

Self-sufficiency is key to explain economic sustainability of sheep farming located in marginal areas



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Objective

To identify key attributes to characterize farms located in less favoured areas and elucidate the existing links between economic performance and some sustainability indicators

Material and Methods

- Survey to 30 farms raising Ojinegra sheep autochthonous breed in less favored area (LFA)
- Harsh climatic conditions (800 m.a.s.l. altitude; -12 °C to 40°C min-max temperatures; 400mm precipitation)
- 6 indicators of farm management and economic performance selected from 45 key indicators
- Principal Components Analysis with Varimax normalized rotation to establish relationships between indicators

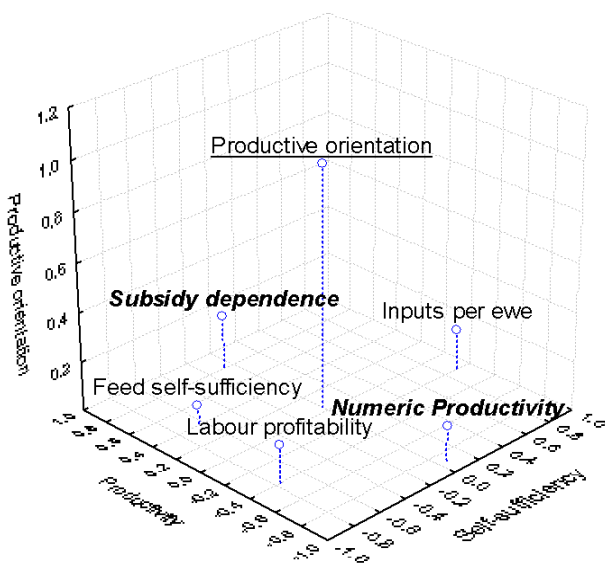


Results

Table 1. List of indicators:

Indicator	Definition	Average	Max	Min	Units
Numeric productivity	Lambs born per ewe per year	1.10	1.51	0.63	lambs/ewe
Inputs per ewe	Variable costs per ewe	42.30	95.56	14.54	€/ewe
Feed self-sufficiency	On-farm feed/Total feed	81.8	100.0	38.8	% (in MJ)
Labor profitability	Net Margin/Working Unit	9673	46935	-12359	€
Subsidy dependence	Subsidies/Total income	47.3	65.5	33.6	%
Productive orientation	Livestock income/Farm income	78.1	100.0	36.0	%

Figure 1. Location of variables in tri-dimensional space defined by main factors



- 1) Factor **Self-sufficiency** (normal format; 35.1% original variance): the higher amount of on-farm feeds the lower variable costs per ewe; economic performances improve
- 2) Factor **Productivity** (***bold italics*** format; 23.1% original variance): increasing lamb production decrease subsidy dependence (subsidies represent almost 50% of farm total income)
- 3) Factor **Productive orientation** (underlined format; 15.7% original variance): Different degree of specialization exists (agriculture vs. livestock) but is not related to economic performance

Conclusion

**Feed self-sufficiency reduces costs and improves farm economic performance;
Higher productivity diminishes subsidy dependence**