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Animal husbandry market in Kazakhstan: Dynamics and prognosis

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Abstract. Studies of livestock dynamics and productivity is an effective mechanism to monitor the possible risks to the breeding of animals of different species and a timely response to strengthen the food security of the Republic of Kazakhstan. The research aims to conduct an analytical review of the state of livestock breeding on the main species of animals that are bred in its territory and the forecast of development soon. The materials for the analysis were reports from the Bureau of National Statistics of the Republic of Kazakhstan, as well as information in Kazakh and foreign periodicals on the state of livestock breeding and current news in the agricultural sector of the country. The statistical materials on the number of animals of different species, gross output received from them, investment activities, and other indicators directly or indirectly related to the dynamic indicators in animal husbandry were used. The results of the analytical review revealed positive annual dynamics of increasing the number of livestock of most species of farm animals in the country. Thus, the growth of cattle population is 2-4% from year to year, a similar situation is observed in sheep (2-4%)

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and poultry (4-10%); the only exception is a decrease in pig population by 5-9%. Populations of cattle, sheep and goats, horses, and camels are mainly concentrated in small farms and individual households, so a significant part of products from them does not get to industrial processing, which leads to the need to import them to meet the needs of the urban population. The main mass of poultry, although represented by the livestock of specialized agricultural enterprises, the volume of output does not provide the necessary volume, which is reflected in an increase in purchases abroad. Therefore, to date, there are no visible prerequisites for reducing the number of animals of all species that are bred in Kazakhstan, and the state support of livestock breeding can contribute to the further growth of livestock

Keywords: gross output; epizootic situation; livestock breeding; subsidies; profitability; export of products

INTRODUCTION

Significant areas of natural pastures, as well as suitable climatic conditions, contributed to the development of livestock in the Republic of Kazakhstan. As of 2021-2023, under the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan (2024), there was a growth in the gross output of the agricultural sector. For 11 months of 2023 gross output from agricultural enterprises was 8,774.3 billion tenge, which is 8.5% higher than the level of the corresponding period of the previous year. This growth in livestock production is due to an increase in the production of eggs – by 4.9%, milk yield of raw cow milk – by 2.1%, and the volume of the slaughter of livestock and poultry in live weight – by 0.7%. This was achieved, in most cases, due to an increase in the livestock number. S.M. Yessengaliyeva *et al.* (2021) have also pointed to a steady increase in the number of farm animals over the years. This extensive approach is less effective and has shortcomings compared to the indicators of industrial livestock breeding. Following R.N. Zhangirova (2020), this is due primarily to the weak technical equipment of the industry and the lack of innovative approaches in Kazakh animal husbandry. A similar opinion is held by R.K. Konuspayev *et al.* (2020). Therefore, in the analytical review of the state of livestock breeding and the prospects for its development in the near future, it is necessary to consider the possibility of intensification of one or another branch. That is especially relevant in terms of breeding work with livestock, which is not given proper attention in the country.

But despite the active saturation of the market with the products of the agricultural sector and livestock directly, the food market remains import dependent. Thus, under the portal ElDala.kz for 2018-2020, exports of food products to Kazakhstan increased by 5.3 percent, from $3.1 billion to $3.3 billion. In 2020, its growth was 7 percent, which is 1.9 percent higher than the same figure for 2018 (Kazakhstan's food exports…, 2021; Pedigree cattle are…, 2022). This trend indicates a significant shortage of agricultural products of Kazakh origin, which reduces the food security of the republic. But simply increasing the productivity of animals or increasing their number will not solve this problem. In the opinion of N.B. Syzdykbayeva *et al.* (2021), it will be more effective to increase the competitiveness of Kazakh products in the local and world markets. These problems can be solved only with the stable growth of the agro-industrial complex of the country, as well as the continuous development of the industry with the help of new technologies and innovative approaches.

To eliminate this situation, the government provides several economic investments in the development and stimulation of agricultural and processing enterprises in Kazakhstan in the form of various state programs. Such support in recent years is expressed in the form of direct subsidies to agricultural producers. Thus, in 2022 more than 124 billion tenge were invested in the agricultural sector of the country for development (Subsidies to livestock…, 2022). Capital investments in cattle breeding have a rather long payback period and therefore need an analytical justification and constant monitoring of investment risks and possible ways to increase productivity in the industry and increase animal productivity. Therefore, the research aims to study the dynamics of livestock development, and productivity in different sectors of livestock breeding in the Republic of Kazakhstan and forecast the situation in them in the near future. It will allow to control of possible risks for animal breeding in the country and timely provide state support to owners of animals to increase the profitability of production and thereby strengthen the food security of the republic.

