Session 9: **Sustainability assessment of sheep farming systems in the north of Spain: a methodological approach**

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Proyecto INIA Nº RTA 2006-00170-C03-01: *"Diseño de herramientas para la evaluación de estrategias y optimización en sistemas de producción ovina"*

INTRODUCTION

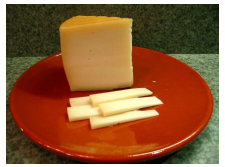
SHEEP PRODUCTION IN SPAIN

LIVESTOCK:

24 million sheep (26% of the total EU-25 population)

PRODUCT:

85% oriented to meat production (lamb)



15% oriented to milk production (cheese)

ECONOMICAL IMPORTANCE:

12% of the national gross product coming from livestock

INTRODUCTION

OBJECTIVE

TO TEST A METHODOLOGY FOR ASSESSING SUSTAINABILITY BY COMPARISON OF CASE STUDIES

MATERIAL & METHODS

MESMIS: The Indicator-based Framework for Evaluation of Natural Resource Management Systems (Masera et al., 1999)

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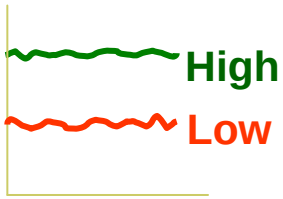
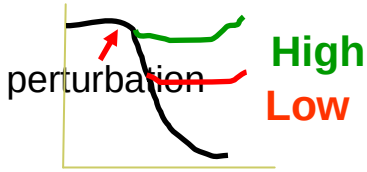
1. PRODUCTIVITY



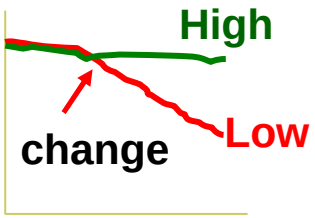
2. STABILITY

3. RELIABILITY

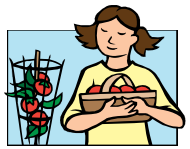
4. RESILIENCE



5. ADAPTABILITY



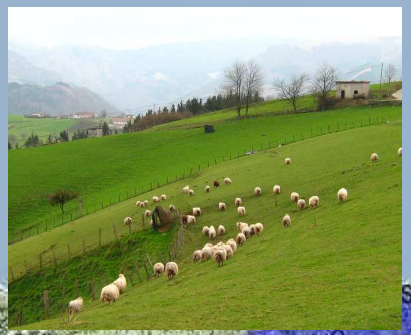
6. EQUITY



7. SELF-SUFFICIENCY

3 farms

Cheese makers



1 lambing/ year

3 farms

Meat producers

1 lambing/ year

5 farms

Meat producers

3 lambings/ 2 year

5 lambings/ 3 year

La Teste-de-Buch
Montauban
Gaillac
Albi
Toulouse
Castres
Bayonne
San Sebastián
Bilbao
Basque Country
Vitoria
Logroño
Avilés
Gijón
Oviedo
León
Burgos
Aragon
Terrassa
Lleida
Catalonia
Vilanova i la Geltrú
Barcelona
Tarragona
Zamora
Salamanca
Segovia
Madrid
Alcalá de Henares
Fuenlabrada
Plasencia
Castellón de la Plana

RESULTS

SWOT analysis (Strengths, Weaknesses, Opportunities & Threats)

Weaknesses and Threats:

- ✓ Farmer's age
- ✓ Access to land
- ✓ Difficulties to start a new activity
- ✓ Abandonment of Grazing
- ✓ Increasing dependence on purchased feedstuffs with raising prices
- ✓ Predation (wolf and vulture)
- ✓ Low prices of raw products

