The challenge of sustainability for local breeds and traditional systems: dairy sheep in the Basque Country (Spain)

Ruiz, R., Díez-Unquera, B., Beltrán de Heredia, I., Mandaluniz, N., Arranz, J. and Ugarte, E

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Guidelines

• Introduction:
  – Basque Country
  – Sustainability

• Dairy Sheep
  – Local Breeds
  – System:

• Programmes: Improvement & Sustainability

• Challenges

• Conclusions
Introduction
Introduction

7,300 km²
2,2 Millones hab.
Land uses

Agro-silvo-pastoral: 94%

27% Natura 2000 Network

Urban & Communication Infr.  
Water  
Rocky & Marsh areas  
Pastures and Meadows 10%  
Scrubs 9%  
Tree covered and Forest 47%  
Crops 28%
Sustainability

Productive

ECONOMIC

Fair

SOCIAL

Self-sufficient

ENVIRONMENTAL

Steady

TIME

Resilient

Adaptable
Main actors
Local Breeds: Features

- Live Weight: 50 - 65 kg
- Rustic = Well Adapted:
  - grazing, humidity, cold & slopes.
- Low prolificacy: 1.1 to 1.4 lambs / year
- Milk yield:
  - 1981: < 100 l.
  - 2009: > 180 l.
- Breeding scheme: + 3% annual improvement
Latxa Black Faced

Basque Country
147,207 sheep
3,503 flocks

Navarre
100,088 sheep
985 flocks
Latxa Blonde Faced

170.502 sheep
3.393 flocks
Carranzana

10,720 sheep
601 flocks
Traditional System: Transhumance
Livestock Farming

Improvement Programmes

Sustainability
• 1981. Farmer's Associations
  – Health: brucellosis, tubercullosis, agalactia,...
  – Reproduction
• 1984. Breeding Scheme:
  – Milk recording programme
  – Artificial Insemination centre
• Added Value & Quality Products:
  – 1987. P.D.O. Idiazabal cheese
    • Payment for milk quality
  – 1993. Quality Label: Young lamb (10 kg LW)
• **Management Centres:**
  Cooperatives to provide advisory to farmers:
  – 1971 Lurgintza; 1984 Lorra…Sergal, Abelur
  – Feeding, Reproduction, Pastures management (fertilization, re-seeding, etc.), technical and economical management

• **Research and Development**
  – 1981. Neiker - Tecnalia

• **Food safety, Risk assessment and Alerts.**
  – 2001. Elika

• **Education:** Itsasmendikoi
  – 1997. Shepherd’s school
Organization

Local Administration

Policy Making Promotion Funds

Basque Government

NEIKER

Research + Development

AR DIEKIN

Breeding Scheme

IKT

Software + Computing services

KALITATEA

Certification

MENDIKOI

Education, Training

Quality

ELIKA

Food Safety and Risk

CRDO

Management, Advisory

Farmers

Farmer's Associations

MANAGEMENT CENTRES

P.D.O. Idiazabal
Breeding Scheme

Milk Recording

Artificial Insemination
Breeding Scheme: Evolution

Milk Yield 120 d. (l.)

- L Black F. average
- L Blonde F. average

+ 1.8 l. / year
Breeding Scheme: Evolution

Milk yield 120 d. (l.)

- L Black F. average
- L Black F. elite
- L Blonde F. average
- L Blonde F. elite

+ 4.5 l. / year

+ 1,8 l. / year
Breeding Scheme: Potential
Breeding Scheme: Potential

\[ y = 10.51x + 302.32 \quad R^2 = 0.63 \]

\[ y = 5.00x + 134.52 \quad R^2 = 0.95 \]

\[ y = 2.51x + 90.35 \quad R^2 = 0.90 \]
EVOLUTION

• Professional
• Organized
• Technology
• Intensification
• Continuous Impr.
• Quality
  – Activity
  – Products

Source: www.idiazabalgaztarenmuseoa.com
<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage of Flocks</th>
<th>Percentage of Sheep Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flocks &lt; 100 sheep</td>
<td>89%</td>
<td>44%</td>
</tr>
<tr>
<td>Flocks &gt; 100 sheep</td>
<td>11%</td>
<td>56%</td>
</tr>
</tbody>
</table>

