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Trajectories of evolution of cattle farming systems in Spanish mountain areas

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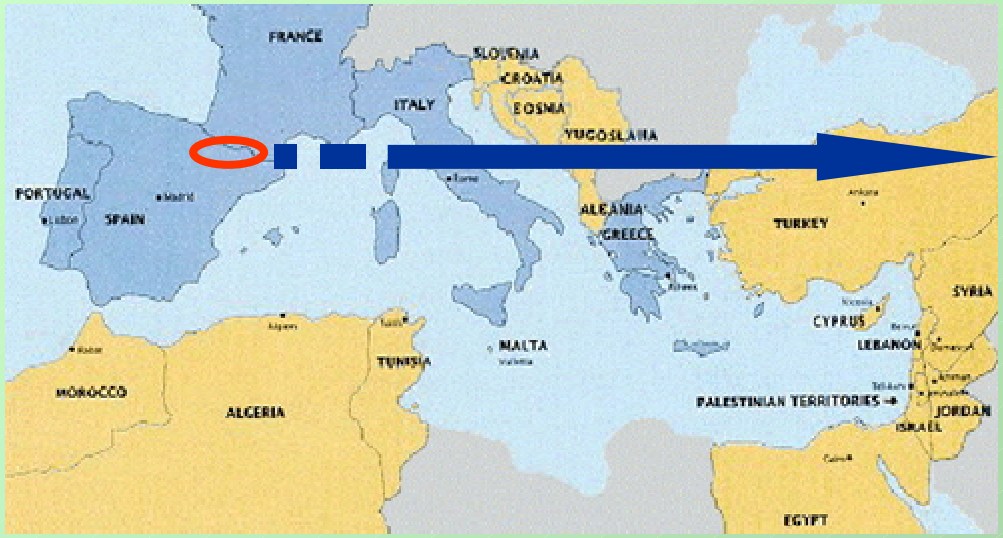
Introduction

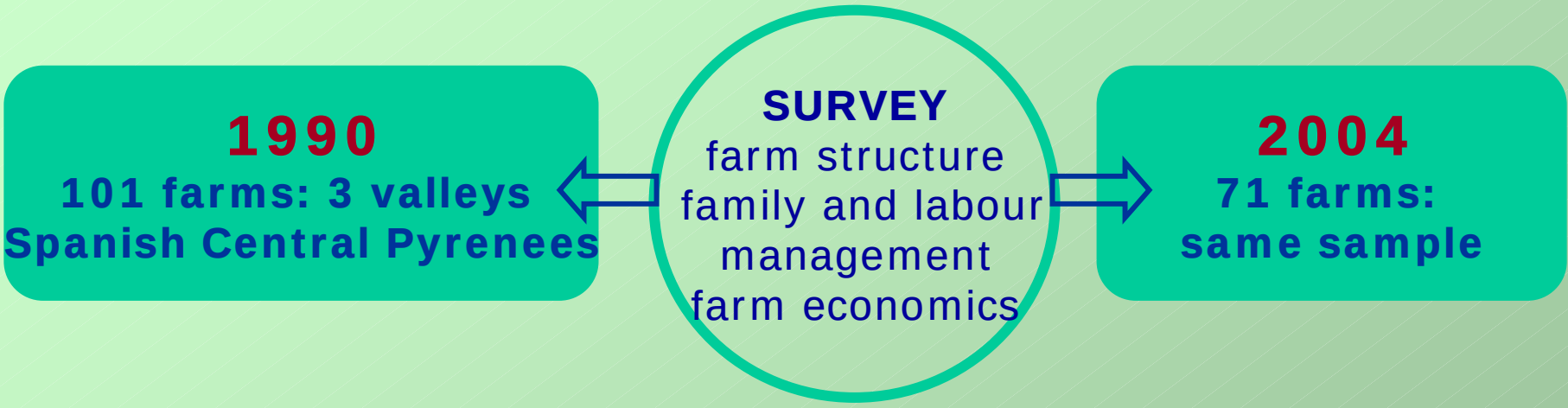


- LFS are in continuous change
- Farms evolve depending on internal factors and the social and economic environment
- CAP has had an enormous influence in recent years
- What other factors determine the evolution of LFS?

