

Assessing the resilience of pastoralist transhumant systems in the Catalan Pyrenees with the help of SHARP+

Presenting:

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PastAdapt Project

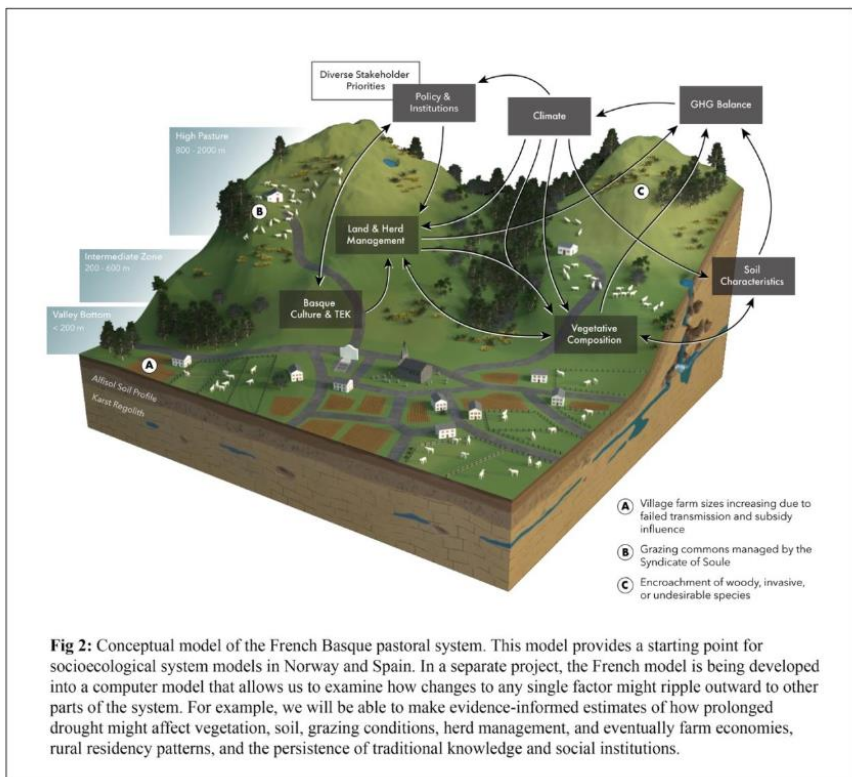
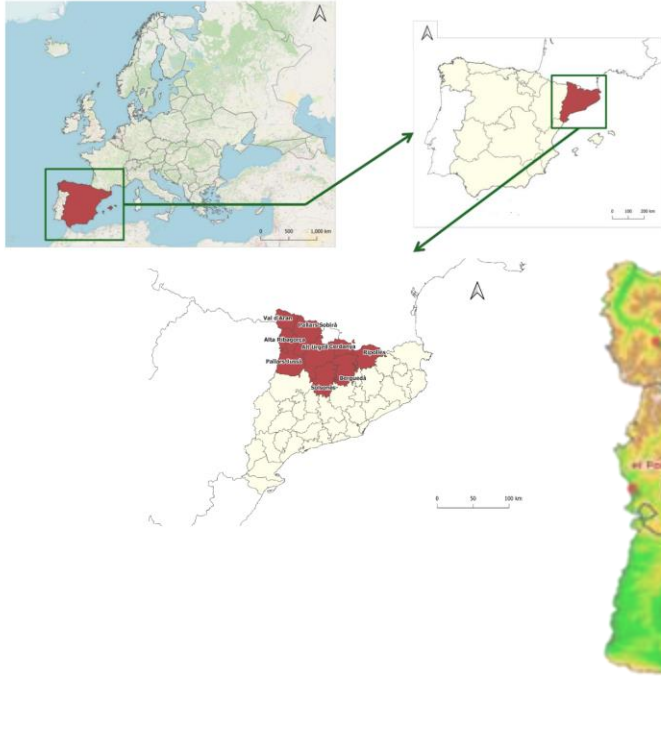


