

MULTIFUNCTIONAL DEVELOPMENT OF RURAL AREAS

INTERNATIONAL EXPERIENCE

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LIVESTOCK PRODUCTION IN KAZAKHSTAN. SITUATION, PROBLEMS AND POSSIBLE SOLUTIONS

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4.1. Agriculture in Kazakhstan

The paper aims to describe state of the art and the conditions of development of livestock sector in Kazakhstan. The Republic of Kazakhstan, located in Central Asia, is bounded in the north by Russia; in the east by China; in the south by Kyrgyzstan, Uzbekistan, and Turkmenistan; and in the west by the Caspian Sea and Russia. Kazakhstan covers an area of 2 724 900 km². More than two thirds of Kazakhstan's terrain consists of deserts and arid wastelands. Most of the remainder is steppes and hilly upland areas, fringed by high mountains in the east and southeast. Nevertheless, Kazakhstan hosts a significant agricultural sector and a consumer base that benefits from the recent strong performance in economic growth, which is supported by the sustained high world prices for oil.

Agriculture is one of the key sectors of the economy of Kazakhstan. The level of development of this sector has always been and continues to be a determining factor in economic and socio-political stability of the Kazakhstan society. As one of the priority directions for development of the Kazakhstan's economy - agriculture has been considered as a sector with enormous potential and large reserves. Kazakhstan's agricultural sector is focused on grain and livestock production, and significant geographic specialization among the five major regions exists in terms of the agribusiness and the food supply chain. Fish industry and animal husbandry are predominant in Western Kazakhstan, irrigated agriculture and sheep breeding in Southern Kazakhstan, food processing industry in Eastern Kazakhstan, and grain, milk and meat production in the largest agrarian area of Northern Kazakhstan. Kazakhstan initiated

privatization and restructuring programs already in 1993, resulting in 90% of agriculture being under private ownership and management according to the current estimates.

According to different estimates, currently there are some 110 thousand companies in agricultural production sector working in all regions of Kazakhstan. A constraint in these companies is the availability of sufficiently trained human resources for R&D, management and marketing activities. Additional constraint is the low level of technological sophistication. Obsolete machinery is used in the production process due to problems of access to finance. According to official estimates, some 85% of the machinery currently being used in Kazakhstan is at least 12 years old and urgently requires replacement and huge amount of investment: 320 million USD according to some estimates. The scarcity of up-to-date agricultural machinery is considered one of the most pressing matters in the way of developing a modern agricultural sector. Additionally the nonexistent seed growing industry is considered a serious constraint for agriculture sector growth. Therefore the improvement of educational as well as the introduction of new technologies in agriculture will gradually improve the situation in the raw materials sector for the food producers.

Climatic conditions of Kazakhstan enable the growth of almost all plants from the moderate thermal zone and the breeding of all kinds of livestock. Thus, livestock is an important branch of agriculture of Kazakhstan. It produces 47% of the volume of gross agriculture product. The importance of this branch is determined not only by its high share in agricultural gross domestic product, but also its great influence on the economy of agriculture and is essential as foodstuffs for domestic and foreign consumers. Traditionally, farmers raise sheep and cattle, while hog, horse and camel herding is also well developed in Kazakhstan.

The majority share of the livestock sector is cattle. Most cattle are kept in private farms, which are considered as a limit of the growth of the population and consequently the production of quality products. In Kazakhstan the annual growth of cattle breeding is stable and increasing 4% annually. This figure is low, considering the industrial development of animal husbandry conditions.

In the times of Soviet Union at the territory of Kazakhstan had up to 10 million head of cattle. In the period of transition of both social and economic processes, the cattle herd in the country declined significantly and, accordingly to the Statistics Agency of the Republic of Kazakhstan, has a little more than 6 million animals. At the same time Kazakhstan is the first in the world in terms of pasture per one head of cattle with more than 25 hectares. On this basis the territory of the Republic may feed an additional five million head of cattle.

Kazakhstan has great potential for growing competitive production in sphere of animal industries and delivery of production to the markets of Russia, Iran, Saudi Arabia and Egypt. Also the Republic Kazakhstan has great opportunities for export of meat production to Russia, as Russia imports annually 1,5 million ton meat from Argentina and Brazil. Kazakhstan is closer, so the transactional costs are naturally lower¹.

According to statistics, the world's exports of beef is shared by Brazil, which produces 28% of total exports, Australia (20%), India (11%), New Zealand (8%), United States, and Uruguay (7%). Other countries share the remaining 19%. Today, one out of three kilograms of beef sold in the world is from Brazil. It should be noted that the increase of exports of Brazilian beef is marked also in Kazakhstan. Thus, in 2004 Kazakhstan imported 376 tons of beef from Brazil; in 2006 these figures had increased to 8,912 tons, i.e. over 23 times more².

