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# ANALYSIS OF SHEEP AND GOAT MILK PRODUCTION BY DEVELOPMENT REGIONS AND FORMS OF PROPERTY IN THE PERIOD 2010-2018

MANOLACHE ALEXANDRA MARINA<sup>1</sup>

**Abstract:** *This paper proposes the analysis of forms of ownership (total, private sector, individual farms), for the eight development regions for sheep and goat milk. This paper is based on the analysis of statistical data from a quantitative and qualitative point of view, highlighting the contribution of each development region and the evolution of sheep and goat milk production in the period 2010-2018. At the end, a comparison will be made with the level of production depending on the change of ownership structure, in order to determine the correct sample according to its ownership form. Given the importance of milk both as a product in human nutrition and the role it plays in the economies of EU member states, the milk and dairy market has been and is one of the common markets, which has been dealt with extensively by regulations. it could become a globally competitive market.*

**Keywords:** *milk, evolution, production, sheep and goat*

**JEL classification:** *E20, Q10*

## INTRODUCTION

Given the importance of milk both as a product in human nutrition and the role it plays in the economies of EU member states, the market for milk and dairy products has been and is one of the common markets, which has been subject to numerous regulations, for to be able to become a competitive market worldwide. The milk sector is the leading sector of European agricultural production, in terms of value representing approximately 14% of its value.

The dairy industry in the European Union is famous for the quality of its products, not only for its famous cheese but also for a wide range of yoghurts, cream and ice cream.

The European Union is a major player in the world dairy market, being the leading exporter for many dairy products, especially cheese. Internationally, the "milk and dairy products" sector is probably one of the most distorted agricultural sectors. Many developed countries provide subsidies to producers, which encourage overproduction. In addition, tariff barriers are high in both developed and developing countries to protect competition from the dairy sector.

## MATERIAL AND METHODS

This paper analyzes the forms of ownership (total, private sector, individual farms), for the eight development regions for sheep and goat milk. With the help of statistical data, from a quantitative and qualitative point of view, we highlight the evolution of sheep and goat milk production, but also the identification of the contribution of each development region in the analysis period. At the end of this paper, a comparison was made with the level of production depending on the change of ownership structure, in order to identify the correct sample according to its ownership.

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## RESULTS AND DISCUSSIONS

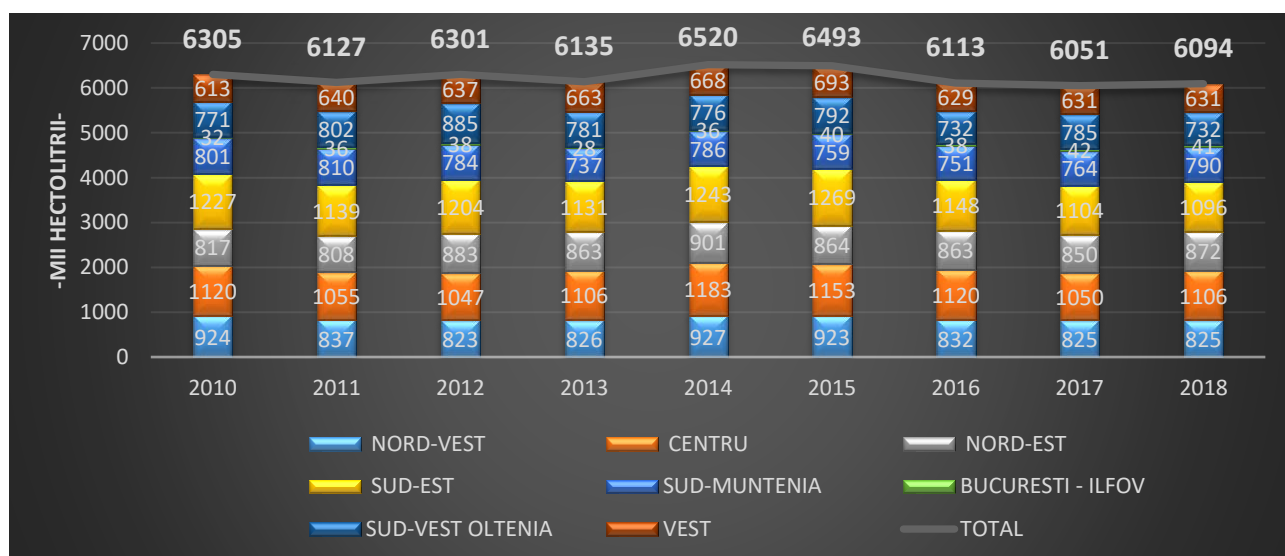
Table 1 . Evolution of sheep and goat milk production by development regions and forms of ownership

