DYNAMICS AND STRUCTURAL CHALLENGES OF THE ROMANIAN SHEEP SECTOR IN 2020–2024

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Abstract

This study assesses the dynamics of Romania's sheep sector between 2020 and 2024 using official national statistics and Eurostat data. Indicators describing flocks, holdings, meat, milk, wool, slaughtering, consumption and self-sufficiency were compared by relative change. The sheep population rose by 1.7%, to 10.443 million head, while holdings fell by 2.2% by 2023. Carcass output increased by 24.0% and apparent carcass weight by 22.0%, but meat self-sufficiency declined from 110.0% to 105.7%. Total sheep milk grew by 5.9%, whereas deliveries to dairies fell by 20.7%, reducing the collection rate from 5.51% to 4.13%. Romania retained 18.5% of the EU sheep population in 2024, but fragmented farms and weak formal milk collection continue to limit value added.

Key words*: sheep population; farm structure; meat production; sheep milk; value chain*

INTRODUCTION

Sheep farming has a strategic role in Romanian animal production because it links food supply, rural employment and the use of grassland resources. At European level, small-ruminant systems are concentrated in regions where alternative agricultural uses are limited, and their sustainability depends simultaneously on farm income, animal health, environmental performance and access to markets [1, 2]. Romania is particularly important in this context: in 2024 it held 18.5% of the European Union sheep population, the second-largest share after Spain [3].

A large animal population does not automatically generate equivalent domestic value added. Previous analyses of the Romanian sheep and goat sector describe a strong position in live-animal trade, but also limited processing, concentration on a small number of export destinations and persistent structural fragmentation [4, 5]. At farm level, market uncertainty, low income and dependence on support remain major European challenges, while improvements in nutrition, reproduction, health and management are essential for productive and sustainable flocks [6, 7].

The aim of this paper was to evaluate the change in the main structural and production indicators of the Romanian sheep sector over the five-year interval 2020–2024. The analysis focused on animal numbers and holdings, meat supply and slaughtering, consumption and self-sufficiency, and the production and formal collection of sheep milk. Particular attention was given to identifying divergences between primary production and integration into formal processing channels.

MATERIAL AND METHOD

The study used secondary data compiled from the Statistical Yearbook of Romania, the 2021 and 2025 editions, and the national publications on food availability. The dataset

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supplied values for 2020 and 2024. The latest available number of sheep holdings referred to 2023 and was therefore labelled separately. Romania's position in the European Union was established from Eurostat livestock statistics and the 2024 EU distribution of sheep populations [3, 8, 9].

Indicators were grouped into three domains: (i) flock and farm structure; (ii) meat production, slaughtering, consumption and self-sufficiency; and (iii) sheep milk and wool production. Absolute change was calculated as $X_2 - X_1$ and relative change as $[(X_2 - X_1)/X_1] \times 100$. Two derived indicators were calculated: apparent carcass weight (carcass production/slaughtered animals × 1,000) and formal milk collection rate (milk delivered to dairies/total sheep milk production × 100). The analysis is descriptive; because annual observations for 2021–2023 were not available in the supplied dataset, it compares the endpoints and does not infer annual trends or statistical significance.

RESULTS

Flock and holding structure

The national sheep population increased moderately, from 10.269 million head in 2020 to 10.443 million head in 2024 (+1.7%). At the same time, the number of holdings declined from 144,872 to 141,675 in 2023 (−2.2%). Although the reference years are not identical, the opposite direction of the two indicators suggests gradual concentration: the sector maintained and slightly expanded its biological base while operating through fewer holdings.

In 2023, 25% of sheep holdings were in the 0–1 ha class and 26% in the 2–5 ha class, whereas only 4% were in the 50–100 ha class. This distribution confirms the continuing numerical importance of small land-based units.

Table 1. Changes in sheep population and holdings in Romania

Indicator	2020	2024	Change
Sheep population (thousand head)	10,269	10,443	+1.7%
Sheep holdings (number)	144,872	141,675[1]	−2.2%

[1]The value refers to 2023

Romania's 18.5% share of the EU sheep population in 2024 gives the sector considerable production potential [3]. However, farm numbers and land-size structure indicate that coordination, collective marketing and access to modern processing remain decisive for converting herd size into stable income.

Meat production, slaughtering and domestic availability

Table 2. Meat-chain indicators in 2020 and 2024

Indicator	2020	2024	Change
Meat, live weight (thousand t)	121	123	+1.7
Meat and meat products (thousand t)	55	56	+1.8
Animals slaughtered in slaughterhouses (head)	467,838	475,397	+1.6
Carcass meat (t)	6,710	8,320	+24.0
Apparent carcass weight (kg/head)	14.34	17.50	+22.0
Per-capita consumption (kg)	2.6	2.8	+7.7
Self-sufficiency (%)	110.0	105.7	−4.3 pp

The volume of sheep and goat meat expressed in live weight increased only slightly (+1.7%), and meat and meat products rose by 1.8%. The number of animals slaughtered in slaughterhouses also increased modestly (+1.6%). By contrast, carcass output grew from 6,710 to 8,320 t (+24.0%). Consequently, the calculated apparent carcass weight rose from 14.34 to 17.50 kg/head (+22.0%). This divergence may reflect a

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change in slaughter categories, heavier marketed animals, improved finishing or differences in the species and categories included in the aggregate; the national totals do not permit causal separation.

