Session 7 : Sustainability and ecosystem services of mountain farming

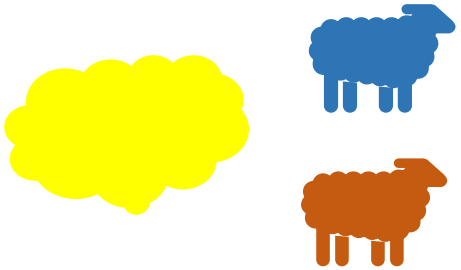
French Mountain sheep farming : a provider of environmental services

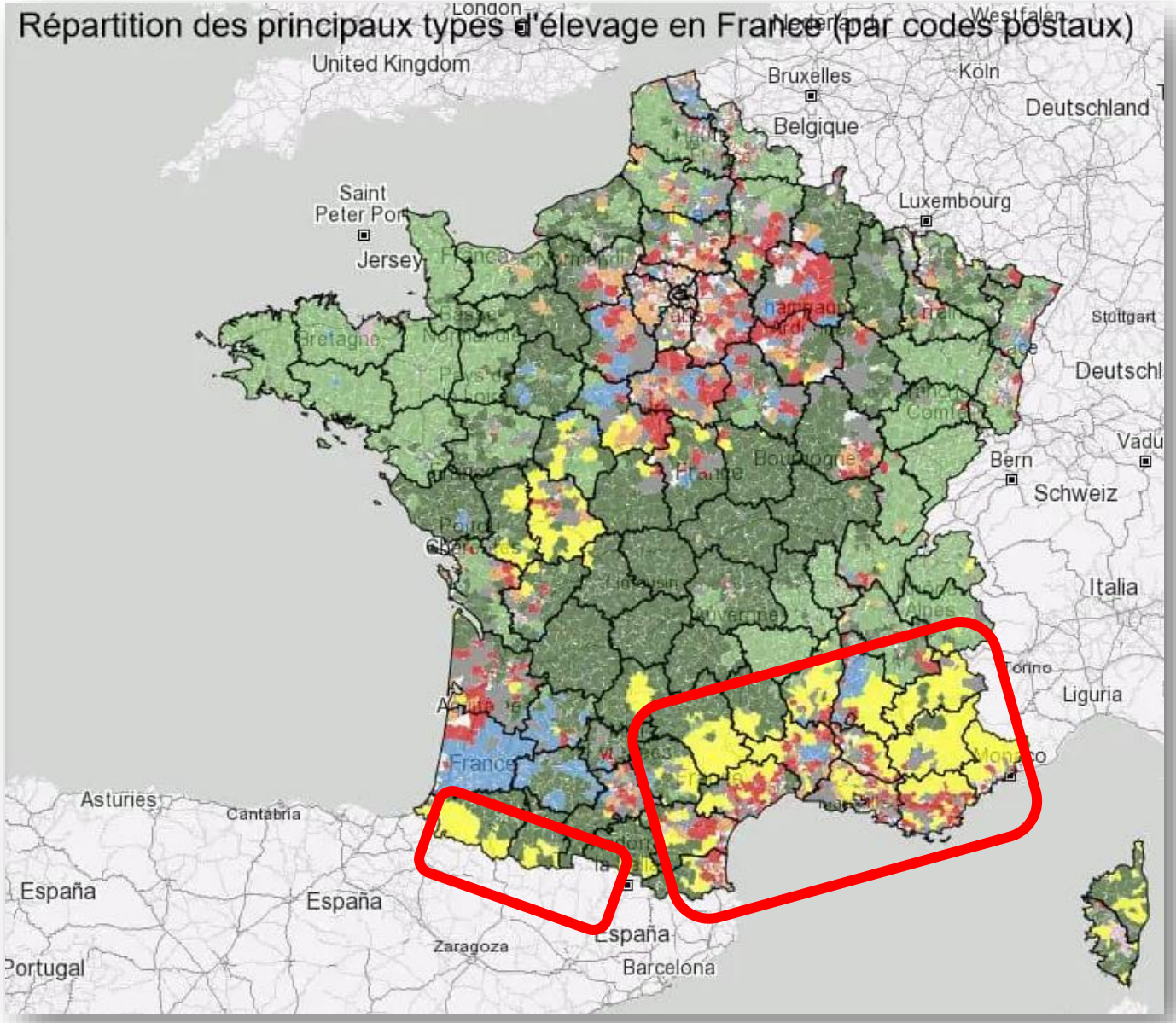
S. Throude, C. De Boissieu, B. Nougadère, C. Vionnet, C. Rolland, B. Rouillé, J.B. Dollé

