The role of sheep and goat breeds' value chains in the rural development in the Mediterranean Region

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Contents

• Domestic Project

• Value Chain Analysis

• Case Studies

• Points for discussion
ARIMNet - www.arimnet.net
A Network for Agricultural Research In the Mediterranean Area

Rationale

• The Mediterranean basin encompasses almost all the key global agricultural challenges
• Mediterranean issues are too often examined separately in various regions
• Global problems addressed by local research systems

Objectives

• To create a community of research for the whole region through the coordination of national programmes in Agricultural Research within the Mediterranean countries
• To address jointly the common key issues for Mediterranean agriculture
Mediterranean biodiversity as a tool for the sustainable development of the small ruminant sector: from traditional knowledge to innovation

- The following aspects are investigated:
  - Components of the production systems
    - Assessment of the sustainability (environment, economical, social)
  - Role of local authorities / organisation at territorial level
  - Synergies in breeds-products interactions
  - Distribution of products, supply chain, trends of the market
WP3 Objectives

- To explore the relationship between traditional livestock and market opportunities
- To identify ways that traditional breed value chains could capitalize market opportunities and improve its performance
- To improve households’ income and employment in rural areas
Methodology: Value Chain Analysis (VCA)

- A Value Chain contains the full range of activities required to bring a product through the different phases of production in response to consumer demand.
- A VCA examines all actors involved in the chain, the linkages and the activities within each link.
- A VCA facilitates the identification of the possibilities for upgrading and removing constraints within the chain.
Steps in the VCA

- **Data collection** (secondary data, sources from national and local administrative organizations, technical and research institutions, field research with farmers and discussions with key actors)

- **Value Chain mapping** (main actors, main activities, flow of information at the different levels of the chain, governance structure- relationships and coordination)

- **Review of Assets**

- **Upgrading strategies - Analysis of constraints and opportunities**

- **Validating of VCA**
Morocco

Main characteristics

- Fez-Boulemane area
- 1.3 million small ruminants
- 2.5% national production
- Main activity
- Sheep/Goat population
- Meat Production
  - Sheep: 3217 tons
  - Goat: 712 tons
  - Lambs (8 months / 7-14 kg carcass)
  - Culled ewes (4 years / 12-20 kg carcass)

Breeds

- Timahdite in agro-forestry pastoral system
- Beni Guil, Ouled Djellal and Safra in agro-pastoral system
- Crosses from D’man and Beni Guil or Sardi in intensive system
Main Actors and Activities of the Supply Chain

- **Farmers**
  - Live animal husbandry
  - Fatteners who finish sheep

- **Intermediaries**
  - Live animal selling to slaughterhouse

- **Slaughterhouses**
  - Live animal selling to slaughterhouse
  - Operate mainly in the weekly rural market
  - Operate in a long circuit

- **Retailers**
  - Butchers
  - Supermarkets
Map of Supply chain

FARMERS

Input suppliers

Milk production

Meat Production

Slaughtering

Self consumption

Local Market

Domestic Market
Review of Assets

**Physical**
- Satisfactory farm infrastructure
- Poor road network
- Poor level of compliance with technical hygienic standards

**Environmental**
- Good adaptation of local breeds
- Value added by agro-ecological diversity
- Climate change

**Institutional**
- Disease Control
- Animal identification
- Regulatory framework for labeled meat
- Lack of training

**Financial**
- Measures for local breed management
- Meat prices set by the state

**Social**
- No collective action
- Miscommunication around lamb
Opportunities and Constraints

Opportunities:
- Well adapted Breeds
- Low input
- Natural Resources
- Add value to biodiversity
- Support the area

Constraints:
- Disorganization
- Lack of relations between operators
- Strong presence of speculators
- No information flow
- No transmission of origin
- Difficult soil and climatic conditions
Corsica

Small ruminant sector

- Sheep population: 90 000 ewes in around 400 farms
- Brocciu (whey cheese) (PDO) – 400 tn
- Local types of cheeses (2 applications for PDO)
- Milk fed lambs (5-7 kg carcass) – 560 tn (75% lambs)

Breeds

- Sheep Breeds
  - 95% Corsica breed (an obligation for the PDO)

