

The Goat Farming Sector: Niche Opportunities for Romanian Farmers in Europe

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ARTICLE INFO	ABSTRACT
<p><i>Article history:</i> Accepted December 2024 Available online December 2024</p> <p><i>Keywords:</i> goat farming, livestock production, opportunities, Romania, Europe</p>	<p>The paper proposes an analysis of the goat farming sector in Romania within the broader European context. The research is based on open access articles and data from Eurostat, the National Institute of Statistics, the International Goat Association, and Worldostats. The study highlights a positive evolution in Romania's goat farming sector, driven by European support measures and increasing international demand for goat meat. Despite this growth, domestic consumption remains low compared to other European countries, primarily limited to festive occasions. Structural challenges, including the lack of slaughtering and processing facilities, encourage live animal exports, which generate limited added value. Coupled payment support plays a vital role in sustaining goat farming activities, particularly for large farms, while its absence significantly increases the risk of small farm abandonment, threatening the sector's diversity and its contribution to the rural economy. To enhance domestic consumption and sector development, the study recommends targeted promotional campaigns on the nutritional benefits of goat products, infrastructure investments, and improved market organization. These measures aim to align Romania's goat farming sector with European best practices and unlock its full economic potential.</p>

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1. Introduction

Goat farming for meat and milk production is a traditional activity in rural Romania, primarily carried out at the household level to ensure self-sufficiency. Recent support measures have driven the development of specialized farms focusing on high-performance breeds for meat and milk production. Often, goat farming complements sheep farming, reflecting a diverse approach to livestock management. The sector has significant growth potential, as an increasing number of local farmers are turning to this activity. Favourable natural conditions, a skilled labour force with extensive experience in livestock farming, and a growing demand in international markets are key factors supporting the sector's expansion (Stanciu, 2015).

2. Literature review

Achieving a production level in the Romanian livestock sector that aligns with the available natural resources can enhance national food security by providing the necessary quantities of milk and meat for population consumption and reducing the domestic agri-food market's reliance on imports. In Romania, the average annual consumption of meat, edible organs, and meat products exceeds 75 kg

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per capita, marking a significant increase compared to the communist period. Leading the preferences of Romanian consumers are poultry, primarily due to its affordable price (95%), followed by pork (91%), fish (73%), and beef (61%). Lamb and goat meat are consumed occasionally (Dragomir, 2024).

Except for poultry and sheep/goat meat, where domestic production meets population needs and even provides surplus for export, the internal consumption of pork, beef, and fish is largely dependent on imports (Popa, 2024). As a breed, goats are highly versatile, adapting to the most diverse environmental conditions. Except for Antarctica (so far), goats are raised on every continent, with the global population exceeding 1.1 billion animals (World Population Review, 2024). The largest goat population are farming in Asian and African countries, African countries dominating the top of highest animal density per 100 inhabitants (figure 1).

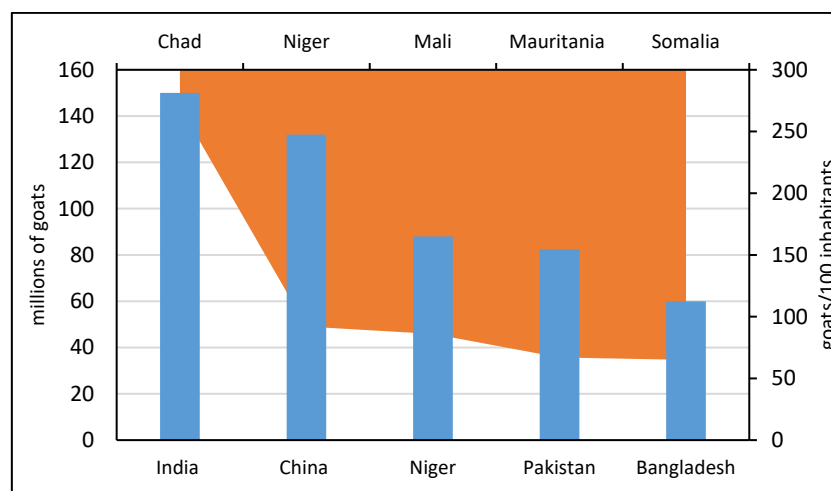


Figure 1. Top countries as goats and goats/100 inhabitants

Source: Authors, by using (World Population Review, 2024).

