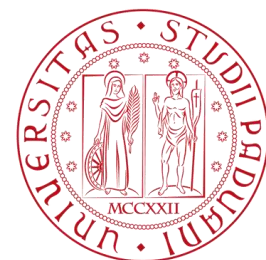


Exploring wildlife-livestock interfaces in alpine pastoral systems

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VetAgro Sup



Mountain Grassland and Livestock
New perspectives for mountain farming

15 - 17 June 2026



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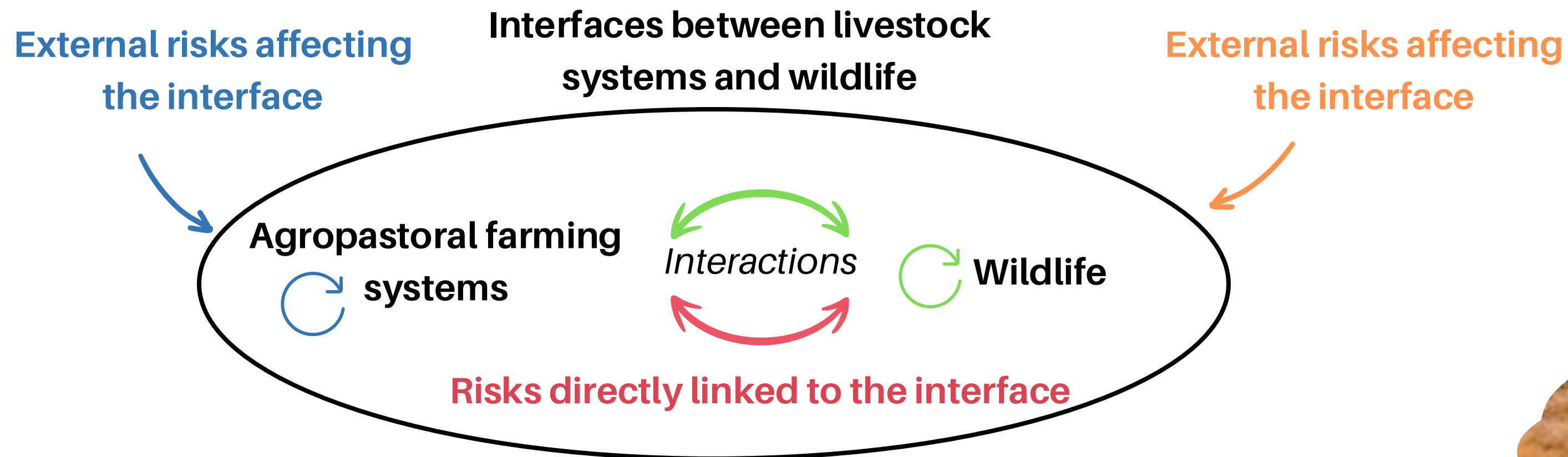


Sheep and ibex, Cime d'Auta, Italy, July 2025

Context and objectives

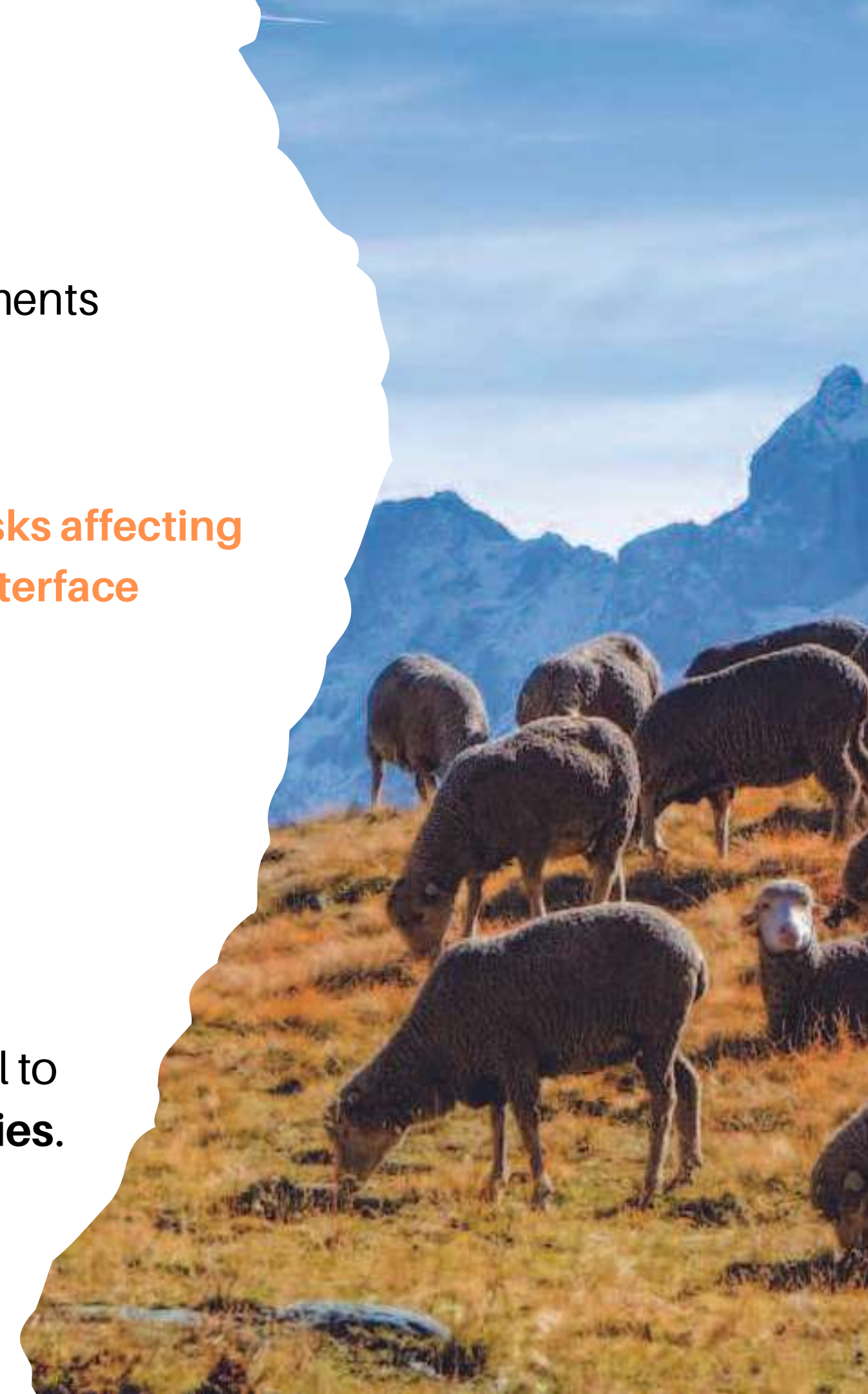
Mountain livestock systems under pressure

Mountain livestock systems operate within complex socioecological environments where farming activities, wildlife and human uses coexist.



A better global understanding of these wildlife–livestock interfaces is essential to ensuring **the long-term sustainability of alpine pastoral systems and territories.**

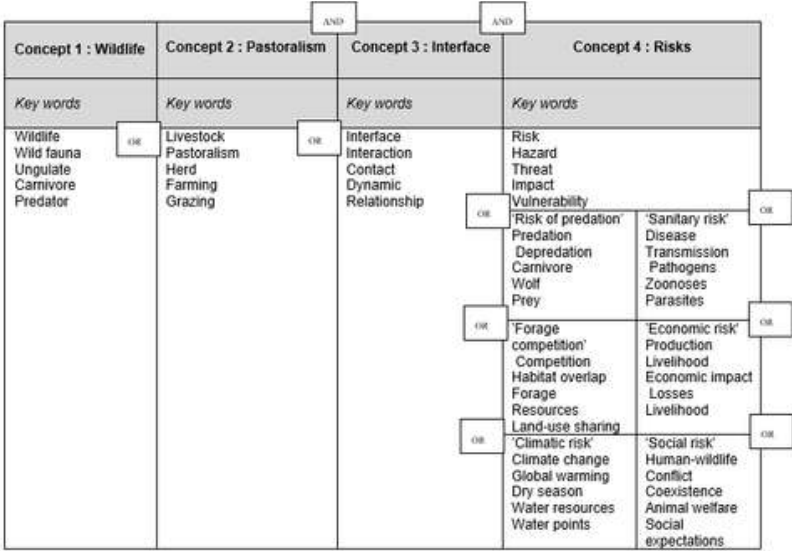
Our work aim to documents **the diversity of interfaces, interactions and risks** between wildlife and pastoral livestock, while proposing **a conceptual framework** for the wildlife-livestock interface.



