

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

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- Domestic Project
- Value Chain Analysis
- Case Studies
- Points for discussion

# ARIMNet - [www.arimnet.net](http://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

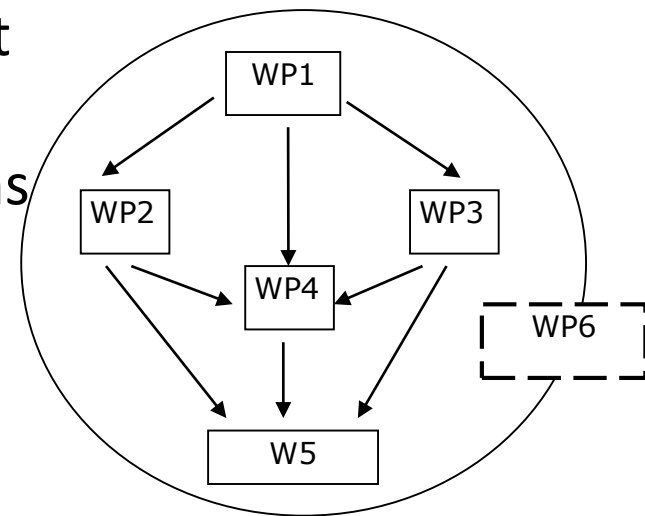
## Objectives

- 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

