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ROMANIAN MILK SECTOR IN INTERNATIONAL CONTEXT

CHETROIU RODICA¹

Abstract: *The paper performs an analysis of the Romanian sector of milk, identifying the status at global level, under various aspects, as part of the worldwide production of milk, with reference to the place our country in the world ranking of cow milk, milk productions, cow farm sizes, milk prices in international context etc. The study also integrates the presentation of some statistical indicators describing the dynamics and variability of cow's herds and milk productions, such as average, standard deviation and coefficient of variability. Our country owns 0.43% of total cows and buffaloes worldwide and 0.6% of milk production, and at the European Union level it provides 5.04% of the flocks and 2.5-2.6% of the cow's and buffalo milk production.*

Keywords: *milk, production, global, farms*

JEL Classification: *O13, Q12, Q17*

INTRODUCTION

Approaching the study of the cow's milk production sector is always a topical subject, given that it is dynamically constant, under the influence of various factors, both inside the system and upstream and downstream.

After the 2014-2016 crisis, both globally and in Romania, a recovery period followed, with farmers looking to adapt to the effects of increased market volatility. In our country, the small size of cows' farms, the poor development of the infrastructure, the competitive economic environment, the technological differences between small milk producers and large farms are very well reflected in the production of milk as well as in its structure [1]. The present study evaluates the position and contribution of the Romanian milk sector in the European and world context it belongs to.

MATERIAL AND METHOD

This study integrates fundamental research methods, the information analyzed in the study having official statistical data - FAO, Eurostat, Ministry of Agriculture and Rural Development, IFCN (International Farm Comparison Network). Statistical analysis tools (statistical indicators), comparative analysis, graphics are used, and also Excel software applications. Taking the time factor as a reference, the data analysis is of longitudinal type, being carried out for a certain time, having both a quantitative and a qualitative character.

