

## ANALYSIS OF MILK PRODUCTION EVOLUTION IN THE COW FARMS FROM ROMANIA - NECESSARY MEASURES TO INCREASE THEIR COMPETITIVENESS

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### Abstract

*In the context of the European single market, a competitive and sustainable increase of dairy farms in Romania is essential for securing their activity continuity and long-term development. Between 2015-2024 the evolution of dairy cows in Romania (number, production yield, quality) was analysed compared to the number and size of farms and farmers' age structure. Dynamics of total national milk production vs milk for processing and EU milk production was evaluated. From income perspective, evolution of raw milk supply prices in Romania (source Milk Market Observatory of European Union) was analysed vs European Union market and compared to price evolution for main feed categories. The results were compared to the dynamics of similar indicators from Poland, a country in Central & Eastern Europe with a remarkable development of milk production. The main conclusions regarding the current level of competitiveness of milk production in Romanian cow farms were highlighted, respectively the long-term risk factors for the national activity of milk production and processing. The necessary measures and related technical-economic levers to consolidate their long-term performance were expressed.*

**Key words:** competitiveness, measures, risks, production, yields.

### INTRODUCTION

Romania's admission to the European Union (EU) since 2007 represented an important opportunity to access its unique market without trade barriers. This opportunity also came with a strong need for Romanian producers and products to be competitive and economically feasible, beyond the mandatory request to completely comply with EU regulations (e.g. product quality standards). The area of economic activity we have in focus is the agricultural activity and specifically the cow milk production as essential raw material for dairy products.

By analysing the evolution in the period between 2015-2024 of the main technical parameters associated to cow milk production, the main objective is to identify the potential key success factors and main risk categories for the cow milk production in Romania and implicitly, the potential most relevant categories of improvement to be recommended - as a leverage to enhance the competitiveness of Romanian milk production on EU market on a medium/long term.

### MATERIALS AND METHODS

The first step of the analysis is to evaluate the degree of development between 2015 and 2023/2024 (based on available public data) for the main parameters of cow milk production in Romania (national milk production, milk production per cow, fat & protein milk content, number and size of the agricultural exploitations based on hectares and cow number, milk price, diesel or fuel price, price for different categories of animal feed associated to dairy cow feeding). Only public data was statistically processed, the main data sources being represented by the Romanian National Institute of Statistics and the European Commission historical databases. The main results were compared with the similar categories of data (for the same period) regarding the milk production evolution in Poland (data collected from Polish National Institute of Statistics and the European Commission historical databases). The selection of Poland for this comparison was made owing the fact that this country switched from a communist system to a democratic system hence from a centralized economy to a market

economy relatively in the same period as Romania (1989), also considering the relatively similar moment of being granted EU membership (2004 for Poland vs 2007 for Romania). At the same time, the similarity of the main geographical characteristics for agricultural land supported this decision. The collected data for the mentioned period was analyzed by calculating the average of the period and the standard deviation, the difference (in percentage) between the beginning and the end of the period. Both national averages were compared between each other and then compared all together with EU average.

The main reached conclusions are the basis to classifying the potential weaknesses and main types of risks associated to Romanian cow milk production efficiency. Implicitly, a set of measures that could enhance on medium/ long term the competitiveness of Romanian milk production was recommended.

## RESULTS AND DISCUSSIONS

### Milk production (quantity and quality)

For the period 2015-2023 the EU cow milk production registered a continuously yearly growth except for 2020 and 2021, with an average yearly pace of +0.6%, from 147,095 thousand tons to 155,100 thousand tons. In 2020 the milk production decreased with ~1% vs the previous year and remained in a relative plateau in 2021. The highest part of EU milk production (93.88%, as yearly average rate for same mentioned period) was allocated for milk processing (Eurostat, 2024, Milk and milk products).

The Romanian cow milk production decreased with 9.2% during the above-mentioned period from 3,981 thousand tons to 3,611 thousand tons. The share of Romanian milk production from total EU milk production slowly decreased from 2.71% in 2015 to 2.37% in 2023. The Romanian cow milk production refers only to the milking milk production without taking into the amount of milk directly consumed by the calves.