# DoMEsTic - [www.arim-domestic.net](http://www.arim-domestic.net)

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

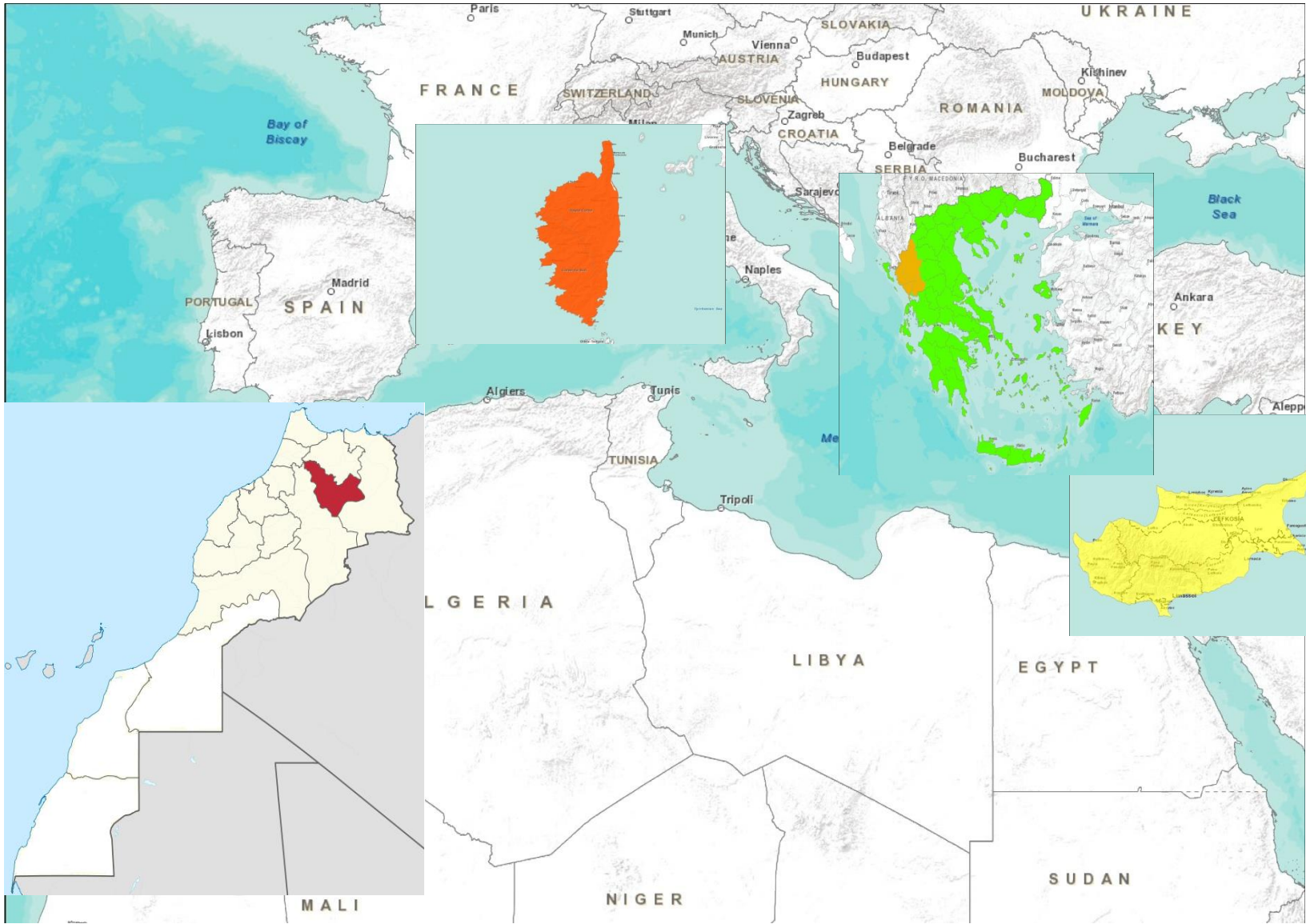
- To explore the relationship between traditional livestock and market opportunities
- To identify ways that traditional breed value chains could capitalize market opportunities and improve its performance
- To improve households' income and employment in rural areas

