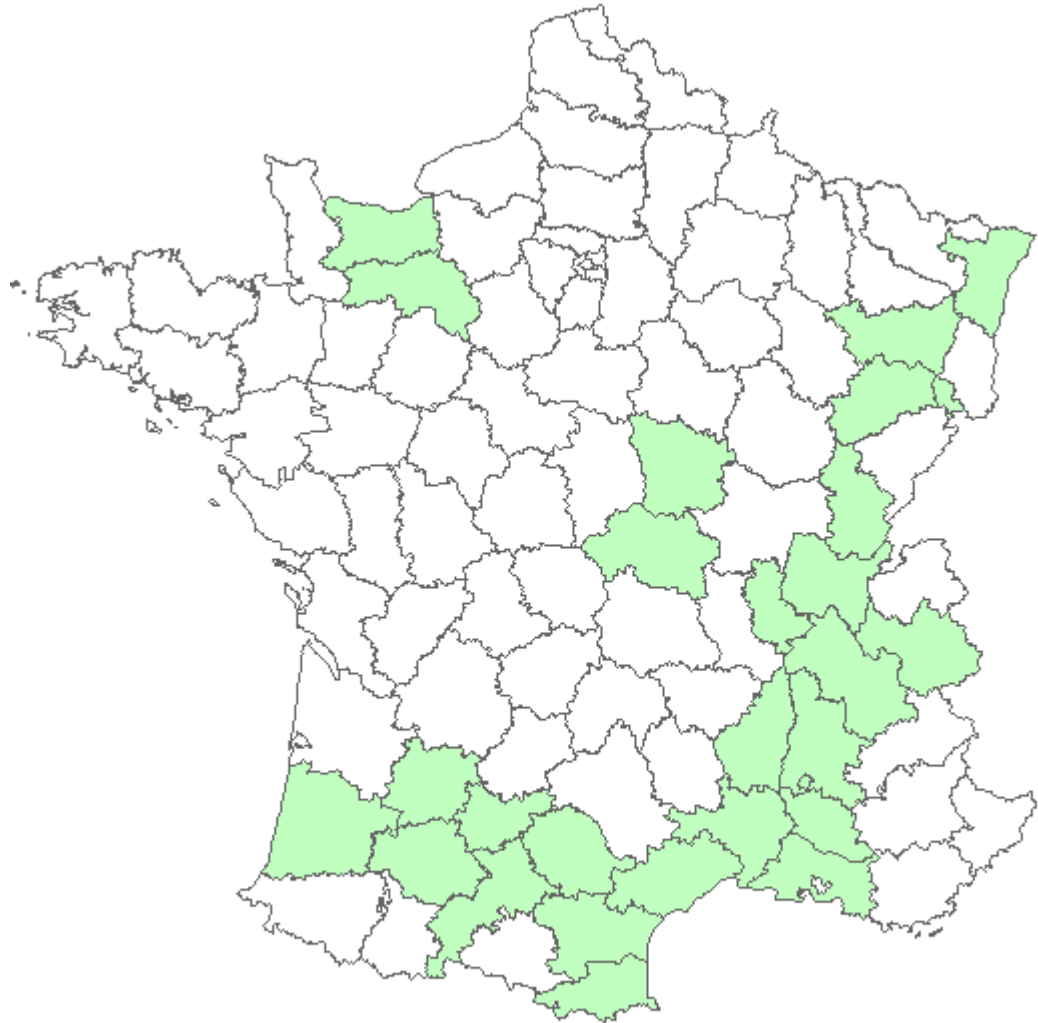
### Four contrasted types of service sets

- Contrasted weights of categories
- Relationships between services
- Two major groups with different level of services provided

→ Link between sets of services and regions?

