

# INTEGRATED APPROACH IN UKRAINIAN DAIRY INDUSTRY: A CASE STUDY FROM POLTAVA REGION

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**Abstract:** *Integration processes in the field of agriculture, and particularly in dairy industry, have real prospects for improving the efficiency of business entities in this industry due to technological features. Particular attention should be paid to vertically integrated business models that allow hedging of various risk groups and minimizing costs due to the optimal combination of the efforts of enterprises belonging to such associations.*

*The purpose of the article is to study the current state of dairy industry in Poltava Region, Ukraine, and to show one of the conceptual ways to increase its economic efficiency. The paper presents a theoretical hypothesis concerning the necessity of vertically integrated agricultural formation's creation in order to improve the competitiveness of dairy production in the region and having positive effect on sustainable development of dairy industry.*

*The practical significance of the study includes the possibility to use findings and recommendations set out in the paper for introduction of mutually beneficial economic relations between agricultural, dairy and trade enterprises in concluding agreements on joint activities based on a successful example from Poltava Region, and contribute to the stabilization, development and increase of the enterprises' efficiency in Ukrainian dairy industry.*

**Keywords:** *dairy industry, integrated ventures, Ukraine, Poltava Region, agro-industrial group*

**JEL Code:** F15, Q13

## 1. INTRODUCTION

Agriculture has been historically one of the main sectors of the Ukrainian economy. Considered for centuries as a “bread basket of Europe” Ukraine today possesses arable land area which equals to 30% of arable land of the European Union and 2.1% of the global arable land bank (FAO, 2019). But it has always been about quality, not quantity: Ukraine accounts for about 25% of the world most fertile black soil which makes the country unique in terms of agricultural potential. Over the last decade, agricultural sector has moved to the forefront of Ukrainian economy. Over the last 3 years agricultural sector contributed 10-12% of Ukrainian GDP (nominal), being among the three largest industries. Approximately 17% of working population is employed in agriculture (State Statistic Service of Ukraine, 2019).

Ukrainian dairy sector is one of the most important and fast-growing branches of the agrifood sector, standing for 4% of the total national output and being one of the key Ukrainian markets. Dairy farming is one of the main sources of income for the rural population, and of raw milk for processing. Four million small family dairy farms and private rural households

produce more than half its gross agricultural product and 75% of its dairy (State Statistic Service of Ukraine, 2019).

Demand for dairy and fermented milk products is stable and not declining. The average world consumption of dairy products in recent years is 103-106 kg per year per capita (FAO, 2019). In Ukraine, the consumption of dairy products is at the level of developed countries: according to the State Statistics Committee of Ukraine, the average Ukrainian consumes about 240 kg of milk and dairy products per year (State Statistics Committee of Ukraine, 2019).

However, Ukraine milk production shrank to 9.8 million tonnes in 2019, hitting the lowest level since independency, a research conducted by the State Statistical Service showed. Due to this, Ukraine cut export of dairy products by 33%, compared to the previous year, to 541 thousand tonnes. Import jumped by 90% to 335 thousand tonnes. The overall population of dairy cows in Ukraine decreased by 5% to 3.6 million heads, with 2.5 million (State Statistics Committee of Ukraine, 2019).

This paper covers one of the central regions of Ukraine – Poltava Region. Poltava Region is one of the leading and well-developed from the 25 Ukrainian regions, situated at the left bank of river Dnipro. It occupies the territory of 28.8

thousand square km (5% of Ukraine territory) with the length of 213.5 km from North to South and 245 km from East to West. The region has advantageous geographical position, considerable reserves of mineral resources and temperate continental climate. It all creates good prerequisites for the development of the agriculture. Land resources of Poltava Region are formed of 2.8 million hectares among which 1.62 million are the agricultural areas. Among leading fields of food industry there are dairy and meat, oil-mill, fruit and vegetable, sugar, fruit and vegetable, baking, confectionery and food-canning (Gereles, 2014).

The purpose of the article is to characterize the dairy industry of Poltava region and its significance throughout Ukraine with the focus on integration processes. It summarises practical experience of successful integrated dairy venture of the region in order to describe the aspects of creating integrated structures in dairy sector and show its potential.

