



# 63<sup>rd</sup> Annual Meeting EAAP 2012 August 27<sup>th</sup> - 31<sup>st</sup>, 2012



O2LA

## Several animal species in the same farm: a system from the past or an innovation for the future?

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### Introduction:

Concepts and problems

Background

### Methods:

Materials and methodology

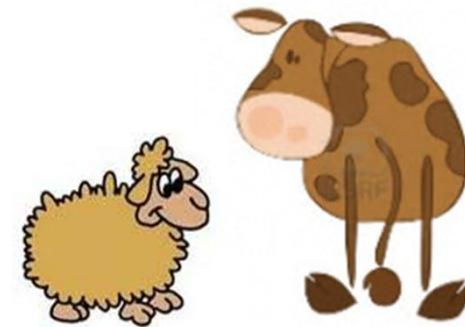
### Results:

Main outcomes

Perspective of breeders

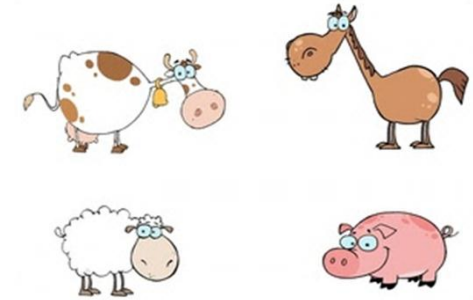
### Conclusion:

Summary and perspectives





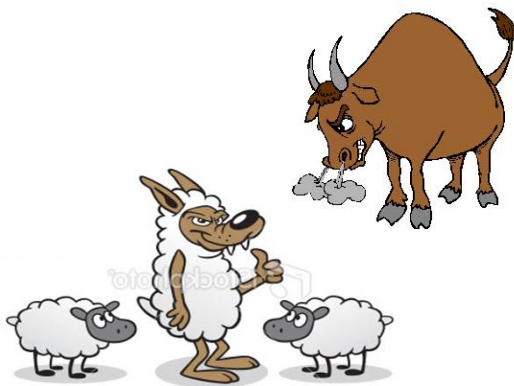
**Mixed livestock farming systems:**  
several species and/or breed in the same farm

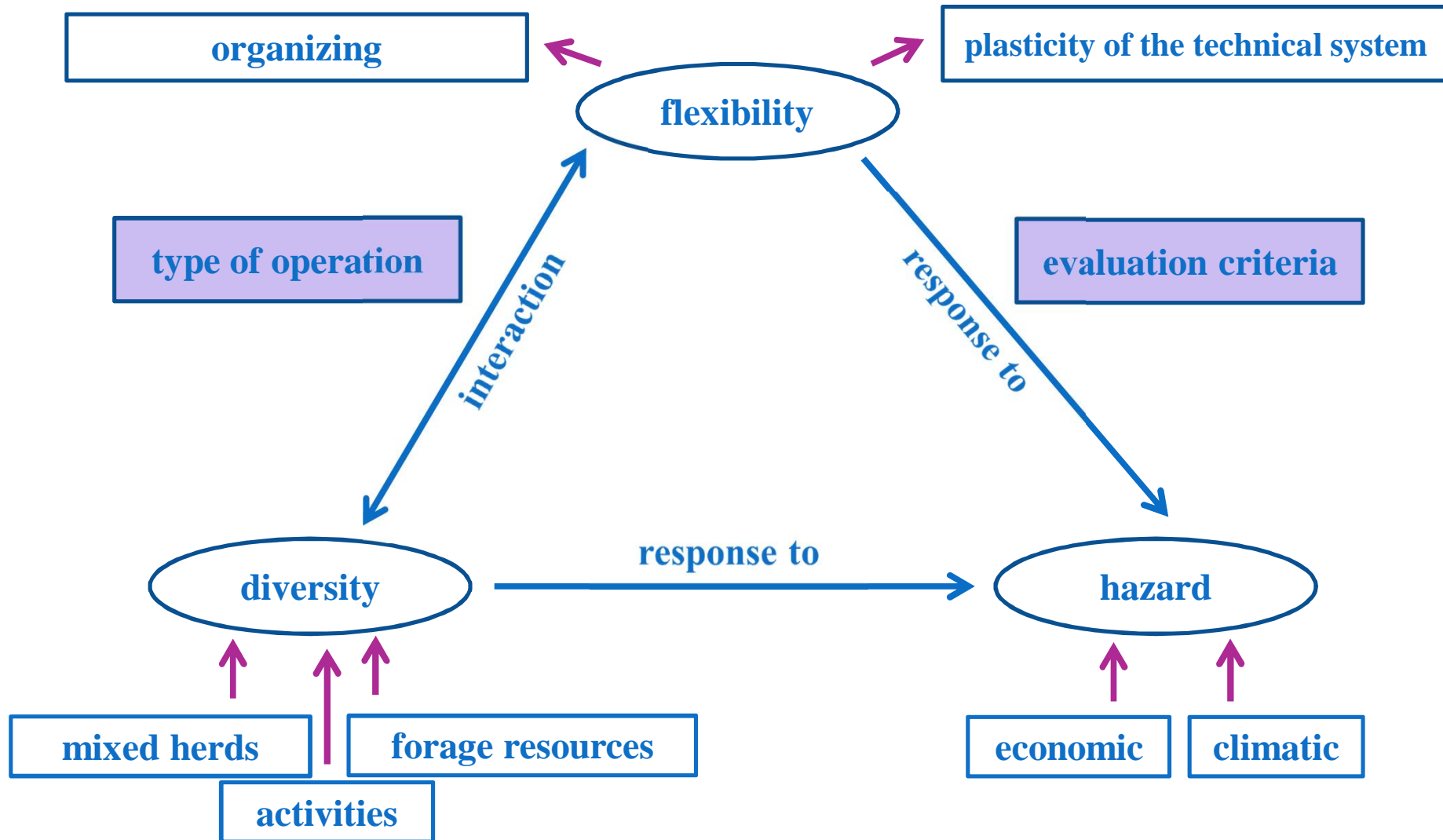


**Mixed systems:**  
possible adjustment in the management (resource, allocations) and complementarity in the outputs

**Advantages:**

- ✓ different ways to combining dairy cows and meat sheep systems
- ✓ several logical organization and possibility for flexibility
- ✓ multi-species systems can provide flexibility
- ✓ high complementarity of the two species and their production mode
- ✓ ability to adapt to any remarkable situation