Location of sheep farms in France

Context

In France, 85% of sheep farms are located in mountain areas

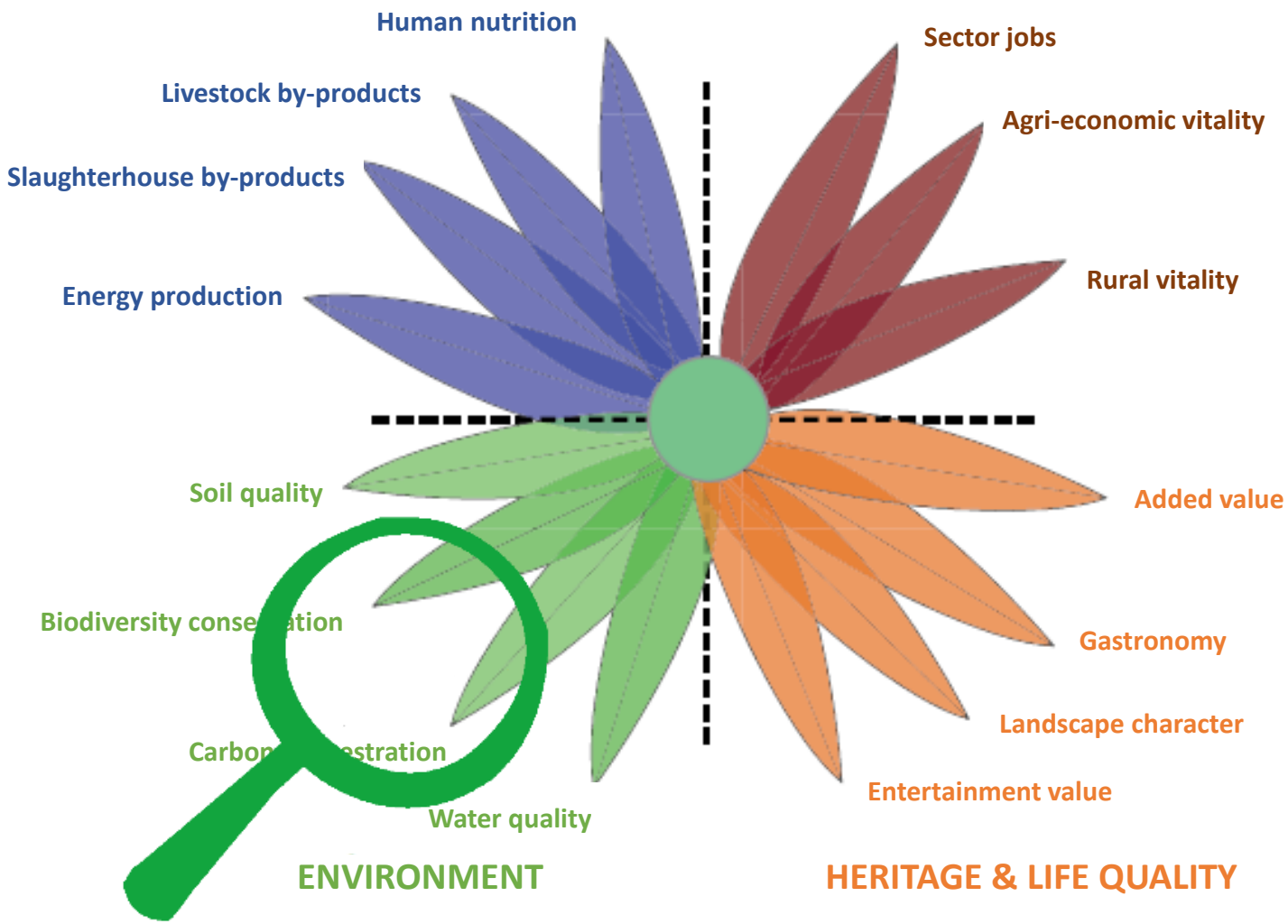




Data from French government – Artic software – Last update April 2024

A wide range of services for mountain sheep farming

Context



How to assess these environmental services?