Approximately 93.4% of the global goat population is concentrated in Asia and Africa, where goats play a critical role in sustaining livelihoods and contribute significantly to agricultural production, both in less developed and industrialized countries. Asia accounts for over 57.7% of the global goat population and is considered the geographical area where goats were first domesticated, around 10,000 years ago. Africa is home to about 35.7% of the global goat population, with 60% of this population concentrated in the sub-Saharan region, mainly in Chad and Ethiopia (World Population Review, 2024).

European authorities pay special attention to sheep and goat farming. To reduce dependency on meat imports, which account for approximately 20% of community consumption, a series of support measures have been developed to assist livestock farmers and processors of milk and meat. According to the European Parliament's legislative report (2018), 87% of sheep and goat meat consumption in Member States was covered by domestic production. Additionally, around 3% of milk production and 9% of European cheese production are ensured by this sector, which employs approximately 1.5 million people. Moreover, this activity is predominantly carried out by a population located in mountainous regions, disadvantaged rural areas, and isolated or hard-to-reach zones, contributing to the sustainable development of Member States.

The goat farming sector also contributes to preserving natural landscapes, protecting biodiversity and local breeds, preventing soil erosion, reducing excess biomass accumulation, and minimizing damage to protective structures, avalanches, or vegetation fires. Goats play a role in managing and cleaning vegetation in ecological areas, including rough pastures, wooded pastures, silvopastoral systems, and low-fertility lands. The growth of younger generations of goat farmers and intergenerational knowledge exchange are vital for the sector's sustainable development. Implementing support measures at the European level can attract young people to rural areas, foster the development of subsistence farms, and increase the number of agricultural associations and cooperatives. In Europe, goat meat production is primarily concentrated in Greece, Spain, and France, while relatively significant consumption is recorded in Portugal, Italy, and Greece. Goat meat production and consumption mainly focus on kids or adult cull animals. Both production and consumption are seasonal, with a relatively small number of economic operators active in the market. The absence of a significant number of traders, processors, or consumers affects transaction prices and farmer incomes. The insufficient promotion of goat meat products in commercial networks negatively impacts consumption and consumer interest in these products (European Parliament, 2018).

Globally, the goat population exceeds 1 billion heads. The largest goat populations, specialized in milk production, are concentrated in Asia. Europe is home to the most diverse goat breeds, with 187 recognized breeds representing about 33% of the global total. This diversity can be attributed to the continent's variety of ecosystems and is a significant advantage for the goat farming subsector. Conserving the biodiversity of goat breeds is vital for ensuring the adaptability of animal production to future changes in farming and production systems. The European goat sector is characterized by a focus on milk production, mainly for industrial cheese manufacturing, but it also supports traditional on-farm production. Goat farming has a lower carbon footprint compared to other livestock activities. Despite often being perceived as inferior to other animals, goats' resilience to various diseases and ability to thrive in resource-scarce environments enhance their appeal (Moraru, 2023).

Romania consistently ranks among the top EU member states for sheep and goat farming, with annual average livestock numbers exceeding 12 million heads. Although the total livestock volume is high, the density per hectare is low compared to other European countries. Local production systems are extensive, requiring more labour and less efficient resource use. Romanian farmers are the leading exporters of live animals to third-party markets within the European Union. Unfortunately, the country's limited slaughtering and processing capacity reduces the added value of exported products (Liptac and Stanciu, 2024). As in other agricultural sectors, Romania remains an exporter of low-value raw materials and an importer of high-priced processed products (Nițu and Cornea, 2020).