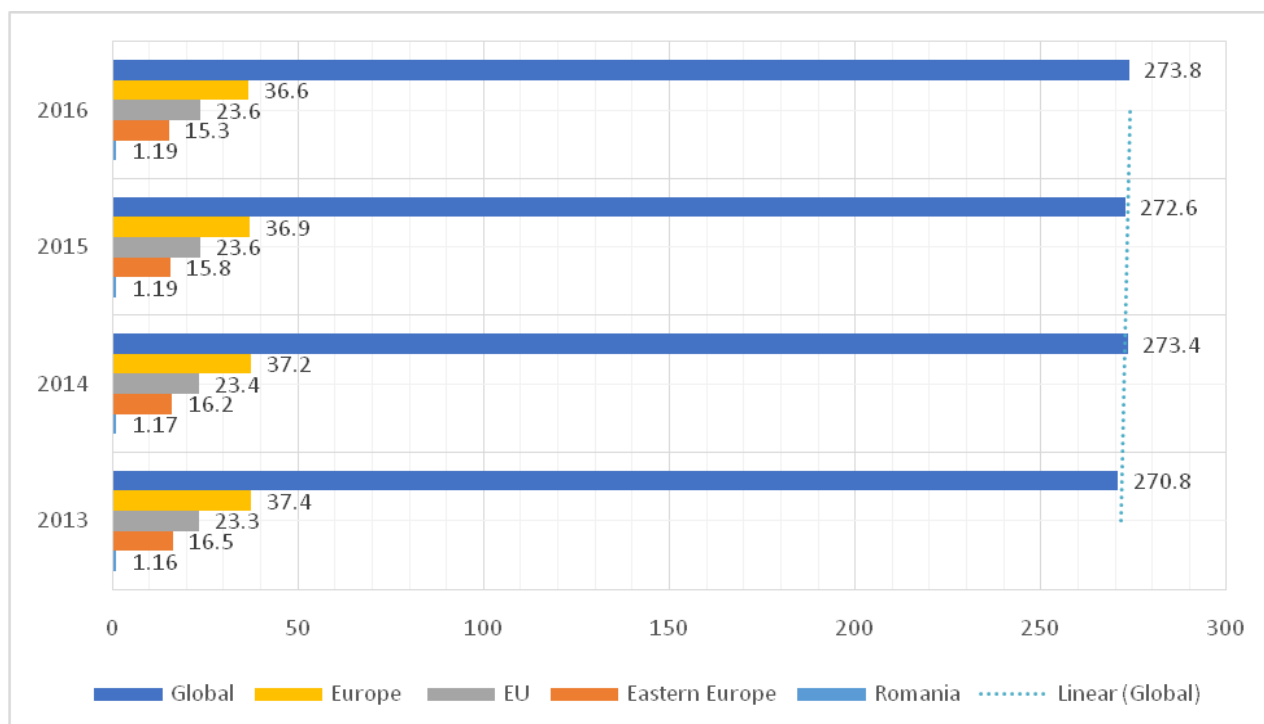
RESULTS AND DISCUSSIONS

According to FAO data, at the world level, there were 273.8 million dairy cows and buffaloes in the year 2016, with 1.1% more than in the year 2013. Europe provides 13.4% of world flocks in these categories, and Romania only 0.43%. Also, our country held only 3.3% of the cows and buffaloes exploited for dairy production in Europe and 5.04% of the European Union in 2016 (see Chart 1).

The calculation of the statistical indicators (Table 1) reveals that the highest variability of cows and buffaloes number during the studied period took place in Eastern Europe (3.26%), with only 0.49 % at the world level. Romania recorded an average variability of 1.27%.

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Chart 1 – Evolution of number of cows and buffaloes, during 2013-2016 (millions heads)



Source: FAOSTAT[2]

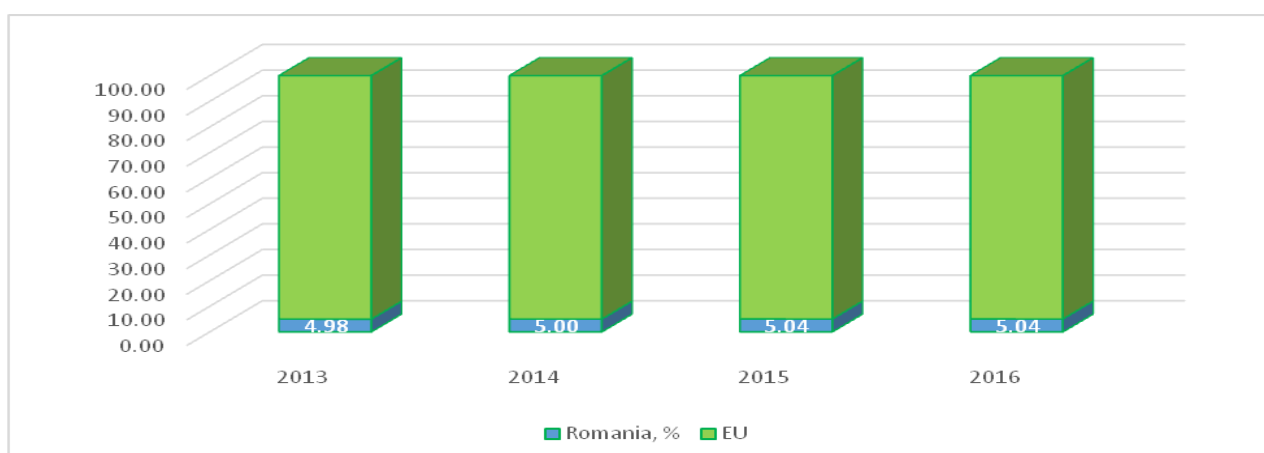
Table 1 – Statistical indicators of bovine number dynamics, 2013-2016

Statistical indicators	Romania	Eastern Europe	EU	Europe	Global
Average \bar{X}	1.18	15.95	23.48	37.03	272.65
Standard deviation s	0.015	0.52	0.15	0.35	1.33
Variability coefficient %	1.27	3.26	0.64	0.95	0.49