Methodology

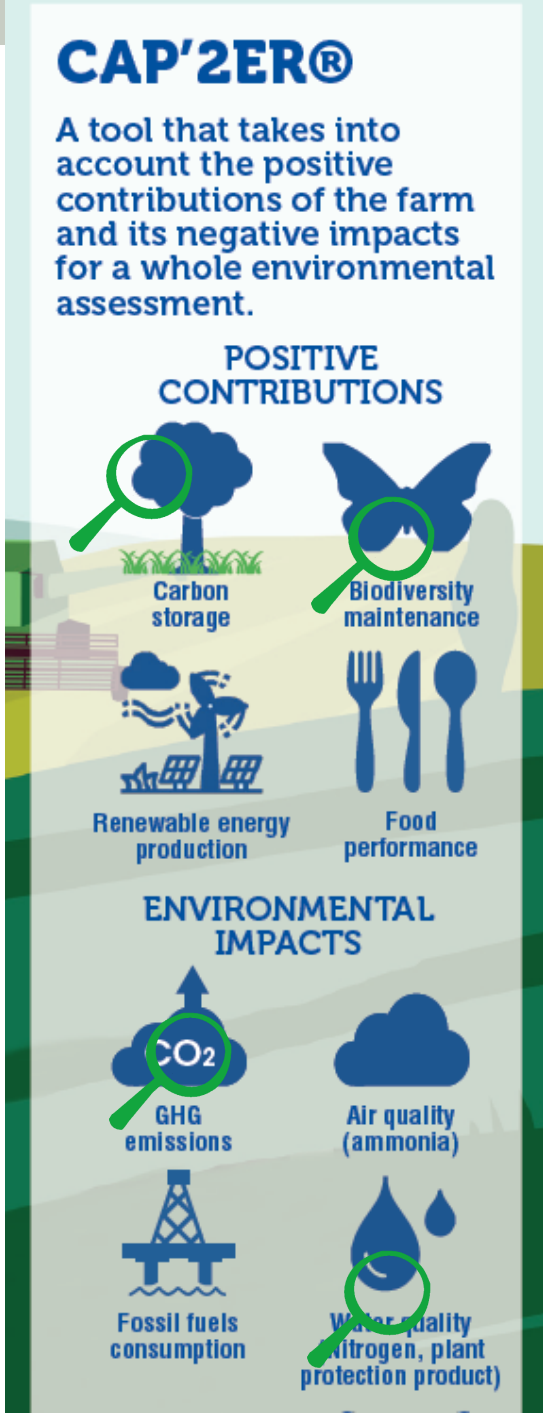
Using the CAP'2ER® tool based on LCA

Objectives of this tool :

- To assess environmental performances of a farm
- To position itself in relation to references
- To act to improve its practices

2 levels of assessment : level 1 (simplified) & level 2 (detailed)

- **For this study : use of level 1**



How to assess these environmental services?

Methodology





Using a large French farms sample from this project :

LIFE GREEN SHEEP IS:

5 years
European project, from October 2020 to September 2025

€ 4,6 M
budget

1 355
demonstrative farms involved

40 partners from
5 European countries

Reduce by **12 %** GHG emissions while making sure farms are sustainable

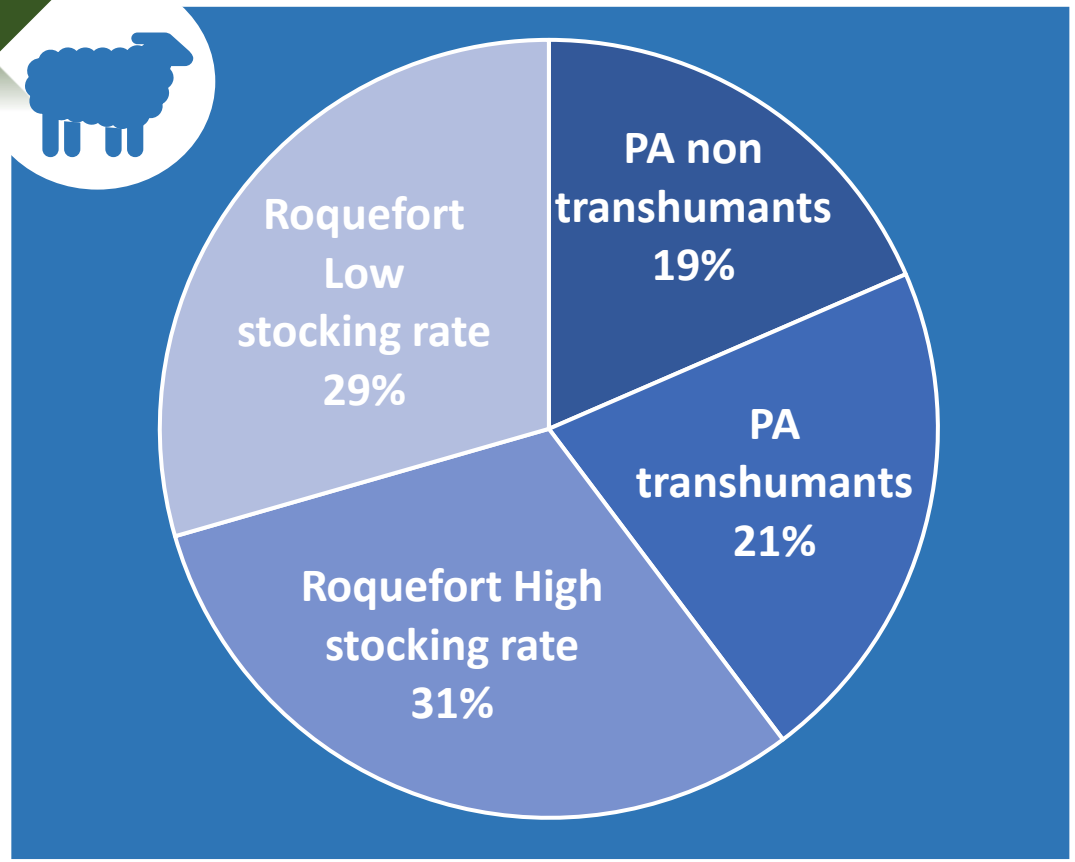
282
innovative farms involved in the implementation of action levers

https://life-green-sheep.eu/

A FR-scale sample with a diversity of rearing sheep systems located in mountain areas

