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AGRICULTURAL SECTOR OF AKMOLA REGION OF THE REPUBLIC OF KAZAKHSTAN: METHODOLOGICAL APPROACH TO ASSESSMENT AND ANALYSIS

ҚАЗАҚСТАН РЕСПУБЛИКАСЫ АҚМОЛА ОБЛЫСЫНЫҢ АГРАРЛЫҚ СЕКТОРЫ: БАҒАЛАУ МЕН ТАЛДАУҒА ӘДІСНАМАЛЫҚ ТӘСІЛ

АГРАРНЫЙ СЕКТОР АКМОЛИНСКОЙ ОБЛАСТИ РЕСПУБЛИКИ КАЗАХСТАН: МЕТОДОЛОГИЧЕСКИЙ ПОДХОД К ОЦЕНКЕ И АНАЛИЗУ

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Abstract. *The goal* is to substantiate the current state of agro-industrial complex of the Akmola region, identify the main trends, and determine promising directions for its development. *Methods* – economic-statistical, analytical. *Results* show the share of gross regional product (GRP) in the gross domestic product of the republic, the dynamics of gross production (GP) of agriculture in the region, the gross harvest and yield of main agricultural crops, the number of livestock and poultry in all categories of farms, including cattle, sheep and goats, pigs, horses and poultry, volumes of meat and milk processing. A comprehensive study made it possible to identify the problems hindering the development of agro-industrial production in the region, these are, first of all, the small-scale production of economic entities, the majority of farmers and personal subsidiary farms in the total volume of gross agricultural output, the low level of processing of raw materials – their low quality, the insufficient level of utilization of processing facilities enterprises. *Conclusions* – measures have been proposed to modernize the region's agro-industrial complex, aimed at the widespread dissemination of agricultural cooperation; development of meat and dairy subcomplexes, processing industry, provision of the population with food products of own production, improvement of state and market regulation of agricultural sectors. The agro-industrial complex also plays a significant social role, solving issues of food supply for the entire country and a certain territory. In addition, it is a guarantor of employment and the main source of income for

residents. The effectiveness of its activities contributes to an increase in the number of jobs, an increase in cultivated areas, an increase in the financial stability of manufacturing enterprises, an increase in the volume of product exports and the creation of an export-oriented commodity distribution infrastructure.

Аңдатпа. *Мақсаты* – Ақмола облысының агроөнеркәсіптік кешенінің қазіргі жай-күйін негіздеу, негізгі үрдістерді анықтау, оны дамытудың перспективалық бағыттарын айқындау. *Әдістері* – экономикалық-статистикалық, аналитикалық. *Нәтижелері* – республиканың жалпы ішкі өніміндегі жалпы өңірлік өнімнің (ЖӨӨ) үлесі, өңірдің ауыл шаруашылығының жалпы өнімінің (ЖӨ) динамикасы, негізгі ауыл шаруашылығы дақылдарының жалпы жиналуы мен өнімділігі, шаруашылықтардың барлық санаттарындағы мал мен құс саны, оның ішінде ірі қара мал, қой мен ешкі, шошқа, жылқы және құс, ет пен сүтті өндеу көлемі. Кешенді зерттеу облыстың агроөнеркәсіптік өндірісінің дамуын тежейтін проблемаларды анықтауға мүмкіндік берді, бұл, ең алдымен, шаруашылық жүргізуші субъектілердің ұсақ тауарлылығы, жалпы ауыл шаруашылығы өнімінің жалпы көлеміндегі фермерлер мен жеке қосалқы шаруашылықтардың көп бөлігі, шикізатты қайта өңдеудің төмен деңгейі-оның сапасының төмендігі, қайта өңдеуші кәсіпорындардың өндірістік қуаттарының жүктемесінің жеткіліксіз деңгейі. *Қорытындылар* – ауыл шаруашылығы кооперациясын кеңінен таратуға бағдарланған өңірдің АӨК жаңғырту шаралары; ет және сүт кіші кешендерін, қайта өңдеу өнеркәсібін дамыту, халықты өз өндірісінің азық-түлік өнімдерімен қамтамасыз ету, аграрлық сектор салаларын мемлекеттік және нарықтық реттеуді жетілдіру ұсынылды. Агроөнеркәсіптік кешен де маңызды әлеуметтік рөл атқарады, бүкіл ел мен белгілі бір аумақты азық-түлікпен қамтамасыз ету мәселелерін шешеді. Сонымен қатар, халықты жұмыспен қамтудың кепілі және тұрғындардың негізгі табыс көзі болып табылады. Оның қызметінің тиімділігі жұмыс орындарының санын арттыруға, егіс алқаптарын ұлғайтуға, өндіруші кәсіпорындардың қаржылық тұрақтылығын арттыруға, өнім экспортының көлемін ұлғайтуға және экспортқа бағдарланған тауар өткізгіш инфрақұрылымды құруға ықпал етеді.