Other

- 30% of cheese production to continental France
- 65% of milk lambs exported alive to Sardinian slaughterhouses → carcasses mainly to continental Italy
# Main Actors and activities of the Supply Chain

<table>
<thead>
<tr>
<th>Fresh and cured cheeses, Brocciu</th>
<th>Milk fed lamb, very few heavy lambs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Farmers</strong></td>
<td><strong>Farmers</strong></td>
</tr>
<tr>
<td>• Husbandry, breeding, milking</td>
<td>• Live animal husbandry</td>
</tr>
<tr>
<td>• On farm processing</td>
<td>• Direct Selling</td>
</tr>
<tr>
<td><strong>Processing units</strong></td>
<td><strong>Traders / Intermediaries / Cooperatives</strong></td>
</tr>
<tr>
<td>• On farm processing</td>
<td>• Live animal purchase</td>
</tr>
<tr>
<td>• Industrial units</td>
<td>• Live animal selling to slaughterhouse</td>
</tr>
<tr>
<td><strong>Exporters</strong></td>
<td>• Meat selling</td>
</tr>
<tr>
<td>• Industrial units</td>
<td><strong>Slaughterhouses</strong></td>
</tr>
<tr>
<td><strong>Retailers</strong></td>
<td>• On farm Slaughter (illegal)</td>
</tr>
<tr>
<td></td>
<td>• Corsican slaughterhouse</td>
</tr>
<tr>
<td></td>
<td>• Sardinian slaughterhouse</td>
</tr>
<tr>
<td></td>
<td><strong>Retailers</strong></td>
</tr>
<tr>
<td></td>
<td>• Butcher</td>
</tr>
<tr>
<td></td>
<td>• Supermarkets</td>
</tr>
</tbody>
</table>
Map of Supply chain

FARMERS

Meat Production
- Slaughtering
- Self consumption
- Local Market

Milk Production
- On farm processing
- Small Dairies
- Large Dairies
- Domestic Market

Input suppliers
Review of Assets

**Physical**
- Good farm infrastructure
- Milking parlors
- Old equipment
- Lack of capitalization in the farms

**Environmental**
- Good adaptation of local breeds
- Transhumance decreased
- Bad spatial distribution of farms

**Institutional**
- Disease Control
- Animal identification
- Well developed on farm processing
- Lack of training

**Financial**
- CAP subsidies
- High prices for milk
- Importation of milk at low price

**Social**
- Family business
- Lack of trust
Opportunities and Threats

**Opportunities**
- Adapted breed
- Efficient selection scheme
- High price for the milk
- Specialty products with strong demand

**Constraints**
- Ageing of farmers
- Declining number of farms
- Lack of cooperation within the sector
- Division among the on-farm processors
Cyprus

Small ruminant sector

- Sheep population: ~300,000
- Goat population: 214,000
- 18% of total value of animal production
- Sheep
  - Milk 18136 tn
  - Meat 3337 tn
- Goat
  - Milk 24581 tn
  - Meat 3874 tn
- On-farm processing of ~20% of milk

Breeds

- Sheep Breeds
  - 58% Chios and fat-tailed crosses
  - 39% Chios
  - 3% Cyprus Fat-tailed
- Goat Breeds
  - 55% Damascus and local Breed Crosses
  - 28% Damascus
  - 17% Local Breeds
### Main Actors and activities of the Supply Chain

#### Milk Chain

<table>
<thead>
<tr>
<th>Farmers</th>
<th>Processing units</th>
<th>Exporters</th>
<th>Retailers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Husbandry, breeding, milking • On farm processing</td>
<td>Family owned • Industrial units</td>
<td>Large and medium-sized dairies (haloumi cheese)</td>
<td>Supermarkets • Delicatessen shops / bakeries • Specialty shops</td>
</tr>
</tbody>
</table>

#### Meat Chain

<table>
<thead>
<tr>
<th>Farmers</th>
<th>Traders / Intermediaries / Cooperatives</th>
<th>Slaughterhouses</th>
<th>Retailers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal husbandry • Animal fattening</td>
<td>Live animal purchase • Live animal selling to slaughterhouse • Meat selling</td>
<td>Slaughter</td>
<td>Butcher • Supermarkets</td>
</tr>
</tbody>
</table>
Map of Supply chain

