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## THE CURRENT STATE AND LATEST TRENDS OF THE UKRAINIAN DAIRY SECTOR<sup>1</sup>

Key words: dairy sector, Ukraine, dairy products, challenges, integration, agroholding

**ABSTRACT.** The global dairy sector is currently going through a period of turbulence. Global human population growth is substantially increasing the demand for dairy products. Our study stresses the importance of the dairy industry in the agriculture of the Ukraine and its national economy. It aims at identifying and describing the latest trends in the Ukrainian dairy industry. While the Ukrainian dairy sector is currently dealing with a number of challenges, we are looking for a number of opportunities for Ukrainian dairy producers to strengthen their competitiveness in the EU and global market, as well as maintain and expand their position on the domestic market. The dairy industry is one of the major industries in the Ukraine and, before the crisis, this segment demonstrated a trend towards its active development, but the situation in the dairy sector has become more complicated since 2014. The biggest problem for the dairy sector was the loss of the Russian market, which accounted for about 80% of exports of dairy products. However, the growth of cow productivity became a significant achievement of the dairy sector. Today, the main challenge for the dairy industry is finding new export markets and developing existing markets.

## INTRODUCTION

According to the United Nations Food and Agriculture Organization [FAO 2018], the global dairy market has one of the most upward growth potentials in the total food market. Slowing demand from China, Russia's trade embargo and the removal of EU milk quotas, resulted in a period of excess supply and low prices. Despite this, the long term outlook for the sector remains positive. The key growth drivers are demands from Asian countries, Russia, the Ukraine and Belarus. Global dairy production is increasing. Most of the increase comes from developing countries, in particular Argentina, China and India [Szűcs, Szöllősi 2015]. At the same time, import demand is growing. The growing world population and changing diets are a challenge for world milk production. As incomes rise and nations become increasingly urbanised, individuals tend to receive more of their calories from protein (including dairy) as opposed to basic carbohydrates (mostly grains). Thus, global demand for dairy is expected to increase by 2.5% early in 2020 [FAO 2018].

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World milk output reached 811 million tonnes in 2017, 1.4% higher than in 2016. Across geographic regions, milk output expanded in Asia, the Americas and Europe; stagnated in Africa; and declined in Oceania. Europe's milk output increased by 1.3% to 224 million tonnes. In the EU, a small increase in milk productivity per animal (yield per cow) enabled milk output to be positive, while the EU-wide phosphate reduction plan led to some reductions in the number of dairy cows. The apparent milk yield in the EU topped 7,000 kg per cow in 2017. As a national average, apparent yield was highest in Denmark (9,569 kg per cow), Estonia (9,143 kg per cow) and Finland (8 889 kg per cow) and lowest in Romania (3,231 kg per cow) and Bulgaria (3,713 kg per cow). Among the main cow milk producing Member States, apparent yield was well-above the EU average in Germany, the United Kingdom and the Netherlands. Two thirds of all EU milk delivered to dairies are used to make cheese and butter [Eurostat 2018].

While the Ukrainian dairy sector is currently dealing with a number of challenges, favourable long term consumer trends and developing technologies provide a number of opportunities. This article looks at these challenges and opportunities and aims at identifying and describing the latest trends in the Ukrainian dairy market. Our research stresses the importance of the dairy industry in the agriculture of the Ukraine, as it provides the population with vital food products, many of which are strategic in export potential.

## RESEARCH MATERIAL AND METHODOLOGY

In the study, data obtained with secondary data collection was used, which is based on available literature and official statistics (the FAO, the USDA, Eurostat and the National Statistics Office of the Ukraine). Main data include the number of cows, actual quantity of milk yield from cows, irrespective of whether it was sold or partly used for domestic needs, average annual milk yield per cow, consumption of dairy products in kilograms per year, trade data, average annual sale raw milk price, profitability level, etc. Data processing was performed using descriptive statistics and time series analysis. These data were used to introduce and analyse the actual situation of the dairy sector and its tendencies on Ukrainian markets.

