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Agroecological Problems of the Soils of Surkhandarya Oasis

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Abstract: this article provides opinions on the soil and their agroecological problems spread in the territories of the Surkhandarya Oasis. Based on the results of the study, the author described his substantiated scientific analysis of the factors that negatively affect the soil fertility characteristic of the Surkhandarya Oasis, recommends ways to eliminate existing problems.

Keywords: irrigated lands, loamy soils, bald soils, subareal, alluvial, prolyuvial Plains, anthropogenic factor, errosies, saline deposits.

In terms of the structure of the Earth's surface, the territory of Uzbekistan is divided into two parts: a large part consists of 78.7% Plains, 21.3% of mountains and swamps in the mountain range. In the areas of the surkhandarya natural geographical region to a height of 500 m (Termez 302 meters) above the ocean level, light gray soil is distributed. In places where groundwater is close to the surface of the Earth, saline gray soil is found. Sandy and loamy soils are found in the sand massifs of the southern part, while alluvial-Meadow and swampy soils are found in the boats of the surkhandarya and Sherabad rivers. The total land area of the region is 2.1 million. ga will make up. The total score bonity is 60 points. Of this, the irrigated area is 562.7 thousand ha, the cultivated land is 279.5 thousand ha, the perennial with trees is 32.7 thousand ha, the gray land is 0.3 thousand ha, hay and pastures are 776.7 thousand ha. In terms of the structure of the Earth's surface, the territory of Uzbekistan is divided into two parts: a large part consists of 78.7% Plains, 21.3% of mountains and swamps in the mountain range.

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On the mountain slopes of surkhondarya, which are more than 1600-2500 m high, mountain-Brown soils are combed, and the humus contained in them goes 4-6 percent. Above 2500 m, the pasture region begins and mountain-meadow, Meadow, Meadow-swamp soil occurs.

Bald soils-form a typical type of desert (desert) soils with a characteristic genetic structure in the Surkhandarya Oasis. These soils appeared on the subareal alluvial and prolyuvial plains of the Surkhandarya oasis in terms of mechanical content somewhat heavy and to one degree or other saline deposits.

Naturally, the soil is a renewable rock, and its role in the life of nature and humanity is incomparable. Nowadays, artificial soil fertility can be increased by humans and improve its

condition. Because the soil, which is considered an independent rock with its natural characteristics, was damaged by Man, which was considered an anthropogenic factor.

Violation of the state of soil use as the causes of deterioration of the soil structure, improper setting of agrotechnical measures make it unusable, as a result of which, under the influence of man, irrigation (water) erosion occurs, salinity in soils occurs and increases or leads to waterlogging. Unfortunately, during the Union period, the leading industry in all republics of Central Asia, especially for Uzbekistan, was cotton, which accounted for almost 75-80% of the total irrigated sown area, and due to the increased agrotechnical measures to obtain a high yield of cotton, the soils were strained, natural fertility sharply decreased, the soil was infected with diseases and pests characteristic of cotton. According to research by industry experts, it is considered normal for a soil weight of 1 cm3 to be equal to 1.1-1.2 gr/cm3, today this figure has reached 1.6-1.8 gr/cm3, and if this figure reaches 2.5 gr/cm3, this body has become Earth not soil, and the culture plant and crops that It should be noted separately that the anropogenic factor, that is, when farming is approached in a scientifically based state, in which human activity is directed towards a certain goal, the soil condition improves, fertility rises. However, it should be openly said that in Uzbekistan, both during the Union and, moreover, even today, the main emphasis is on the cultivation of more crops, and all agrotechnical measures are given in a strengthened state. In some regions, the Earth is strained as a result of late ripening of cotton, when the earth does not rest at all, and a number of farms receive two to three harvests in a year. In most cases, the discharge from the crop is left without autumn Dew, the irrigation standards went to 20 thousand cubic meters (2.5-3 times more than the norm), nitrogen was given in huge quantities, and phosphorus and potassium fertilizers were not given enough (the ratio of N:P:K to 1:0.75:0.5 was sharply broken). Due to the overuse of chemical toxic agents (pesticides) several times more often than not, as a result of the destruction of beneficial insects, microorganisms in the composition of the soil, worms, rodents in combination with pests, the soil has practically lost its natural fertility. In the lands used in the national economy, human activity is of great importance in soil formation. Crop rotation, tree transfer, earth processing and fertilization, irrigation, Earth weeding and saline washing, leveling and the like all have a huge impact on the development of the soil and its main characteristics.

