

**REGIONAL ASPECTS OF DAIRY DEVELOPMENT  
INDUSTRY IN THE REPUBLIC OF KAZAKHSTAN**

**РЕГИОНАЛЬНЫЕ АСПЕКТЫ РАЗВИТИЯ МОЛОЧНОЙ  
ПРОМЫШЛЕННОСТИ В РЕСПУБЛИКЕ КАЗАХСТАН**

**ҚАЗАҚСТАН РЕСПУБЛИКАСЫНДАҒЫ СҮТ ӨНЕРКӘСІБІН ДАМУДЫҢ  
АЙМАҚТЫҚ АСПЕКТІЛЕРІ**

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**Abstract.** The current situation and dynamics of dairy industry development in the Republic of Kazakhstan have been presented. Production indicators in regions and cities of the country have been explored. The regional milk production characteristics, main types of products have been outlined. The positive and negative fluctuations in production volumes are reflected in percentage. The regions which are the leaders in production of dairy products, as well as the regions that have the largest deviations in the volume of production in recent years have been identified. The characteristic features of the leading regions have been revealed. The maximum, average and minimum prices for certain types of dairy products in the country have been shown, as well as differences between cities in terms of price level, factors that affect the situation with prices have been indicated. The information on the role of various categories of producers in the development of dairy industry is presented. The weaknesses of this industry and measures on their elimination, as well as information on specific documents aimed at the development of the country's dairy industry, and some target indicators for the future have been presented. Some problems affecting the sustainable development of dairy industry and ways to address them have been considered.

**Аннотация.** Показаны текущая ситуация и динамика развития молочной отрасли в Республике Казахстан. Рассматриваются производственные показатели по областям и городам страны. Отмечаются особенности молокопроизводства в регионах, основные виды выпускаемых продуктов. Отражены в процентном выражении колебания объемов производства в положительную и отрицательную стороны. Выделены регионы - лидеры по выпуску молочной продукции, а также регионы, имеющие наибольшие отклонения по объемам производства за последние годы. Выявлены характерные черты, присущие для регионов-лидеров. Показаны максимальные, средние и минимальные цены по стране на отдельные виды молочной продукции, а также различия между городами по уровню цен, указаны факторы, влияющие на ситуацию с ценами. Представлена информация о роли различных категорий производителей в обеспечении развития молочной отрасли. Представлены слабые стороны данной отрасли и разработанные меры для их устранения, а также информация об отдельных документах, направленных на развитие молочной отрасли страны, некоторые целевые показатели на перспективу. Затрагиваются отдельные проблемы, препятствующие устойчивому развитию молочной промышленности и пути их решения.



## Рынок продовольственной продукции

volume of production. For example, in the East Kazakhstan region in 2016 the number of cattle was 1,044.9 thousand heads and here 836.4 thousand tons of cow's milk were produced. At

the same time in the Almaty region 692.7 thousand tons of this type of milk were produced, while the number of cattle here was higher – 1,097.6 thousand heads.

Table 1 – Volumes of milk production in the regions of the Republic of Kazakhstan in 2016

Region (city)	Milk of all kinds	Cow's milk	Share of cow's milk, %
Akmola	378,564.0	376,978.7	99.6
Aktobe	307,116.8	305,282.7	99.4
Almaty	696,859.7	692,715.9	99.4
Atyrau	61,265.9	59,518.3	97.1
West Kazakhstan	227,627.8	227,281.0	99.8
Zhambyl	297 617,3	295,123.2	99.2
Karagandy	436,194.6	430,129.1	98.6
Kostanay	380,250.3	378,750.5	99.6
Kyzylorda	88,638.1	83,680.9	94.4
Mangystau	10,881.7	5,233.7	48.1
South Kazakhstan	721,694.4	714,157.9	99.0
Pavlodar	364,398.9	363,492.9	99.8
North Kazakhstan	525,625.3	525,600.5	100.0
East Kazakhstan	839,266.3	836,443.6	99.7
Astana city	534.5	513.8	96.1
Almaty city	5,111.5	5 111.5	100.0
<i>Source: CS MNE RK</i>			

Over the last three years a significant change in the volume of cow's milk produced has occurred in a number of regions. During this period, both positive and negative dynamics of production indicators are observed. Thus, according to the data of CS MNE RK, the biggest changes (2016 to 2014) have occurred in the following regions: growth of production in Akmola

– 107.7%, Karagandy – 112.2%, Man-gystau – 121.8%, North Kazakhstan – 111.1%, East Kazakhstan – 107.8%; decline in production in Astana city – 30.9%, Almaty city – 44.6%.

