

# Romania's Food System Vulnerability: Peste des Petits Ruminants Effects on the Agri-Food Sector

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ARTICLE INFO	ABSTRACT
<p><i>Article history:</i> Accepted March 2025 Available online April 2025</p> <p><i>JEL Classification:</i> Q13, Q18, Q31</p> <p><i>Keywords:</i> sheep, goats, PPR, meat price, Romania</p>	<p>In Romania, the consumption of lamb/kid meat is mainly associated with the Easter holidays, as Romanians are not among the top consumers at the European level. This paper proposes an analysis of the sheep/goat meat market in Romania in the context of the Peste des Petits Ruminants (PPR) outbreak. The bibliographic documentation considered open-access articles from major scientific databases, complemented by reports from public institutions. The research used data from European and national statistics concerning the epidemic's manifestation, price trends, and sheep meat consumption in Romania. The study highlighted the virulent spread of the PPR epidemic, which had a significant impact on sheep and goat farms. The ban on live animal exports at the European level, combined with the lack of appropriate sheep/goat meat processing units, has substantially affected the domestic sector. Although traditional contracts exist with non-EU partners, live animal exports now incur additional food safety costs. The increased supply of sheep/goat meat on the domestic market will likely ensure a relative price stability for lamb/kid meat during the 2025 Easter season. However, in the long term, the competitiveness of the small ruminant farming sector in Romania will be negatively impacted. The study contributes to the understanding the Romanian agri-food market vulnerabilities and may serve as a basis for public policy interventions and market forecasting tools in the context of animal health crises.</p>

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## 1. Introduction

The occurrence of food safety incidents can disrupt the normal functioning of the agri-food market and the supply of food to the population. Avian influenza, bovine spongiform encephalopathy, and African swine fever are examples of situations where food supply chains or even consumer health were put at risk. Peste des Petits Ruminants (PPR) is a newly emerged disease in Romania, raising concerns among livestock farmers and consumers, especially in the context of increased lamb meat consumption during the Easter holidays.

## 2. Literature review

Peste des Petits Ruminants (PPR), caused by a *Morbillivirus*, is one of the most destructive viral diseases that can affect sheep and goat populations. Most likely, the virus is transmitted only through direct contact between animals, entering the body through the pharyngeal mucosa, considering that it has

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low resistance in the external environment. The mortality of infected animals can reach up to 70% (National Veterinary Sanitary and Food Safety Authority ANSVSA, 2024).

Globally, the annual economic losses caused by this disease range between 1.5 and 2 billion USD. PPR poses a serious risk to food security by reducing farmers' livelihoods, especially in underdeveloped countries. Over 80% of the world's sheep and goat populations are concentrated in poor regions of the world, providing local populations with food resources and minimal subsistence income. The elimination/reduction of the incidence of this disease represents an international public concern and a global strategic objective (FAO & OIE, 2015).

PPR is not a new disease, being known for several decades by small ruminant farmers in Africa, the Middle East, and South Asia, who are frequently affected by this scourge. The first report of the disease was in 1940, in animal populations from Côte d'Ivoire. PPR has constantly expanded over the years, especially recently, currently affecting large parts of Africa, the Middle East, Central Asia, South Asia, and the People's Republic of China. OIE (WOAH) reports mention 70 countries where infections have been reported or are suspected, 60% of them being in Africa. The remaining affected areas are in Asia (Southeast Asia, China, South Asia, and Central Asia/Western Europe including Turkey) and the Middle East. OIE (WOAH) states that an additional 50 countries are considered at risk of PPR. At the European level, the virus was reported relatively recently in Bulgaria (2017), probably via the Middle East route, and in Greece (2024). In Romania, PPR was reported for the first time in July 2024, at a sheep fattening farm in Tulcea County, near the border with Ukraine (Department for Environment, Food & Rural Affairs, 2024). The report of the disease in this region supports the hypothesis of cross-border transmission of the virus, considering the cases reported in southern Ukraine in 2023. The expansion of PPR to the north and west reflects a worrying trend regarding transboundary animal diseases, which is why the World Organisation for Animal Health (WOAH) and FAO have included the disease among the strategic priorities of their joint global epizootic control program (FAO & OIE, 2015).

