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# PRODUCTIVITY GAPS ALONG THE MILK CHAIN IN ROMANIA – COMPARISONS WITH THE EU-27 MEMBER STATES

MARIANA GRODEA<sup>1</sup>

**Abstract.** *Taking into consideration the new Common Agricultural Policy (2014 -2020, for the milk sector, which will have as main component the milk quota removal after 2014, the present paper makes a comparative analysis of the indicators from the milk chain links (agriculture, processing, trade, consumption) from Romania and the EU-27 member states in the period 2009-2012, in order to reveal the performance level and Romania's position among these European countries, as well as the modalities to narrow the productivity gaps along the Romanian milk chain compared to the European Union, having in view the domestic supply improvement and meeting the consumers' needs. In this context, an investigation was made by each link in the chain, at the level of milk production, raw milk collection for processing, milk processing, distribution and consumption, in close connection with milk quality and price evolution; certain variants and measures were designed to narrow the gaps of productivity and institutional organization of the milk chain in Romania.*

**Key words:** cow herds, milk production, dairy cow farm size, prices, quality

## INTRODUCTION

The milk sector in Romania is characterized by a low integration of players in the chain, the main causes being the following: low attractiveness of association for milk producers, which results in an excessive fragmentation of supply and the diminution of farmers' bargaining power with processors implicitly, lack of market information, mainly in the case of medium and small-sized operators, who often make decisions unknowingly; this situation brings about losses at all levels, with a significant competitiveness diminution.

That is why the associative organization forms can be considered competitive structures that encourage milk sector modernization and can improve the marketing of dairy products, by the fact that they make it possible for a large number of small producers to actively and efficiently participate to the economic process, narrowing the productivity gaps along the milk chain between Romania and the remaining EU-27 member states.

## MATERIAL AND METHODS

In order to capture the main aspects concerning the national milk market, the following information was used: the national data supplied by the National Institute for Statistics (NIS), through the official publication "Romania's Statistical Yearbook", as well as the database Tempo-online - INS, which were subsequently processed, and the information from MARD, ANSVSA. The aspects regarding the evolution and the quantitative and qualitative modifications on the European and world milk market had as information source the reports and international studies elaborated by the European Commission, the data from FAOSTAT Agriculture and EUROSTAT publications. The information supplied by the previously mentioned institutions has its own advantages, enabling comparisons by different regions and across Romania.

The utilized method was the comparative analysis of certain sets of indicators specific to each link in the chain. The set of indicators used for the analysis of the first link of the chain refers to the following: evolution of dairy cow herds, of their yields, average size of dairy farms. The second stage of the chain is investigated from the perspective of the following indicators: collected milk production out of total production by the processing dairy factories, raw milk quality, raw milk procurement price, number of enterprises in the milk industry, added value per employee in milk industry. The indicators on the trade with dairy products refer to the obtained production and the trade between the EU-27 member states.

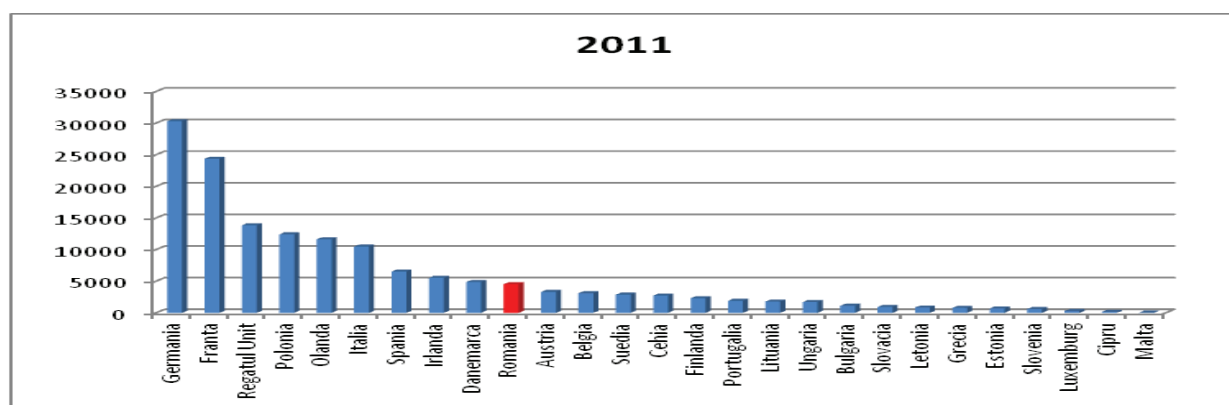
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## RESULTS AND DISCUSSIONS

This section presents the results of the comparative analysis, in the period 2009-2012, of the indicators from the milk chain links (agriculture, processing, trade, consumption) from Romania and the EU-27 member states, based on the presented methodology, as well as of the variants and modalities to narrow the productivity gaps between the Romanian milk chain and that of the other EU countries.