## 2. MATERIALS AND METHODS

A case study was chosen as a main research methodology that is commonly used in social and business sciences, together with descriptive statistics, time series and financial indicators within industry trend analysis. A case study is a research strategy and an empirical inquiry that investigates a phenomenon within its real-life context. Particularly in Business research a case study is a study in which a case or a small number of cases in their real life context are selected, and scores obtained from these cases are analysed (Dul and Hak, 2008). Descriptive statistics and time series were used to analyse major characteristics and trends of the dairy industry of Ukraine and Poltava Region, and company's financial performance and its position within the industry.

The research region was chosen because Poltava Region ranks as the leading one in terms of milk production in Ukraine – around 6-6.5% of gross production – during last 5 years and an absolute leader of milk production in 2018 and 2019 years. In the structure of milk production in the region, households account for a larger share – 56.9%, while the share of agricultural enterprises increases for the study period by to 43.1%.

Secondary data collection, both historical and up-to-date, is based on official statistics, provided by Food and Agriculture Organization of the United Nations (FAO), Emerging Markets Information System (EMIS), State Statistic Service of Ukraine and Main Statistics Department of Poltava Region. It is data derived from the state statistical observations on activity of enterprises and organizations in the field of agriculture, processing industry, trade as well as other official sources. EMIS database was used to gather industry information, company reports and financial data from dairy industry of Ukraine, specifically Dairy Product (except Frozen) Manufacturing (NAICS1 31151).

Some primary data was collected during few personal interviews with the Head of Directors' Board and the founder,

1 North American Industry Classification System

Sales Department specialists of Bilotserkivka Agroindustrial Group (BIAGR) during business visits to the company.

## 3. RESULTS AND DISCUSSION

Production of milk and dairy products is one of the key directions of the food industry of Ukraine. The development of this sector of industry contributes to the food security of the state, as well as contributes to the development of its export potential. In recent years, there has been a clear division of regions in Ukraine in the specialization of the dairy industry. Therefore, it is advisable to study the dynamic and structural changes in the dairy industry in the regions, in order to identify the problems of dairy industry development in the regions.

Ukraine ranked the 22nd among the largest milk producing countries in the world at the end of 2019, despite a significant reduction in the number of cows and milk production based on the Dairy Report 2020 by IFCN experts. As noted, the IFCN study provides a detailed analysis of 123 countries – the largest milk producers (98% of world production) in 2019. The analysis of the dairy sector covered over 200 countries. The experts compared the profitability and productivity of dairy farms, milk and feed prices in different countries. In particular, the report indicates that in 2019 Ukraine produced 9 million tons of milk in dry matter base, the price of raw milk was 11% lower than the price on the world market, and the country's milk self-sufficiency was 104%. In 2014-2019 milk production decreased by 2.3% per year, the number of dairy farms decreased by 4.3% annually, while the average milk yield grew by 2% annually (IFCN, 2020)

In addition, IFCN experts state that in 2019 the increase in milk production in the world was 1.4%, which is significantly lower than the long-term average (2.3%). The growth came mainly from India, Oceania, Africa and the Middle East. At the same time, the growing popularity of milk alternatives in rich countries and low milk availability in developing countries has slowed the growth in demand for dairy products (IFCN, 2020).

### 3.1. Overview of dairy industry in Poltava Region, Ukraine

In 2019, Poltava Region took the first place in terms of milk production in Ukraine again – 758.5 thousand tons or 7.8% of Ukrainian gross production. In the structure of milk production in the region, households have a larger share – 47.7%, but their share tends to decrease, while the share of agricultural enterprises increased during the study period to 52.3% (Table 1). Increasing milk production by agricultural enterprises allows to increase its quality, as well as the efficiency of production. Moreover, Poltava Region has one of the largest breeding bases in Ukraine.