Source: Own calculations, based on FAOSTAT data

The representation of our country at the level of the European Union from the point of view of cows and buffaloes is quite poor; however, there was an ascending curve during the analyzed period (4.98-5.04%), as shown in the Chart 2:

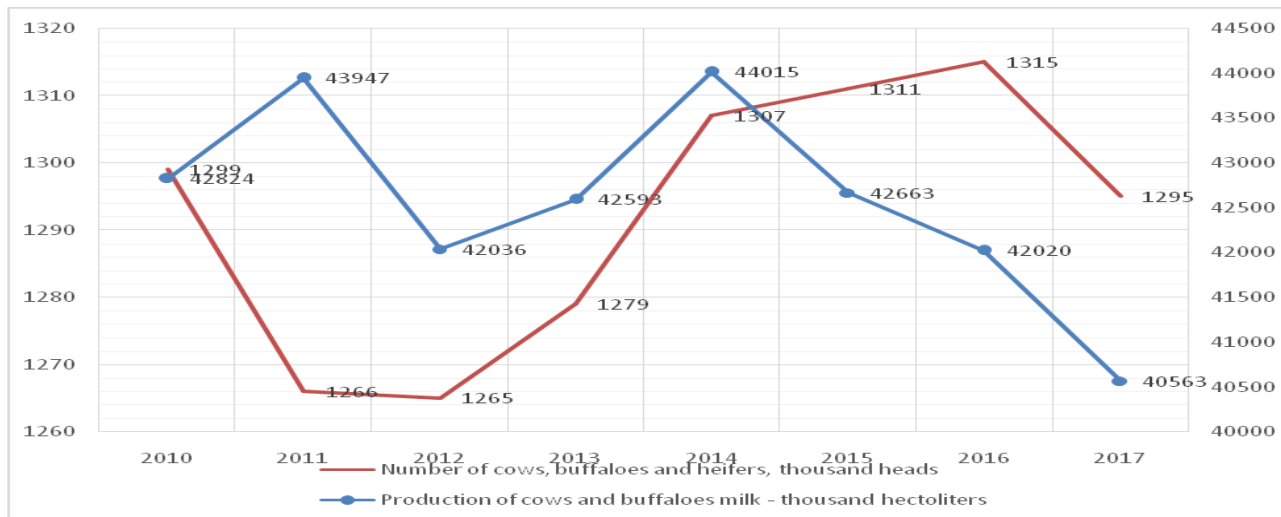
Chart 2 – Share of Romanian number of cows in those of EU



Source: Own calculations

The dynamics of cows, buffaloes and heifers in our country, in parallel with that of milk production (Chart 3), reveals a sinuous evolution, both in terms of flocks and production. It should be noted that the two curves describe similar but not identical forms, which indicate that the increase in milk production was not necessarily a consequence of the increase of the flocks.

Chart 3 – Dynamics of cows, buffaloes and heifers and of milk production in Romania