## RESEARCH RESULTS

The long-lasting, invariably downward trend in the dairy sector – in terms of population of cows and milk production – has already led to the situation whereby the deficit of milk for industrial processing has become acute. However, if one looks at official statistics on the production of milk in households and corporate farms and compares them with data on industrial processing by regions, it turns out that all regions do have excess of milk. However, in some regions, like Mykolayiv, Kherson, Kyiv, Cherkasy, Poltava and Sumy, competition of processors over milk may be more acute as the share of supply for processing accounts for 60%. At the same time, if we look at the production and processing of milk originating from agricultural enterprises, taking into account that the later are constantly increasing supply, it can be concluded that demand for milk from agricultural enterprises significantly exceeds output in some regions.

Despite the fact that the Ukraine belongs to the TOP 20 global producers of milk, the Ukrainian dairy industry is suffering from a permanent deficit of raw milk supplied for processing. One of the reasons behind this lasting trend is that the structure of initial production of raw milk is dominated by households having a share of more than 70% [UKRSTAT 2017]; the latter produce milk mostly for their own consumption and leftovers are sold at marketplaces, where they can get more attractive prices. Nevertheless, already today, it is possible to observe the results of largescale investments in the industrial production of milk made in the last few years.

Ukrainian milk producers and processors concentrated on the domestic market and actively searched for new foreign markets for their value-added dairy products. The country was able to respond to high world market dairy prices by slightly increased processing activity and a re-direction of selected dairy products from the domestic market to foreign markets. The industry was slow to react to price fluctuations due to significant momentum associated with current animal productivity levels and the inability to increase milk production rapidly. However, high world market butter prices inspired exporters, which pushed Ukraine into the top 15 butter exporters [Tarashevych 2017].

In 2017, the exchange rate lost its dominating influence on milk and dairy product production and trade. The industry is slowly recovering from the vast currency devaluation of 2014-2016. The exchange rate remained stable throughout 2017. Producers benefit from reduced uncertainty over exchange rates, currency regulations, finance availability (including foreign investment), domestic prices, and stable demand, as well as uninterrupted imports of input.

Low milk prices in 2017 facilitated the market exit of inefficient producers. Industrial enterprises managed to increase fluid milk production by around 2%, while reducing animal numbers. Household raw milk production declined due to decreasing cow numbers. Due to the relatively small share of industrial milk production in the Ukraine, total milk production decreased in the country. The overall dairy herd size decrease is a continuation of a two-decade trend of animal number reduction (Figure 1), accompanied by increased productivity (yield per cow). Being relatively low-efficiency producers, rural households use a low-cost production model with a lot of seasonal grazing and minimum usage of expensive feed or veterinary medicine.

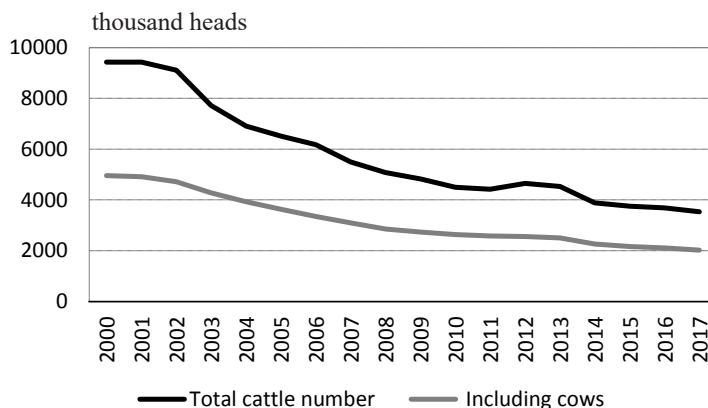


Figure 1. Number of cattle 2000-2017

Source: [UKRSTAT 2017]

Household milk is processed by families into basic, cheap, dairy products and sold on open-air markets without any statistical record. There is widespread belief that household milk and dairy products are “organic”, “healthier”, of “higher quality” and even “safer” than industrially processed products [Gereles, Galych 2013]. A significant share of this milk is processed into soft cheese and sour cream. The quality of milk procured from households remains quite low [Lytovchenko 2015]. Bacterial contamination and veterinary problems result in farm gate price discounts. Household producers receive only 60-70% of the average price paid for industrially produced milk.