## **Hazard:**

**uncertain phenomenon, mostly unpredictable, most often caused by an unknown or unfamiliar determinism**

**economic**

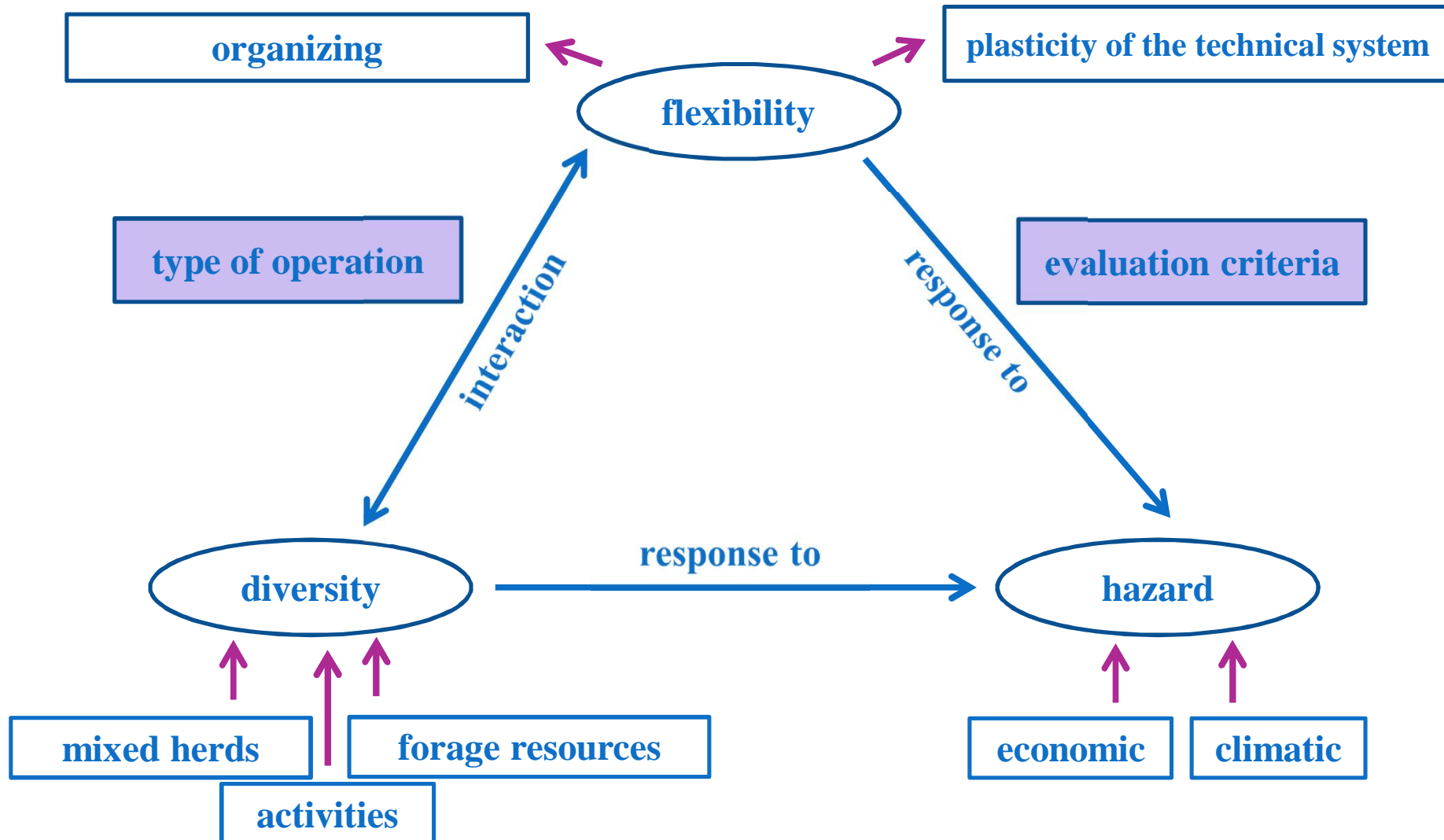
**volatility of the prices  
climatic hazards**



**diversity**

**crops & grassland species  
animal diversity: breed or species**

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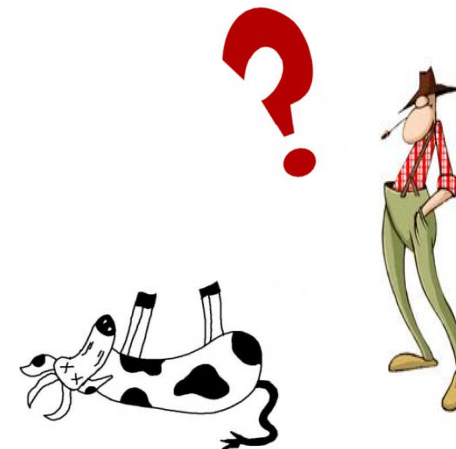