FARMERS

Meat Production
- Self consumption
- Local Market

Milk Production
- On farm processing
- Small Dairies
- Domestic Market
- Large Dairies
- International Market

Input suppliers

Local Market
Domestic Market
International Market
Self consumption
On farm processing
Small Dairies
Large Dairies
International Market
Review of Assets

**Physical**
Good farm infrastructure in farms with more than 100 heads
Milking or refrigerator equipment not available in all farms

**Environmental**
Good adaptation of local breeds
Bad distribution of farms/Overgrazing in some areas

**Institutional**
Disease Control
Animal identification
No professional organisations/associations
Insufficient farmer training

**Financial**
CAP subsidies
Economic crisis
Increased feed prices
Delayed payments from dairy industry
Low meat prices

**Social**
Family business
No sense of community
Lack of trust
Opportunities and Constraints

**Opportunities**

- Adapted breeds
- Natural Resources
- Biodiversity value
- Support rural/marginal areas

**Constraints**

- Declining number of farms
- Ageing farmers
- Unstable climatic conditions
- Lack of cooperation between the actors
- No information flow
Ipeiros, Greece

**Small ruminant sector**
- Sheep population: 870,000
- 9600 farms
- 10% of total population
- Goat population: 200,000
- 5500 farms
- 5% of total population

**Breeds**
- Sheep Breeds
  - Local crosses
  - Kalarritiko, Boutsiko, Katsika
  - Frizarta, Lesvos, Karagouniko, Chios
- Goat Breeds
  - Local goat
  - Damascus, Alpine

**Transhumance**
- 480 farms
- 70,000 sheep
- 20,000 goats
# Main Actors and activities of the Supply Chain

<table>
<thead>
<tr>
<th>Feta cheese, Kefalograviera, galotyri, other cheeses, yogurt</th>
<th>Farmers</th>
<th>Processing units</th>
<th>Exporters</th>
<th>Retailers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmers</td>
<td>Farmers</td>
<td>Processing units</td>
<td>Exporters</td>
<td>Retailers</td>
</tr>
<tr>
<td>• Husbandry, breeding, milking</td>
<td>• Family owned</td>
<td>• Family owned</td>
<td>• Large dairy units</td>
<td>• Supermarkets</td>
</tr>
<tr>
<td>• On farm processing</td>
<td>• Industrial units</td>
<td>• Industrial units</td>
<td>• Delicatessen shops</td>
<td>• Delicatessen shops</td>
</tr>
<tr>
<td></td>
<td>• Collection of milk, quality control, processing</td>
<td>• Collection of milk, quality control, processing</td>
<td>• Specialty shops</td>
<td>• Specialty shops</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Milk fed lamb / kid, sheep/ goat meat</th>
<th>Farmers</th>
<th>Traders / Intermediaries</th>
<th>Slaughterhouses</th>
<th>Retailers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmers</td>
<td>Farmers</td>
<td>Traders / Intermediaries</td>
<td>Slaughterhouses</td>
<td>Retailers</td>
</tr>
<tr>
<td>• Animal husbandry</td>
<td>• Live animal purchase</td>
<td>• Live animal purchase</td>
<td>• Slaughter</td>
<td>• Butcher</td>
</tr>
<tr>
<td></td>
<td>• Live animal selling to slaughterhouse</td>
<td>• Live animal selling to slaughterhouse</td>
<td>• Supermarkets</td>
<td>• Supermarkets</td>
</tr>
</tbody>
</table>
Map of Supply chain

FARMERS

Meat Production
- Self consumption
- Local Market

Milk Production
- On farm processing
- Small Dairies
- Large Dairies

Local Market
Domestic Market
International Market
Review of Assets

**Physical**
- Industries follow international standards and quality procedures
- Local tradition
- Not milking parlors in all farms

**Environmental**
- Good adaptation of local breeds
- Lack of rational pastures management

**Institutional**
- Disease Control
- Animal identification
- No professional organisation
- Lack of training

**Financial**
- CAP subsidies
- Economic crisis
- Delayed payments from industry
- Increased feed prices
- Low meat prices