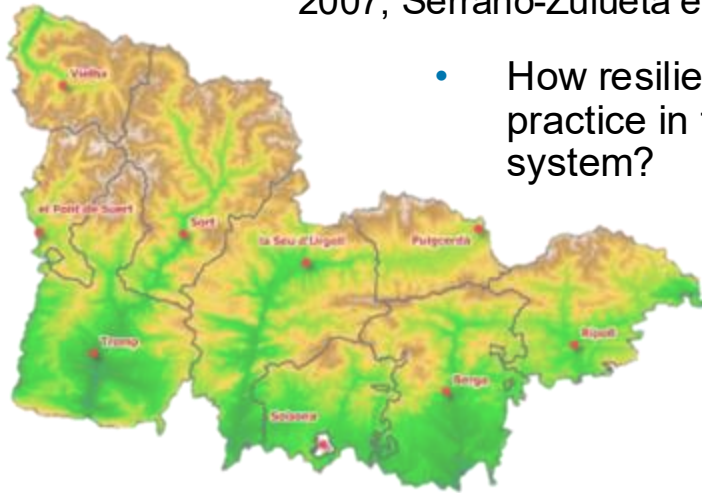
Figure: PastAdapt, 2024

- Belmont Forum funded (2024-27)
- Coordinated at the University of Georgia, by Thomas L. Mote
- **Mitigation and Adaptation in Cultural Heritage Landscapes: Lessons from Transhumant Pastoral Systems for Managing Novel Climate Risks**
- Field sites: Norway (NIBIO), France (University of Georgia), Spain (BC3)
- SHARP+ tool to conduct an initial vulnerability analysis of each transhumant system

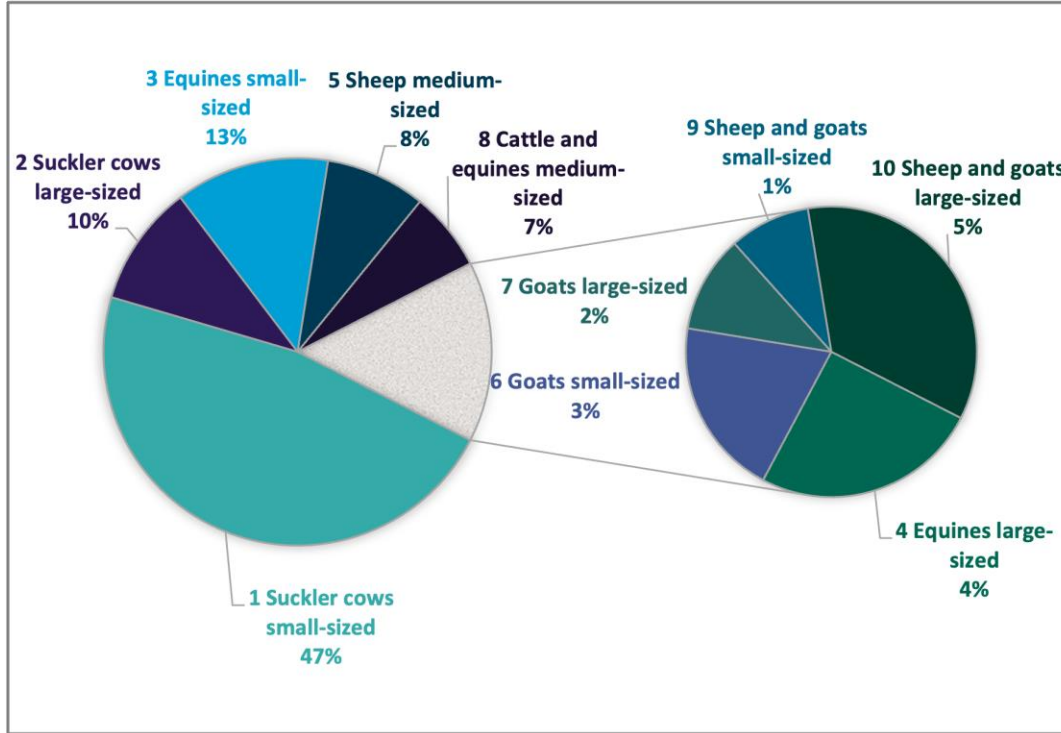
Regional contextualisation



- Historic changes in transhumant practices
- Numerous ecosystem services
- Set of challenges: lack of generational renewal, difficulties in the cohabitation with tourism (e.g. land conflicts), challenges in the cohabitation with wild fauna (bears, boars) (Lasanta et al. 2007, Serrano-Zulueta et al. 2024)
- How resilient is the transhumant practice in this social-ecological system?