The analysis of available data for Romania emphasizes that this component represents yearly ~9.5% from milking milk production (The National Institute of Statistics of Romania, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2023, 2024, Livestock and animal production).

It is important to underline that Romania has a high specificity among all EU countries concerning the share of milk which is delivered for processing. Compared to EU average share of 93.88% milk from processing mentioned above, Romania has a degree of utilization for processing of only 28.65% from the national milk production with a positive yearly growth rate, from 23.1% in 2015 to 31.1% in 2023 (The National Institute of Statistics of Romania, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, Livestock and animal production. Eurostat, 2024, Milk and milk products).

Implicitly, the share of milk for direct sales, as milk for consumption or dairy products) on a short supply chain (e.g. agricultural markets, fairs) and for self-consumption is strongly higher than for milk allocated for processing.

We may consider that this extreme high share of milk which is not available for processing represents a disadvantage for both milk farmers and milk processors from Romania, especially in those periods when national milk demand for processing is raising above the available milk supply in Romania (temporary increased demands or due to seasonal milk availability). As effect, the shortage in raw milk quantities is covered via import of raw milk or import of dairy finished goods.

Even though the share of milk for direct sales or self – consumption is so high, in practice only very limited quantities of milk could migrate on a very short term to processing due to different reasons: milk quality level (physical – chemical and microbiological), the geographical dispersion of these additional volumes, the associated logistics costs required by the collection, the stability of availability and delivery for processing. During the process of data evaluation, we also analyzed whether a part of this milk on a medium long term could efficiently migrate towards processing and become attractive for processing should the national milk demand increase, for example as an effect of increasing consumer demand. Our perspective will be shared within the conclusions, after the presentation of the results from the evaluation of all data categories.

The milk production was also studied focus on fat and protein content, as main milk quality parameters with direct influence in the yields level of production processes for dairy products.

At EU level, the weighted average of fat content was mentioned as confidential in the public EU reports and the data was available only for 2015-2018. The average fat content is 4.04% with limits ranging between 4.01 and 4.06%; average protein content is 3.43% with yearly increasing trend - from 3.36% to 3.47%.

For the complete period 2015-2023 the fat and protein content for the milk produced in Romania is below the EU average: 3.80% fat and 3.27% protein; we shall underline that both indicators have a positive and steady positive development, from 3.75% to 3.80% the fat and from 3.26 to 3.30% the protein (Eurostat, 2024, Fat and protein cow's milk content, annual data).

The average fat content for the Romanian milk was 3.80% with a standard deviation of 0.0064 pp. Similarly, average protein content for Romanian milk was 3.27% with a standard deviation of 0.0040 pp.

The development of both parameters has a major role because they positively influence the specific consumption of dairy products by decreasing it. This could be the effect of the consistent investments made by the Romanian farmers in technology and *know-how*, in the cow genetic value and feed quality. Due to the distinct level of average milk fat and protein content in different EU countries, different fat and protein standards exist for the trading of milk raw; for the levels above standards bonifications are paid.

Evaluating the evolution of Polish milk production between 2015 and 2023 showed a continuously yearly development, from 13,236 thousand tons in 2015 to 15,478 thousand tons in 2023, in percentage from 9% to 10% from the EU milk production.

Assessment of Polish milk production growth rate shows a plus of 16.94% with an average yearly pace of 1.88% (Statistical Yearbook of the Republic of Poland, Statistical Yearbook of Agriculture, 2024); this is much higher than EU average yearly pace of +0.6%, whereas in Romania there was a downward trend of cow milk production quantity. More than 99% from the total milk production is allocated to milk processing, above EU average of 94% and farther away than Romanian milk allocation to processing of 28.35% (Statistical Yearbook of the Republic of Poland, Statistical Yearbook of Agriculture, 2024).

The dynamics of milk production in Romania and Poland for the period 2015-2023 (as

percentage from EU total milk production) is presented in the Figure 1.