From the day of the first expulsion of the protected lands, their natural appearance changes, that is, their upper turf layer disappears, which mixes with the lower one. The air transfer, water regime of such soil will be different, the necessary conditions for the life of plants and soil animals will be created. With fertilizing the Earth, we drastically change its nutrient regime. Ground mineral and organic fertilizers cause an increase in the amount of nutrients in the soil and, in part, a change in the chemical composition of the soil. As a result of digging up the poisons, removing the soil poison, washing out the brine, very large changes occur in the soil. Fertile shurkhok soils, swamps and other similarly difficult-to-use lands improve in quality and become fertile soil due to human labor. Sunhiy watering on the development of soils is especially admirable. In natural conditions, the Earth, which receives a total of 100 mm to 400 mm of water from precipitation-sochin Waters, is moistened 4-5 times more by sunhiy irrigation. As a result of watering, the nature of the soils changes, the movement of existing elements in its genetic layers, new wounds, the process of silting up, biological life changes dramatically, the rate of internal weathering of mineral rocks changes. In the admiration of the hard deposits brought by irrigation waters, a new agroirrigation layer is formed. Today, only humans can increase soil fertility, improve its condition. Because the soil with its natural nature was damaged by man, considered an anthropogenic factor. It also violated the rules for the use of soil, leaving it out of track, making it unusable, as a result of which, as a result of human activity, water erosions occur, the Earth is flooded with salt or becomes waterlogged. The main reason for this is the incorrect use of soil resources and non-compliance with the rules for conducting farming.

Due to the scarcity of irrigation water, it is required to increase the useful coefficient of the existing irrigation system in the region, to achieve irrigation of more areas at the expense of austerity. But in practice, due to the fact that irrigation work was carried out incorrectly, irrigation systems were not in demand, groundwater rises and soil salinity states are observed. Factors contributing to the salinity

of the soils of the desert area and measures for their prevention. To date, the irrigated farmland of Uzbekistan is 4.2 million hectares. 2 million hectares of these lands have been saline to varying degrees and are losing productivity features.

In surkhandarya region, the total area of saline land is 12,860 hectares. Areas with relatively high soil salinity can be found in Angor, Muzrabot, Sherabad, Giziryk districts with different levels of saline soils. According to the territorial zoning scheme developed by uzpiti and determined by the Institute "Sredazgiprovodkhlopok", taking into account the climatic and regional elevation conditions, the districts of Sherabad, Dzharkurgan, Angor, Muzrobod, Gizirim and Termez belong to the first soil climatic area, mainly the sub-mountain and sub-mountain plains area, where light-tinged and typical gray soils are spread. The soils of the surkhandarya Oasis are mainly explored in two areas: The lowlands are considered the hottest area of the Oasis, including the desert area: Sherabad, Gizirik, Termez, Muzrabot, Angor and Dzharkurgan districts. The average annual temperature fluctuates from 16.2 s (Termez) to 18.1 S (Sherabad), in some years it reaches 18.9 s, the average temperature of the growing season in these districts fluctuates in the range of 24.8-26.7 s. The transition period from winter to spring in this area is characterized by a sharp change in temperature. In February, the temperature will rise to 5,7-6,3 s, in March-11,3 s, in April-18,0-18,4 s. A stable high average temperature, which begins from the second half of March to the end of the growing season, makes it possible to grow thin-fiber cotton varieties in this area. The first frost is from October 19 to November 24, the last spring frost falls on March 20-22. The length of the frost-free period is 213-238 days. The average annual sum of the effective temperature is 3056°C for the Sherabad, and 2703°C in the term. The western part of the desert area (Sherabad district) is warmer than its eastern part (Termez, Dzharkurgan districts). At the same time, the eastern part of the desert is characterized by a slightly lower amount of annual precipitation.

