ECONOMIC ASPECTS OF SHEEP FARMING IN LATVIA

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Abstract
The aim of the study is to identify the development of the sheep farming sector in Latvia, to identify problems, challenges and future research directions. The study conducted an extensive data analysis using the monographic and descriptive methods, analysis and synthesis, quantitative and qualitative research methods and the graphic method. Sheep farming is a traditional livestock farming sector in Latvia. The number of sheep on farms has been variable, but recent years have shown a downward trend. The number of sheep on farms and the number of farms are decreasing by 14.9% and 20.9% in last 5 years. The trends in the sheep meat market are positive - sheep meat prices increased up to 688.94 EUR/100 kg in 2024, but the profitability of farms is limited, which is reflected in the variable gross margin: the ability of farms to cover variable costs. The gross margin for fattening lambs and breeding lambs has an increasing trend, but for ewes it is decreasing. In sheep farms in general the ability of farms to cover variable costs is hampered, with the result being at the break-even point or negative. Despite the uncertain situation in the economic field, the sector faces several challenges in the coming years: climate risks, an increase in the number of predators and the risk of infectious diseases. It is expected that only the most efficient farms in the sector will be able to ensure their sustainability. In the context of the sector, challenges of a legal meat market are also emerging, as a large part of the meat produced is obtained outside slaughterhouses.
Keywords: sheep farming, economic aspects, gross margin, sustainable development.

Introduction

The agricultural sector, as a food production base, is the foundation of human existence. Balanced and always available food ensures the existence of society in terms of climate challenges and national security aspects.

The challenges of the European Green Deal determine that current conventional practices in agriculture could change significantly, favoring technologies and solutions that would be much more beneficial to the environment and climate (Bhatt & Abbassi, 2021). The goals pursued by the European institutions concern not only climate issues, but also the availability and quality of food, putting forward the 'farm to fork' initiative. The situation in Ukraine, which developed after the military invasion of the country in 2022, shows that existing logistics and supply chains may cease to exist, therefore it is important to ensure accessible food even in crisis situations. Moreover, this food must meet the highest quality conditions.

This context also includes sheep farming – a sector that is traditional in much of Western Europe, with a permanent ecosystem of consumers and producers, close ties to nature and important functions in the rural environment, but dependent on public support payments (Furesi et al., 2015). Sheep meat is consumed and appreciated worldwide for its nutritional value and taste. However, this meat is highly perishable and easily exposed to both spoilage and pathogenic microorganisms (Purgatorio et al., 2022).

Sheep meat prices have been rising in Europe for several years. The price of sheep meat in the European Union (EU) has increased by 49% on average from 2020 to 2024, in Latvia - by 61%. EU member states are stable importers of sheep meat, as their own production volumes fail to cover demand, i.e. net production is less than domestic consumption. Demand is relatively unchanged. The production volume of sheep carcasses in 2023 decreased by 6.7% compared to 2020. The decrease in the months of 2024 compared to 9 months of 2023 was 6%. The global sheep meat market has become more concentrated and has developed into a niche market. Its impact on farmers must be assessed with an understanding of the overall market (Ramírez-López et al., 2020).

Research shows that there is potential for improvements in the sector's farming efficiency. Fixed capital, labor, and feeding are the main costs that can be reduced by implementing best practices and innovations in farming methods (Theodoridis et al., 2022). Slow adoption of innovation is a key challenge for the sustainability of the European sheep farming sector. The future of the sector depends on the adoption of best practices, modern technologies and innovations that can improve its resilience and reduce its dependence on public support (Theodoridis et al., 2021).

Materials and Methods

Research methods: the monographic and descriptive methods, analysis and synthesis, quantitative and qualitative research methods and the graphic method. The present research is based on scientific publications, information from databases and other sources. The research period spans from 2019 to the most recent data available.

Results and Discussion

To understand the overall potential of the sheep farming sector, it is important to understand the quantitative volumes of the sector and their dynamics over time. The next steps are to understand the dynamics of these volumes by analyzing economic efficiency and trends in key markets. The data should be viewed in the context of the challenges of the sector, understanding that the current situation will change rapidly in a changing environment.