Аннотация. *Цель* – обоснование современного состояния агропромышленного комплекса Акмолинской области, выявление основных тенденций, определение перспективных направлений его развития. *Методы* – экономико-статистический, аналитический. *Результаты* – показаны доля валового регионального продукта (ВРП) в валовом внутреннем продукте республики, динамика валовой продукции (ВП) сельского хозяйства региона, валовый сбор и урожайность основных сельскохозяйственных культур, численность скота и птицы во всех категориях хозяйств, в том числе крупный рогатый скот, овцы и козы, свиньи, лошади и птицы, объемы переработки мяса и молока. Комплексное исследование позволило обозначить проблемы, сдерживающие развитие агропромышленного производства области, это, прежде всего, мелкотоварность хозяйствующих субъектов, большая часть фермеров и личных подсобных хозяйств в общем объеме валовой сельскохозяйственной продукции, низкий уровень переработки сырья – низкое его качество, недостаточный уровень загруженности производственных мощностей перерабатывающих предприятий. *Выводы* – предложены меры модернизации АПК региона, ориентированные на широкое распространение сельскохозяйственной кооперации; развитие мясного и молочного подкомплексов, перерабатывающей промышленности, обеспечение населения продуктами питания собственного производства, совершенствование государственного и рыночного регулирования отраслей аграрного сектора. Агропромышленный комплекс играет также значимую социальную роль, решает вопросы продовольственного обеспечения всей страны и определенной территории. Кроме того, является гарантом занятости населения и основным источником доходов жителей. Эффективность его деятельности способствует повышению числа рабочих мест, увеличению посевных площадей, росту финансовой устойчивости предприятий-производителей, наращиванию объемов экспорта продукции и созданию экспортно ориентированной товаропроводящей инфраструктуры.

Key words: agro-industrial complex, Akmola region, gross regional product, production, processing of agricultural products, food belt, food security, cooperation, government support.

Түйінді сөздер: агроөнеркәсіптік кешен, Ақмола облысы, жалпы өңірлік өнім, ауыл шаруашылығы өнімдерін өндіру, қайта өңдеу, азық-түлік белдеуі, азық-түлік қауіпсіздігі, кооперация, мемлекеттік қолдау.

Ключевые слова: агропромышленный комплекс, Акмолинская область, валовой региональный продукт, производство, переработка сельхозпродукции, продовольственный пояс, продовольственная безопасность, кооперация, государственная поддержка.

Introduction. The Akmola region is the largest agro-industrial complex in Kazakhstan and makes a significant contribution to the food security of the country.

As a whole, the region's contribution to the country's economy is about 3% (the share of gross regional product (GRP) of the region in the gross domestic product of the republic in 2017 – 2.86%, 2018 – 2.75%, 2019 – 2.78%, 2020 - 3.2%, 2021 - 3.1%, 2022 - for 9 months - 3.2%). In the GRP structure of the region (for 9 months of 2022), the main share is occupied by industry – 27.7% and agriculture – 17.9%. A feature of the GRP structure is a significant increase in the share of agriculture in the years of favorable weather and climatic conditions [1].