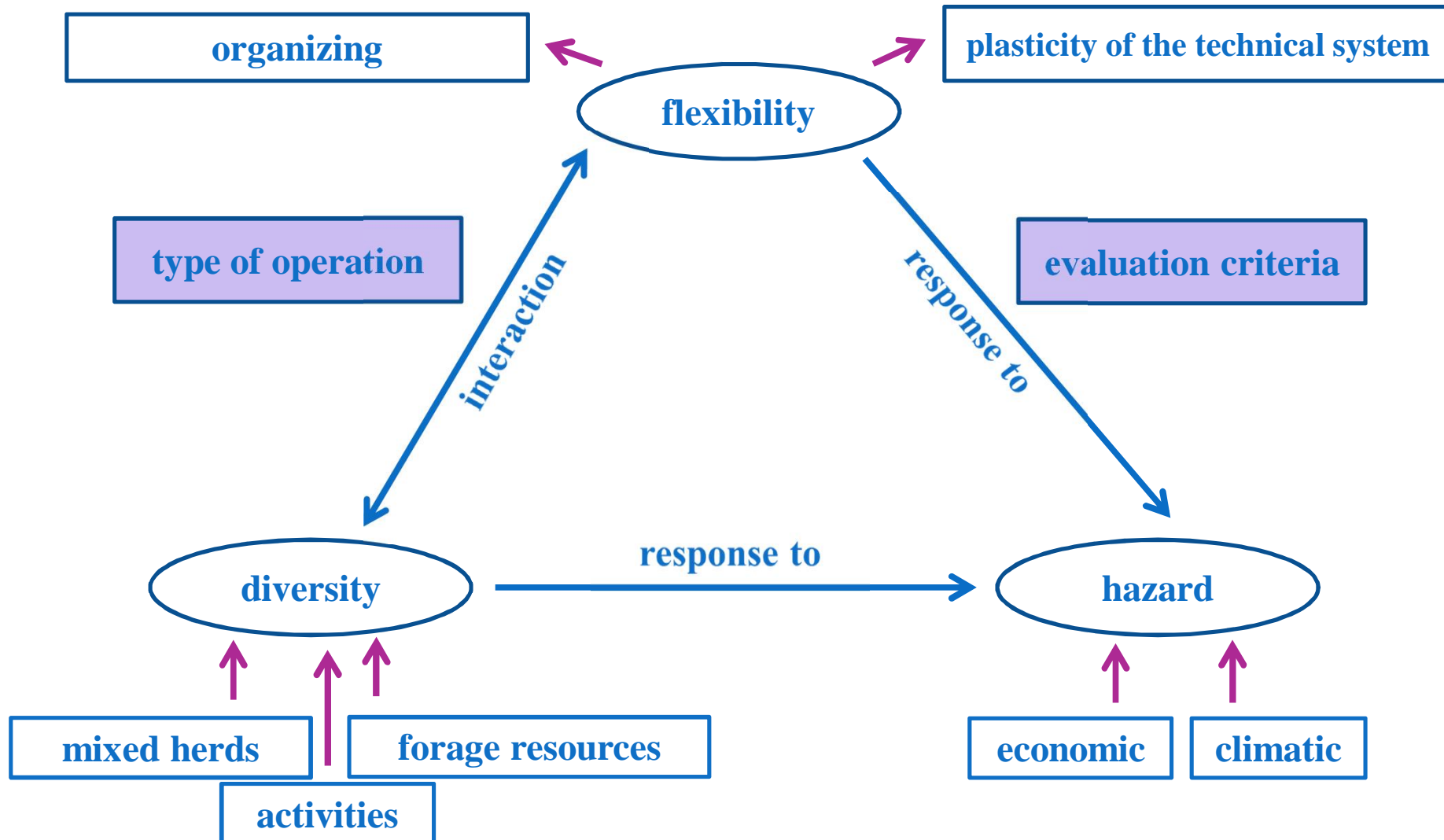
diversity

crops & grassland species  
animal diversity: breed or species

## Flexibility:

adaptability and ability of the farms to resist





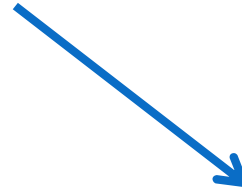




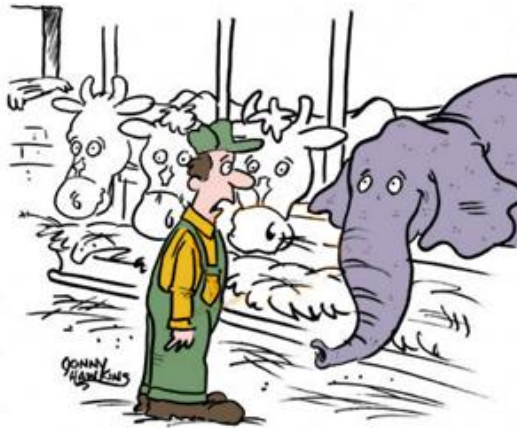
**Important elements for adaptation  
to the hazards**