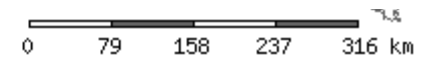


# 3.3. Results - Spatial location of service sets



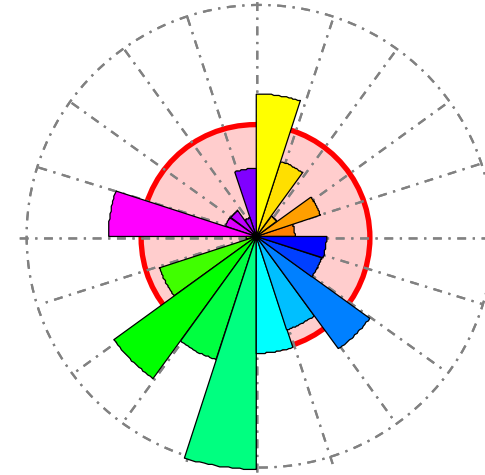
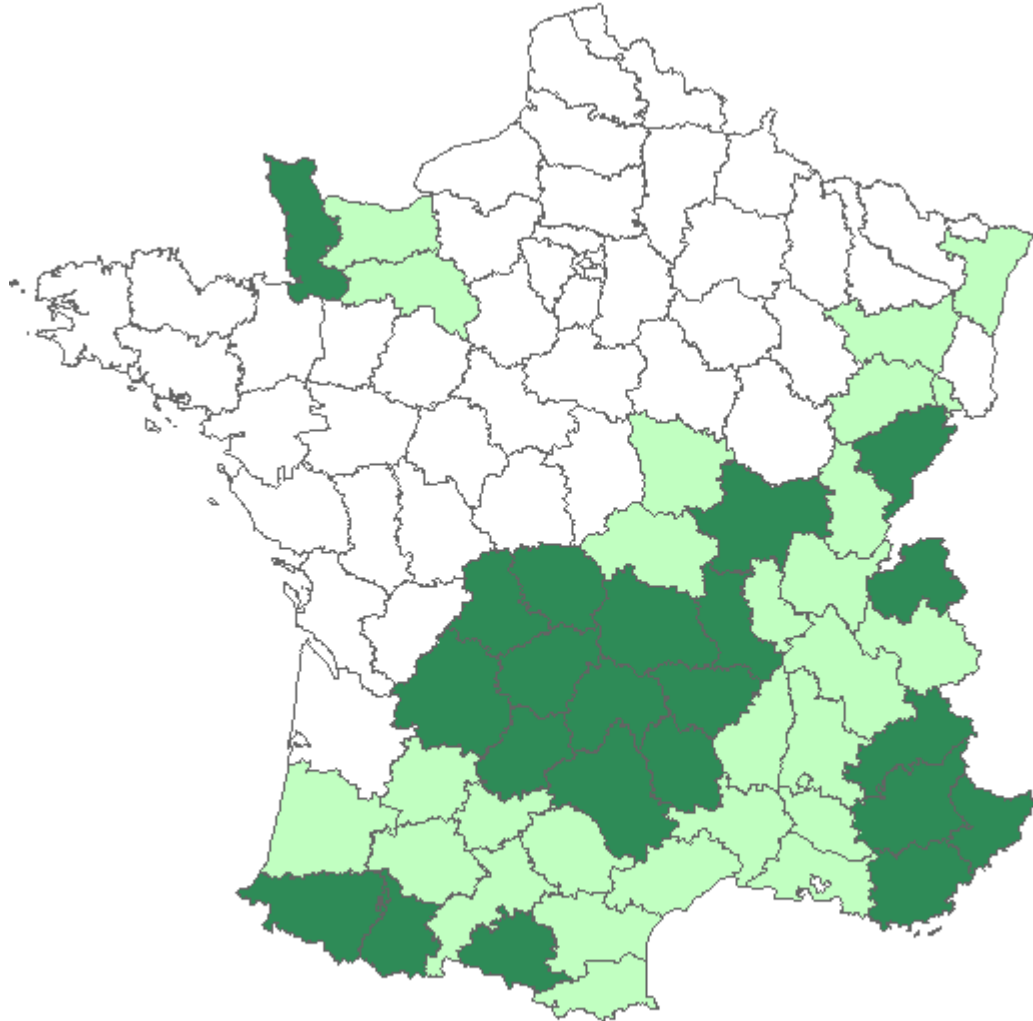
● Moderate level of environmental & heritage services