The relevance of the development of the agro-industrial complex of the Republic of Kazakhstan, including the Akmola region, is confirmed by the tasks aimed at developing agriculture, supporting small and medium-sized businesses, developing digitalization, creating a green economy to achieve sustainable development.

The necessary urgent measures were outlined to increase labor productivity, get rid of dependence on raw materials and develop infrastructure. In our country, it is possible to form 7 large ecosystems for the production and processing of meat, fruits, vegetables, sugar, cereals, oilseeds, dairy products [2]. The President of the Republic also spoke about the need to solve the problems of the small-scale nature of agriculture and noted the advantages of their cooperation.

It should be noted that certain factors that negatively affect the development of the agro-industrial complex: insufficient domestic production, in particular, this entails an increase in imports; outdated agricultural machinery, relatively low yields, high concentration of production in a personal subsidiary farm; lack of high-quality raw materials for industrial processing, etc.

Material and methods of research. It should be borne in mind that about 90% of technologies in the agro-industrial complex are outdated, and they require updating. It is one of the main factors constraining the development of the agro-industrial complex as a whole.

The purpose of the study is to identify the main trends in the development of the agro-industrial complex of the region and identify priority areas.

The theoretical and methodological basis of the study consisted of works on agriculture, the agricultural processing industry (agricultural products of the region, gross harvest and yield of major crops for 2013-2022, processing of agricultural products, production capacities of processing enterprises, etc.), as well as the current trends in the development of the agro-industrial complex as a whole and the region.

Economic-statistical, abstract-logical and analytical research methods were used in the work on the publication. An economic and statistical method for analyzing the current state and development of the main sectors of agriculture, processing and sale of agricultural products, assessing the main trends in the agro-industrial sector of the Akmola region. Abstract-logical method for identifying problems that constrain the level of the agro-industrial sector of the region. Analytical method in determining trends, prospects for the development of the agro-industrial complex in the region, as well as in determining the key factors that constrain this industry.

Results and their discussion. Currently, there are high rates of development of agriculture in Akmola region, the gross output of which for 2013-2022 grew by 4.6 times, including gross output of crop production by 4.4 times, gross output of livestock production by 5.2 times (figure1). The basis for the growth of production was the expansion of the resources used (land, livestock, capacity of enterprises) and an increase in the level of their use.

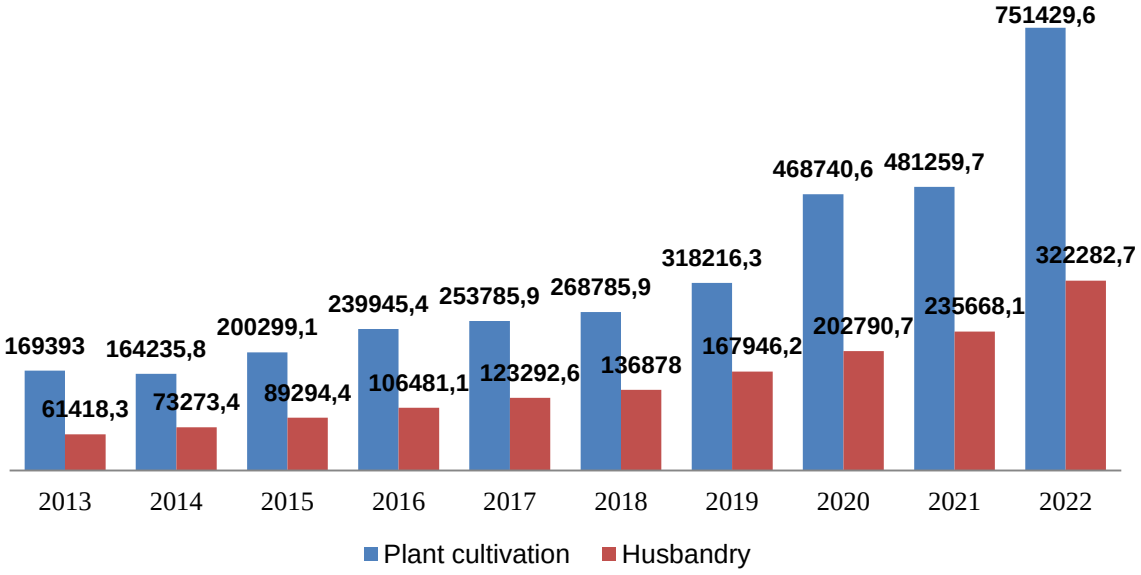
Food security issues characterize the state of the country's economic system, including the agro-industrial complex, satisfying the needs for food according to rational nutrition standards necessary for an active and healthy lifestyle, despite external and internal conditions, and without reducing the state food reserve.

