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

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► To cite this version:

Jean Zapata, Clémentine Lacour, Stéphane Violleau, Géraldine Dupic, Pascal Faure, et al.. Assessing ecosystem services provided by livestock farms in the French Massif Central. Joint Meeting of the "Mountain Pastures, Mediterranean Forage Resources (FAO/SCORENA-CIHEAM) and Mountain Cheese" Network, Institut National de Recherche Agronomique (INRA). UMR Unité Mixte de Recherche sur les Herbivores (1213)., Jun 2014, Lempdes, France. 843 p. hal-02739242

HAL Id: hal-02739242

<https://hal.inrae.fr/hal-02739242v1>

Submitted on 2 Jun 2020

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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.**



JM FAO CIHEAM 24-26 June, 2014 Clermont-Ferrand, France



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

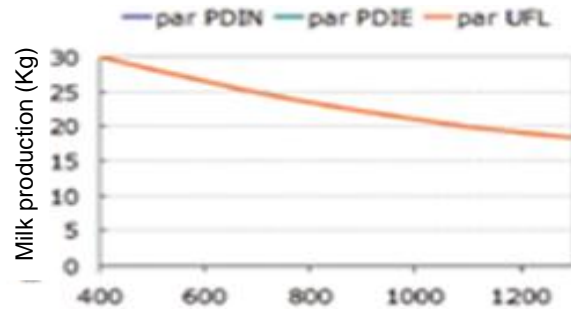


❖ Management flexibility



❖ Allowed milk production

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



thermal time (degree day, C)

Environnemental services

❖ Carbon storage



❖ Patrimonial interest (botany)