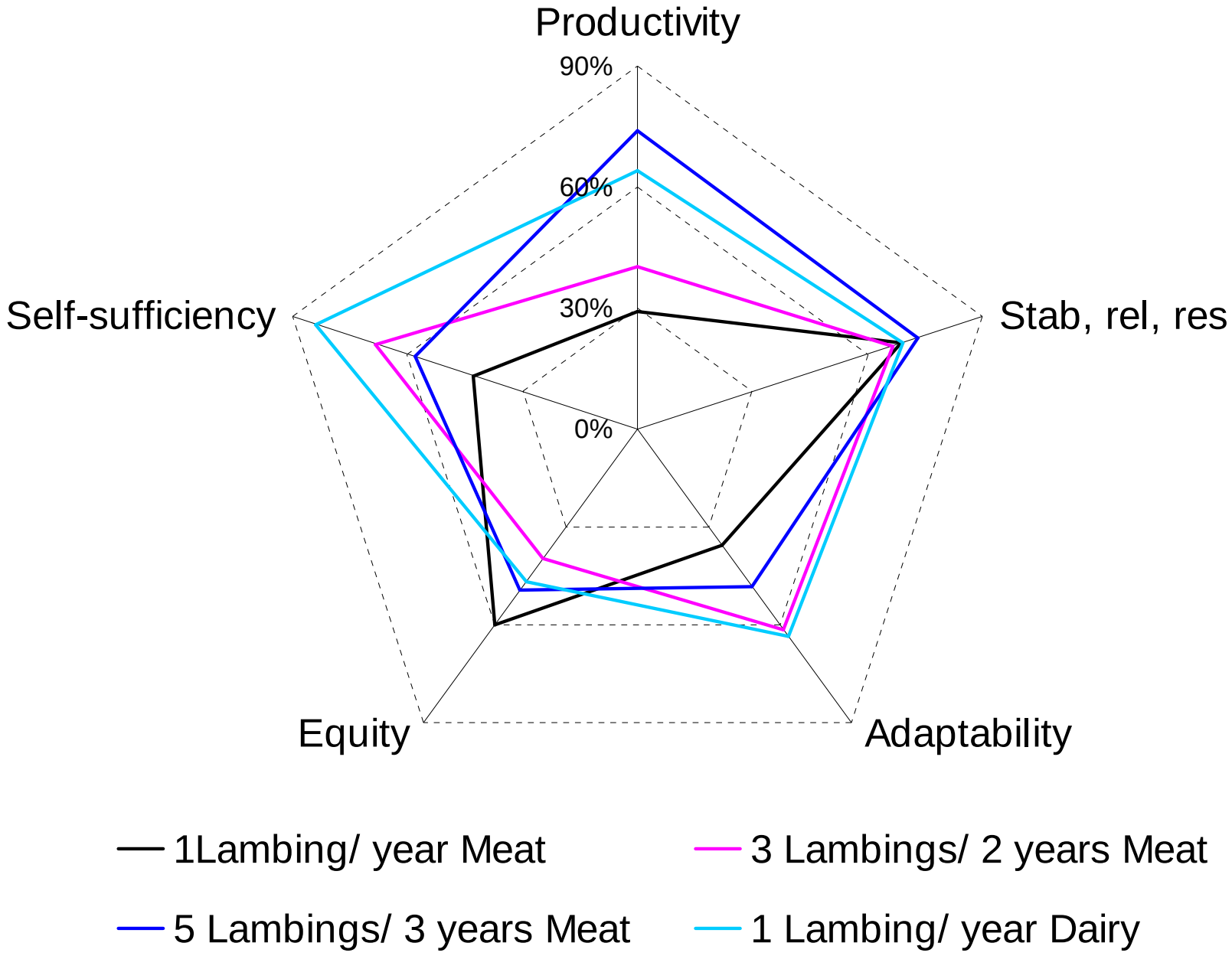
Strengths and Opportunities:

- ✓ Systems integrated within their environments
- ✓ Availability of local resources
- ✓ Agro-silvo-pastoralism
- ✓ Low environmental impact
- ✓ Landscape maintenance
- ✓ Adding value activities (cheese)
- ✓ Quality Labels (PDO,PGI)

