



TOPIC: MONITORING OF KARAKUL PASTURES

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Abstract.

Natural pastures and hayfields are primarily characterized by vegetation cover, which depends on the habitat. Therefore, in all studies aimed at their study, special attention should be paid to determining the vegetation cover, its flora composition, distribution, condition, abundance, nutritional value, as well as the level of occurrence of poisonous, harmful and weeds.

Keywords:

Pasture, fodder, productivity, climate, desert region.

Introduction. Pastures are the main source of fodder for desert livestock in the country, and they can be used all year round. Pasture fodder is the cheapest food source. However, the current state of karakul pastures does not meet the requirements of sustainable development of the industry. Because the productivity of pastures is low, it does not exceed 1.5-3.0 ts / ha in terms of dry matter. In addition, the productivity of desert pastures is directly related to weather conditions, so yields fluctuate dramatically over the years and seasons. Precipitation will double in many years per hectare of desert pastures compared to the average year, and decrease to 1-0.5 ts / ha in arid years. Multi-year observations show that every ten years there are 3 years of high yield, 4 years of average yield and 3 years of low yield.

Pasture productivity and feed quality fluctuate dramatically not only over the years but also throughout the seasons. For example, the amount of fodder in pastures decreases by 2.5 times by winter. The protein content of the feed decreases from 20% to 5%, and the protein content decreases from 13% to -4%. While 100 kg of pasture feed contains 80-90 feed units in spring, in winter this figure does not exceed 18.3%.

The low productivity typical of desert pastures and its sharp fluctuations have occurred under the influence of natural-historical factors that have occurred in this region. The negative developments in pasture management in recent years can also be attributed to the product of human mismanagement in the desert region. The sharp increase in the population living in the desert region, the expansion of the villages has led to an increase in the number of livestock and a rapid increase in the pressure on the pastures around the countryside. As a result of the continuous eating of shrubs and semi-shrubs by livestock, their natural ability to reproduce from seed was limited. The harvesting of these plants for agricultural needs is also leading to the complete disappearance of shrub and semi-shrub plant species from the vegetation cover of rural pastures. Currently, the pastures around each village are in a severe crisis within a radius of 5-7 km. According to the data, currently about 40% of karakul pastures in Uzbekistan are experiencing various levels of crisis (Rafikov, 1997; Mahmudov, 2005). The area of severely degraded pastures around the wells alone is 0.5 million hectares, and the area of mobile sand massifs is 2.0 million hectares. Due to the pasture crisis, yields have now fallen from an average of 2.5 ts / ha to 1.8 ts / ha, or 21% (Mahmudov, 2005). The increase in pressure on pastures is also due to the failure of water sources. Due to the depletion of water resources, the use of herds 1 in the pastures around the water source from early spring to late autumn completely disrupts the system of rational, seasonal use of them.

Due to the frequent droughts in recent years, there is a need to relocate livestock to remote areas of the desert, which leads to significant expenditures and a sharp decline in the efficiency of the sector.

The decline in pasture productivity, the deterioration of feed quality has resulted in the deterioration of vegetation cover as a result of their continuous use, the depletion of biodiversity.

Table-1
Distribution of pastures in the Republic of Karakalpakstan and regions

Names of regions	Area (thousand / ha)	As a percentage (%)
The Republic of Karakalpakstan	5196,4	24,7
Andijan region	21,2	0,1
Bukhara region	2540,8	12,1
Jizzakh region	742,7	3,5
Kashkadarya region	1407,3	6,7
Navoi region	8737,7	41,6
Namangan region	151,2	0,7
Samarkand region	797,3	3,8
Surkhandarya region	830,3	4,0
Sirdarya region	20,2	0,1
Tashkent region	432,1	2,1
Fergana region	23,5	0,1
Khorezm region	109,4	0,5
Total	21010,1	100

Studies show that the number of species in the vegetation cover of pastures has now declined sharply. For example, if 35-40 years ago more than 260 flowering plant species were recorded in the natural flora of Karnabchol (Mavlonov, 1973), today the number of plant species in this region does not exceed 35-40 species, ie biodiversity has decreased more than 6 times.

Plant diversity in severely crisis pastures does not exceed 5-6 species. More than half of them are plants with unsatisfactory nutritional properties, almost inedible, such as incense, mushrooms, sagebrush, apricot, fly.

The natural conditions of the pasture region of Uzbekistan are diverse in terms of its physical-geographical and pasture-feeding conditions, as it is located at different altitudes above sea level. However, the arid regions of the republic have a certain degree of commonality in terms of soil-climate, vegetation characteristics.

