

Sustainable Sheep Production in Algeria: Mapping Challenges and Opportunities Across the Value Chain

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Introduction

Sheep farming in Algeria, with around 19 million head, is a key economic resource for rural families and a major contributor to red-meat production. It also provides milk, cheese, and wool, supporting food self-sufficiency. Deeply rooted in tradition, it plays an important cultural and social role. Local breeds, adapted to arid areas, make efficient use of natural rangelands and help maintain pastoral ecosystem balance.

Objective: To analyze the structure and performance of the supply chain, assess how value is distributed along its different stages, and identify key constraints and leverage points to enhance its sustainability and competitiveness.

Materials and Methods

General Methodology

- ✓ Mixed approach: qualitative + quantitative
- ✓ Field survey (Jan–Sept 2025)
- ✓ Three representative zones: High Plateaus, Aurès, Sahara

Sampling and Data Collection

- ✓ 200 farmers (stratified sampling)
- ✓ 30 semi-structured interviews (veterinarians, slaughterhouses, traders)
- ✓ 3 regional focus groups
- ✓ Secondary sources: MADR, INRAA, FAO, ONAB

Statistical analysis

Objective: Understand the performance and sustainability of Algerian sheep farming systems.
Approach: Mixed methods (quantitative + qualitative).
Tools used: SPSS, AHP, weighted SWOT.
Analysis focused on:
Costs and productivity of the systems
Relationships between farm size and performance
Ranking of development scenarios

