



Development of Large-Horned Cattle Breeding in the Republic of Karakalpakstan and its Territorial Characteristics

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ABSTRACT

The dynamics of cattle breeding in the Republic of Karakalpakstan and issues of its territorial organization are studied in this article.

Keywords:

Livestock, large-horned cattle, land fund, pasture fund, territorial difference

Livestock is one of the most priority directions in the socio-economic development of the Republic of Karakalpakstan. Because, in recent years, the water shortage in the region is causing a number of problems in the development of agriculture. The republic has a large pasture fund for the development of the livestock industry. Furthermore, the local population has a rich history of livestock and has been extensively engaged in this industry in the pastures since ancient times. In the territory of Karakalpakstan, livestock has its own history of development as the main branches of agriculture. Therefore, the development of the livestock sector, first of all, provides the population with quality and cheap food products, and secondly, products are widely used as raw materials in the light and food industry. In the republic, there are cattle breeding, sheep and goat breeding, horse breeding, camel breeding, pig breeding, poultry breeding, fishing, cocoon breeding, beekeeping and other fields.

Cattle breeding in Karakalpakstan is one of the fields of livestock that has been widely practiced since ancient times in order to provide the population with milk, meat and skin. Beef and dairy cattle breeding differs from pasture cattle in the direction of meat and wool in that it is primarily located in suburban or agricultural cropping areas. Therefore, the development of suburban beef and dairy cattle breeding also depends on the level of provision of cultivated areas.

According to statistics, the number of large-horned cattle increased from 379,8 thousand to 1175,9 thousand in 2000-2022, i.e. by 3.1 times. Its average annual growth rate was 9.5 percent. This is a good indicator, of course. However, the results of its analysis show that this indicator has both periodic and territorial differences. For example, the number of livestock of this type increased by 188.5% in 2000-2010, and by 155.2% in 2010-2020. It can be concluded that in recent years, the rate of increase in the number of large-horned cattle has decreased significantly.

Table 1. The dynamics of the number of large-horned cattle in the administrative units of the Republic of Karakalpakstan, (thousand head)

№	Administrative units	2000	2005	2010	2015	2020	2022
1	Amudarya	46,2	51,6	88,8	106,3	155,2	165,8
3	Beruni	45,7	57,0	91,0	111,9	153,4	161,1
4	Bozatau	21,6	-	-	-	-	37,9
5	Qarauzak	16,8	17,5	24,9	28,5	37,9	38,9
6	Kegeyli	18,1	38,8	61,6	70,0	79,5	53,7
7	Kungrad	25,7	27,5	44,3	51,4	65,5	68,9
8	Qanlikul	15,4	14,8	22,2	27,6	33,3	34,8
9	Muynak	10,5	9,9	14,7	19,4	27,5	29,3
10	Nukus	13,0	17,7	26,5	30,6	37,5	39,2
11	Takhiatash	3,1	4,2	6,3	-	22,8	24,5
12	Takhtakupir	13,0	14,1	22,4	33,9	43,3	45,1
13	Turtkul	41,2	43,3	75,4	104,9	128,3	133,7
14	Khodjeyli	26,8	27,5	48,6	64,1	55,6	58,2
15	Chimbay	25,5	33,3	47,4	56,9	77,0	81,0
16	Shumanay	15,8	29,8	50,2	59,5	60,9	64,5
17	Ellikkala	38,9	46,0	83,1	97,3	123,3	130,1
18	Nukus city	2,6	4,7	8,3	9,2	9,6	9,1
	Total by republic:	379,8	437,7	715,8	871,7	1110,6	1175,9

The table was compiled based on the data of the Statistical Department of the Republic of Karakalpakstan

The number of large-horned cattle is relatively more in Amudarya, Beruni, Turtkul and Ellikkala districts. In 2022, these districts accounted for 50.2% of the total large-horned cattle in the republic, and this figure was equal to 45.3% in 2000. The percentage of livestock of this type is less in Muynak and Takhiatash districts than in other districts (less than 2.5

percent in each of them). It is known that the main part of large-horned cattle belongs to the southern districts.

During the research period, the dynamics of large-horned cattle had large territorial differences, that is, by rural districts. In particular, we can see the republican administrative units according to the increase in the number of livestock of this type during the years 2000-2022 (Table 2).

Table 2. Grouping of the rural districts of the Republic of Karakalpakstan according to the level of growth of the number of large-horned cattle

Groups and administrative units	Growth rate, (times)	Share of cattle, (percentage)		Area share, (percentage)	Share of arable land, (percentage)
		2000	2022		
Takhiatash, Shumanay	Above 4,0	4,8	9,0	0,6	8,0

Amudarya, Beruni, Nukus, Takhtakupir, Turtkul, Chimbay, Ellikkala and Nukus city	3,0-3,9	50,9	53,5	25,0	50,9
Bozatau, Kegeyli, Qanlikul, Qarauzak, Kungrad, Muynak, Khodjeyli	less than 2,9	44,4	37,6	74,4	41,1

The table was developed by the author based on the data of the Statistical Department of the Republic of Karakalpakstan

In the first group of rural districts, the number of large-horned cattle increased by 4 times in 2000-2022, and its share in the republic increased from 4.8% to 9.0%. Districts of this group account for 0.6% of the territory of the republic, and 8.0% of arable land. If we look at the level of increase in the number of large-horned cattle during the researched period at the level of rural districts, it has increased almost 8 times in Takhiatash district and more than 4 times in Shumanay district. There are objective reasons why these indicators are like this. For example, administrative-territorial changes took place during this period, and a certain amount of land from Khodjeyli district was added to these both districts. Districts of the second group account for 25.0% of the territory of the republic, and 50.9% of the arable land. During the considered period, the number of large-horned cattle in this group increased from 3.0 to 3.9 times, and its share in the republic increased from 50.9 percent to 53.5 percent. According to their geographical location, they are mainly made up of southern, partly central and northern districts.