According to the International Goat Association (2024), the goat sector holds a significant position in Romanian livestock farming, with a long-standing tradition and considerable economic relevance. It provides milk, meat, and various processed products to the population. In 2019, Romania's goat sector recorded approximately 2.045 million heads, including 1.32 million breeding goats and 200,000 mated juveniles, representing a 5.4% increase compared to 2018. Goat farming is entirely managed by the private sector, with animals predominantly raised in rural areas where conditions are favourable, supported by growing consumer demand. Most goat farms (83%) have up to 10 heads, accounting for over 37% of the total population.

The advantages of goat farming in Romania include efficient use of fodder resources in hard-to-reach alpine areas, the adaptability and hardiness of local breeds, accumulated tradition and experience, largely organic production, and significant contributions to ecosystem balance. Despite these advantages, the sector also faces a series of challenges, such as low productivity levels for meat and milk, a high degree of farm dispersion (which complicates milk collection and processing), and a lack of education and interest among farmers in adopting modern technologies. Poorly developed supply chains and limited promotion of the benefits associated with goat meat and milk consumption are additional weaknesses of the sector. However, especially at the level of individual households, goat farming can provide the population with meat and milk, which are high in nutritional value and have therapeutic effects. Goat milk is characterized by a high level of digestibility, making it easy to assimilate. Additionally, its anti-allergic properties make it suitable for individuals intolerant to cow's milk or lactose. Haenlein (2004) identified medium-chain fatty acids in goat milk, which are easier to digest and metabolize. The high levels of bioactive compounds, such as oligosaccharides, support gut health and strengthen the immune system. Park (1994) emphasized the hypoallergenic nature of goat milk, attributed to its distinct protein composition that reduces allergic reactions. Goat milk contains lower levels of alpha-S1 casein compared to cow milk, which is often responsible for milk allergies.

In goat milk, the content of alpha-S1 casein, considered the main factor responsible for milk allergies, is lower compared to cow's milk. From a nutritional perspective, goat meat is superior to other types of meat. For example, compared to lamb, its fat and cholesterol content is lower, making it a more dietary option. Babiker, El Khider, and Shafie (1990) highlighted goat meat as a healthier alternative for individuals aiming to reduce dietary fat intake. Additionally, the favourable balance of unsaturated fatty acids in goat meat supports cardiovascular health, making it an excellent choice for health-conscious consumers.

Casey and Webb (2010) explored strategies to optimize goat meat quality, emphasizing its low-fat content and superior protein composition. They noted that proper management practices, including diet and animal welfare, can enhance its nutritional value and appeal to consumers.

3. Materials and Methods

The documentation was carried out using open access articles available on ResearchGate, Clarivate, and Google Scholar, complemented by information from specialized journals. Relevant data for the research were selected from databases such as Eurostat, the National Institute of Statistics, the International Goat Association, and Worldostats. The information was statistically processed, graphically represented, and analysed. To ensure validation, the results were compared with relevant works from the specialized literature.

4. Goat Populations in Europe and Romania

4.1. Goat Populations in Europe

In 2023, the goat population in European farms was estimated at approximately 10.66 million animals, registering a decrease of about 15% compared to the population in 2014. Figure 2 illustrates the evolution of the total number of live goats in the European Union (EU-27), as well as in Greece, Spain, Romania, France, and Italy, during the 2014–2023 period. For comparison, Eurostat's (2024) European

statistics also include Turkey. The data presented highlight significant differences in goat populations among the Top 5+1 European countries.