**heterogeneity of the resources  
and territories**



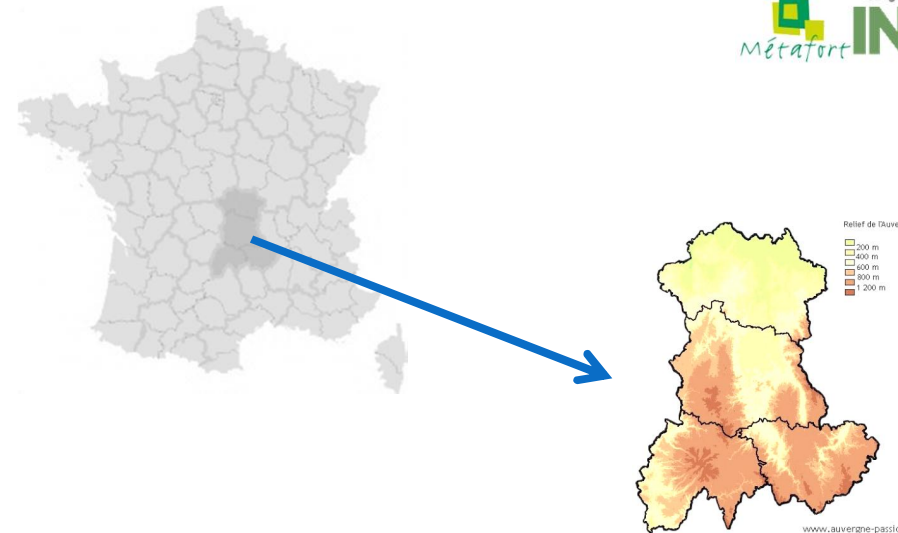
**diversity of the animals**



**How did *you* get in here?**



## Field: Auvergne (Centre of France) Massif Central



### The aim of the research:

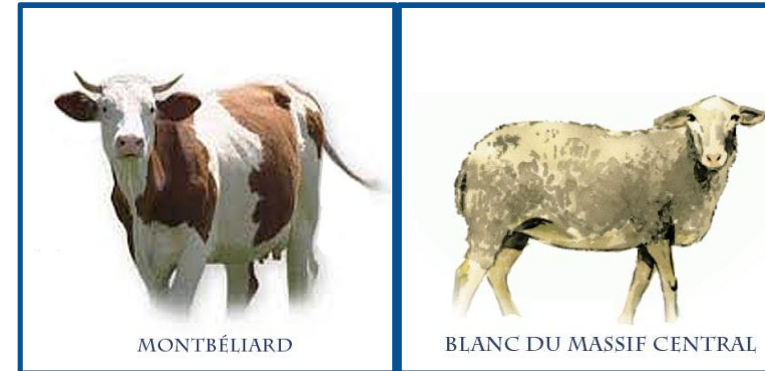
- ✓ understanding the functions of the mixed farming livestock systems and explaining how the breeders can reach the flexibility in this region.

### The main question:

- ✓ the temporal organization of breeding activity in mixed systems promotes the flexibility against the climate and economic hazards?
- ✓ what are the advantages and constraints of the mixed systems against a single farming system?
- ✓ how the breeders can act to reach the flexibility in their system?



## Auvergne: 17000 farms



	number	total area of agriculture	number of dairy cows	number of ewes
farms dairy cows and meat sheep	550	77 ha	31	150
farms dairy cows	5220	68 ha	36	
farms meat sheep	1400	68 ha		323



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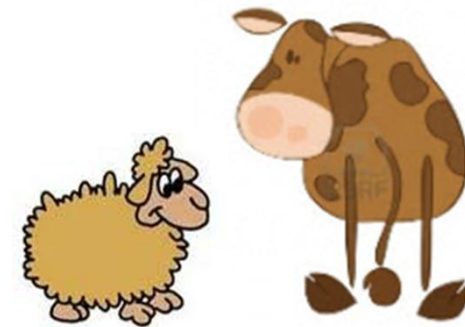
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### Results:

Main outcomes  
Perspective of breeders

### Conclusion:

Summary and perspectives





**preparation**

**18 surveys**

**6 individually,  
12 collective**

**137 ha total area**

**interview guide**

**2 time scales**

**field**



**data**

**18 boards**

**55 variables**

**full transcript of  
the interviews**

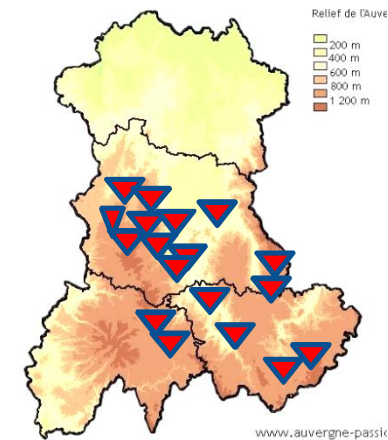
**analysis**

**descriptive and  
multivariate  
statistical  
analysis**

**lexicometric  
analysis**



	<b>farms dairy cows/meat sheep</b>
<b>total area of agriculture (ha)</b>	<b>137</b>
<b>number of dairy cows</b>	<b>49 (Montbéliardes)</b>
<b>milk production (liter)/cow/year</b>	<b>5900</b>
<b>number of ewes</b>	<b>356 (BMC)</b>
<b>offspring/ewe/year</b>	<b>1.06</b>



## Questionnaire: semi-structured interviews

- 1) Historical approach about the mixed system within the farm: when? why? how?
- 2) Graphical methods to collect data about herd and land management