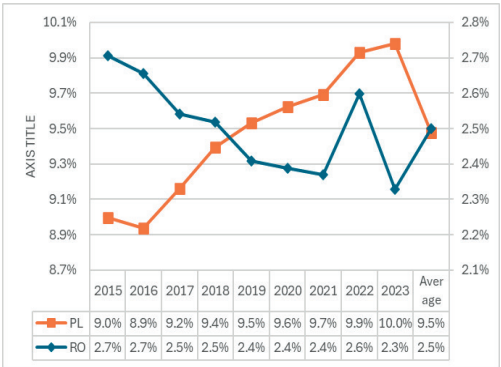


Figure 1. Evolution of Romanian and Polish milk production in the period 2015-2023 (percentage from EU milk production)

The similar evaluation of the progress for fat and protein milk content emphasized a consistent improvement of both indicators, to 4.08% in 2023 (+0.11 pp. vs 2015) and to 3.37% in 2023 (+0.14 pp vs 2015).

For the period 2015-2023 the average fat content for the Polish milk was 4.01% with a standard deviation of 0.0166 pp. Similarly, average protein content for Polish milk was 3.27% with a standard deviation of 0.017 pp (Eurostat, 2024, Fat and protein cow's milk content, annual data). Both indicators are still under EU average level (presented before) with the fat content close to fulfill the EU average and protein content still relevantly below. The comparison with fat and protein content from Romanian milk shows both indicators are below Polish performance, with a relevant difference for fat. The detailed dynamics is presented in the Figure 2.

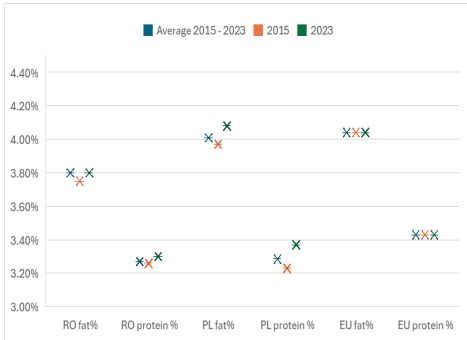


Figure 2. Fat and protein milk content (%) in Romania and Poland (vs EU average), 2015-2023

Therefore, it can easily be stated that Polish milk production has a robust and steady growth, both in terms of quantity and physical and chemical parameters. The yearly rate was higher than EU average for milk production quantity. The increasing fat and protein milk content gets closer to the EU average, the latter being an excellent result which, combined with the quantitative production growth trend, makes milk Polish market an important player of EU milk market.

**Cow number and yields/cow**

The EU dairy cows number decreased during 2015-2023 with 9.9%, from 21,268 to 19,693 thousand heads. At the same time the yield per cow increased with 15%, from 6,760 to 7,970 kg milk (Eurostat, 2025, Number of dairy cows). The combination of both results increased the milk production competitiveness and emphasizes farmers’ focus on higher yields per cow and lower the general costs/cow. The evolution of Romanian number of cattle, out of which the dairies cow number showed a decreasing trend for both categories during same evaluated span of time. Total number of cattle decreased with 13.3% in 2023 vs 2015 and dairy cows number decreased with 11.2%. The share of Romanian dairy cows from the EU similar category slowly decreased from 5.4% to 5.3% (The National Institute of Statistics of Romania, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, Livestock and animal production. Eurostat, 2024, Milk and milk products). In Poland, compared to Romania, the cattle total number increased with 6.5%; the dairy cows number decreased with 4.4%, but with a slower pace than EU average. Implicitly, the share of Polish dairy cows from EU similar category slowly increased from 11.3 to 11.8% (Eurostat, 2025, Number of dairy cows). To sustain the already discussed data another chart regarding progress of total cattle number, out of which dairy cows, in Romania and Poland, 2015-2023, is presented below (Figure 3).

The milk production per cow increased in EU, Romania and Poland, the only difference being the pace at which these expansions happened. EU yield per cow grew with 15.25% in 2023 vs 2015 vs only +2.45% in Romania and an excellent 24.20% in Poland.