LITERATURE REVIEW

Livestock is the basis of the global food program, which provides sustainable development of all agriculture and provides jobs and food for almost 1.3 billion people (Moving towards sustainability…, 2021). The livestock market is quite specific and strictly structured both by animal species and geography (Meat industry size…, 2024). Production of such products varies by the type of animals raised, the purpose of their maintenance, the intensity of livestock production systems, and the resources they consume. In recent times, the market for animal products has been changing due to increased demand for different animal products, population and income growth, and changes in livestock technologies (Alders *et al.*, 2021; Bohatko & Utechenko, 2024).

One of the main factors that affect the intensity of the breeding of certain animals in a particular territory is the economic benefit from the sale of their products (Wei & Zhen, 2020; Adams *et al.*, 2021). This is the main goal of animal breeding, and it is characteristic of all countries, regardless of geographical and political foundations (Xu *et al.*, 2019;Abay & Jensen, 2020). X. Lan *et al.* (2021) and Z. Mehrabi *et al.* (2020) point out that it is the demand for certain animal raw materials or products that determines the priority species of animals that are bred in a particular region and determine their direction of productivity. Quite often, the demand for certain goods in neighbouring countries adjusts for the development of some direction of livestock breeding and the size of purchasing prices in the country. A similar situation is now observed in Kazakhstan, where prices for meat animals have increased, which was provoked by a shortage of meat raw materials in neighbouring countries, China and Russia (Meat in Kazakhstan…, 2023). The greatest increase in prices was observed precisely in the regions bordering these countries. This situation occurs in other countries as well and is a common reaction to various economic and social influences (Taipov *et al.*, 2017; Food and Agriculture…, 2022).

In Kazakhstan, as well as in Kyrgyzstan, given the presence of large areas that can be used for grazing animals, individual farms of the population are widespread (Yang *et al.*, 2022). Such agricultural enterprises are perceived differently within a single livestock market. Most authors point to the main role of such farms in the future (Wang *et al.*, 2020;Tirkaso & Hailu, 2022). They, the increase in individual farms, associate with the increase in employment of the rural population and less negative impact of them on the environment (Enahoro *et al.*, 2019). While the opposing viewpoints to the low productivity of animals in this category of farms and the low level of innovation in them (Baltenweck *et al.*, 2020). The low productivity of grazing, which is the main source of fodder for individual farms in Kazakhstan, also contributes to this. The analysis of pastures by T. Chen *et al.* (2020), R. Sabyrbekov (2019), and J. Umuhoza *et al.* (2021) points to the decreasing productivity of pastures in post-Soviet Central Asian countries. In addition, pasture productivity is significantly affected by weather conditions (Liang *et al.*, 2021). Lack of moisture and high temperatures during the growing season significantly reduce the efficiency of grazing and do not allow for optimal animal productivity.

Therefore, the state of any livestock industry in the country is influenced by a significant number of both internal and external factors. The more of them can be addressed during an analytical review of livestock market conditions, the more effective and accurate will be the obtained forecast of the development of this or that type of animal in the near future.

MATERIALS AND METHODS

The main source of materials for the analytical study was monthly and annual reports of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan (2024), which are publicly available. For this purpose, statistical materials were used on the main indicators of the state and development of livestock in the republic, gross output received from it, investment activities in these sectors of agriculture, and other indicators directly or indirectly related to the dynamic indicators in the livestock sector of Kazakhstan. The studies did not include certain types of animals, the number of which occupies less than 1% in the country or are bred in a small area – rabbits, deer, bees.

In addition, reports and current news in the agricultural sector of the country, as well as the results of studies of several authors who analysed the impact of social, economic, weather, and other factors on the development of livestock in different countries were the materials for preparing the analytical review. Predominantly Central Asia studies were used, the conditions of which are similar to those of the Republic of Kazakhstan. Special attention was also devoted to the studies on the dynamics of animal population development and the established features of agricultural development in neighbouring post-Soviet countries, which also closely correlated with the trends in the Kazakh livestock sector of the agrarian business. The publication date of the study was also considered. In other words, studies from 2019 or newer were used in the research. The research results had to be conducted on animals, which are the main species in the agrarian sector of the Republic of Kazakhstan. Also, special attention was paid to the publications, which revealed the influence of various factors on the state and future development of animal husbandry, characteristic of the current political and economic situation in the world. The citation index was also used for the inclusion of studies in the research.

When preparing analytical materials, the main attention was focused on statistical information on the number and dynamics of livestock of different types of animals, their productivity in different types of farms, typical for Kazakhstan, and the volume of processing of animal raw materials at industrial enterprises. Special attention was also devoted to the analysis of exports and imports of both live animals and livestock products for the analytical period, which allowed to highlight the economically sound promising areas for further development of animal husbandry in Kazakhstan in the coming period. As a result of the system analysis causal and regular correlations between the indicators of the number of animals and economic (financial) prospects in each of the sectors of animal husbandry of Kazakhstan were determined.