CATEGORII DE PRODUSE	FORME DE PROPRIETATE	REGIUNI	U.M.	2010	2011	2012	2013	2014	2015	2016	2017	2018
LAPTE OAI E SI C APRA	Total	NORD-VEST	Mii hectolitri	924	837	823	826	927	923	832	825	825
		CENTRU		1120	1055	1047	1106	1183	1153	1120	1050	1106
		NORD-EST		817	808	883	863	901	864	863	850	872
		SUD-EST		1227	1139	1204	1131	1243	1269	1148	1104	1096
		SUD-MUNTENIA		801	810	784	737	786	759	751	764	790
		BUCURESTI - ILFOV		32	36	38	28	36	40	38	42	41
		SUD-VEST OL TENIA		771	802	885	781	776	792	732	785	732
		VEST		613	640	637	663	668	693	629	631	631
		<b>TOTAL</b>		<b>6305</b>	<b>6127</b>	<b>6301</b>	<b>6135</b>	<b>6520</b>	<b>6493</b>	<b>6113</b>	<b>6051</b>	<b>6094</b>
	Sector Privat	NORD-VEST	Mii hectolitri	924	836	823	824	926	922	832	825	825
		CENTRU		1120	1054	1047	1105	1183	1153	1119	1050	1106
		NORD-EST		816	807	880	862	898	861	861	848	870
		SUD-EST		1226	1137	1204	1130	1243	1268	1147	1103	1096
		SUD-MUNTENIA		801	810	783	737	786	758	751	764	790
		BUCURESTI - ILFOV		32	36	38	28	35	40	38	42	41
		SUD-VEST OL TENIA		771	802	885	781	776	792	731	785	732
		VEST		613	640	637	663	668	693	629	630	630
		<b>TOTAL</b>		<b>6303</b>	<b>6122</b>	<b>6297</b>	<b>6130</b>	<b>6515</b>	<b>6487</b>	<b>6108</b>	<b>6047</b>	<b>6089</b>
	Exploataii agricole individuale	NORD-VEST	Mii hectolitri	923	832	812	813	911	910	822	813	820
		CENTRU		1116	1041	1043	1099	1172	1144	1105	1037	1093
		NORD-EST		812	788	858	842	881	845	844	830	847
		SUD-EST		1217	1123	1192	1121	1226	1255	1132	1090	1083
		SUD-MUNTENIA		792	800	777	730	781	751	745	756	785
		BUCURESTI - ILFOV		31	36	38	28	35	40	38	42	41
		SUD-VEST OL TENIA		767	799	881	780	775	790	730	784	731
		VEST		611	632	634	660	666	690	626	627	628
		<b>TOTAL</b>		<b>6269</b>	<b>6051</b>	<b>6235</b>	<b>6073</b>	<b>6447</b>	<b>6425</b>	<b>6042</b>	<b>5979</b>	<b>6027</b>

Source: INS

From the table above, it appears that the South-East development region, on total form of ownership, registered the highest average of 1173.4 (thousand hectoliters), followed by the form of private sector ownership, also in the region The south-eastern average was 1172.7 (thousand hectoliters) and the rate of this region registered a minus of 1.40%, the lowest average is in the Bucharest-Ilfov region of 36.8 (thousand hectoliters). Analyzing the individual agricultural holdings, in the analysis period 2010-2018, also in the South-East development region, an average of 1159.9 (thousand hectoliters) was registered, and the rate having a value of minus 1.45%.

Figure 1. Dynamics of sheep and goat milk production regardless of the form of ownership