Objectives

1. to analyse the evolution of cattle farming systems in mountain areas in the last 15 years
2. to identify different patterns and trajectories of change
3. to identify what factors can influence the evolution of LFS

Methodology

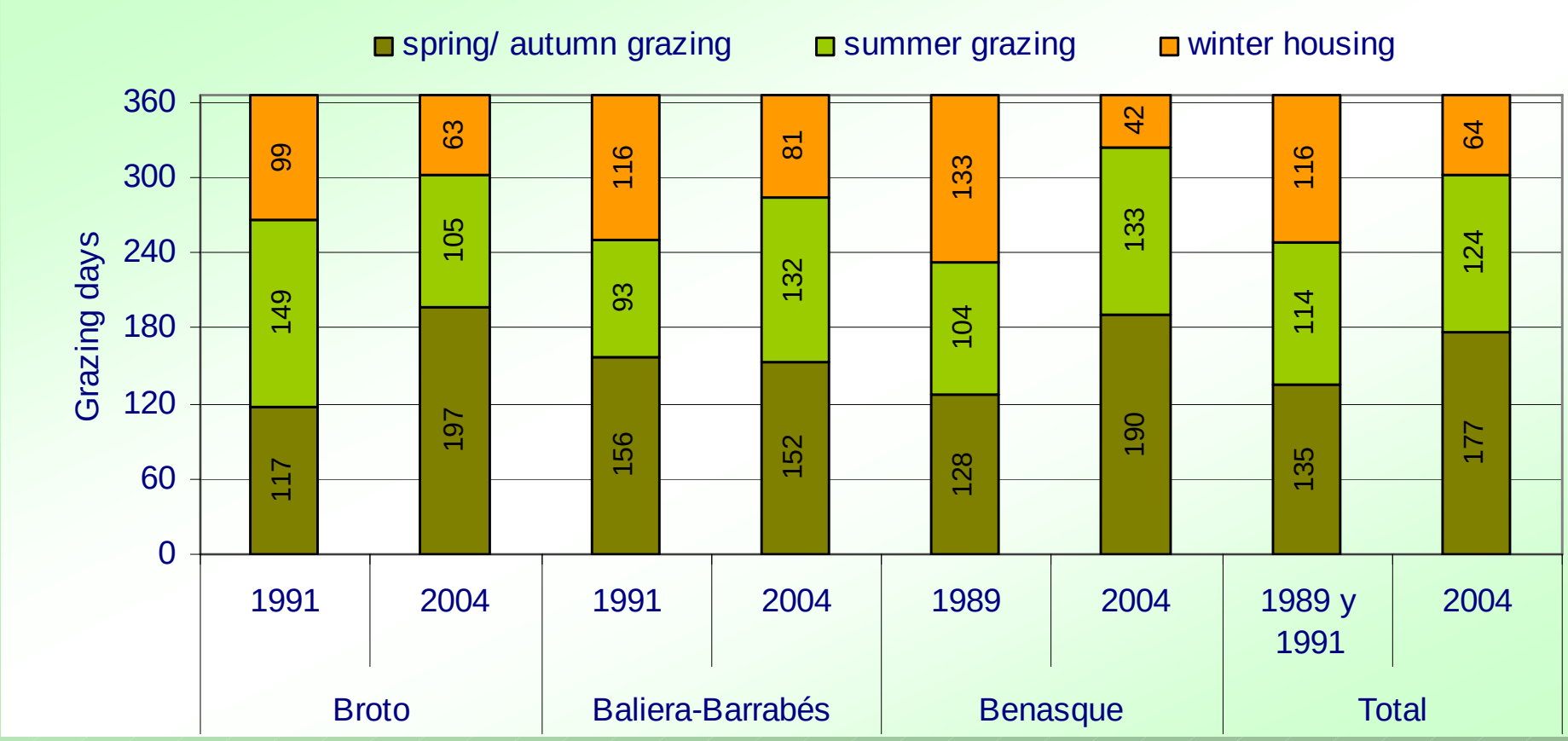


1. Global evolution of cattle systems: Student T
2. Patterns and trajectories of change: PCA and Cluster Analysis of repeated measures for structure, management and economics (once eliminated common temporal effect)
3. Factors associated to patterns of change: Discriminant Analysis of patterns of change with farm, family and socio-economic factors