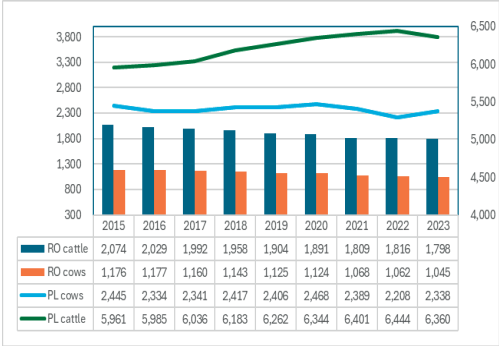


Figure 3. Cattle and dairy cow number in Romania and Poland, 2015-2023 (thousand heads)

As effect, Poland recovered a part of the gap vs EU average: in 2015 the average performance of Polish milk cow was 79.8% from EU average cow performance while in 2023 represented 86%. On the other hand, in Romania the gap increased with 5.5 pp, because in 2015 the average performance of a Romanian milk cow was 49.5% and decreased up to 44.5% from the average performance of an EU milk cow (European Commission, 2024, Data-Modelling platform of resource economics, EU-27 estimated agricultural balance sheets). The detailed evolution is presented in Figure 4.

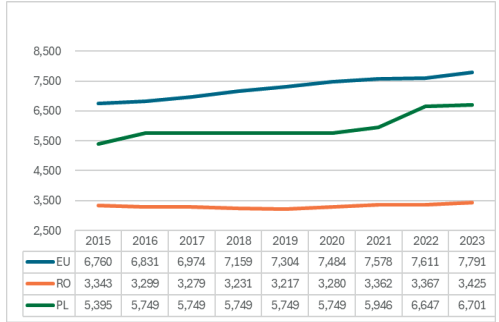


Figure 4. Milk production/ cow (kg) in EU, Romania and Poland (2015-2023)

Pursuant to evaluating in conjunction all categories of data mentioned before - number of dairy cows, milk production/cow, fat/ protein content - we can conclude that even though Romania owns 5.3% from total number of dairy cows, it covers only 2.37% from total EU cow milk production, in decreasing trend.

Fat and protein content are still primarily below EU average – even if they registered a growth. Although there is no sense in denying the importance of yield per cow growth, the rising rate has yet to reach the EU average yield/cow. We also must accentuate that the average milk production per cow is calculated at national level considering the total number of dairy cows, while it was mentioned before that in Romania only 30% of the total milk production is dedicated to processing.

The connection between these two aspects includes also the fact that the milk production from commercial farms which deliver their milk for processing is continuously under a consistent and important optimization process to remain competitive on the raw milk market. At the same time, the milk production from the agricultural exploitations with a very low number of cows (below 5 cows) has a much lower production performance. A higher part of these milk volumes is not directed to processing but kept for self-consumption or selling on a short supply chain. The evaluation of milk data for Polish milk production and cow numbers shows that Poland can be considered an example for the East and Central part of Europe. All the analyzed parameters support the development of milk production in term of quantity and quality and the production performance per cow. The milk volumes availability and increasing milk quality development enhance Polish position as a reliable milk source alternative on EU milk market.

**Agricultural exploitations (number and size)**

In 2020 the number of EU agricultural exploitations was 9,070 thousand units, out of which 2,887 thousand units in Romania (31.83%) and 1,302 thousand units in Poland (14.36%) (Eurostat, 2024, Farm indicators by legal status of the holding, utilized agricultural area, type and economic size of the farm). Romania was responsible in 2020 for approximately one third of total number of agricultural exploitations but regarding the outcomes only for 3.3%. The 2020 structure of agricultural exploitations based on number of ha per exploitation reflected that EU has close to 64% exploitations below 5 ha, while RO was above 90% (90.32%) vs Poland with a better status of 53% exploitations below 5 ha

(Eurostat, 2022, Farms and farmland in the European Union- statistics). The detailed evolution is presented in Figure 5.