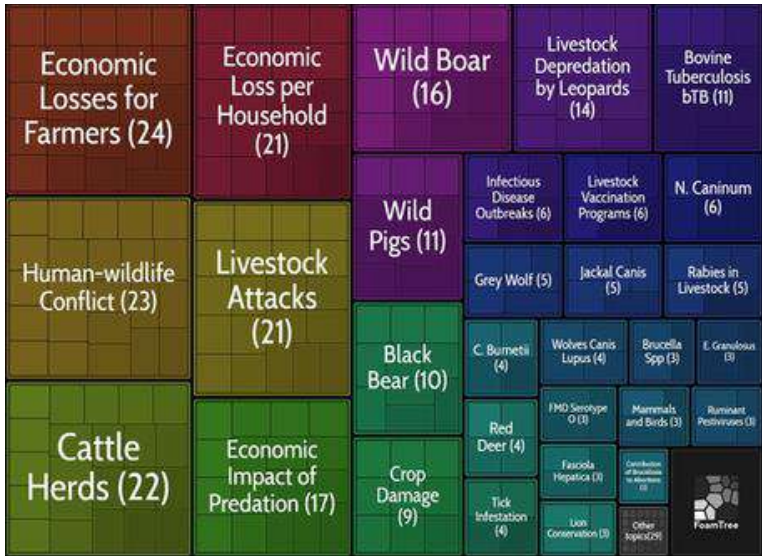
Exploring risks through 6078 cases studies in literature

The aim was to explore the complexity of risk management and its impacts on pastoral systems, particularly through the implementation of:

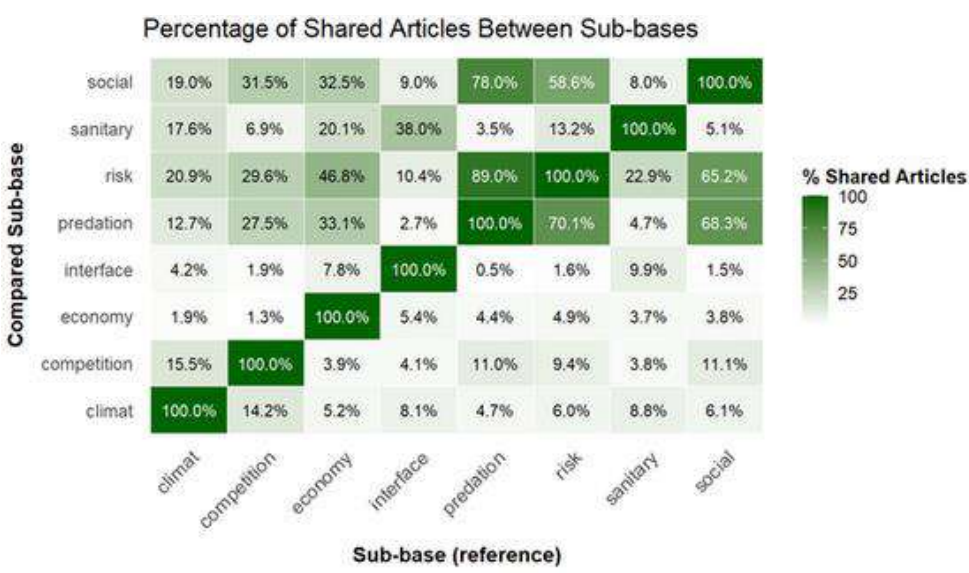
a) a methodological framework for the construction and analysis of a thematic corpus in order to identify the risks associated with the interface between wildlife and livestock farming systems



Concept plans, thematic research equations



Thematic classifications by clustering - Carrot² software



Cross-tabulation matrices & thematic links - R analysis

6,078 case studies identified, analyzed and classified



150 case studies particularly relevant



b) and the proposal of an analytical framework for understanding risks at the wildlife-livestock interface through 150 cases studies

Exploring interactions with wildlife, pastoral practices and alpine territories through one hundred interviews

The aim was to characterize the diversity of interfaces and pastoral practices in order to identify points of resilience and vulnerability of pastoral farming systems.

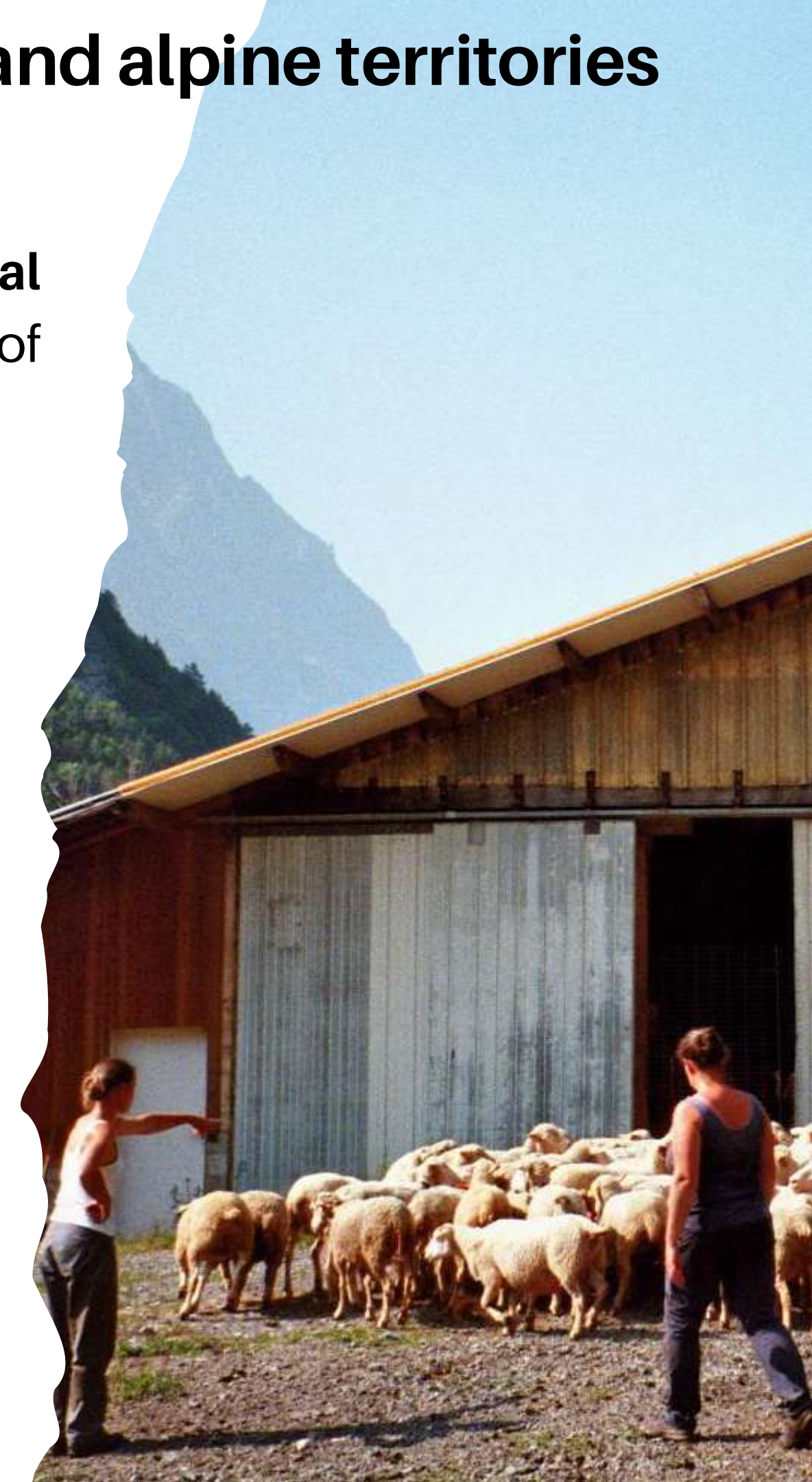
Semi-directive interviews with 70 farmers with pastoralism (suckler sheep farms and dairy cattle farms)

Several themes are covered, such as :

- Organization of livestock systems, herd management practices, use of feed resources, spatial organization of pastoral grazing areas
- Nature of interactions with wildlife
- Predation, Health management, Resource competition
- Climate change and Societal expectations...

Pastoral trajectory analysis to characterize management practices & Qualitative analysis using NVIVO to investigate multiple risk management in pastoral systems