Codex Alimentarius defines a food safety incident as "a situation in which there is a confirmed or suspected risk to human health associated with the consumption of a food" (Codex Alimentarius Commission, 2009). From this perspective, Peste des Petits Ruminants (PPR) cannot be considered a food safety incident, considering that the virus is not transmissible to humans, and the meat from infected animals does not pose a risk to consumers if it is properly heat-treated. PPR can have a significant impact on the availability of animal-based foods, and thus on food security, in terms of consumer access to food, disruption of the supply chain, and the stability of the food supply. Livestock farmers may suffer significant losses due to uncovered production costs, loss of consumer confidence in sheep/goat meat, and limited access to domestic markets or export opportunities (FAO & OIE, 2015).

Niu et al. (2021) mention that PPR is an acute and highly contagious viral disease that has a strong impact on sheep and goat populations but is also present in some wild animal species (antelopes, gazelles, wild goats or sheep). The morbidity rate can reach 90%, and the virus can cause mortality rates of 30–70%. The article states that the World Organisation for Animal Health (formerly OIE) defines it as a transboundary disease that must be reported by the authorities. The authors develop a predictive model regarding the evolution of the epidemic, based on Random Forest, which uses outbreak data from the FAO Empres-I database (2008–2018) and climate changes from the WorldClim database.

The developed model shows high potential for monitoring the risk of PPR outbreaks globally and can help authorities to act preventively, reducing economic and veterinary losses in at-risk areas.

### 3. Materials and Methods

The bibliographic research was carried out based on open access articles available in the databases Google Scholar, ResearchGate, and Clarivate. Where necessary, the information was supplemented with data from national and international public institutions with responsibilities in the field of food safety and animal health. The research also used data from both European and national statistics. For verifying formatting, English language accuracy, and data systematization, artificial intelligence tools (ChatGPT) were used. The data were statistically processed and interpreted. For validation purposes, the results were compared with relevant data from the scientific literature.

### 4. Results

#### History of the PPR epidemic in Romania

PPR was reported for the first time in Romania on July 11, 2024, in Tulcea County. The epidemic progressed rapidly, so that by July 26, 2024, ANSVSA had confirmed 18 outbreaks (11 commercial holdings and 6 households), of which 47 were active (ANSVSA, 2024) (Table 1).

**Table 1. The emergence of PPR in Romania**

Date	Locality/County	Farm / Holding	Animal species	Number of animals
11.07.2024	Baia/Tulcea	Commercial farm	Sheep	49,091
23.07.2024	Baia/Tulcea	Commercial farm	Sheep	14,899
	Baia/Tulcea	Commercial farm	Sheep	7,478
	Stejaru/Tulcea	Backyard farm	Sheep	663
	Babadag/Tulcea	Commercial farm	Sheep	23,481
			Goat	1,329
	Sinoe/Constanța	Backyard farm	Goat	424
26.07.2024	Stejaru/Tulcea	7 Commercial farms	Sheep	8,814
	Babadag/Tulcea	4 Backyard farms	Goat	

Source: Authors, by using ANSVSA (2024)

In August, the epidemic progressed rapidly, affecting 55 holdings, with a total of approximately 232,283 animals impacted (Table 2).

**Table 2. PPR in Romania (August 2024)**

Date	County	Farm / Holding	Animal species	Number of animals
09.08.2024	Tulcea (10 localities)	Commercial farms (7)	Sheep / Goat	212,813
		Commercial farms type A (14)		
		Backyard farm (27)		
	Constanta (4 localities)	Backyard farm (6)	Sheep / Goat	6,381
	Timis	Commercial farm (1)	Sheep / Goat	12,500
	Ialomita (1 locality)	Backyard farm (1)	Sheep	589

Source: Authors, by using ANSVSA (2024)

Following the implemented measures, on September 9, 2024, ANSVSA reported that 47 active PPR outbreaks remained out of the 64 confirmed nationwide, with 17 outbreaks having been eradicated 10 in Tulcea County, 6 in Constanța County, and one in Ialomița County.