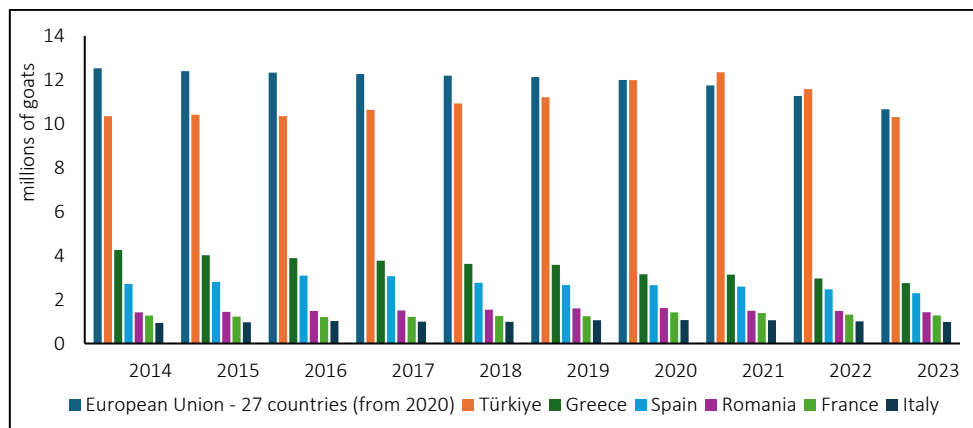


Figure 2. Live goats Europe 2014-2023

Source: Authors, by using Eurostat (2024)

In the European Union 27, the goat population experienced a continuous decline during the analysed period, with an average annual reduction rate of -1.5%. With goat populations comparable to the combined total of the EU-27, Turkey is the European leader in goat farming, with approximately 12–14 million heads annually. The development of the Turkish goat farming sector is primarily driven by its strong tradition, high domestic demand for goat meat and dairy products in a market of over 100 million consumers, and favourable geographical conditions.

Spain and Greece report relatively similar goat populations, ranging between 3–5 million heads annually. These two countries are internationally and regionally recognized for their production of traditional goat cheese and the high domestic demand for these products.

Romania shows a slight increase in goat populations, ranging between 1–1.5 million heads throughout the analysed period. This growth can be attributed to access to European funds and a shift by farmers toward niche products made from goat milk and meat.

France and Italy have smaller goat populations compared to the other countries (around 0.5–1 million heads), reflecting a specific focus on producing high-quality products, such as premium cheeses. Farmers in these countries prioritize added value in their products rather than the volume of livestock.

4.2. Goat Populations in Romania

Romania's favourable geographical position, suitable climate, diverse terrain, and large areas covered by pastures (3.3 million hectares) and meadows (1.5 million hectares), representing 14% and 7%, respectively, of the total 14.6 million hectares of land, create optimal conditions for sheep and goat farming. This activity has a long-standing tradition, being mentioned since ancient times. Native goat breeds are well-adapted to local conditions and are primarily raised in small-scale farms (subsistence and semi-subsistence farms), generally characterized by low operating costs. Figure 3 shows the evolution of the goat population in Romania, according to official information. Data from the National Institute of Statistics (2024) present the total livestock population raised in Romania during the period 1990–2023. Starting from 2001, the statistics differentiate the population of goats, specifically animals that have given birth at least once.

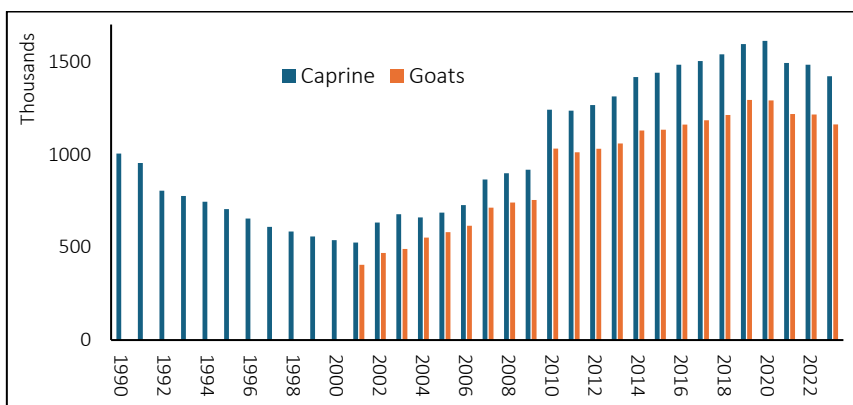


Figure 3. Goat and Caprine Population in Romania 1990-2023

Source: Authors, by using NIS (2024)

The presented data show an overall increase in goat (caprine) and breeding goat (goat) populations during the analysed period. Following the political regime change in Romania, a significant decline in livestock numbers was recorded between 1990 and 2000. This decline was likely caused by the transition to a free-market economy and the reorganization of agriculture, as collective farms were replaced by private holdings. Starting in 2000, a recovery trend in the sector can be observed. Growth became more pronounced after 2010, which may indicate a revitalization of this livestock sector, supported by EU measures aimed at sustaining the industry. The peak in goat populations was recorded between 2018 and 2020, followed by a slight decrease up to 2023.

