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Hydrological Peculiarities Of Water Structures Forming Landscape And Ecological Condition Of Jizzakh Reservoir Area

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Abstract: In the state forest landscapes type hydrosoorujeniy vyayushchich na formirovaniya landscape-ecologicheskogo sostaniy okruzajushichich Djizzakskodododnosti, ix geographical and hydrologic osobennosti.
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Natural and anthropogenic factors directly related to water sources play an important role in the formation of landscapes in arid regions. Therefore, one of the main factors determining the natural habitat and its condition is hydrogenic factors that are related to the water resources and sources of the area under study. They include all natural and natural anthropogenic sources in the area.

In the central part of Uzbekistan, in a relatively arid and water-scarce region, the Jizzakh region is of great importance for water sources, including the Tuyatortar Canal and the Jizzakh Reservoir from large hydraulic structures in the region. Therefore, the study, evaluation and scientific prediction of their impact on the current landscape and ecological state of the region is of vital importance.

The Tuyatortar canal, 108.2 km long, begins with the Zarafshan River. More precisely, it begins with the Robotkhuja dam in the south-east of Urgut district of Samarkand region and comes closer to Jizzakh. The Tuatortar canal is the main water source for more than 37,500 hectares in Bulungur district of Samarkand region and Bakhmal, Gallaorol and Sharof Rashidov districts of Jizzakh region.

The channel is called Tuyatortar Khakimov explained: According to the legend, a camel was excavated in the footsteps of the camel's path, and camels were often used to bring water to the canal. The Tuatortar Canal is a very ancient water body that was destroyed in the VI-VIII centuries by mutual war and during the Arab invasion. In the 16th century, the Khan of Bukhara restored the channel Abdullah II and was widely used in irrigated agriculture in the territory of Samarkand region.

In 1912, despite the great difficulties, the inhabitants of Jizzakh repaired the Tuyatortar canal at 26 km and dug a 58 km channel. Soon after heavy rainfall and floods in the spring of 1915 the canal became inaccessible. As a result of the First World War, the events of Jizzakh in 1916, and the drought of 1917, irrigation in Jizzakh oasis was interrupted, and the area of irrigated land was reduced by almost 70%.

In the twenties of the last century, the irrigation system of the Jizzakh oasis was restored by means of hashar and the water was brought from the Zarafshan River through the Tuatortar canal. According to historical sources, more irrigated land was reduced during the Civil War and the natural disasters of 1921. The local population also had to clean the ditches and springs from the mud and rebuild the Tuatortar canal due to water shortages. As a result, 2,000 hectares of land were reclaimed in the same year using canal water. It is said that by the efforts of the villagers, 116 km, including 84 km of the Tuyatortar canal and 42 adjacent ditches, were rehabilitated.

In the early years of the Soviet Union, a five-year (1925-1929) plan adopted by the Central Asian Water Administration set out the development of 15,000 hectares of new land in the Jizzakh Desert. As a result of the establishment of the Jizzakh Water Exploration Organization in 1925 and the Sangzor Hydrological Party in 1926, the Zulfikorsay Dam with a capacity of 21 million m3 was designed to expand the Tuatortar canal. However, the implementation of this project prevented the water level of the Zarafshan River from falling in the autumn and winter, reducing the capacity of the Tuatortar canal by up to two times, so it was advisable to build small dams along the channel.

During the 1930-1936 years, a number of small dams were built at the head of the Sangzor irrigation system and the Tuyatortar canal. As a result, 5,000 hectares of new land was developed. In 1959-1965, the Tuatortar canal was expanded by mechanization and provided a flow of 25-30 m3 / sec.

Figure 1. Cosmic velocity of the Jizzakh reservoir

In 1987, the Korovultepa reservoir was built in the natural swamp of the channel that connects the Zarafshan and Sangzor rivers due to the increased flow of the Tuatortar canal. This reservoir will be replenished through the Tuyatortar canal in autumn and winter, with a total volume of 53.0 million m3, maximum dam height of 40 meters, and maximum water flow capacity of 50 m3 / s. The water is used for irrigation of the lands in Gallaaral district and for the discharge of water into the Sangzor River. Korovultepa Reservoir is a type of reservoir that can be filled and discharged. The Tuyatortar canal is the source of the reservoir's water supply.

In 1967, the Tuatortar canal was pumped into the Jizzakh reservoir. Currently, the capacity of the Tuatortar canal is 50m3 / sec. As noted above, more than 34,000 hectares of arable land in Samarkand and Jizzakh regions are irrigated through the waters of the Tuatortar canal.

In some years, water from the Jizzakh machine canal will be fed to the Jizzakh reservoir. The start of the Jizzakh Machine Canal (DM-1) is drawn west of the Nov pump station at the top of the Farhad Dam. The first pumping station (NS-1) will be installed here and will pump up to a maximum of 220 cubic meters of water per second with a height of 25.6 meters. The length of the Jizzakh Machine Canal (DM-1) is 153.8 km, width is 14 meters, average depth is 2.3-2.6 meters, coastal dam is 0.5-1.2 meters and the channel is fully concretized.