74.4% of the territory of the republic, and 41.1% of the arable land belong to the third group of districts. In this group, the increase in the number of large-horned cattle in 2000-2022 was less than 2.9 times. Due to the low growth rate, the share of this type of cattle in the republic decreased from 44.4 percent to 37.6 percent. In this group, there are

northern districts, where the development of livestock industry is extremely important in the future.

As mentioned above, rural districts in Karakalpakstan differ sharply from each other in terms of their occupied area, number of inhabitants and livestock, crop and pasture areas, and other geographical features. For example, the difference between the largest Kungrad district (74.5 thousand square km) and the smallest Takhiatash district (0.2 thousand square km), or the "geographical" coefficient of the area, is 372.5. This means that Kungrad district is 372.5 times bigger than Takhiatash district. If we compare this method according to the number of large-horned cattle in the republic, the coefficient of "geography" between Amudarya district with the largest number of large-horned cattle (165.8 thousand) and Takhiatash district with the least amount (24.5 thousand) is equal to 6.8. This coefficient between Chimbay district (41.2 thousand ha) and Takhiatash district (6.8 thousand ha), which has the largest number of cultivated areas, is 6.1. Therefore, the presence of such large geographical differences among the rural districts of Karakalpakstan makes it important to determine the index of development of the sector, which is expressed in the ratio of large horned cattle and arable land. In this case, the index of normal development is equal to 1.00. If this index is greater than 1.00, the capacity level of the industry in these districts is high, if the index is less than 1.00, it means that these districts have wide opportunities for development of the industry.

Table 3. Index of development of large-horned cattle industry in the Republic of Karakalpakstan

№	Administrative units	Large-horned cattle		Arable land area		Sector development index
		thousand heads	Share (%)	thousand ha	Share (%)	
1	Amudarya	165,8	14,1	32,5	7,8	1,82
2	Beruni	161,1	13,7	28,9	6,9	1,98
3	Bozatau	37,9	3,2	14,6	3,5	0,92
4	Qarauzak	38,9	3,3	32,4	7,7	0,43
5	Kegeyli	53,7	4,6	25,1	6,0	0,76
6	Kungrad	68,9	5,9	38,7	9,2	0,63
7	Qanlikul	34,8	3,0	32,9	7,9	0,38
8	Muynak	29,3	2,5	8,5	2,0	1,23
9	Hykyc	39,1	3,3	22,9	5,5	0,61
10	Takhiatash	24,5	2,1	6,8	1,6	1,29
11	Takhtakupir	45,1	3,8	32,7	7,8	0,49
12	Turtkul	133,7	11,4	25,7	6,2	1,85
13	Khodjeyli	58,2	4,9	19,8	4,7	1,05
14	Chimbay	81,1	6,9	41,2	9,9	0,70
15	Shumanay	64,5	5,5	26,8	6,4	0,86
16	Ellikkala	130,1	11,1	28,7	6,9	1,62
17	Nukus city	9,1	0,8	0,4	0,1	8,08
		1175,9	100,0	418,5	100,0	1,00

The table was developed by the author based on the data of the Statistical Department of the Republic of Karakalpakstan

Based on the results of the analysis of Table 3, the rural districts of the Republic of Karakalpakstan can be divided into the following two groups according to the index of development of the field of large-horned cattle breeding:

- Amudarya, Beruni, Muynak, Takhiatash, Turtkul, Khodjeyli and Ellikkala districts;
- Bozatau, Qarauzak, Kegeyli, Kungrad, Qanlikul, Nukus, Takhtakupir, Chimbay and Shumanay districts

The development index is higher than 1.00 in the rural districts of the first group.

There are two reasons for this, the number of large-horned cattle in these districts is large or the arable land is relatively small. According to statistical data, in Amudarya, Beruni, Turtkul and Ellikkala districts, which are part of the first group, there is less arable land (27.7%) compared to the total number of livestock of this type (50.2%). This ratio is completely different in Muynak, Takhiatash and Khodjeyli districts (9.5 and 8.4 percent). In general, this group accounts for 59.7% of the large horned cattle in the republic, and 36.1% of the arable land. So, the "geographical" coefficient between this type of livestock and arable land is 1.65.

In rural districts of the second group, the development index is less than 1.00. This

group accounts for 39.5% of Karakalpakstan's large-horned cattle and 63.8% of arable land. The "geographical" coefficient between these two factors is equal to 0.62.

It can be concluded that the second group consists mainly of rural districts located in the northern and partly in the central region, which have favorable opportunities for the development of beef and dairy cattle breeding. These opportunities are primarily explained by the availability of large arable land for growing fodder crops. At the same time, taking into account the shortage of water resources in recent years, it is advisable to replace the composition of cultivated areas in these districts with fodder crops that require less water.

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