The positive trend in recent years highlights the importance of this sector in Romanian agriculture, contributing to the rural economy through the production of milk, meat, and other specific products. The proportion of breeding goats ranged from 70% to 85%, with a minimum of 72% in 2002 and a maximum of 84% during the 2004–2006 period. At the end of 2023, the total goat population raised by Romanian farmers was estimated at 1,421,695 heads. The regional distribution of goats across Romania's development regions is shown in Figure 4.

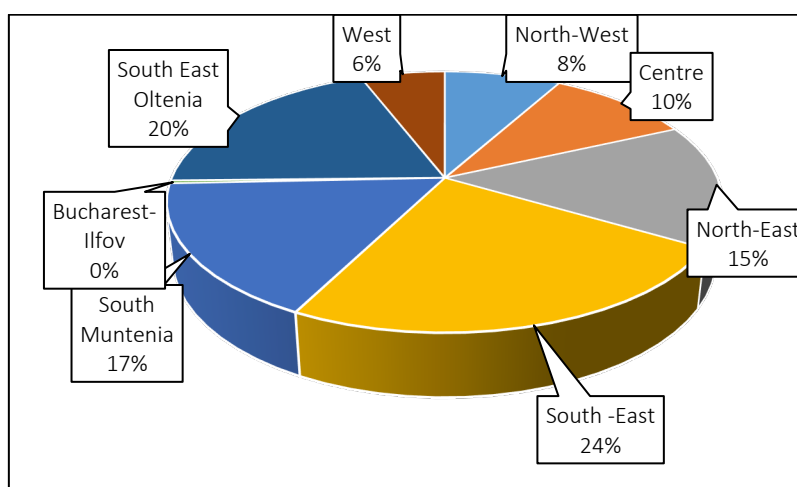


Figure 4. Distribution of Goat Herds by Development Regions in Romania

Source: Authors, by using NIS (2024)

Goat Farmers in South-East (342,439 heads), South-East Oltenia (276,900 heads), and South Muntenia (238,390 heads) collectively account for over 60% of the national goat population. The Bucharest-Ilfov region has the smallest contribution at the national level, with the agricultural census recording only 5,161 goats (0.36% of the total). This predominantly urban area is characterized by limited pastureland for livestock and a population primarily engaged in non-agricultural activities. The South-East development region holds the largest goat population, benefiting from territories with pastures, water resources, and favorable environmental factors.

The relatively high demand on the local market for goat and sheep meat and milk, along with access to ports on the Danube and the Black Sea facilitating live animal exports, are additional factors positively impacting the sector. Furthermore, the presence of a population experienced in raising goats and sheep, the local traditions of the Macedo-Romanian population (Aromanians) in Tulcea and Constanța, and the settlement of shepherds from other regions of Romania due to transhumance contribute significantly. Goat farming has become an integral part of the local culture, particularly in Dobrogea Region.

4.3. Structure of Goat Farms in Romania (2019-2021)

Table 1 shows the evolution of the number of goat farms and the livestock numbers, segmented by farm size (1-50 goats and >50 goats) for the period 2019-2021.