The following main trends were: (1) A decrease in milk production in households (Table 1), (2) An increasing number of farms in production, (3) The optimization of herds, (4) An increase in yield and quality, (5) Reduced processing.

Among agrarian enterprises of all types, including agroholdings, the effectiveness of dairy production continues to grow. During the past five years, yield has risen by 32%; average annual yield per cow constituted 5,228 kg in 2017. Among agroholdings, it has grown most by 7.7% in 2017, compared with 2016, while in others – by 3.3%. Among the households, the average annual yield per cow actually remained at last year’s level [UKRSTAT 2017].

The conflict between Russia and the Ukraine had a negative impact on industry development, as Russia was a major market for Ukrainian milk products. Ukrainian export volumes declined as a result of the Russian embargo. Processors turned to dry milk and butter production in 2014. The trend continued in 2015. Total dairy production declined in 2016, mainly as a result of decreasing raw milk production, declining demand on the domestic market and little export. In the second half of 2015, the embargo had been

Table 1. Ukrainian milk production, processing, trade and prices, 2015-2017

Denomination	2015	2016	2017	2017/2015
	quantity [mln t]			[%]
Production (all producers) including:	10.60	10.40	10.30	97.2
–agricultural enterprises	2.70	2.80	2.76	102.2
–households	7.90	7.70	7.56	95.7
Received for processing, including:	4.25	4.20	4.35	102.4
–households	1.34	1.19	1.24	92.5
–agricultural enterprises	2.74	2.51	2.69	98.2
–other structures	0.17	0.50	0.42	247.1
Export of dairy products (in terms of milk)	0.48	0.45	0.85	177.1
Imports of dairy products (in terms of milk)	0.08	0.10	0.13	162.5
Average sale price of raw milk	[hryvnya* per 1 t]			
–agricultural enterprises	4,347.3	5,461.8	7,234.0	166.4
–households	3,619.9	4,351.4	5,550.2	153.3

\* EUR exchange rate (end of year): 24.986 (2015); 27.224 (2016); 32.15 (2017)

Source: [UKRSTAT 2017]

partly lifted and export production shortly revived. Average sale raw milk prices have promptly grown in the Ukraine during recent years. The increased price is sufficient for profitable large-scale production and has inspired some investment in industrial milk production and processing. Thus, the level of profitability has begun to grow steadily since 2015 and, in two years, profitability has doubled (from 12.6% in 2015 to 26.9% in 2017) [UKRSTAT 2017]. At the same time, milk and dairy production vary essentially region to region (Figure 2).

Ukrainian dairy processors procure household milk due to an insufficient quantity of industrially produced milk. Processors tried to minimize the procurement of raw milk from households, but are not able to switch to industrially produced milk completely. The share of industrially processed milk is increasing. In 2017, it reached 61,8% of total fluid milk purchases, in comparison to 52% in 2014. Despite a big share in total milk production, the household share in industrial processing is much lower and constitutes only 28.5% of all procured milk in 2017 [UKRSTAT 2017]. The majority of this product is procured as second grade milk. Producers are trying to improve milk quality through multiple joint processor-rural community programmes: sanitary education, milk collection centres with modern chilling equipment, subsidies for veterinary and breeding services, loyalty programs, etc. Raw milk quality improvement programmes implemented at dairy processing facilities are expensive and rather inefficient. Raw milk quality control at the village collection point has been difficult to implement. Using raw milk quality improving technologies at the dairy processing facilities is too expensive for broad use. Bacteria, the presence of antibiotics in raw milk, and contamination within somatic cells remain the major problems for Ukrainian processors [Gereles, Galych 2013].