Livestock is an important branch of agriculture of Kazakhstan. It produces 47% of the volume of gross agriculture product in Kazakhstan. The importance of this branch is determined not only by its high share in agricultural gross domestic product, but also its great influence on the economy of agriculture and is essential as foodstuffs producer for domestic and foreign consumers. However this sector faces many problems. The paper aims to presents them and possible solutions.

4.2. Materials and Methods

The analysis presented in this paper is based on the Program for the Development of agriculture in the Republic of Kazakhstan for the years 2010 - 2014 introduced by the Resolution of the Government of the Republic of Kazakhstan from October 12, 2010, № 1052³. Additionally, information from the books, scientific and statistical journals, laws and regulations of the regional and municipal authorities are used. The statistical data were collected from reports of the Ministry of Agriculture and Ministry of Statistics of the Republic of Kazakhstan.

The research was conducted on the basis of different scientific methods: sampling, grouping, and comparative systems analysis as well as abstract-logical method.

¹ Ministry of Statistics of the Republic of Kazakhstan [2011]: *Kazakhstan in 2010*. /Edited by Smailov A.A.

² A. Yesbolova, G. Abdikerimova [2011]: *Current status of livestock in South Kazakhstan Oblast: International Journal "The scientific world of Kazakhstan"*, ISSN -1815-9486.

³ The Program for the Development of agriculture in the Republic of Kazakhstan for 2010 - 2014 years. [2010]: www.minagri.kz web site of Ministry of Agriculture of the Republic of Kazakhstan.

4.3. Agriculture Production in Kazakhstan

Production of gross agricultural output in Kazakhstan amounted 9.9 billion US dollars in 2010. Crop production was worth up to 4.6 billion US dollars, livestock 5.3 billion US dollars⁴. Compared with 2009, gross agricultural output in the country decreased by 11.7%. The decrease is considered due to reduced crop production by 22.6%. The value of livestock products produced grew by 2.6%.

For the study of agriculture in Kazakhstan the number of registered agricultural groups over the past five years should be considered, which is presented in the table 1.

Table 1. The number of agricultural units in the Republic of Kazakhstan

Title/ year	2006	2007	2008	2009	2010	Rate of increase or decrease 2010 to 2006, %
Total of agricultural units:	196 417	200 812	201890	201072	200876	102.2
number functioning	161962	173132	174608	174651	175636	108.4
including:						
State agricultural enterprises	65	65	79	25	35	53.8
Non-agricultural enterprises	4919	5224	5203	5145	5408	109.9
Farms	156978	167843	169326	169481	170193	108.4

Source: Ministry of Statistics of the Republic of Kazakhstan, 2011

The data in the Table 1 shows that over the past five years, the total number of enterprises increased by 4459 units, including the non-agricultural enterprises, which increased by 489 units, and farms increased by 13,215 units. The number of state agricultural enterprises decreased however by 30 units over the period 2006-2010. The reason is because the state agricultural enterprises have proved unprofitable in the market of agricultural products.

For the analysis of cattle breeding in Kazakhstan should be studied also the main indicators of livestock by types of farms, which is presented for the period 2006-2010 years in the table 2.

⁴ Ministry of Statistics of the Republic of Kazakhstan [2011]: *Kazakhstan in 2010*. /Edited by Smailov A.A.

Table 2. Main indicators of livestock in farms of all categories in Kazakhstan (thousand heads)

Type	2006	2007	2008	2009	2010	Rate of increase 2010 to 2006, %
Cattle	5457.4	5660.4	5840.9	5991.6	6095.2	111.6
including: Cows	2442.6	2569.0	2605.6	2675.4	2717.3	111.2
Sheep	14334.5	15350.3	16080.0	16770.4	17369.7	121.2
Horses	1163.5	1235.6	1291.1	1370.5	1438.7	123.6
Camels	130.5	138.6	143.2	148.3	155.5	119.2
Pigs	1281.9	1304.9	1352.7	1347.3	1326.3	103.4
Birds	26215.5	28239.3	29506.8	30148.4	32686.5	124.7

Source: Ministry of Statistics of the Republic of Kazakhstan, 2001, 2011

Analysis of the table 2 indicate that the growth in groups in all categories of farms of the country from 2006 to 2010 years is distributed as follows: increased in 637.8 thousand heads of cattle, including cows: 274.7 thousand units, 44.4 thousand heads of pigs, and horses -275 thousand units, with sheep and goats increased by 3035 thousands heads, camels -25 thousands heads.

The most common areas of specialization of livestock farms in Kazakhstan at present still remains: in cattle breeding - dairy, meat, dairy and meat, in pork - beef; in poultry - egg, meat, broiler (table 3).