Cluster analysis



Cluster name	Size
1 Suckler cows, small-sized	10 to 100 mother cows
2 Suckler cows, large-sized	More than 100 mother cows
3 Equines, small-sized	10 to 50 mares
4 Equines, large-sized	More than 50 mares
5 Sheep, medium-sized	More than 100 ewes
6 Goats, small-sized	10 to 100 goats
7 Goats, large-sized	More than 100 goats
8 Cattle and equines, medium-sized	More than 10 mares and more than 10 mother cows
9 Sheep and goats, small-sized	More than 10 goats and 100 to 500 ewes
10 Sheep and goats, large-sized	More than 10 goats and more than 500 ewes

Methodology inspired by Meyer et al. 2024



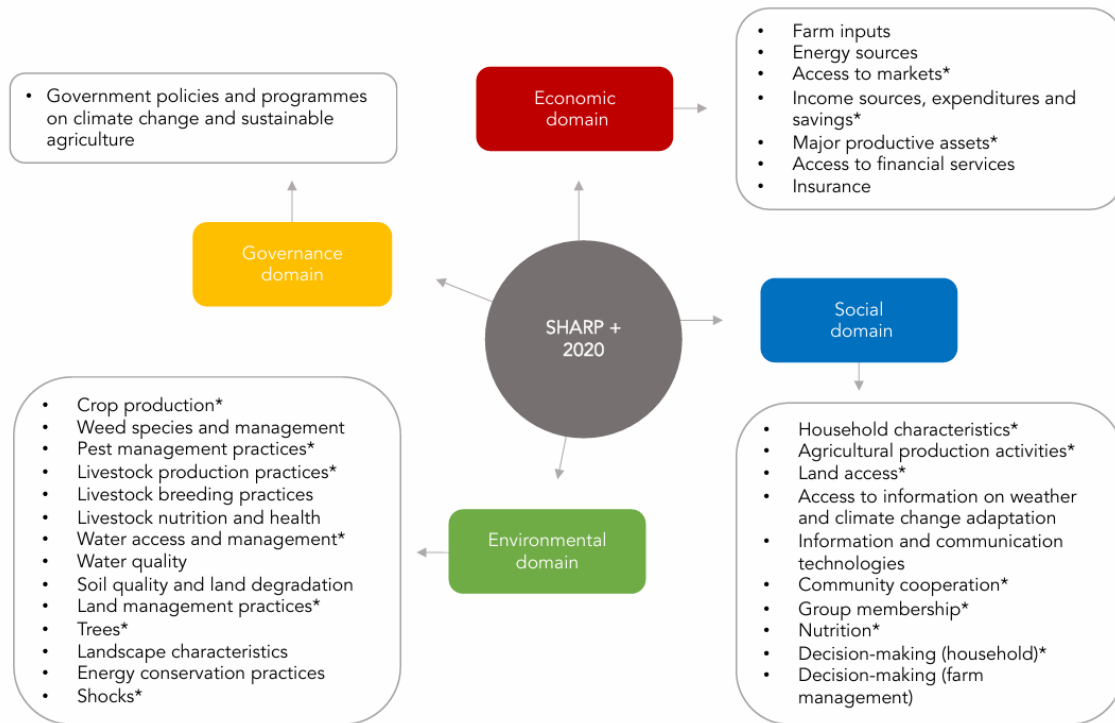
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SHARP+ analysis (I)