Three study areas



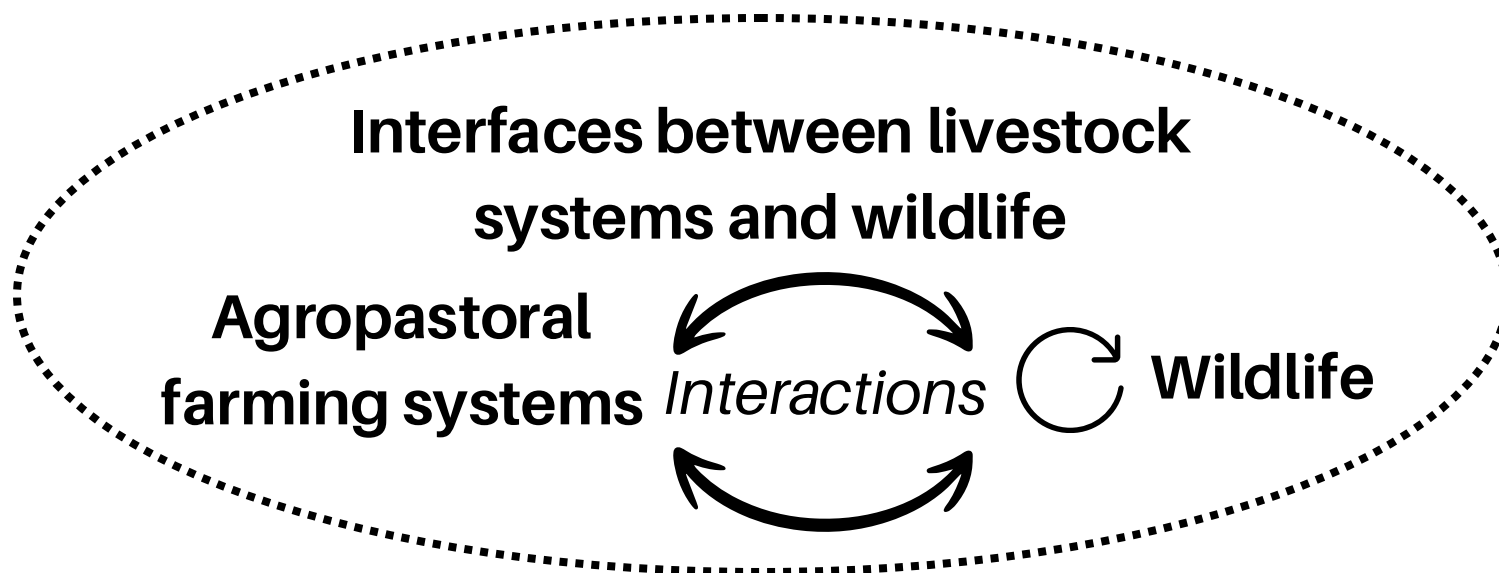
Results

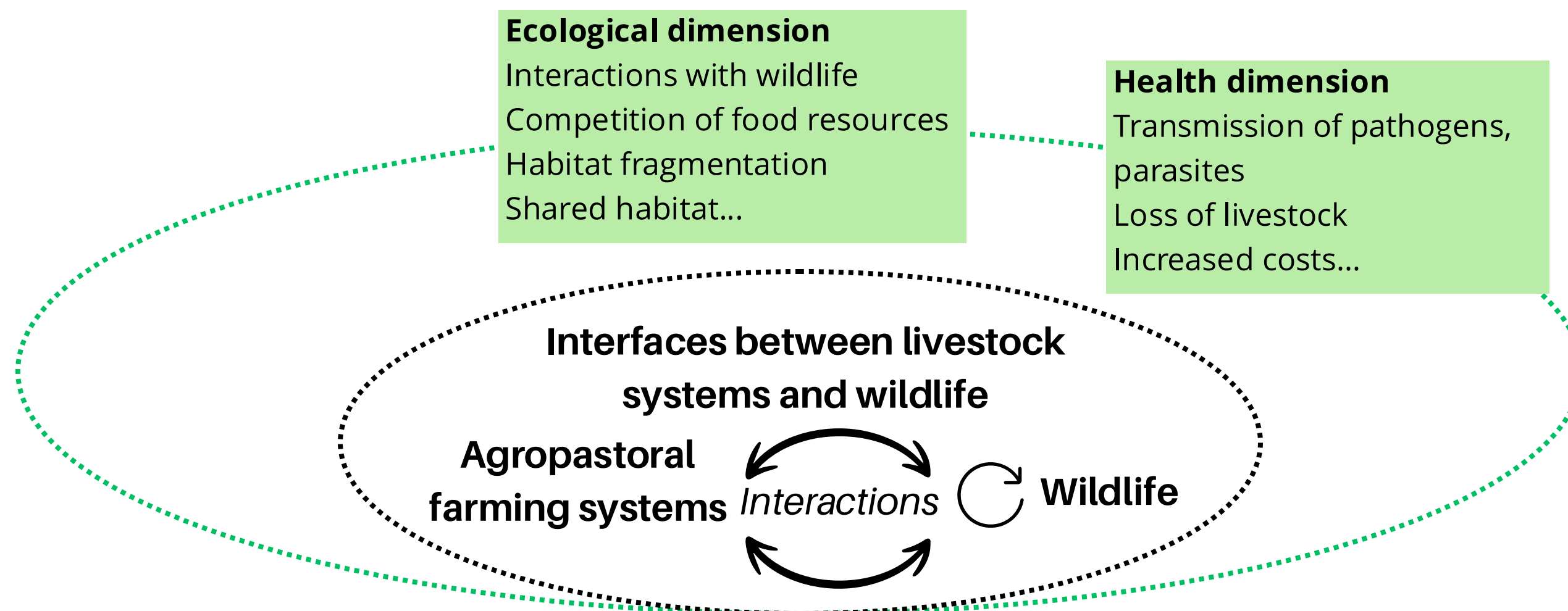
The diversity of risks at the wildlife–livestock interface reveals its multidimensional nature

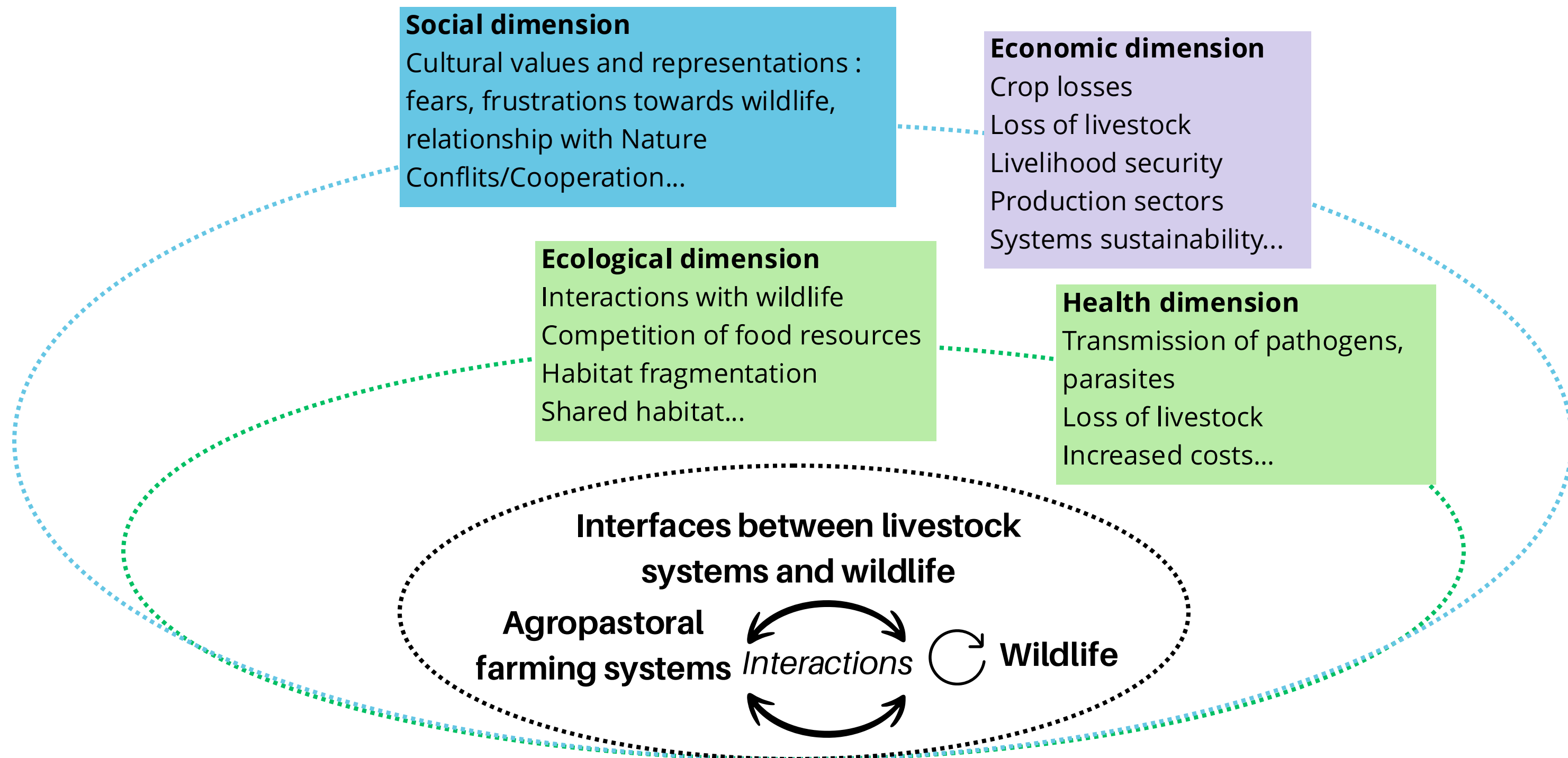
The analysis of the **6,078 case studies** underlines **a set of risks affecting pastoral farming systems linked to their interface with wildlife**. The livestock–wildlife interface appears **deeply multidimensional**, encompassing **ecological, health, economic, social and political dimensions**.



Not only this...







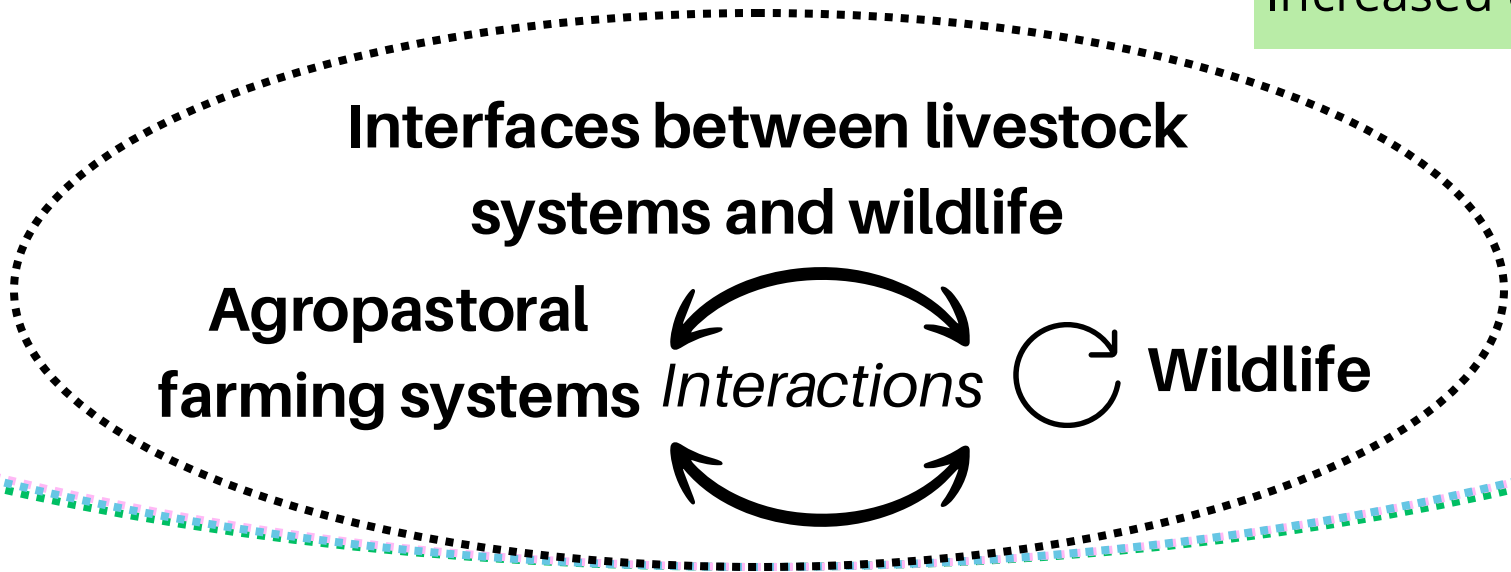
Political and institutional dimension
Governance & Reglementation
Wildlife management
Risk management strategies...

Social dimension
Cultural values and representations :
fears, frustrations towards wildlife,
relationship with Nature
Conflits/Cooperation...

Economic dimension
Crop losses
Loss of livestock
Livelihood security
Production sectors
Systems sustainability...