On September 13, 2024, the number of affected units in Romania had decreased to 37, with 30 outbreaks eradicated: 21 in Tulcea County, 8 in Constanța County, and one in Ialomița County. On September 27, 2024, ANSVSA reported 24 active outbreaks, including 7 in Timiș County and 17 in Tulcea County.

At the beginning of October 2024, the last 17 outbreaks in Tulcea County were closed, so that on October 4, 2024, only 7 outbreaks remained active in Timiș County. A statement issued by officials from the Ministry of Agriculture and Rural Development (MADR) on October 15, 2024, mentioned that the last outbreaks would be eradicated by the end of the month, and thus it was considered that the virus had been fully eradicated from Romanian territory (ZIU de Constanța, 2024).

Despite these optimistic reports from the authorities, in February 2025, Austrian veterinary authorities detected the PPR virus in a batch of sheep exported from Romania. The report of this event in Brussels led to the temporary suspension of live sheep and goat exports from Romania to all European Union member states, in accordance with Implementing Decision (EU) 2025/525 (G4Food.ro, 2024).

The measure was enforced until June 8, 2025. ANSVSA launched an internal investigation and identified an outbreak in Bihor County. The authorities initiated institutional dialogue at the EU level, attempting to find rapid solutions to resolve the incident. However, the impact of this event on Romania's image as a supplier of live animals to the EU market was significant, negatively affecting trade relations.

### Romanian exports of sheep meat

Romania is one of the main exporters of live sheep and goats within the European Union, with the quantity of meat increasing from approximately 12,400 tons in 2010 to 73,728 tons in 2021 (Table 3).

**Table 3. Romania's trade in sheep and goat meat (tonnes)**

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2025	6,901	6,901	-	-	-	-	-	-	-	-	-	-	-
2024	53,219	5,540	6,192	7,118	6,923	7,431	1,304	3,746	1,074	593	1,735	5,621	5,945
2023	63,368	5,349	6,039	9,149	7,060	5,719	3,726	3,308	4,606	3,766	5,145	3,756	5,745
2022	63,332	5,103	5,839	5,446	5,470	3,885	6,723	5,297	5,342	4,630	5,658	5,567	4,371
2021	73,728	6,550	5,897	7,996	8,781	7,199	6,584	5,996	4,387	5,620	5,170	4,197	5,353
2020	72,453	6,409	2,842	4,765	5,964	4,886	5,387	6,247	8,593	5,837	6,997	7,758	6,767
2019	77,486	3,704	6,020	4,589	6,080	8,118	5,807	11,166	5,570	4,444	4,191	10,365	7,433
2018	58,450	2,133	1,179	2,763	5,732	8,447	7,882	7,890	7,154	2,183	4,138	2,774	6,175
2017	56,060	1,552	2,307	3,854	4,760	11,823	7,422	5,588	9,950	2,025	2,470	2,675	1,634
2016	60,777	1,240	2,946	4,961	7,076	7,411	5,608	5,399	8,931	6,607	7,948	1,274	1,375
2015	44,517	1,020	660	831	6,404	4,925	6,154	5,801	8,176	5,590	719	1,992	2,243
2014	48,669	3,244	5,818	4,824	3,630	4,745	4,159	5,487	7,506	7,218	1,685	294	60
2013	49,401	2,642	3,996	3,627	2,957	3,091	4,006	2,934	5,288	9,478	2,963	4,683	3,735
2012	36,964	734	1,180	873	989	1,832	2,907	4,458	5,308	5,897	8,634	1,464	2,687
2011	14,314	307	165	290	241	412	805	883	1,969	1,735	4,246	1,404	1,857
2010	12,414	158	55	115	248	695	974	2,563	2,099	1,298	1,990	1,354	865

Source: Authors, by using European Commission (n.d)

Although during the 2022–2024 period the quantities of exported meat decreased, reaching 53,219 tons in 2024, the year 2025 recorded only 6,901 tons of exports in January, after which they were suspended within the EU. Although this restriction does not theoretically apply to the export of lamb or

sheep carcass meat, which may continue under current regulations, there is noticeable reluctance on the European market, likely due to food safety concerns (ANSVSA, 2025).