Sheep farming is a relatively traditional industry in Latvia, despite the fact that it is not as popular as poultry farming, cattle breeding (beef cattle and dairy cattle) or pig farming. The number of sheep in Latvia fluctuated from 183,7 thousand in 1991 to a low of 27 thousand in 1999 (Central Statistical Bureau, 2025d). The significant decrease in the number of sheep ended in 1999, then gradually increased, reaching 112,2 thousand animals in 2017. After that, the number of animals gradually decreased again. The percentage of sheep in the entire period since 1991 is 3.5%-13.0% of the most common farm animals in Latvia (cattle, pigs, sheep, horses, goats). The large number of sheep in the early 1990s can be explained by a shift in farming methods, as the country transitioned from a planned economy to one based on free market principles. Prior to 1991, small homestead farms were common, and meat was primarily produced for self-consumption. The large number of sheep in the early 1990s can be explained by the change in farming methods, moving from a planned economic system to an economic system based on free market principles, because before 1991, small homestead farms were common, where meat was obtained for self-consumption. Sheep were suitable for the model of such small farms. As farming methods changed, the number of people living in rural areas decreased significantly, and with it, the volume of sheep farming also decreased (Central Statistical Bureau, 2025c). Following the structural changes in farming sector, the number of sheep has dropped to 78 300 units, but number of sheep farms has dropped to 2 252 units in 2024. At the end of the last century, sheep meat was mainly produced outside slaughterhouses, then in recent years the amount of sheep meat produced in slaughterhouses has increased significantly (Central Statistical Bureau, 2025b). This means that there is an increasing focus on officially recognized export markets, as the industry gradually moves out of the shadow economy.

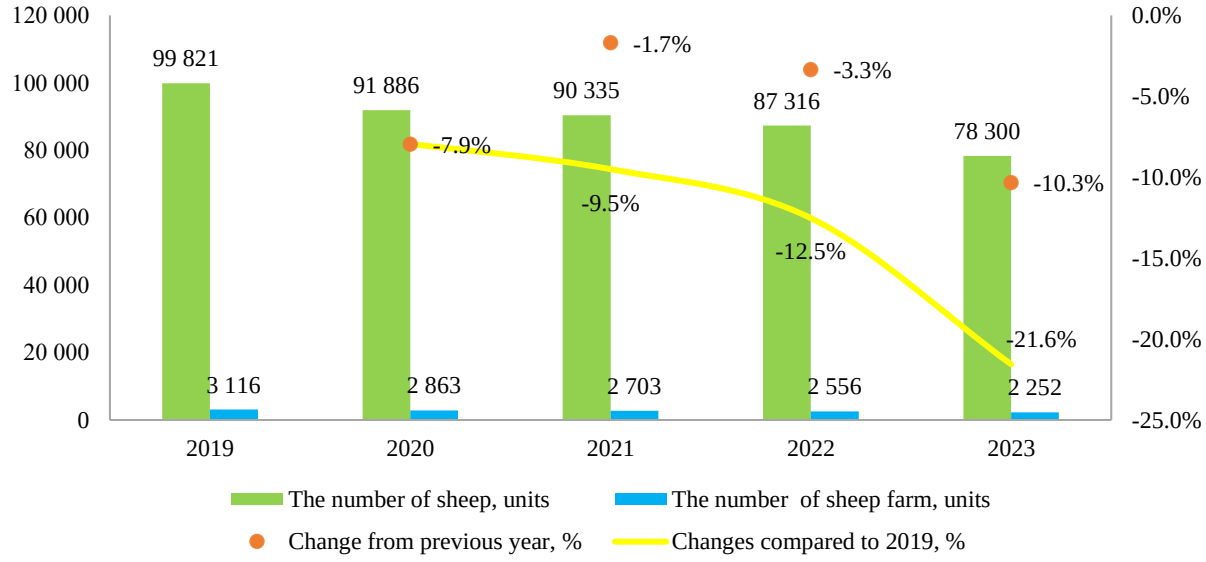
The situation in lamb and goat meat market has shown a rapid growth in the last few years. The lamb meat price grew from 428.39 EUR/100 kg in 2019 to 688.94 EUR/100 kg in 2024. However, the volume of meat produced outside slaughterhouses remains significant, which poses risks to food security and indicates the shadow economy. This is evidenced by the consumption of sheep and goat meat, which in Latvia in the last 10 years is estimated at around 0.9 thousand tons per year, but the volume produced in slaughterhouses is half of that amount (Central Statistical Bureau, 2025a).