Ecological dimension
Interactions with wildlife
Competition of food resources
Habitat fragmentation
Shared habitat...

Health dimension
Transmission of pathogens,
parasites
Loss of livestock
Increased costs...



Global changes
Climate change
Market dynamics
Territorial transformations
Agricultural transformations
Land-use pressure...

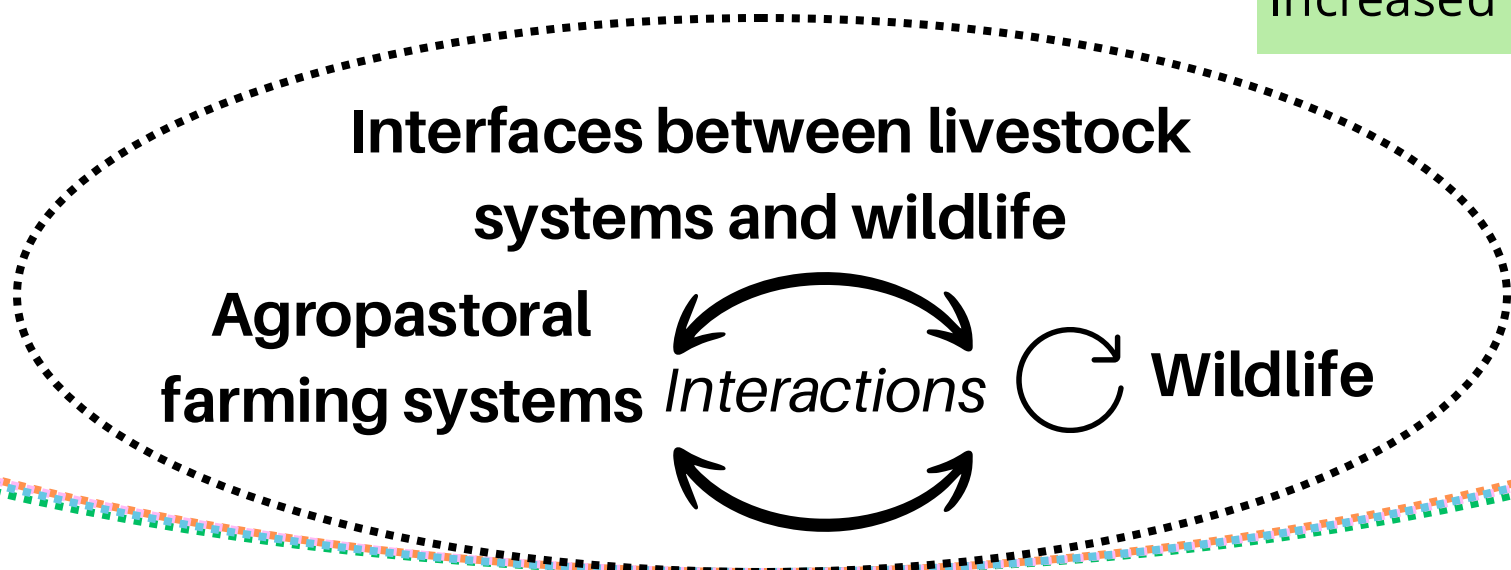
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Health dimension
Transmission of pathogens,
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Loss of livestock
Increased costs...



Spatio-temporal dimension

Short-term (daily)

Middle-term (saisonnality)

Long-term (year, between years)

Mobility of wildlife, livestock, humans...

Political and institutional dimension

Governance & Reglementation

Wildlife management

Risk management strategies...

Global changes

Climate change

Market dynamics

Territorial transformations

Agricultural transformations

Land-use pressure...

Social dimension

Cultural values and representations :
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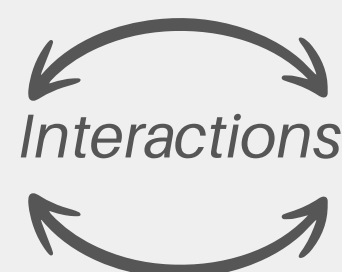
Transmission of pathogens,
parasites

Loss of livestock

Increased costs...

Interfaces between livestock systems and wildlife

Agropastoral
farming systems



Wildlife

Results

The diversity of pastoral practices and wildlife interactions shapes the wildlife-livestock interface

The analysis of pastoral trajectories and the annual organization of farming systems through surveys reveal key notions structuring wildlife-livestock interfaces :

- The importance of alpine pastures within the farming system

IMPORTANCE
OF ALPINE
PASTURE



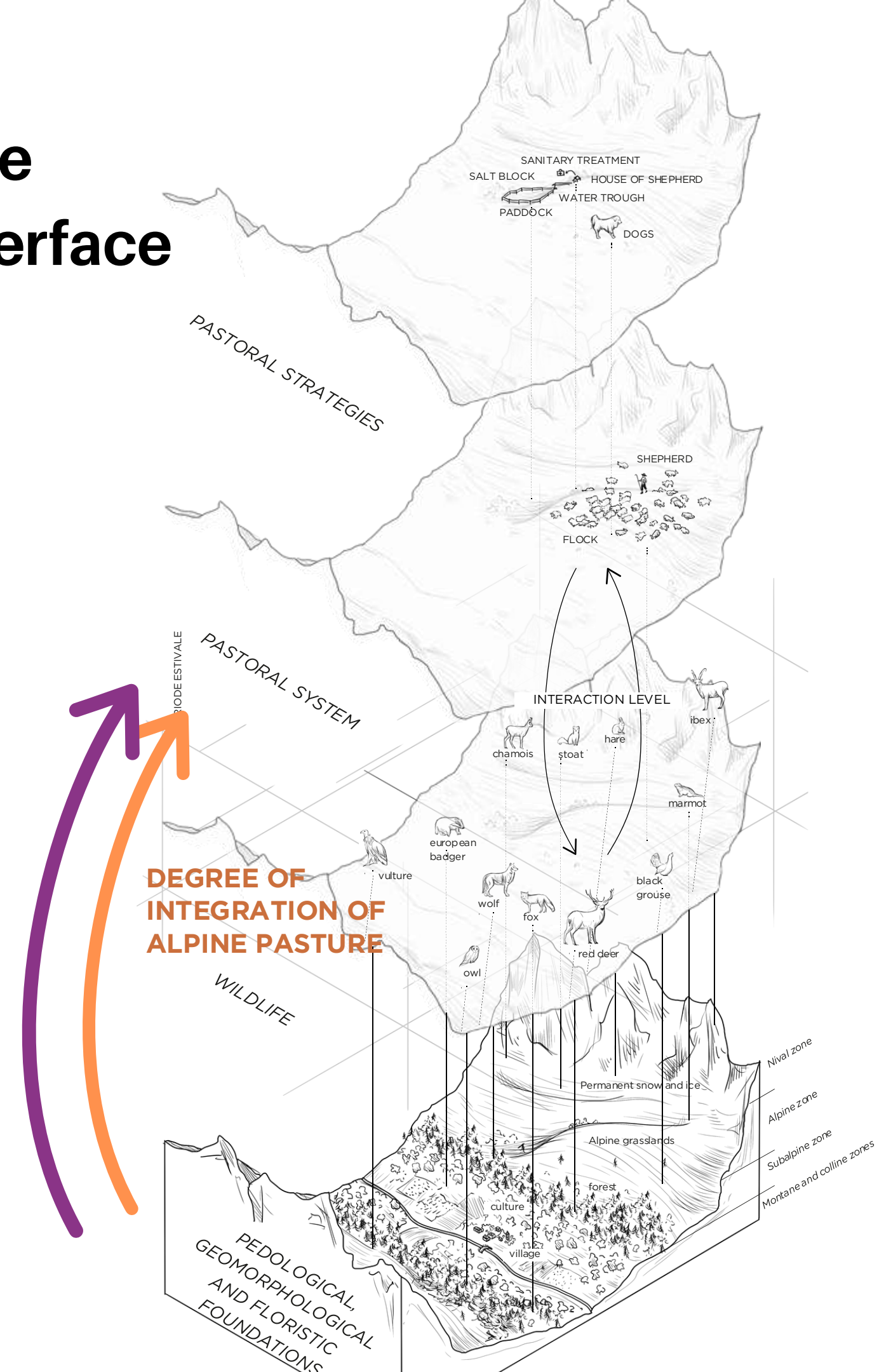
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- The importance of alpine pastures within the farming system
- The degree of integration of alpine pastures into the overall farm functioning