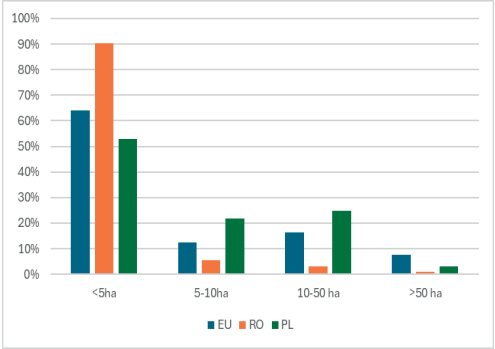


Figure 5. Exploitations structure in hectares (2020)

In Romania, the very high number of agricultural exploitations has a relevant decreasing tendency between 2013 and 2023 - from 3,630 thousand units to 2,859 thousand units in 2023, which means 21.33% less. More than 99% from total number of exploitations represents exploitations without legal personality and with an average size of ~2.5 ha. The number of exploitations with legal personality is only ~25 thousand units, slow decreasing trend; the average size (ha) is consistent, even with a slow decreasing trend, from 206 to 190 ha in 2023; detailed evolution is presented in Table 1 (The National Institute of Statistics of Romania, 2014, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, Agricultural holdings, areas and cattle herds).

Table 1. The number of Romanian agricultural exploitations and average size (thousand units, ha)

Criteria		Agricultural exploitations (x1000 units)	Agricultural land/ exploitation (ha)
2013	total	3,630	3.6
	w/o LP	3,602	2.0
	with LP	28	206.6
2016	total	3,422	3.7
	w/o LP	3,396	2.0
	with LP	26	213.6
2020	total	2,887	4.4
	w/o LP	2,862	2.7
	with LP	25	194.7
2023	total	2,859	4.4
	w/o LP	2,834	2.7
	with LP	25	190.5

Note: LP = legal personality



Evaluating density of cattle per 100 ha during 2015-2023, out of which dairy cows (heifers included) per 100 ha, we noticed a considerable higher density of total cattle in Poland vs Romania: 43 heads in Poland in 2023 vs 41 in 2015, while in Romania only 13.9 heads in 2023 with a slow decreasing tendency vs. 15.6 heads in 2015.

Density of dairy cows/100 ha is much lower in Romania vs Poland, less than 10 heads in Romania vs 16 in Poland, in a relative stagnation; the complete evolution is presented in Figure 6 (The National Institute of Statistics of Romania, 2011, General agricultural census; 2017, Farm structure survey; 2024, Farm structural survey. Statistical Yearbook of Republic of Poland, Statistical Yearbook of Agriculture, 2024).

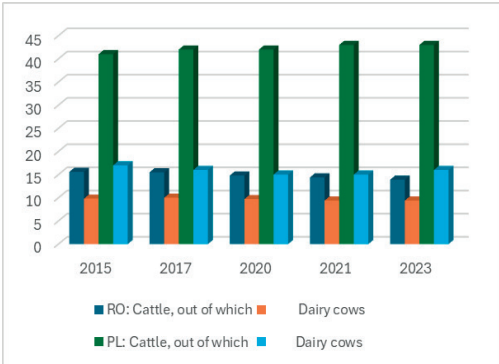


Figure 6. Density of cattle, out of which dairy cows/100 ha in Romania and Poland (heads, 2015-2023)

The evaluation of exploitations structure with cattle in Romania when it comes to size (number of cattle) was done by comparing the available 2010 and 2016 data, while 2023 data are expected to be made public available during first semester of 2025 (The National Institute of Statistics of Romania, 2011, General agricultural census; 2017, Farm structure survey; 2024, Farm structural survey).

The data analysis reflected an extremely high share of exploitations with a very low number of cattle: two thirds of the exploitations with cattle have below 2 heads and close to 30% of exploitation have between 2 and 9 heads. Even if noticed an increasing tendency for number of heads per exploitation the average size (number of cattle) remains extremely low.

The evolution of structure for the agricultural exploitations is presented in Table 2.

Table 2 Structure of exploitations with cattle in Romania

Year/nr of exploitations with cattle	< 2 heads	< 9 heads	> 100 heads	> 500 Heads
2010 (728,000)	73.7%	23.6%	0.08%	0.01%
2016 (541,000)	66.1%	29.5%	0.10%	0.02%

The evaluation of overall categories of data - number of exploitations, with and without legal personality, the density of cows per 100 ha and the size of exploitations in heads of cattle per exploitation, shows that in Romania there is still a high dispersion of total land among agricultural exploitations, the number of cows per exploitation being also very small; on top of that 99% of the exploitation does not have legal personality. We can understand why the milk production competitiveness in Romania as national average is so reduced.