13 km of the canal passes through the territory of the Republic of Tajikistan and flows 30-35 cubic meters per second. Pumping stations were established near the city of Dashtobod in the Zaamin district at 75.5 km. Through these pumping stations (NS-2, NS-2), the water rises to 25.5 meters. The second part of the Jizzakh Machine Canal (DM-2) will begin at the same location, with 100-115 cubic meters of water per second.

The length of the channel DM-2 is 68.5 km, the width is 1.3-5 meters, the depth is 2.5-4.5, the dam is 0.4-0.6 meters, the main part is concrete. The channel traverses 46 and 57 km of the Great Uzbek Path and Central Asian Railways. The pumping stations NS-3-1 and NS-3-2 in the second phase will raise 30-35 cubic meters per second of water to 17.8 meters, and the third part will flow into the DM-3 channel. During

winter, canal water is fed through the Ravotsay River to the Jizzakh reservoir.

The length of Ravotsay is 59 km. It begins with the northeastern slopes of the Molguzar Mountains and is largely saturated with snow and rain water. Ravotsay pours into Jizzakh reservoir during winter and spring. In addition, the water from the mudslides in the Kuruksay, Mevalisoy, Tangisoy, Yoyilmasay areas is also often flooded to the reservoir in the winter and spring.

Photo 1. Location of the Tuatortar Canal to the Jizzakh Reservoir

Table 1. The main part of the meter is cubic

Channels` name	Length (km)	Irrigated land (thous.)	The main part of the meter is cubic (in seconds)	
			Max water quantity	Average water content
DM-1	158,8	66,3	220	160
DM-2	68,5	53,1	56	48
DM-3	69,9	31,9	35	30

As mentioned above, channels and especially reservoirs play an important role in determining the hydrological condition of the area. Therefore, it is advisable to give a brief overview of the main ones. The Novka reservoir in the Jizzakh region was launched in 1980 in the Sangzor valley upstream of the Sangzor River. The reservoir area is 0.60 sq. M. km, depth 5.2 m, full water capacity 6.0 mln. cubic meters, useful water capacity is 5.0 million m3, and dam height is 23 m. Water is pumped into the reservoir from the Sangzor River and the Novka River.

Khojamushkent Reservoir - 0.58 km2, depth 5.0 m. The total water capacity is 5.50 million m3, the useful water capacity is 5.0 million m3, and the dam is 6 m. Zaamin Reservoir - Located in Zaamin District.

Zominsoy, Achchisay, Pishogarsay, Turkmansay, Khojamushkentsoy, Jaloyir are of great importance in water supply of the population and agriculture in Zaamin district. The largest of all streams is Zominsoy, its length is 58 km and its basin is 700 km^2. Zomin reservoir was built and put into operation in 1986 for the rational use of Zominsay and seasonal waters.

Korovultepa Reservoir - It is replenished from the Zarafshan River through the Old Tuyatortar canal in late autumn and winter. In addition to Zarafshan water reservoir, seasonal large and small streams flow into the reservoir. It is noteworthy that Korovultepa Reservoir was built in a convenient location in a natural swamp near the Tuyatortar canal and was put into operation in 1987. The total volume is 53.0 million m3, the absolute height of the dam is 40 meters, with a maximum throughput of 503 / sec.

Water is used to irrigate lands in Gallaaral District and to discharge water into the Sangzor River.

Arnasay reservoir - Arnasay reservoir was created to provide irrigation water for the Aydar-Arnasay Dam in Mirzachul natural area and to protect pasture and irrigated land from floods. There are 3 dams in the reservoir and the first dam is 5.5 km away from Chordara. are located far away. The second dam was built to drain the water downstream of Aydarkul, 53 km from the first dam. are located far away.

From the Arnasay reservoir to the Aydar-Arnasay lake system in February-March 2010, 510.64 million cubic meters and from February 2012 to April 2012, more than 1 billion cubic meters. 528 million. cubic meters of water. In 2015, water discharge from the Arnasai reservoir into the Aydar-Arnasay lake system began. Today, the Arnasai Reservoir plays an important role in the Jizzakh region's water resources and has a major influence on the hydrogen situation.

In conclusion, hydrogenic factors play an important role in determining the landscape and environmental conditions within the reservoirs. It is noteworthy that so far, the role of hydrogenic factors in defining landscape and environmental conditions is poorly understood. It is noteworthy that water sources play a major role in the establishment of landscape and environmental conditions in arid areas, ie in areas where water is scarce. As the water enters the region, the landscape changes, its main indicators and, if necessary, the main features. A striking example of this is the dramatic changes in the Aral Sea landscape.

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