Food security is ensured by the potential production of basic foodstuffs at the global and national levels, primarily grain. The main criteria of food security are the volume of grain transportation reserves and the level of its production per capita [4,5].

Food security is determined by the action of three systems: consumption systems that depend on the purchasing power of the population (economic accessibility) and the dynamics of the consumer market (physical accessibility) and two systems that provide domestic feed production and food imports [6].

It should be noted the special role of grain in the composition of commercial products of the agro-industrial complex. This is determined by its strategic importance as a basic and very important food product and as an important component of some branches of animal husbandry and feed production [7]. Sown area of agricultural crops in Akmola region in 2022 was 52.7 thousand hectares, which is 110.6% more than in 2013.

The total harvest of the major crops in the region is discussed below (table 1).



Note: made by the author on the basis of the source [3].

Figure 1 – Dynamics of gross agricultural production in Akmola region, million tenge

Table 1 – Total yield of major crops in Akmola region, thousand tons (2013-2022)

Indicator	Years									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Grain (including rice) and legumes	4 411,7	4 502,6	4 434,7	5 023,8	4 822,3	5 037,4	4 192,5	5 093,9	3875,9	53 502,3
Sunflower seeds	22,5	17,9	14,5	25,5	53,7	19,8	18,5	18,9	25,6	51,6
Potato	222,4	242,7	248,3	269,2	281,1	284,8	282,7	282,1	268,0	272,5
Vegetables	58,8	63,9	62,4	69,4	60,4	52,5	54,0	51,6	47,9	45,6
Note: compiled by the author according to data from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, 2013-2022 [8].										

According to the table, the gross yield of major crops has a positive trend in the dynamics, especially in 2022. In 2022, favorable weather allowed a large harvesting campaign to be carried out without interruption, so today 15.4 million hectares of grain and leguminous crops or 96.3 percent of the total harvesting area were harvested in the republic.

Also in 2022, spring sowing of agricultural products was carried out on an area of 5 252.7 thousand hectares, including cereals and legumes 4 662.6 thousand hectares, oilseeds 366.7 thousand hectares, fodder crops 206.7 thousand hectares. Considering the population, potatoes were planted on 14.5 thousand hectares, vegetables – on 2.2 thousand hectares.

In 2022, the harvest of grain and grain crops was 53 502.3 thousand tons, the average yield was 11.6 hkg/ha. Compared to 2013, this indicator has slightly increased. The total yield of sunflower seeds was 51.6 thousand tons, the average yield of 10 hkg/ha. Compared to 2013, this indicator has increased by 2 times. The gross yield of sunflower seeds in 2022 amounted to 51.6 thousand tons, the average yield of 10 hkg/ha. Compared to 2013, this indicator has increased by 2 times. There is also an increase

in gross yield of potatoes, it was 272.5 thousand tons from the area of 14.5 thousand hectares, the average yield of 185.7 hkg/ha. Compared to 2013, this figure increased by 123%. The 2nd table shows the yield of major crops in Akmola region.