Source : CartoDynamique INRA





# 3.3. Results - Spatial location of service sets

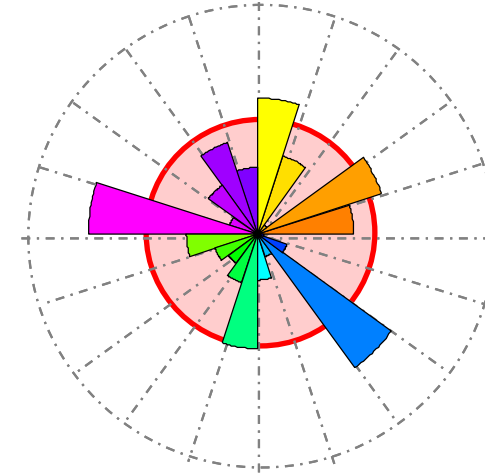
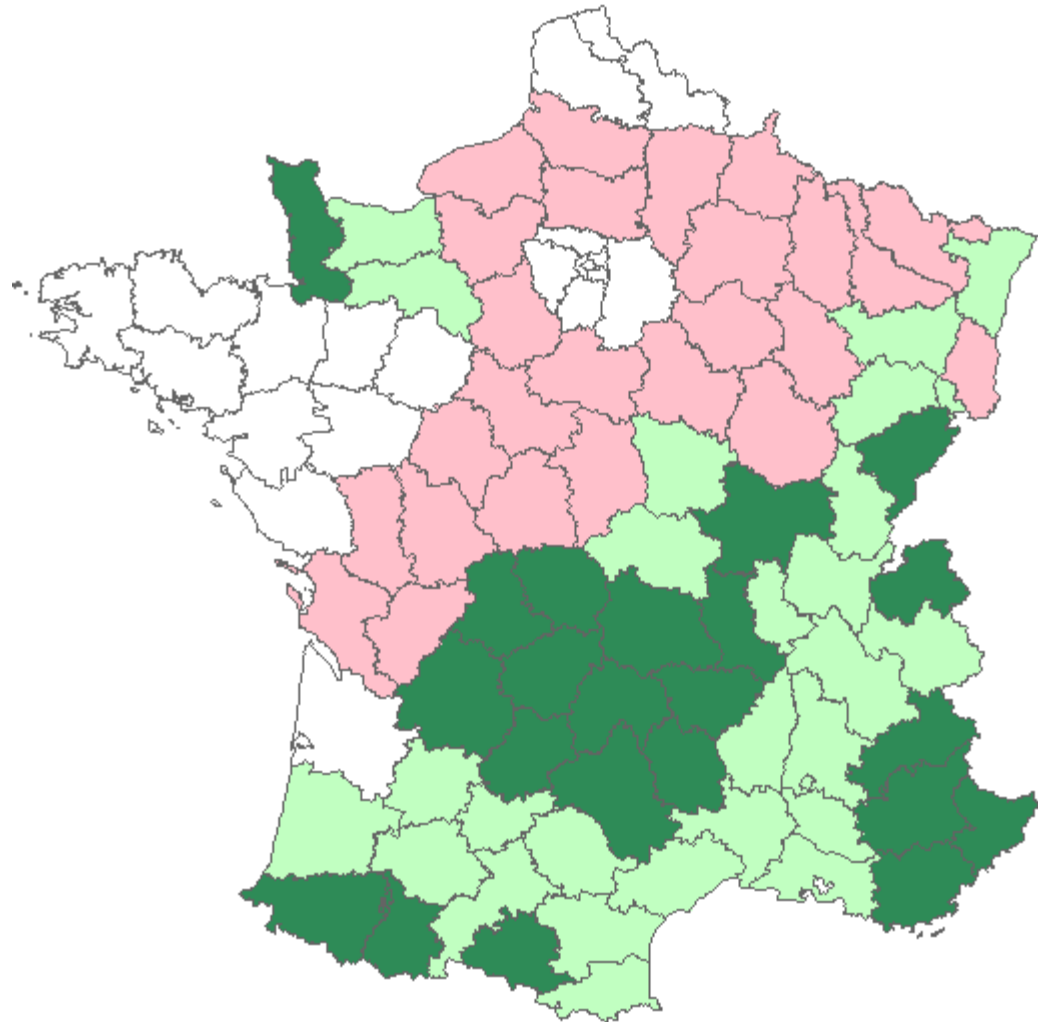





-  Moderate level of environmental & heritage services
-  High level of environmental & heritage services