❖ Floewing color diversity



❖ Pollinisation impact



❖ Fauna interest



Cheese quality services



❖ Organoleptic potential

Color

4/4

Flavor

1/4

❖ Nutritional potential

Antioxydes

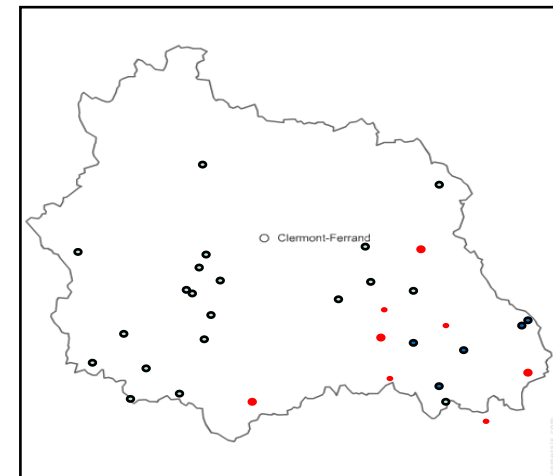
3/4

insaturated fatty acids

3/4

DIAM has been tested on a group of 36 farmers

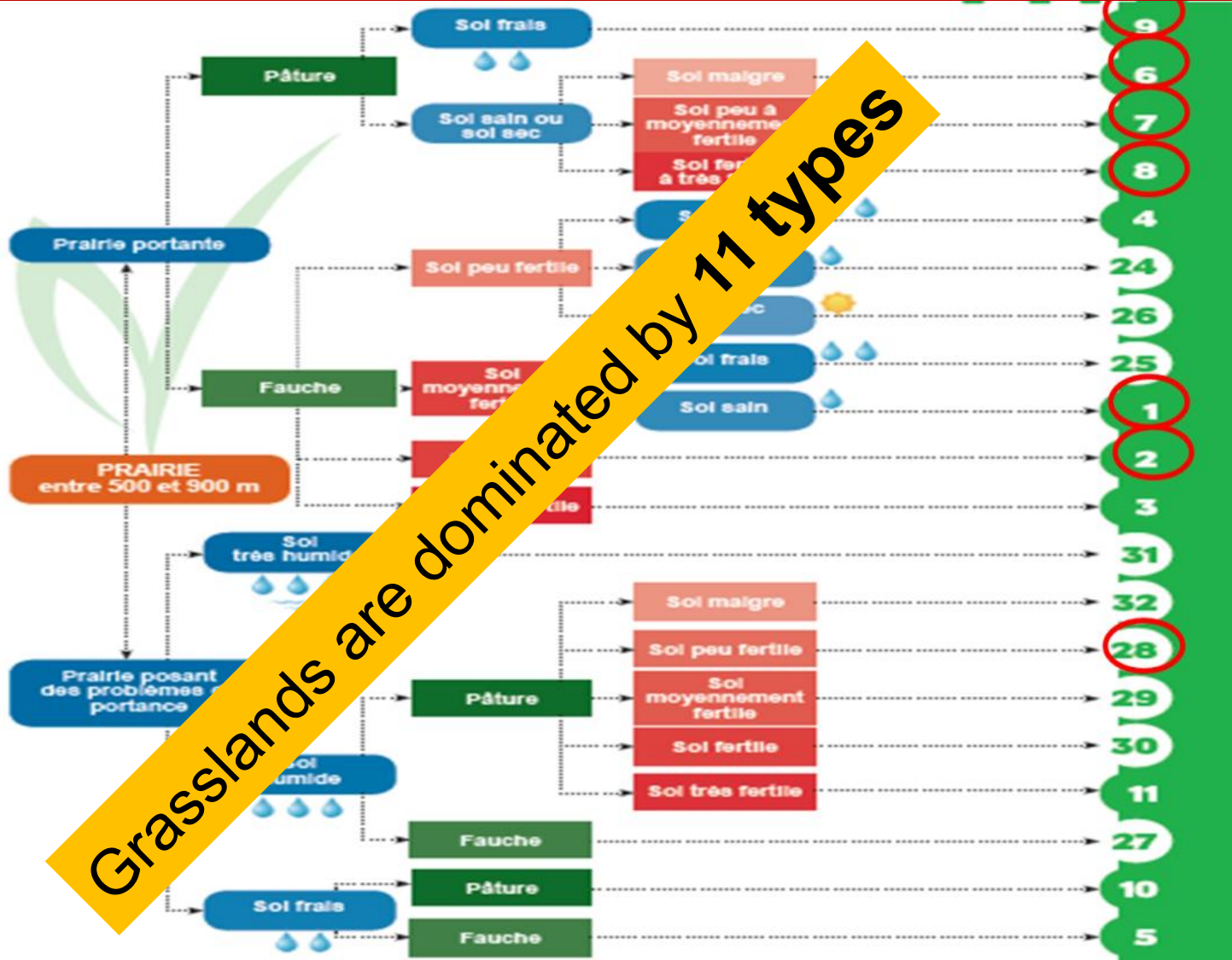
- Half are engaged in **local food supply chains**
- A quarter are **organic farmers**
- Two third of the farms are **oriented towards dairy cows**
- All are **grass-based** systems



KEY 1 - Grasslands between 500 and 900 m

A

S

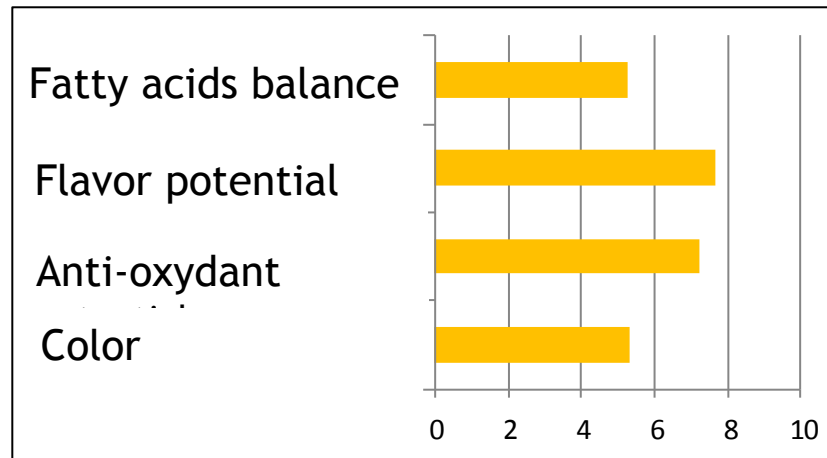
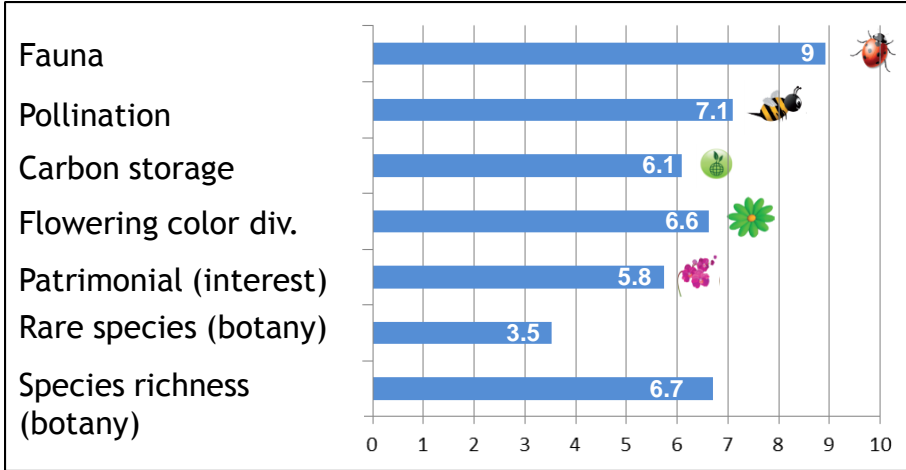


