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History of Construction of Artificial Irrigation Networks in Mirzachul

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Abstract: As we study the history of Mirzachul, the launch of various irrigation networks, canals, water reservoirs, etc., became extremely important for its irrigation and development. V. I. Masalsky in his work "Land of Turkistan" published in 1913, he said: "During our rule in Central Asia, we did a lot of work in the country, but as fate would have it, we did not do anything in the area of the country's main need, that is, in the area of appropriating new lands, regulating the use of water by law, and increasing the cultivated areas. Despite the great importance of irrigation in Central Asia, we have done almost nothing in Turkestan, except for the work done by the state to irrigate the Murgob rivers and the fact that Romanov irrigated several thousand acres of land. is lying down"[1].
Key words: Water, use, irrigation, networks, barren, lands, funding, sanitation, dam, reclamation, water, channel. project, irrigation scheme

Introduction:

A.I. Voeykov[2] could see the future of Mirzachul and wrote that "Currently, research work on irrigation of 218 thousand tens of acres of land has been completed here, and these lands can be irrigated with the water of the Syrdarya and its tributaries." Also, in January 1912, the newspaper "Turkestan statements" published an article in order to appease the Russian peasants who were burning with passion for cotton, in a result, a member of the State Duma and special commission was formed under the chairmanship of N.I. Temiryazov who was elected at the meeting of the Cotton Committee in St. Petersburg. Most of the members of the commission were poor "Russian peasants" who had moved from the villages of Mirzachul governorates. These peasants used to hand over a certain amount of the harvest from crops such as black-eyed peas, millet, beans, sesame, and peas grown by their own efforts to the landowners. A number of rich people of "Spassky" village were engaged only in cotton farming.[3]

Results of investment in water.

Chasing after the profits, Prince Romanov did not spare all the money in the treasury for the construction of the canal in the name of "Emperor Nikolay I".[4]

No matter how much money was spent on the construction of the canal, it still did not bother the tsar's officials. Because the need for cotton in Russia was strong and growing day by day. It was no coincidence that 1 million 19 thousand 487 rubles were spent on the construction of this canal in 1903 at the beginning of the 20th century, and 2 million 362 thousand 100 rubles were spent by 1910. Russia needed cotton, so he spared no expense.

For this purpose, the "Strong Kingdom" created the "Department of Relocation" within the Ministry of Agriculture and State Property in 1905 at the request of the center. Its purpose was to increase the number of Russians in the country and increase violence against the local people. After that, in 1906, the "Syrdarya resettlement district" was established in Turkestan, and the local population took the form of a plan to take away the land for the Russian mujiks (foreigners).

Materials (summaries) of the investigation conducted by G. K. Riezenkampf on the irrigation of the Mirzachul and Dalvarzin deserts were provided in the project documents of the engineer V. A. Vasilev. In order to study these documents and draw a conclusion, the Supreme Council of People's Economy thoroughly and comprehensively examined the proposals made on irrigation of Turkestan.

The People's Commissars presented the draft "Decret" on irrigation works for discussion at the meeting of the special commission chaired by the Soviet. The members of the commission approved with satisfaction the plan of development of large areas in Mirzachul, Dalvarzin deserts, Chu, Zarafshan valleys.

The country's cotton industry played an important role in this plan, and it was once again carefully considered by a special commission on March 23, 1918.

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The next day, March 24, with the participation of more than 20 experts who worked in Central Asia, the project of irrigation of Turkestan, drawn up by G.K.Rizenkampf, was discussed. Specific objects of designated water facilities, allocation of funds to them, issues of providing construction with specialist personnel were determined.

The designated project "Decree" was revised and a number of additions and clarifications were made, and it was signed by the Council of People's Commissars on May 17, 1918.

The land-water reform in the country was carried out on the basis of the "Decret on Land" of the Russian government, and its main purpose was to strengthen the class stratification in the countryside.

Land reclamation projects

In 1920, a special department for the reconstruction and use of the Mirzachul irrigation system was established. A water police and a sanitary service to combat malaria were established. On May 10, 1920, the Technical Irrigation Committee of the Mirzachul system discussed the issue of methods of carrying out sanitary-reclamation and irrigation works and found it necessary to carry out 1-1.5 billion soums of work in the field for 5 years. Due to the lack of personnel, measures were taken to remove water management institutions from the ranks of the army, and this measure was implemented at the beginning of 1921.

Before 1920, some works were done in the field of irrigation works in Mirzachul. For example, on July 10, 1919, an estimate of 500,000 soums was approved for the most basic works in the field of land reclamation, that is, for the reclamation of 3,000 tens of saline lands in Mirzachul.