Publication materials and presented research results selected for analysis were subjected to comparison and critical analysis methods depending on the number of animals on which research was conducted and the levels of statistical validity of the results obtained. Since most of the studies included in the analysis were conducted on the same animal species, but in different economic and geographical conditions, the method of analogy was used for their comparison to obtain ideas about general trends in the development of animal husbandry and the influence of various factors on its further development. At the stage of preparing intermediate and conclusions, the method of generalization was used, which helped to combine one's judgment with the conclusions of researchers who had conducted similar studies. In preparation for the forecast of the development of this or that branch of cattle breeding in the country's epizootic situation in neighbouring regions with Kazakhstan, factors of influence on the world economic situation of international conflicts and other global processes were also considered.

RESULTS

The dynamics of changes in the number of animal populations by species and direction of productivity were tracked by the materials of statistical information from website of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan (2024). For 2020-2022 the information on the changes in the population of this or that animal species was used for the calendar year, as of December 31 of the current year. Information on animal population for 2023 was taken only for the first month of the current year to identify the main trends compared to the same situation in the previous year. Analysis of statistical materials shows an annual increase in the number of most species of productive animals from year to year (Fig. 1).

For a more detailed state of the livestock market in the Republic of Kazakhstan, it was decided to analyse the situation in each branch of livestock separately. The livestock of this species is represented by dairy, beef, and combined production animals. The main mass of animals is concentrated in farms and individual farms of the population (Table 1).

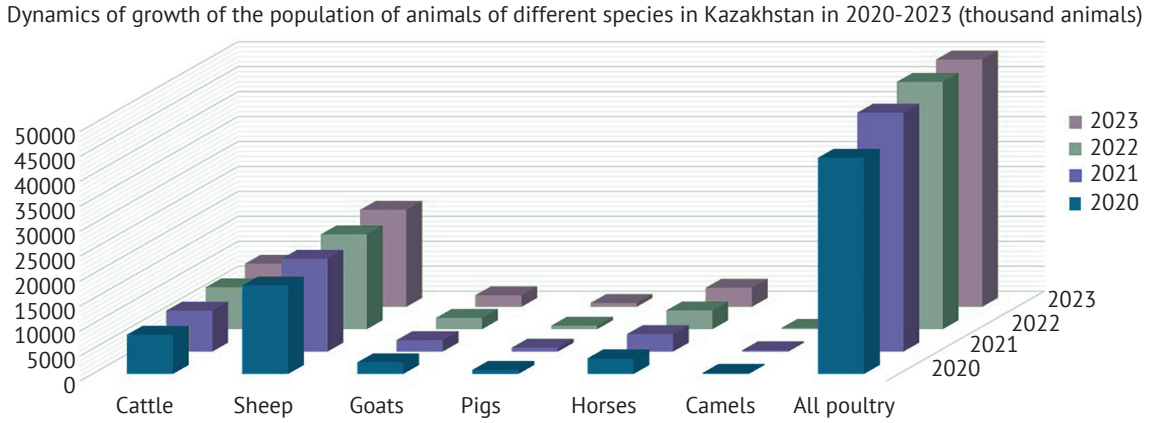

***Figure 1**. Change in the number of farm animals in 2020-2023*

***Source:** compiled by the authors based on the data by Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan (2024)*

***Table 1**. Dynamics of change in the population of cattle in the controlled period in the Republic of Kazakhstan*

Cattle type	Year	Total, animals	Agricultural enterprises, %	Farms, %	Individual farms, %
Cattle	2020	7,850,045	9.6	36.4	54.0
	2021	8,192,415	9.4	38.2	52.4
	2022	8,395,031	9.6	40.2	50.2
	2023	8,638,307	9.4	39.5	51.1
	2024	8,651,105	9.5	40.0	50.5
Including cows	2020	4,008,270	7.3	39.9	52.8
	2021	4,235,659	7.1	41.5	51.4
	2022	4,501,585	6.9	42.0	51.1
	2023	4,504,845	7.0	41.7	51.3
	2024	4,506,823	7.1	42.0	50.9

***Source:** compiled by the authors based on the data by Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan (2024)*

The data in the table indicate a positive trend in the country to increase the total number of cattle and cows. With a constant growth of the number of animals of this species, its distribution among different types of farms remains approximately at the same level. Insignificant fluctuations between adjacent years do not exceed statistical error. This positive trend allows to expect a slight increase in the next year, which is already confirmed by the figures for the first month of 2024. Population growth is + 4.5% for cattle and + 6.2% for cows through the same period in 2023. The number of cattle is mainly concentrated in individual farms and relatively small farms. These farms also contain the bulk of dairy and combined production animals. Households have 75.4% of dairy cows and 21.9% of dairy and meat cows. On farms – 42.3% and 39.6% respectively. Whereas in agricultural enterprises up to 52.9% of the livestock is represented by meat breeds. Due to this differentiation in cattle breeding, the bulk of raw milk is obtained in farms with a low level of manufacturability (Fig. 2).