Although Romania is on the tenth position among the EU-27 cow milk producing countries, from the point of view of milk production evolution in the period 2009-2011, it has the strongest decline (-682 thousand tons), being on the last place in the case of this indicator (Figure 1).

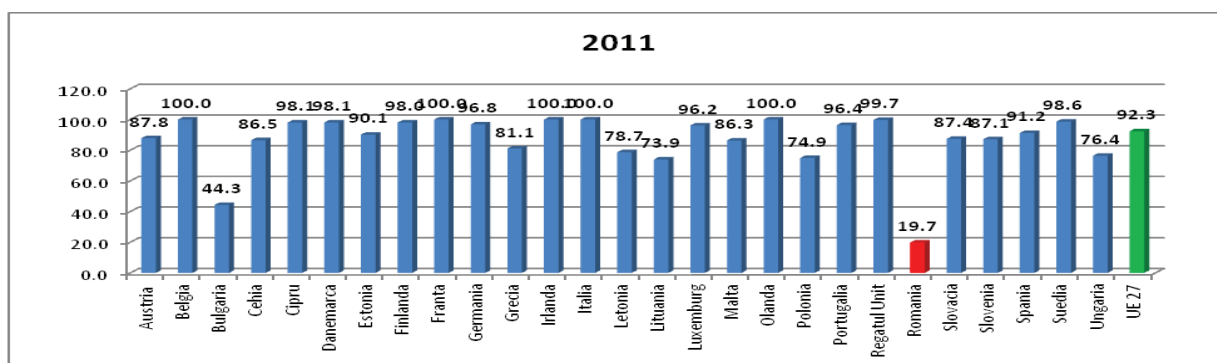
Fig. 1. Total cow milk production in the European Union-27– thousand tons



Source: www.fao.org – FAOSTAT Agriculture

As regards the share of milk deliveries in total obtained milk production, in the year 2011, it is mentioned that compared to the European average of 92.3%, the great majority of the European countries deliver milk to processing in percentages ranging from 87 to 100%. Bulgaria (44.3%) and Romania (19.7%) represent an exception. Romania lies on the last position following the analysis of this indicator (Figure 2).

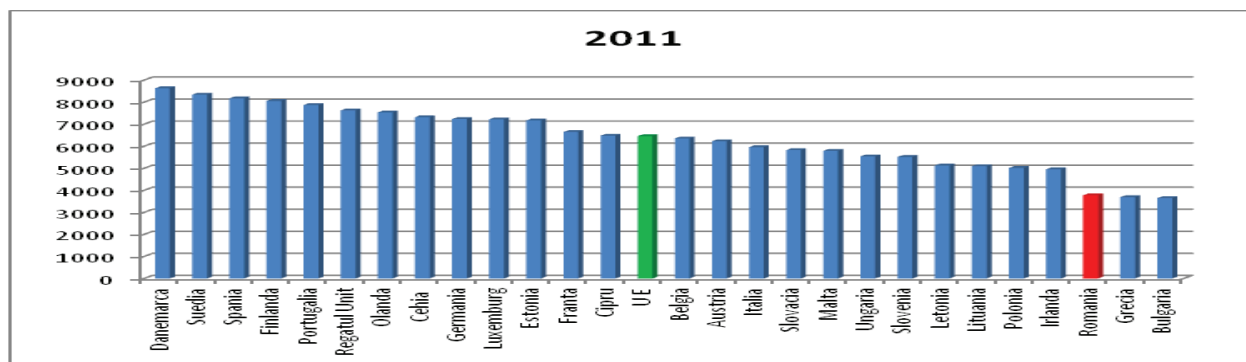
Fig. 2. Share of milk deliveries in total cow milk production in the EU-27 member states, in the year 2011 (%)



Source: Eurostat

The average yield/cow head features great differences across the European countries. Thus, the highest yields in the year 2011 were found in Denmark (8636 kg/cow head), Sweden (8341 kg/cow head), Spain (8174 kg/cow head) and Finland (8058 kg/cow head). At the opposite pole we can find countries like Bulgaria (3653 kg/cow head), Greece (3691 kg/cow head) and Romania (3776 kg/cow head). (Figure 3).