Overall, profitablity of sheep farming is hampered. In 2024 one sheep family (1 ewe and 1.8 lamb on average) had gross margin -21.40 EUR (production aim – fattening) or 44.63 EUR (production aim – breeding). Gross margin shows the option to cover variable costs. It means that sheep farming balances around break even point or even below it.

Changes in the sheep farming sector continue, significant changes in the number of sheep and sheep farms are observed ‘Figure 1’.

Figure 1

Number of sheep at the end of the year, changes in the number of farms and number of sheep in Latvia



Source: authors’ construction based on Central Statistical Bureau, 2025e.

Over the past 5 years (2019-2023), the number of sheep has decreased by 21.6% (Central Statistical Bureau, 2025d). Data from the Ministry of Agriculture (Ministry of Agriculture, 2025) also show a further decrease in the number of sheep in 2024.

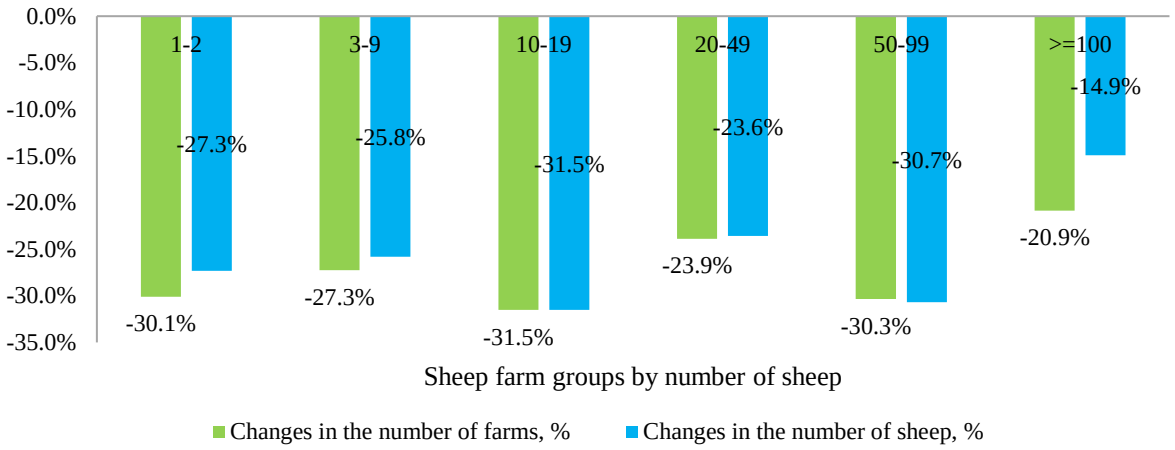
In 2023, 53% of sheep were registered on farms with over 100 animals, and they were only 8.3% of all sheep farms. This means that no more than 186 sheep farms, or only 8.3% of the total number of sheep breeders in Latvia, can be called economically significant in 2023. In

2023, the largest proportion (30%) is sheep farms with the number of animals 3-9, while 83% of all farms have the number of animals up to 49 animals. Such a number of animals does not provide a significant production flow, because the possible number of lambs that can be sold for meat or breeding is relatively small. The number of farms tends to decrease. In real life, this means the liquidation of the farm or the liquidation of the sheep farming sector on the farm. The number of farms is decreasing in absolutely all of the farm groups. The largest decrease in the number of farms is in the farm group 10-19 sheep. The smallest decrease is in the group 100 and more sheep. The second largest decrease in the number of farms is observed in the group 50-99 sheep. A more detailed analysis is needed to reveal the basic problems of the industry and the reasons for the decrease, which have prevented even relatively large farms from continuing farming and development.