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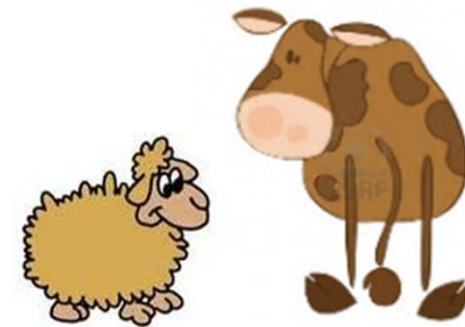
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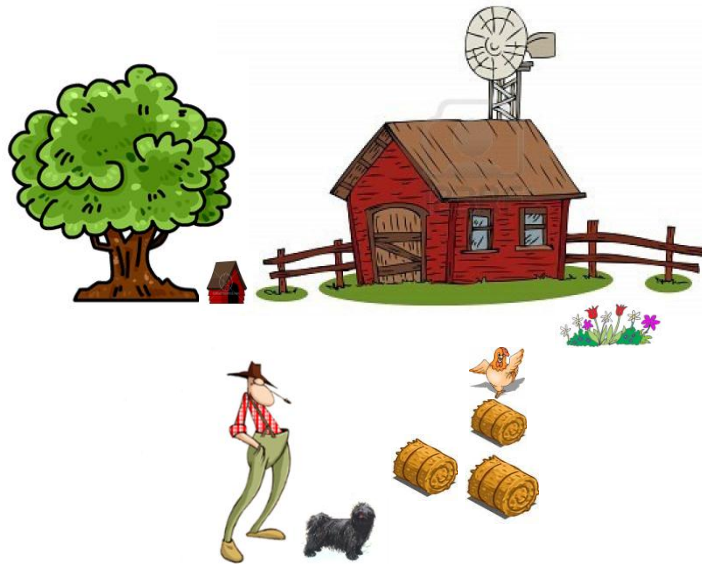
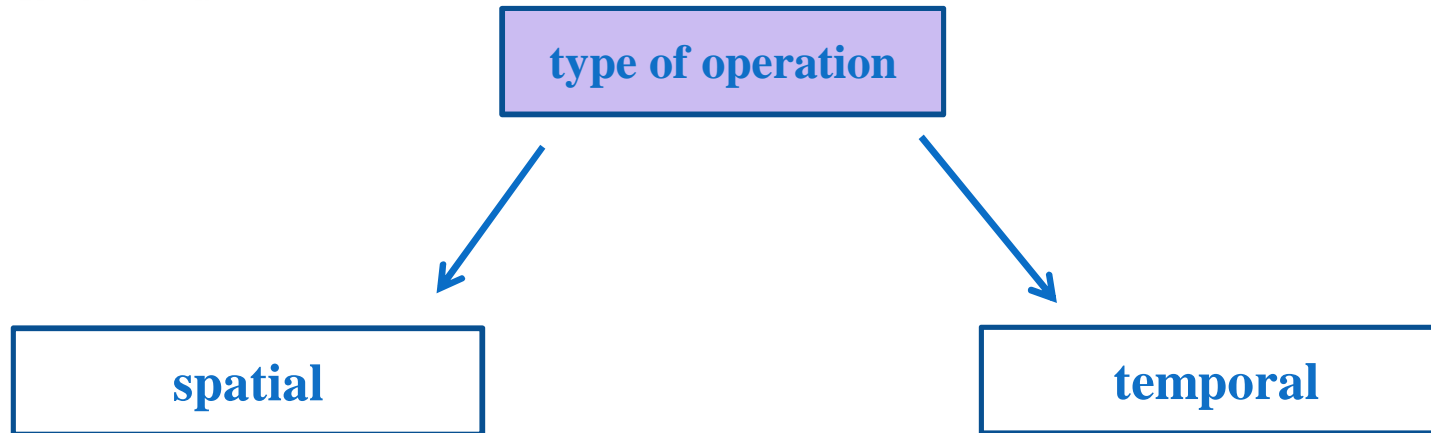
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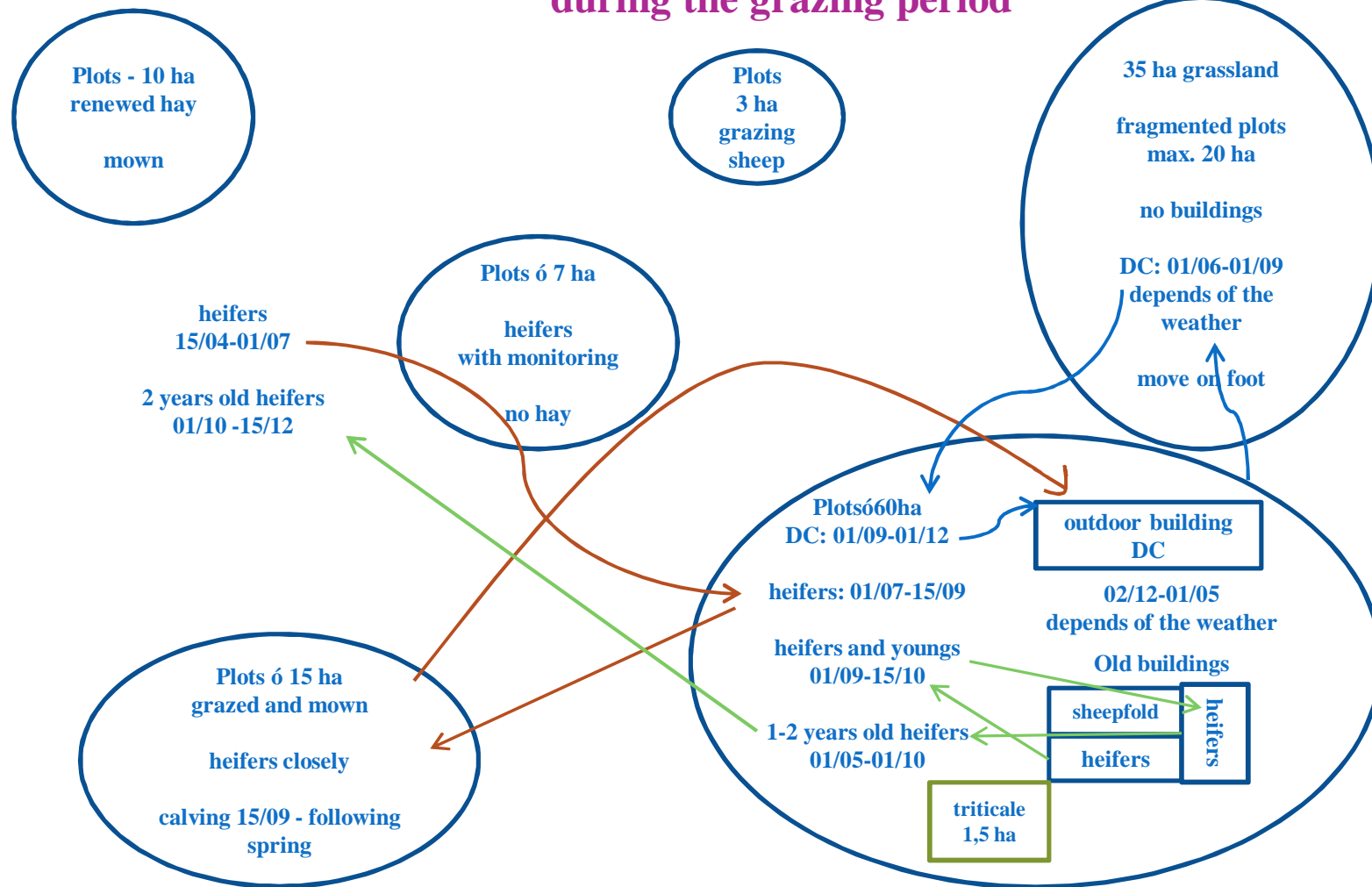