Fig. 3. Average cow milk yields in the EU-27 member states– kg/head



Source: www.fao.org – FAOSTAT Agriculture

Both the quality and the quantity of milk are affected by the high fragmentation of production, as 59 % of the total cow herds in Romania are found on very small-sized units of 1-2 heads. Thus, out of the 761528 holdings whose average yield was 1.83 heads in 2010, only 20-22% deliver milk to the processing factories. In these conditions, an adequate selection work and the application of modern technologies are almost impossible. For comparison, the average size of dairy farms in several European countries is the following: Hungary – 22 heads (EUROSTAT 2010), Germany – 40.7 heads (EUROSTAT 2010), Slovakia – 183 heads (“An Assessment of the Competitiveness of the Dairy Food Chain in Slovakia”), Slovenia – 12.5 heads (EUROSTAT 2010).

As regards **raw milk collection** for processing, it can be mentioned that an analysis by the two collection sources revealed the increase of imported raw milk from 3.6% in the year 2007 to 8.2% in 2011, to the detriment of milk collection on the holdings and milk collection centers in the country.

As regards the **raw milk quality**, from the market analysis conducted by ANSVSA, it results that at the end of the year 2011, the percentage of conform milk corresponding to the EU standards, delivered to processing units, was 80%. At the same time, the study also mentions that the conform milk percentage is higher in the case when milk is collected directly from farmers and it is lower when the milk is taken over from a collection center; out of this reason, the prices offered by the processors are different in the case of conform and non-conform milk. From this point of view, the ANSVSA specialists asked for and obtained the approval of the European Commission for the prolongation of the transition period in order to improve raw milk quality until December 31.2013.

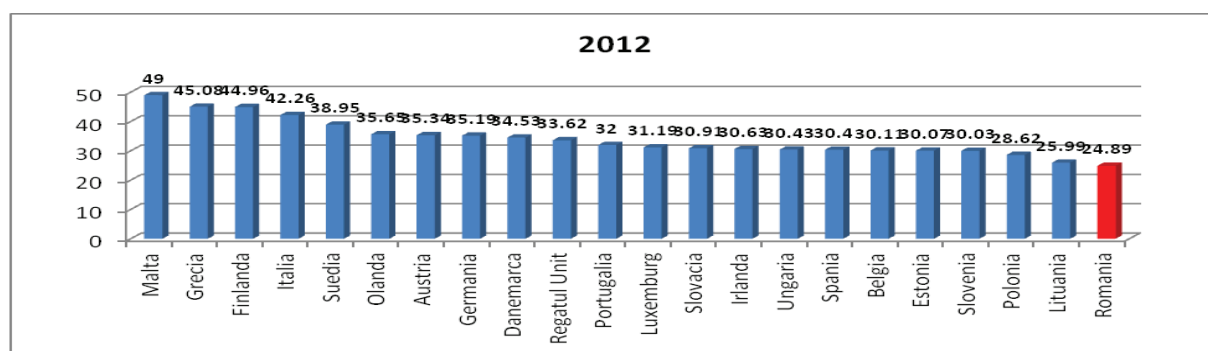
**Milk industry** went through an extremely difficult period caused by several factors: prolonged economic crisis, diminution of sales under the background of purchasing power diminution, the unprecedented increase in the price of utilities, the black market that reached 60% of total and the aflatoxin scandal that began in early March 2013. The aflatoxin scandal determined an unprecedented diminution of milk and dairy consumption, the figures supplied by the officials at that time ranging from 45% (APRIL) to 20% (Ministry of Agriculture). According to the Romanian Employers' Association in Milk Industry, the small and medium-sized producing companies mostly suffered, as they did not have an outlet for their products any more: the retailers ordered less, and certain buyers of the large trade networks preferred to import finite products.

The **consumption** decline is also the result of the loss of the habit to drink milk on a daily basis. A study by Euromonitor conducted in 2010 reveals that Romania is among the last countries in Europe as regards milk consumption per capita, followed only by Slovakia and Bulgaria. Thus, in the year 2010, milk consumption per capita in Romania reached 36 liters (equivalent of about 100 ml/day), compared to the European average of 64-65 liters in countries like Switzerland, Netherlands, Belgium, Slovenia or Serbia. In the nutritionists' opinion, the recommended daily milk consumption is 250 ml/day, which is twice as high compared to the present milk consumption per capita in Romania.

According to a study of the company Tetra Pak, while the consumption of other categories of liquid dairy products continue to increase at an average yearly rate estimated at 6.9% in the period 2011-2015, milk consumption will continue to decrease at an average yearly rate of 4.9%. This diminution of milk consumption is largely determined by the diminution of unpacked (unprocessed) milk consumption. Although the packed milk will continue to increase at a yearly average rate of 2.8% in the period 2011-2015 (the UHT milk has an average yearly increase of 3.9%), this increase will not compensate the massive diminution of unprocessed milk quantities.