Table 1. Goat Farms and Livestock in Romania by Farm Size (2019-2021)

Year	Small farms (1-50 goats)	Goats in small farms (1-50 goats)	Medium/Large farms (>50 goats)	Goats in medium/Large farms (>50 goats)	Total farms	Total goats
2019	128,182	1,125,856	5,887	523,909	134,069	164,9765
2020	142,336	1,081,950	6,103	530,071	148,439	161,2021
2021	97,827	854,611	5,645	564,613	103,472	141,9224

Source: AgroInfo(2021)

The data presented in the table reveal the following significant trends and conclusions. The total number of farms decreased significantly from 134,069 in 2019 to 103,472 in 2021, a reduction of 22.8%. The total number of goats also declined, from 1,649,765 in 2019 to 1,419,224 in 2021, marking a reduction of 14%. These figures highlight a general decline in the goat farming sector in Romania. The number of small farms fell considerably, from 128,182 in 2019 to 97,827 in 2021, a decrease of 23.6%. Goat numbers in these farms dropped from 1,125,856 in 2019 to 854,611 in 2021, representing a reduction of 24%. This sharp decline suggests either consolidation into larger farms or abandonment of activity by small farmers due to low profitability or limited access to resources.

Large farms (>50 goats) number decreased slightly, from 5,887 in 2019 to 5,645 in 2021, a reduction of 4%. However, the number of goats in large farms increased from 523,909 in 2019 to 564,613 in 2021, marking a growth of 7.8%. This growth reflects professionalization and the expansion of large farms, indicating that they are becoming the backbone of the goat farming sector in Romania.

The share of goats raised in large farms (>50 goats) increased from 31.8% in 2019 to 39.8% in 2021, suggesting a shift toward more intensive and concentrated farming practices. Small farms are becoming increasingly uncompetitive, affected by higher maintenance costs and limited access to financial support. According to AgroInfo (2021), in large farms that benefit from coupled support, goat numbers

increased by 7.7% between 2019 and 2021. Conversely, in small farms (1-50 goats), goat numbers decreased by 28.7% during the same period. This highlights the critical role of financial support in maintaining and developing farms. Without such support, many small farms may reduce activity or shut down altogether due to low profitability.

5. Consumption of Goat and Sheep Meat

Goat meat consumption is generally analysed together with sheep meat. Globally, the highest average annual consumption of goat and sheep meat per capita is recorded in Mongolia, with a value of 66.3 kg (Figure 5).

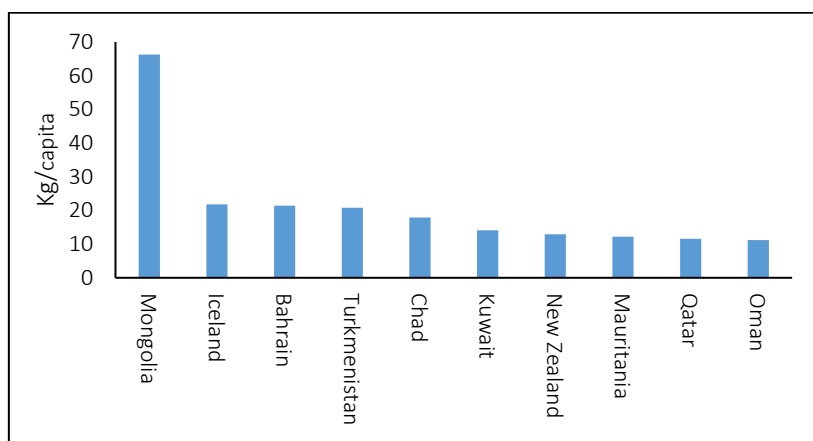


Figure 5. Top 10 Countries by Sheep and Goat Meat Consumption (kg/capita)

Source: Authors, by using World O Stats. (2024).

In recent decades, sheep and goat meat consumption in the EU has decreased by approximately 40%, from 3.6 kg per capita in 2001 to around 2 kg per capita in 2018 (European Parliament, 2018). Among European countries, the highest consumption levels are observed in Portugal, Italy, and Greece. In Romania, goat meat is not a staple product in consumers' diets. It is predominantly consumed in rural households or within traditional communities, particularly during religious holidays (Liptac and Stanciu, 2024).

Compared to other types of meat, goat meat stands out for its lower caloric content and reduced cholesterol levels (Table 2). Additionally, the favourable ratio of unsaturated to saturated fatty acids contributes to improving consumers' health by reducing the risks associated with obesity and other metabolic disorders (Institutul de Cercetare Dezvoltare pentru Creșterea Ovinelor și Caprinelor Palas Constanța, 2020).

