IRSTI 06.52.17 UDC 338.436.33

DOI: 10.46666/2021-2.2708-9991.19

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## LIVESTOCK SECTOR OF THE REPUBLIC OF KAZAKHSTAN: REALITIES AND INTERNAL RESERVES

# ҚАЗАҚСТАН РЕСПУБЛИКАСЫНЫҢ МАЛ ШАРУАШЫЛЫҒЫ САЛАСЫ: ШЫНДЫҚТАР ЖӘНЕ ІШКІ РЕЗЕРВТЕР

# ОТРАСЛЬ ЖИВОТНОВОДСТВА РЕСПУБЛИКИ КАЗАХСТАН: РЕАЛИИ И ВНУТРЕННИЕ РЕЗЕРВЫ

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Abstract. The goal is to show the main directions of increasing the volume of livestock production in Kazakhstan aimed to ensure the country's food security. The article sets the following objectives – to analyze the current state of the livestock industry; determine the factors hindering its development; to develop proposals for the introduction of scientific achievements into production. Results – an analysis of the current state of agriculture is presented, in particular, the livestock sector (the share of the industry in the structure of gross output of agricultural sector, the presence of livestock, volume of livestock production, etc.). The article presents data characterizing the current state of animal husbandry and the reasons that impede economic growth: irrational distribution of livestock in the context of farm categories, low level of its productivity, lack of a feed market, ineffective use of the potential of natural pastures and hayfields, violation of technologies in the procurement of feed, low proportion of breeding stock animals in the total livestock, etc. The conducted studies allowed us to draw the appropriate conclusions – in order to increase the competitiveness of the livestock industry, it is necessary to develop a strategy for its development in the republic, which would allow small households to realize their comparative advantages on market so that the products obtained meet the requirements of food safety and quality from the growing number of

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Аңдатпа. *Мақсаты* – елдің азық-түлік қауіпсіздігін қамтамасыз ету үшін Қазақстанда мал шаруашылығы өнімдерін өндіру көлемін ұлғайтудың негізгі бағыттарын көрсету. Мақалада келесі міндеттер қойылған – мал шаруашылығы саласының қазіргі жағдайына талдау жасау; оның дамуын тежейтін факторларды анықтау; өндіріске ғылыми жетістіктерді енгізу бойынша ұсыныстар әзірлеу. Нәтижелері – ауыл шаруашылығының қазіргі жай-күйіне, атап айтқанда, мал шаруашылығы бағытына (аграрлық сектордың жалпы өнім құрылымындағы саланың үлесі, мал басының болуы, мал шаруашылығы өнімінің көлемі және т.б.) талдау жасалған. Мал шаруашылығының қазіргі жай-күйін және экономикалық өсуді қиындататын себептерді сипаттайтын деректер ұсынылған: шаруашылық санаттары бөлінісінде малды ұтымсыз орналастыру, оның өнімділігінің төмен деңгейі, жемшөп нарығының болмауы, табиғи жайылымдар мен шабындықтар әлеуетін тиімді пайдаланбау, жемшөп дайындау технологиясының бұзылуы, жалпы мал басындағы асыл тұқымды малдың төмен үлес салмағы және т.б. Жүргізілген зерттеулер тиісті қорытынды жасауға мүмкіндік берді – мал шаруашылығы саласының бәсекеге қабілеттілігін арттыру үшін шағын үй шаруашылықтарына алынған өнім қала халқының сатып алушылары мен импорттық тауарларды пайдаланатын тұтынушылар санының артуы тарапынан азық-түлік өнімдерінің қауіпсіздігі мен сапасына қойылатын талаптарға сәйкес келуі үшін нарықта өздерінің салыстырмалы артықшылықтарын іске асыруға мүмкіндік беретін республикада оны дамыту стратегиясын әзірлеу қажет. Қазақстанның аграрлық ғылымы белсенді инновациялық саясатты – ел экономикасы үшін аса маңызды мәселені іске асырудың жеткілікті әлеуетіне ие болады.