Despite constant criticisms of the quality of raw milk produced in the backyards of private farmers and constant calls for the urgent need to reform the dairy industry, households have long been the main producers of milk in Poltava Region. Thanks to the work of households, at least

Table 1. Main indicators of dairy industry in Poltava Region, 2011-2019

Indicators	2011	2015	2017	2018	2019
Cows number in all agricultural ventures, thsd. heads – Ukraine	2631.2	2262.7	2108.9	2017.8	1919.4
<i>Poltava Region</i>	<i>137.4</i>	<i>129.2</i>	<i>127.0</i>	<i>121.7</i>	<i>121.0</i>
in enterprises, thsd. heads – Ukraine	589.1	529.2	484.6	466.6	467.8
<i>Poltava Region</i>	<i>66.0</i>	<i>69.4</i>	<i>64.3</i>	<i>60.8</i>	<i>61.0</i>
in private farms, thsd. heads – Ukraine	37.4	41.1	39.9	39.2	42.8
<i>Poltava Region</i>	<i>1.3</i>	<i>2.7</i>	<i>3.1</i>	<i>3.9</i>	<i>4.4</i>
in households, thsd. heads – Ukraine	2042.1	1733.5	1624.3	1551.2	1451.6
<i>Poltava Region</i>	<i>71.4</i>	<i>59.8</i>	<i>62.7</i>	<i>60.9</i>	<i>60.0</i>
Production of milk of all kinds in all agricultural ventures, thsd.t – Ukraine	11248.5	10615.4	10280.5	10064.0	9663.2
<i>Poltava Region</i>	<i>701.4</i>	<i>794.5</i>	<i>792.4</i>	<i>762.1</i>	<i>758.5</i>
in enterprises, thsd.t – Ukraine	2216.6	2669.2	2765.7	2755.5	2728.6
<i>Poltava Region</i>	<i>302.5</i>	<i>424.8</i>	<i>424.6</i>	<i>394.0</i>	<i>397.0</i>
in private farms, thsd.t – Ukraine	112.1	177.4	194.8	201.8	209.2
<i>Poltava Region</i>	<i>5.8</i>	<i>17.0</i>	<i>24.0</i>	<i>25.5</i>	<i>29.0</i>
in households, thsd.t – Ukraine	9031.9	7946.2	7514.8	7308.5	6934.6
<i>Poltava Region</i>	<i>398.9</i>	<i>369.7</i>	<i>367.8</i>	<i>368.1</i>	<i>361.5</i>
Annual average milk yield per cow in all agricultural holdings, kg -- Ukraine	4082	4644	4820	4922	4976
<i>Poltava Region</i>	<i>4826</i>	<i>6016</i>	<i>6113</i>	<i>6120</i>	<i>6133</i>
in enterprises, kg – Ukraine	3975	5352	6025	6190	6101
<i>Poltava Region</i>	<i>4633</i>	<i>6133</i>	<i>6623</i>	<i>6489</i>	<i>6516</i>
in households, kg – Ukraine	4110	4437	4480	4559	4630
<i>Poltava Region</i>	<i>4991</i>	<i>5884</i>	<i>5590</i>	<i>5760</i>	<i>5741</i>

Source: State Statistic Service of Ukraine, 2019; Main Statistics Department of Poltava Region, 2019

for the last 20 years, that the domestic market needs of milk and dairy products production has been met. So far, only in recent years, despite the negative trend of declining production, households have sold to dairy companies more than 50% of total milk production. Prior to that, this share reached 60-65%.

In the early 1990s, rural population kept cows almost exclusively to meet their own needs, as well as partly for the sale of milk and dairy products in farmer's markets. Dairy enterprises did not buy milk from households. Thus, during 1990-1992, processors purchased only 100 thousand tons of milk from households or 0.2% of the total volume of purchases (Keranchuk, 2017). At the same time, against the background of economic and social problems, increasing the number of cows and milk production has become one of the few opportunities for rural households to earn money in the countryside, which has suffered from unemployment. Dairy processing enterprises also implemented certain measures that supported and stimulated the development of dairy production in households. New milk collection points were established in villages, and support was provided to individual intermediaries engaged in independent procurement of raw milk from the population.