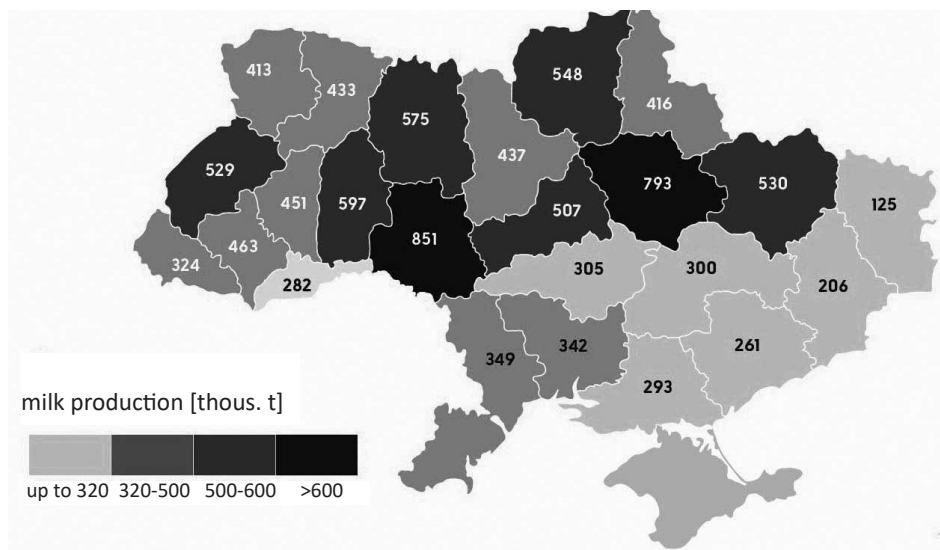


Figure 2. Milk and dairy production in the Ukraine, 2017

Source: [UKRSTAT 2017]

There is a need to describe the current consumption of dairy products. After major political and economic turmoil of 2013-2015, disposable incomes started to recover in 2016-2017. Data show the flat consumption of dairy products in 2015-2017 (209.9 kg per capita in 2015 compared to 200 kg per capita in 2017). Skyrocketing world market prices have attracted a lot of Ukrainian producers to redirect their product abroad. A significant share of low-income consumers was unable to sustain butter consumption levels at the new higher price. Consumption of margarine and vegetable oils is likely to increase to offset the butter consumption drop (almost 4.5%). Consumption of cheese (4.47 kg per capita in 2017, that increased by more than 8% compared to 2015) is recovering despite rather high prices. More affluent Ukrainian consumers recognized the superior quality of imported cheeses. Dairy products remain a staple food in the Ukraine and consumption suffers little during economic turmoil. However, it is also slow to grow during economic recovery. A significant share of dairy products is sold at open-air markets. This includes traditional soft cottage cheese, sour cream, some butter, and liquid milk [UKRSTAT 2017].

Research on the effective development of milk production, the dairy industry in general and existing organizational and economic relations in the agro-industrial sub-complex were made by many Ukrainian and foreign scientists and economists, including: Mykola Butko [2010], Vasyl Tsymbal [2010], Nina Tarasyuk [2012], Mary Augustin et al. [2013], István Szűcs and László Szöllősi [2014] and others. According to these scientists, large integrated farms are the most perspective organizational forms of management due to their ability to combine the production, processing and marketing of agricultural products, use new technologies that are financially unaffordable for other enterprise types, minimize transaction costs, and optimize taxation. However, according to recent features and trends in the dairy industry, some approaches proposed by these authors require deepening and adaptation to the modern realities in the specific context of improving competitiveness in domestic and foreign dairy markets.

The mutual relationship among partners in the dairy product sub-complex covers all the stages of manufacturing the final product, at all levels: management, organization, production, transportation, processing, storage and selling. Agroholdings play an important role in the formation of the agricultural market in the Ukraine. For example, the share of holdings in total exports is higher than that of other agricultural enterprises in total production [Gereles, Galych 2013]. In general, when considering the financial indicators of holdings over the past year, companies have managed to succeed significantly. In 2017, there were 93 agricultural enterprises, processing more than 10 thousand hectares. The largest number of agroholdings in 2017 was in the Kyiv (32), Chernigiv (28) and Poltava (26) regions. It is necessary to mention that, in 2017, there were 93 agroholdings, some of them with an annual production of milk exceeding 5 thousand tons (medium and large independent producers are not taken into consideration). Their share in the overall milk output (only agricultural enterprises) accounted for 18.1%. Besides farms belonging to holdings, there were 30 independent producers with the same scale of production. Their market share slightly exceeded 13%. The trend toward enlargement and concentration has been irreversible throughout recent years [UKRSTAT 2017]. The list of top 10 producers of dairy products are described in Figure 3.