Table 2. Chemical Composition of Goat Meat

Prepared Meat (85 g)	Calories	Fat (g)	Saturated Fat (g)	Cholesterol (mg)	Protein (g)	Iron (mg)
Kid (Goat)	122	2.8	0.79	63.8	23	3.2
Chicken	162	6.3	1.7	76.0	25	1.5
Beef	179	7.9	3.0	73.1	25	2.9
Pork	180	8.2	2.9	73.2	25	2.7
Lamb	175	8.1	2.9	78.2	24	1.4

Source: United States Department of Agriculture Composition of Foods (2018)

Goat meat is an important source of micronutrients, such as iron, potassium, and vitamin B12. The quality of its protein is influenced by the composition and balance of essential amino acids. Goat meat contains levels of arginine, isoleucine, lysine, methionine, threonine, and tryptophan comparable to other types of meat. From this perspective, Webb et al. (2005) classify it as a lean red meat with significant nutritional benefits. There is no specific data on goat meat consumption. National statistics usually groups it under the general category of "sheep and goat meat consumption," combining these two types of meat. The evolution of this indicator is illustrated in Figure 6. Goat meat represents only a small portion of this total, being consumed mainly in rural areas or within the context of local traditions.

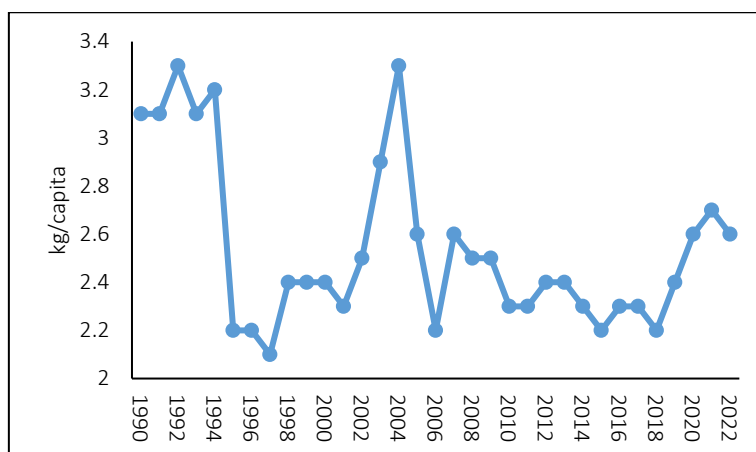


Figure 6. Average Annual Consumption of Sheep and Goat Meat in Romania (kg/capita)

Source: Authors, by using NIS (2024)

In Romania, the annual per capita consumption of sheep and goat meat ranges between 2.2 and 3.4 kg. According to the data presented in Figure 6, significant fluctuations in the average annual consumption of sheep/goat meat per capita can be observed during the period 1990–2023. The minimum consumption values reached 2.1 kg in 1997, while maximum values of 3.3 kg were recorded in certain years (1992, 2004, etc.).

6. Conclusions

The goat farming sector in Romania has experienced significant growth in recent years, driven by European support measures and increasing demand for goat meat and dairy products in both domestic and international markets. As one of the top five goat producers in Europe, Romania benefits from abundant natural resources, favourable geographical conditions, and a strong tradition in livestock farming, particularly in the southern and eastern regions.

Despite its potential, the sector faces challenges such as limited infrastructure and fluctuating consumer demand. To address these issues and stimulate domestic consumption, targeted promotional campaigns, strategic investments in infrastructure, and improved market organization are crucial. Financial support through coupled payments is essential to sustaining activity in the goat farming sector, especially for large farms.

Without these support measures, small farms are at a high risk of abandonment, which would further diminish the sector's diversity and its ability to contribute to the rural economy. The analysis underscores the need for public policies that support both large and small farms to ensure the long-

term sustainability of the goat farming sector. Moreover, the sector's alignment with European initiatives for sustainable agriculture presents additional opportunities for growth and innovation, particularly in niche markets for high-quality goat products.

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