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RECOMMENDATIONS ON IMPROVING THE HYDRODYNAMIC CONDITION OF KARAVULBAZAR DISTRICT OF BUKHARA REGION

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Abstract: Based on the geographical location of the underground waters of the Bukhara region, recommendations were developed on the basis of their reserve, balance, physical-chemical composition, and their use in the national economy. Cooperation with relevant organizations was carried out.
Data on the studied area were analyzed. Based on the agricultural map of Qarovulbazar district, the possibilities of using underground water were determined.

Bukhara region, the entire Amudarya delta is located in a closed basin within the Turan. Its sharp continental dry subtropical climate is one of the factors affecting the occurrence of surface and underground water, their life and location on the territory. Amudarya is considered the largest river of Turan, it starts from the northern slope of the Khindikush mountain at an altitude of 4900 m. Its main tributaries start from the Pamir-Aloy mountains. Amudarya is called Vakhajir at its source, then Vakhan river, after joining Vakhan river with Pamir river, it is called Panj, and at the place where Panj joins with Vakhsh river, Amudarya is named Amudarya. The Vakhadjir-Vakhandaryo-Panj section of the Amudarya is 1137 km long, and it includes several tributaries: Tunt, Bartan, Yazgulyam, Vanch, Kyzilsuv on the right side, Kokcha river on the left. takes After joining the Panj Vash river, the largest right-hand branches of Amudarya are Kofernigon, Surkhandarya and Sherabad, and Kunduzdarya flows on the left. In the rest of Amudarya, it cannot add any other network for 1257 km. The total length of Amudarya is 2574 km. Amudarya flows in its lower part with a number of deltas. The earliest delta of Amudarya begins in Tuyamo`in district. Amudarya has formed a number of large and small deltas since ancient times until it flows from Tuyamoyin to the Aral Sea. They are called Bukhara and Sarikamish deltas, Aqchadarya (Jana river) and Arolodi deltas in the geological strata of Bukhara region. The territory of the Bukhara region includes the Bukhara and Sarikamish deltas. Amudarya divides into several branches in its delta. The largest of them are Aqchadaryo, Konadaryo, Daryalik, Erkindaryo, Kazogdaryo, Ko`ksuv, O`lidaryo, Aqdaryo, Kipchikdaryo and Inzhenero`zak. The area of the catchment area in the mountainous part of Amudarya is 199.3 thousand km2. The main territory of this area corresponds to the lands where the Pamir-Aloy mountain systems are located. Their average absolute height is 5000-5500 m, while some of them are above 6000 m or even 7000 m above sea level. The main branches of Amudarya: Panj, Vakhsh, Kokcha and others are fed by ice and snow waters. Branches starting from the lower parts of the mountains: Kunduzdarya, Kafirnigan, Kyzilsuv, Surkhandarya and others are also fed by snow and ice waters [1]. In general, 79 km3 of water is collected annually in the mountainous part of the Amudarya basin. Therefore, until the 1960s, on average, 63 km3 of water flowed past the city of Kerki, and 46.6 km3 past the city of Nukus.

1. Amudarya is one of the richest rivers in terms of turbidity, and 1 m3 of its water contains 2.6 kg of turbidity. The reason is that Amudarya starts from the highest mountains in Central Asia, so it flows very fast and erodes itself and its banks. According to some data, 84 mln. More than a ton of various broken rock flows. This makes the Amudarya water very muddy. After the river reaches the plain, it erodes the banks of Karakum and Kyzylkum and makes the river water muddy again. The reason is that the coasts of Karakum and Kyzylkum consist of loose alluvial rocks. Water turbidity near the city of Kerki corresponds to more than 4 kg of mud per 1 m3 of water. Amudarya sludge is considered a valuable fertilizer, and according to Uzbek scientists, it brings an average of 2 tons of carbon-calcium, potassium and various chemical solutions to each hectare of land. Also, chemical elements table salt, Glauber's salt, soda and khakoza are found in the river water. Currently, as a result of the construction of the Tuyamoyin reservoir in the Lower Amudarya region, very little silt flows into the Bukhara fields. The reason is that the Tuyamoyin reservoir is a water purification basin for 7.5 billion Amudarya water. The annual flow of the Amudarya river is 79280 mln. is m³. Here, the turbidity flowing from the upper reaches of the Amudarya settles and carries less turbidity to the lands located downstream. However, the Amudarya water becomes even more cloudy as a result of "degish" mowing of its banks below Tuyamoyin. The Tachyatash dam is the structure that clears the water for the current Amudarya delta. [3] Amudarya freezes in winter, its thickness reaches 30-40 cm in January and February. The thickness of the ice varies depending on the warm and calm winter. In the Bukhara region, a number of canals receiving water from the Amudarya have been built, and these canals can be divided into three systems [2].