**Social**
- Family business
- No collective action
- Lack of trust
Opportunities and Constraints

**Opportunities**
- Adapted breeds
- Low input
- Natural Resources
- Biodiversity value
- Support the area

**Constraints**
- Ageing of farmers
- Lack of cooperation between the actors
- No information flow
<table>
<thead>
<tr>
<th>Country / Region</th>
<th>Species</th>
<th>Breed</th>
<th>Product</th>
<th>Production System</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fez-Boulemane, Morocco</td>
<td>Sheep</td>
<td>Timahdite Beni Guil, Ouled Djellal, Safra Crosses from D’man and Beni Guil or Sardi</td>
<td>Meat</td>
<td>Agro-forestry pastoral system Pastoral Oasian</td>
<td>Meat</td>
</tr>
<tr>
<td>Corsica, France</td>
<td>Sheep</td>
<td>Corsican (an obligation for PDO)</td>
<td>Meat Milk</td>
<td>Low intensity rangeland /grassland Forage crop intensification</td>
<td>Dairy products Brocciu whey cheese (PDO) Milk lamb</td>
</tr>
<tr>
<td>Cyprus</td>
<td>Sheep</td>
<td>Chios, fat-tailed breeds &amp;crosses Damascus, Machaeras, other local breeds &amp; crosses</td>
<td>Meat Milk</td>
<td>Agro-pastoral (mixed system)</td>
<td>Dairy products Haloumi Milk lambs /kids</td>
</tr>
<tr>
<td></td>
<td>Goat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ipeiros Greece</td>
<td>Sheep</td>
<td>Katsika, Kallaritiko Chios, Lesvos Karagouniko Frizarta &amp; crosses</td>
<td>Meat Milk</td>
<td>Agro-pastoral (transhumance)</td>
<td>Dairy products Feta (PDO) Other PDO cheeses Milk lambs /kids</td>
</tr>
<tr>
<td></td>
<td>Goat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Review of Assets

<table>
<thead>
<tr>
<th>Country / Region</th>
<th>Physical</th>
<th>Environmental</th>
<th>Institutional</th>
<th>Financial</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morocco</td>
<td>Poor road network / low compliance with technical hygienic standards</td>
<td>Adapted local breeds</td>
<td>Established organisation for health control, identification etc</td>
<td>Meat prices set by the state</td>
<td>No collective action</td>
</tr>
<tr>
<td>Corsica, France</td>
<td>Good farm infrastructure</td>
<td>Adapted local breeds</td>
<td>Well developed on farm processing</td>
<td>High prices for milk</td>
<td>No trust</td>
</tr>
<tr>
<td>Cyprus</td>
<td>Adequate farm infrastructure</td>
<td>Well-adapted local breeds</td>
<td>Lack of professional organisations</td>
<td>Increased feed prices Low meat prices</td>
<td>No collective action Low meat prices</td>
</tr>
<tr>
<td>Ipeiros Greece</td>
<td>Tradition in sheep and goat farming Quality products</td>
<td>Well-adapted local breeds</td>
<td>Lack of professional organisations</td>
<td>Increased feed prices Low meat prices</td>
<td>No collective action No trust</td>
</tr>
</tbody>
</table>
General Recommendations

- Identify special characteristics of the breed
- Find a viable business model
- Enforce the collective action
- Coordination among the supporting institutions
- Policy measures
Upgrading the sector -1

- Morocco
  - Common Rules that allow product specifications
  - Super markets need segmentation and information to offer to consumers

- Corsica
  - Registration of several cheeses as PDO
  - Re-organization of the sector with a better interprofession board
  - Domestic market for milk fed lambs.
Upgrading the sector -2

• Cyprus
  • Breeding healthy, disease resistant animals
  • Conservation of local breeds
  • Higher on-farm processing of milk products
  • Added value of sheep and goat products (PDO efforts)
  • Incentives for young individuals to continue family business
  • Support for new sheep and goat farmers
  • Enhanced education, knowledge transfer and extension services

• Ipeiros
  • On farm processing of milk
  • Labeled meat products
  • Support collective action, professional organisations, cooperation between actors
Next steps

- Validating the VCA
- Comparative analysis of the case studies
DoMEsTlc Consortium

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