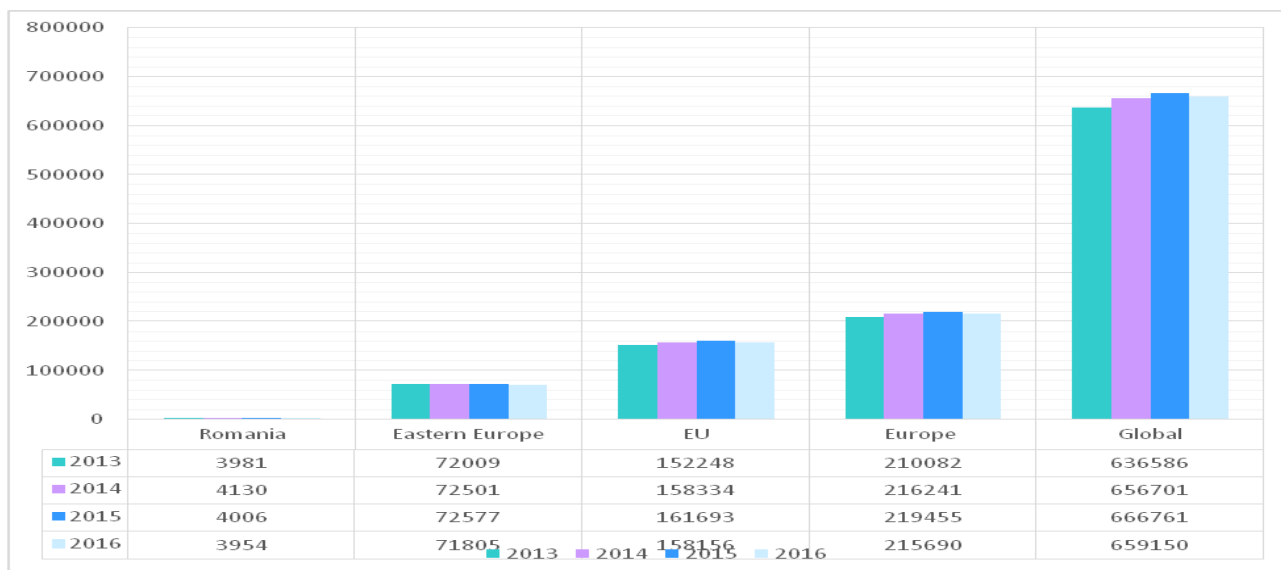


Source: National Institute of Statistics [5]

The calculation of the number and milk production statistical indicators shows that the average of total milk production for 2010-2017 in our country was 42583 thousand hl, with a standard deviation of 1113.1 thousand hl, accompanied by the average number of flocks of 1292 thousand heads - standard deviation 19.8 thousand heads. The coefficient of variability of 2.6% for milk production was higher than that of flocks, which was 1.5%.

In terms of total milk production, on a global scale, Romania contributes with 0.6% of the quantity, on the background of negative evolutions both internally and in Eastern Europe. Production increases were recorded, but at EU (3.9%), European (2.7%) and global level (3.5%) (Chart 4). It is worth mentioning that, according to data compiled by the International Farm Comparison Network (IFCN), our country was ranked 36th in global milk production in 2016, with 604,000 cows' farms.

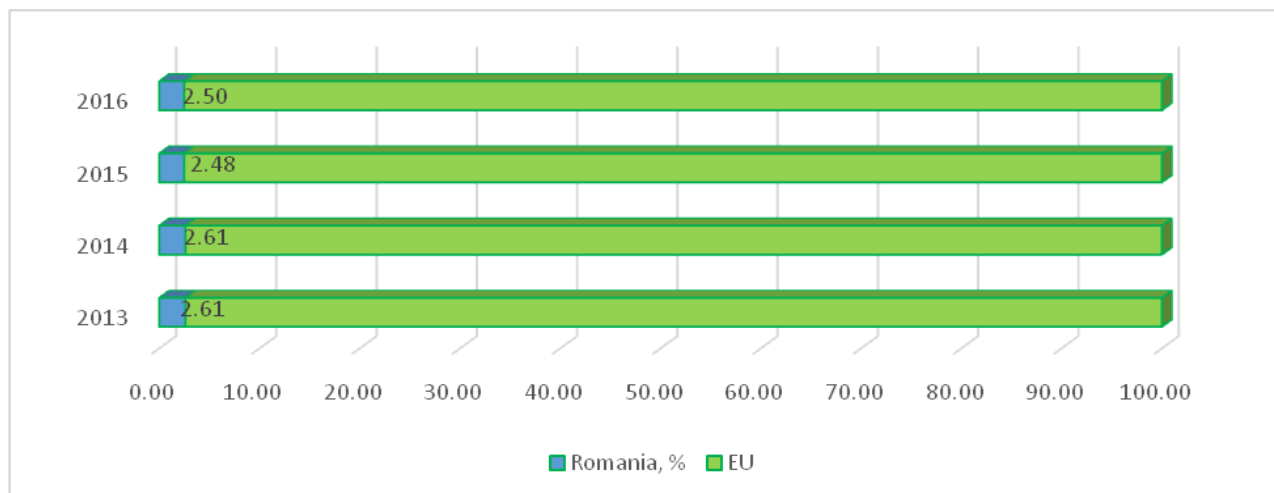
Chart 4 – Dynamics of milk production at global, European and our country level (thousand tons)