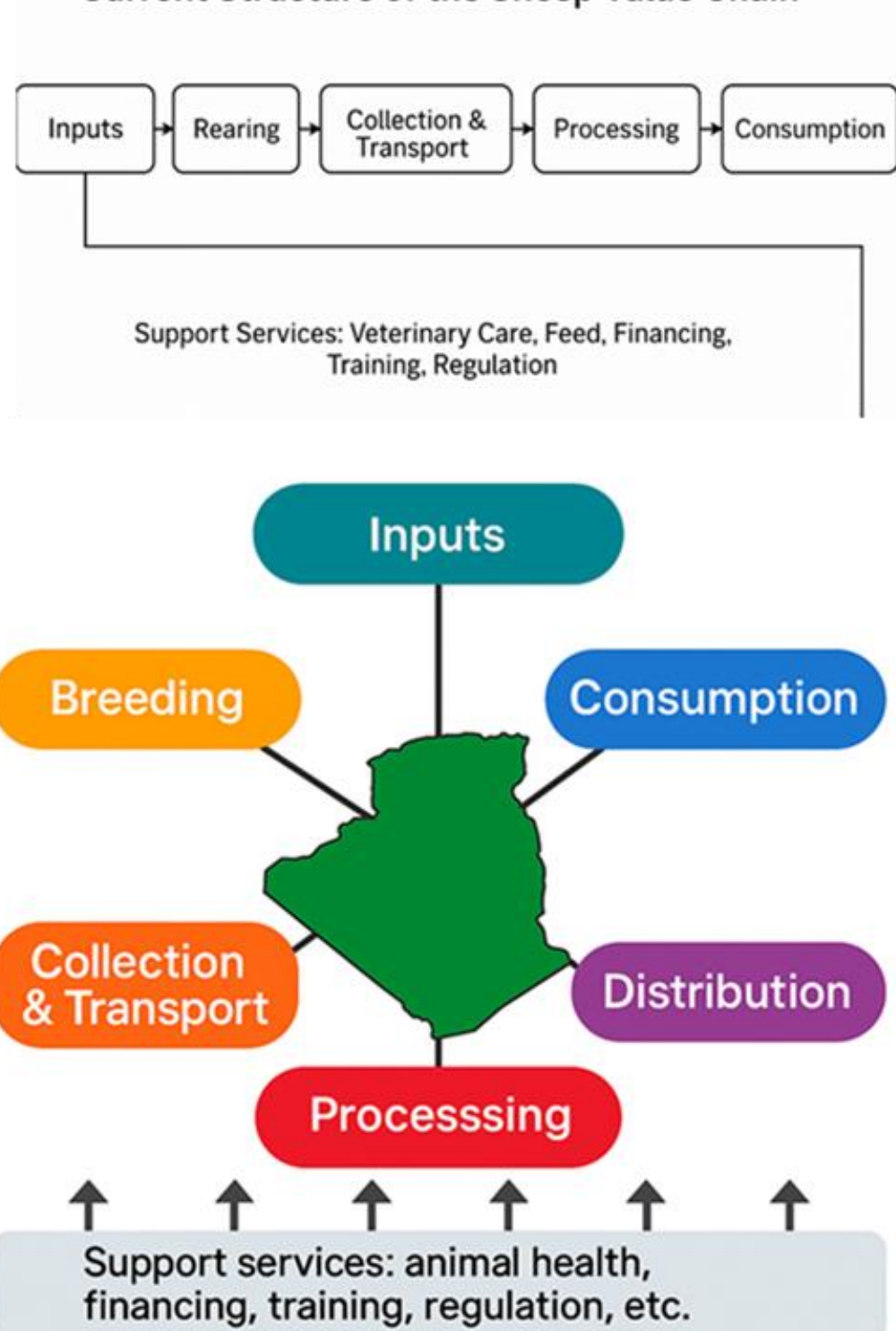
Results

Present the main results from the value chain analysis:

The Algerian sheep sector remains highly fragmented and heavily dependent on informal channels. Structure of the sheep value chain. Six main links: inputs → production → collection → processing → distribution → consumption. Cross-cutting services: animal health, financing, training, regulation. Weak coordination between actors = significant value losses. The multicriteria analysis (AHP: Analytic Hierarchy Process) shows that:

🐑 **Scenario 2 (cooperative model):** the most feasible in the short term. 🐑 **Scenario 1 (Status quo):** maintaining the current system. 🐑 **Scenario 3 (smart and traceable system):** the most sustainable and innovative in the long term.

Current Structure of the Sheep Value Chain



Supply of inputs.

Inputs = 45 to 55% of total production costs.
Strong dependence on imported cereals.
Irregular supply in rural areas.
Very limited access to credit for small livestock farmers.

Reducing feed dependence is a priority lever.

Processing and slaughter.

- Less than 50% of slaughtering is carried out in approved facilities.
- Informal slaughtering is dominant → health risks.
- By-products (wool, hides, tallow) are poorly valorized.

Consequence: low income and lack of certification for high-end markets.

Supply of inputs.

- Three production systems:
 - Extensive (steppe and Saharan areas)
 - Semi-intensive (foothills, irrigated areas)
 - Intensive (peri-urban areas)
 - Average flock size: 40–60 heads
 - Carcass yield: 24–26 kg
 - Lamb mortality: 10–12%

Weaknesses: animal health, reproduction, technical training

Distribution and consumption.

- Channels: livestock markets, butchers, temporary stalls (Eid).
- Price: 1,100–2,500 DZD/kg; distributor margin: 15–30%.
 - Consumption is mainly seasonal and traditional.
- Lack of diversification (processed products, ready-to-eat dishes).

Observation: market is not very dynamic despite strong cultural significance.

Collection and transport.

- Mainly managed by informal intermediaries (“سماسرة / middlemen”).
- Transactions are conducted without contracts (invoices) or traceability.
- Transport conditions are often poor → weight loss (1–2% per day).
 - Cost: 8–12 DZD/km per animal.

Impact: loss of economic value and degraded quality.

Cross-cutting support services.

- Public veterinary services are underfunded; private services are expensive.
 - Access to agricultural credit is limited.
- Training is mostly theoretical and poorly adapted to real needs.
- Weak enforcement of health and traceability standards.

Conclusion: strengthening support institutions is essential.

Operational recommendations for a sustainable sector.

Priority actions:

- Create regional platforms to coordinate stakeholders and monitor performance.
- Strengthen cooperatives and associations through training, financing, and market access.
- Invest in digital traceability to improve quality and transparency.
- Improve veterinary and extension services for resilient animal health.
- Promote technical modernization and innovations adapted to local realities.

Expected impact:

- Enhanced food security.
- Better use of natural resources.
- Improved incomes and rural living conditions.

Conclusions

Analysis of the sector’s strengths and weaknesses:

- Cultural, social, and economic importance of sheep.
- Major obstacles: low organization and informality of exchanges; technical and environmental pressures.
- 🐑 **First study on the sheep value chain in Algeria.**
 - Analytical framework based on six value chain segments: inputs, production, collection, processing, distribution, consumption.
 - Mixed method: quantitative surveys, qualitative interviews, and participatory workshops.