Source : CartoDynamique INRA

0 79 158 237 316 km

# 3.3. Results - Spatial location of service sets

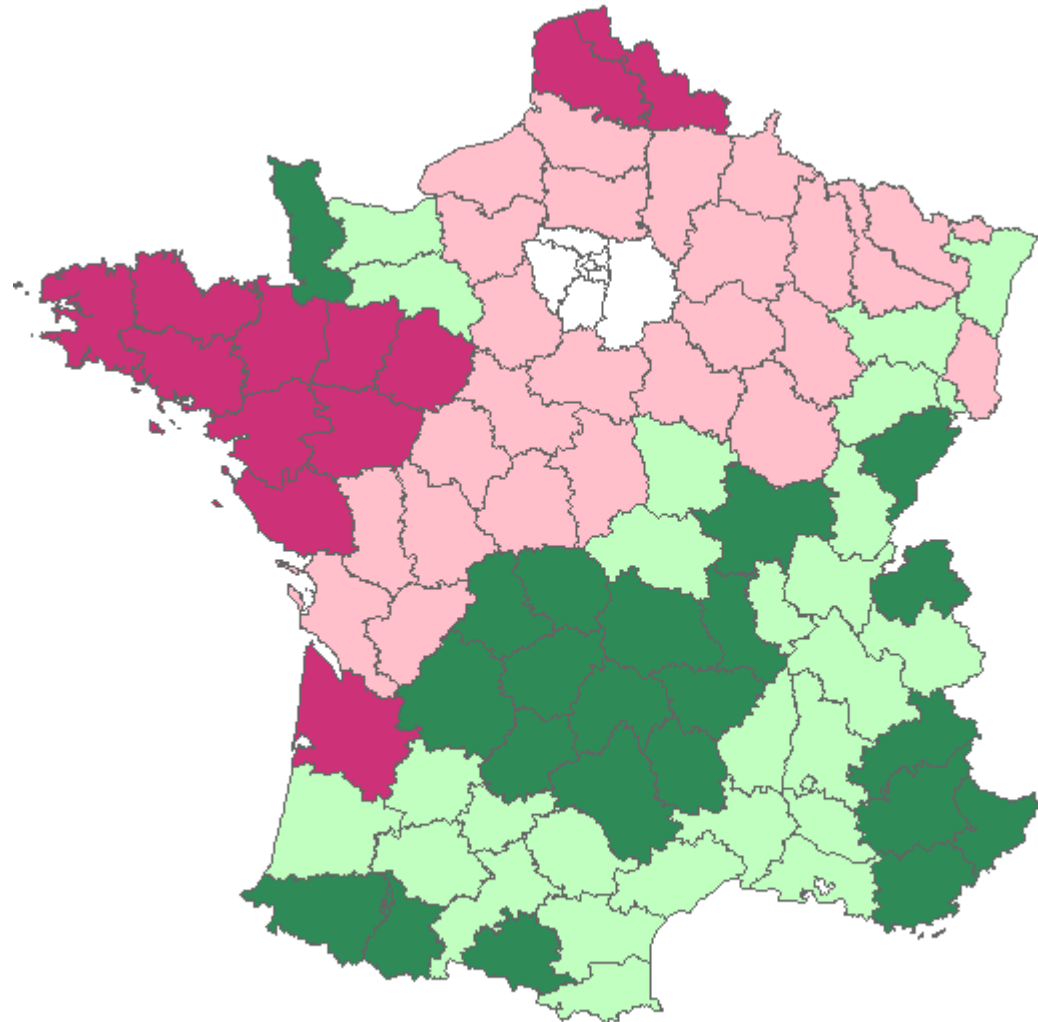


-  Moderate level of environmental & heritage services
-  High level of environmental & heritage services
-  Moderate level of production & vitality services

Source : CartoDynamique INRA





0 79 158 237 316 km

# 3.3. Results - Spatial location of service sets



## Non random distribution of service sets types

- Link to agricultural and local context
- What about other regional drivers?

-  Moderate level of environmental & heritage services
-  High level of environmental & heritage services
-  Moderate level of production & vitality services
-  High level of production & vitality services

Source : CartoDynamique INRA

0 79 158 237 316 km

# 4. Conclusion & perspectives

- Four contrasted types of service sets...
  - Showing relationships between services,
  - Linked to specific regions
- Deepening this first assessment of sets of services
  - Considering lower scales than the department
  - Analysing the drivers involved in the provision of services

Need for better understanding of the relationships between services and their drivers to help policy makers improve provision of services while limiting side effects.



**Thank you for your attention.**