IMPORTANCE
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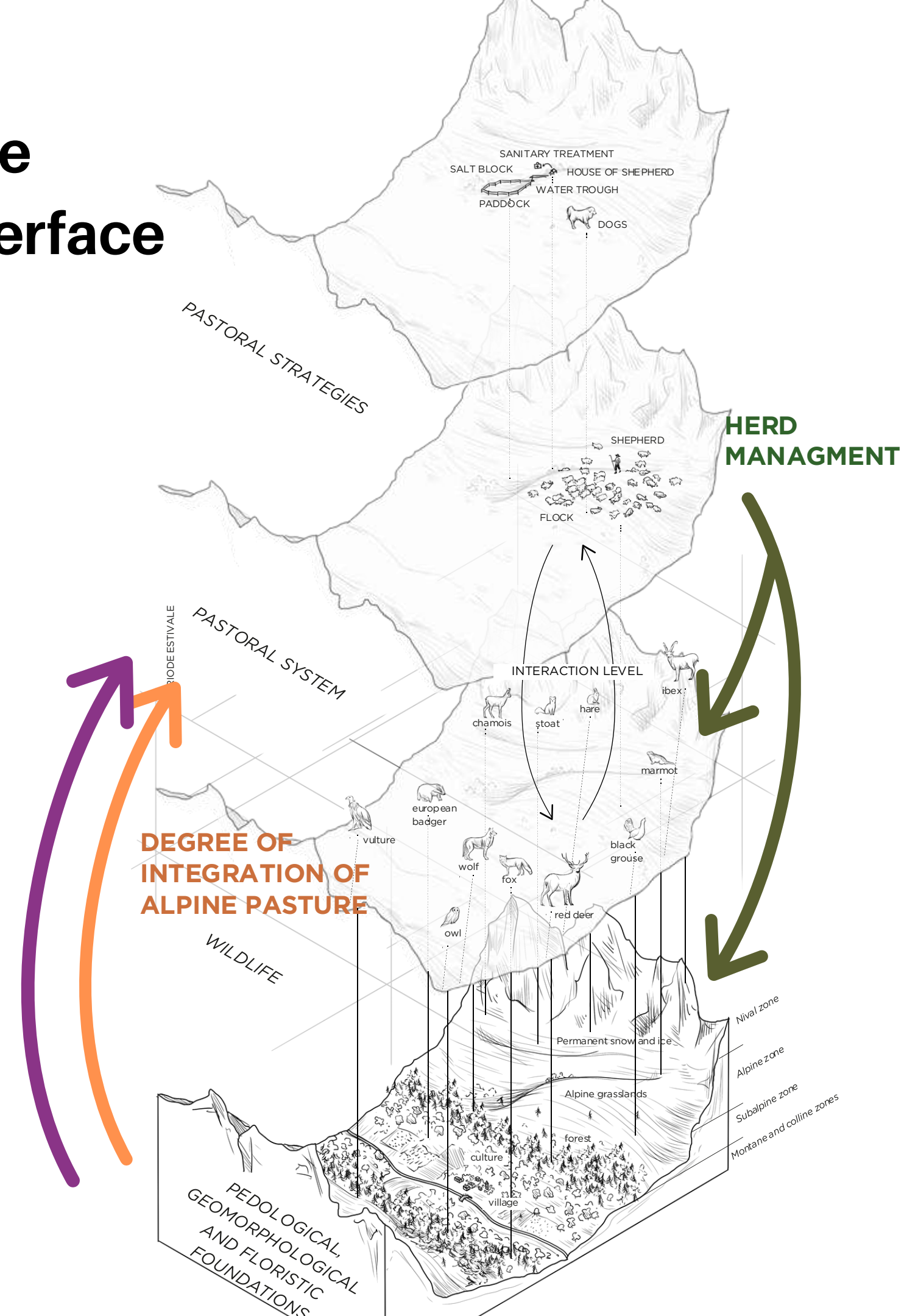
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- Herd management strategies

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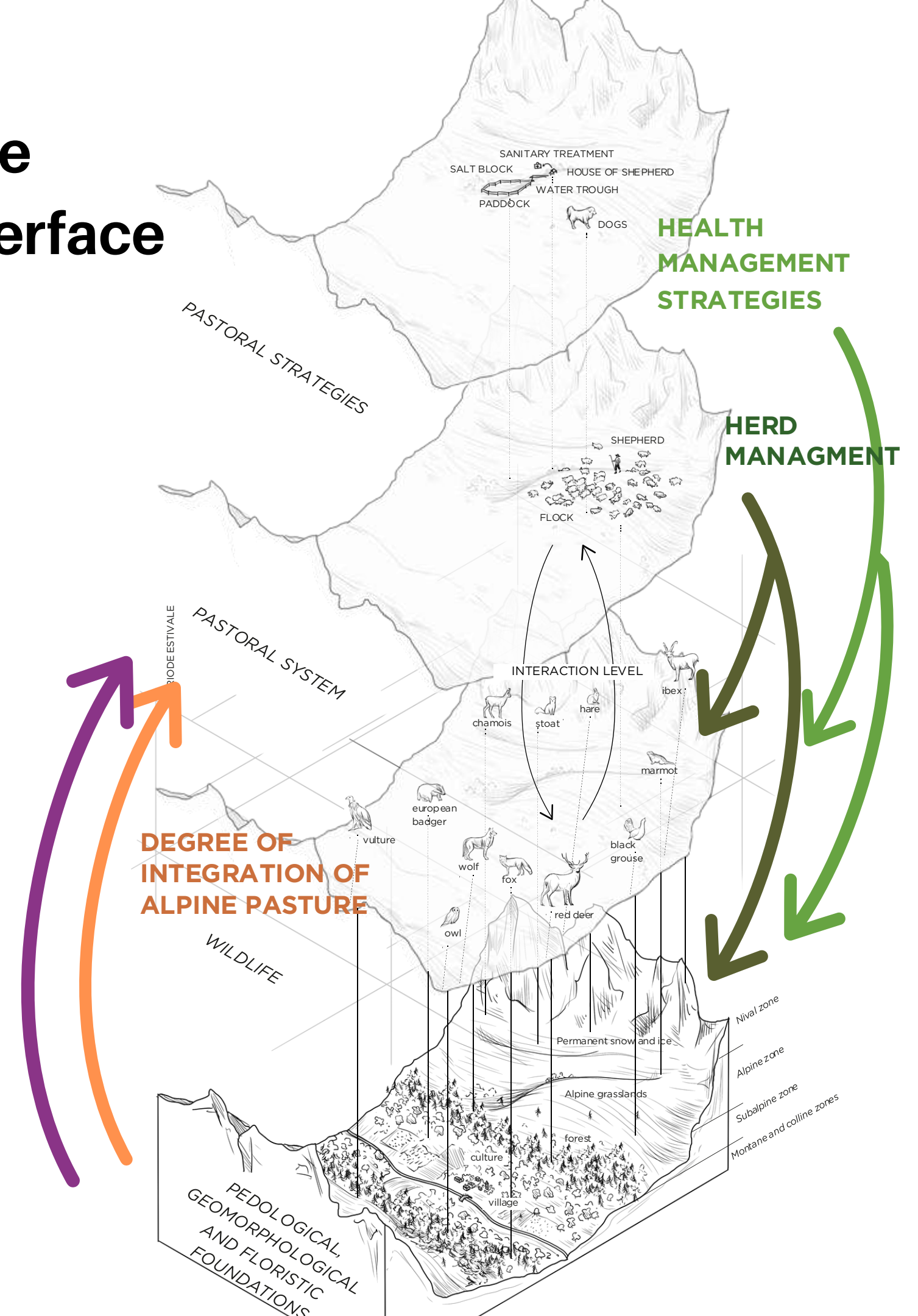
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- Herd management strategies
- Animal health management strategies

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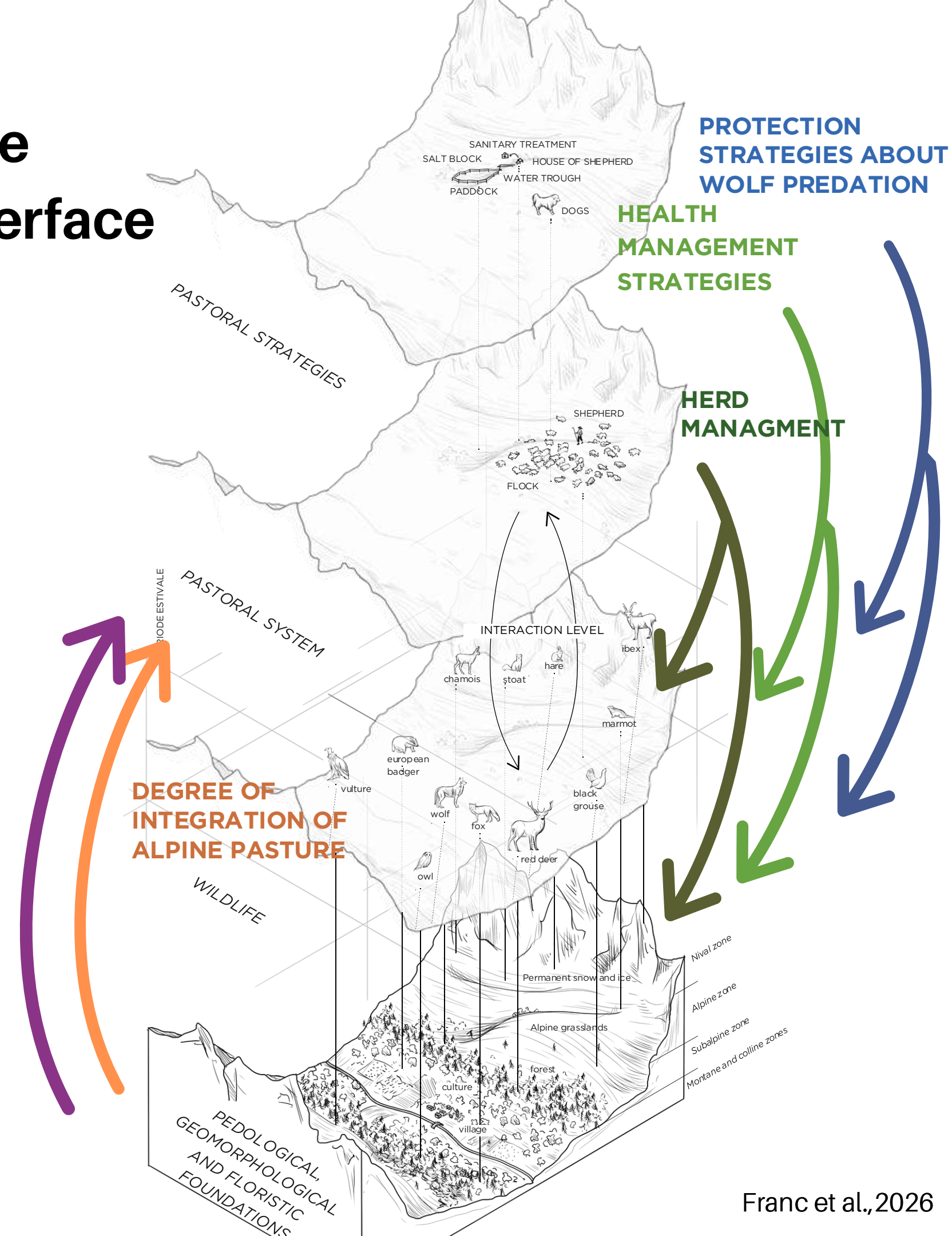
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The analysis of pastoral trajectories and the annual organization of farming systems through surveys reveal key notions structuring wildlife-livestock interfaces :

- The importance of alpine pastures within the farming system
- The degree of integration of alpine pastures into the overall farm functioning
- Herd management strategies
- Animal health management strategies
- Protection strategies

The interplay between the physical interface and pastoral practices describes the diversity of wildlife-livestock interfaces across pastoral farming systems.

