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Assessing ecosystem services provided by livestock farms in the French Massif Central

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Assessing ecosystem services provided by livestock farms in the Massif Central

Zapata J. , Lacour C. , Violleau S. , Dupic G. , Faure P. , Baumont B. , Carrere P. , Hulin S. , **Farruggia A.**



What were our objectives with DIAM?

- Underline the importance of the **GRASS RESOURCE** and grasslands diversity within farm
- Give a **NEW VISION** of livestock breeding shared with farmer and all the partners



How DIAM works?

Agricultural services

❖ Yield



❖ Production seasonality

At 400 °C 60% of grass are vegetative
 At 800 °C 80% of grass culms above 10 cm soil level

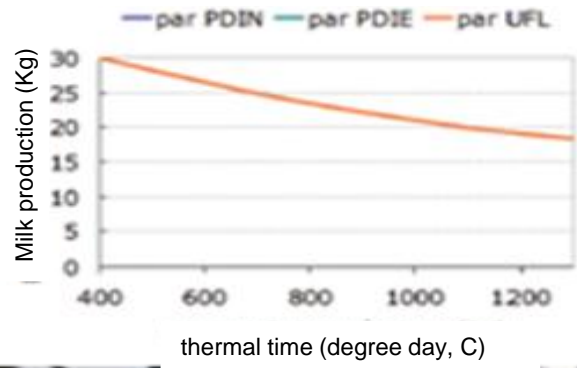
❖ Forage nutritive value at 500°C



❖ Management flexibility



❖ Allowed milk production
 (milk production allowed at grazing, with a diet intake from 16-20 Kg MS/day for a standard dairy cow)



Environnemental services

❖ Carbon storage



❖ Patrimonial interest (botany)