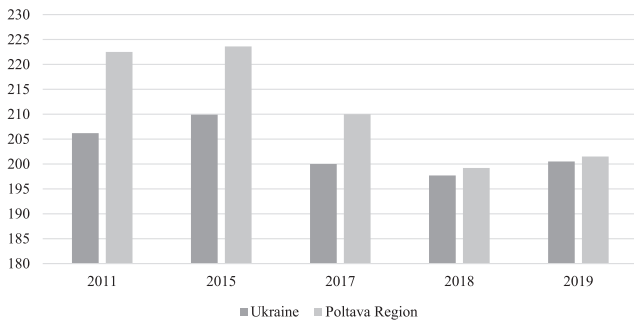
During last decade frugal industrial milk production in the Poltava Region puts dairy processors in a place that they have no choice but to procure milk mainly from households. Many processors found a way to enter into cooperation agreements with individual suppliers or with United Territorial Communities in order to increase quality of the raw milk and decrease its seasonality.

Dairy processors usually offer long-term contracts with more attractive conditions, along with supplying modern refrigeration systems and milk tanks. It is also common to run some educational programs for households, for example on sanitary rules. However, milk from industrial farms continues to be the most desirable by the processors due to consistent quality. It allows production of high-margin dairy products and cheese (Goncharuk and Gamma, 2013).

Yet dairy products are strategically vital products, which induce high demand on the market. During last years, dairy industry is characterized by productivity increase, changes in consumption culture, quality of sales and others. So that, to correspond to the existing market expectation, milk processors in the conditions of raw materials shortage, use milk of bad quality, or turning to falsifications, replacing animal fats by vegetable ones (Gereles, 2014). Doubtless such situation leads to the quality loss of finished products and actually to the fraud of consumers, and, as the result, to consecutive loss of competitive advantages on the market by the producer. In spite of negative tendencies of decrease of cow livestock and milk production, productivity of milk herd increased and for ten years, average annual milk yield from one cow increased by 68.5%. The basic way to increase milk yield is food supply improvement, its quality and structure of food contentment (Fedulova, 2018).

In 2019, the consumption of milk and dairy products in the Poltava Region was 201.5 kg per person per year. The statistics shows that this consumption on average per person was a bit higher than the average for Ukraine – by 4% (Figure 1).

Figure 1. Consumption of milk and dairy products, per capita in year; kg, 2011-2019



Source: State Statistic Service of Ukraine, 2019

### 3.2. Current integration processes in dairy industry of Ukraine and Poltava Region

World practice has proved practicability and efficiency of integrated production, its advantages (Szöllősi, 2008; Szűcs and Szöllősi, 2014), such as: higher level of selection and veterinarian assistance, development of mechanization and automation in feeding and milking processes, better product quality control, more advanced forms of product packaging, improving of storage modes and types of transportation (Goncharuk and Gamma, 2013).

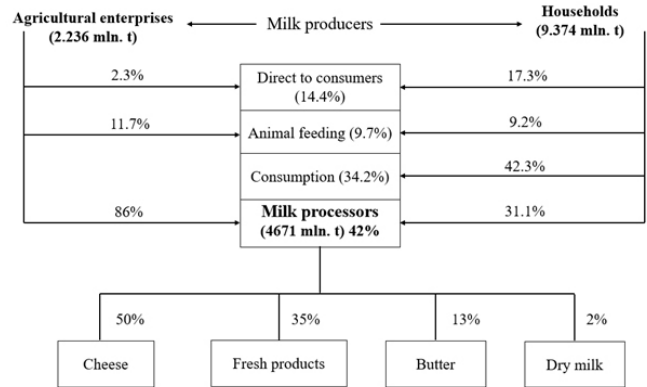
The existing researches (Szöllősi, 2008; Szöllősi, 2009; Goncharuk and Gamma, 2013; Szűcs and Szöllősi, 2014; Keranchuk, 2017; Fedulova, 2018) showed that efficiency of processing enterprises and its economic stability depend on the fixed relations with producers of agricultural production. It will lead to the necessity of improvement of economic mechanisms of regulation of these enterprises' activity (Goncharuk and Gamma, 2013).

Practically, the partnership between agricultural producers and processing enterprises means organic interests' union, focusing on obtaining high final results in their joint activity. In such way both parties are developing cooperation in agricultural production, boosting usage of high-yielding technologies in milk production and processing, deepening specialization, improving technical and technological maintenance of economic structures, optimizing logistics, increasing loading of production facilities at milk processing enterprises along with production volumes of dairy products.