Adapting the tool to the study region

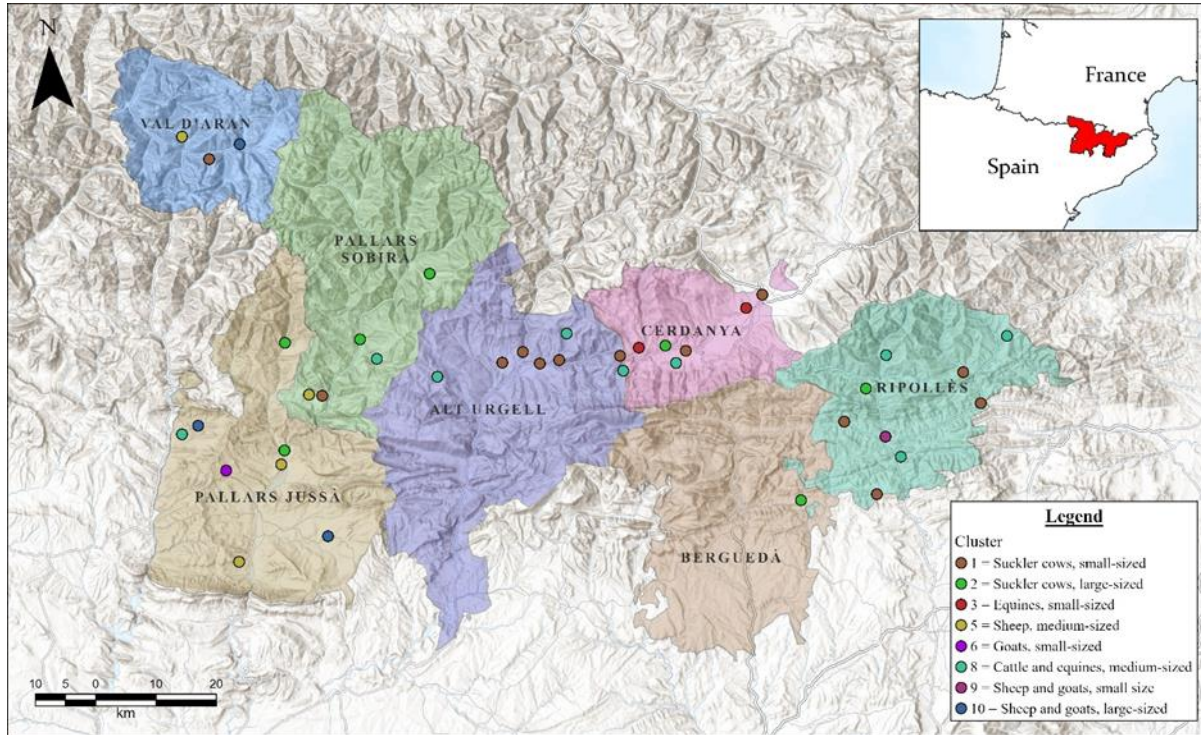
- Reduction from 33 to 17 modules
- Changes on modular, question and scoring level
- New modules on transhumance, generational renewal and knowledge
- Objective, subjective and total resilience score:
- High resilience level farms are described as “able to learn from past events and adopt individual or collective strategies to improve their livelihoods. Their set of knowledge, skills and resources appear to be adequate to meet their short- and long-term needs” (Lagana et al., 2022).

Resilience threshold	Total resilience score (scale of 0 to 20 points)
Low resilience level	0 to 7 points
Medium resilience level	7.01 to 12 points
High resilience level	12.01 to 20 points



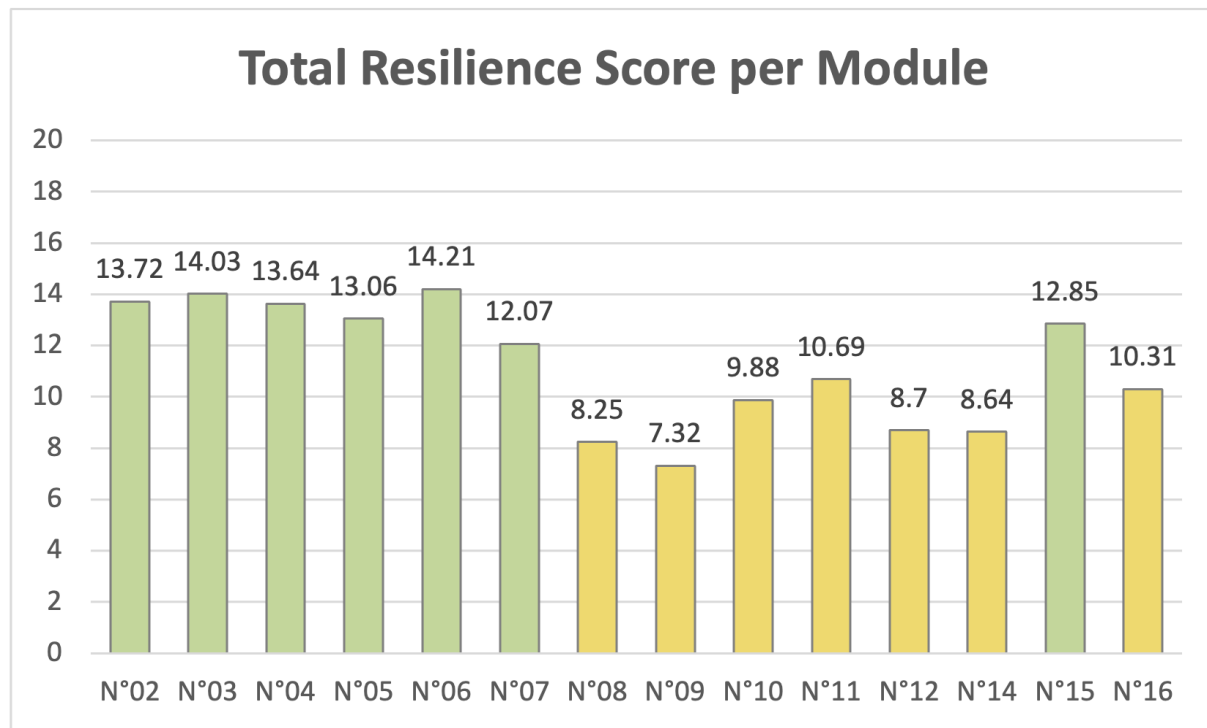
Overview of the mandatory and optional modules in the original SHARP+ tool. Modules marked with an asterisk* are optional.
Figure taken from: Lagana et al. 2022