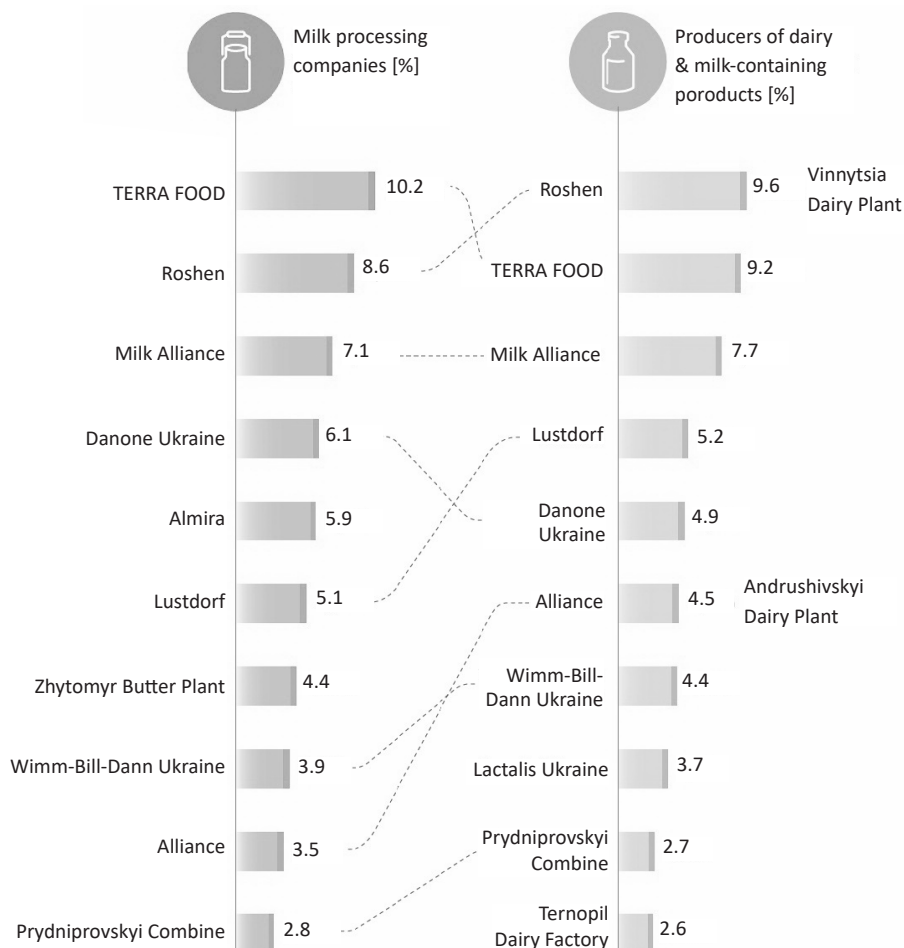


Figure 3. Top 10 dairy companies by market share, 2017 [%]

Source: [UKRSTAT 2017]

Due to changing priorities in exports of dairy products, agroholdings began their reorientation from cheese production towards the production of butter and milk powder, because these products have a long shelf life and, so, in terms of import, are interesting for many countries. However, prices for these products have declined on the world market thus reducing the income of exporters significantly [UKRSTAT 2017].

Since the beginning of 2016, an agreement on the establishment of The Deep and Comprehensive Free Trade Area between the Ukraine and EU (DCFTA) has been in existence. In total, the Ukraine and the EU eliminated 99.1% and 98.1% of import duties, respectively. For the Ukraine, the DCFTA opens the export market for 28 EU member states: more than 500 million consumers with a high demand. As of today, many Ukrainian agricultural companies meet European and global standards and are already exporting to



the EU, including 16 dairy companies [UKRSTAT 2017]. Notably milk production was artificially limited in April 2015 in Europe. The abolition of the milk quota in the EU has led to the opening up of growth opportunities, exports and competition development and, as the main result – an increase in milk production in Europe. The demand, however, remained far behind supply. However, it also offers great opportunities for the Ukraine to compete for the European market and further increase its share.

