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The goat meat sector in an Algerian mountain region: analysis of its value chain

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Abstract. The aim of this study is to determine the different various actors in the goat meat value chain in the mountainous region of Tizi-Ouzou. The study of sixteen goat farms from a prior survey of 80 goat farms, showed that these farms are still conducted in extensive. The goat breeding has evolved and passed from self-consumption to a production for the market. Young goats are the most sold for their tender meat. The marketing of goat meat goes through few intermediaries (actors) that structure the market. Restaurants are a new segment that integrates the value chain and ensures a better value of goat meat. The price of this meat follows that of the sheep meat. Its fluctuation follows the moments of strong demands like the Aid-Al-adha. The demand for goat meat continues to grow. Because of its dietary characteristics, goat meat is beginning to interest a growing consumer segment. For that purpose, a better knowledge of the value chain of this meat will make it possible to target the opportunities for a better structuring of the market and its development.

Keywords. Goat meat – Value chain – Market – Development – Tizi-Ouzou.

La filière viande caprine en région de montagne d'Algérie: analyse de sa chaîne de valeur

Résumé. L'objectif de ce travail est de déterminer les différents acteurs de la chaîne de valeur de la viande caprine dans la région montagneuse de Tizi-Ouzou. Le suivi d'une quinzaine d'élevages, issus d'une enquête préalable sur 80 élevages caprins, a montré que ces élevages sont toujours menés en extensif. Cet élevage a évolué et est passé d'une fonction d'autoconsommation à une fonction de production destinée au marché. Ce sont les chevreaux et chevrettes qui sont les plus vendus pour leur tendre viande. La commercialisation de la viande passe par peu d'intermédiaires qui structurent le marché. Les restaurants constituent un nouveau segment qui intègre la chaîne de valeur. Le prix de cette viande talonne celui de la viande ovine. Sa fluctuation suit les moments de fortes demandes comme l'Aid-Al-adha et sa demande ne cesse de croître. Du fait de ses caractéristiques diététiques, la viande caprine commence à intéresser un segment de consommateur de plus en plus élargi. A cet effet, une meilleure connaissance de la chaîne de valeur de cette viande permettra de cibler les opportunités pour une meilleure structuration du marché et son développement.

Mots-clés. Viande caprine – Chaîne de valeur – Marché – Développement – Tizi-Ouzou.

I – Introduction

In mountainous areas, the agro-ecological environment is adequate for extensive goat farming supported by the exploitation of pastoral resources. These farms are conducted with low expenses (Dubeuf, 2011). In 2015, goat meat production in Algeria reached a quantity of 19,115 tons, it represents only a small percentage (12%) compared to beef production (155 037 tons) (FAOSTAT, 2016). In recent years, there has been a change in consumer behaviour towards goat meat, because of better dietary and organoleptic characteristics of this meat. In the mountainous region of Tizi-Ouzou (Northern Algeria), the extensive goat husbandry is very present with mixed production (Kadi *et al.*, 2013, Mouhous *et al.*, 2017). Currently, the production of goat meat is changing

towards adapting their products to consumers' requirements, including the production of chevon meat (Mouhous *et al.*, 2016). The aim of this work is to give an overview on the different elements of the value chain of goat meat in the Tizi-Ouzou area.

II – Materials and methods

Located in north of Algeria, the study area is distributed over an area of 2976 km² of which 50% has slopes greater than 25% (DPAT, 2010). The number of goats reached 57 305 (17% of the local total number of ruminants) (DSA 2014). From a preliminary study of 80 goat's farms, we chose 16 farms to conduct a one year follow-up. Investigators passages were made once or twice a month. In this work, we focus only on different elements of the value chain of goat meat. Surveys have also targeted another value chain actors such as resellers (livestock dealer and representative agent), butchers, restaurants and consumers.

III – Results and discussion

1. Characterization of goat farming systems

In mountainous areas, the use of the rangelands is daily and throughout the year. For the complementation, which consists of wheat bran and a mixture of barley-corn, goats receive on average 500 g / day / head throughout the year. Those results agree with those reported by Kadi *et al.* (2016). More than half of the farms (57%) have a size ranging from 30 to 100 head, and have goats from crossed populations. The farms have all followed a mixed production (milk and meat) but at different output levels depending on the amount of milk produced, as already reported by Kadi *et al.* (2013). There are three categories of breeders: high production (457 l/goat), medium production (327 l/goat) and low production (189 l/goat).