Аннотация. *Цель* – показать основные направления увеличения объемов производства продукции животноводства в Казахстане для обеспечения продовольственной безопасности страны. В статье поставлены следующие задачи – проанализировать современное состояние животноводческой отрасли; определить факторы, сдерживающие ее развитие; разработать предложения по внедрению научных достижений в производство. Результаты – дан анализ современного состояния сельского хозяйства, в частности, животноводческое направление (доля отрасли в структуре валовой продукции аграрного сектора, наличие поголовья животных, объемы животноводческой продукции и др.). Представлены данные, характеризующие современное состояние животноводства и причины, затрудняющие экономический рост: нерациональное размещение скота в разрезе категорий хозяйств, низкий уровень его продуктивности, отсутствие рынка кормов, не эффективное использование потенциала естественных пастбищ и сенокосов, нарушение технологий в заготовке кормов, низкий удельный вес племенных животных в общем поголовье и др. Проведенные исследования позволили сделать соответствующие выводы – для повышения конкурентоспособности отрасли животно-водства необходимо разработать стратегию его развития в республике, которая позволила бы мелким домашним хозяйствам реализовывать свои сравнительные преимущества на рынке, чтобы полученная продукция соответствовала требованиям безопасности и качеству пищевых продуктов со стороны возрастающего числа покупателей городского населения и потребителей, использующих импортные товары. Аграрная наука Казахстана располагает до-статочным потенциалом реализации активной инновационной политики - вопроса особой важности для экономики страны.

Key words: agriculture, livestock industry, livestock, feeding, productivity, gross output, agricultural market, consumption, innovative technologies, competitiveness.

Түйінді сөздер: ауыл шаруашылығы, мал шаруашылығы саласы, мал басы, азықтандыру, өнімділік, жалпы өнім, Аграрлық нарық, тұтыну, инновациялық технологиялар, бәсекеге қабілеттілік.

Ключевые слова: сельское хозяйство, животноводческая отрасль, поголовье животных, кормление, продуктивность, валовая продукция, аграрный рынок, потребление, инновационные технологии, конкурентоспособность.

**Introduction.** The agro-industrial complex of Kazakhstan faces cardinal tasks to increase production volumes, produce competitive,

export-oriented agricultural products and increase labor productivity by 2.5 times.

To implement the set tasks, the State Program for the Development of the Agro-

- the volume of gross agricultural production on average for 2017-2019 amounted to 4.6 trillion. tenge, or 7.4% in the structure of the country's GNP. In the structure of gross agricultural production, 25.0% falls on agricultural enterprises, 31.0% on individual entrepre-neurs, peasants and farms, and 44.0% on households;
- labor productivity in agriculture in 2017 amounted to 1,74 thousand tenge, in 2018 2,08 thousand tenge and in 2019 2,47 thousand tenge;
- the gross harvest of cereals (including rice) and legumes on average for the analyzed period amounted to 19.4 million tons, potatoes 3.7 million tons, sunflower 0.8 million tons, vegetables 4.0 million tons and etc.;
- produced meat in slaughter weight in 2017 1,79 thousand tons, in 2018 1,87 thousand tons and in 2019 1975 thousand tons;
- the export of food products in 2019 reached 1 344.6 million US dollars or increased by 8.3% compared to 2017 [2].

For the further development of the agroindustrial complex in the country, it was decided to develop a National Project for 2022-2026. On the development of the agro-industrial complex, where tasks are also set to increase the export of agricultural products by 2.0 times and increase labor productivity by 2.5 times.

Material and methods of research. Today in Kazakhstan, special attention is paid to the development of the agricultural sector animal husbandry. There are great potential opportunities for its development in the country. These are huge rangelands that, from an ecological point of view, allow the cultivation of organic, clean products.