The Ukrainian dairy chain consists of the following key participants: dairy farms, dairy processing enterprises and consumers (retailers, export, and new markets). Based on 2015-2019 years' statistics (State Statistics Committee of

Ukraine), it can be shown as an average on the following scheme (Figure 2).

Figure 2. The dairy chain in Ukraine, average of 2015-2019 years



Source: own compilation based on State Statistic Service of Ukraine, 2019

Agro-industrial integration in the proper sense of the word means a certain organizational combination of agricultural and technologically related industrial production in order to obtain final products from agricultural raw materials and achieve greater economic benefits through mutual material interest and responsibility of all participants in agro-industrial production.

To understand the essence of agro-industrial integration and its specific manifestations, it is advisable to consider the peculiarities of the creation and functioning of certain types of agro-industrial formations. Depending on the integration nature, they can be combined into two groups: economic and intersectoral (Table 2).

Business formations are formed as associations, corporations, concerns and other associations of independent enterprises based on Ukrainian law. Economic agro-industrial formations are represented by agro-trade and agro-industrial enterprises and agro-firms.

An agro-trade enterprise is an economic and production structure in which the production of agricultural products and its sale are integrated mainly in fresh form (mainly fruit and vegetable products, potatoes, grapes, milk). It is formed on the basis of a trade network (or simply sales of products). Sometimes such an enterprise carries out primary processing (completion) of products, and, accordingly, has the necessary production infrastructure (elements of wholesale and retail trade, storage, warehouses, refrigerators). The condition for the operation of such an enterprise is the presence of the

Table 2: Directions of agro-industrial integration in Poltava Region and Ukraine

Direction of agro-industrial integration	The nature of agro-industrial formation	Organizational form of agro-industrial formation	Principles of creation of agro-industrial formation
Interfarm	Economic	Farm Agro-trading enterprise Agro-industrial enterprise/group	Economic condition and management capabilities of an agricultural enterprise
Intersectoral and Territorial	Intersectoral	Association Concern Agroholding	The presence of enterprises in various industries and their willingness to join forces

Source: own compilation



actual buyer and the proximity of the location to the markets (Andriichuk, 2013).

An agricultural firm is a relatively new type of agro-industrial formation of a sectoral nature. Initially, agricultural firms were created on the basis of an economically stable agricultural enterprise with the involvement of other enterprises (Andriichuk, 2013). They not only produced products for sale (fresh or processed), but also provided various production services (elite seeds, transport services, scientific and practical advice, etc.). The obligatory organizational unit of agricultural firms later became the market infrastructure, the marketing department.

An agro-industrial enterprise/group is a production type of agro-industrial integration, which is characterized by the presence in the structure of production of a separate enterprise of the agrarian, processing and trade link of a certain product direction (by the nature of the final product). An agro-industrial enterprise is a unity of agro-industrial production on the basis of industrial methods (Andriichuk, 2013). As a rule, such enterprises should have a well-developed specialized branch of agriculture, modern industrial processing of raw materials and their own wholesale and retail trade. Such enterprises usually produce products that can be stored for a long time and transported over long distances (juices, wines, canned fruits, vegetables and meat).

In our paper we would like to present such successful agro-industrial group, located in Poltava Region, – Bilotserkivka Agroindustrial Group (BIAGR). Bilotserkivka Agroindustrial Group was founded in 1980. Today, it is modern agroindustrial complex of a closed cycle. The company controls quality of products at each stage of manufacturing process. All production facilities are located in Poltava Region.

### **3.3 Integrated dairy company case – Bilotserkivka Agroindustrial Group (BIAGR)**

The specialisation of BIAGR was and is the production of butter and spreads, casein (skimmed milk powder), soft and pasty cheeses, cottage cheese. Company's mission is to provide people with high-quality food products, so everybody can enjoy tasty and healthy food. Company's principles: decency, honesty, responsibility.

The company was founded in 1960 as a production site of Myrhorod cheese factory. Since 1964 it has been a production site of the Reshetyliv Butter Plant. From 1968 to 1975 the plant was on its own balance. From 1975 to 1992 the enterprise was subordinated to the Myrhorod cheese factory. From 1992 to June 2008, the company operated as "Bila Tserkva Dairy Plant". In July 2008, the company was reorganized into a private enterprise "Bila Tserkva Agro-Industrial Group".