It is also of upper significance to underline the fact that from these small agricultural exploitations, the majority without legal personality, a high share of raw milk is kept for self-consumption or for selling on short supply chain. This stands as an explanation of the fact that only ~30% of total national milk production is transferred for processing.

It is a low probability for these milk volumes (coming from very small milk cow exploitations) to continue to exist on a long term at the same volume scale and to migrate in a stable and competitive way for processing in dairy products.

This equation is even more sensitive when we consider in evaluating the above-mentioned aspects the fact that ~40% from the total number of Romanian agricultural exploitations are owned by people of 65 years or more (Eurostat, Farmers and the agricultural labour force – statistics – Statistics Explained, 2022).

### Milk price and feed price dynamics

The next column finds its aim into analyzing the milk price between 2015 and 2024 (as 2024 was already publicly available). The milk price was evaluated for comparison with EU average price and between both countries. The reported prices are expressed as farm gate prices, in eurocents per kilogram and considering different fat and

protein milk content, in accordance with reported national average for both parameters. The dynamics of milk price was also compared with the evolution of diesel price (using the same methodology), considering the relevance and impact of diesel cost in the entire milk production cost. Likewise, the evolution of price for corn kernel was evaluated on both markets to have a comparative image about the development of this raw material for the same period.

For the Romanian market, the milk price development was also evaluated comparatively to the evolution of price for green corn for silage, with respect to its relevance as cost driver in the feed ratio for milk production.

The EU cow milk price strongly increased between 2015 and 2024, with ~60%, from a level of 30.34 to 48.41 eurocents/kg. EU average price was 37.98 eurocents per kg with a standard deviation of 7.69 eurocents. The peak milk price was in 2022 at 50.21 eurocents/kg.

The Romanian milk price for cow milk increased (in percentage) stronger than EU average rate for 2015-2024, with 71.47%, from 26.32 to 45.12 eurocents/kg. Romanian average price was 34.46 eurocents per kg with a standard deviation of 8.49 eurocents. Peak milk price was in 2022 at 47.44 eurocents/kg.

The Polish cow milk price showed the strongest progress between 2015 and 2024, with 77.47%, from 27.83 to 49.51 eurocents/kg. Average Polish price was 36.01 eurocents per kg with a standard deviation of 8.73 eurocents. Peak milk price was in 2024 at 49.51 eurocents per kg, followed by 2022 price of 49.01 eurocents per kg (European Commission, 2025, Milk market observatory - dashboard).

Both Romanian and Polish prices were able to decrease their gap vs EU average price, the Romanian price with a lower amplitude than Polish price. As effect, compared to the EU average price of 37.98 eurocents per kg, the Romanian price was lower with 9.26% vs the gap of 5.16% for the Polish milk price. Evaluating RO average price vs Polish average price for cow milk, we may say that for the period 2015-2014 the Polish average price was higher with 4.52% than Romanian price.

Corroborating the image presented before regarding the fat and protein milk content, the milk production per cow and the average size of

cattle exploitations together with dynamics of milk price, we may say that the increasing milk production performance in Poland is also reflected in the milk price development, with a stronger rate than EU milk market price increase (European Commission, 2025, Milk market observatory - dashboard). The detailed dynamics is presented in Figure 7.

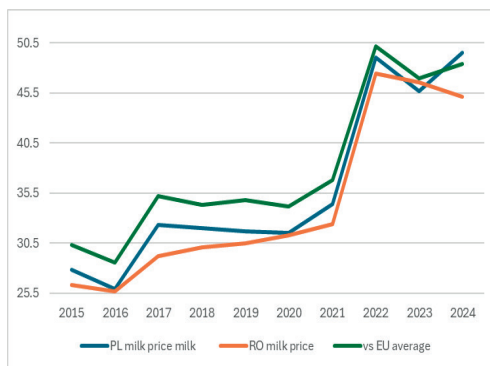


Figure 7. Milk price dynamics in Romania, Poland and EU, 2015-2024 (eurocents per kg)

The evaluation of diesel price shows that at EU level the fuel price strongly grew between 2015 and 2024, with 29.97%, from 1.24 to 1.61 euro/liter. The EU average price was 1.39 euro/l with a standard deviation of 0.235 euro. Peak milk price was in 2022 at 1.82 euro/liter.