# 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, 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

## Farmers

- Live animal husbandry
- Fatteners who finish sheep

## Intermediaries

- Live animal selling to slaughterhouse

## Slaughterhouses

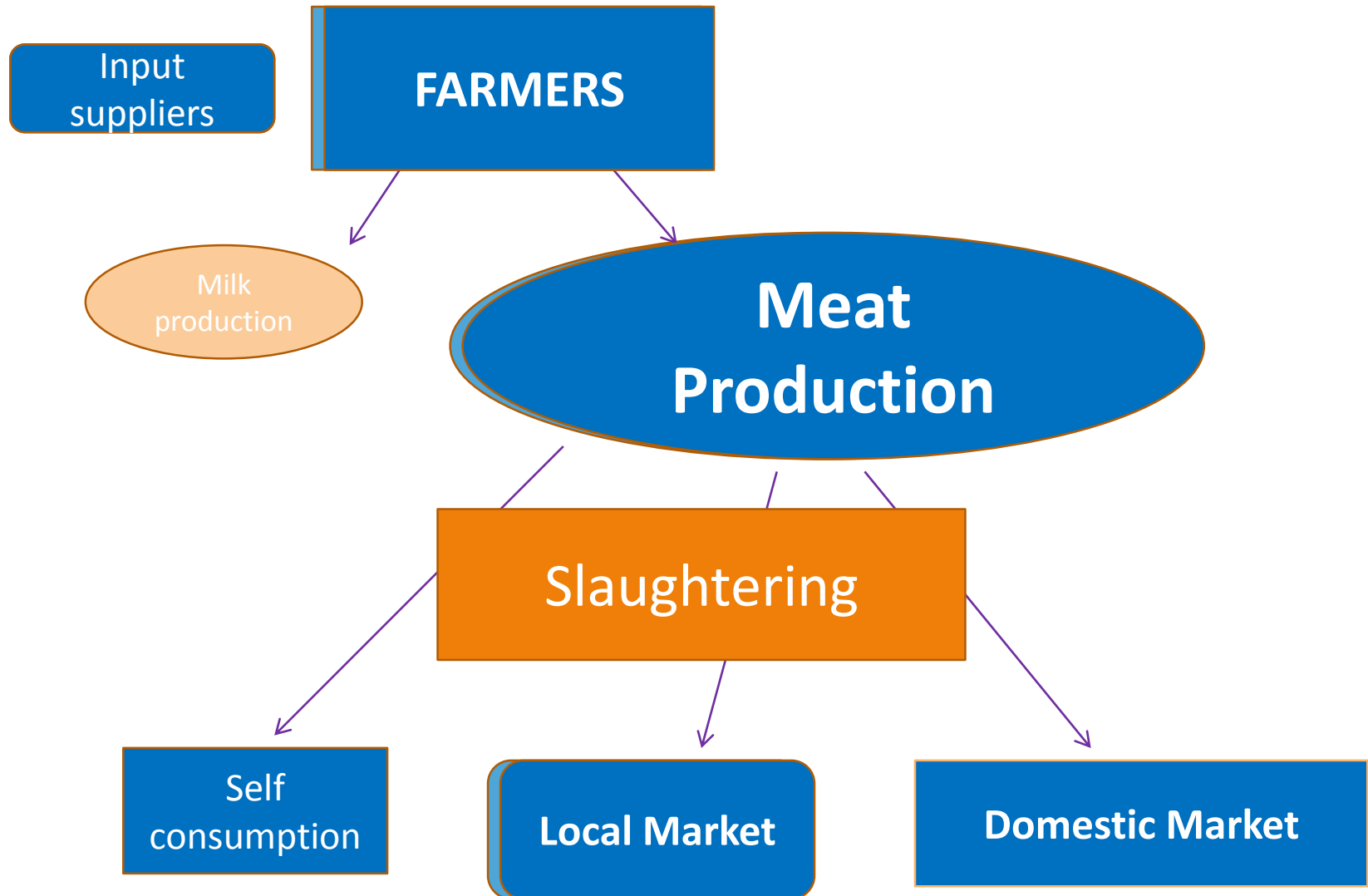
- Live animal selling to slaughterhouse
- Operate mainly in the weekly rural market
- Operate in a long circuit