Table 1. Saline lands of Surkhandarya region

t/r	Tumanlar	Maydoni ming/km^2	SHo`rlanmagan	Kuchsiz sho`rlangan	O`rtacha sho`rlanish %	Kuchli sho`rlanish %
1.	Oltinsoy	0.57	75.5	21.7	2	0.8
2.	Angor	0.39	9.9	60.1	21.3	8.7
3.						
4.	Boysun	3.72	44.4	50.3	0.3	2.3
5.	Denov	0.76	70.8	16.5	10.4	2.3
6.	Jarqo`rg`on	1.14	57.3	33.3	3.6	5.8
7.	Qumqo`rg`on	2.2	73	21.1	4.2	1.7
8.	Qiziriq	0.56	13.2	33.2	29.5	24.1
	Muzrabot	0.74	8	42.3	36.2	13.5
	Saraosiyo	3.93	92.3	7.7	-	-
	Termiz	0.86	30.6	29.9	27.7	11.8
	Uzun	1.63	93.2	6.3	0.5	-
	SHerobod	2.73	7	50.1	27	15.9
	SHo`rchi	0.85	64.5	29.2	4.9	1.4
	Termiz sh.	0.03	-	-	-	-
	Viloyat bo`yicha umumiy	20.1	41.5	32.3	16.8	9.4

During the year, 130 mm of precipitation falls in Termez, and 154 mm in Sherabad, of which 31-35 mm per hectare per growing season. The air is characterized by being extremely dry, with an annual average relative humidity of 43-54%, decreasing in July to 21-32%, on the contrary, increasing to 62-66% in winter.

For the first area, hot-dry winds of the south-western direction (Afghan wind) are characteristic features, often repeated, very strong and duration are observed, and have a destructive effect on cultivated plants (Table 2).

The main part of the irrigated areas of this area is composed of weary, weary-Meadow, sur-tous Beetle, sandy desert soils with a total area of 148,729 hectares irrigated by 121,062 hectares, or 81.4% saline to varying degrees. Of these: weakly saline soils are 42.2%, moderately saline 24.9% and saline land area 14.3%. Territory of the mountain and Foothill Plains. Located at an altitude of 450-1000 m above sea level, it includes Sariosiya, Denov, long, Shurchi, Boysun, Bandikhan, Altinsoy and Kumqurgan districts.

In this region, too, the transition period from winter to spring occurs with a sharp rise in temperature: in February the temperature is 4.9°C, in March it is observed at 10.1°C, in April it reaches 16.9°C, but is considered lower than in the first area. The average annual temperature in this area is 15.7°C, and during the growing season-23.3°C. The average July temperature is 27.5°C, in some years it is indicated up to 29.4°C. The frost-free period averages 212-214 days. The first autumn frost falls on average on March 25-27, in some years there are cases of deviations from these indicators (from February 4 and April 18).

Table 2. Indicators of wind activity in the districts of Surkhandarya region, m / sec

Kuzatish punktlari	Oylar						Vegitatsiya davrlari	Yillar	CHang-bo`ronli shamollar bo`ladigan kunlar soni
	IV	V	VI	VII	VIII	IX			
Sutkalik va yillik urtacha shamol tezligi									
Denov	2,6	2,4	2,0	1,6	1,6	1,7	2,0	2,3	-
Termiz	3,4	3,0	2,7	2,7	2,5	2,0	2,7	2,6	-
SHerobod	2,2	2,9	3,0	2,6	2,4	2,6	2,6	3,0	-
Kuchli shamolli kunlar soni									
Denov	0,8	1,0	0,9	0,4	0,4	0,4	3,9	5,0	4
Termiz	2,0	2,1	1,1	0,9	0,9	0,5	7,5	17,0	28
SHerobod	0,9	0,6	0,2	0,2	0,05	0,0	2,0	4,0	6

The average July temperature is 27.5°C, in some years it rises to 29.4°C. The sum of more than 100 effective temperatures in the frost-free period is 25.06°C from Shurchi district and 23.87°C in Denov district. These districts receive 234-353 mm of precipitation throughout the year. The main amount of precipitation falls on the novegitational period (52-53%), 37-38% of the annual norm is observed in March and April.