The Romanian diesel price increased in percentage lower than EU average rate between 2015 and 2024, with 22.21%, from 1.20 to 1.46 euro/liter.

It is relevant to mention that the starting point in 2015 was a higher price for diesel in Romania vs Poland (1.20 vs 1.08 euro/l). The Romanian average price was 1.24 euro/l with a standard deviation of 0.219 euro. The peak milk price was in 2022 at the level of 1.64 euro/l.

The Polish diesel price had the strongest raise between 2015 and 2024, with 39.03%, from 1.08 to 1.50 euro/l. The average price was 1.21 euro per kg with a standard deviation of 0.214 eurocents. Peak diesel price was in 2022 at 1.54 euro/l.

Comparing to EU average price of 1.39 euro/l, the Romanian price was lower with 10.38% vs EU average price for diesel; the gap between Polish diesel price and EU average prices is – 12.94%. Comparing the RO average price with Polish average price for diesel, we may say that

for the period 2015-2014 the Polish diesel price was lower with 2.86% than Romanian price (European Commission, 2025, Weekly oil bulletin).

The evolution of diesel price in EU, Romania and Poland is presented in Figure 8.

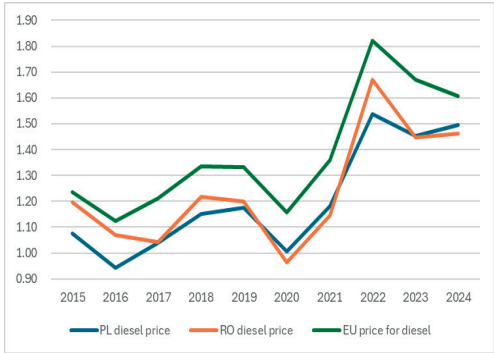


Figure 8. Diesel price development in Romania, Poland and EU, 2015-2024 (euro/l)

The data reflects an important increase in absolute values for the diesel price, even if the gap price for Romania and Poland vs EU price is increasing in percentage.

Comparing Polish diesel price dynamics with the similar one in Romania we may say that the share of costs due to the fuel price is stronger for the Romanian farmers than the Polish farmers in the context where milk price revenues are smaller for Romanian farmers.

The analysis of corn kernel price evolution in Romania shows an important price increase between 2015 and 2024, with 34.79%, from 0.171 to 0.230 euro/kg. Romanian average price was 0.185 euro/kg with a standard deviation of 0.044 euro. Peak milk price was in 2022 at 0.28 euro/kg, followed by 2023 at 0.23 euro/kg.

The Polish price for corn kernel had a decrease of 7.94% between 2015 and 2024, from 0.135 to 0.125 euro/kg. The average price was 0.128 euro/kg per kg with a standard deviation of 0.005 euro.

The peak milk price was in 2015, with yearly decreases until 2023 inclusive (The National Institute of Statistics of Romania, 2025, Vegetable agricultural production, Economic accounts in agriculture; Prices of agricultural products).

Evaluating Romanian average price with Polish average price for corn kernel, we may underline

that for 2015-2023 the Polish price was lower with 30.86% than Romanian price.

The results reflected an increasing cost for the Romanian farmers vs Polish milk farmers by using the corn kernel in the recipe of energy concentrated feed for dairy cows. Implicitly, this affects the milk profitability per liter of milk produced, together with the other challenges mentioned before.

The evolution of corn kernel price in EU, Romania and Poland is presented in Figure 9.