The territory of Uzbekistan is divided into the following regions, depending on the altitude: desert, hills, mountains and pastures



Pastures located in the plains are called desert areas and cover 78.1% of the total area. Hills account for 15.2%, mountains for 4.5% and pastures for 2.6%. In the desert region, irrigated agriculture and pastoralism, especially karakul, are developed. The annual rainfall in this region is 100-250 mm, the average annual temperature is around 15^o C.

The region of the foothills is called the hills and the average annual rainfall is 200-345 mm. The average annual temperature is slightly lower than in the desert region, i.e. 15^o C, 14-16^o C in the south. The region is home to dry farming and large irrigated farming oases. Large areas of Tashkent, Syrdarya, Jizzakh, Kashkadarya, Samarkand regions belong to this region.

The mountainous region of average altitude occupies a large area of Tashkent, Samarkand, Kashkadarya, Surkhandarya regions. The average annual rainfall in this region is relatively more than - 400 mm, which is more favorable for lalmi farming. The average annual air temperature is 8-11^o C.

The high mountainous region is called meadows, the soils are light brown, the vegetation consists mainly of grass-desert plants and are the best pastures for the summer season.

The total area of used pastures of the republic is 23.6 million hectares, or 52% of the total area. In particular, 17.8 million hectares of desert and semi-desert karakul pastures. Of these, 14 percent are not supplied with water. Desert and semi-desert pastures (hills) are used as a source of fodder for desert and pasture livestock in the republic.

Table-2
Pasture fund used by desert-pastoral livestock

Provinces	Total pasture area, thousand / ha	Including not supplied with water	
		thousand / ha	%
The Republic of Karakalpakstan	3461,1	430,0	12,4
Bukhara	2416,0	439,7	18,2
Jizzakh	582,0	205,0	35,2
Kashkadarya	1011,9	122,5	12,1
Navoi	9245,8	1110,3	12,0
Samarkand	633,2	124,9	19,73
Surkhandarya	407,9	64,6	15,84
Total in the Republic:	17758,8	2498,4	14,0

The rest of the pastures are located in other regions and are used for seasonal feeding of livestock.

The diversity of soil-forming parent rocks, the ecological environment, the diversity of flora ensure the diversity and complexity of the soils of the republic due to the sharp continental climate and the size of the territory.

Large sandy massifs occupy large areas in the Kyzylkum Desert, the ancient Amudarya delta and the Surkhandarya region. Sandy soils have high water permeability, water is absorbed into deeper layers. No flow is generated on the soil surface. Even a small amount of moisture moistens the sand to a depth of 100-150 cm. The almost absence of capillaries in sandy soils ensures efficient use of available moisture by plants, ensuring minimal physical evaporation.

The dead moisture reserve in the sands does not exceed 1%. In sandy soils there are more favorable conditions for plant growth.

The distribution of precipitation in the desert and semi-desert region is highly variable across regions, and this process is inextricably linked to the direction of humid air movement.

The Kyzylkum desert is characterized by very low humidity. The average annual rainfall in this area is 103-146 mm.

To the east, as the sea level rises, and especially in the Northeast, the amount of precipitation gradually increases. The average annual rainfall in the foothills is 289-325 mm. The relative humidity also affects the productivity of pastures. In winter, usually in the morning and at night, partially in the evening the relative humidity reaches a maximum of 70-90%, and in the daytime 55-75%.

The relative humidity in the Kyzylkum is very low in summer (July-August), ie only 15-20%.

Sustainable development of desert-pastoral animal husbandry and its efficiency is directly related to pasture productivity. Studies show that 85-90% of the annual feed demand of livestock in desert-pastoral livestock can be ensured if its pastures are satisfied. However, 7.3 million hectares of currently used pastures have experienced various levels of crisis, accounting for 40.7% of the total pasture fund (Table 5).

Table-5
**Indicators of the crisis in the pastures of the republic
 (Rafikov, 1997)**

Provinces	Crisis pastures, thousand / ha	Percent
The Republic of Karakalpakstan	1 500	43,4
Navoi region	4 100	43,8
Bukhara region	1 200	37,6
Surkhandarya region	205	41,2
Samarkand region	117,3	24,5
Jizzakh region	168,4	25,4

As a result of the crisis, the annual productivity of pastures has decreased over the past 5 years from the previous 2.4 ts / ha to 1.84 ts / ha, or 21%. Decrease in productivity in pastures of the Republic of Karakalpakstan - 27%, Bukhara region - 18.5%, Jizzakh region - 16.9%, Navoi region - 26.5%, Surkhandarya - 17.4%, Samarkand - 10.9% and Kashkadarya region - 6.2 %. Currently, if a comprehensive assessment of desert pastures is made, 58% of them can be classified as good pastures, 17% as medium pastures, 10% as satisfactory pastures and 12% as unsuitable pastures.