With an annual relative humidity of 57-58%, the average indicators of the growing season rise to 63-64%. The soils of the surkhandarya region are one of the main causes of salinity, with low rainfall in the area and high evaporation, being the second cause of soil salinity, remaining on the surface of the soil due to the close location of the underground sizot waters to the surface and the evaporation of salts contained in the water.

Another of the most important reasons is watering by puddling plows without observing the irrigation technique, plowing evenly over the surface of the Earth, plowing the land without leveling the low-rise carpet, leaving the water to remain on the surface of the soil, watering the earth without bringing it to the obi-Tobi also leads to soil salinity. In addition to the fact that the Collector drains, which were built to wash and prevent salinity of saline soils, became neglected, most of the pipes were perforated and unsuitable for use, again not working well in many places, the vast majority of ditches dug for Salt washing were filled, cleaned only during the seasons, and at other times neglected, the waters of the ditches it is the saddest case that even ditches were dug in the middle and not brought to the end, and the failure of the soil due to the indifference of the responsible persons engaged in land reclamation and irrigation work is sharply increasing. The Land Fund of irrigated areas of surkhandarya region, according to reclamation, is divided into 2 groups: reclamation state is better, kulay land and reclamation is divided into heavy, non-pecuniary land. In order to improve the reclamation of land in the region, the comparative length of collector ditch networks is important. According to the instructions of the Ministry of Agriculture and water resources of the Republic of Uzbekistan dated January 1, 2017, a total of 331.5 thousand hectares of irrigated lands in the region were estimated at 176.5 thousand ditches. The total length of collector ditch networks is 10,099.8 km, and the inter-farm networks are 1,100. 0, and the farms internal colletore ditch networks have a length of 8,999. 8 km. The scheme of hydromodule zoning, clarified by districts of the surkhandarya region, was developed on the basis of an in-depth analysis of irrigation regimes and soil climatic conditions, land reclamation, grunt water regime, soil salinity level and other factors, established for individual districts of the region. The irrigation regime is designed for veggie and novegetative periods for all agricultural crops. Among the most important measures to prevent soil salinity, it is necessary to switch to carefully developed new irrigation systems that fully meet the requirements of agronomy, build new hydraulic structures at Irrigation stations, save water, do not waste it, carry out reclamation measures and other similar work. Irrigation requires achieving irrigation of more areas at the expense of savings due to uneven distribution of water. But due to the fact that irrigation work was carried out inappropriately and the current irrigation Ridge was not in demand, there are cases of soil salinity with rising groundwater.

In the reclamation of shurkhocks on irrigated land, it is necessary to carry out the following main activities:

1. With the help of digging collectors and ditches around the fields, the sizot lowers the level of the waters, stopping water from rising to the Earth's cradle through capillary pathways.
2. Construction of ikhota logging around fields and irrigation facilities.
3. Washing of harmful salts collected in soil layers, soluble in water (washing brine is usually carried out in late autumn and winter).
4. Fertilizing and plastering are recommended. The main thing in measures to improve the condition of saline lands is to lower the groundwater, that is, dig ditches, Clean Old Ones and carry out saline washing.

Building ixota trees around fields and around irrigation facilities reduces the heat and dryness of the climate around the field as well as the effects of wind. This greatly slows down the evaporation of water from the surface of the soil, as a result of which the paski will move up the water of the sizot in the layer, as well as reduce soil salinity. Trees also absorb most of the water leaking from the canals through the root, evaporating and preventing the waters of the sizot from rising.

The soil is washed to remove harmful salts from the soil layer. And the depth of the Sizot waters, the degree of salinity of the soil, will depend on the nature of the water permeability, and, depending on this, the specific water norm and the number of washes are set for each field. Saline soil can be washed from 1-2 times to 10-15 times, the norm of water supplied with each wash can range from 2-3 thousand cubic meters to 15-20 thousand cubic meters per hectare.

Usually, the chemical composition of salts in the soil must be determined before the brine is washed. If the soil contains sodium salts (NaCl, Na2SO4, etc.), it is recommended to plaster the field before

washing. Crop rotation, frequent loosening of the soil bet in the fields and the introduction of organic fertilizers (manure, peat, compost, etc.) also improve the hossas of saline soils. And the fields washed with brine are recommended to plant both spiky and leguminous plants (wheat, alfalfa) in the early years.

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