Today, the main challenge for dairy agroholdings is finding new export markets and developing existing markets. To do this, it is important to develop a systemic state export policy that requires work with each particular country of destination. One of the perspectives for Ukrainian dairy companies is also export-oriented organic milk production, as more and more people pay attention to health and are willing to pay for quality products. The demand for dairy products for baby food is also increasing around the world, especially in China [Tarashevych 2017].

The Ukraine has a significant opportunity to further strengthen its already important role in agribusiness. Its geographic position guarantees low freight costs for exports to neighbouring Western Europe and growing importers such as Middle-Eastern and African countries. The expected rise in demand for dairy products could make this sector more attractive to private investors, especially to foreign agro-food companies currently investing in emerging economies. Therefore, the crisis on international food markets 2010-2012 has attracted the special attention of experts and business circles to the Ukraine, which is one of few countries that have significant potential to increase the production of agricultural output.

## SUMMARY AND CONCLUSION

Today, the dairy industry is considered to be one of the most dynamically developing and promising sectors of Ukrainian agribusiness. Despite the polarity of Ukrainian dairy production, overall dairy sector efficiency is growing which is a major element of international competitiveness. Ukrainian dairy producers should focus on increasing production intensity, re-orientate towards more profitable commodities, expand to foreign markets, integrate small farms, develop agrarian holdings and attract investment on international stock markets. All these future opportunities may strengthen their competitiveness on the EU and global market, as well as maintain and expand their positions on the domestic market. This meets the results of Oleg Nivievskyi and Stephan von Cramon-Taubadel [2008], who underline that “the size of the farm, productivity and labour intensity has a strong positive effect on competitiveness”. The loss of the Russian market was a key problem for the dairy sector, so today, the key challenge is finding new export markets. Domestic demand has shifted towards cheaper products and remains stable. Ukrainian exports now go to two groups of countries: Former Soviet Union countries that predominantly import cheese, butter and whole dairy products, and Asian and African importers of Ukrainian dried milk.

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AKTUALNY STAN I NAJNOWSZE TENDENCJE UKRAIŃSKIEGO SEKTORA  
MLECZARSKIEGO

Słowa kluczowe: sektor mleczarski, Ukraina, produkty mleczne, integracja, agroholding

## ABSTRAKT

Sektor mleczarski na świecie przechodzi obecnie okres turbulencji. Globalny wzrost populacji ludzkiej znacznie zwiększa popyt na produkty mleczne. Badania ukazują ważne miejsce przemysłu mleczarskiego w rolnictwie Ukrainy i w gospodarce narodowej. Celem badań była identyfikacja i przedstawienie najnowszych trendów w ukraińskim przemyśle mleczarskim. Obecnie ukraiński sektor mleczarski boryka się z wieloma wyzwaniami, dlatego poszukuje się różnych możliwości dla ukraińskich producentów mleka w celu wzmocnienia ich konkurencyjności na rynku unijnym i światowym, a także utrzymania i rozszerzenia ich pozycji na rynku krajowym. Przemysł mleczarski jest jedną z głównych gałęzi przemysłu na Ukrainie, a przed kryzysem segment ten wykazywał tendencję do aktywnego rozwoju, ale sytuacja w sektorze mleczarskim stała się bardziej skomplikowana od 2014 roku. Największym problemem dla sektora mleczarskiego była utrata rynku rosyjskiego, który stanowił około 80% eksportu produktów mlecznych. Wzrost wydajności krów mlecznych stał się znaczącym osiągnięciem sektora mleczarskiego. Obecnie głównym wyzwaniem dla przemysłu mleczarskiego jest znalezienie nowych rynków eksportowych i rozwój istniejących rynków.

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