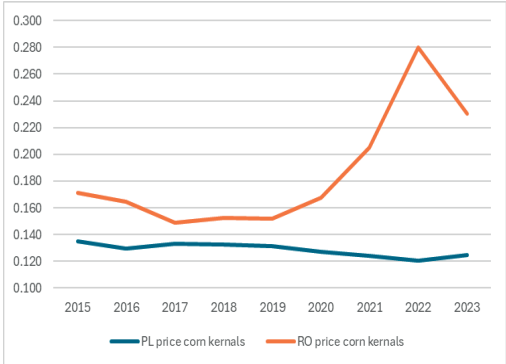


Figure 9. Corn kernel price development in Romania and Poland, 2015-2023 (euro/kg)

The Romanian price for green corn for silage increased in percentage with 7.60% between 2015-2023, with a peak of 38.44% in 2022 vs 2015, from 0.0055 to 0.0076 euro/kg. Romanian average price 2015-2023 was 0.0063 euro/kg with a standard deviation of 0.009 euro. The peak milk price was in 2022 at the level of mentioned before. The detailed price evolution for green corn for silage in Romania is presented in Figure 10.

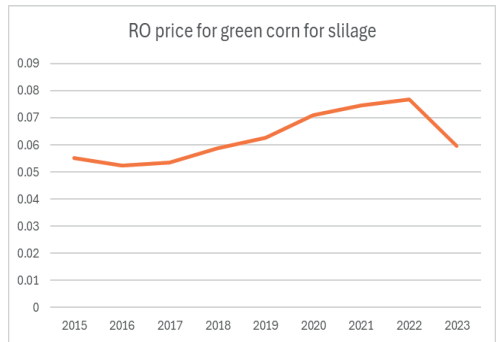


Figure 10. Green corn for silage price development in Romania, 2015-2023 (euro/kg)



The prices for diesel fuel, green corn for silage and corn kernel were for Romanian and Polish markets were converted from the national currency to euro using the yearly parity euro/ron and euro/zloty communicated by each National Bank for the evaluated period (Narodowi Bank Polski, 2025, Historic average exchange rates; National Bank of Romania, 2025, Historic average exchanges rate).

We must accentuate that the impact of increasing prices for cost drivers as diesel fuel, green corn for silage and corn kernel has to be weighted with their corresponding share in the milk production cost, data which were not in the objective of this evaluation. Despite this, the analysis of evolution for all these cost drivers shows that their shares in the milk production cost for the Romanian farmers is increasing at a higher rate than for Polish farmers, which affects the possibility of Romanian milk producers to be competitive vs farmers from other EU countries. In addition, as mentioned before, given that the milk price in Romania is lower than the milk price for Polish farmers, we have a picture of the strong challenges the Romanian milk farmers must manage.

## CONCLUSIONS

Summarizing the results and the discussions presented in the previous chapters, the main conclusion is that between 2015 and 2023/2024 the increase of milk production performance in Romania (milk production per cow, fat and protein content, average size of agricultural exploitation with cattle and number of ha/exploitation) cannot enhance the needed efficiency for the Romanian milk farmers.

This perspective has to be considered in a context in which the milk price index is enlarging its gap vs the EU average milk price level. The increase of the milk production cost drivers is affecting even stronger the profitability of the Romanian milk producers in a context we may see higher increasing price levels for them in Romania vs other countries, such as Poland.

The development of Polish milk production could be considered an example from which the positive aspects are worth to be identified and replicated, if possible, in Romania as well.

Taking in mind the unique EU market for cow milk production and milk marketing, the need for technical and economic efficiency of the Romanian milk production is essential to secure the availability of Romanian milk market on a long term. This last aspect should be considered within the frame where the high volumes of existing Romanian milk which are now kept for self-consumption or selling on a short supply chain, have a low possibility to migrate towards milk processing and to become competitive, both technically and economically.

Strictly respecting the existing EU regulations, it might be recommended that the enhancement of those State measures which could support a stronger improvement of Romanian milk production efficiency to be also evaluated at national level: land concentration in the favour of young farmers, higher accessibility to financial resources guaranteed by the State, fiscal facilities to encourage the long term investments in the genetical value of the cows, in land concentration and for animal husbandries technologies.

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