1. Interstate and intrastate trunk canals Tashsoka, Qilichniyozboy, Shavot, Gozovot, Mang'itarna, Khankaarna.

2. Inter-farm canals Pitnakarna, Urgancharna.

3. Canals, ditches and ditches inside the farm.

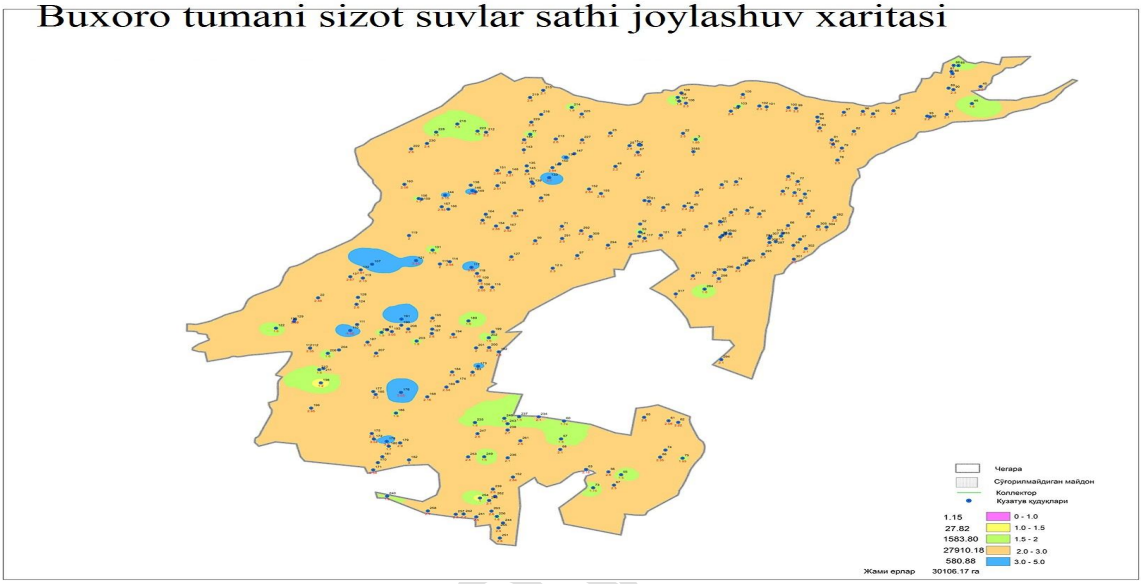
The location of the underground seepage water level and their hydrochemical regime are the main factors influencing the meliori status of irrigated areas. It is known that the regime of groundwater seepage in irrigated areas mainly depends on the amount of water taken to the border of the territory and the amount of drainage water discharged from the border. Also, the flow of underground water coming to the border of the territory and the amount of water coming out of the ground also have an effect. Long-term observations show that the average annual level of groundwater in the irrigated areas of Bukhara district is 2.60 meters. In particular, this indicator is the average of "Novmetan stream" -2.32m, "Navroz stream" - 2.37m, "Diosyo Foshun" -2.20m, "Bogi" Kalon"- 2.45m, "New Life" -2.74m, "Istiqbol" -2.35m, "Sofikorgar" -3.10m, "Qavola Mahmud" -2.61m, "Kochkomar" -2.68m, "Sahavat" -2.52m, "Sohibkor" -3.37m, "Rabotkalmoq" -2.41m, "Shergiron" -2.67m, "Otbozor" -2.32m. The average peak period of the groundwater level was March - 2.36 m, and the lowest average period was January - 2.88 m. The average amplitude of its one-year change was 0.52 m. By the period of the characteristic location of the underground groundwater level, that is, before vegetation, it was 2.55 meters in the state of April 1, and in the state of July 1 of the vegetation period, it was 2.51 m. meters and after the vegetation on October 1 - 2.64 meters, when analyzing the location, after the salt washing activities carried out in the district on April 1, the level of seepage water in most of the irrigated areas was up to 2.50-3.0 meters located in depth.

The hydrochemical regime of seepage waters is also inextricably linked with the amount and mineral content of wastewater supplied to irrigated areas, as well as its location.

The soil of the irrigated lands of Bukhara district has a complex mechanical structure and is prone to salinity. Therefore, based on many years of experience, the characteristic period of soil salinity determination is carried out in April before the growing season and in October after the growing season. This event, in turn, is an important factor in increasing soil fertility. For this reason:

- in the case of April, after the saline washing of the land, the efficiency of the salt washing event is determined, planting salt-resistant crops in the fields where its effectiveness is less after salt washing, increasing attention to agrotechnical work and watering these fields during the growing season make recommendations for work related to farming;

- in the case of October, the contours of the area formed due to the increased salinity of the soil composition during the growing season are determined, and the soil salinity is determined in order to develop recommendations for the norm of salt washing for the next year's crop, its time and preparation of land for salt washing The degree of severance is determined.



Among the largest collectors in the region, the central Bukhara collector, Halach and other collectors and ditches are working. There are also hundreds of km of closed drains in the region.

In my future research, I will devote Bukhara region to drinking water and at the same time improving agricultural lands of Bukhara region.

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