Sheep numbers are decreasing in all farm groups, but the rates of decline vary between groups 'Figure 2'.

Figure 2

Changes in the number of sheep and farms in Latvia, 2023 compared to 2019, %



Source: authors' construction based on Central Statistical Bureau, 2025d.

The comparison of the rates of change shows that in the groups of farms with the number of sheep 10-19, 20-49 and 50-99 the rate of change of the number of farms is very similar to the rate of change of the number of sheep. In the other groups the rate of change of the number of animals is lower than the rate of change of farms. This means that, despite the decrease in the number of farms, on average there are more animals on farms, that is, those farms that continue this direction of farming often increase the number of animals. It can be concluded that the potential for development and expansion is seen in farms.

The number of sheep in the group of farms with 100 or more sheep increased at the end of 2022 compared to 2021, but decreased again in 2023. In general, it can be concluded that the rate of decrease in the number of sheep in this group is the lowest, and it fluctuates seasonally. Changes in individual years can often be attributed to local, temporary factors, for example, in 2023, due to the beginning of the dry vegetation period, it was challenging to prepare an appropriate amount of fodder, which may affect the number of sheep - taking into account the limited amount of fodder, farms have chosen to reduce the number of animals.

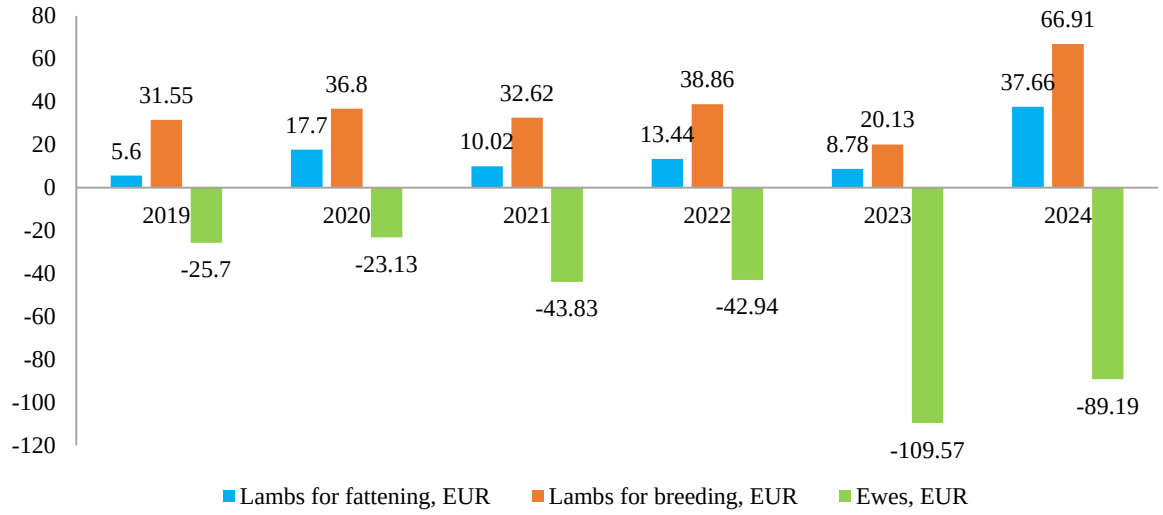
Experts from the Latvian Rural Consulting and Education Centre, in cooperation with farms, calculate gross margin indicators for sheep farming. Gross margin is an indicator that shows the difference between the revenue from the produced product and the variable costs per unit of production. Each gross margin calculation uses a specific production technology that is considered optimal (Latvian Rural Consulting and Education Center, 2025).