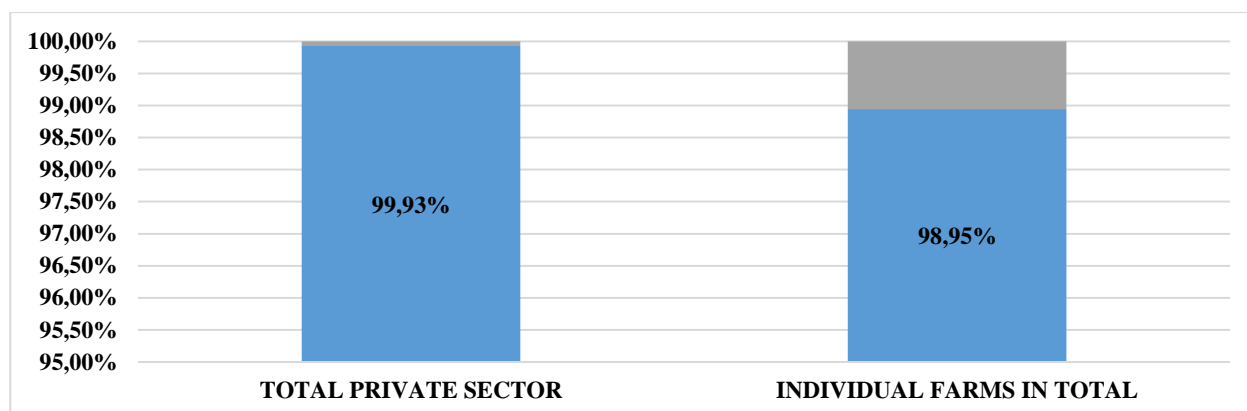


Source: INS, own calculations

In Figure 1, the dynamics of sheep and goat milk production show that in 2014, the South-East region contributed the most in total ownership, with the highest average production of 1243

(thousand hectoliters), the rate of total ownership is (-0.42%) and the lowest production is recorded in 2017, in the region of Bucharest-Ilfov 42 (thousand hectoliters), here being found the highest rate of 3.15 %.

Figure 2. Share of average milk production by ownership



Source: INS, own calculations

Figure 2, of the total milk production, in the private sector in total is obtained 99.93% of it, and if we analyze the individual farms in total, they record a share of sheep and goat milk production of the total production of 98 , 95% (average from the analysis period 2010-2018).

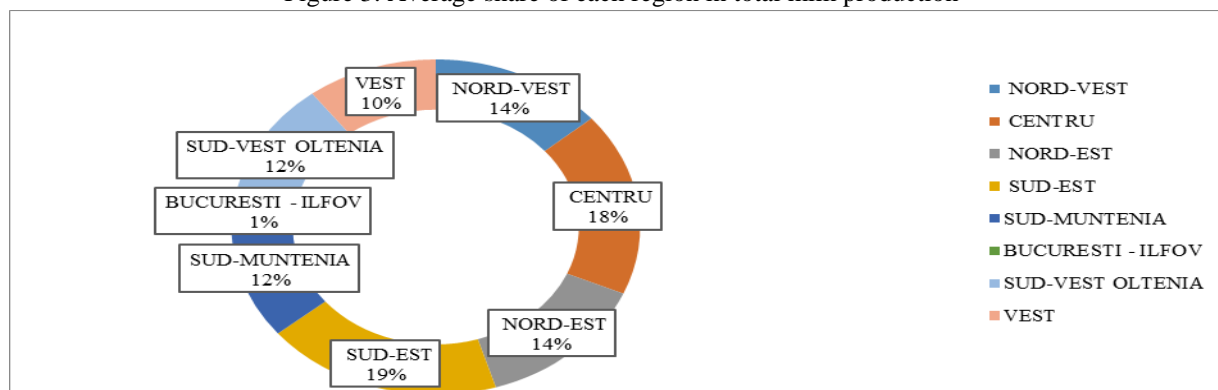
Table 2. Average share of regions, for the three forms of ownership