Source: FAOSTAT

The share of Romania's milk production from European Union production is modest, ranging from 2.48 to 2.61%, as shown by FAO data (see Chart 5).

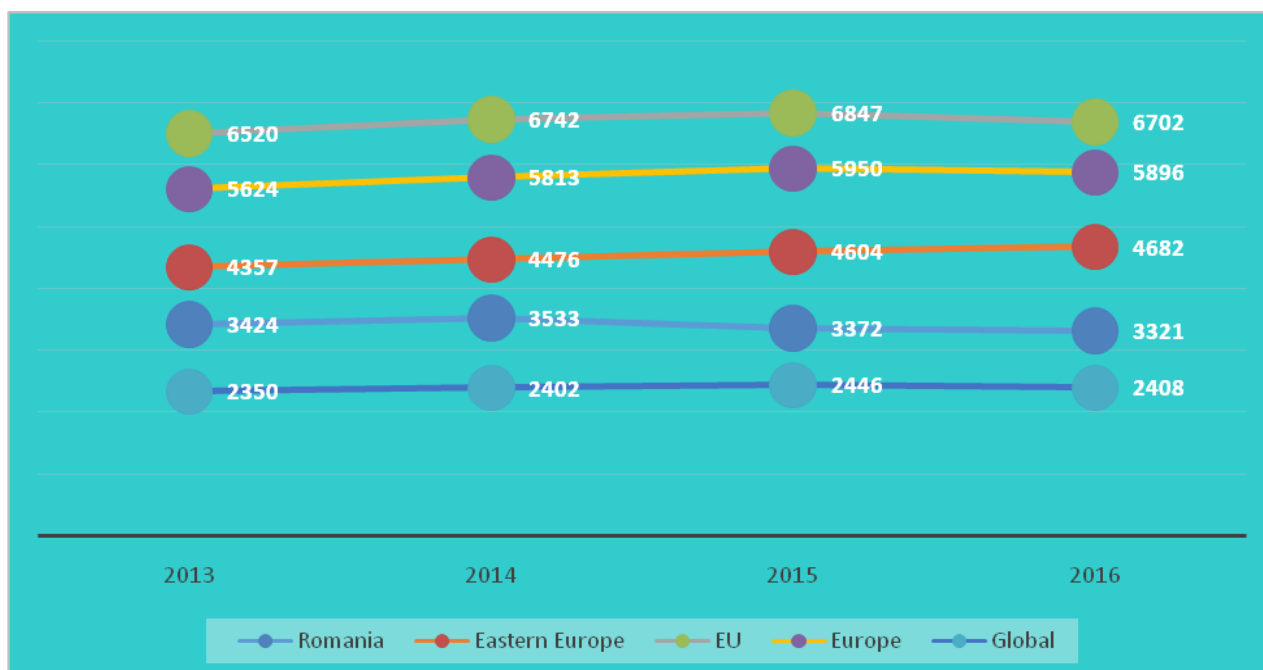
Chart 5 – Share of Romania cows and buffaloes milk production in that of EU



Source: FAOSTAT

In terms of average milk yields, Romania is at half the EU values (3424-3321 kg / cow / year compared to 6520-6702 kg / cow / year, 2013-2016) and even below the average European production (4357-4682 kg / cow / year), but exceeding 38-47% world average (which was 2350-2408 kg / cow / year between 2013 and 2016) (see Chart 6).