The largest increase in the production of cow's milk occurred in the Mangystau region. However, against the background of other areas, the production volumes of this region are insignificant, which does not allow to speak about the significant contribution of the region to the increase of the production of cow's milk in the whole country. In absolute terms, the most significant increase in the production indicator occurred in the East Kazakhstan region – more than 60 thousand tons in the last triennium. Then follow the North Kazakhstan and Karagandy regions, where they began to produce 52.3 and 46.7 thousand tons more cow's milk respectively. At the same time, in the cities of Astana and Almaty, the production of this milk has significantly decreased.

It should also be noted that the main producers of cow's milk in the regions are the households. The contribution of the households to the total production of cow's milk varies by region. The greatest contribution of them was

registered in the city of Almaty – 98% of the gross output of milk. At the same time, a significant share of milk production in the Karagandy region is provided by peasant or farmer households – 43%, and in the Akmola region a large share (in comparison with other regions) of this production is provided by agricultural enterprises – 18%.

Meanwhile, attention is drawn to the fact that in regions with the largest increase of milk production a high share of the output of this product (in comparison with other regions) is provided by organized farms or entities (agricultural enterprises and peasant or farm households). Thus, in each of these regions the share of such entities in 2016 accounted for more than 20% of the total milk production. In addition, in these regions there is a positive dynamics of the share of production of organized farms (entities) in the total milk production. Thus, according to the data of CS MNE RK, for 2014-2016 this share increased in Akmola region – from 12.9% to 22.3%, in Karagandy region – from 37.1% to 43.9%, in Mangystau region – from 28.2% to 33.6%, in North Kazakhstan region – from 17.7% to 26.3%, in East Kazakhstan region – from 27.7% to 32.9%.

The growth in the total volume of milk production in these regions was mainly provided by agricultural enterprises and peasant or farm households. It should be noted, that in 2014-2016 in the Akmola region there was a decrease in the volume of milk production by households by 3.9%, and in the North Kazakhstan region – by 0.6%. At the same time, due to the increase

## Рынок продовольственной продукции

in the output of milk by the organized farms (entities) by 86.5% and by 65.4%, respectively, in these areas, an increase in the total volume of milk production was achieved. In Karagandy and East Kazakhstan regions, the growth in output of households in the period was only 0.1%, while the increase in production of organized farms (entities) here was 32.7% and 27.9% respectively. Only in the Mangystau region there was an increase in milk production both by households (by 12.7%) and by organized farms or entities (by 45.1%). This circumstance testifies to the important role of organized farms (entities) in ensuring the development of the dairy industry. It should be noted, that good target programs have been developed in Kazakhstan, but without cooperation, using only budgetary funds, they can't be realized [3].

In addition, as shown above, in the East Kazakhstan region in 2016, significantly more milk was produced than in the Almaty region, despite the fact that the number of cattle in the latter region is higher than in the first. It should be noted, that the specific weight of milk production by organized farms (entities) in Almaty region is only 16.3% of the total production volume or two times smaller than in the East Kazakhstan region. This circumstance may also indicate a higher production efficiency in organized farms (entities).

In the regions and cities of the republic various dairy products are produced. In terms of output there are also significant differences between regions, as can be seen from the Table 2.