Currently BIAGR belongs to Bila Tserkva United Territorial Community (UTC – a.k.a. County). It is one of the first 152 communities in the country, hence Poltava Region. It was formed in 2015 (due to national administrative and territorial reform of Ukraine 2015-2020), uniting 18 villages from Bila Tserkva, Podil, Birkiv and Balakliiv village councils. The company has a strong interest in

adequate rural infrastructures, which provides sufficiently attractive living conditions for employees and their families. Most of the employees are residents of the Bila Tserkva community. BIAGR is a budget-forming enterprise of Bila Tserkva UTC, as 77% of the community budget is formed from taxes on the company's commercial activities.

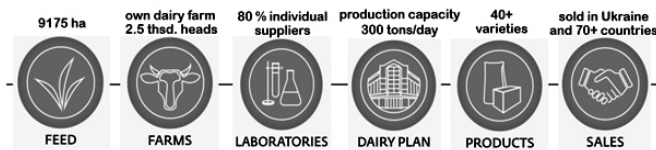
In 2003, founder of the company decided to establish "Bilagro LLC" – own agricultural enterprise engaged in the cultivation of grain, industrial crops and dairy farming. In 2010 a new administrative building was built. The construction of a high-quality European-style dairy farm for 2.5 thousand heads has been completed, that largely solved the problem of providing the company with raw milk. Also, in July 2011 a brand-new department for the soft and pasted cheese production was constructed and the production has begun. Currently, the company employs 577 people. The company's specialists managed to successfully solve the main task – to preserve the production technology traditional butter and create a new quality product with high nutrition properties, while maintaining an average market prices and stable quality. There is a branded store located near the factory, where all dairy products are sold on a daily basis. To ensure the continuous production the company has its own boiler room, heat generator, transformer substations, and compressors.

The product quality and safety management system are based on international standard FSSC 22000. The closed cycle of dairy production (Figure 3) begins with the choice of dairy products suppliers, besides their own dairy farm, which supplies high-quality milk in the amount of 20 tons per day. The company collects milk in surrounding households that sell milk to BIAGR at a single fixed price per litre, regardless of its quantity, and 27 small businesses and family farms with which BIAGR has concluded contracts for the milk supply for a year (classic contracts are used). The contract has 11 sections, which specify the name, quantity, quality, price, terms, total amount of the contract, order and terms of delivery, requirements for packaging, payment's order, obligations of the contractor to assist the producer in organizing the milk production, mutual property liability of the parties for breach of contract on other terms that the parties determine as necessary in the contract. At the same time the company uses its own vehicles to collect and deliver milk from surrounding households.

The company performs a thorough audit of suppliers' farms on the daily diet of cows. There is an optimised cows' diet developed by BIAGR's specialist and distributed to households and farmers. BIAGR's specialists pay particular attention to whether meadow herbs, legumen and cereal crops are included in the daily diet of cows, as well as to the presence of conditions for storing such feed. All milk suppliers are located in Poltava region, where the state of the environment remains relatively stable and is acceptable enough compared with the majority of other regions of Ukraine. Moreover, especially important that farms which supply milk to Bilotserkivka Agroindustrial Group are located near the production facilities; so, every day there is

only fresh milk used for the processing factory. Specialists of company's laboratory perform a monthly audit on all sanitary and hygienic norms there and check if cows are taken good care of. After all, both the quality of milk and the quality of manufactured dairy products depend on their well-being. Before being processed, the milk is triple tested. The production capacity of the company is 300 tons of milk per day. Dairy products of BIAGR are made on the modern European equipment of the leading companies from Germany, Sweden, Switzerland.