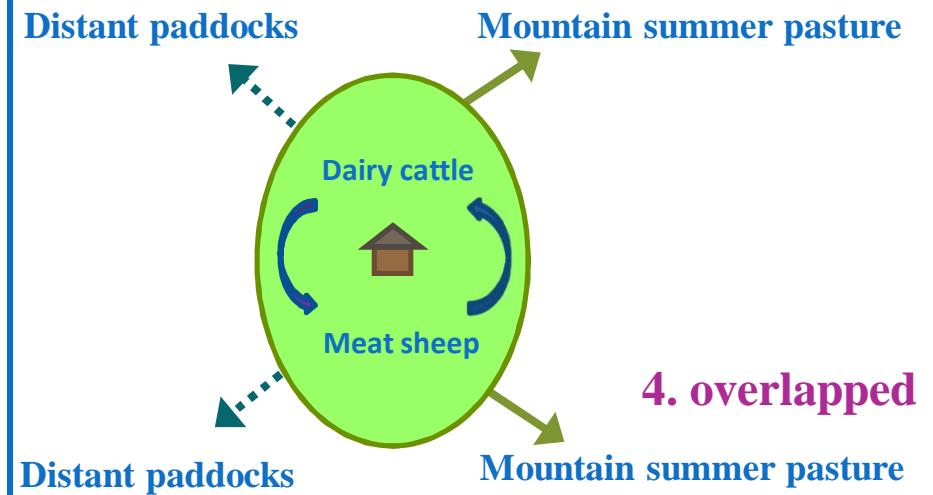
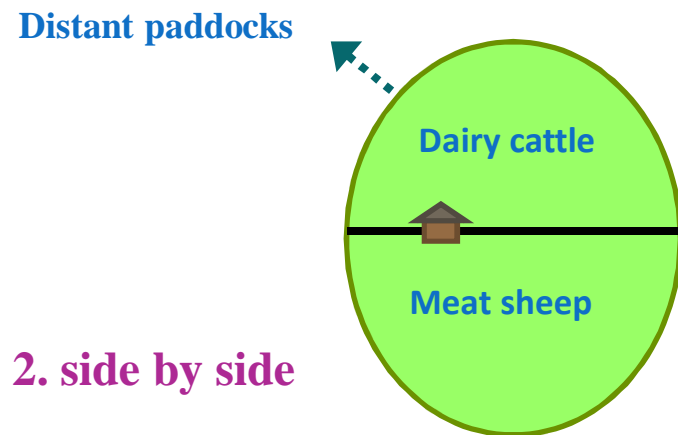
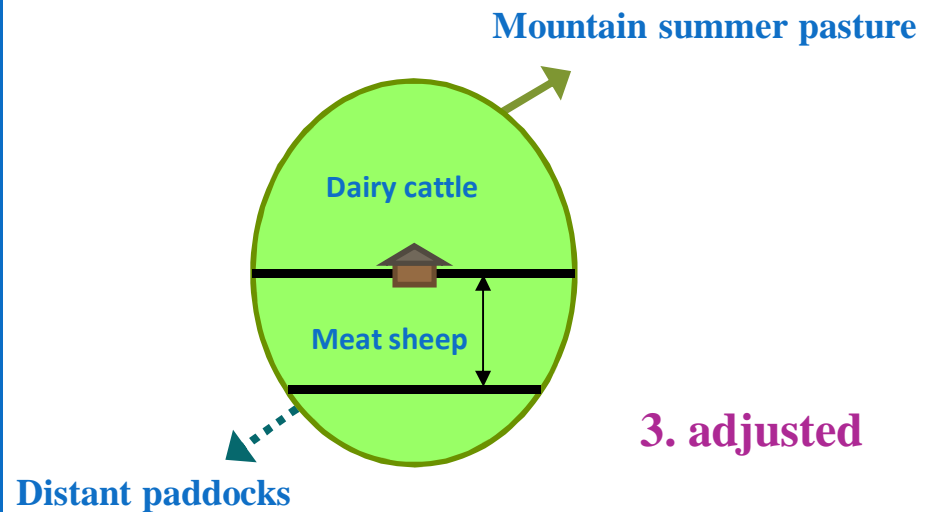
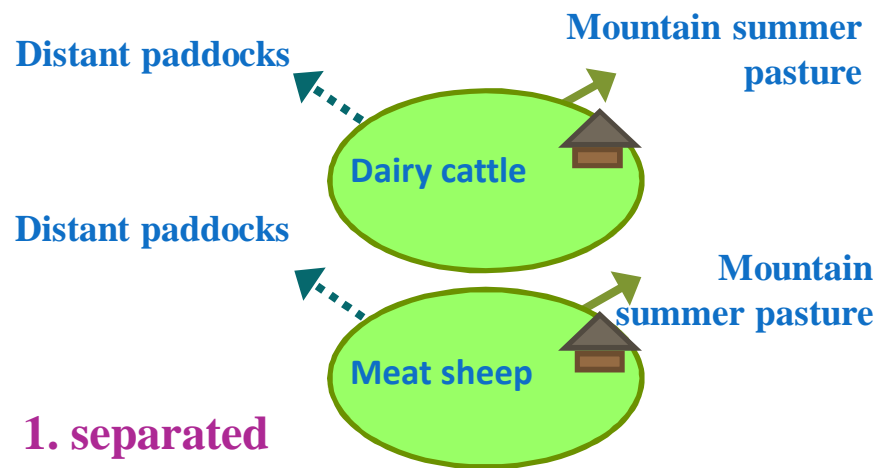
## Example for one farm area (groups of paddocks), with the different circuits of animals during the grazing period