Table 2 – Volumes of production of basic dairy products for 2016 by regions

Region (city) / Product	tons							
	Milk processed liquid and cream	Skimmed milk powder	Butter and dairy spreads (pastes)	Cheese and cottage cheese	Yogurt, milk and cream (fermented or acidified others)	Koumiss	Shubat	Kurt
Akmola	76,061	-	686	896	5,064	63	12	-
Aktobe	22,404	-	29	143	14,467	72	-	-
Almaty	83,583	-	1,353	6,613	22,782	178	876	-
Atyrau	436	-	-	27	185	-	33	-
West Kazakhstan	2,460	-	225	279	721	-	-	-
Zhambyl	11,259	525	1,381	1,245	1,969	-	-	-
Karagandy	13,354	-	236	1,405	21,222	3	-	16
Kostanay	69,647	429	3,738	1,890	18,485	7	-	12
Kyzylorda	8,409	-	91	103	672	-	17	16
Mangystau	284	-	-	419	10,954	-	720	-
South Kazakhstan	21,541	-	152	1,063	26,153	-	278	11
Pavlodar	16,682	2,588	1,067	1,549	31,732	203	-	-
North Kazakhstan	108,027	1,217	1,925	1,332	21,969	36	-	-
East Kazakhstan	20,372	-	1,164	4,332	10,591	26	-	2
Astana city	-	-	-	691	-	-	-	-
Almaty city	45,190	-	4,544	2,705	4,615	67	47	9

*Source: CS MNE RK*

Table 2 shows that in some regions some products are not produced or produced in a small (unregistered) volume. At the same time, some regions are a kind of “flagship” for the production of certain types of dairy products.

Thus, the output of milk processed liquid and cream is mainly provided by the North Kazakhstan, Almaty, Akmola, Kostanay regions and the city of Almaty. In total, these regions produce about 77% of these products.

From the statistical data it follows that skimmed milk powder is produced only in four regions of the country, at the same time, in the largest volume in the Pavlodar region.

The city of Almaty and Kostanay region are leading in the production of butter and dairy spreads (pastes), which are in a significant

distance from other regions and provide half of the output of these products.

Cheese and cottage cheese are most actively produced in Almaty and East Kazakhstan regions, as well as in Almaty city. In 2016 the contribution of these regions to the output of these dairy products was about 55%. Pavlodar, South Kazakhstan, Almaty, North Kazakhstan and Karagandy regions are the main producers of yogurt, milk and cream (fermented or acidified others). These regions produced about 65% of the total output of these products. At the same time, national dairy products (koumiss, shubat, kurt) are most widely produced in Pavlodar, Almaty, Mangystau, Karagandy and Kyzylorda regions (more or about half of the total volume).

## Рынок продовольственной продукции

It should be noted, that the production volume of these dairy products in these regions-leaders has as a stable increase, as well as fluctuations (in the positive and negative direction) of production indicators.

In particular, for the production of milk processed liquid and cream, steady growth is observed in Almaty city, where production growth in 2015-2016 (compared to the previous year) was 11% and 27% respectively. At the same time, in Kostanay region in 2015 there was a sharp decline in output – by 30%, and in 2016 the increase was 31%. However, last year's output in this area was lower than in 2014. In other regions, the changes in indicators were less frequent.

In terms of production of skimmed milk powder the largest increase in volume occurred in the Pavlodar region – 2.4 times. At the same time, in the Kostanay region a negative trend is observed – more than 20%.

Production volumes of butter and dairy spreads (pastes) are growing steadily in the Kostanay region, where for the years 2015-2016, by 78% and 8% more respectively of these products were produced. However, the city of Almaty has a significant decline: in 2015 only 80% of the volume of the previous year was produced here and in 2016 – 84%.

Stable growth in cheese and cottage cheese production is demonstrated by the East Kazakhstan region, where the growth of 2015 (to the previous year) was 23%, and in 2016 – 27%. During the same period, the annual decline in output in the city of Almaty was 16%.