Figure 3. Scheme of a closed production cycle in BIAGR



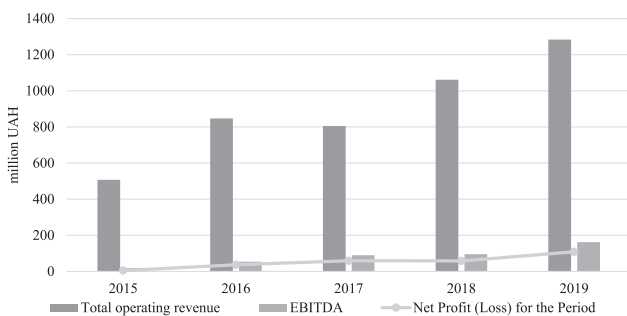
Source: BIAGR's annual reports and marketing materials

So, it meets all the criteria of a European company with highly developed equipment. For example, the high-fat cream separator from the Swedish company Tetra Pak, which was purchased in 2020, is the latest experimental model, so far, the only one in the world. In order for the separator to work, it was not enough to just buy it and deliver it to Ukraine: mechanics had to install new production lines, then test new equipment. For several months, engineers from a Swedish manufacturer worked side by side with the specialists of BIAGR.

BIAGR developed their own educational improvement program, which involves some selection of students, their preparation and adaptation to employment at the company in cooperation with the Poltava State Agrarian Academy. BIAGR's representatives took part in developing updated educational plans and became invited lecturers at some academic courses. Moreover, the company offers internship positions to bachelor and master students of the university in several professional fields on an annual basis.

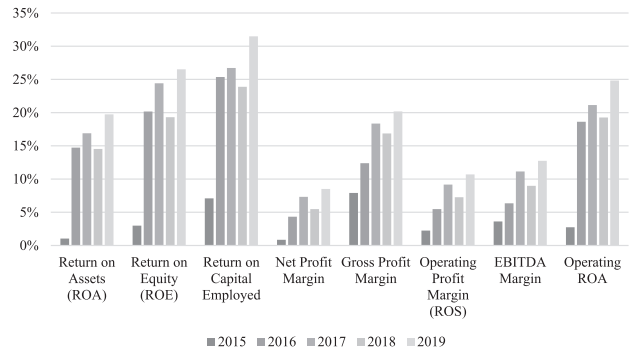
Analysing business activity of BIAGR and its financial situation during 2015-2019, it is shown positive changes (Figure 4-5). Thus, there was a significant increase in EBITDA by 875%, while total operating revenue increased in 2.5 times and net profit reached 108 million UAH (250% of 2015 value).

Figure 4. Financial performance of BIAGR, 2015-2019



Source: EMIS database, Financial statements of BIAGR, 2019

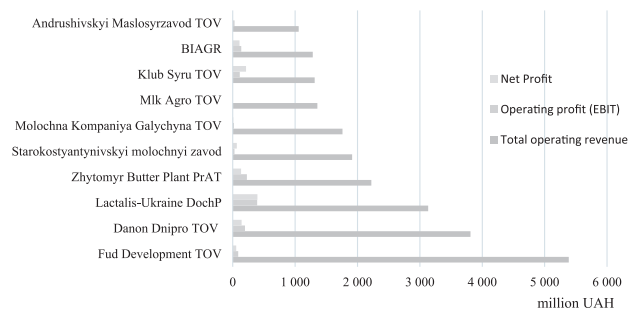
Figure 5. Efficiency indicators of BIAGR, 2015-2019



Source: EMIS database, Financial statements of BIAGR, 2019

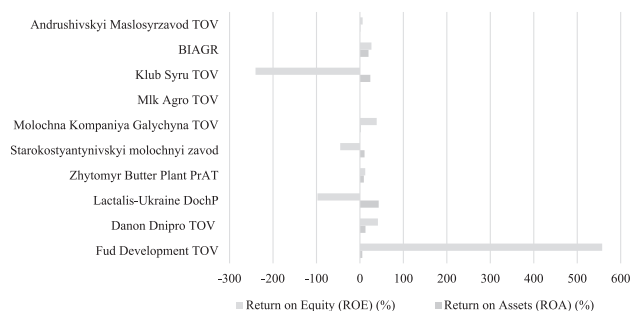
During the studied period of 2015-2019 BIAGR enters ten leading dairy products manufactures within Ukrainian industry of Dairy Product (except Frozen) Manufacturing, which includes 75 companies of different sizes and ownership types. Particularly in 2019 the company occupies the 9th place based on total operating revenue (Figure 6) with 1283 million UAH, compare to the absolute leader in this industry – Food Development LLC. with 5386 million UAH. As it is shown on a Figure 7, BIAGR's profitability (ROA) scores the 3rd place within the mentioned top 10 dairy products manufactures within Ukrainian industry. Overall, the ROE develops differently within those ten companies during the studied period, however, BIAGR has a distinct positive ROE.