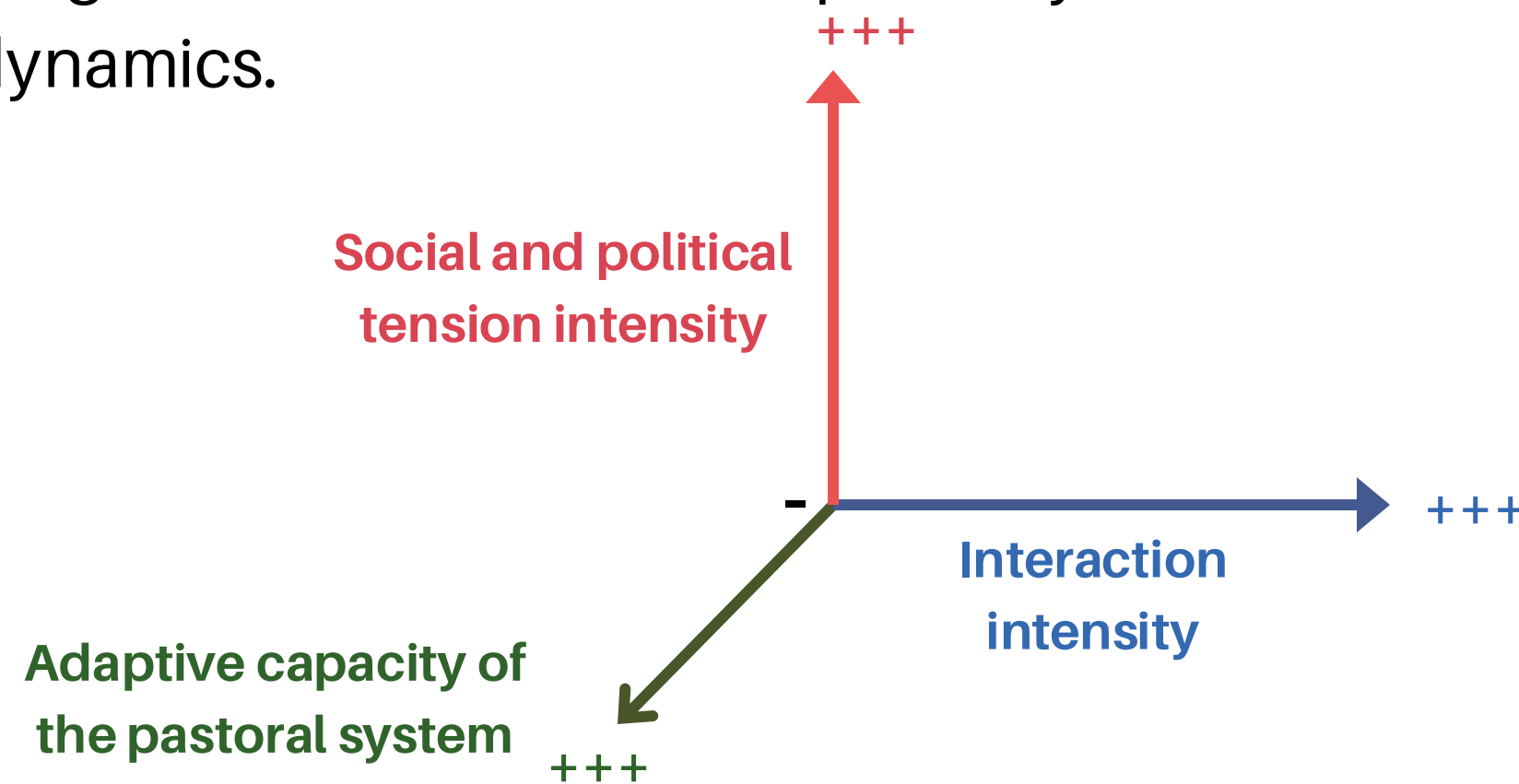


Results

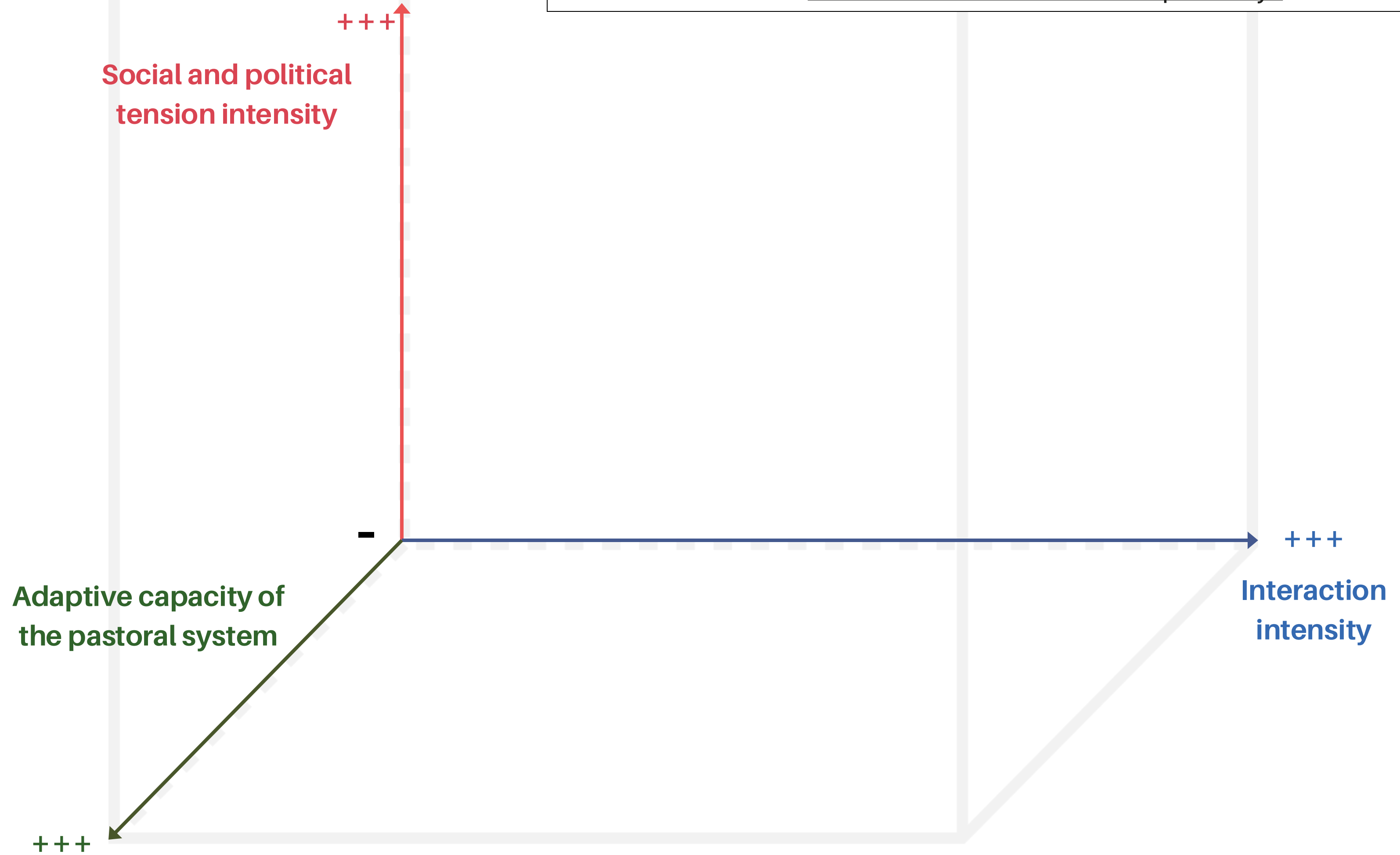
The interface also appears as a space of negotiation where risks and coexistence are constructed through interactions, tensions and mutual adaptations