1. Global evolution: structure, labour and orientation

	1990	2004
No. farms	101	71
Land Area (ha)	58.1	66.1
Livestock Units	49.0	70.1
Work Units	1.8	1.4
Liv. Units/ Work Units	27.3	54.1
% off-farm job (farmer)	13.7	25.0
% off-farm job (family)	41.2	58.3
% dairy farms	90.2	1.4
% fattening farms	9.8	48.6

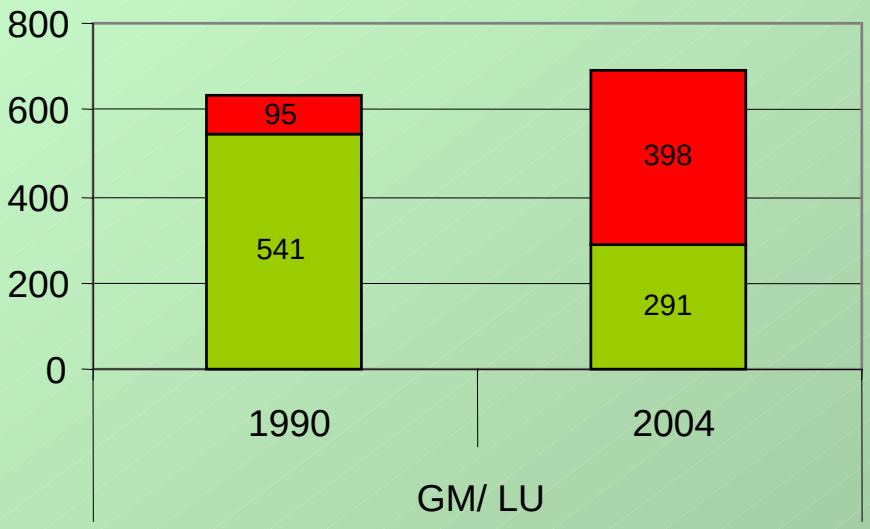
1. Global evolution: grazing management

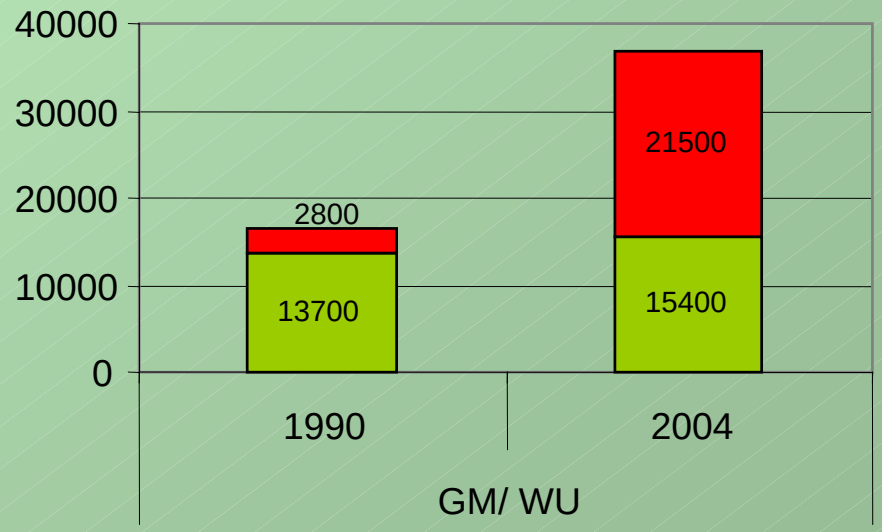


1. Global evolution: economics

	1990	2004
Feeding cost / LU	202	142
Total Revenue[1]	43.5	72.5
Gross Margin[1]	29.1	50.1
GM-premiums[1]	23.8	21.1

Figures in constant monetary value 2004 (€); [1](000€)