In Romania, although the **raw milk price** in the year 2012 was the lowest in the EU-27 countries (24.89 euro/100 kg), this is mainly dictated by the evolution of neighbour markets – Hungary, Poland, and Slovakia – as the main sources for covering the national deficit (Figure 4).

Fig. 4. Raw milk procurement price in the EU-27 member states (euro/100 kg)



Source: Eurostat

In Romania, the **import** of dairy products was worth 130-140 million euro in 2010, while **exports** reached about 40 million euro, with an increasing trend.

In the case of cheese and curd, the imports reached 2000 tons, worth 70 million euro, while the exported quantities were larger, i.e. about 2700 tons, with a value of only 15 million euro, which reveals that the exports consisted of raw products, curds, and quality finite products were imported instead. In quantitative terms, the imports followed an increasing trend, from 4365 thousand hl of milk in 2007, to 5771 thousand hl in 2011, while exports doubled, to reach 2234 thousand hl in 2011.

## CONCLUSIONS

### Romania after the removal of milk quotas – modalities to bridge up the productivity gaps

The milk sector in Romania presents significant discrepancies in terms of productivity compared to EU-27. This can be explained both by the internal structure of the Romanian dairy farms (small size, high fragmentation), inadequate or defective use of production factors (human resources included), and by the existing deficient institutional framework and infrastructure. Although Romania is on the 7<sup>th</sup> position among the EU-27 countries with regard to the dairy cow herds, the average yields are quite modest (3776 kg/cow head), Romania being among the last countries on the list, only before Greece and Bulgaria.

The milk sector performance is seriously affected by the high fragmentation. Thus, in the year 2010, 59 % of the total dairy cow herds were found on very small-sized holdings of 1-2 heads, while the total number of holdings was 761528, with an average size of 1.83 heads/farm. Although a diminution by 28% of the number of holdings was noticed as compared to 2007, the number of non-performant small-sized holdings remains very high, which reveals the persisting subsistence and semi-subsistence phenomenon in the milk sector in Romania, which is the main factor that hinders competitiveness increase. However, as a positive fact, we can notice the percentage diminution of holdings with 1-2 cow heads in total holdings (from 92% in 2007 to 87.27% in 2010),

simultaneously with the increase in percentage of the holdings with 3-5 heads (from 6.3% in 2007 to 10.14% in 2010). The holdings with 51-100 cow heads and over 100 heads, which we consider commercial or potentially commercial, account for only 0.11 %, having 6.25% of the total dairy cow herds.

From this point of view, due to the weak competitiveness of the Romanian dairy farmers compared to the farms from the developed countries, it is estimated that after the milk quota removal, many farmers with 2-3 cow heads/farm will disappear from the Romanian market, as December 31, 2013 means the end of the term for non-conform milk processing.

One of the main conclusions is that farm size is an important factor in profit maximization. That is why a support measure for the Romanian farmers after 2015, through the "Milk Package", would be to **encourage the farms with at least 50 cows, with land into ownership, by projects with financial support**, on the example of certain countries like Netherlands, Belgium, which massively invest in dairy farm revamping, so that these can increase their animal herds up to 10 times, towards 3000 heads. One of the reasons for this is the fact that the farms smaller than 50 cow heads cannot supply sufficiently large milk quantities to processors so that to find a buyer for their production, not to speak about the capacity to bargain good prices and make a profit.

At the same time, another measure from the "Milk Package" envisages **strengthening the role of contracts**. In the milk and dairy sector, in order to ensure that the respective contracts are conform to certain adequate minimum standards and to guarantee the good operation of the domestic market and of the common market organization, it is necessary to establish certain basic conditions at EU level for the utilization of these contracts. As the status of certain dairy product cooperatives can already include rules with similar effect, these cooperatives must be exempted, for simplification purpose, from the obligation to conclude contracts. In order to ensure the effectiveness of such scheme, this has to be also applied in the case when the intermediaries (collectors<sup>2</sup>) collect the milk from farmers for delivery to processors. In this case, the contract must comply with the following: to be concluded before the delivery, to be under written form and contain the price due for delivery, which can be a fixed price and indicated in the contract and/or may vary according to certain specific clauses, namely the market situation evolution, estimated on the basis of market indicators, the delivered volume and quality or composition of delivered raw milk. The following must be also specified, namely: the volume that can be and/or is to be delivered, the calendar of deliveries and validity period of contract.

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<sup>2</sup> "collector" means an enterprise that transports the raw milk from a producer or from another collector to a raw milk processor or to another collector, in which case the raw milk ownership is transferred each time.