Grasslands diversity characterizes the forage systems

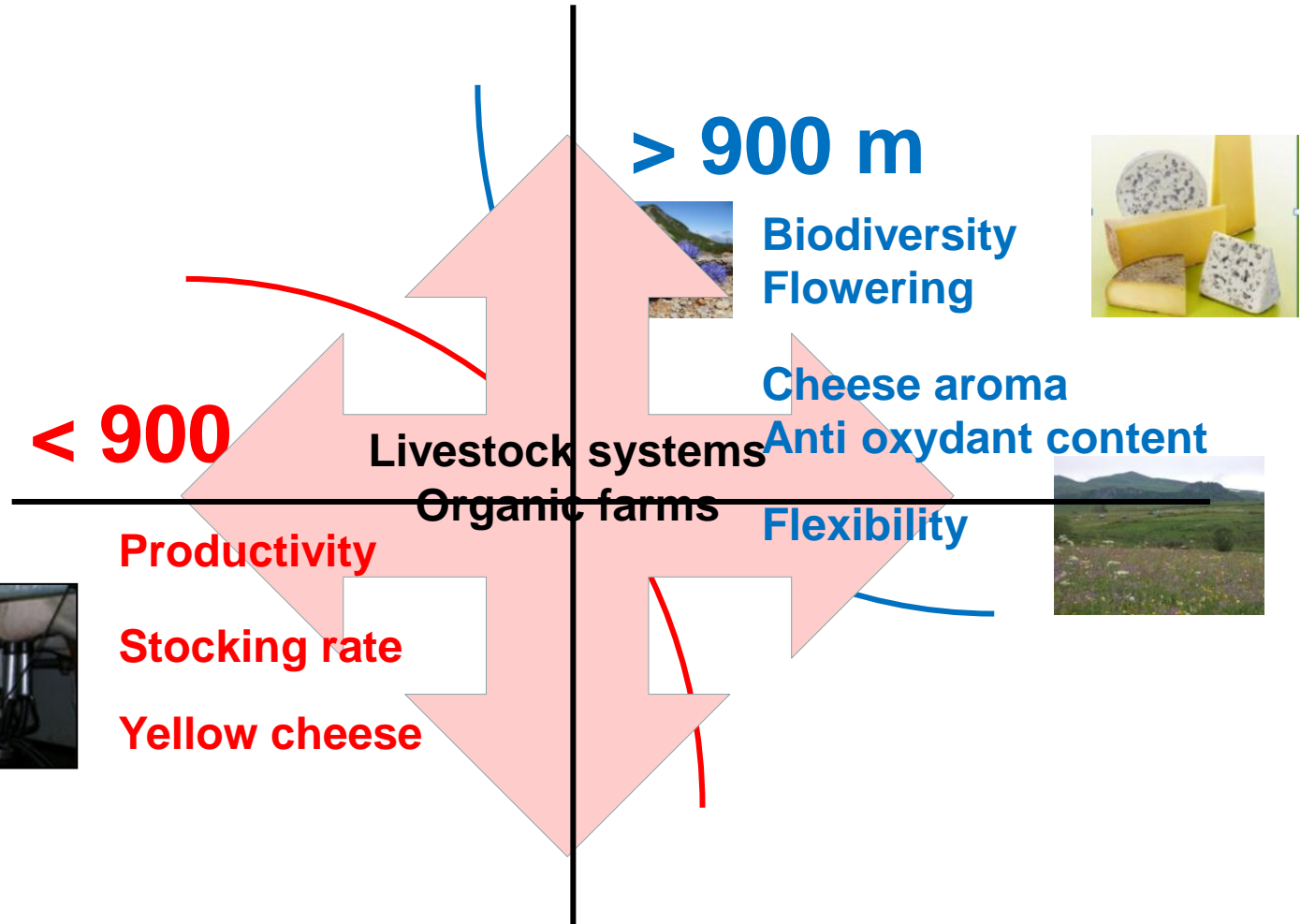
- **10 types** of grassland per farm (**5-16 types**)
- Grasslands that offers assets in terms of **productivity co-exists** with grasslands offering greater management **flexibility**
- But **grazed herbage** is not the main feed



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