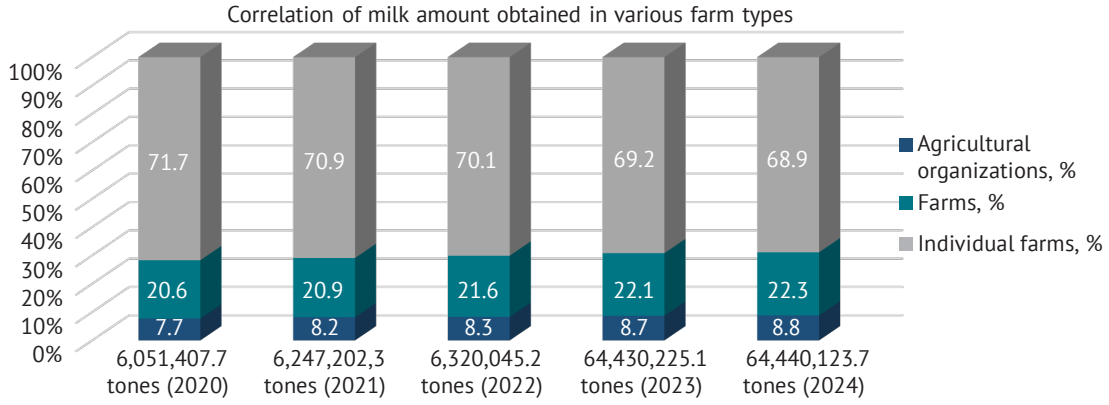

***Figure 2**. The structure of raw milk obtained in the Republic of Kazakhstan during the controlled period*
***Source:** compiled by the authors based on the data by Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan (2024)*

Milk from individual farms, due to the lack of primary processing technology, has low-quality indicators and only part of it is used for further processing (up to 30%). The bulk of such milk is used in households or sold on the market after processing into other dairy products – sour cream, cottage cheese, and butter. This leads to a shortage of dairy products in the Kazakh market and the need to export them to meet the needs of the population. The main problem of cattle breeding in the country is low breeding work among livestock, so the milk yield of cows in farms and households is 1,865-2,465 kg of milk. It is a very low indicator and its increase in the level of animal productivity of agricultural enterprises (5,128 kg) could compensate for the lack of raw milk in the country. Unfortunately, it will not be possible to quickly raise the breeding level of local cattle in the near future.

This is primarily due to the impossibility of purchasing breeding animals in neighbouring countries because of the military conflict between Ukraine and Russia, and these countries were the main suppliers of breeding resources for cattle, and building up the productive capacity of cows by raising their replacement cattle requires a long period. Therefore, in the near future, there are no prerequisites to reduce the number of cattle in the country and a significant increase in their productivity. And the introduction of a new form of subsidizing the development of the agrarian complex is possible and will increase the number of cattle by 5%, as planned by the Ministry of Agriculture (Vidyanova, 2023). The breeding of these animals is traditional in Kazakhstan. As with cattle, the predominant concentration of animals of these species in farms and individual farms of the population (Table 2).

***Table 2**. Dynamics of sheep and goat number change in the Republic of Kazakhstan for the monitored period*

Cattle type	Year	Total, animals	Agricultural enterprises, %	Farms, %	Individual farms, %
Sheep and goats	2020	20,059,486	4.8	41.9	53.3
	2021	20,876,776	5.0	43.4	51.6
	2022	21,276,685	5.5	45.6	48.9
	2023	21,753,031	5.2	44.1	50.7
	2024	21,754,985	5.3	44.0	50.7

Table 2. Continued

Cattle type	Year	Total, animals	Agricultural enterprises, %	Farms, %	Individual farms, %
Incl. sheep	2020	17,751,517	5.5	42.3	52.2
	2021	18,595,263	5.7	43.7	50.6
	2022	19,014,009	6.0	47.1	46.8
	2023	19,438,210	5.8	45.5	48.7
	2024	19,439,123	5.9	46.1	48.0
Incl. goats	2020	2,307,969	0.9	30.8	68.3
	2021	2,281,513	1.0	31.3	67.7
	2022	2,262,676	1.0	33.0	66.0
	2023	2,314,821	1.0	32.0	67.0
	2024	2,315,862	1.1	31.9	67.0

Source: *compiled by the authors based on the data by Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan (2024)*

As can be seen from the above table, the total number of sheep and goats in the country increases every year. At the same time, the growth between species is not proportional. So, if in sheep breeding there is a constant growth of 2-4% per year, the number of goats is practically at the same place with slight fluctuations of ± 1.5% between adjacent years. Thus, in January 2024, the sheep population grew 6.7% and the goat population was 3.8% less than in the same period in 2023. This disproportion is partly caused by increased demand for mutton in neighboring countries and the Middle East, where Kazakhstan exports its products (in 2023 alone 6,653 tons of meat were sold for export). This growth in exports of sheep meat during this period (sheep meat sales abroad increased by almost 3.5 times in 2023 compared to 2022) made it possible to compensate and cover export revenues from the sale of live sheep, which arose with the introduction of the ban on the sale of breeding animals, from $17 million in 2022 to zero in 2023. This lability allowed the sheep population to be maintained and show a positive trend in January 2024. The development of sheep breeding is also stimulated by the growth of purchasing prices for wool. The amount of wool sold from different forms of sheep farms is shown in Figure 3.