Exports to third-country partners (such as Saudi Arabia, Jordan, Morocco, and Algeria) were not suspended, but strict veterinary health requirements were imposed, which led to high logistical costs, ultimately reducing the total volume of sheep exported by Romanian farmers (Revista Ferma, 2024).

In Bihor and Arad counties, where active outbreaks were identified, additional restrictions were applied. However, in the rest of the country, exports to these markets remain possible (AGERPRES, 2025). Traditionally, Romania has been an important supplier of live sheep, especially for partners in the Middle East. Nevertheless, exports of processed lamb meat remain limited due to Romania's low internal processing capacity and the low demand for refrigerated meat from trading partners (Agrointeligenta, 2024). Even though this type of export is not restricted by EU regulations, Romania has not managed to offset the losses caused by the ban on live animal trade.

There are still prospects for accessing third-country markets. For instance, Algeria has expressed its intention to import around 300,000 sheep from Romania this year, thus strengthening bilateral cooperation between the two countries (Revista Ferma, 2025). However, these exports represent only a partial solution for Romanian livestock farmers, who continue to be affected by the economic impact of European restrictions.

#### Lamb Meat Prices – Forecast for Easter 2025

Light lamb meat prices show significant fluctuations in Romania, correlated with the Easter holidays. Compared to the price levels recorded on the European market—where demand is constant and fluctuations are buffered by stockpiles—the monthly average prices on Romanian markets are below the EU average, except during festive periods (Figure 1).

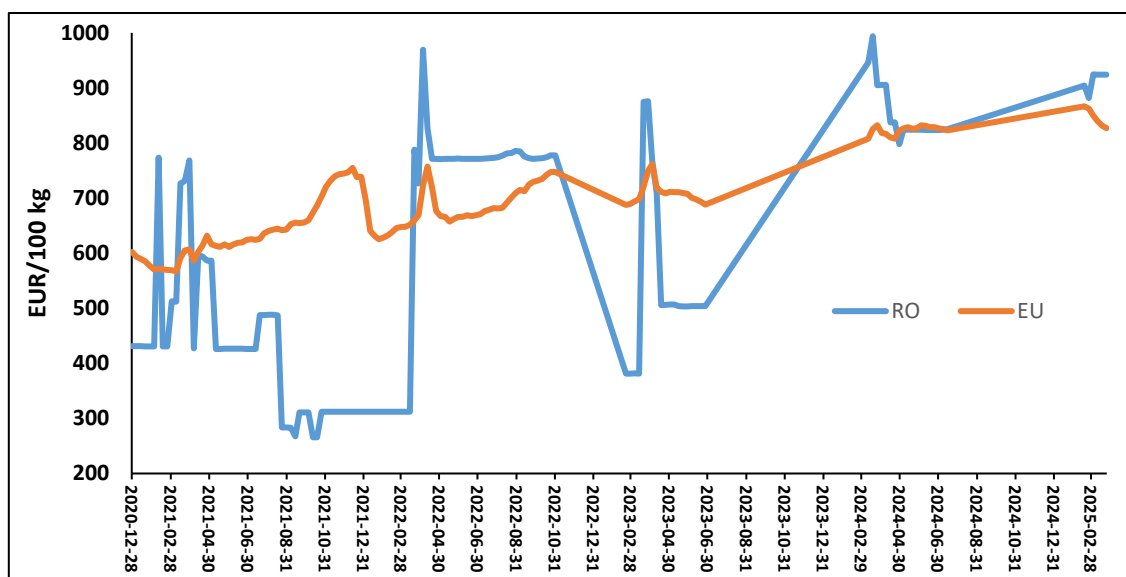


Figure 1. Lamb (light) meat price in EU and RO

Source: Authors, by using European Commission (n.d)