## Retailers

- Butchers
- Supermarkets



# Map of Supply chain





# 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



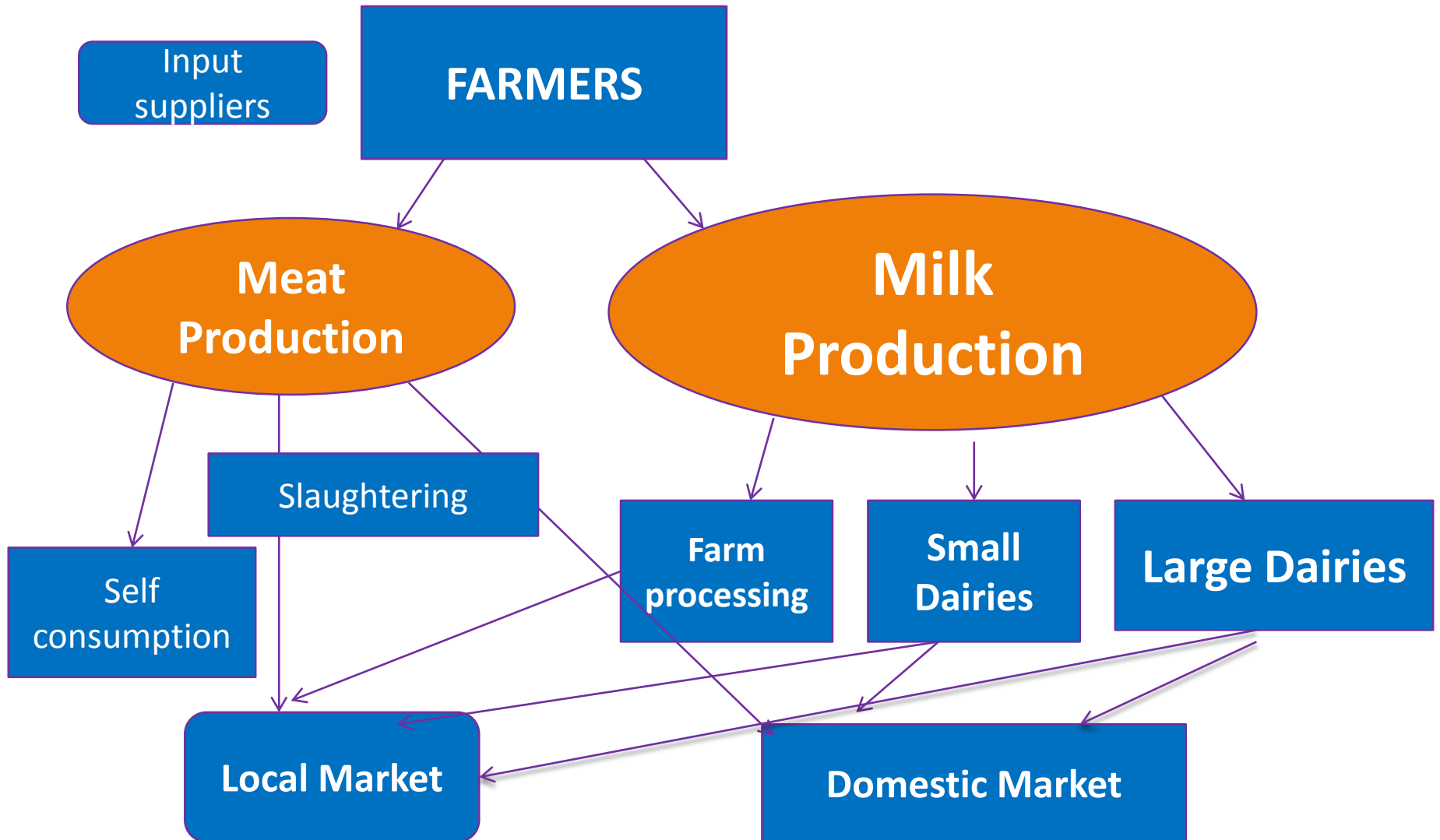


# Main Actors and activities of the Supply Chain

		Fresh and cured cheeses, Brocciu			
Milk chain		Farmers	Processing units	Exporters	Retailers
		<ul style="list-style-type: none"><li>• Husbandry, breeding, milking</li><li>• On farm processing</li></ul>	<ul style="list-style-type: none"><li>• On farm processing</li><li>• Industrial units</li></ul>	<ul style="list-style-type: none"><li>• Industrial units</li></ul>	<ul style="list-style-type: none"><li>• Supermarkets</li><li>• Delicatessen shops</li><li>• Specialty shops</li></ul>
		Milk fed lamb, very few heavy lambs			
Meat chain		Farmers	Traders / Intermediaries / Cooperatives	Slaughterhouses	Retailers
		<ul style="list-style-type: none"><li>• Live animal husbandry</li><li>• Direct Selling</li></ul>	<ul style="list-style-type: none"><li>• Live animal purchase</li><li>• Live animal selling to slaughterhouse</li><li>• Meat selling</li></ul>	<ul style="list-style-type: none"><li>• On farm Slaughter (illegal)</li><li>• Corsican slaughterhouse</li><li>• Sardinian slaughterhouse</li></ul>	<ul style="list-style-type: none"><li>• Butcher</li><li>• Supermarkets</li></ul>