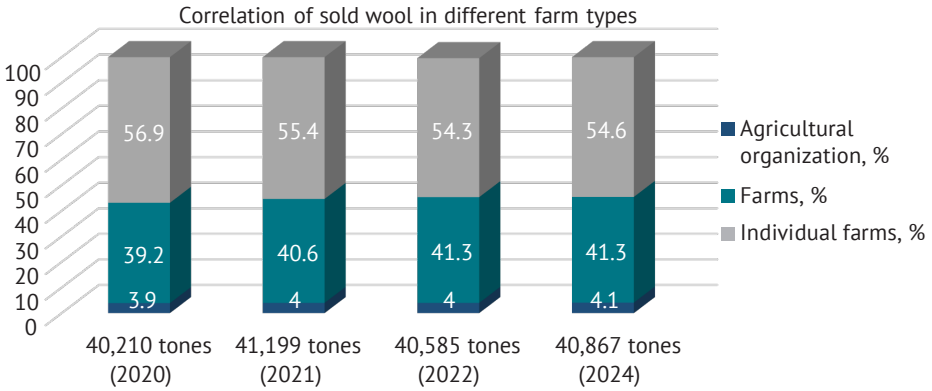

Figure 3*. Wool obtained and sold in the Republic of Kazakhstan during the controlled period*
Source: *compiled by the authors based on the data by Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan (2024)*

Analysis of the quality of raw wool, which was sold, showed that the bulk of it – more than half, belonged to the coarse type, and fine and semi-fine wool, which in monetary terms is valued more highly was not more than a third of the entire mass. Based on the above mentioned, it can be expected that the number of sheep will continue to grow, and the structure of the population will change towards the breeding of fine-fleece sheep breeds. While the main product of goat breeding is milk productivity, and due to the specificity

of this product, there is no reason to expect an increase in demand for this product (Tokysheva *et al.*, 2022). Therefore, no significant increase in the goat population should be expected in the near future. There are no economic or any other prerequisites for that.

In contrast to other animal species, raising and using poultry on an industrial scale involves significant investments in technological equipment and specialized feed. Therefore, the bulk of poultry is kept in specialized agricultural enterprises (Table 3).

***Table 3**. Dynamics of farm poultry number change in the Republic of Kazakhstan for the monitored period*

Cattle type	Year	Total, animals	Agricultural enterprises, %	Farms, %	Individual farms, %
All poultry types	2020	43,334,963	71.0	1.6	27.3
	2021	47,884,731	73.4	1.3	25.2
	2022	49,563,295	75.0	1.1	23.9
	2023	49,560,685	74.9	1.2	23.9
	2024	49,560,101	75.0	1.2	23 8
Including egg chicken	2020	20,783,218	59.6	1.9	38.4
	2021	23,037,044	63.0	1.6	35.3
	2022	21,498,958	63.2	0.8	36.0
	2023	21,308,313	65.6	0.8	33.7
	2024	21,308,998	65.5	0.9	33.6

***Source:** compiled by the authors based on the data by Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan (2024)*

Given the high intensity of growth of specialized broiler poultry crosses and the relatively high profitability of its production, authors can predict a further increase in the number of poultry in the republic in industrial farms. This is confirmed by the increase in the number of poultry in 2024 in agricultural enterprises by 7% compared with the same period in 2023. At the same time, the number of poultry in other categories of farms is 3-4% short of last year's level. The decrease in the number of livestock may be due to the seasonality of poultry breeding in households. The maximum number of livestock in such farms is observed in the spring and summer periods. Therefore, there is no reason to worry about the reduction of the poultry population in households.

A similar situation is observed in the breeding of egg production chickens. The main of their livestock is placed in specialized enterprises, which will create comfortable conditions for poultry housing and productivity (Fig. 4).