SPECIE	REGIUNE	FORME DE PROPRIETATE	2010	2011	2012	2013	2014	2015	2016	2017
LAPTE OAIE SI CAPRA	Regiunea NORD-VEST	Total	14.7%	13.7%	13.1%	13.5%	14.2%	14.2%	13.6%	13.6%
		Sector privat	14.7%	13.7%	13.1%	13.4%	14.2%	14.2%	13.6%	13.6%
		Expl. Individuale	14.7%	13.7%	13.0%	13.4%	14.1%	14.2%	13.6%	13.6%
	Regiunea CENTRU	Total	17.8%	17.2%	16.6%	18.0%	18.1%	17.8%	18.3%	17.4%
		Sector privat	17.8%	17.2%	16.6%	18.0%	18.2%	17.8%	18.3%	17.4%
		Expl. Individuale	17.8%	17.2%	16.7%	18.1%	18.2%	17.8%	18.3%	17.3%
	Regiunea NORD-EST	Total	13.0%	13.2%	14.0%	14.1%	13.8%	13.3%	14.1%	14.0%
		Sector privat	12.9%	13.2%	14.0%	14.1%	13.8%	13.3%	14.1%	14.0%
		Expl. Individuale	13.0%	13.0%	13.8%	13.9%	13.7%	13.2%	14.0%	13.9%
	Regiunea SUD-EST	Total	19.5%	18.6%	19.1%	18.4%	19.1%	19.5%	18.8%	18.2%
		Sector privat	19.5%	18.6%	19.1%	18.4%	19.1%	19.5%	18.8%	18.2%
		Expl. Individuale	19.4%	18.6%	19.1%	18.5%	19.0%	19.5%	18.7%	18.2%
	Regiunea SUD-MUNTENIA	Total	12.7%	13.2%	12.4%	12.0%	12.1%	11.7%	12.3%	12.6%
		Sector privat	12.7%	13.2%	12.4%	12.0%	12.1%	11.7%	12.3%	12.6%
		Expl. Individuale	12.6%	13.2%	12.5%	12.0%	12.1%	11.7%	12.3%	12.6%
	Regiunea BUCURESTI - ILFOV	Total	0.5%	0.6%	0.6%	0.5%	0.6%	0.6%	0.6%	0.7%
		Sector privat	0.5%	0.6%	0.6%	0.5%	0.5%	0.6%	0.6%	0.7%
		Expl. Individuale	0.5%	0.6%	0.6%	0.5%	0.5%	0.6%	0.6%	0.7%
	Regiunea SUD-VEST OLTENIA	Total	12.2%	13.1%	14.0%	12.7%	11.9%	12.2%	12.0%	13.0%
		Sector privat	12.2%	13.1%	14.1%	12.7%	11.9%	12.2%	12.0%	13.0%
		Expl. Individuale	12.2%	13.2%	14.1%	12.8%	12.0%	12.3%	12.1%	13.1%
	Regiunea VEST	Total	9.7%	10.4%	10.1%	10.8%	10.2%	10.7%	10.3%	10.4%
		Sector privat	9.7%	10.5%	10.1%	10.8%	10.3%	10.7%	10.3%	10.4%
		Expl. Individuale	9.7%	10.4%	10.2%	10.9%	10.3%	10.7%	10.4%	10.5%

Source: INS, own calculations

In Table 2, for the three forms of ownership (Total, private sector, individual holdings), we note that of the entire analysis period 2010-2018, the South-East region recorded the highest shares, and the lowest share was recorded. in the Bucharest-Ilfov region.

Figure 3. Average share of each region in total milk production

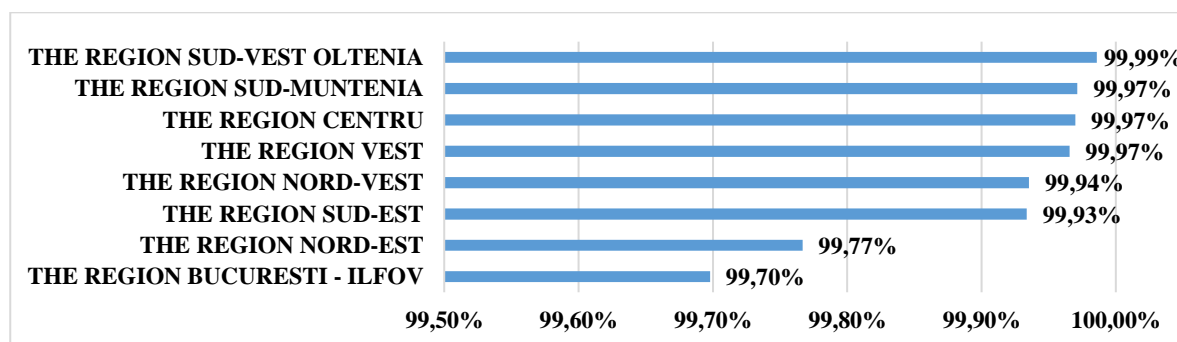


Source: INS, own calculations

In Figure 3, in total regardless of the form of ownership, milk production is structured as follows by development regions:

- South-East region, with the highest share of (19%), Center region (18%), North-West region (14%), North-East region (14%), South-Muntenia region (12%), the South-West Oltenia region (12%), followed by the West region (10%), and the lowest share was noticed in the Bucharest-Ilfov region (1%).