2. The different actors in the goat meat value chain in the Tizi-Ouzou region

A. Breeder

As a central element of the value chain, the breeder comes upstream from the goat meat sector. Depending on the orientation of the production, breeders act on the flows of the different types of animals by selling the animals reformed or which do not have a productive interest. In the simple circuit system it is the farmer who takes his animals to the market. Breeders of the strong milk production strategy sell more chevons. They keep males and females for breeding and milk production. In the other two strategies (low and medium production) farmers sell more reproductive animals (male and female) as small (chevons).

B. Livestock dealer and representative agent

In the organization of the goat meat value chain, there are very few types of actors involved in marketing live animals. We count the livestock dealers and the representative agents. Both are also livestock dealers-breeders and agent-breeders. The livestock dealers have a significant financial wind-fall that allows them to make transactions at any time. There are not many representative-agents on the market. Different formulas exist for the marketing of these animals: (i) the agent tries to sell the animal at the best price on the market, in return he receives a commission; (ii) the sale is at the farm level. The transaction is done either by the breeder himself or by a representative-agent.

C. Slaughterhouses

The slaughterhouse is an important intermediate segment of the goat meat value chain. The study area has 14 slaughterhouses (6 private and 8 public) distributed in different sub-Districts. They all have a veterinarian (DSA, 2018). For the year 2018, according to the DSA, the slaughter involved a total of 6234 goats (15% of the total population of the District of Tizi-Ouzou) which produced a total weight of 1251.8 quintals of meat. However, illegal slaughter still exists but with low frequency.

D. Butchers

The butcher is another link in the value chain which takes its share of the margin. Not all butchers that sell goat meat. In addition to beef and sheep, there are some butchers who specialize in goat meat. These butchers are supplied by the market (livestock dealers, breeders) or directly from breeders on their farms.

E. Restaurants

In our case study, the restaurant represents a link in the organization of the goat meat value chain. Goat meat currently come in big cities and the restoration (Sahraoui *et al.*, 2016). People who consume goats give it a festive character intended for a targeted clientele. The restaurants surveyed offer goat meat once or twice a week. This contrasts with the observations of Hadbaoui and Senoussi (2016) that show that in the s that the Algerian steppe the restaurants are not a segment of the sheep meat value chain.

F. Consumers

In the study area, there are two types of consumers; a first segment that consumes goat meat, controlled or not because of its dietary value (contains very little cholesterol) as signaled by Madruga and Bressan (2011); they are regular consumers. A second segment that consumes this meat often uncontrolled and irregularly, because of its affordable price compared to that of sheep meat. On the other hand, the bad odour felt in live goats would be one of the limiting factors in the consumption of goat meat by a large part of the population in the study area.

3. The market for goat meat in the Tizi-Ouzou region

Goats are sold in two forms; either in carcasses or on feet. There is no sale of goat carcasses on the livestock market.

A. Livestock market

Place of business transaction, the market is the space where the animals selling price is formed. There are four major livestock markets in the study area, almost distributed at the cardinal points. That of the region of Oued Aissi is the most important. But in every Daira (sub-district), there is a small local market. Livestock dealers, who are often breeders, and some big breeders are forced to attend other livestock markets in the neighboring Districts.

B. The marketing of goat meat

The carcasses of chevons and, to a lesser extent, male goats are the most popular. The most appreciate are leg of and steak. However, it is rare to find regular consumers who go directly to a breeder for the purchase of goat meat. While the quality of the meat is related to the wholesomeness and being free of pathogens and without residues (Casey and Webb, 2010).

C. The type of animals and the price of goat meat

Low and medium milk production groups have a strong sale of adult males (Table 1). Young (female and male goat kids) does not exceed 10% of sales. The small animals and are kept high for the market. While for high milk producers, sales are concentrated on male goat kids (77%) and female goat kids (14%) while the adults are kept.

Table 1. Distribution of sales of goats (no. of animals) by farms following different milk production strategies

Production modalities	Total sales	Sale male goat (%)	Sale female goats (%)	Sale female goat kids (%)	Sale chevrons (%)
Low production (189 l/goat)	42	71	17	7	5
Medium production (327 l/goat)	37	76	8	8	8
High production (457 l/goat)	107	4	5	14	77

In the farms followed, the average price of male goat (usually for sacrifice) is 35 000 DA. A price variation is signalled. An average male goat of 35 kg is estimated on the market at 45, 000 DA. The selling price of goat meat at the butchers vary between 1000 and 1500 DA/kg.

IV – Conclusion

The goat meat value chain is built around a reduced number of actors. Today, valorization of this meat based on a dietetic value that channels a segment of consumers is increasingly important. The goat meat value chain requires an improvement of its chain links for a better valorization of goat meat. For example, the creation of breed farms upstream. Downstream, the development of advertising and the presence of goat meat in the shelves of outlets would also popularize this meat and capture a larger segment of consumers.

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