❖ Floewing color diversity



❖ Pollinisation impact



❖ Fauna interest



Cheese quality services

❖ Organoleptic potential

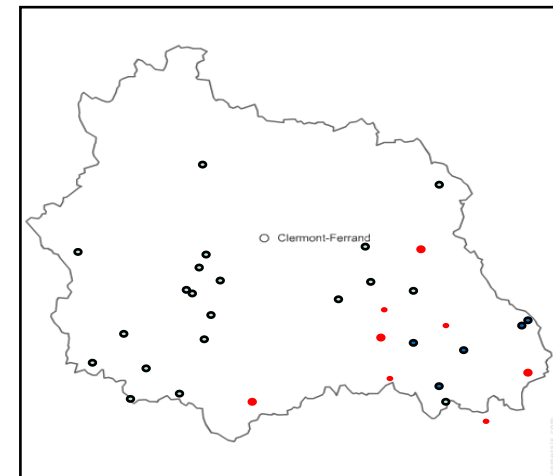
Color	Flavor
4/4	1/4

❖ Nutritional potential

Antioxydes	insaturated fatty acids
3/4	3/4

DIAM has been tested on a group of 36 farmers

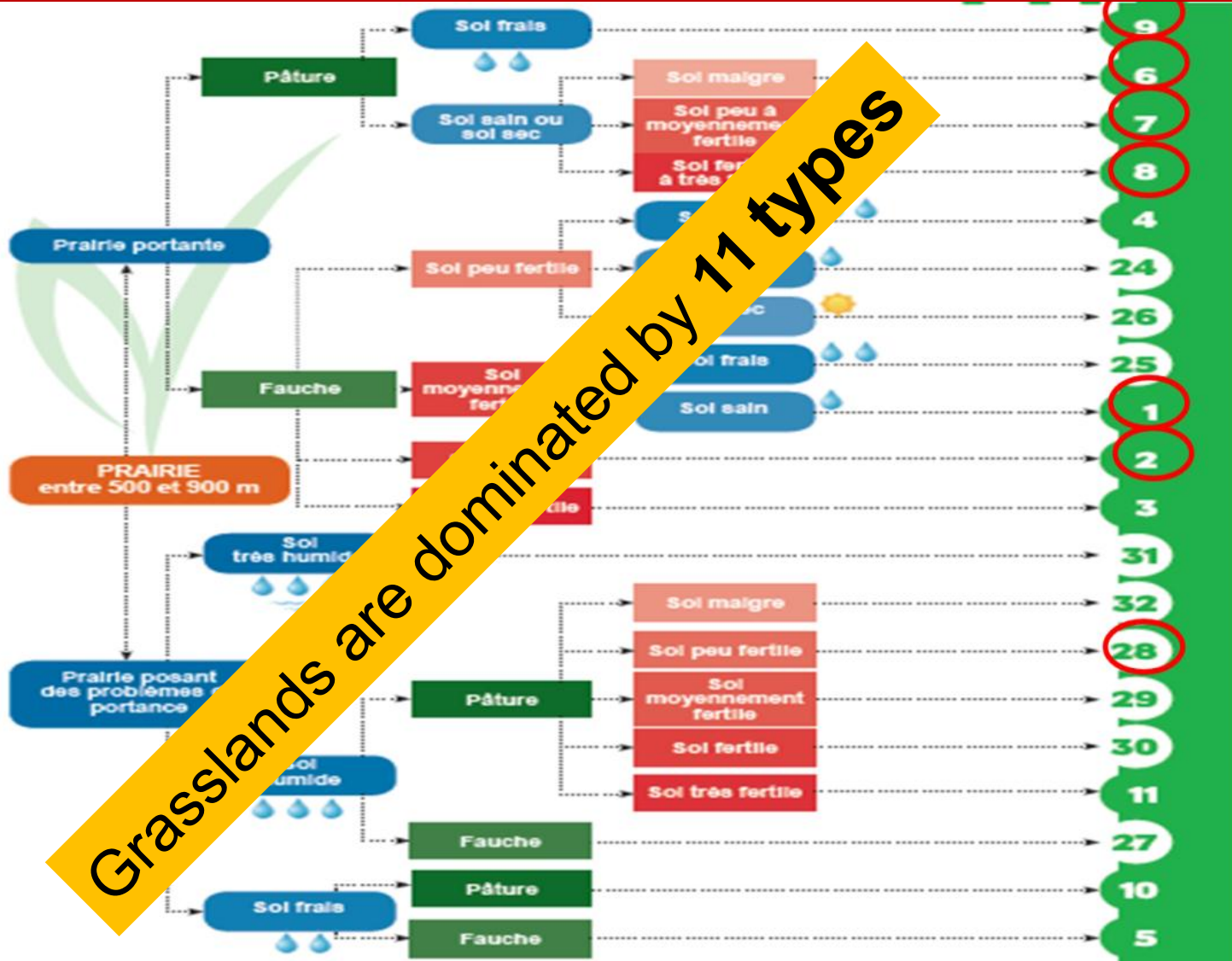
- Half are engaged in **local food supply chains**
- A quarter are **organic farmers**
- Two third of the farms are **oriented towards dairy cows**
- All are **grass-based** systems



KEY 1 - Grasslands between 500 and 900 m

A

S



Grasslands are dominated by 11 types

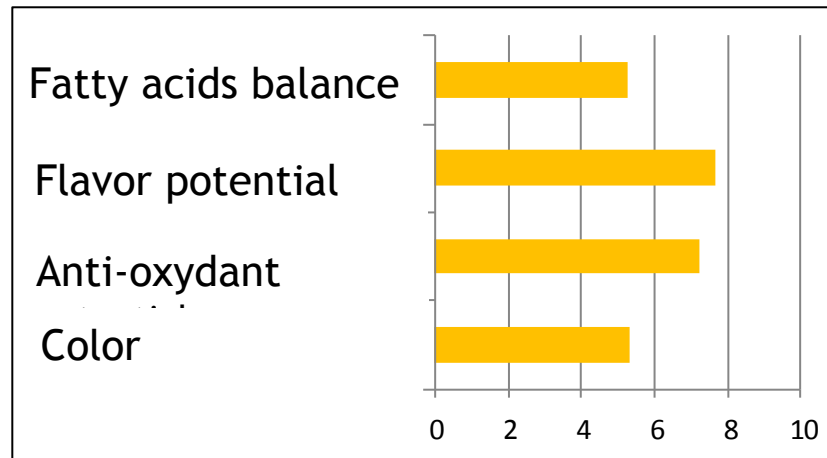
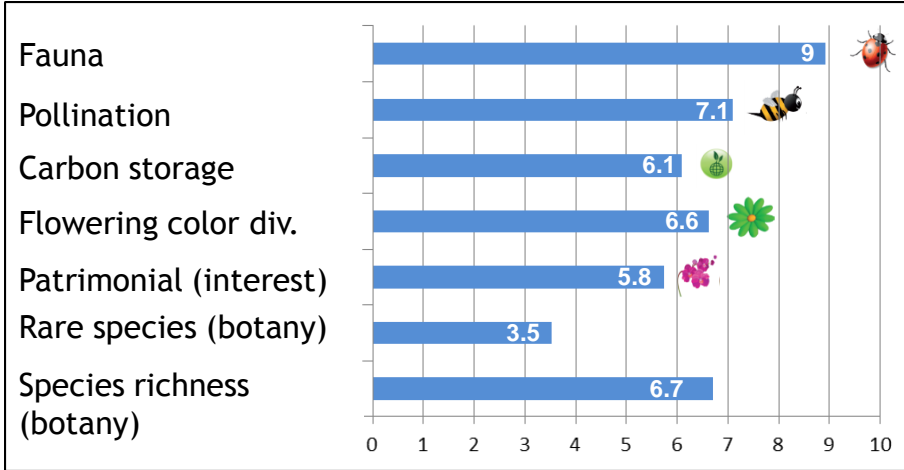