# Map of Supply chain





# 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

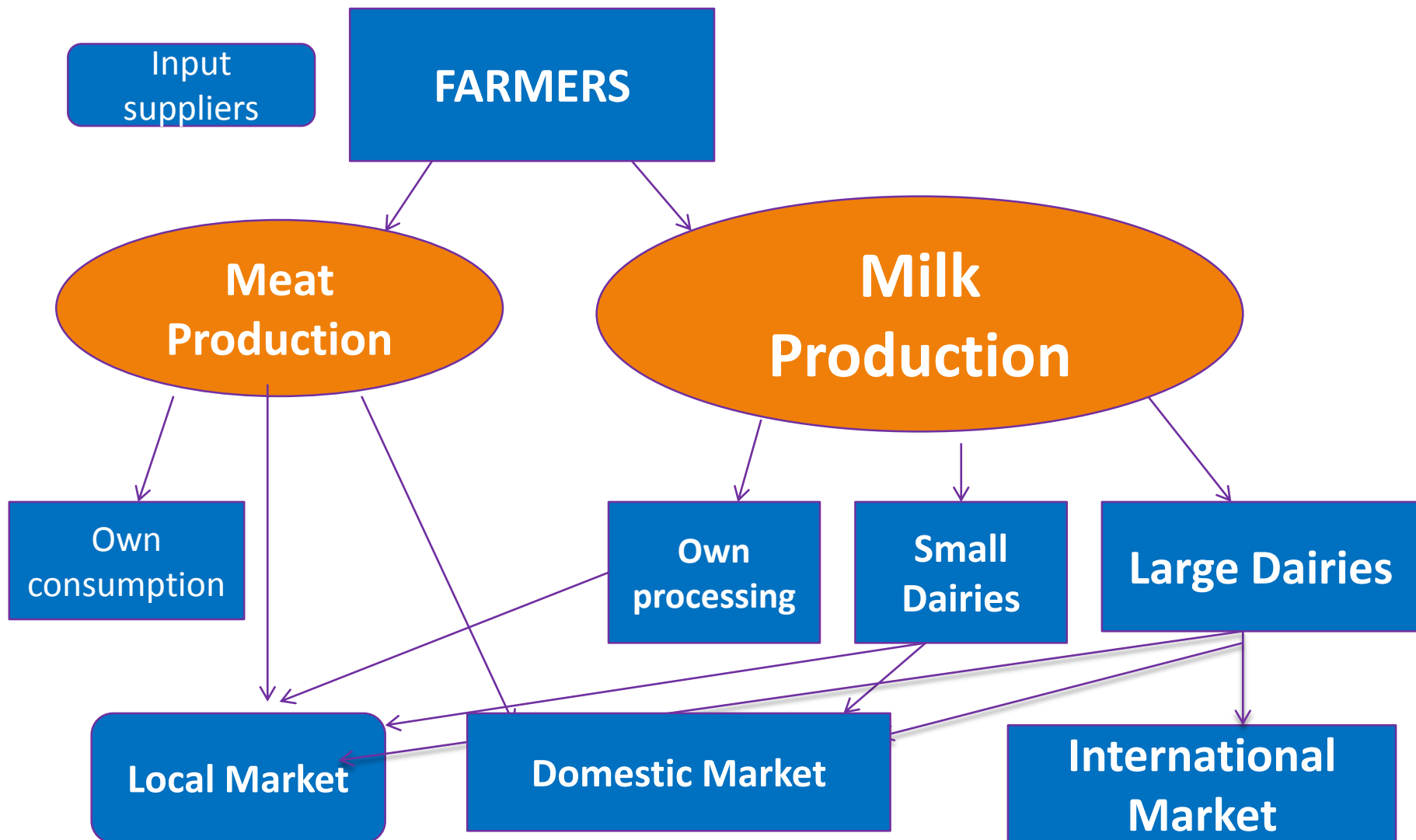


# Main Actors and activities of the Supply Chain

		Haloumi cheese, Anari cheese, Yogurt, Kefalotyri			
Milk chain		Farmers	Processing units	Exporters	Retailers
		<ul style="list-style-type: none"><li>• Husbandry, breeding, milking</li><li>• On farm processing</li></ul>	<ul style="list-style-type: none"><li>• Family owned</li><li>• Industrial units</li></ul>	<ul style="list-style-type: none"><li>• Large and medium-sized dairies (haloumi cheese)</li></ul>	<ul style="list-style-type: none"><li>• Supermarkets</li><li>• Delicatessen shops / bakeries</li><li>• Specialty shops</li></ul>
		Milk fed lamb / kid, mutton / goat meat			
Meat chain		Farmers	Traders / Intermediaries / Cooperatives	Slaughterhouses	Retailers
		<ul style="list-style-type: none"><li>• Animal husbandry</li><li>• Animal fattening</li></ul>	<ul style="list-style-type: none"><li>• Live animal purchase</li><li>• Live animal selling to slaughterhouse</li><li>• Meat selling</li></ul>	<ul style="list-style-type: none"><li>• Slaughter</li></ul>	<ul style="list-style-type: none"><li>• Butcher</li><li>• Supermarkets</li></ul>



