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
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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
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, value 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

<table>
<thead>
<tr>
<th>Farmers</th>
<th>Intermediaries</th>
<th>Slaughterhouses</th>
<th>Retailers</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Live animal husbandry</td>
<td>• Live animal selling to slaughterhouse</td>
<td>• Live animal selling to slaughterhouse</td>
<td>• Butchers</td>
</tr>
<tr>
<td>• Fatteners who finish sheep</td>
<td></td>
<td>• Operate mainly in the weekly rural market</td>
<td>• Supermarkets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Operate in a long circuit</td>
<td></td>
</tr>
</tbody>
</table>
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

### Fresh and cured cheeses, Brocciu

<table>
<thead>
<tr>
<th><strong>Farmers</strong></th>
<th><strong>Processing units</strong></th>
<th><strong>Exporters</strong></th>
<th><strong>Retailers</strong></th>
</tr>
</thead>
</table>
| - Husbandry, breeding, milking  
- On farm processing | - On farm processing  
- Industrial units | - Industrial units | - Supermarkets  
- Delicatessen shops  
- Specialty shops |

### Milk fed lamb, very few heavy lambs

<table>
<thead>
<tr>
<th><strong>Farmers</strong></th>
<th><strong>Traders / Intermediaries / Cooperatives</strong></th>
<th><strong>Slaughterhouses</strong></th>
<th><strong>Retailers</strong></th>
</tr>
</thead>
</table>
| - Live animal husbandry  
- Direct Selling | - Live animal purchase  
- Live animal selling to slaughterhouse  
- Meat selling | - On farm Slaughter (illegal)  
- Corsican slaughterhouse  
- Sardinian slaughterhouse | - Butcher  
- Supermarkets |
Map of Supply chain

- **Input suppliers**
- **FARMERS**
  - Meat Production
    - Slaughtering
      - Self consumption
    - Local Market
  - Milk Production
    - Farm processing
    - Small Dairies
    - Large Dairies
    - Domestic Market
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>
</table>
| • Husbandry, breeding, milking  
• On farm processing | • Family owned  
• Industrial units | • Large and medium-sized dairies  
(haloumi cheese) | • Supermarkets  
• Delicatessen shops / bakeries  
• Specialty shops |

### Meat chain

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

FARMERS

Input suppliers

Meat Production

Own consumption

Local Market

Domestic Market

Milk Production

Own 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
- Goat population: 200,000
- ? % of total value of animal production

- Sheep
  - Milk
  - Meat

- Goat
  - Milk
  - Meat

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><strong>Milk chain</strong></th>
<th><strong>Meat chain</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Farmers</strong></td>
<td><strong>Farmers</strong></td>
</tr>
<tr>
<td>• Husbandry,</td>
<td>• Animal</td>
</tr>
<tr>
<td>breeding,</td>
<td>husbandry</td>
</tr>
<tr>
<td>milking</td>
<td>• Animal</td>
</tr>
<tr>
<td>• On farm</td>
<td>fattening</td>
</tr>
<tr>
<td>processing</td>
<td></td>
</tr>
<tr>
<td><strong>Processing units</strong></td>
<td><strong>Traders / Intermediaries / Cooperatives</strong></td>
</tr>
<tr>
<td>• Family owned</td>
<td>• Live animal purchase</td>
</tr>
<tr>
<td>• Industrial units</td>
<td>• Live animal selling to slaughterhouse</td>
</tr>
<tr>
<td>• Collection of milk, quality control, processing</td>
<td>• Meat selling</td>
</tr>
<tr>
<td><strong>Exporters</strong></td>
<td><strong>Slaughterhouses</strong></td>
</tr>
<tr>
<td>• Large dairy units</td>
<td>• Slaughter</td>
</tr>
<tr>
<td><strong>Retailers</strong></td>
<td><strong>Retailers</strong></td>
</tr>
<tr>
<td>• Supermarkets</td>
<td>• Butcher</td>
</tr>
<tr>
<td>• Delicatessen shops</td>
<td>• Supermarkets</td>
</tr>
<tr>
<td>• Specialty shops</td>
<td></td>
</tr>
</tbody>
</table>

*Feta cheese, Kefalorviera, galotyri, other cheeses, yogurt*

*Milk fed lamb / kid, sheep/ goat meat*
Map of Supply chain

- FARMERS
  - Input suppliers
  - Meat Production
    - Self consumption
    - Local Market
  - Milk Production
    - Farm processing
    - Small Dairies
    - Domestic Market
    - Large Dairies
    - 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 Intensive system</td>
<td>Meat</td>
</tr>
<tr>
<td>Corsica, France</td>
<td>Sheep</td>
<td>Corsican (an obligation for PDO)</td>
<td>Meat</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</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>Milk</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</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>Milk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Country / Region</td>
<td>Physical</td>
<td>Environmental</td>
<td>Institutional</td>
<td>Financial</td>
<td>Social</td>
</tr>
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<td>-----------------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<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 No trust</td>
</tr>
<tr>
<td>Ipeiros Greece</td>
<td>Tradition in sheep and goat farming Quality products</td>
<td>Well-adapted local breeds</td>
<td>Established Research and Regional infrastructures</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
DoMEsTiC Consortium

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