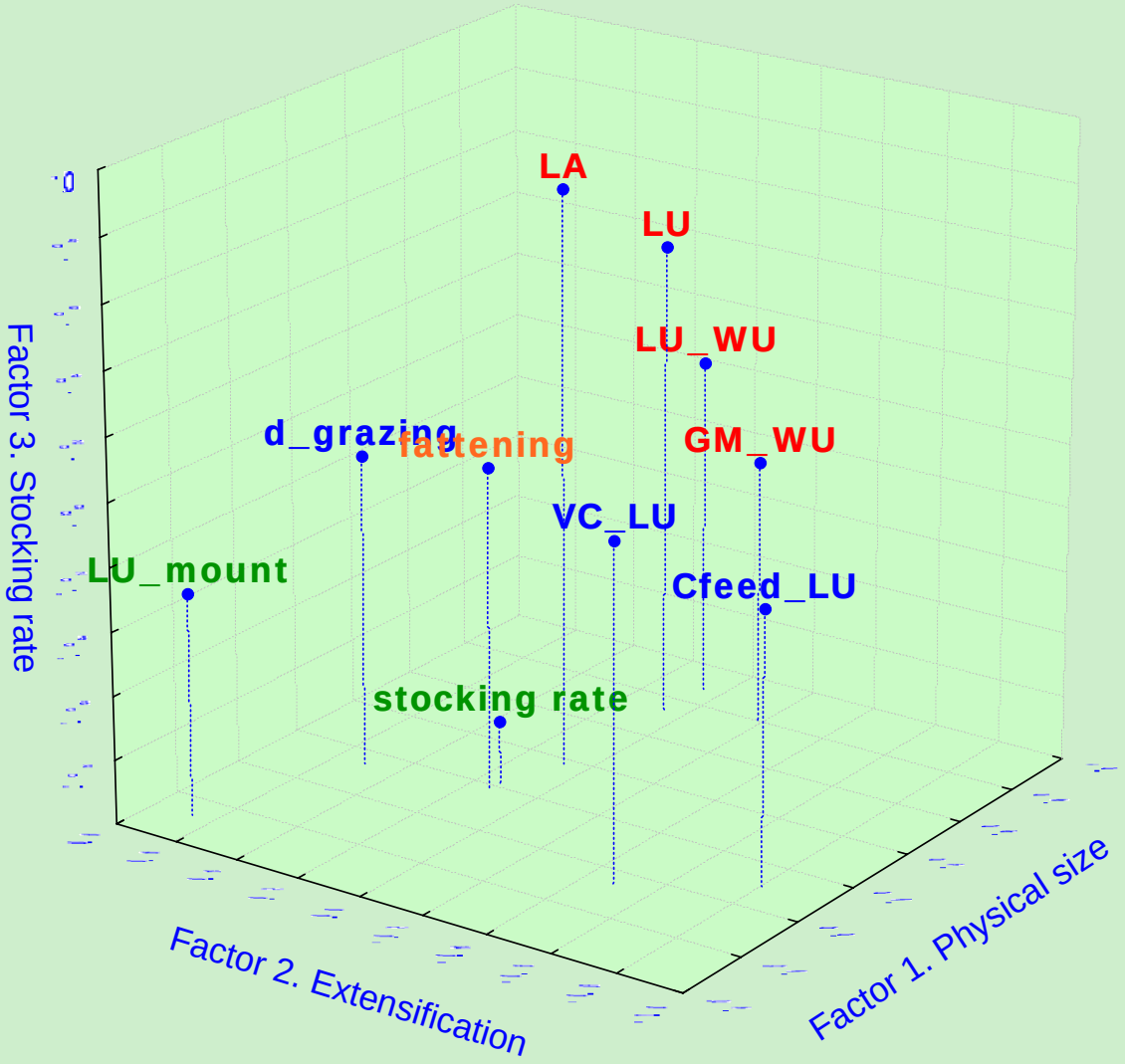




GM without premiums

premiums

2. Patterns and trajectories of evolution



PCA (1990-2004)