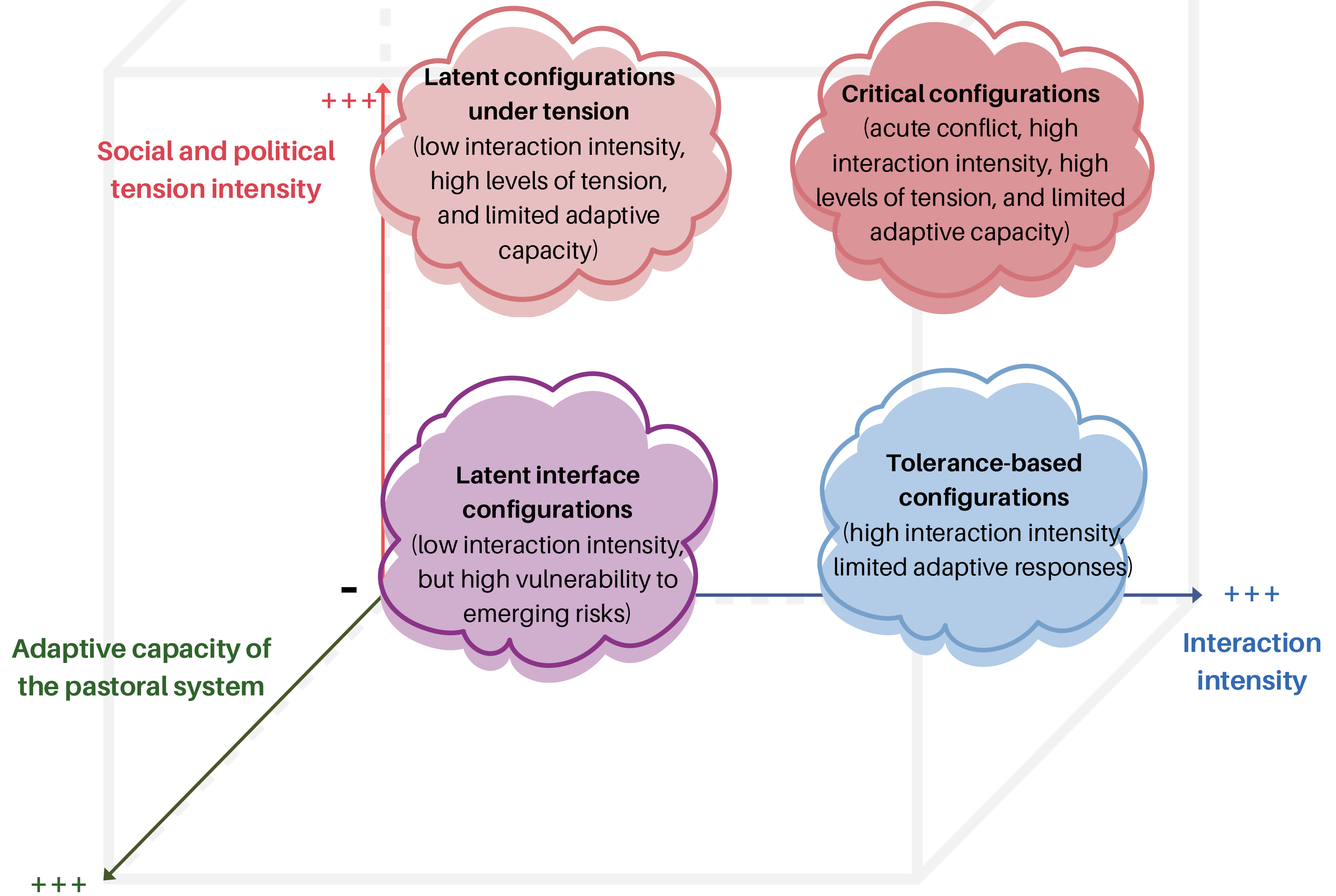
The wildlife-livestock interface should not be understood as a fixed zone of confrontation, but as **dynamic socio-ecological configurations** where **coexistence** is continuously shaped by negotiations.

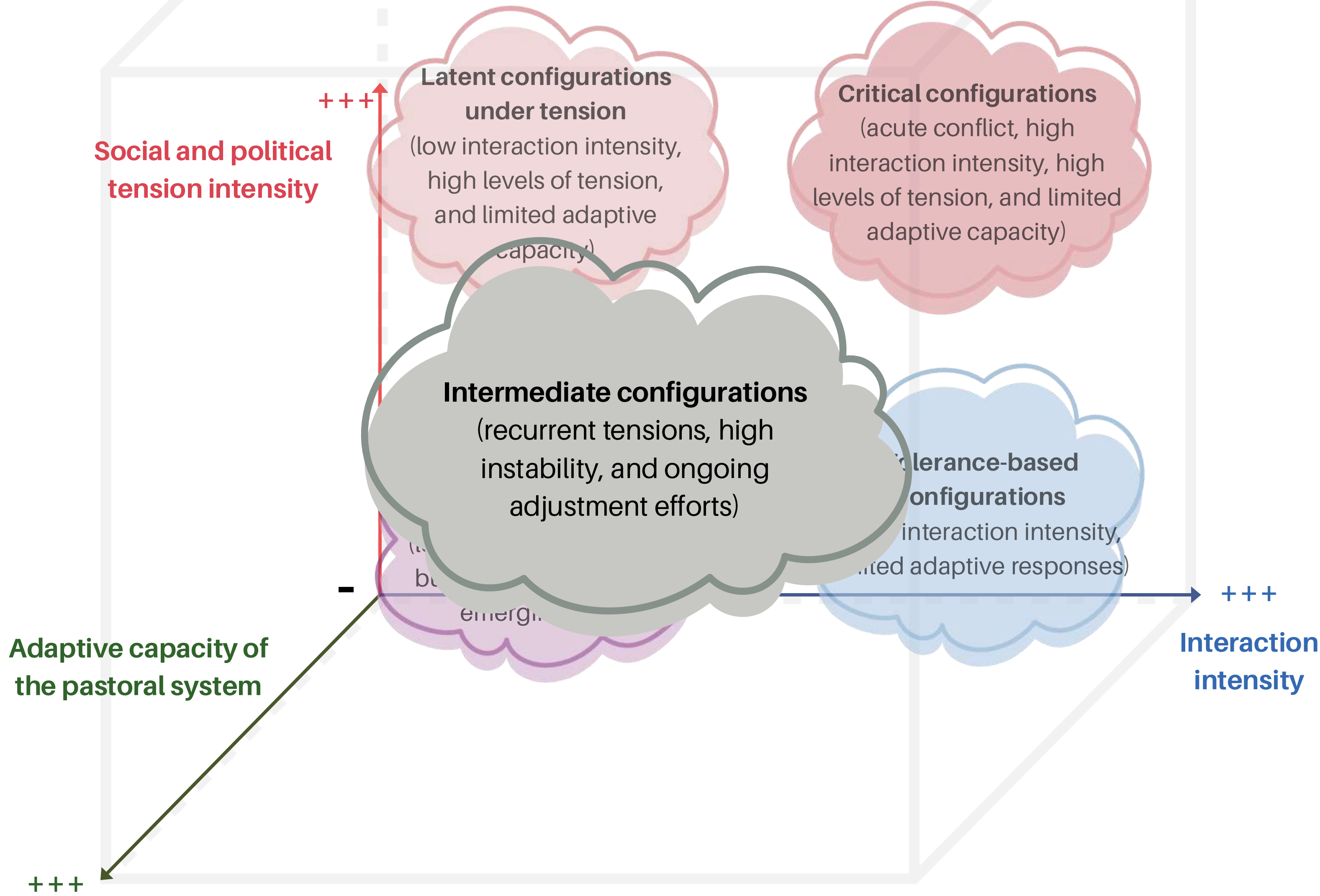
These configurations **seem to differ in terms of interaction intensity, levels of tension, and the adaptive capacity of pastoral systems**, resulting in diverse coexistence pathways and risk management dynamics.