The strongest factor in the pasture crisis (43.7%) is overgrazing. In addition, there are a number of factors that contribute to the pasture crisis: deflation, soil salinity, water erosion, man-made factors, global climate change, island tragedy, and so on.

The main factor causing the pasture crisis is their continuous and sporadic use, and the main factor hindering their rational use and seasonal use system is the disruption of their water supply. Most water sources (mine wells and boreholes) were commissioned 50-60 years ago, and most of them are now in need of repair or completely out of order (Table 6).

Table-6

Current state of water resources in the pastures of the Republic

Water sources	Total	To repair need
Mine wells	2267	535
Wells	807	189

In the desert region, the development of mineral resources, the laying of main pipelines, the growing population and the sharp increase in the number of livestock under their personal care are leading to increased pressure on desert pastures, the crisis of pasture ecosystems and the acceleration of desertification. Increased mowing of existing shrub and semi-shrub vegetation for firewood and other farm needs is also exacerbating the pasture crisis. The economic indicators of the karakul farms of the country, the analysis of economic activities also testify to the seriousness of the negative changes taking place in the desert pastures.

Today, about half of the value of livestock products produced on most farms is spent on feed, leading to a sharp decline in the profitability of the industry.

A number of effective technologies have been developed in the country to prevent pasture crises, increase their productivity and intensify fodder production in the desert.

The introduction of existing technologies will increase the productivity of pastures from 2-3 ts / ha to 15-20 ts / ha. Despite the fact that these technologies were tested in large areas (32,000 hectares) at the breeding plant "Karnab" in Nurabad district in the 80s and 90s of the last century, their high efficiency has not been introduced in any farm in the country for 27 years. Although 17 promising varieties of desert forage crops have been created, their seed production has not been established at all, although in the 80s and 90s the Karnab breeding plant had 2,000 hectares of seed fields and produced 100-120 tons of seeds a year. . At present, such advanced experience is not used in any farm in the country.

The analysis of the current state of desert pastures shows that there are the following problems:

- Acceleration of pasture crisis, sharp decline in biodiversity, gross productivity and feed quality as a result of irrational use (overuse) of natural plant resources in desert pastures;
- Decreased availability of pasture fodder for existing livestock and deterioration of economic indicators of the sector;
- Disruption of water supply and increased pressure on certain pasture areas;
- Complete disruption of the seasonal pasture use system;
- Decreased self-regenerative capacity of desert ecosystems and acceleration of desertification processes.

Pasture degradation. According to the State Committee for Nature Protection of the Republic of Uzbekistan (SRRSDC, 2008), 20.8 million hectares of pastures in Uzbekistan, including 17.4 million hectares in the desert region.

According to the State Committee for National Security, 15-18 mln. The land is covered by desert pastures, 3-5 mln. ha of foothill pastures and more than 1 million ha of land mountain and high mountain pastures.

In the last 15-20 years, there has been a decline in the amount of fodder - degradation - as a result of overuse of pastures, erosion, overgrazing of cattle in pastures and other anthropogenic impacts on mobile livestock. 20.8 mln. 16.4 million hectares of pastures. hectare was degraded by 78%, of which: forage fodder on 9.3 million ha - 20-30%; 30-40% of the area of 5 million hectares; 2.1 mln. ha or more than 40% of the forage area was degraded. Pasture degradation is observed mainly in Jizzakh, Samarkand, Navoi, Bukhara regions and the Republic of Karakalpakstan. More than 70% of the area, including one-third of it, has been severely degraded.

Degradation of vegetation cover in pastures. Desertification begins in the Adir region when the rate of anthropogenic impacts exceeds the self-regenerative capacity of landscapes.

The main causes of vegetation degradation are:

- Intensive grazing;
- Development of new lands for irrigation;
- Cutting wood and shrubs for firewood;
- Irrigation of lands with mineralized water, over-irrigation, repeated salinization, use of unprepared lands, discharge of collector-drainage water only in the low desertification zone, etc.

It is possible to prevent the escalation of desertification, to restore degraded pastures by conducting phytomelorative works, which provide for the stratification and selection of pasture phytomeolarants for various natural-territorial complexes. Phytomelorants are selected according to the resistance of different species to the characteristics of edaphic conditions of desert areas.

The United Nations Development Program in Uzbekistan is an environmental review of Uzbekistan, based on indicators. Project "Improvement and development of a database of environmental criteria (indicators) using the Geographic Information System (GAT) for monitoring the state of the environment in Uzbekistan." UzTMKDK, T .; 2008, 88 p.

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