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Use And Protection Of Natural Resources Of Kokand Oasis

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Abstract: The article covers the use and protection of natural resources of the Kokand oasis. It also covers the issues of population growth in the Kokand oasis and changes in the soils of the oasis as a result of various natural processes, reduced productivity and their protection.

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1. Introduction

The territory of the Republic of Uzbekistan is full with unique irrigated agricultural regions. For this reason, the reclamation here has been paid special attention since ancient times. After gaining independence, our republic always takes care of the effective use of irrigated lands, increasing the productivity of soil and the yield of agricultural crops.

As indicated in the decree of the president of the Republic of Uzbekistan "on measures for effective use of land and water resources in agriculture" in June 17, 2019, PF – 5742, at the present time, more than 20 million hectares of land, including 3.2 million hectares of irrigated land, are being used to produce food for the needs of the population and to provide the economical system with products.

Large-scale irrigation and melioration activities are carried out within the framework of state programs in order to effectively use soils in our country, increase the fertility, improve the reclamation status and water supply.

The main texture and properties of soils in our republic according to the types of zone, the humus state and its components, the soils exposed to erosion of oases are practically unexplored. And this is due to research from soil specialists on hungry and brown soils, meadow and swamp – oasis soils, fertile soils, oasis cultural soils, the main properties and problems of their conservation and restoration. Also, the clay soils developed on the tertiary period deposits are slightly saline, on which the water is considered to be moderately mineralized to a depth of 5-10 m. But it should be noted that in the irrigated soils of oasis, the levels of water are around 3 – 5 m, mineralized at different levels, they are directly involved in the re-salinity of soils [4].

The accumulation of salts and salinity of the lands occurred in the steppe region and the region of soils, that is, in the regions of the Republic of Karakalpakstan, Khorezm, Bukhara, Sirdarya, in the regions of Kashkadarya, Surkhandarya, Navoi, Samarkand, Fergana Valley. If compared to the dynamics of the rate of salinity in 2000-2010 years, we can see that salinity reached 2446,9, that is, 65,9 percent in the Republic.

2. Materials and methods

The history of irrigation of the Kokand Oasis has a long period, as a result of this process, significant changes occurred in the soil cover, the process of soil formation has passed from the automatic mode to the side of half-gomorph soil formation. According to him, the soils of the Oasis are characterized by a specific morpholitogenetic structure, agrochemical, agrophysical and meliorative texture and properties. In the greater part of the oasis, the annual amount of precipitation is less than I other regions of the Fergana Valley 80 – 100 mm, around the city of Kokand 98 mm. The relative humidity is much lower, the temperature is relatively hot and dry, and the air pressure decreases as a result of warming up the temperature in spring and autumn.

At the same time of the year, through the Khujand gate, the Kokand wind blows from Mirzachul to the valley, the speed of the wind reaches 20 – 25 m\sec. Thus, wind erosion in the Kokand Oasis is strongly developed. Because this type of erosion occurs in a dry climate, where the annual amount of precipitation is low, the air temperature of spring and summer months with high humidity evaporation from the Earth is hot, under conditions with low relative humidity [2].

Today, it is possible to observe the formation of new small – scale sand masses as a result of the blowing and scattering of the sand "Kokand wind" in the Besharik, Furqat, Uzbekistan, Dangara, Uchkoprik, Buvayda, Baghdad districts located in the Kokand Oasis. Because the sands in this area are located in the direction of the wind, about 100 tons of sand is blown from each hectare of land throughout the year. As a result, the barkhans formed in the central Fergana desert can Silge up to 14 – 20 meters per year [3].

As a result of the many years of scientific research conducted by soil-erosion scientists K. Mirzajonov, M Hamrayev, it became clear that fertile soils, cultured in very large areas in the Kokand Oasis, were left under sandy barkhans due to wind erosion. According to their account, it is established that in the oasis there are such lands about 10 thousand hectares. The composition of these soils includes 2 – 3 percent soil and water – resistant grain-structure up to 40-50 percent, from the slopes of the earth 50 – 70 – 100 buried with sand at a depth of CM. If a layer of these soils is rolled out on the plantation plug, the soil becomes wind-resistant and fertile soil. Especially it is recommended to conduct these activities in the autumn.