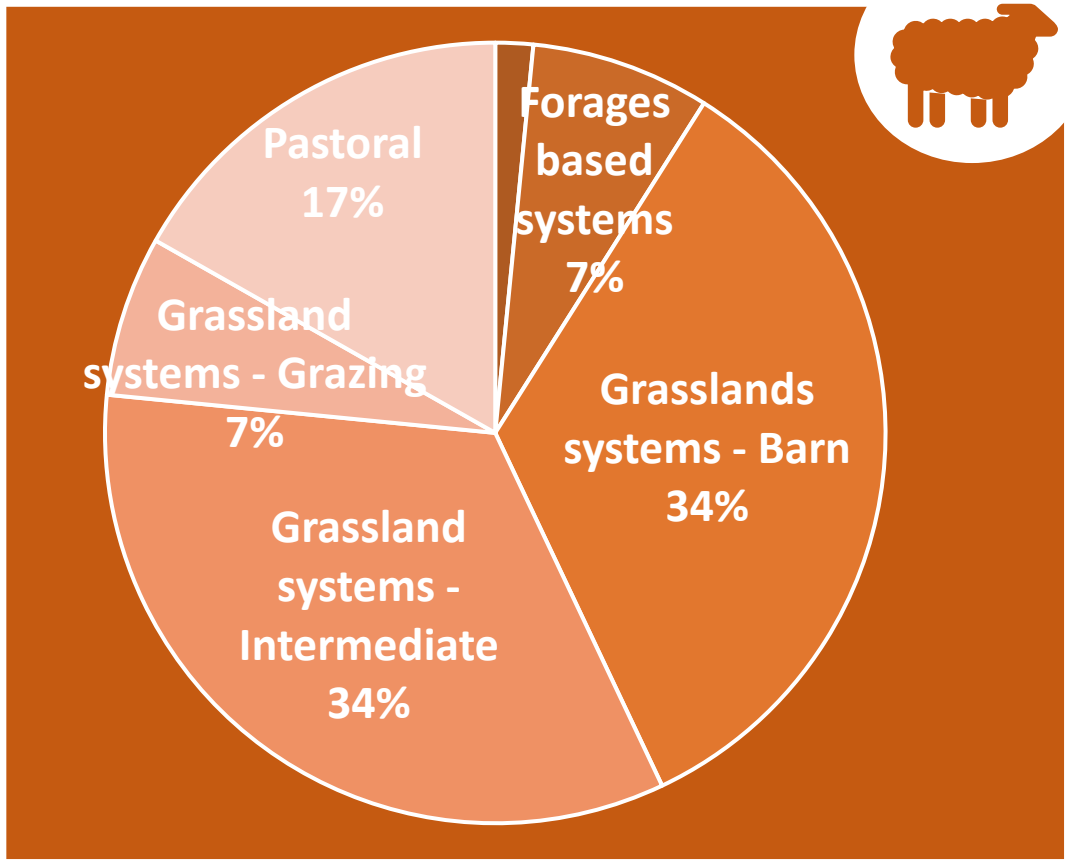
Results

164 French dairy sheep farms



Roquefort Stocking rate value = 6,92 ewe/ha
PA : Pyrénées-Atlantiques

256 French meat sheep farms



Grassland – Grass : time inside < 3 months
Grassland – Barn : time inside >5 months

Which environmental services ?
Focus on biodiversity conservation

Results

eq ha of biodiv./ha

1,3 *(0,3 – 3,4)*

1,7 *(0,4 – 23,8)*

>1 : increasing of biodiversity
0,5 – 1 : preservation of biodiversity
(Manneville, 2015)

% of grasslands in total area used

89% *(63 – 100)*

87% *(11 – 100)*

Hedge rows (linear meter/ha used)

89 *(13 – 258)*

152 *(10 – 918)*

Preliminary results from LIFE Green Sheep project from 420 french sheep farms - 2024

Which environmental services ?
Focus on water quality

Results

kg leached N/ha

34 *(0 - 114)*

12 *(0 – 111)*

34 for dairy sheep
20 for meat sheep
(Preliminary results of LIFE Green Sheep project – All systems, not only in mountains, 2024)

% of grasslands in total area used

89% *(63 – 100)*

87% *(11 – 100)*

Mineral nitrogen (kg N/ha)

32 *(0 – 97)*

20 *(0 – 165)*

Preliminary results from LIFE Green Sheep project from 420 french sheep farms - 2024

Which environmental services ?
Focus on carbon storage

Results

kg C/ha

343 *(63 – 703)*

456 *(48 – 3 342)*

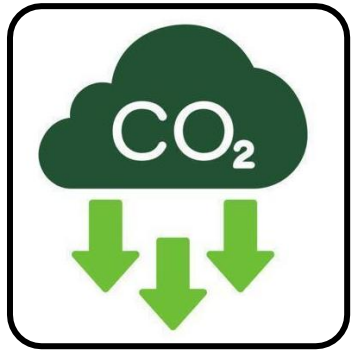
332 for dairy sheep
426 for meat sheep
(Preliminary results of LIFE Green Sheep project – All systems, not only in mountains, 2024)