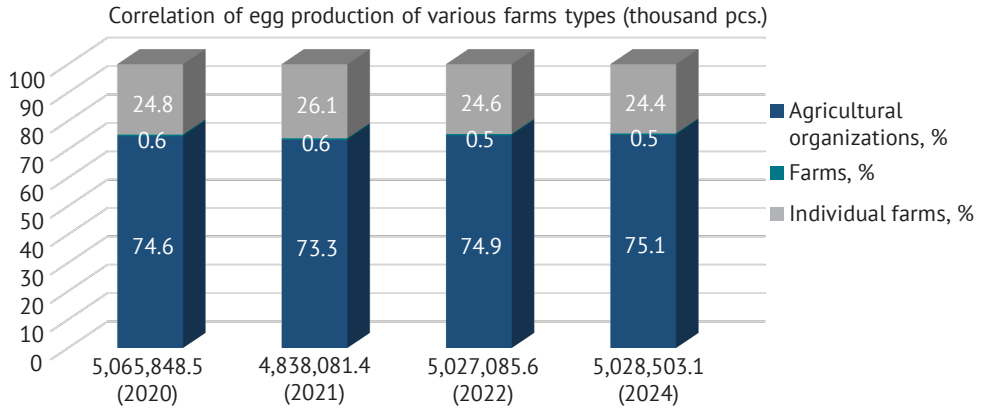

***Figure 4**. Production of eggs in Kazakhstan for a controlled period*
***Source:** compiled by the authors based on the data by Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan (2024)*

Given that the egg-laying period is much longer than the time it takes to raise broilers, the prognosis for 2024 is optimistic. Much of the risk will depend on the epizootic situation for poultry diseases and the implementation of the necessary veterinary and sanitary measures. The decrease in the number of eggs obtained in 2021 was associated with a decrease in the number of egg birds due to the outbreak of avian influenza. Therefore, for this category of poultry, kept in significant numbers in small areas, the forecast remains cautious. Animals with small numbers of individuals whose products are used practically to meet the demand of the local population were included in this category (Table 4).

***Table 4**. Dynamics of farm animal number change in the Republic of Kazakhstan for the monitored period*

Cattle type	Year	Total, animals	Agricultural enterprises, %	Farms, %	Individual farms, %
Pigs	2020	816,736	31.2	8.9	59.9
	2021	776,117	33.4	10.5	56.0
	2022	706,519	32.5	9.7	57.8
	2023	709,796	31.7	9.2	59.1
	2024	710,986	31.9	9.0	59.1
Horses	2020	3,139,831	6.3	47.8	45.9
	2021	3,489,777	6.6	49.3	44.1
	2022	3,759,468	7.2	50.7	42.1
	2023	3,808,939	7.1	50.2	42.6
	2024	3,810,002	7.2	50.4	42.4
Camels	2020	227,703	7.4	41.7	50.9
	2021	243,365	7.0	43.0	50.0
	2022	254,595	6.7	43.9	49.4
	2023	257,303	6.7	44.3	49.0
	2024	258,987	6.8	44.0	49.2

***Source:** compiled by the authors based on the data by Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan (2024)*

While the number of horses and camels increases slightly every year, the number of pigs is constantly decreasing. The main reason for this situation is the recent outbreak of African Swine Fever (ASF) in China when due to quarantine measures partial slaughter of animals in the border areas was carried out. In addition, the increase in the Muslim denomination in Kazakhstan will only reduce the consumption of pig meat. Therefore, from this point of view, and given the risks in the re-emergence of ASF, the likelihood of increasing the number of pigs in the near future remains unlikely.

As for the other two animal species, given their historical aspect in the life of the local population and the use of their products for the preparation of traditional national products, it is safe to assume that the number of these populations will remain at the same level from year to year, or will tend to a slight increase.

DISCUSSION

The main goals of the functioning of the livestock market in any country are to provide the population with food products and to improve the material well-being of owners of animal resources. Therefore, it is more appropriate to consider this sector of the economy in two positions: as a branch of agriculture, which is a priority of domestic state policy, and as a business project, since the main purpose of keeping animals, in any category of agricultural enterprises, is to make a profit. From these two positions, authors will try to build a forecast of the development of one or another branch of livestock farming in the republic for this and next years.

The main goals of the functioning of the livestock market in any country are to provide the population with food products and to improve the material well-being of owners of animal resources (Bondarenko *et al.*, 2023). Therefore, it is more appropriate to consider this sector of the economy in two positions: as a branch of agriculture, which is a priority for the state. The state program of support of the agroindustrial complex of the country will be significantly revised this year in Kazakhstan. First, it will allow access to subsidies for all market participants, regardless of the type and number of animals kept. Before that, the funds were available only for agricultural enterprises, and it was not available for farms and private farms the population where most of the cattle were kept. In this case, an obligatory condition of granting funds for owners of animals was an annual increase of livestock by at least 5% and get not less than 80 heads of brood per 100 sows (Vidyanova, 2023). This approach alone will make it possible, if not to increase the number of livestock in the country, then at least to stabilize it at the achieved level. The only subsidized item for agricultural enterprises will be compensation for the purchase of pedigree resources from imports and cheaper artificial insemination services (What has changed…, 2023). Such an approach can partially increase the growth of animal productivity, and hence improve the state of livestock breeding. Other authors – M. Petrick (2021), G. Chi *et al.* (2020) – also point to the positive impact of state support on the development of the livestock industry in the economy of post-Soviet countries. The studies of these authors indicate that in all countries as a result of such support, there was an increase in livestock and (or) animal productivity.