In the large area of the Kokand oasis are composed of hungry and brown soils, as well as sandy desert soils fortified with shrubs, such soils occupy large areas on the territory of the above-named districts.

The mechanical composition of both these two soil types is water-permeable, so that water does not accumulate on the surface part of the Earth, and washing is rather sluggish. Another reason for not washing it is that the relief is flat. But the wind can easily dust and scatter these soils. The deflation of the cocaine wind in the regions where the same soils are distributed is clearly visible. Organized to prevent wind erosion, a sharp reduction in the area of tree-growing paves provide a wide way for the development of erosion. The risk of erosion increases as a result of irregular cutting of shrubs in ihotazars established with the aim of strengthening sands, their area decreases year by year [5].

Several newly mastered (mechanical composition is light) lands of the western and central part of the oasis suffer from wind erosion. Now, as a result of improper irrigation and farming in these lands, many areas are turning into abandoned lands, ravines, leaving the agricultural fund. According to the data provided, 20 percent of the total area of grasses soil is water erosion. Water erosion on 1430 thousand hectares of land in the territory of Uzbekistan, land erosion on 750 thousand hectares of land in lalmi, deflation on more than 2 million hectares of land in three regions. In particular, 500 thousand hectares of Fergana Valley were subjected to soil erosion, according to which 160 thousand hectares of irrigated land, 40 thousand hectares of land and 80 thousand hectares of land subject to cliff erosion, deflation was determined to be 90 thousand hectares. According to this, as a result of insufficient implementation of measures on the extensive use of organic fertilizers by users of agricultural lands in our country, the amount of humus in irrigated soils has decreased by 10-15 percent in the last 30 years, as a result of which the irrigated land, rich in the equivalent account, exceeds 450 thousand hectares.

Wind erosion, which occurs in the fields of cultivation of agricultural crops of districts located in the Kokand oasis, is considered one of the unpleasant environmental problems. And measures aimed at preventing such processes are carried out very quietly, or pre – existing plantations, while the area of extinction is reduced from year to year, while in some areas it is completely lost [2]. The reasons for the origin of such a condition can be directly related to the increase in the number of inhabitants in the oasis from year to year (Table 2).

Table 2. The growth rate of the population of the Kokand oasis

Names of districts	Year of establishment	The amount of people, in thousands			
		1989th year	2010th year	2016th year	2019th year
Besharik	29.09.1926	140.9	181.2	208.1	224.6
Baghdad	31.12.1964	108.0	174.8	193.3	210.4
Buvayda	26.12.1973	111.2	178.9	206.4	222.2
Dangara	07.12.1970	87.3	144.1	158.0	170.1
Uchkuprik	29.09.1926	113.9	183.3	206.6	224.4
Furkat	09.04.1992	-	97.1	107.6	115.8
Uzbekistan	17.04.1963	142.6	194.5	217.3	234.3

The table was compiled by the author using the data of the Fergana regional statistical department.

It is known that the Fergana Valley is one of the most densely populated regions of our republic. In the Namangan region, an average of 1 km. address in the Andijan region, if the location corresponds to 460-490

people, then this figure corresponds to 560-610 people. If the per capita ratio of irrigated lands in the Republic is 0.17, then in the Namangan region this ratio will be 0.7-0.8. As can be seen from the table, it is possible to see that the Kokand Oasis is distinguished from other oases of the Fergana Valley even by its territory, where the fastest population increase is observed. Farmers work in the irrigated land. In the meadow, the pet feeds, the land is used for their own purposes. As a result, the lithological-geomorphological, mechanical composition of the soil, water and air regime, physical, agrochemical and chemical-biological properties of the arable lands also changed [7].