Figure 4. Share of the total private sector by development regions in sheep and goat milk production

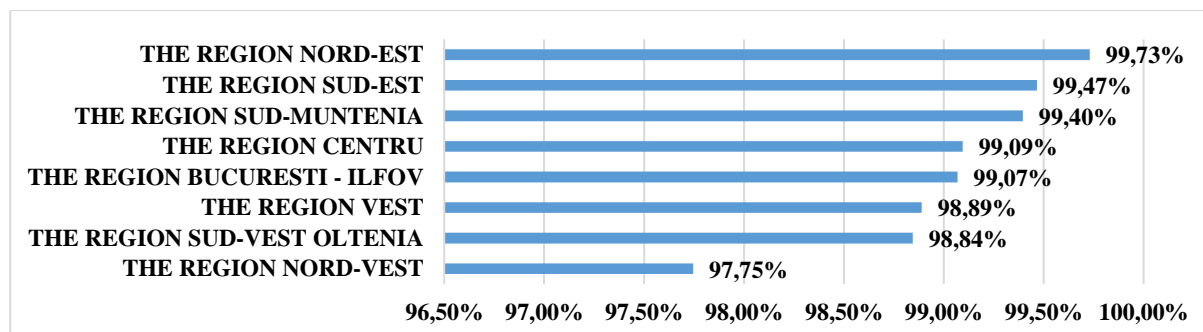


Source:

INS, own calculations

Figure 4, to the share of the private sector in total by development regions in sheep and goat milk production, it is noted that in the South-West Oltenia region was registered the highest share of 99.99%, and the lowest share was in the Bucharest-Ilfov region of 99.70%.

Figure 5. Share of individual farms in total milk production, by development regions



Source: INS, own calculations

Figure 5, the share of individual farms in total milk production, by development regions, shows that the North-East region has the highest share of 99.73%, and the North-West region has the lowest share (97.75%) of the total milk production for the eight development regions analyzed.

## CONCLUSIONS

Of the eight development regions analyzed, for the three forms of ownership, from the analysis period 2010-2018, from the comparison made at the production level depending on the change of ownership structure, the correct sample is structured as follows: (Total, sector private, individual holdings).

Sheep's and goat's milk is a valuable product, used in our country for high quality cheese preparations, much appreciated by consumers. Compared to cow's milk, it has a higher nutritional value due to its chemical composition: it contains 5-6% protein and 6-8% fat. In Europe, the countries that consume the most sheep's milk are: France, Greece, Bulgaria, Romania.

World milk production has not kept pace with world population growth. The decline in world per capita milk production is the result of lower production in developed countries, while per capita milk production increased slightly in developing countries over the same period.

Unlike developed countries, where milk production tends to increase as a result of increasing per capita yields, in developing countries the increase in production is mainly due to the increase in the number of dairy cows and the number of farms. and not productivity growth

### **Decrease in cow's milk consumption in the European Union**

Various campaigns against the consumption of animal products, including dairy products, have put pressure on European consumers, who have largely given up on these products, citing health, ethical or environmental reasons. Lactose intolerance has also been considered among the increasingly serious concerns affecting consumption.

According to official estimates, in the last ten years, the consumption of cow's milk per capita has decreased by almost 5 liters. This decline was only partially offset by very large purchases of alternative beverages, such as soy (+ 0.8 kg / capita in 10 years). In the next decade, the downward trend is expected to continue at the same pace, reaching in 2026 an annual consumption of 53.8 kg of dairy products per capita. In contrast, there is a trend towards a stabilization of yogurt consumption, while cream consumption should continue to increase slowly, although it is not enough to compensate for the decrease in milk consumption, according to analysts in the field.

In conclusion, although dairy herds have decreased, European farms are more productive due to investments in genetics and animal feeding schemes. The EU milk market is currently in a fairly favorable situation. The average price of milk in the EU in January 2014 was 40.03 c / kg, ie 17% higher than in January 2013, representing the highest average price of milk ever recorded (statistics since 1977).

This upward trend has also been observed with regard to the price of dairy products, although the price of butter has been under some pressure since the beginning of 2014. So far, strong global demand has helped to keep prices firm. However, a price adjustment should not be ruled out, given the increase in milk production noted by the main exporters.

Medium-term forecasts for milk and milk products are favorable for both the world market and the internal market. Global demand remains dynamic, especially in emerging economies. Despite the slowdown in economic growth, dairy products play an important role in people's diets, given the higher proportion of middle-class households.

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