- **200 flocks in Breeding Programme**

“GARDENERS”

“PROFESSIONALS”
# Energy supply of different sources to total requirements

<table>
<thead>
<tr>
<th></th>
<th>Mountain (%)</th>
<th>Lowlands (%)</th>
<th>Indoors (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Traditional</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>From</td>
<td>30</td>
<td>53</td>
<td>17</td>
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<tr>
<td>... to ...</td>
<td>50</td>
<td>38</td>
<td>12</td>
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<tr>
<td><strong>Intensive</strong></td>
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<td>From</td>
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<td>60</td>
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<td>... to ...</td>
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Commercialization & Marketing
# Seasonality

<table>
<thead>
<tr>
<th>January</th>
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<th>April</th>
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<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
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</table>

[Image of a sheep]
## Seasonality

<table>
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<th>January</th>
<th>February</th>
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<th>October</th>
<th>November</th>
<th>December</th>
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</thead>
<tbody>
<tr>
<td><img src="image1.jpg" alt="Image of a cow with a caption" /></td>
<td><img src="image2.jpg" alt="Image of milk being poured" /></td>
<td></td>
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<td>Month</td>
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<td>February</td>
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</tbody>
</table>

**Seasonality**
Production Basque Country

• Milk = 9.2 Million Tons
  – 46% for home-made cheese
  – 51% sold to dairy factories
  – 3% for self-consumption, sold as fluid milk, etc.

• Meat:
  – 145,000 young lambs (10 kg Live weight)
  – 11,000 heavier lambs
1988: Regulatory Council P.D.O. Idiazabal:

- Defend the Denomination of Origin
- Apply the Regulations,
- Watch over its fulfilment,
- Promote and control the quality
• **Product:** Raw milk + Ripening >2 months
• **Breeds:** Latxa & Carranzana
• **Area:** Basque Country & Navarre

• **Awards:**
  • 1992. “European Food Heritage Product”
  • 2008: World Cheese Awards, Dublin = 28 medals
    7 gold + 9 silver + 12 bronze
    2400 cheeses & 140 countries
Idiazabal P.D.O.. Volume

- Cheese (kg)
- Milk (l.)

Bar chart showing the production of cheese and milk from 1995 to 2008.
Idiazabal P.D.O.: Actors

The graph shows the number of flocks and cheese makers from 1995 to 2008. The number of flocks and cheese makers has increased significantly over the years, with a notable peak in 2002. The number of cheese makers has also increased steadily post-2002.
Training & Education:

Shepherd’s School

Since 1997
Shepherd's School – Artzain Eskola

1997 – 2008 = 166 “students”
- 14 per year
- 24% women vs. 76% men
- age: 27 years old
- 54 % descendants from “shepherds” (n = 91)
  -389 sheep / flock on average

12 years = 81 new young shepherds
Challenges

• Price of outputs
  – Lamb
  – Wool
  – Multifunctionality: environmental assets

• Access to land

• Climate change: adaptation

• Conflicts Livestock – wildlife: wolf

• …
Conflicts livestock - wildlife

Absent since ’50s + Re-entry in ’90s
2008: 146 casualties
135 sheep + 9 cattle + 2 horses
Damages assessed in 16000 €
average = 109 € / casualty
Conflicts livestock - wildlife

Administration

- Payment: casualties only
- Plan for the “Management of Wolf Population” Draft in discussion
- Coexistence
- Mastiffs
- Electric fences

Farmers

- Payments
  - Lost animals
  - Injured
  - Abortions, milk…
  - Extra work?
- No Coexistence
Wolves *Canis lupus*

**Populations:**
1. NW Iberia
2. Sierra Morena
3. Alps
4. Italian
5. Carpathian
6. Dinaric-Balkan
7. Baltic
8. Karelian
9. Scandinavian
10. German / W. Poland

Source: www.lcie.org/project1.htm
Conclusions

• Importance of local breeds
• Effective Tools to improve sustainability features from technical and economical
• Adding value activities: impact upon incomes and social assets (self-steem)
• Valorisation of multifunctionality
• Important challenges still to be faced
Gracias

Thanks

Eskerrik asko

Merci