The production of yogurt, milk and cream (fermented or acidified others) in the North Kazakhstan region is growing at a high rate. The annual growth in output in this region in 2015

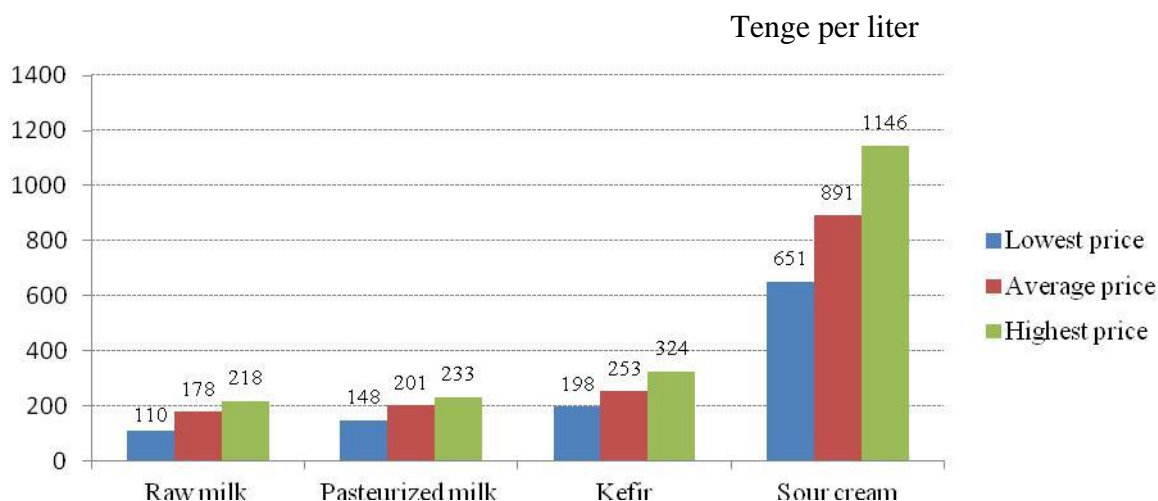
was 68%, and in 2016 – 84%. The most significant fluctuation of the indicator is observed in the South Kazakhstan region: in 2015 the annual growth was 35%, however, by the end of 2016, 94% of the volume of the previous year was produced here.

Statistical indicators of koumiss production in 2015 significantly decreased. In Pavlodar and Almaty regions in this year the registered volumes of production were only 35% and 26%, respectively, of the volume of 2014. At the same time, in these areas, by the end of 2016, annual growth was 6% and 28% respectively.

There are sharp fluctuations in the production of shubat. Thus, in Almaty region in 2015, in comparison with the previous year, 60% more of this product was produced, and in 2016 – by 30% less. In Mangystau region, according to statistical data, in 2015 the output of shubat increased 3.6 times, and in 2016 the production indicator remained almost at the same level as in 2015.

The production of kurt in Karagandy and Kyzylorda regions in 2016, in comparison with the previous year, increased by 1.6 and 2.7 times respectively.

Regions of the country are significantly different from each other in terms of the level of prices for milk and dairy products. The main markets on which these products are sold are concentrated in the regional centers and major cities of the republic. Depending on the situation on the local market, prices in the regions vary in a fairly wide range. The Figure 1 shows the minimum and maximum prices for milk, kefir and sour cream registered in the indicated centers and cities, as well as the average prices for these products in the country.