Today, the demand for meat is increasing every year in the world. A good market situation is developing for our republic, significantly increase the volume of meat exports to the external market, especially to the market of neighboring countries, such as Russia, China, the United Arab Emirates, etc.

It should be noted that since the beginning of independence in Kazakhstan, ten program documents have been developed, on the basis of which the state policy in the field of the agro-industrial complex of the Republic of Kazakh-stan is being implemented.

The results of the study of this industry showed that not all the economic indicators

For a complete analysis of the current state of the livestock industry in the country, abstract-logical, balance, comparative analysis, monographic methods of economic research were applied. The information base of the study was made up of data from the Committee on Statistics of the Ministry of Economy, the Ministry of Agriculture of the Republic of Kazakhstan, as well as materials published on the pages of the media, including the Internet.

Results and their discussions. In Kazakhstan, agriculture is the main resource, but it is far from being fully utilized. Although the republic has a significant potential for the production of organic and environmentally friendly products, which are in demand not only in the country, but also abroad. The current situation in the agro-industrial complex justifiably gives rise to criticism.

Despite the fact that over the past five years, about 2.4 trillion tenge were sent to the agro-industrial complex, the share of agriculture in the country's GDP does not exceed 4.5%. The export potential is not up to the mark. The issues of high-grade food security of the population remain. We import half of the food and products consumed in the country. Here we need a new and verified approach to the development of the industry [3]. During the presentation of the projects «Industrialization Map» and the ceremony of awarding the winners of the «Parvz» and «Altvn Sapa» awards. it was noted that in Kazakhstan during the years of industrialization, 1 250 new enterprises were launched, more than 300 thousand jobs were created. Today 110 countries in the world consume our products. In recent years, more than 500 types of products have begun to be produced, previously not produced in the country, and about 50 new types of goods have been exported [4].

According to the Statistics Committee of the Ministry of Economy of the Republic of Kazakhstan, the volume of production in the manufacturing sector for the analyzed period increased more than 3 times, and its share in the structure of industry increased to 42%. Manufacturing products in the total volume of Kazakhstani exports reached 32%.

In 2020, the volume of industrial production (goods, services) by type of economic activity in the republic amounted to 29 380 billion tenge, of which food production reached 1 708 billion tenge, which is about 6.0%.

However, in practice, the use of specialized average annual production capacities is

still not high. For example, the use of capacities for processing sausages and meat products, meat by-products or animal blood is 41.5%, milk - 45%, butter - 39.2%, hard cheeses - 52.6% [5]. The reason for the low level of processing of meat and meat products, milk and dairy products is:

- placement of the main livestock of animals in the household (cattle 22.0%, sheep and goats 55.9%, pigs 61.0%, camels 52.6%);
- low level of productivity of animals, in particular, the average milk yield per 1 cow (2 355 kg);
- lack of a feed market, natural pastures and hayfields are not effectively used;
- low quality feed, which is associated with a violation of the technology of their procurement;
- low proportion of breeding animals in the total livestock population [6].

To improve the efficiency of the livestock industry, the Ministry of Agriculture, together with business, has developed a sectoral program for the development of beef cattle breeding for 2018-2027. The goal of the program is to increase the export potential of the industry. The main operator of this program is the Fund for Financial Support of Agriculture.

In 2020, 8,300 rural entrepreneurs received microcredits for 31.1 billion tenge. Compared to the previous year, the amount has more than doubled. In 2020 alone, more than 10 thousand rural entrepreneurs in the

amount of 50 billion tenge received preferential loans through the Fund for Financial Support of Agriculture. Concessional loans were aimed at opening livestock farms, family greenhouses, and the construction of rural infrastructure facilities [7].