# Map of Supply chain - Cyprus







# Review of Assets

## Physical

Good farm infrastructure in farms with more than 100 heads

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Milking or refrigerator equipment not available in all farms

## Environmental

Good adaptation of local breeds

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Bad distribution of farms/Overgrazing in some areas

## Institutional

Disease Control  
Animal identification

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No professional organisations/associations  
Insufficient farmer training

## Financial

CAP subsidies

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Economic crisis  
Increased feed prices  
Delayed payments from dairy industry  
Low meat prices

## Social

Family business

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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

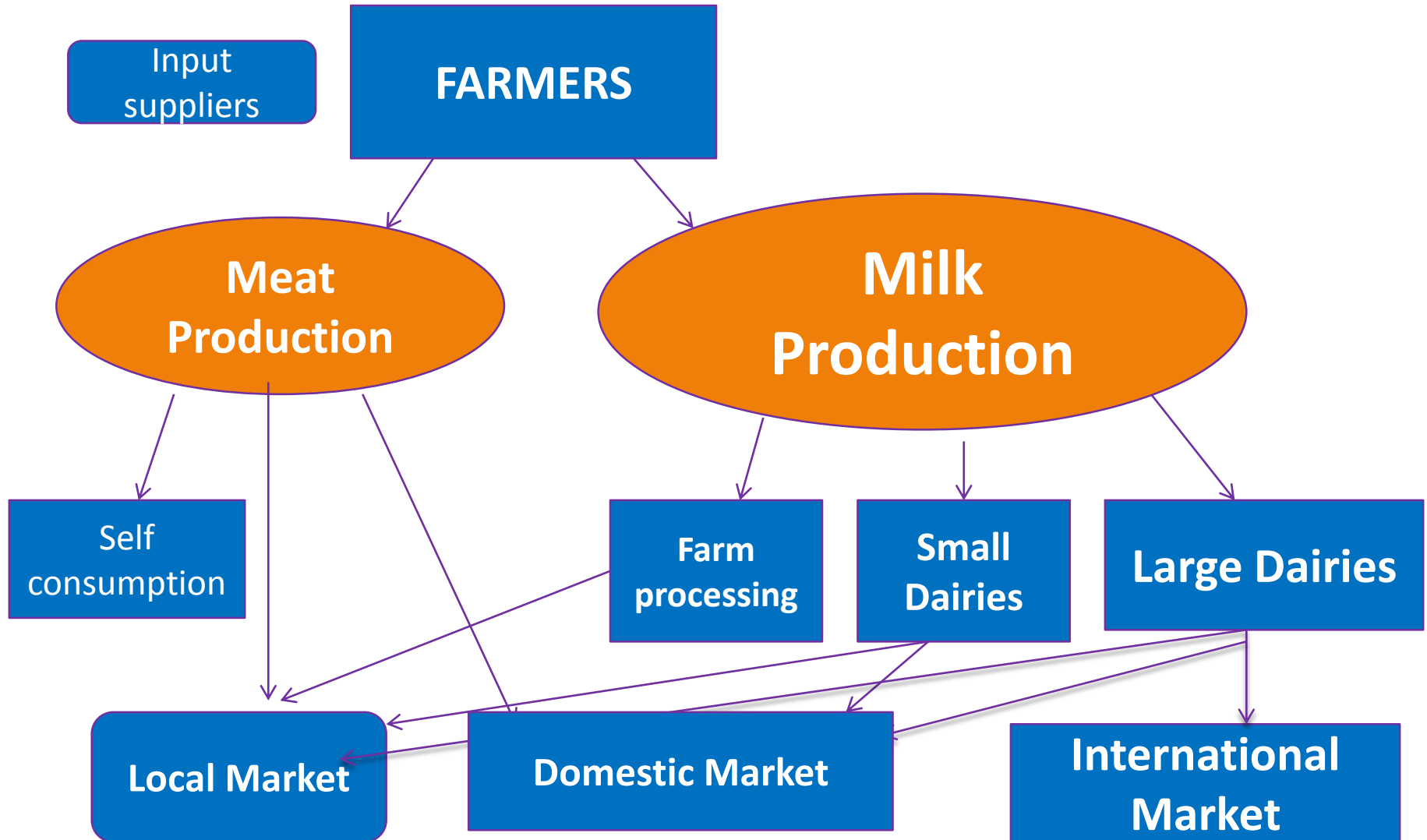


# Main Actors and activities of the Supply Chain

		Feta cheese, Kefalograviera, galotyri, other cheeses, yogurt			
Milk chain		Farmers	Processing units	Exporters	Retailers
		<ul style="list-style-type: none"><li>• Husbandry, breeding, milking</li><li>• On farm processing</li></ul>	<ul style="list-style-type: none"><li>• Family owned</li><li>• Industrial units</li><li>• Collection of milk, quality control, processing</li></ul>	<ul style="list-style-type: none"><li>• Large dairy units</li></ul>	<ul style="list-style-type: none"><li>• Supermarkets</li><li>• Delicatessen shops</li><li>• Specialty shops</li></ul>
		Milk fed lamb / kid, sheep/ goat meat			
Meat chain		Farmers	Traders / Intermediaries / Cooperatives	Slaughterhouses	Retailers
		<ul style="list-style-type: none"><li>• Animal husbandry</li><li>• Animal fattening</li></ul>	<ul style="list-style-type: none"><li>• Live animal purchase</li><li>• Live animal selling to slaughterhouse</li><li>• Meat selling</li></ul>	<ul style="list-style-type: none"><li>• Slaughter</li></ul>	<ul style="list-style-type: none"><li>• Butcher</li><li>• Supermarkets</li></ul>