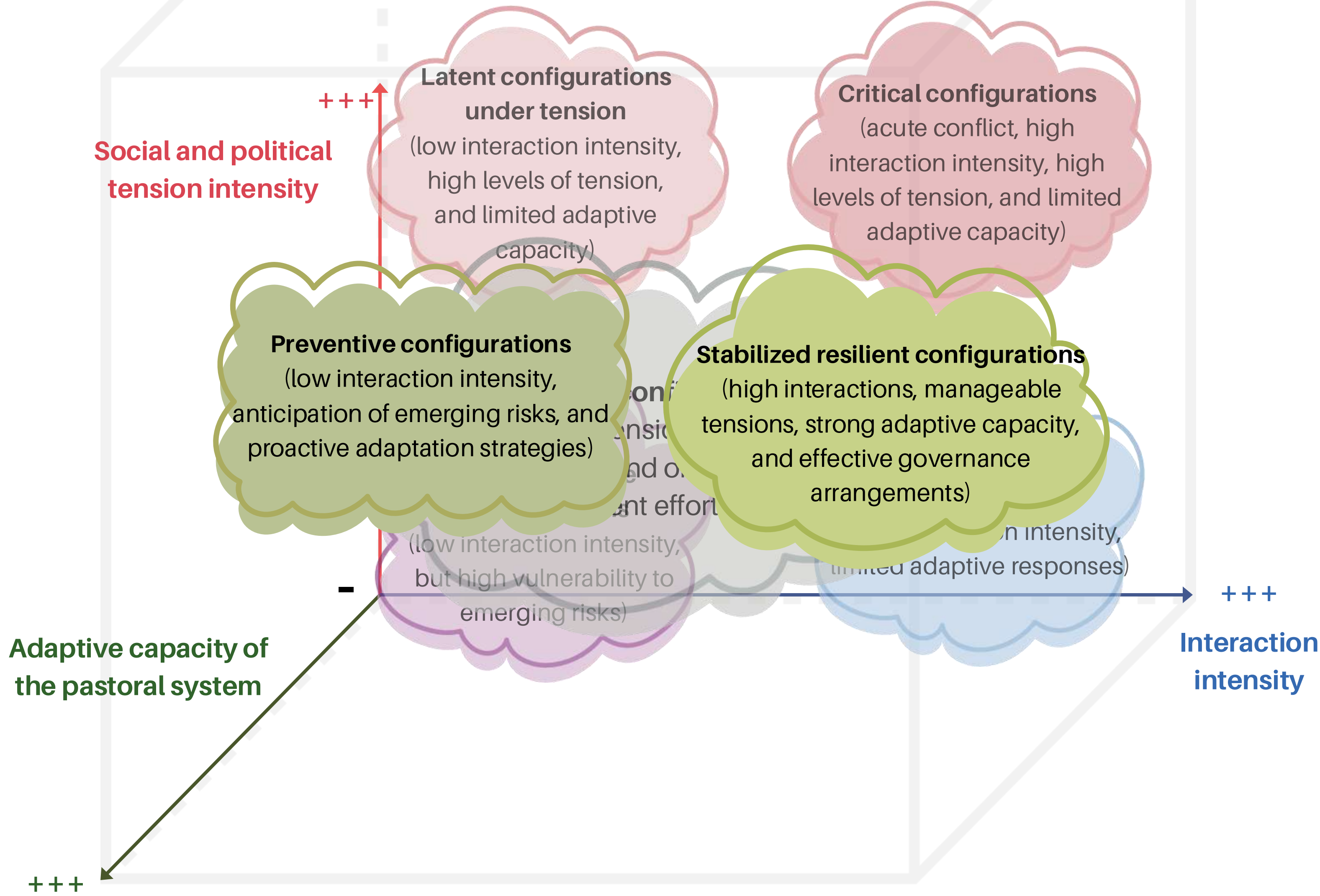


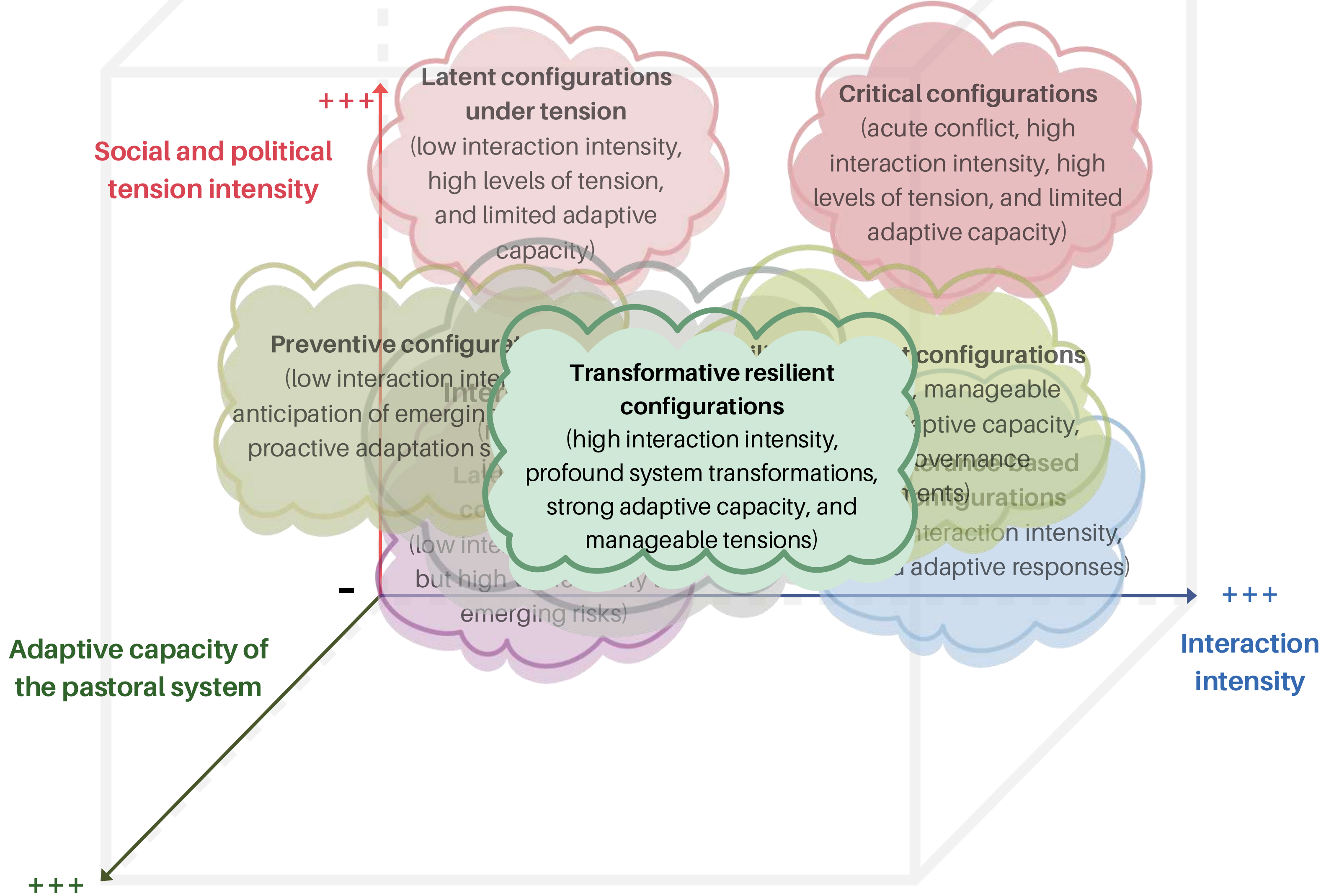
Dynamic configurations of wildlife-livestock interfaces: from interactions
and tensions to coexistence pathways

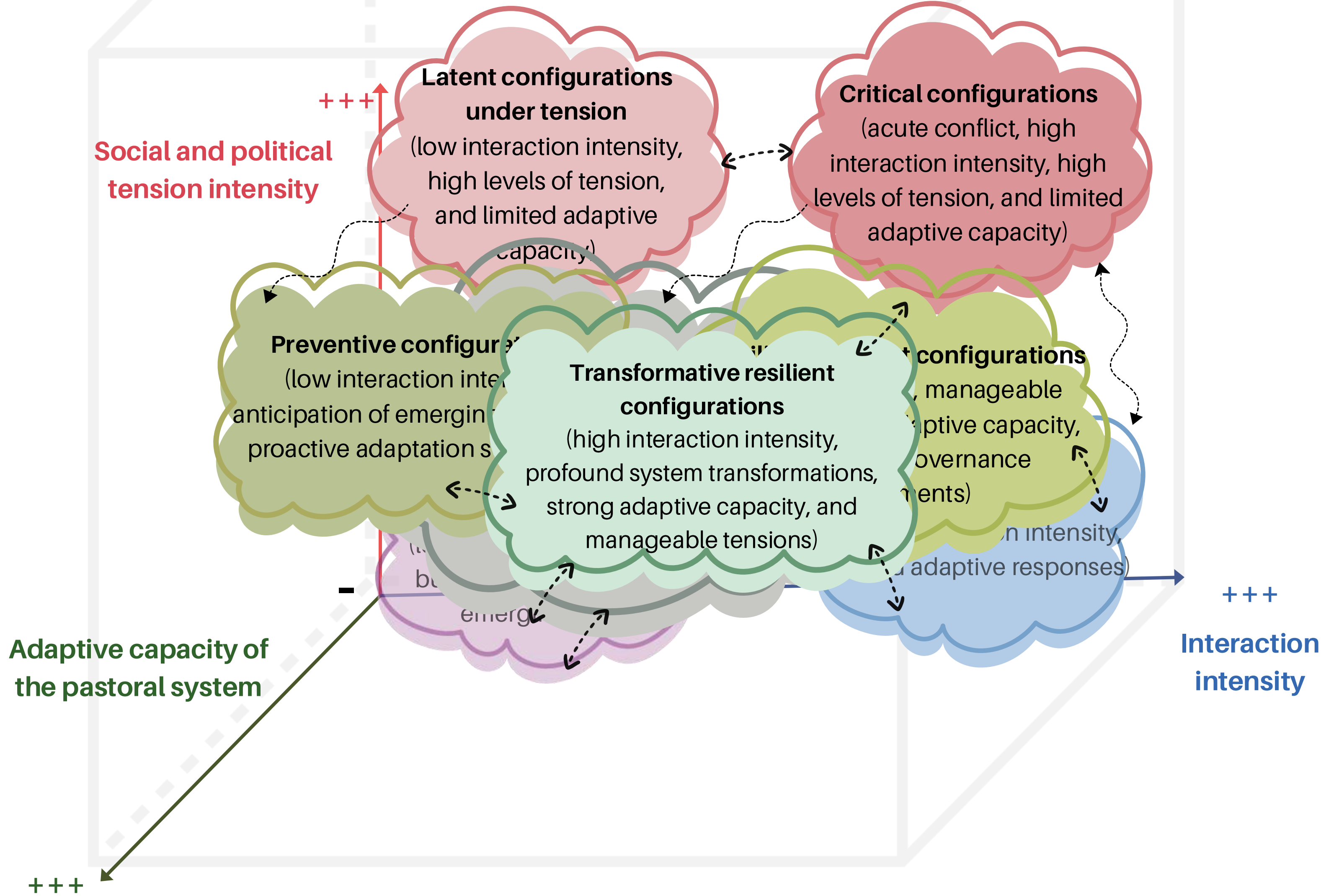












Key points to remember

- **Wildlife-livestock interfaces** are not merely zones of contact but **dynamic, multidimensional and context-dependent socio-ecological configurations**
- **Different interface configurations** lead to **contrasting risk exposure** and coexistence pathways
- **Coexistence** is the **outcome of continuous negotiations, adaptations and trade-offs** occurring at the wildlife-livestock interface
- **Importance of exploring the diversity of wildlife-livestock interfaces** : for understanding coexistence dynamics and **supporting the resilience/adaptation of pastoral systems** under global change



Conclusion

→ If wildlife-livestock interfaces are diverse, should risk management strategies be equally diverse?
Towards context-specific, systemic and territorialized approaches to multiple risk management...



Sheep and ibex, Cime d'Auta, Italy, July 2025



Thank you for your attention ! Any questions ?

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Take-home references



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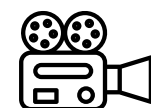
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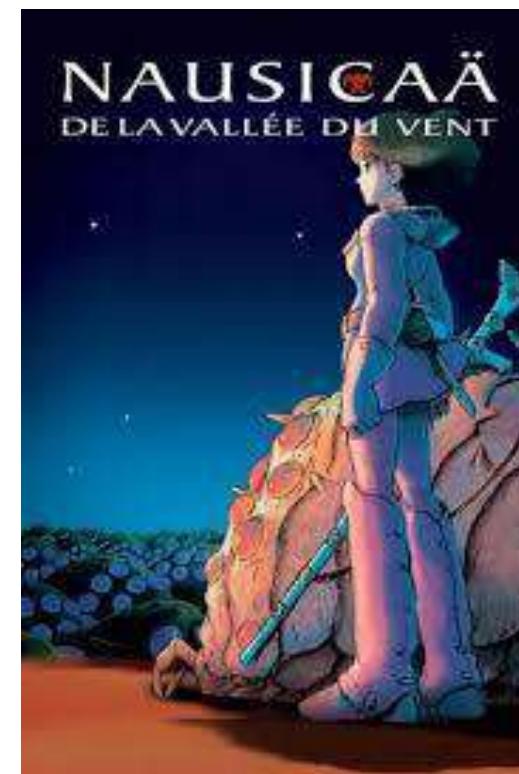
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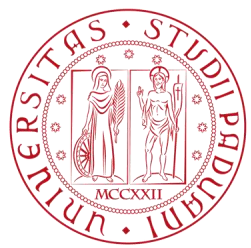
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<https://doi.org/10.3389/past.2025.15413>



Hayao Miyazaki, 1984, Nausicaä of the Valley of the Wind



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