Per-capita consumption increased from 2.6 to 2.8 kg (+7.7%), while self-sufficiency fell from 110.0% to 105.7%, a reduction of 4.3 percentage points. The indicator remained above 100%, confirming that domestic availability exceeded internal use, but the narrowing surplus shows that demand grew faster than the balance available for the domestic market. The coexistence of a high livestock base and relatively low domestic consumption is consistent with the sector's export orientation and with earlier findings on Romanian consumer preferences [4, 10].

Milk, wool and formal processing

Table 3. Sheep milk and wool indicators in 2020 and 2024

Indicator	2020	2024	Change
Total sheep milk (t)	410,000	434,000	+5.9%
Milk collected by dairies (t)	22,600	17,923	−20.7%
Formal collection rate (%)	5.51	4.13	−1.38 pp
Wool production (t)	23,057	25,622	+11.1%

Total sheep milk production increased by 24,000 t, reaching 434,000 t in 2024 (+5.9%). In the same period, the quantity collected by dairies fell by 4,677 t (-20.7%). The formal collection rate therefore declined from 5.51% to 4.13%, meaning that less than one twentieth of reported production entered the industrial collection channel in 2024. The result points to a widening gap between farm production and formally recorded processing, compatible with on-farm processing, direct sales, household use or unrecorded channels.

Romania ranks first in the EU for the number of dairy ewes and fourth for sheep milk output according to the national statistical synthesis used in this study. The low collection rate nevertheless limits traceability, standardization and the possibility of developing higher-value branded products. Life-cycle research on Romanian sheep cheese also shows that processing performance depends on energy use, transport and wastewater management, so expansion of formal processing should be accompanied by efficiency and environmental measures [11]. Wool production increased by 11.1%, from 23,057 to 25,622 t, but the statistical increase alone does not demonstrate improved economic valorization.

DISCUSSIONS

The five-year comparison reveals a sector with a stable biological base but uneven integration along the value chain. The increase in sheep numbers, carcass output, milk and wool contrasts with fewer holdings, lower meat self-sufficiency and sharply reduced formal milk collection. These relationships are more informative than any single indicator: Romania has scale at national level, yet farm fragmentation and weak aggregation reduce bargaining power and complicate consistent delivery to processors.

The carcass results are encouraging because output grew much faster than the number slaughtered. However, the apparent carcass weight is a derived aggregate for sheep and goats and should not be interpreted as an animal-level performance measure without information on species, age, category and slaughter season. Future statistical reporting should separate lambs, adult sheep and goats, and should connect carcass classification with farm production systems. Such detail would help distinguish genuine productivity gains from compositional changes. The milk indicators reveal the clearest structural bottleneck. Rising total output accompanied by falling deliveries to dairies suggests that additional production was not captured by formal

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processors. Strengthening producer groups, seasonal collection centres, refrigerated transport, quality-based payment and short certified chains could raise the collection share without excluding traditional processing. In addition to improving milk collection, attention should also be given to milk quality, as feeding strategies can influence its composition, particularly the fatty acid profile, which is relevant to the nutritional value of dairy products [12].

European research shows that sheep and goat farm sustainability is multidimensional and depends on business resilience, food security, animal health, biodiversity and social capital [1]. Technical intensification should therefore be adapted to local resources rather than pursued only through higher input use [7].

Market strategy is equally important. Romania's reliance on live-animal exports and a limited number of external destinations exposes farmers to trade and sanitary shocks [5]. A gradual shift toward carcass meat, certified dairy products and differentiated local brands could retain more value domestically. Climate-resilient feeding solutions are also relevant for lowland Romanian sheep farms, where recent economic modelling found that alternative forage resources can support viability under climatic constraints [13]. The use of alternative feed ingredients, including agro-industrial by-products, may further support feed diversification and more efficient resource utilization in ruminant production systems [14].

Beyond nutritional strategies, the choice of rearing systems and appropriate management practices can also influence livestock productivity and overall farm efficiency [15]. Furthermore, digital decision-support tools may contribute to improved resource allocation, production planning and farm management [16].

CONCLUSIONS

Between 2020 and 2024, Romania consolidated its position as a major European sheep producer, increasing its flock by 1.7% and retaining 18.5% of the EU population. The simultaneous 2.2% reduction in holdings by 2023 indicates gradual concentration but does not remove the predominance of small units. Meat-chain performance improved most visibly in carcass output and apparent carcass weight, while consumption increased and the self-sufficiency margin narrowed.

The principal weakness identified is the formal valorization of sheep milk: total production rose by 5.9%, but dairy collection fell by 20.7% and represented only 4.13% of output in 2024. Sector policy should therefore prioritize cooperative organization, collection and cold-chain infrastructure, quality-based contracting, modern slaughter and processing capacity, and diversification from live-animal exports toward products with higher added value. Better annual statistical detail by animal category and marketing channel is necessary for monitoring these measures.

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