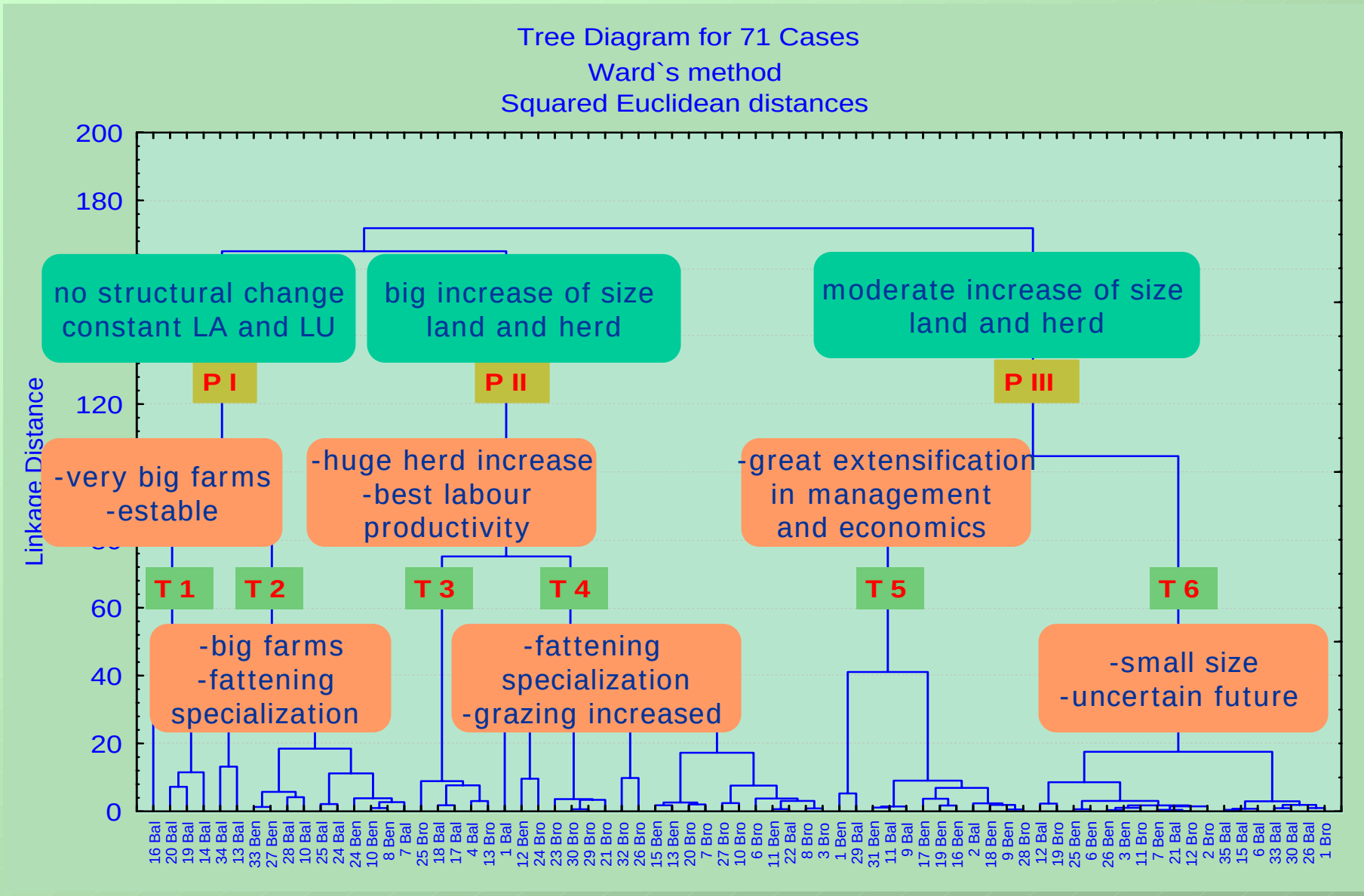
Dim1. Farm Size

Dim2. Extensification (economic and grazing)