The gross calculation is made for ewes, lambs on meat farms and lambs on breeding farms. Therefore, the total of the various calculations reflects the overall situation in any of the selected production objectives. The gross calculation for lambs takes into account the cost of lamb entry (the price of lamb at birth), feed costs, veterinary costs, labor costs, as well as income from lamb sales.

The gross coverage of fattening lambs and lambs for the breed tends to increase Figure 3, while the gross coverage of ewes is decreasing. In fact, there are factors that determine that keeping ewes is increasingly unprofitable. The gross calculation assumes that 1 ewe feeds 1.8 lambs per season. In order to talk about a profitable sheep farming industry, the sum of gross coverages for an ewe and 1.8 lambs for any of the selected breeding purposes (breeding or fattening) should be greater than 0. This would be the point where the farm's income is able to cover the farm's variable costs. In 2022, the gross coverage of one ewe was -42.94 EUR. The gross coverage of 1.8 fattening lambs was 24.19 EUR, while the gross coverage of raising lambs for the breed was 69.95 EUR. In 2024, the gross coverage of one ewe had deteriorated to -89.19 EUR. In

turn, the gross coverage of 1.8 fattening lambs had increased to 67.79 EUR or 2.8 times, while the gross coverage of the lambs for breeding had increased to 120.44 EUR or 1.7 times. In the two years analyzed, sheep farming with the aim of raising fattening lambs has not been able to cover variable costs – the gross coverage amount for 1 ewe and 1.8 lambs was negative, while the breeding of lambs for breeding was apparently profitable. It is important to take into account the reliability of the data and calculations, because the gross coverage calculations of ewe lambs were made for ewe lambs from breeding farms. It can be assumed that these costs are lower on meat farms. The gross margin calculation shows that sheep farming as an industry is not highly profitable; therefore, only the most efficient farms can continue their successful development.

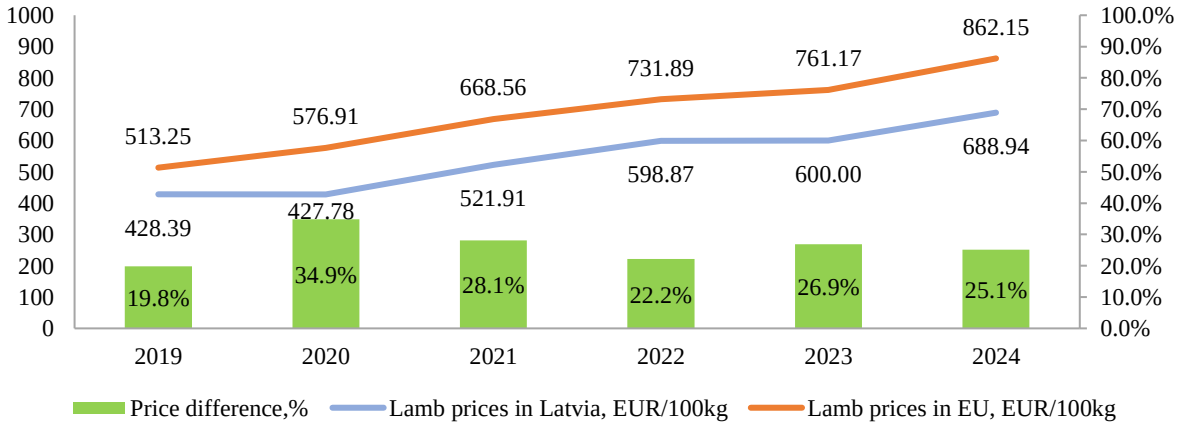
Figure 3
Gross coverage for fattening lambs, breeding lambs and ewes, EUR/unit



Source: authors' construction based on Latvian Rural Consulting and Education Center, 2025

A significant factor in gross margin calculations is the purchase price of lambs. Between 2019 and 2024, prices for fattening lambs increased from 1.82 EUR/kg to 3.50 EUR/kg live weight, or 1.9 times over 5 years. A similar situation is also reflected in the analysis of carcass prices in the EU and Latvia 'Figure 4'. The European Commission's compiled sheep meat prices show a continuous price increase, maintaining a 20-35% difference between Latvian and EU average prices. Price changes are significantly related to insufficient production volume in the EU - sheep meat consumption is higher than the produced volume. Initially, in the short term, the missing volume of meat is sought on the domestic market, increasing prices, in the longer term, import volumes increase and the volume of domestic production also increases.