Kazakhstan needs to more effectively use its competitive advantages, in particular, in the production of environmentally friendly products. The country's agricultural market pays attention not only to increasing the volume of agricultural production, but also to increasing the level of its profitability. The level of profitability of agricultural production in agricultural enterprises as a whole in Kazakhstan in 2020 amounted to 34.2%, while in 2016 it was equal to 28.5%, including for crop production -41.5% and 38.7% and for livestock - 22.0% and 9.9%, respectively. In recent years, the profitability of the livestock industry has significantly increased, which indicates that this direction of agricultural development in the country has a competitive advantage, although the share of livestock production in the structure of gross output remains practically at the same level over the years, within 44.0% (table 1).

As can be seen from table 1, in 2020 compared to 2016, the gross agricultural output increased by almost 56%, of which the share of the crop growing industry increased by 54.4% and livestock by 57.8%, respectively increase in production.

Table 1 - Gross agricultural production for 2016-2020, billion tenge

	Year							
Indicator	2016	2017	2018	2019	2020	2020 к 2016, %		
Rural total the farm	3 321,7	3 701, 4	4 092, 3	4 497, 6	5 177, 9	155,9		
including:								
-plant growing	1 825,2	2 047,6	2 249,2	2 411,5	2 817, 7	154,4		
-animal husbandry	1 469, 9	1 621,5	1 810, 9	2050,4	2 319, 5	157,8		

Note: data of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan: "Agriculture, Forestry and Fisheries", Nur-Sultan, 2020, p. 134.

The leading industry in animal husbandry is cattle breeding. The main region for breeding cattle (cattle) is the northern one. More than 35% of the total cattle livestock are located in this region. In the south and southeast of the country - 30% of the total number of cattle (table 2).

From the data in table 2, it can be seen that the number of cattle in 2020 compared to 2016 increased by 20.5%, of which in the northern region by 11.1%, in the central region - 16.2%, in the eastern region - 19.7%, western - 25.5% and southern - 24.8%.

In the structure of the cattle population, 39.2% is occupied by the southern, 22.7% - northern, 17.2% - western, 13.5% - eastern and 7.4% - central regions.

In recent years, there has been a redistribution of the cattle population. In 2016-2020 their share in households increased from 44.7% to 85.3%, while the share of agricultural enterprises during this period significantly decreased - from 69.1% to 7.1%. The share of peasant farms increased from 0.05% to 8.03%. Currently, 55.1% of the cattle livestock are housed in private households of the population, 9.6% of animals - in agricultural enterprises and 35.3% - in peasant farms (table 3).

Table 2 - The number of cattle in the Republic of Kazakhstan for 2016-2020 in all categories of farms, thousand heads

Region		Cattle	2020 to				
	2016	2017	2018	2019	2020	popu-	2016, %
						lation	
						struc-	
						ture in 2020, %	
NI = utla	4 547 7	4.540.0	4 504 0	4 044 0	4 000 0		444.0
North	1 517,7	1 540,3	1 581,8	1 644,0	1 688,8	22,7	111,3
Central	472,5	480,2	506,2	534,0	549,2	7,4	116,2
Восточный	839,4	868,2	895,4	952,7	1 004,5	13,5	119,7
West	1 019,5	1 073,3	1 150,1	1 224,2	1 280,4	17,2	125,5
South	2 334,9	2 451,3	2 630,6	2 796,0	2 913,5	39,2	124,8
Total for the	6 184,0	6 413,3	6 764,1	7 150,9	7 436,4	100,0	120,5
republic							

Calculated by the author based on the data of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan: "Agriculture, Forestry and Fisheries", Nur-Sultan, 2020, p. 134

Table 3 - The number of cattle by categories of farms for 2016-2020, thousand heads

Year						
Indicator	2016	2017	2018	2019	2020	Average
						for 2016-2020
All categories of farms,						
including:	6 183,9	6 413,2	6 764,2	7 150,9	7 436,4	6 789,7
agricultural enterprises	507,5	581,4	662,9	712,8	717,9	636,5
individual entrepreneurs and peasant or farm enterprises	1 790,3	2 035,6	2 224,1	2 409,8	2 624,3	2 216,8
households	3 886,1	3 796,2	3 877,2	4 028,3	4 094,3	3 936,4

Note: data of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan: "Agriculture, Forestry and Fisheries", Nur-Sultan, 2020, p. 134.