# Map of Supply chain





# 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



# Summary of cases studies

Country / Region	Species	Breed	Product	Production System	Products
Fez-Boulemane, Morocco	Sheep	Timahdite Beni Guil, Ouled Djellal, Safra Crosses from D'man and Beni Guil or Sardi	Meat	Agro-forestry pastoral system Pastoral Oasian Intensive system	Meat
Corsica, France	Sheep	Corsican (an obligation for PDO)	Meat Milk	Low intensity rangeland /grassland Forage crop intensification	Dairy products Brocciu whey cheese (PDO) Milk lamb
Cyprus	Sheep Goat	Chios, fat-tailed breeds & crosses Damascus, Machaeras, other local breeds & crosses	Meat Milk	Agro-pastoral (mixed system)	Dairy products Haloumi Milk lambs /kids
Ipeiros Greece	Sheep Goat	Katsika, Kallaritiko Chios, Lesvos Karagouniko Frizarta & crosses	Meat Milk	Agro-pastoral (transhumance)	Dairy products Feta (PDO) Other PDO cheeses Milk lambs /kids

# Review of Assets

Country / Region	Physical	Environmental	Institutional	Financial	Social
Morocco	Poor road network / low compliance with technical hygienic standards	Adapted local breeds Rangeland degradation	Established organisation for health control, identification etc	Meat prices set by the state	No collective action
Corsica, France	Good farm infrastructure	Adapted local breeds Bad farm distribution	Well developed on farm processing	High prices for milk	No trust
Cyprus	Adequate farm infrastructure	Well-adapted local breeds	Lack of professional organisations	Increased feed prices Low meat prices	No collective action No trust
Ipeiros Greece	Tradition in sheep and goat farming Quality products	Well-adapted local breeds Lack of community pastures management	Established Research and Regional infrastructures Lack of professional organisations	Increased feed prices Low meat prices	No collective action No trust

# 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

- GREECE - Hellenic Agricultural Organisation – Direction of Agricultural Research (NAGREF)
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