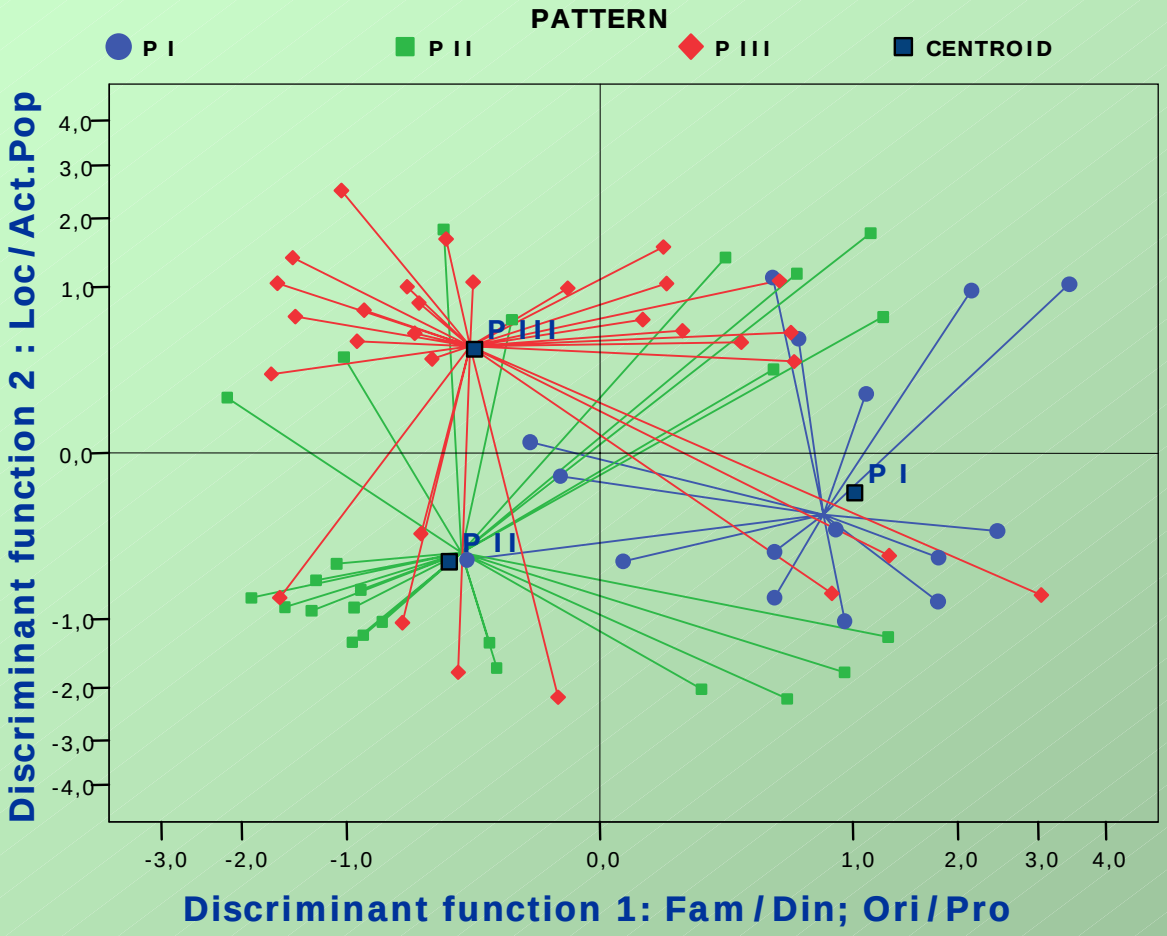
Dim3. Stocking rate on forage area

Dim4. Fattening activity

2. Patterns and trajectories of evolution



3. Factors associated to change



Farm:
orientation of production

Family**:
family size, children and index of farmer innovation

Socio-economic environment:
location and evolution of active population (services/ agriculture)

Concluding remarks

1. structural and productive adjustment: milk abandonment and expansion of on-farm fattening;
2. extensification of management (grazing period enlargement and reduction of winter housing) and farm economics (reduction of off-farm inputs);
3. intensification of capital (Livestock Units / Working Units) and increment of labour productivity
4. different dimensions of change (size, extensification, stocking rate, fattening orientation) and trajectories of evolution, despite common temporal effects
5. importance of internal factors, socio-economic environment and especially family characteristics to understand farm dynamics