Thus, from the data in table 3, it can be seen that the distribution of cattle livestock on average for 2016-2020 in households and peasant (farmer) households is 90%. In 2019 1 114.2 thousand tons or 56.4% of the total volume of meat production in the country were slaughtered in the household or sold for slaughter of livestock and poultry (in live weight).

Raising animals in households does not allow for intensive production, in particular breeding of pedigree animals. This is due to the fact that pedigree cattle must be provided with a high-quality fodder base, which is not available to all households.

Hence, low productivity and efficiency of production in these farms. It is proved that in large agricultural enterprises, where the achievements of scientific and technological progress are used to a greater extent, productivity is much higher - 1.5-2.0 times. Therefore, in order to improve the efficiency of agriculture, it is necessary to transform small farms into larger business structures, creating all the

necessary conditions for their development (provision of optimal land plots, industrial infrastructure, residential buildings, agricultural machinery, soft loans, subsidies) [8].

There are real opportunities in Kazakhstan to occupy a worthy niche in the world market for the export of meat and meat products. Today among the CIS countries Kazakhstan ranks third in meat production after Russia and Ukraine (table 4).

In 2020 the export of Kazakhstani meat and meat products amounted to 154.3 thousand tons, which is 46.5% higher than in 2018. At the same time, imports amounted to 546.2 thousand tons, which is 0.9% higher than in 2019. Import exceeds export 3.5 times.

The volume of meat production in slaughter weight in the republic is gradually increasing every year. In 2020 compared to 2015, it increased by 20%. During this period the production of poultry meat increased by 52.4%, pork - 30%, beef - 20.3%.

Table 4 - Slaughtered on the farm or sold for slaughter of livestock and poultry by species in Kazakhstan for 2015-2020, thousand tons

Indicators		Production					
	2015	2016	2017	2018	2019	2020, 2015 in %	structure in 2020, %
Total for the							
republic	931,0	960,7	1 017,6	1 059,6	1 120,6	120,3	100
including cattle	416,8	430,6	450,4	477,4	501,3	120,3	44,7
sheep and	110,0	100,0	100, 1	177,1	001,0	120,0	15,3
goats	165,1	169,2	171,4	170,6	171,4	103,8	10,0
horses	101,5	107,8	117,5	126,5	132,0	130,0	11,8
porks	95,3	93,9	91,9	86,1	86,4	90,7	7,7
camels	6,1	6,5	6,6	6,7	6,8	111,5	0,6
birds	146,1	152,7	179,6	192,2	222,7	152,4	19,9

Note: data of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan: "Agriculture, Forestry and Fisheries", Nur-Sultan, 2020, p. 134.

Over the years the production of camel meat has decreased. For example, in 2020 compared to 2015 it decreased by almost 10.0%. Kazakhstanis consume more beef and lamb (table 5).

Over the past 5 years per capita meat production in the republic has fluctuated from 53 kg in 2015 to 60.9 kg in 2020. Most of all the population of the country consumes beef meat.

Table 5 - Meat production in Kazakhstan, on average per capita, 2016-2020, kg

Product name	2016	2017	2018	2019	2020
Total for the republic	53,4	54,4	56,8	58,3	60,9
Beef	23,9	24,4	25,1	26,3	27,2
Mutton	9,5	9,5	9,6	9,4	9,3
horsemeat	5,8	6,1	6,5	6,9	7,2
Pork	5,5	5,3	5,2	4,8	4,7
Camel meat	0,4	0,4	0,4	0,4	0,4
Poultry	8,3	8,7	10,0	10,5	12,1

Calculated by the author based on the data of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan: "Agriculture, Forestry and Fisheries", Nur-Sultan, 2020, p. 134.

In 2020 compared to 2015 it increased by 13.8%. The fastest growing poultry meat production in the country. The average per capita consumption of poultry meat in 2019 is 12.1 kg, which is 3.8 kg more than in 2015.