Also, in the middle and lower flank microsomes of the Kokand oasis, mineral grunt water lies near the surface of the Earth, moderately and strongly decomposed irrigated Meadows, marshy-meadow and swampy soils and marshes are well developed. The process of salinity and swamp in these soils is very active and we can see this from the 3rd table.

Table 3 The area of irrigated agricultural land on the salinity level of the Kokand Oasis (on the account of hectare)

Туманлар номи	**Not soiled and weak**	**Standard**	**Strong and very strong**
Besharik	20579,15	3388,8	1340,0
Baghdad	12459,0	-	800,1
Buvayda	12953,3	-	639,0
Dangara	12832,9	13036,5	1354,3
Uchkuprik	13691,6	1732,2	1742,2
Furkat	11144,33	10770,5	437,7
Uzbekistan	-	15264,5	-

The table was compiled by the author.

In accordance with the purpose of systematic work on increasing soil fertility by users of all agricultural lands of the Kokand oasis, in particular, the development of complex measures for the widespread use of organic fertilizers, as well as identification, evaluation, monitoring of soil degradation and elimination of negative consequences, it is desirable to establish a system of measures to improve soil fertility.

It is also necessary to enrich the world of plants characteristic of the steppe region in undigested parts of the Central Ferghana, that is, to multiply the white saxaul, black saxaul, cherkess, kandym, yantak kablar, which grows naturally. These measures serve to strengthen the sands, to prevent migration to the oasis, as well as preventing wind erosion [6].

The influence of wind erosion on salinity and desertification of soils of the Kokand Oasis is incomparably greater. Therefore, it is necessary to seriously study the ways of salinity of oasis soils and the development of measures against it in order to meet the needs of the population, to rival the industrial and agricultural sectors.

Before the research on the conservation and increase of fertility of irrigated steppe – oasis soils formed in the Kokand oasis, it is necessary to first of all to realize the saline state of these lands and its improvement. The solution of these problems can be found in the draft resolution “on additional measures for effective use of Land Resources, Conservation, Restoration and increase of soil fertility” by President Shavkat Mirziyoyev [8]. In this decision, the analysis of practical work on increasing the fertility of soils showed that there are a number of systemic problems and shortcomings in the field.

3. Results

In particular, there is a lack of a single legal document covering the systematic work on the use and protection of soils, the mechanism for the introduction of scientifically based works to bring the soils into the state of ecologically clean and healthy soil has not been fully established, measures on the extensive use of organic fertilizers by users of agricultural lands have not been, the lack of modern approaches to soil fertility detection and forecasting by the scientific research institutes in the field, the effectiveness of the use of lalmi and yaylov lands is low, the application of thrifty, modern advanced technologies has not been sufficiently established, such as problematic issues have been covered. It is also desirable to carry out the following recommendations for the Prevention of such soil – ecological problems. They consist of:

- Since the texture, properties and composition of the soils of the Kokand oasis formed as a result of irrigation appeared as a result of human activity, it is necessary to study all aspects and analyze them;
- study the contrast sides of natural hornbeam brown, sandy, bald soils distributed in the oasis with fertility rate;

- due to the mechanical composition of soils of Kokand oasis consists of sand and dust particles, prone to wind erosion, development and implementation of measures to combat and protect these lands from deflation in irrigation farming;
- in the process of irrigation, the levels of groundwater in the soil of the Kokand oasis are rising, salting these soils to different degrees. Therefore, it is necessary to properly design a system of vertical and horizontal trenches on land, to restore the existing irrigation and melioration system.

Conclusion.

If the above requirements are taken into account, the increase in soil fertility and more effective use will be achieved. In addition, this form of protection of soil-ecological conditions provides an opportunity for conducting joint research, use in agriculture and other sectors, as well as settlement of oasis regions. If soil-ecological conditions of the Kokand Oasis are prevented, the impact of natural and anthropogenic processes on its productivity, agricultural sectors will develop and high economic efficiency will be achieved.

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