% of grasslands in total area used

89% *(63 – 100)*

87% *(11 – 100)*

Climate regulation *(GHG emissions offsetting)*



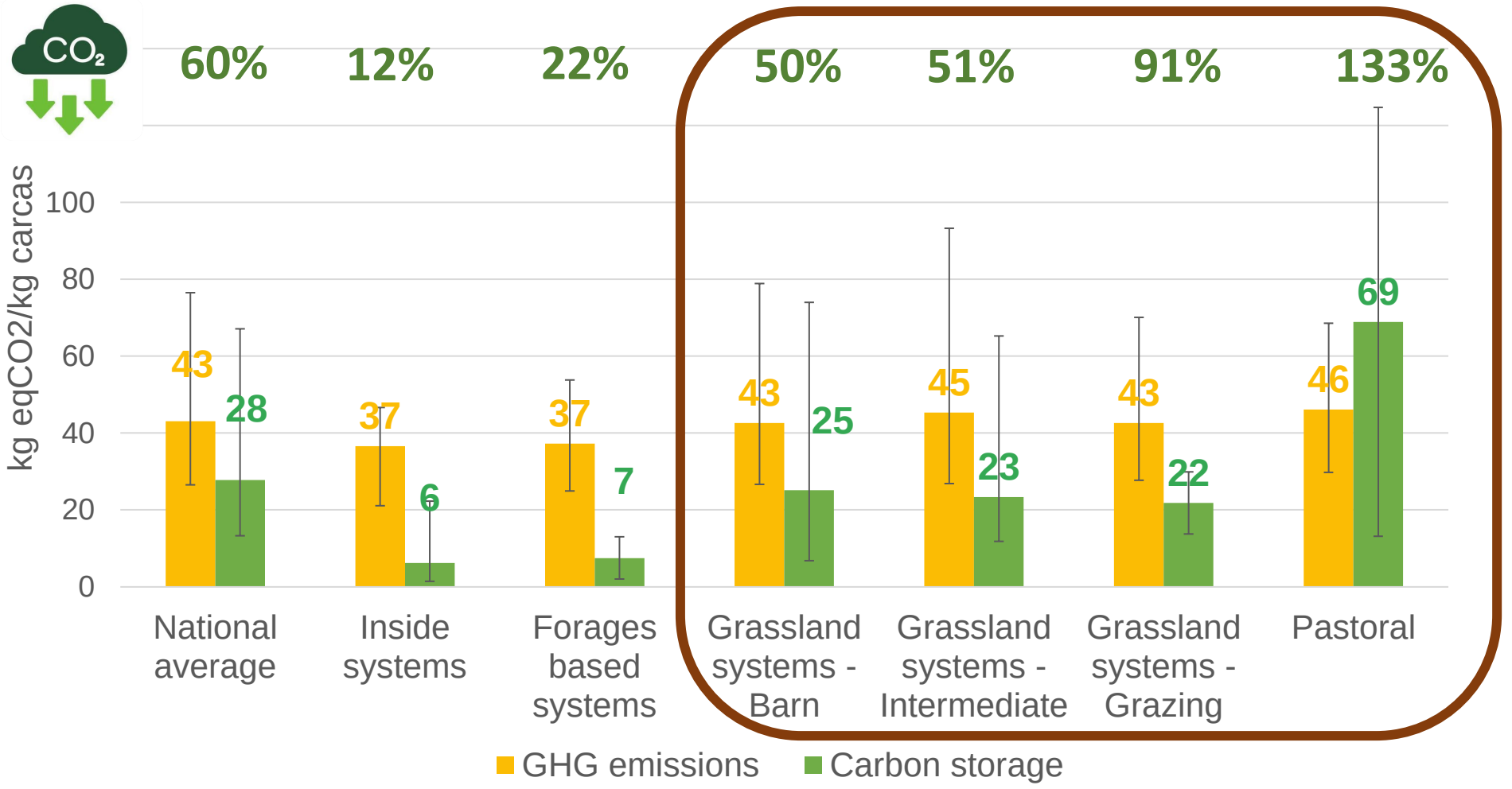
22%

65%

Preliminary results from LIFE Green Sheep project from 420 french sheep farms

A higher GHG emissions offsetting for moutain systems *Ex of meat sheep farms*

Results

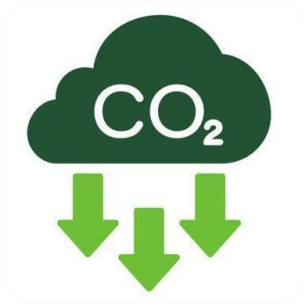


Preliminary results from LIFE Green Sheep project from all FR meat sheep farms (635 farms)

French Mountain sheep farming : a provider of environmental services

Conclusion

Not only negative impacts but also positive contributions !



An important contribution to climate regulation thanks to grassland & pastoral areas !

Lots of other services from sheep farms

More updated results to come soon ! Be connected with us ! ☺

Session 7 : Sustainability and ecosystem services of mountain farming

Thanks for all French partners for these preliminary results !

Financial supports

Session 7 : Sustainability and ecosystem services of mountain farming

Thanks for your attention

Any questions ?

sindy.throude@idele.fr