Grasslands diversity characterizes the forage systems

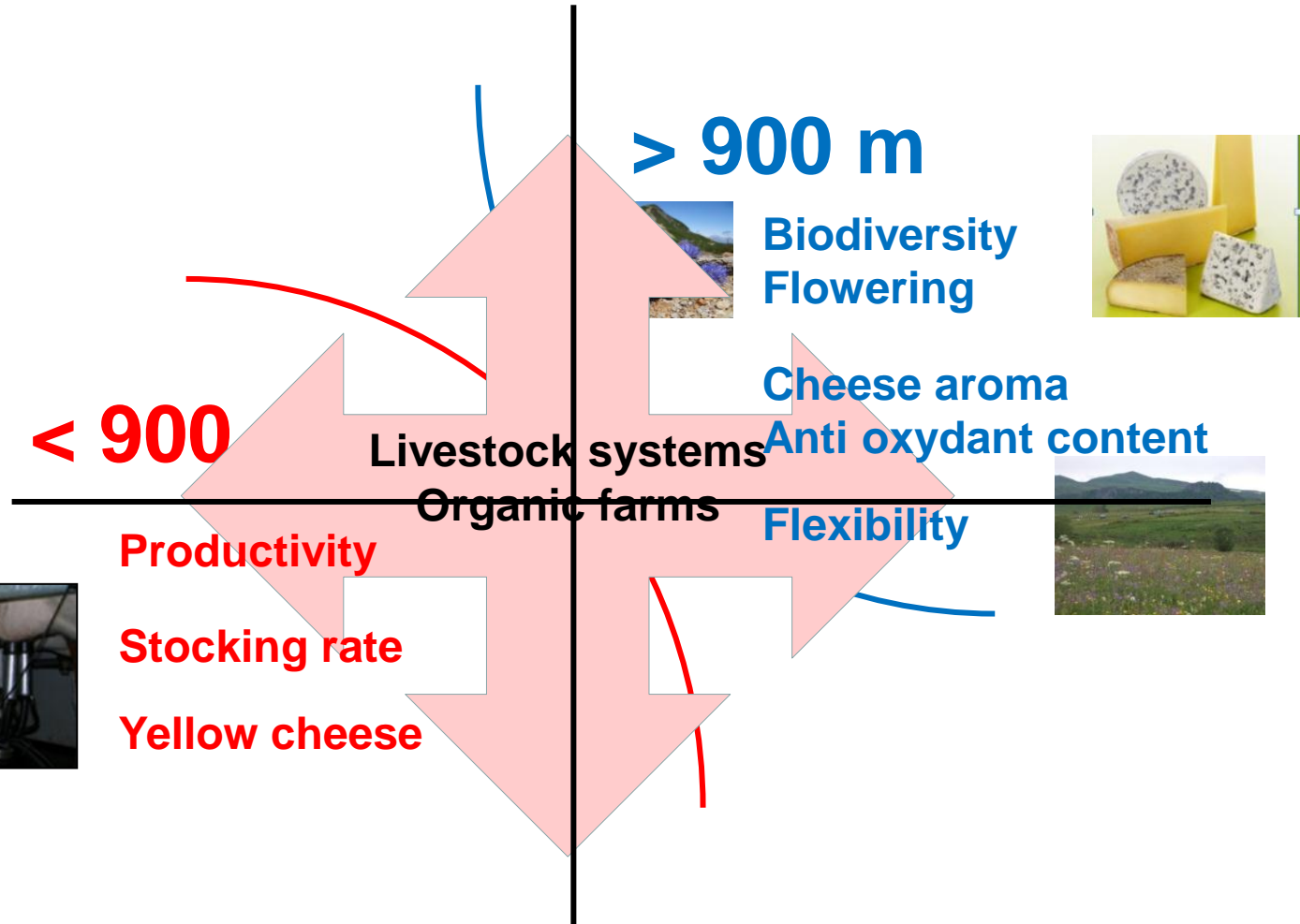
- **10 types** of grassland per farm (**5-16 types**)
- Grasslands that offers assets in terms of **productivity co-exists** with grasslands offering greater management **flexibility**
- But **grazed herbage** is not the main feed



Environmental and « cheese » services provided by a farm



A PCA to study the relationships between services and farms



Learnings ...

- ☹️ The tool needs an **EXPERTISE** to correctly allocate type to plot
- ☹️ Many of the indicators are still **ABSTRACT** for individual farmer, and advisors are still **UNCOMFORTABLE** with the process of reporting the results
- 😊 A **GLOBAL** vision and a **NEW PERCEPTION** on the environment previously experienced as a source of constraints
- 😊 A tool of **DIALOGUE** and exchange with other stakeholders
- 😊 Brings a new **AWARENESS** that there is not just one 'grassland' but a **MOSAIC** of many different grasslands which is a way into **SUSTAINABILITY** in mountain areas