Meat, milk and eggs are staples of the population due to their high nutritional value. Without them, it seems to be impossible to provide a high level of nutrition.

In 2010, Kazakhstan produced 937.4 thousand tons of meat, of which 406 thousand tons was beef, 142.9 thousand tons was lamb, 206 thousand tons was pork, 103 thousand tons was poultry meat, and 73 thousand tons was horse meat. However, global demand is even higher and interest in Kazakhstan's meat comes from such countries as Saudi Arabia, Japan, Russia, France, Britain, and Iran. World leaders - Argentina and Brazil - are working at maximum capacity⁵.

Therefore Kazakhstan has the opportunity to occupy a niche in the global market for meat production. It needs to be noted that Kazakhstan in the production and export of grain is in the

⁵ A. Yesbolova, G. Abdikerimova [2011]: *Current status of livestock in South Kazakhstan Oblast: International Journal "The scientific world of Kazakhstan"*, ISSN -1815-9486.

top ten global exporters of flour for the third consecutive year, ranked first. This, however, cannot be said about livestock breeding. Therefore recently the State Program of development of livestock breeding was launched. The prerequisites for the initiation of this program addressed the current situation in livestock production with its set of key problems. These are a general reduction in livestock because over the past 20 years, the number of cattle decreased from 10 to 6 million heads. Additionally, there is an unfortunate situation for Veterinary Services as well as there are problems on fodder production, too.

Table 3. Production of main livestock outputs in Kazakhstan

Year	Meat (slaughter weight), thousand tons	Milk, thousand tons	Eggs, million units	Wool (physical mass), thousand tons	Karakul, thousand units
1990	1559.6	5641.6	4185.1	107.9	1821.4
1991	1524.4	5555.4	4075.3	104.4	1821.4
1992	1257.5	5265.1	3564.7	96.4	1994.5
1993	1311.5	5576.5	3288.2	94.6	1879.3
1994	1206.7	5296.0	2629.3	75.3	1950.9
1995	984.8	4619.1	1840.8	58.3	1145.2
1996	836.7	3627.1	1262.4	42.2	1033.4
1997	717.4	3334.5	1265.8	34.6	361.2
1998	636.3	3364.3	1388.4	25.2	214.3
1999	634.9	3535.2	1512.4	22.3	152.3
2000	622.6	3730.2	1692.2	22.9	129.9
2001	654.5	3922.9	1855.3	23.6	124.4
2002	672.6	4109.8	2102.1	24.8	127.6
2003	693.2	4316.7	2276.7	26.8	164.5
2004	737.1	4556.8	2316.8	28.5	145.6
2005	762.2	4749.2	2514.0	30.4	191.9
2006	808.6	4926.0	2494.7	32.4	129.3
2007	838.7	5073.2	2664.2	34.2	90.6
2008	874.2	5198.0	2989.1	35.2	115.0
2009	896.3	5303.9	3306.4	36.4	78.8
2010	937.4	5381.2	3720.3	37.6	72.6

Source: Ministry of Statistics of the Republic of Kazakhstan, 2001, 2011

Against all these problems one should mark that there is a very favorable price condition of the market. Since Kazakhstan has 182 million hectares of pasture, which gives a huge potential that only few countries in the world have, it seems obvious that livestock in Kazakhstan can be

enlarged and, most importantly, be profitable. In addition the Customs Union with other Central Asia countries and harmonization of veterinary standards will make export to Russia possible, which constitutes of success factors with regard to institutional conditions⁶. On other hand, farmers must comply with the advanced technology of growing, feeding, and housing of livestock. Today, cattle are mainly in part-owner units (87%). This constitutes of a significant problem. This is due to the fact that the cattle are grazing near settlements, leading to pasture degradation. A solution for that could be to breed cattle with traditional systems. This could reduce the cost of feed; animals could spend 6 to 9 months of grazing on natural pastures. Since feed costs on average make up 60% of livestock production costs, old systems could reduce the cost of meat.

Another factor of development that should be considered is the genetic transformation of animals. At present, statistics shows that the middle weight per cattle head in Kazakhstan is 156 kg. Meanwhile, the middle weight in the USA, Australia, Canada, and Brazil is 250-300 kg. In monetary global terms, it is 1.5 billion dollars in additional revenue for the Kazakh farms.

4.4. SWOT Analysis of the Livestock Sector in Kazakhstan

In 2010, the Republic of Kazakhstan produced 937.4 thousand tons (in slaughter weight) of cattle, which exceeds the level of 2009 by 4.5%. On average, 22% of produced meat is used for industrial processing. However the bulk of produced meat is used for personal consumption. The level of consumption of meat and meat products by the population is by 39% higher than the average statistical national rate of consumption, which is 48 kg / year for 1 person). With this regard it needs to be noted that there is a significant level of dependence on import of processed products: sausages, approximately 40%, and canned meat - 52%. More than 90% of the supply of sausages and canned food is imported from Russia, Poland, etc.⁷ [Program 2010].