SHARP+ analysis (II)



- N=40
- 7 comarcas
- 7 out of 10 clusters represented

Results: Total Scores



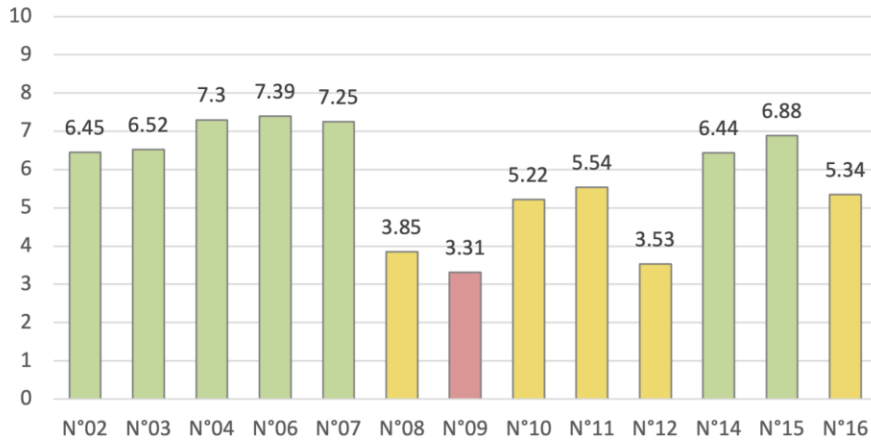
Total resilience score
across the whole
sample: 10.95

- 2. Education and knowledge
- 3. Agricultural production
- 4. Animal production
- 5. Animal nutrition
- 6. Transhumance
- 7. Access to land
- 8. Work and generational renewal
- 9. Shocks and disturbances
- 10. Market access
- 11. Sources of income, expenses and savings
- 12. Institutional and governmental support
- 14. Community cooperation
- 15. Belonging to groups
- 16. Personal time and life

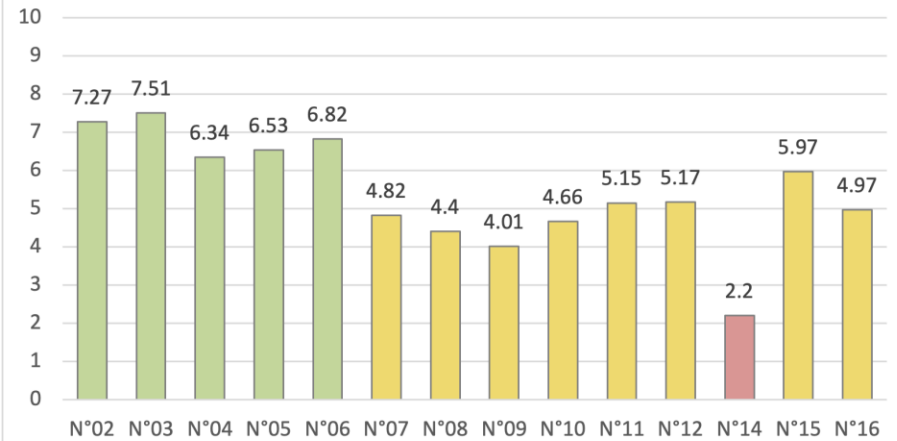


Results: Subjective and objective scores

Subjective Score per Module (/10)



Objective Score per Module (/10)