Following A. Lavruk (2019) in 2018 in Ukraine 4.23 billion UAH were allocated from the budget, as a result, there was an increase in pork production by 108.9% and poultry meat by 613%, as well as an increase in egg production by 176%. Following M. Petrick (2021), agricultural enterprises for animal breeding in post-Soviet countries of Central Asia began to appear only recently and this process is partially encouraged

by generous state support. Following the research of G. Chi *et al*. (2020), state support for livestock farming in Kyrgyzstan contributed to the increase in agricultural production through new technologies and equipment. Using these two positions, an attempt to build a forecast of the development of one or another branch of livestock farming in the country for this, and the next years will be made.

Another positive factor that contributes to improving the state of livestock in the country is the use of natural pastures, which are rich in Kazakhstan (Bulegenova *et al*., 2019). This system of animal breeding allows to obtain products with minimal capital investment, which contributes to improving profitability and maximizing profits from livestock breeding. A group of researchers led by S. Robinson *et al*. (2021) shared the same opinion. They point to the advantage of farms and individual farms of the population for livestock production in Kazakhstan, given the significant areas used as natural pastures, but the lack of state support, in their opinion, hindered the development of this category of farms. Therefore, a new approach to subsidizing livestock in the country, introduced in 2023, will stimulate the development of this category of farms and increase their animal productivity. To assess the potential of livestock development in terms of business attractiveness, such factors as the export of certain types of animals and their raw materials, as well as the provision of the domestic market with livestock products were used.

The results of the analytical study indicate the import dependence of livestock breeding in Kazakhstan, which was reflected in the purchase of horses for 5.3 million dollars over the past two years, and cattle for 55 million dollars over the same period. These figures indicate a shortage of breeding stock in the country for these types of animals, as evidenced by the volumes of purchased livestock only from European countries. As of the end of February 2023 imported more than 57 thousand breeding cows (Kazakhstan and EU…, 2023). Unfortunately, this approach of improving the breeding qualities of local livestock, by partially replacing it with imported, carries several risks. These are problems with the acclimatization of imported animals to the new conditions of maintenance and productivity, and an increased percentage of their retirement from the herd due to the impact of stress factors on them (Krasnova & Funta, 2023). Another significant factor of such policy was the reduction of the breeding animal market, caused by a Russian invasion as these countries were the main suppliers of breeding cattle to Kazakhstan. This, perhaps, explains the decrease of one-third in the volume of purchased heifers in 2022. The purchase of animals in other countries is less profitable due to the high prices of breeding resources there. This situation can fundamentally change the established principle of improving the country's herd by intensifying targeted breeding work among local animals. It looks realistic, considering also the compensation of the cost of artificial insemination of animals under budget programs. Moreover, this approach is also used in other countries to improve the productivity of livestock in the individual farm of the population. In India, subsidizing artificial insemination of cows with sperm divided by herds with high genetic productivity potential allowed to increase in the productivity of local herds up to 4000 kg of milk per lactation (Ministry of fisheries…, 2022). A similar situation was observed in Ukraine (Resolution of the…, 2018). The result of a partial reduction in the price of artificial insemination of cows for all categories of enterprises was an increase in milk productivity of cows in 2018 in agricultural enterprises to 5898.7 kg, and in the population – 4893.5 kg (Popko, 2020).

The situation in pig and sheep breeding is radically different from the previously mentioned industries. In recent years, the number of exported animals of these species has exceeded the volume of animals imported into the country. Sheep breeding has the greatest potential in cattle breeding in Kazakhstan. Statistical materials on the number of sheep and the volume of sales of products are consistent with the results of research conducted in Kyrgyzstan by K. Tilekeyev *et al*. (2016) and confirm the dominance of this industry in all Asian post-Soviet countries. In their opinion, individual farms of the population through the simplified system of taxation prevail in this region and are traditionally engaged in sheep breeding, which is associated with the predominantly pastoral breeding of these animals and the predominance of mutton in the diet of the population of the Asian republics. The growing volume of wool sales from year to year, especially of fine-fleece animal breeds, also contributes to the strengthening of the economy of the industry. Therefore, considering the forecast of sheep breeding development for the nearest future, authors can only hope for annual growth in the number of animals of this type with a possible increase in the number of fine-fleece breeds. The situation in pig breeding remains less clear. Despite the positive balance of export operations from the sale of live pigs, there is an annual decrease in the number of livestock. And this is aggravated by the increase in the number of imported pigs purchased in recent years. This situation can only be explained by the fear of breeding pigs after the outbreak of African swine fever in China in 2020. G. Gongal *et al*. (2022) suggest that providing appropriate veterinary and preventive measures to protect animal health will reduce the likelihood of particularly dangerous diseases spreading in Asia. Therefore, authors hope to stop reducing the number of pigs in Kazakhstan already this year and to increase it in subsequent years.