Table 4 presents SWOT analysis of cattle sector of Kazakhstan.

⁶ A. Dautov [2011]: *“Kazakhstan aspires to world leadership in the meat market” /article for «BNews.kz»*. <http://www.bnews.kz/ru/news/post/58225/>

⁷ The Program for the Development of agriculture in the Republic of Kazakhstan for 2010 - 2014 years. [2010]: www.minagri.kz web site of Ministry of Agriculture of the Republic of Kazakhstan.

Table 4. SWOT analysis of cattle sector of Kazakhstan

Strengths	Weaknesses
<ul style="list-style-type: none"> - In the south-eastern Kazakhstan Climatic conditions are favorable for grazing (low-cost) sheep; - in the North, Central, West and East regions there is a surplus unused grassland suitable for transhumance of livestock; - The competitiveness of Kazakhstan Meat market in Russia. 	<ul style="list-style-type: none"> - Small-scale production, more than 80% livestock is in the personal part-time farm; - Reducing the area under feed crops, reducing the volume of production and high cost of feed; - Sporadic cases of registration centers especially dangerous diseases of animals and birds in some regions; - Low proportion of breeding and pedigree livestock; - High level of dependence on import of meat products; - The seasonal nature of production livestock production.
Opportunity	Threat
<ul style="list-style-type: none"> - With population growth is expected increase of meat consumption. In this case, potential beef market for Kazakhstan is Russia. The entry of Kazakhstan into the Customs union raises competitiveness of domestic beef; - Production of ecologically clean production (without using genetic engineering), as well as establishing production of meat industry standards of "Halal" is potential output domestic producers of meat markets of Arab countries and the Middle East. 	<ul style="list-style-type: none"> - High level of competition from major meat-importing countries: Argentina, Brazil, Australia, New Zealand. These countries export large amounts of frozen meat, which allows them to offer meat at prices significantly lower than the product of Kazakhstan production; - A ban on the exportation of products in connection with outbreaks of especially dangerous diseases of animals.

Source: own elaboration

4.5. Discussion and Conclusion

The major system-wide problems in the agricultural sector of Kazakhstan mentioned in different scientific papers and reports from industry are as follows⁸:

- Backwardness of agricultural technologies, physical and moral deterioration of the durable equipment;
- Small-scale agricultural production;
- Low genetic potential of seeds used and farmed livestock;
- Weak food supply, degradation of pastures;
- Lack of a uniform system of identification of farm animals and the electronic database on it;
- Lack of quality raw materials for industrial processing and the low share of domestic value-added products in the domestic food market;
- Availability of essential food products, which are not met domestic needs;
- Absence of national standards for measurement methods of food on the modern equipment, low level of harmonization of standards with international requirements;
- Low levels of investment in the agricultural sector;
- Lack of implementation of scientific developments into production;
- Lack of qualified personnel;
- Lack of development of rural co-operatives;
- Insufficient financial resources to fully meet the needs of rural producers in credit facilities.

Taking the above into account to support the development of livestock in Kazakhstan, among others it is necessary to define a list of priority species of animals with high genetic potential for productivity, make changes to the mechanisms and regulations grant to increase the proportion of breeding animals through the use of artificial insemination and the widespread introduction of biotechnology methods for embryo transfer. It is also necessary to strengthen the inspection of work in the field of veterinary medicine and livestock breeding and improve the food supply.

⁸ A. Yesbolova, G. Abdikerimova [2011]: *Current status of livestock in South Kazakhstan Oblast: International Journal "The scientific world of Kazakhstan"*, ISSN -1815-9486.

Speaking of food supply, it is necessary to note a major problem in the agricultural branch - there is no special program for the production of coarse and succulent fodder. The main feed for cattle for many years and remains lucerne and cane, waste obtained after processing of rice.

According to experts, with such a diet, animals are not terrible, but good yields and weight gain are impossible. In addition to hay and Lucerne, the diet of cattle must be included corn, animal feed, oil cake, additives, and various vegetables. Only with such a diet can yields increase and the time for additional weight gain shorten.

In order to develop the livestock industry in Kazakhstan, it is necessary to improve the breeding, and transfer the meat from the farm homestead to the industry. It is needed to make meat production more stable. Now the slaughtering is unstable, there are large deviations between the production periods. Also the development of consolidated enterprises (cooperatives) and the solution of marketing problems through the cluster approach could be a solution. In addition creation of a market infrastructure for processing, harvesting, storage and export products is needed as well as advisory and advocacy and practical work on the rational use of distant pastures among farmers.

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