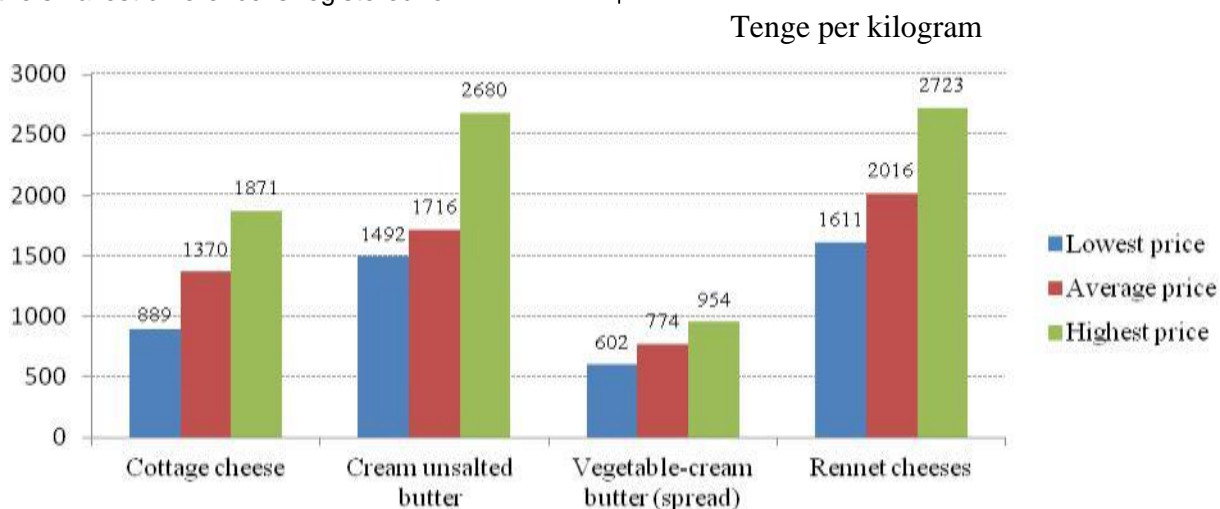
Source: CS MNE RK

Figure 1 – The lowest and the highest prices, registered in the regions, as well as average prices in the republic for milk, kefir and sour cream as of December 20, 2016

## Рынок продовольственной продукции

In accordance with the data shown in Figure 1, the largest difference between prices (in relative terms) is observed for raw milk – the maximum price for this product is almost 2 times higher than the minimum price. At the same time, the smallest difference is registered for

pasteurized milk – the highest price is 1.6 times higher than the lowest price. For more expensive dairy products (cottage cheese, butter, cheeses), there is also a significant difference between prices in the regions, as shown in Figure 2.



Source: CS MNE RK

Figure 2 – The lowest and the highest prices, registered in the regions, as well as average prices in the republic for some dairy products as of December 20, 2016

Figure 2 shows that the greatest difference between prices (in relative terms) is characteristic of cottage cheese. For this product, the maximum price is 2.1 times higher than the minimum price. At the same time, in a narrower range vary prices for vegetable-cream butter (spread) – the highest price is 1.6 times higher than the lowest price.

Thus, some cities are distinguished by the high price of dairy products, while for others, their cheapness is inherent. The Table 3 shows the cities in which the highest and the lowest prices for these products were registered.

From Table 3 it can be seen that the highest prices for dairy products have been formed mainly in the largest cities of the republic (Almaty and Astana), as well as in the centers of the regions with relatively low milk production volumes. However, attention is drawn to the fact that in the cities of Ust-Kamenogorsk and Semey, belonging to the East Kazakhstan region, high prices for kefir, sour cream and butter were also fixed. At the same time, this region is the leader in milk production. This fact indicates a low level of development of milk processing in this area, which causes an insufficient supply of dairy products in the region and leads to an increase in prices for dairy products. It should be noted, that for the production of certain types of dairy products the East Kazakhstan region is much inferior to the Almaty region. Thus, in 2016 in these regions

volumes of produced milk processed liquid and cream were about 20.4 and 83.6 thousand tons, and of produced yogurt, milk and cream (fermented or acidified others) were about 10.6 and 22.8 thousand tons respectively. Thus, between these regions there is more than a twofold difference in the volumes of production of these dairy products. The region-leader in milk production is also inferior to Almaty region in the output of other types of dairy products. In this regard, special attention should be paid to the development of processing in the East Kazakhstan region. In addition, in the city of Zhezkazgan, which belongs to the Karagandy region, high prices for dairy products were also registered, despite the fact that the region is one of the leaders in milk production. At the same time, this region produces considerable (in comparison with other regions) volumes of various types of dairy products. This fact testifies to the insufficient level of development of the trade and logistics infrastructure within the region, which is also a problem in need of solution.

It should be noted, that the development of the country's dairy industry is given special attention by the state. For example, in the Master-plan for the development of the processing industry in the Republic of Kazakhstan until 2020, milk processing (production of butter, cheese, milk powder) is one of the priority areas for the development of this industry. In addition, in accordance with this

## Рынок продовольственной продукции

document, until 2020, it is planned to create 212 milk reception stations, which will increase the collection of milk. The creation of these points is

planned in the East Kazakhstan, Almaty, South Kazakhstan, North Kazakhstan, Kostanay and Akmola regions [4].