Figure 6. Top ten companies within Ukrainian Dairy Product (except Frozen) Manufacturing, 2019



Source: EMIS database, 2019

Figure 7. Profitability of Top ten companies within Ukrainian Dairy Product (except Frozen) Manufacturing, 2019



Source: EMIS database, 2019

BIAGR's products are represented in all national retail networks in Ukraine. Today, the products of the company, produced under the brand "BILOTSEKIVSKE", are in demand in both domestic and international markets. 80% of the products are sold in Ukraine, the rest is exported to more than 70 countries. Brand "BILOTSEKIVSKE" is especially popular in the Middle East and China.

Despite its strong position on Ukrainian market, management of the company BIAGR seeks to expand the sales geography. Recently it has received a 7 million EUR grant from the European Bank for Reconstruction and Development (EBRD) to modernize production to the EU standards. This will help with obtaining a permit to sell products in the European Union, first of all to the Baltic countries. In addition, such modernization involves an increase in job positions and positively influencing employment rate of Bila Tserkva UTC.

In 2020 the company is among the top three in the production of cottage cheese in Ukraine. However, to remain a leader, company's management tries the employees to get new skills and experience. In 2019, the delegation of BIAGR studied the experience of European partners in the production of cottage, its packaging, as well as processing of sour whey into dry mineralized one. In Ukraine, whey is considered almost a production waste, nowadays the company uses it to fatten cows and pigs. But in Europe it is a very valuable ingredient for making baby food. At the same time, the requirements for such products are very high and it is quite difficult production. Recently, membrane technologies have been successfully used, in particular electro dialysis, during which minerals are separated from the serum itself and nanofiltration for concentration. Company's technologists are exploring them. Hence, the plan of BIAGR to expand the product range in the future.

Due to BIAGR's top management opinion, the reputation plays an important role in business, especially if this business is directly related to the products that people buy every day. Consumers will soon stop buying low-quality goods. So, the slogan: "Honesty, decency, responsibility", which the company proclaimed, forces the whole team to constantly adhere to high standards.

#### 4. CONCLUSIONS

As a result of the study, we identified the following main features of the dairy industry of Poltava region, Ukraine:

- During last years, Ukrainian dairy industry and as a consequences Poltava Region are characterized by productivity increase, changes in consumption culture, quality of sales and others.

- Lack of high-quality raw milk; milk producers are mainly represented by households, small and medium farms who are unable to produce raw milk in sufficient quantity and appropriate level of quality, which adversely effects on the competitiveness of domestic dairy products.

- During last decade frugal industrial milk production in the Poltava Region puts dairy processors in a place that they have no choice but to procure milk mainly from households.

Many processors found a way to enter into cooperation agreements with individual suppliers or with United Territorial Communities in order to increase quality of the raw milk and decrease its seasonality. Dairy processors usually offer long-term contracts with more attractive conditions, along with supplying modern refrigeration systems and milk tanks. It is also common to run some educational programs for households, for example on sanitary rules.

- However, milk from industrial farms continues to be the most desirable by the processors due to consistent quality. It allows production of high-margin dairy products and cheese.

Using successful example of vertical integration in dairy industry, such as a represented case study from Poltava Region – BIAGR – can be used to solve those problems. During the studied period of 2015-2019 BIAGR enters ten leading dairy products manufactures within Ukrainian industry of Dairy Product (except Frozen) Manufacturing, which includes 75 companies of different sizes and ownership types. BIAGR as an agro-industrial group functions in a form of integrated venture, which organizational form implies the integrating relationship of agriculture milk producers, dairy companies and resellers.

Thus, a vertical integration will allow overcoming of hostility of interests between agricultural and processing enterprises on mutually favourable conditions, and that the determined priorities should be presented to the agricultural producers through its leading role in the cycle of food production.

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