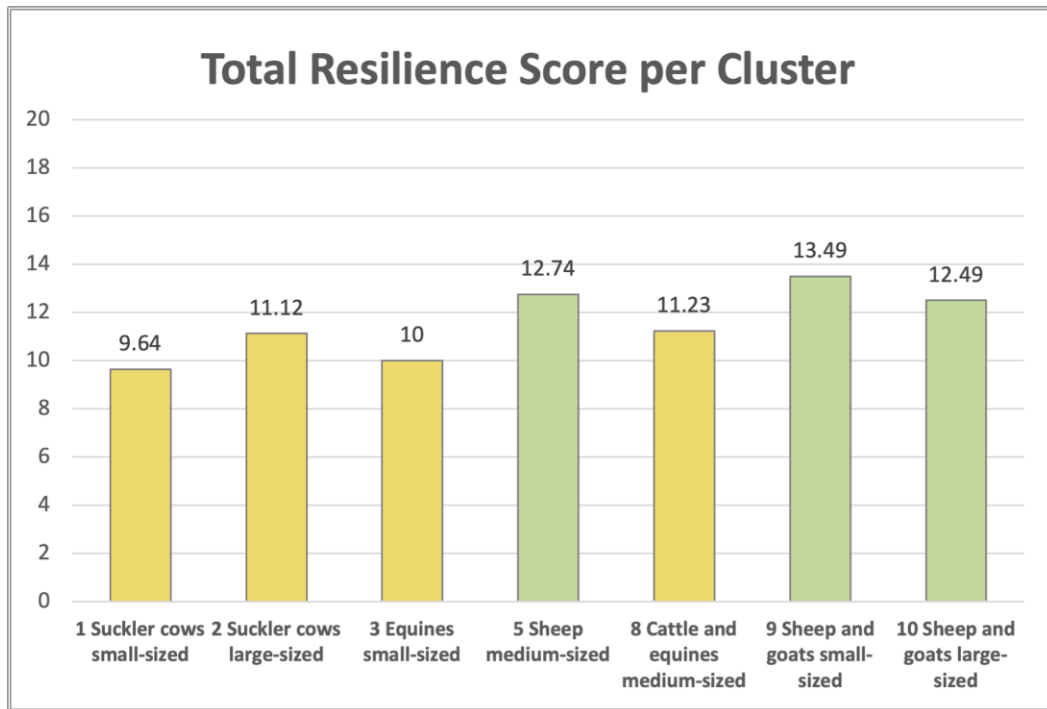
Results: Insights from different clusters

Clusters with a high level of resilience are those composed primarily of sheep:

- Cluster 5 (Medium-sized sheep)
- Cluster 9 (Small-sized sheep and goats)
- Cluster 10 (Large-sized sheep and goats)

Differences between transhumant and non-transhumant farms:

- higher resilience score of 1.5 points was seen in cluster 5



Conclusion: Making sense of the scores

- Transhumance by sheep and / or goats = resilience strategy for the region but problematic on individual farm level
- “Negative” adaptations trends
- Subjective perception and objective resilience score can vary significantly (e.g climatic shocks)
- SHARP+ method holds potential for the comparison of resilience between different social-ecological systems / regions but needs to be adapted to be more robust

Sources

Meyer, Maximilian, Christian Gazzarin, Pierrick Jan, and Nadja El Benni. 2024. 'Understanding the Heterogeneity of Swiss Alpine Summer Farms for Tailored Agricultural Policies: A Typology'. *Mountain Research and Development* 44 (1). <https://doi.org/10.1659/mrd.2023.00041>.

Lasanta, Teodoro, María Laguna, and Sergio M. Vicente-Serrano. 2007. 'Do Tourism-Based Ski Resorts Contribute to the Homogeneous Development of the Mediterranean Mountains? A Case Study in the Central Spanish Pyrenees'. *Tourism Management* 28 (5): 1326–39. <https://doi.org/10.1016/j.tourman.2007.01.003>.

Serrano-Zulueta, Rubén, Antonio Gómez-Sal, Ferrán Pauné, et al. 2024. 'A CLASSIFICATION OF PASTORALISM IN SPAIN: UNDERSTANDING THE PAST TO ADDRESS PRESENT CHALLENGES'. *Nomadic Peoples* 28 (2): 242–74. <https://doi.org/10.3828/whpnp.63837646691057>.

THANK YOU



Photo: Katharina Schatton