Many experts predict, that by 2020 the country may face a shortage of beef and the demand for it will increase by 1.8%. To avoid this situation, it will be necessary to reform the system of production and replenishment of livestock. These reforms will require large investments. However, based on the experience of developed countries, this industry will be quite profitable and on average its profit will be about 40% [9].

According to the Meat Union of the Republic of Kazakhstan, each Kazakhstani on average consumes almost 61 kg of meat per

year. In total in 2020 the republic produced 1 120.6 thousand tons of meat of all types. Meanwhile, Kazakhstan has all the necessary conditions for the development of beef cattle breeding. Low cost of feed production (about 190.0 million hectares of pasture land), which will increase production livestock products [10].

According to official data, in recent years only 81.2 million hectares or 43% of pastures have been used for cattle grazing in the republic, of which 76.8 million hectares of pastures have been allocated to reserve lands due to their lack of water supply and remoteness from settlements. The number of grazing livestock in the republic amounted to 14.9 million conventional heads in terms of cattle and 1 conventional head of cattle accounts for only 3.3 tons of feed. If we take into account that

the need for feed for 1 head of cattle per 180 grazing days is 6.3 tons, then the deficit of pasture feed from 81.2 million hectares of pastures will be 52.3%, i.e. the existing fodder stock of pastures can provide only 7.4 million conventional heads of cattle [11].

Therefore, the discrepancy between the balance between livestock and pasture resources has a negative impact on the condition and productivity of pastures, the yield of livestock products, as well as its quality.

As mentioned above, this problem is intensifying against the background of a steady increase in the number of animals in the population. Therefore, a large share of degraded pastures falls on lands located near settlements, especially within 5 km around the village. The main reason is oversaturation with livestock, which leads to the problem of cattle overcrowding. In particular, due to overgrazing 27.1 million hectares of pastures were de-graded, of which 14 million hectares were completely withdrawn from use, which led to a violation of the norms of the permissible load of grazing on pastures.

The development of land relations due to the fact that the state gave land to rural entrepreneurs for long-term lease limited the ability to move farm animals using seasonal pastures, which created the prerequisites for the concentration of livestock around settlements and watering places close to them. Thus, the load of animals per unit area in the natural economic zones of only South-East Kazakhstan exceeds the permissible limit by 3-5 and more times. This led to a discrepancy between the pasture feed stock and the grazing needs of animals for pasture feed. So, at present the productivity of 1 hectare of pasture land by regions, taking into account non-watered areas, does not exceed 250 fodder units.

### Conclusions

It should be noted that the issues of distant pasture breeding in Kazakhstan were prac-tically not considered for more than 25 years, which led to the fact that pasture lands were used ineffectively. Many farmers have stopped roaming to summer pastures or winter pastures for economic reasons:

- firstly, it is the lack of proper infrastructure;
- secondly, the lack of financial resources for the migration and movement of animals;
- thirdly, being located closer to the village, farmers can sell milk, kumis, butter at the local market. Moreover the second prevails, in view of the fact that for some it is the only source of income.

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World practice has shown that animals that graze in flocks and herds on distant pastures are more well-fed than those that, European countries [12].

For the effective use of rangelands it is necessary to solve the following issues:

- issues of watering of pastures, over the next 10 years to put into circulation an additional 50 million hectares, in distant pastures to equip wells and drill wells;
- strengthening the fight against desertification of rangelands;
- provision of an information database on pasture lands, which would make it possible to assess the conditions of pasture animal hus-bandry and their rational use:
- creation of the necessary socio-economic conditions for livestock breeders for the development of distantpasture animal husbandry.

Thus, solving the problems of the effecttive use of pasture lands in Kazakhstan will make it possible to steadily manage forage resources, preserve the ecological integrity of the republic's pasture ecosystems in the environment, and thereby ensure the country's food security.

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