A similar situation with a high risk of morbidity and mortality is characteristic of industrial poultry production. Since most poultry are located within relatively small areas. But, despite this possibility, the number of

poultry farms and their livestock in Kazakhstan is only increasing every year (Bayantassova *et al.*, 2023). The economic prerequisites that contribute to this are the annual increase in the imported purchase of poultry meat and eggs to meet the demand of the population of Kazakhstan. At the same time total sum spent for the purchase of poultry products on import balances on 30-33 million dollars per year. Also, one should not discard other attractive sides of breeding this type of animal: short interval of meat poultry breeding, high egg productivity, and fast payback period of investments in this industry. Therefore, based on statistical information and economic analysis of the situation in poultry farming in Kazakhstan, it is safe to expect only further growth of the poultry population in the country.

Summarizing the results of the analytical review, it can be stated that today in Kazakhstan there are no visible prerequisites for a decrease in the number of animals of all species that are bred in its territory, and constant government support can contribute to further growth of the population.

CONCLUSIONS

Based on the results obtained during the analytical review of the livestock industry in Kazakhstan and short-term forecasts of further development of this market, the following conclusions and suggestions for future studies can be made: Breeding animals of most species represented in Kazakhstan tend to continually increase their numbers from year to year. This happens in all farms, regardless of their category or the volume of their livestock. The only animal species whose numbers have been declining for several years now are pigs. This phenomenon was preceded by an outbreak of a particularly dangerous disease of African swine fever in neighboring China. As the epizootic situation improves, it is expected that the number of pigs will recover to their pre-disease level. There are economic prerequisites for this – a positive balance in the export-import operations for pig products.

Revision of the domestic livestock subsidy policy of Kazakhstan in 2023 will allow access to state funding for all categories of farms engaged in livestock breeding. Given that the main livestock is concentrated in farms and individual farms of the population, which previously could not apply for a subsidy, and the fact that the main condition for providing such assistance is an annual increase in the number of animals by 5%, it is worth expecting growth of the entire livestock market in the country. A no less positive factor in the development of cattle breeding in Kazakhstan is its lability. The ban on the sale of breeding animals in 2022 could have brought down sheep breeding as an industry, but a quick change in priorities and an increase in exports of mutton several times allowed not only to keep the number of livestock at the same level but even increase it in January 2023 compared to the same period in 2022.

Based on the abovementioned facts it can be confidently stated that the livestock market in 2023 will not only maintain its position but also show an increase in the number of animals of most species that are bred in Kazakhstan. To make a more reasonable long-term forecast for the development of livestock in Kazakhstan in the near future plans to study the main trends in the industry in different regions of the country, mainly with a maximum concentration of animals of certain species, and to identify the main factors that may affect the dynamics of livestock.

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CONFLICT OF INTEREST

None.

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Ринок тваринництва в Казахстані: динаміка та прогноз

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Анотація. Дослідження динаміки поголів'я та продуктивності тварин є ефективним механізмом моніторингу можливих ризиків для розведення тварин різних видів і своєчасного реагування для зміцнення продовольчої безпеки Республіки Казахстан. Метою дослідження було проведення аналітичного огляду стану тваринництва за основними видами тварин, які розводяться на території країни, та прогноз розвитку на найближчу перспективу. Матеріалами для аналізу послужили звіти Бюро національної статистики Республіки Казахстан, а також інформація в казахстанських і зарубіжних періодичних виданнях про стан тваринництва і поточні новини в аграрному секторі країни. Використано статистичні матеріали щодо поголів'я тварин різних видів, отриманої від них валової продукції, інвестиційної діяльності та інші показники, які прямо чи опосередковано пов'язані з динамічними показниками у тваринництві. Результати аналітичного огляду виявили позитивну щорічну динаміку збільшення поголів'я більшості видів сільськогосподарських тварин в країні. Так, приріст поголів'я великої рогатої худоби становить 2-4 % з року в рік, аналогічна ситуація спостерігається у овець (2-4 %) та птиці (4-10 %); єдиним винятком є зменшення поголів'я свиней на 5-9 %. Поголов'я великої рогатої худоби, овець і кіз, коней і верблюдів переважно зосереджене в дрібних фермерських господарствах та індивідуальних домогосподарствах, тому значна частина продукції від них не потрапляє на промислову переробку, що призводить до необхідності її імпорту для задоволення потреб міського населення. Основна маса м'яса птиці, хоч і представлена поголів'ям спеціалізованих сільськогосподарських підприємств, але обсяги виробництва не забезпечують необхідного обсягу, що відображається на збільшенні закупівель за кордоном. Тому на сьогоднішній день немає видимих передумов для скорочення поголів'я тварин всіх видів, які розводяться в Казахстані, а державна підтримка тваринництва може сприяти подальшому зростанню поголів'я худоби

Ключові слова: валова продукція; епізоотична ситуація; тваринництво; субсидії; рентабельність; експорт продукції