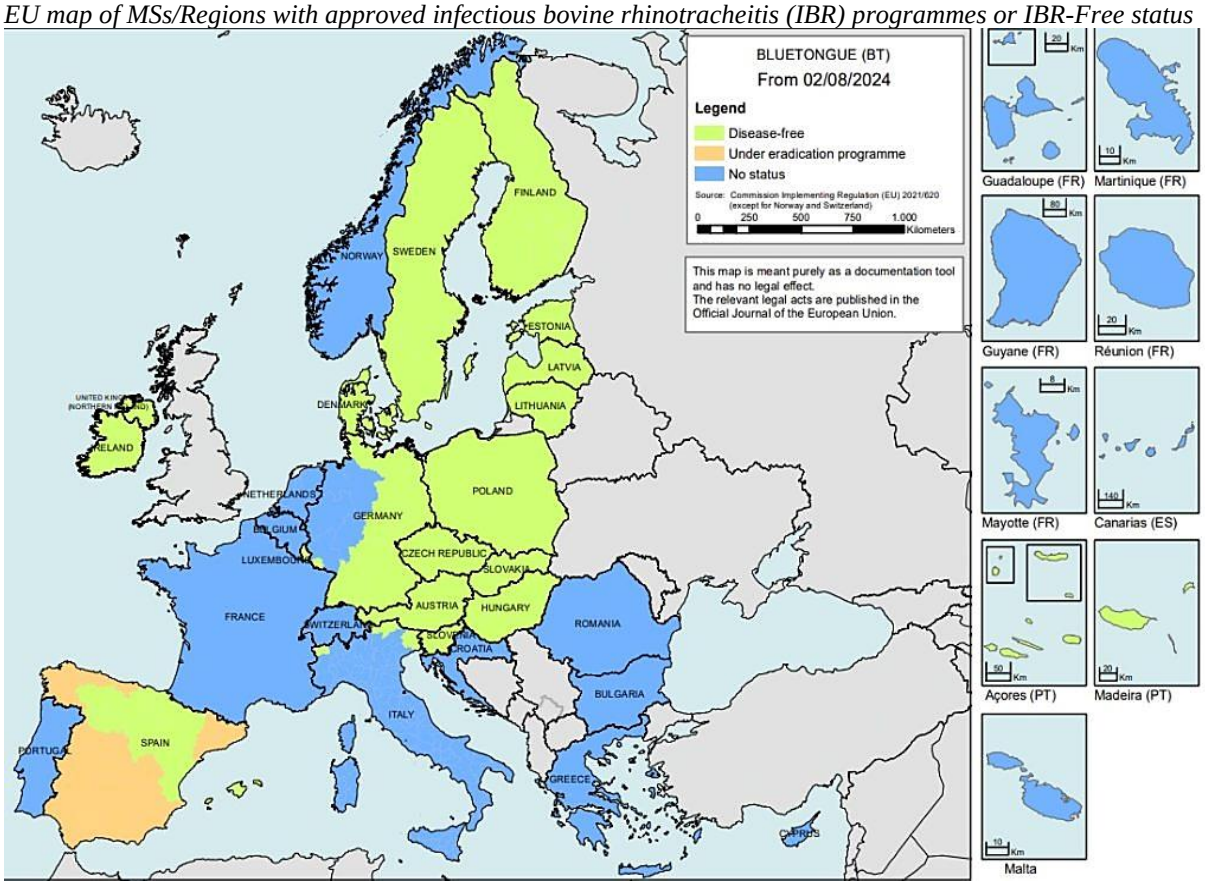
Figure 4
Lamb prices in Latvia and the EU



Source: authors' construction based on European Comission, 2025, March 12.