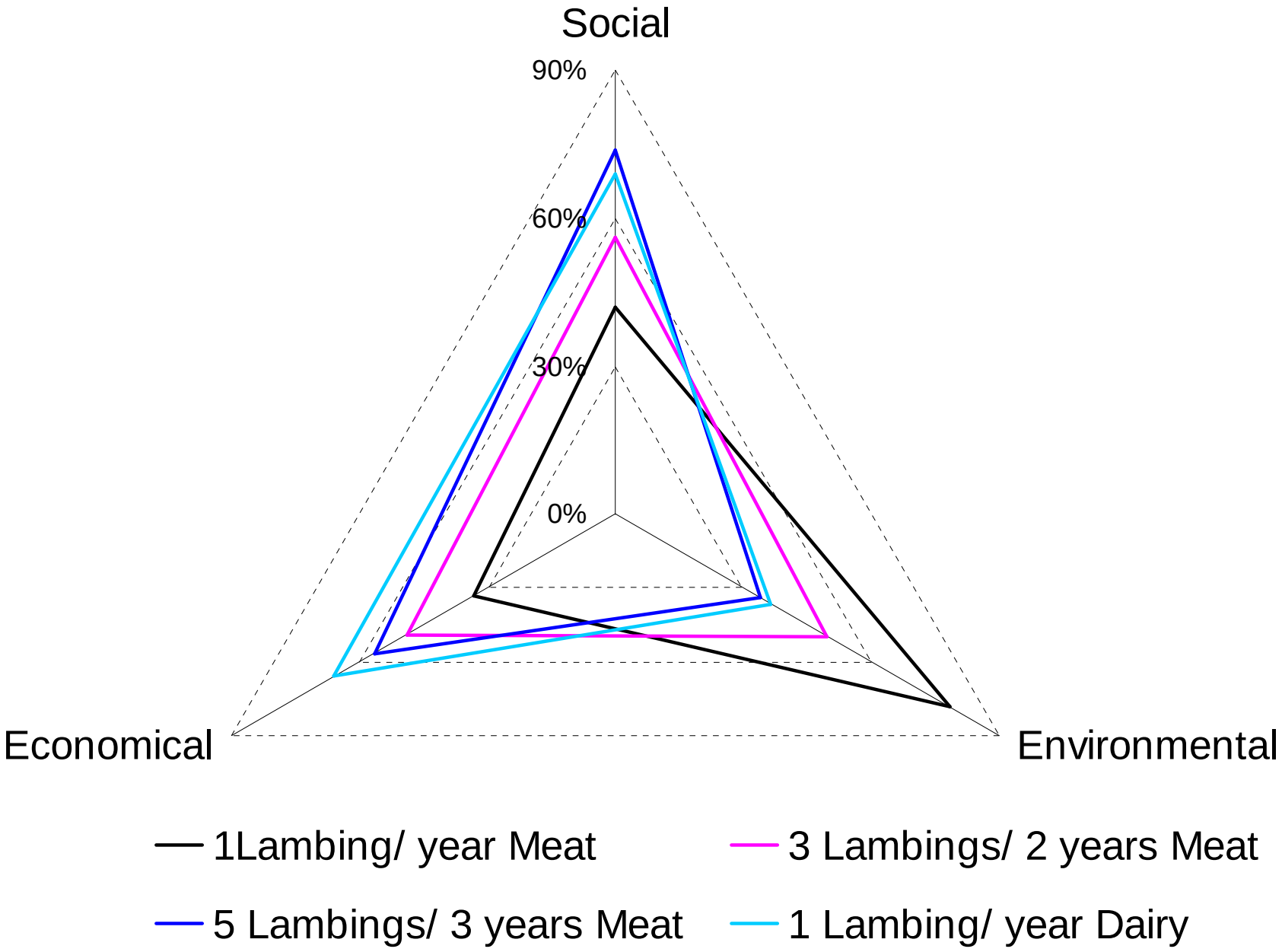
RESULTS

ATRIBUTE	INDICATOR	Type	INDICATOR	Type
Productivity (8)	Labour productivity 16%	€	Feed efficiency 13%	€
	Animal productivity 15%	€	Animal output 12%	€
	Economic efficiency 14%	€	Herd fertility 9%	€
	Land productivity 13%	€	Animal/ person 8%	€
Stab, rel, res. (5)	Farm continuity 32%	S	Facilities 15%	S
	Off-farm income 22%	€	Wildlife conflicts 10%	E
	Advisory services 21%	S		
Adaptability (7)	No. Incomes 23%	€	Distance markets 10%	S
	Main income 17%	€	Communal areas 10%	E
	Education 16%	S	Distance to	S
	Land access 17%	S	Slaughterhouse 7%	
Equity (10)	Salary level 14%	S	Distance to services 11%	S
	Satisfaction level 13%	S	Contracted labour 8%	S
	Grazing 13%	E	Leisure time 6%	S
	Energy efficiency 13%	E	Stocking rate 6%	E
	Protected areas 11%	E	Local breeds 5%	E
Self-sufficiency (7)	Feed self-sufficiency 18%	€	Own area 13%	€
	Forage self-sufficiency 16%	€	Subsidies 13%	€
	Endowment 15%	€	Added-value 11%	€
	Family labour 14%	S		

RESULTS


Productivity
90%
60%
30%
0%
Self-sufficiency
Stab, rel, res
Equity
Adaptability
1Lambing/ year Meat
3 Lambings/ 2 years Meat
5 Lambings/ 3 years Meat
1 Lambing/ year Dairy

RESULTS


Social
90%
60%
30%
0%
Economical
Environmental
1Lambing/ year Meat
3 Lambings/ 2 years Meat
5 Lambings/ 3 years Meat
1 Lambing/ year Dairy

CONCLUSIONS

- The MESMIS framework allowed assessing sustainability in different farming conditions

- There was a positive relationship between degree of intensification and economical and social sustainability and a negative relationship with environmental sustainability

- Self-sufficiency and marketing of added-value product were key factors for sustainability

THANK YOU