DC: dairy cow



## Four types for the spatial interaction between cows and sheep



 main area (around barns)

 farm



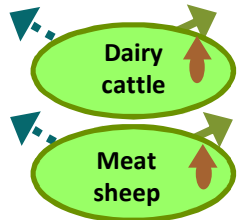
**spatial adjustments**

**separated**

**side by side**

**adjusted**

**overlapped**

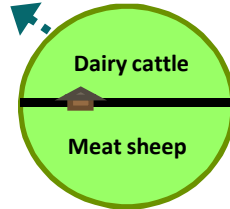


**priority: the quality of milk and sheep meat**

**available oversized and additional areas**

**large number of the animals**

**adjustments: rarely**

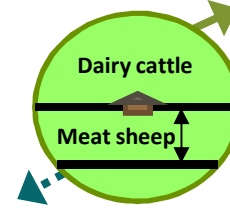


**priority: high level of the productivity**

**management: complex frequently modified**

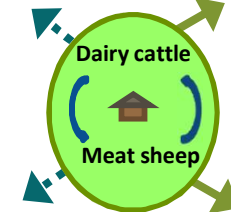
**system: under pressure**

**adjustments: rarely, in case of purchasing feed**



**priority: great range of outputs**

**adjustments: when it need to reduce the area of the sheep for keeping the same amount of feed for dairy cows**

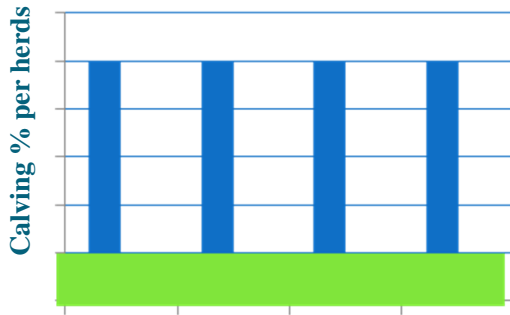


**priority: use self produced feed as much as possible to simplify the management and increase the age of the animals**

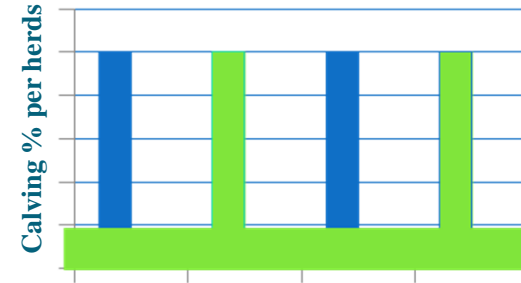
**adjustments: rarely, due to the low animal requirements and to the internal sources**



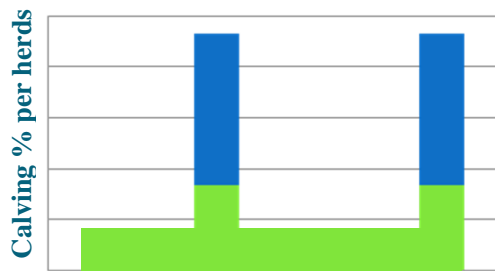
## Four types for the temporal (calving/lambing) schedule of the mixed herds