The overall market situation shows several positive features for Latvian sheep farms:
• The internal EU market is unsaturated;
• Sheep meat prices have been increasing in recent years;
• The reduced number of farms and sheep in Latvia maintains upward pressure on prices.
Despite this background, the sheep farming sector in Latvia has limited earning capacity. The assumption of limited earning capacity is not absolute. It is necessary to look for methods and a business model that allows for streamlining production processes, ensuring a positive economic performance. However, in a large part of farms, based on general data analysis, sheep farming is an extensive farming sector that helps manage the property or serves as a side activity or farming direction that seemingly helps to obtain additional income without calculating all costs or cross-subsidizing from other business directions.
In addition to an inefficient farming model, the industry faces a range of new challenges.
Climatic challenges
2023 was the year of heat and drought, which significantly reduced the total harvest, at a time when grasslands are important for growth. The year 2024 was relatively wet, which again resulted in poor-quality forage. Such climatic instability requires investments to ensure technologies for the preparation of feed that is less dependent on climatic factors (silage, dried hay).
The number of predators is increasing
In Latvia, around 500 sheep suffer from wolf attacks every year – bitten, injured, lost (Sheep farming industry overview for 2023, 2024). Moreover, these are only the reported cases. In general, the positive attitude of society towards nature and nature protection makes it necessary to look for solutions to coexist with predators.
Diseases
The health status of sheep is an important basis for farming. A current problem in Europe is bluetongue (bluetongue disease) ‘Figure 5’. The use of marker vaccines and associated marker tests provides a means of controlling the disease in herds with medium to high herd prevalence, but this strategy must be complemented by biosecurity measures to reduce the risk of introducing the virus into the herd. Disease control and eradication at the herd level is achievable, but a systematic approach is essential to address disease control issues at a regional or national level.

Figure 5
EU map of MSs/Regions with approved infectious bovine rhinotracheitis (IBR) programmes or IBR-Free status



Source: Guelbenzu, 2024.

The disease is spread by blood-sucking insects and has 24 serotypes, which makes vaccination difficult. This is actually only possible after the disease has been detected on the farm (Ministry of Agriculture, 2025). The disease often ends in the death of the animal. The common practice is to slaughter infected animals, thus further reducing the number of sheep (Latvian Rural Consultation and Education Center, 2025).
This disease has not been detected in Latvia at this time, and the European Commission has determined that the country has the status of a disease-free country. This is considered an advantage, but there are challenges in maintaining this status.

Conclusions

1. The number of sheep and the number of sheep farms in Latvia have a tendency to decrease. Slower decrease trends are observed in large farms, which indicates the desire and opportunities of these farms to continue sheep farming, but still there is a rapid drop of number of sheep farms by 20.9% and drop of number of sheep by 14.9% comparing the year 2024 and 2019.
2. Gross margin analysis shows that the ability of sheep farms to cover variable costs is hampered, which creates significant risks to the viability of the farm. For ewes and lambs at any of the selected production objectives, the ability of farms to cover variable costs is hampered, with the result being at the break-even point or negative. In 2024, one sheep family (1 ewe and 1.8 lamb on average) had gross margin -21.40 EUR (production aim – fattening) or 44.63 EUR (production aim – breeding).
3. Sheep farms in Latvia are positively affected by rapidly growing sheep meat prices throughout the EU, price changes ensure their viability. The lamb price in Latvia has grown from 428.39 EUR/100 kg in 2019 to 688.94 EUR/100 kg in 2024. Despite the price increase, the challenges expected for the sector indicate the need for significant investments in ensuring operations. Such factors will continue to put pressure on the profitability of farms, which will determine that only the most efficient farms will strengthen in the sector.
4. There are 0.9 thousand tons of lamb and goat meat consumption in Latvia per year. Only about one half is obtained in slaughterhouses. The large amount of meat obtained outside slaughterhouses in Latvia indicates a disorganized meat circulation control system and a high risk of the spread of the shadow economy, as well as reducing the country's export capacity.

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