Table 2 – Yields of major crops in Akmola region, hundredweight per hectare (2013-2022)

Indicator	Year									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Grain (including rice) and legumes	10,4	11,0	10,8	11,6	11,2	11,7	10,1	11,6	8,7	11,6
Sunflower seeds	4,2	3,4	5,2	8,5	9,6	6,8	7,2	8,9	6,2	10,0
Potato	132,7	134,7	134,4	149,9	166,2	185,1	186,5	193,7	178,1	185,7
Vegetables in the open field	139,4	142,0	143,4	161,1	172,5	185,4	197,0	198,8	195,9	188,5

Note: compiled by the author according to data from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, 2013-2022 [lk.8].

According to table 2, the yield of grain and leguminous crops in 2022 increased by 1.2 hundred kilograms per hectare or 111% compared to 2013. During the period under consideration there is an increase in other types of crops, for example, the yield of sunflower seeds increased by 2 times, potatoes and vegetables by 1.5 times.

The livestock industry is dynamically developing in the region, with the exception of pig breeding (table 3).

Table 3 – Number of livestock and poultry of Akmola region, thousand heads (2013-2022)

Indicator	Year									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Cattle	357,5	374,7	383,6	393,6	404,2	422,6	434,0	450,2	461,5	455,1
Sheep and goats	460,6	491,5	509,5	519,7	511,2	533,7	535,2	554,6	564,1	573,4
Pig	118,9	114,6	111,9	110,9	111,2	104,0	99,0	96,1	88,8	79,3
Horse	128,7	142,4	152,2	164,7	172,1	189,5	202,1	216,3	216,1	232,0
Poultry	3,2	4,4	4,9	5,0	5,7	7,6	8,0	9,0	9,3	9,7

Note: compiled by the author according to data from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, 2013-2022 [lk.8].

According to statistics, the total number of cattle in the region (in all categories of farms) for 2013-2022 increased by 127%, the number of sheep and goats increased by 124%, the number of horses increased by 2 times, and the number of poultry – three times. As of January 1, 2023, 190.0 thousand tons of meat (101.1%), 406.7 thousand tons of milk (100.6%), 736.9 million tons of eggs (93.3%) were produced in live weight in the region. Now, as part of the development of beef cattle breeding, 125 farms (peasant) farms for 6.4 thousand heads, 19 farms for 2.3 thousand heads are functioning as part of the development of the dairy direction.

Currently, 15 meat processing enterprises with a capacity of 87.5 thousand tons per year, 14 dairy enterprises with a production capacity of 137 thousand tons per year, 36 flour milling enterprises with a capacity of 794.8 thousand tons per year and 8 oilseed processing enterprises 49.3 thousand tons per year operate in Akmola region.

The main share in the structure of industrial food production was meat processing enterprises – 53.0%, dairy – 15.3%, cereals – 13.9%, bakery products – 3.0%, other industries – 14.8% [9].

Meat processing enterprises in the region produced 83.5 thousand tons of meat in kind in 2022, an increase of 2.0% compared to the same period in 2021, the production of sausage products was 3.9 thousand tons, compared to the same period in 2021 increased by 20.5.

In 2022, the volume of processed milk production amounted to 82 thousand tons, down by 21.7% compared to the same period in 2021, butter – 1.7 thousand tons, down by 8.5%, cheese and cottage cheese – 1.1 thousand tons, down by 25.0%, fermented milk products - 7.0 thousand tons, increased

by 8.8%. Also in 2022, 23.5 thousand tons of vegetable oil were produced, which is 39.7% more than in 2021; 231.4 thousand tons of fine flour were produced, an increase of 41.5% compared to the same period in 2021.