Chart 6 – Comparative evolution of the average milk yields (kg/cow/year)

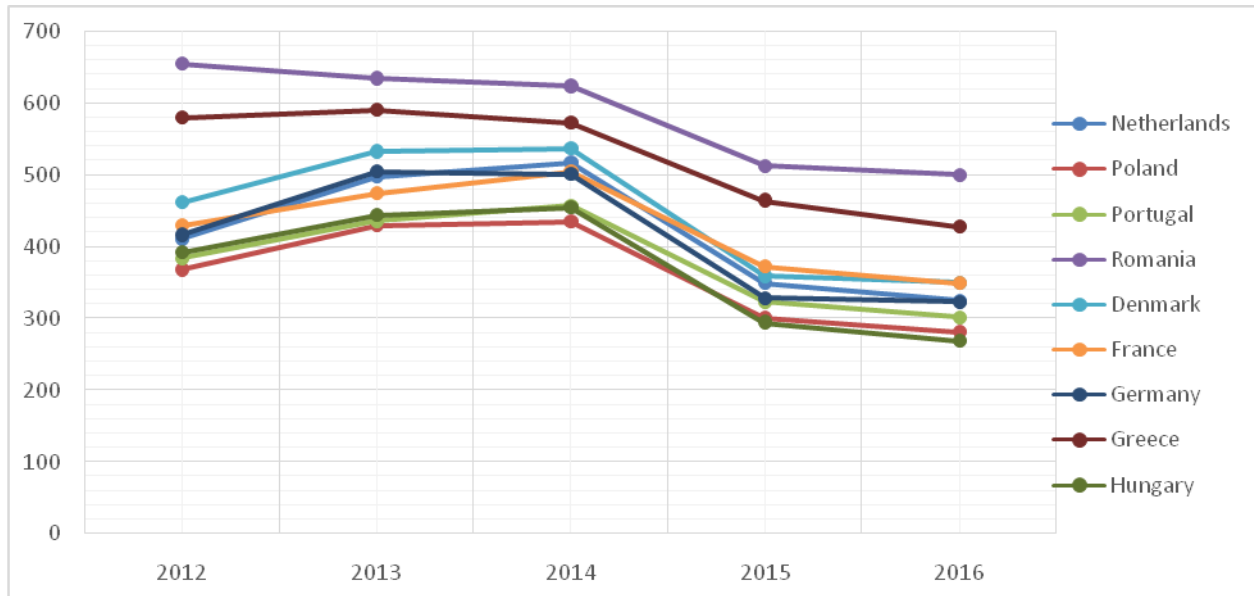


Source: FAOSTAT

As mentioned by the International Farm Comparison Network (IFCN) [3], there is a wide diversity in global milk production due to both geographical and cultural variety and political circumstances. In terms of farm size, the largest are in North America, followed by Oceania and China, while the smallest farms are in Africa (IFCN - Dairy Report 2017). Romania recorded an average of 2.4 cows / farms [4] in 2016, with 84% of the farms belonging to the 1-2 heads category (operative data from Ministry of Agriculture and Rural development [6]).

With regard to the producer milk price in a number of countries in Europe, according to FAO data, Romania is at the top and is followed by Greece, while countries close to us, such as Hungary or Poland, are registering lower prices. This ranking can also explain the massive imports of milk that have taken place in our country during the studied period (Chart 7).

Chart 7 – Producer milk price in European countries (\$/ton)



Source: FAOSTAT

CONCLUSIONS

The data presented in this paper highlights the fact that our country participates in the world cattle and buffalo herds and in the production of milk under 1%, and at the level of the European Union, with 5% of the flocks and about 2.5% milk production. In dynamics, starting in 2014 curves describing both flocks and milk production in Romania are generally descended, in 2017 registering 1295 thousand cows and buffaloes and 40563 thousand hectoliters of milk respectively. Therefore, the effects of the crisis of 2015-2016 in the milk sector are still felt, and producers aim to rebalance both these technical and economic realities.

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