Table 3 – Cities with the highest and the lowest prices for milk and dairy products as of December 20, 2016

Product	Cities with the lowest prices	Prices	tenge per liter (kilogram)	
			Cities with the highest prices	Prices
Raw milk	Kokshetau	110	Almaty	218
	Pavlodar	117	Aktobe	200
	Kostanay	130	Zhezkazgan	185
Pasteurized milk	Taldykorgan	148	Zhezkazgan	233
	Petropavlovsk	172	Almaty	229
	Pavlodar	175	Astana	222
Kefir	Taldykorgan	198	Astana	324
	Petropavlovsk	202	Almaty	294
	Karagandy	210	Ust-Kamenogorsk	286
Sour cream	Petropavlovsk	651	Ust-Kamenogorsk	1,146
	Taldykorgan	687	Almaty	1,072
	Aktau	703	Semey	1,026
Cottage cheese	Petropavlovsk	889	Atyrau	1,871
	Taldykorgan	984	Almaty	1,825
	Semey	1,068	Astana	1,730
Cream unsalted butter	Pavlodar	1,492	Aktau	2,680
	Petropavlovsk	1,500	Atyrau	2,128
	Zhezkazgan	1,509	Ust-Kamenogorsk	2,073
Vegetable-cream butter (spread)	Taraz	602	Ust-Kamenogorsk	954
	Shymkent	627	Astana	939
	Almaty	673	Taldykorgan	936
Rennet cheeses	Semey	1,611	Astana	2,723
	Shymkent	1,719	Zhezkazgan	2,309
	Petropavlovsk	1,773	Almaty	2,259

*Source: CS MNE RK*

Also according to the Master-plan for the Development of the Dairy Cattle Sector in the Republic of Kazakhstan until 2020, it is planned to create new dairy farms (hereinafter – MGF) with a capacity of 600 heads: in 2018-2019 – 3,600 units per year, and in 2020 – 2,400 units. At the same time, the entry of these facilities is planned in Akmola, East Kazakhstan, Zhambyl, Kostanay, Pavlodar and North Kazakhstan regions. Along with this, for the period 2018-2020 an annual commissioning of 400 mini MGF units (capacity of 24-200 heads) is planned in most regions of the republic [5]. In general, the measures taken by the state should contribute to the growth of the industry's performance in the coming years.

Thus, the regions of the country differ significantly in terms of potential and indicators of dairy industry development, including due to differences in their natural-climatic and socio-economic characteristics. At the same time, significant changes in the production of dairy products are observed in the positive and negative directions. In addition, there are significant differences between regions in terms of

the level of prices for dairy products. In this regard, continuous monitoring and analysis of regional indicators play an important role, because through them it is possible to make the most effective management decisions on the development of dairy industry and ensure the availability of dairy products to the population of the country. It should be noted, that, along with market conditions, the measures taken by the state make a significant impact on the development of dairy industry, like any other sector.

Taking into account the information outlined in the article, today the solution of the problem of small-scale production has a special relevance. In some of regions, the increase in milk production in recent years has been provided mainly by agricultural enterprises and peasant or farm households. In this regard, local executive bodies need to pay considerable attention to stimulating the development of organized farms (entities), taking into account regional characteristics. It should be noted that in the Republic of Kazakhstan in 2015 the Law "On Agricultural Cooperatives" was adopted, and also certain instruments aimed at the

development of cooperation in the countryside are being introduced at the republican level. However, local measures taken by regional bodies could contribute to the intensification of the processes of enlargement of production.

In addition, important for the country is the solution of problems of low level of development of processing, as well as of trade and logistics infrastructure in certain regions. The state is currently taking certain measures in this direction. However, the current programs and plans of the all-republican character in insufficient, in our opinion, degree detail the measures that should be taken at the regional level.

Thus, in addition to the current measures, the development and implementation of sectoral planning documents by local executive bodies can help in solving the current problems of dairy industry development. It should be noted that the Master-plans mentioned in the article were designed in 2013 and reflect to a greater extent the all-republican activities. Constant monitoring and analysis of regional production indicators, as well as on their basis annual updating of sectoral planning documents (regional Master-plans) can contribute to accelerating the development of the dairy industry as a whole throughout the country.

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