As part of the development of the food belt around Astana, a 300-kilometer zone was allocated, which included all 17 districts of the region. At the moment, 128 agricultural enterprises are engaged in the supply of agricultural products, including 68 meat and dairy processing enterprises, 6 poultry enterprises, 54 grain processing enterprises. Most agricultural producers in the region sell their products ("Capital Projects LTD" LLP, "Astana Agroproduct" LLP, "Ijevski" PC, "Gormolzavod" Kokshetau LLP, "Agrofirma Rodina" LLP, "Milk Project" LLP, etc.).

Thus, the directions and rates of development of the agricultural sectors of Akmola region are mainly positive and have the potential for further growth with an effective mechanism of regulation and support. Accordingly, as of August 1, 2020, for the implementation of subsidies to subjects of agro-industrial complexes under the state program for the development of agro-industrial complexes of Kazakhstan for 2017-2021, 14 Rules for subsidies, which cover 29 types of subsidies, including 6 in crop production, 9 in animal husbandry, and 1 for processing of agricultural products were developed and put into effect.

In addition, in 2019, 356 294 million tenge of subsidies were allocated and disbursed to improve the efficiency of the agro-industrial complex of the Republic of Kazakhstan, 22 711 investment projects were implemented, 107.7 billion dollars were invested in tenge, which is 2.2 times higher than the level of 2018. The main volume of budget funds 45% (48.9 billion tenge) falls on the renewal of agricultural machinery, 36.2 billion tenge or 34% for subsidizing investment projects in the field of livestock, 15% for crop production (15.8 billion tenge), 6% in the field of processing (6.7 billion tenge).

According to the program of subsidizing the interest rate on credit and leasing obligations, 2 438.4 million tenge was disbursed. By the end of 2019, subsidiaries of JSC "National Management Holding "KazAgro" totaling $ 64.8 billion issued 16.2 thousand tenge loans, including: 47.4 billion from the fund of financial support for agriculture loan of 12 554 tenge; from the «Agrarian Credit Corporation» JSC 17.4 billion dollars issued 3 627 loans in tenge [10,11].

In 2023, the volume of state support in the form of subsidies to agricultural producers of Akmola region amounted to 45.6 billion tenge, including in the following areas:

- 12.9 billion tenge was allocated for subsidizing the crop industry (pesticides – 9 103.7 million tenge, fertilizers – 3 171.4 million tenge, seed production - 617.5 million tenge);
- 5 billion tenge was allocated for subsidizing animal husbandry. Support for the development of animal husbandry is carried out in two directions: increasing the productivity and quality of livestock products, as well as subsidizing livestock breeding;
- 17.7 billion tenge for investment investments, subsidizing processing, guaranteeing and insuring loans (investment investments – 16 627.7 million tenge, for subsidizing the costs of processing enterprises – 1 025.9 million tenge, subsidizing within the framework of guaranteeing and insuring loans - 83.5 million tenge);
- for repayment of interest rates on loans and leasing in the amount of 10 billion tenge.

For the implementation of these directions allocated and used 10.6 billion tenge (at the expense of subventions from the republican budget - 5.6 billion tenge, at the expense of the reserve of the Government of Kazakhstan for contingencies - 5 billion tenge). 15.2 billion tenge for investments and subsidizing of processing (14 196.6 million tenge for investments, 697.8 million tenge for subsidizing of expenses of processing enterprises, 296.6 million tenge for guaranteeing and insurance of debt).

Financial recovery and repayment of interest rate on leasing – 5.8 billion tenge (financial recovery – 83.8 million tenge, repayment of interest rate on leasing – 5 699.4 million tenge). Thus, 5.8 billion tenge was used, out of which: for financial recovery - 83.8 million tenge; 5.7 billion tenge for repayment of interest rate on leasing [12].

It should be noted the development of a new National project for the development of the agro-industrial complex of the Republic of Kazakhstan for 2021 – 2025, which will contribute to the positive trends in the development of agro-industrial complex of the Republic of Kazakhstan.