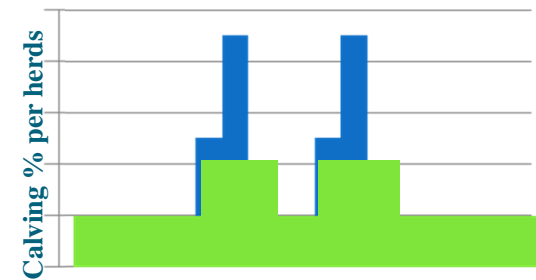
1. expanded and cumulated



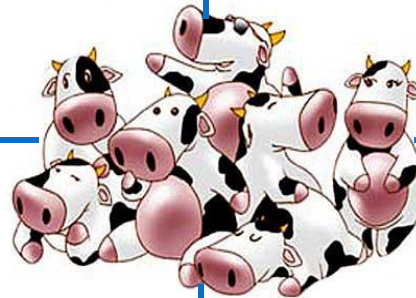
3. separated



2. added



4. overlapped

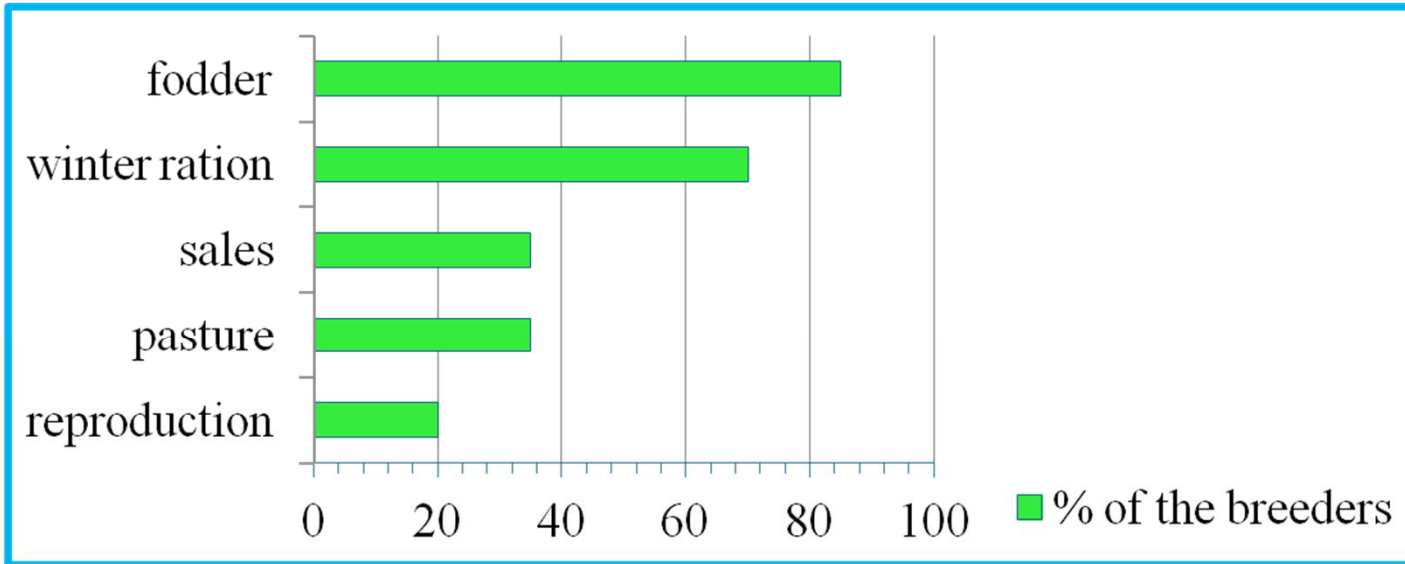


One colour = one species

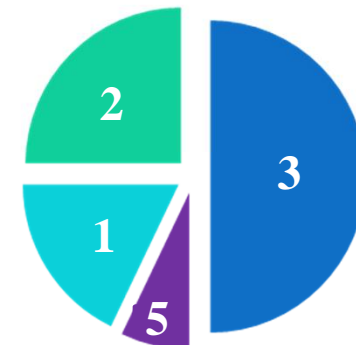


**temporal adjustments**

**5 ways to adapt - often combined**



**The most common combinations for the mixed adaptations**



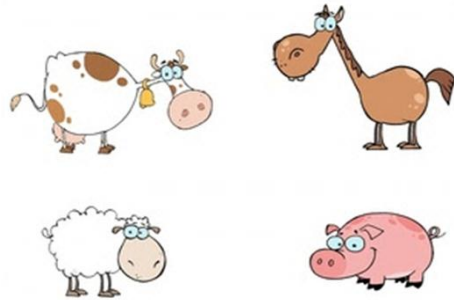
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**40% of the farmers are do not connecting to these mixed types of adaptations**



**breeding system**

**50% possibilities of plots**



**20% financial freedom**

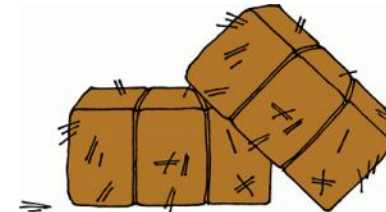


**TEMPORAL ANCHORING**

**10% compensate in emergency**



**20% safety stocks**



**forage system**

F  
I  
E  
L  
D

A  
N  
A  
L  
Y  
S  
I  
S



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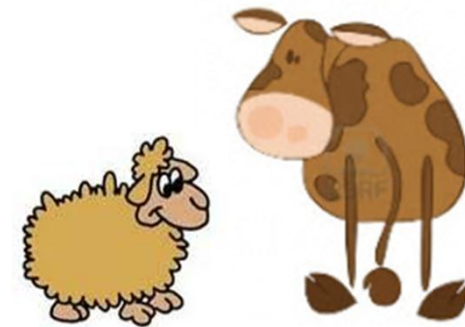
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## Summary

- ✓ during two years eighteen inquires of mixed farms (dairy cows and meat sheep) of Massif Central were realized
- ✓ two different ways of organizations exist in the mixed livestock systems: spatial and temporal
- ✓ there are different potentials to cope with hazards:
  - 4 possibilities for the temporal
  - 4 possibilities for the spatial } adjustments
- ✓ in the breeding and forage management systems there are different external and internal sources to avoid the risks







## Conclusion

There are trends pointing towards the  
specialization,

**BUT** it seems mixed farming systems  
still have a beautiful future ahead  
and can be keep modern,

because lots of breeders did not think  
to need to specialize in one or other  
type of the productions.

system from the past    innovation for the future





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# Thank you for your attention!



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