According to information from online media, the forecast for lamb meat prices for Easter 2025 shows that prices are variable, depending on the region, type of commercialization, population income, and existing market demand. In Bucharest, lamb carcass meat is sold in markets at approximately 7 EUR/kg, leg cuts reach 8 EUR/kg, and loin cuts 9 EUR/kg. A whole lamb weighing between 12–15 kilograms is sold for around 96–120 EUR (Libertatea, 2025; Fanatik.ro, 2025).

In Brasov, where there are more local producers, the announced prices are lower, reaching approximately 5 EUR/kg live weight and 8 EUR/kg for carcass meat. The price differences are due to regional characteristics, such as the presence of breeders and production cost levels. Greater distances from the production site are reflected in added transport costs (MyTex.ro, 2025).

The evolution of lamb meat prices in previous years shows a general trend of price increases during the Easter period, from 6 EUR/kg carcass in 2022 to 7 EUR/kg in 2023, with no significant increases recorded in 2024 (Capital, 2024).

For 2025, most specialists estimate a possible price stabilization in the range of 7–8 EUR/kg for carcass meat and approximately 5.5 EUR/kg for live lamb (Capital, 2024). Some opinions predict possible price hikes approaching Easter, with prices in Bucharest potentially reaching 12 EUR/kg, depending on demand, increased logistical costs, and additional expenses related to PPR-related restrictions (Cancan, 2025).

From our perspective, price stability is possible, without spectacular increases, based on the growth of lamb meat supply on the domestic market, due to the restrictions imposed on live sheep exports to the European Union. Redirecting production to the domestic market will put downward pressure on prices (G4Food.ro, 2024). However, the risk of new PPR outbreaks could reduce the slaughter and distribution capacity of local producers, with an impact on the supply chain.

### **Affordability of Lamb Meat in Relation to Population Income**

A reliable forecast of lamb meat price trends for Easter 2025 should be correlated with the population's income level. Purchasing power has a direct impact on the affordability of food products. Estimates from the National Commission for Strategy and Forecasting indicate that the average net monthly salary at the national level will reach 1,100 EUR in 2025, marking a 6.2% increase compared to 2024 (National Commission for Strategy and Forecasting, 2024).

Reports from the National Institute of Statistics for the third quarter of 2024 show that the average total monthly income of a household in Romania was 1,650 EUR, of which total expenditures amounted to 1,425 EUR. Approximately 33.8% of household spending was allocated to food and non-alcoholic beverages, equivalent to an average monthly food budget of around 485 EUR per household (National Institute of Statistics, 2024).

If the estimated average price of lamb meat in carcass form for Easter 2025 (7–8 EUR/kg) is compared to the estimated average monthly income per person (approximately 650 EUR), it results that between 1.06% and 1.21% of individual monthly income would be spent on purchasing one kilogram of lamb meat. From this perspective, lamb meat falls into a relatively affordable category but may still be considered a luxury product, especially for members of households with low or unstable incomes.

## 5. Conclusions

The findings underline the need for integrated veterinary and economic policy measures to mitigate the effects of transboundary animal diseases on national food security.

Although lamb meat prices forecasted for Easter 2025 are expected to be like those recorded in previous years, several market-influencing factors may come into play, such as weather conditions, animal feed costs, emerging diseases, and consumer behavior, all of which can significantly contribute to the final price dynamics. Consumers may benefit from relative short-term price stability for lamb meat, but farmers will continue to face significant economic pressures.

The evolution of population income supports the continued affordability of lamb meat for Romanian consumers in 2025. However, the broader economic context—including food inflation, rising production costs, and uncertainties caused by PPR—may affect consumer behavior and access to sheep and goat meat.

Increased domestic processing capacity and improved disease traceability systems may help compensate for export limitations in live animals.

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