The main objectives of the national project have been defined: to increase labor productivity in agriculture by 2.5 times; to provide basic foodstuffs for domestic production in Kazakhstan; to double exports of agricultural products, to increase the share of processed products to 70%; to constantly increase the income of 1 million people in the

village by forming 7 large ecosystems and implementing investment projects [13].

As an example, let us consider the priority areas of the region's agro-industrial complex:

- development of cooperation of agricultural enterprises and its significance for the resolution of the problem on the settlement of agricultural products, primary processing, sorting, transportation for processing enterprises and agricultural products (main problem development melkol agricultural production, in particular, is a living product, a high amount of rural consumption and personal subconsciousness in the general area; the average amount of agricultural products, the number of agricultural products, the production of non-productive products in comparison with imports) [14];

- development of the processing industry to address the issue of raw materials orientation of the agro-industrial complex (the main problems that hinder the development of the agricultural complex are the low share of low share of processing of agricultural raw materials, insufficient utilization of the production capacity of processing industrial enterprises, high level of imports);

- the development of grain processing enterprises and their raw materials base (the main problem of the industry is the instability of the grain market due to the price situation, the insufficiency of the accounting and control system for the availability and use of grain, which does not allow calculating the real need for grain processing volumes in order to fill the domestic grain market);

- the development of the dairy industry in the region (the main problem is the lack of sufficient volumes of raw milk production, suitable in quality characteristics for milk processing; underdevelopment of milk production, primary processing, transportation, storage system, marketing due to a large part of households in total milk production);

- development of the meat industry in the region (this sector is the largest importer of meat products, although it has raw materials and meat processing enterprises);

- the transition to a resource-saving and high-tech level of development of the agro-industrial complex on a digital basis is a vector for the future development of the economy and the growth of national competitiveness. This is due to the fact that Big Data, the Internet of things and artificial intelligence can significantly increase the efficiency of all business processes from production, processing, storage and marketing of manufactured products to the end consumer [15].

Conclusions

1. Akmola region is an agro-industrial region of Kazakhstan. The economic specialization of the region is agricultural production. The gross domestic product of the region tends to grow on average by 3 %: in 2017 - by 2.86%, in 2018 - by 2.75%, in 2019 – by 2.78%, in 2020 - by 3.2%, in 2021 - by 3.1%, in 2022 (data for 9 months) - by 3.2%. More than 28.4% of grain, 6.6% of milk, 8.7% of meat, and 16.4% of eggs belong to the Akmola region. The region is an essential link in the formation of the metropolitan food belt.

2. To solve the problems in the meat and dairy industries of the region the following proposal is offered: in order to overcome the small-scale commodity nature of agricultural production it is necessary to consolidate small forms of farming and organize cooperative farms, slaughterhouses, and dairies. Reception stations and other infrastructure facilities are justified, where milk and meat production and processing volumes are increased, their quality is controlled, the raw material base of agricultural production and processing enterprises is expanded, and their workload is ensured.

3. In order to solve the problems in the field of grain the following recommendations are offered: to provide targeted incentives for the production of hard and strong wheat varieties demanded in the foreign market in the form of investment subsidies to strengthen the growth opportunities for the export potential of food wheat. Given the location of the region in the zone of risky agriculture, there is a dependence of agricultural producers on weather conditions in the production of crop products. In this regard, increasing the area of irrigated land, and replacing agricultural equipment with high-performance equipment allows farmers to partially exclude the impact of adverse weather conditions during sowing and harvesting operations.

4. Expansion of state support to agricultural producers through simplification of lending and microcrediting. The introduction of special technologies, elements of digital transformation of the agro-industrial complex, ensuring high crop yields and livestock productivity, the use of innovative technologies, the growth of technical equipment and other factors of agriculture can increase the volume of gross product, increase the level of self-sufficiency of domestic product needs and expand participation in foreign markets.

5. In general, the strategy for the development of the agro-industrial complex of Kazakhstan, including the region, should be aimed at providing the population of the country and the region with high-quality food products of domestic production and increasing the export of agricultural products.

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