In addition, assistance was provided in the field of agronomy and the wages of workers were increased.[2]

In August 1920, under the leadership of M. M. Bushuev, the Mirzachul State Expedition began to work. This commission included professors N.A. Dimo, V.F. Bulaevsky, as well as geologists, hydrologists, metrologists, botanists, and zoologists. A scheme for the development of Mirzachul was created.

On May 2, 1923, the Council of People's Commissars of the Turkestan Autonomous Soviet Socialist Republic recieved a decision on "Amelioration measures in Mirzachul". Accordingly, the issues of strengthening the fight against salinity and swamping, digging ditches, and proper irrigation of land in the north-western part of Mirzachul were set.[1]

In 1953, Mirzachul irrigation project (irrigated area of 152,600 hectares, total irrigated area of 202,600 hectares) was created. In 1935, the project of irrigation system of Mirzachul prepared by Upragol engineer N.I. Glibin was presented to the Scientific and Technical Council. The main essence of this project was the economical use of water resources of the canal. The new scheme envisages strict regulation of water use, increasing the efficiency of the system by concreting the canal, reducing waste and excess water, providing water to the canal after the end of the growing season, but the system of collector drains was denied. This project has not been approved.

In 1935, the rules "Using water for the irrigation system in Mirzachul" were published. In these rules, among other things, it was noted that a strict regime should be followed in the use of water, otherwise the condition of the land would worsen, and malaria would spread. After that, special control was established in this regard.[2]

Farkhod hydroelectric power station

Despite the war period, the construction of Farkhod hydroelectric power station finally became of great importance. With this, it would be possible to meet the demand for electricity of Uzbekistan and neighboring republics and to supply Mirzachul lands with water. There was a good opportunity to build a hydroelectric power station in Bekobod region and to drain the water of Syrdarya to Mirzachul.

Various construction project options were offered for discussion. After studying all these options, the projects of A. N. Askochensky and V. V. Poslavsky were approved. According to their project, it was proposed to dam the water of the Syrdarya and build a hydroelectric power station.

The dam to be built on the threshold of the Farkhod hydroelectric power station was supposed to raise the water level of the Sirdarya River to a height of 20 meters, and as a result, a water reservoir was formed and its water was supposed to move the pipes of the power station. It was not possible to build a station building near platinum. A convenient place for the station building was chosen 14 km from the station.

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The width of this channel was 30 meters at the bottom and 90 meters at the top, and it was practically equal to the bed of a large river. According to the project, after giving its energy to the pipes, the running water should be thrown into the canal and a certain part of it should be discharged into the canal. The capacity of the hydroelectric power station in the project was 130 thousand kilowatts. The construction of this hydroelectric power plant started in February 1943 and it helped to solve several problems of the national economy. Uzbekistan, Tajikistan and Kazakhstan zones of Mirzachul got a new large source of electricity.

The construction of the Farhod hydroelectric system made changes to the irrigation project of Mirzachul previously prepared by G.K.Rizenkampf. For example, the need to build the Central Canal disappeared (it was enough if only the South Canal was left). In addition, the construction of the Karakum and Chordara reservoirs has eased the prospect of irrigating the remaining 350,000 hectares of land in Mirzachol (Southern and Mirzachul zones).

In 1945, the main water supply of the Kirov main canal began to be carried out using the discharge canal of the Farkhod hydroelectric power station. This made it possible to expand the S.M. Kirov canal and increase its water carrying capacity to 230 cubic meters per second.

The specific role of Land Irrigation and Agricultural Development.

In the post-war years, a lot of attention was paid to ending the backlog in the production of machines for the needs of cotton cultivation, irrigation and land reclamation in Uzbekistan.

The main task was to improve the condition of cultivated fields and lands in irrigation zones.

In 1947-1950, specific plans for land reclamation were developed.

In 1959-1965, the residents of Jizzakh expanded the "Tuyatortar" canal with the power of mechanization. A water flow of 20-24 cubic meters per second was achieved from the channel. In addition, tens of kilometers of ditches were dug. Thanks to these activities, the state of land reclamation of 1000 hectares has improved. In 1965, the irrigated area was increased to 15 thousand hectares. 32.3 centners of cotton were harvested from each hectare, and 41,000 tons of cotton were grown.

In 1963-1968, the construction of Jizzakh Reservoir with a water capacity of 80 million cubic meters was completed.[1]

As a result, large-scale development of the "Yoyilma" massif began. The Jizzakh Reservoir is located 7 kilometers south-east of Jizzakh railway station, where the Sangzor and Ravotsoy rivers meet, on the plain at the foot of the mountain, and has a total water capacity of 80 million cubic meters. For the development of Jizzakh lands, the reservoirs of Qorovultepa, Novka, Rovot and Zomin were fully built and put into operation.[2]

In 1968-1970, 1.5 thousand hectares of land were developed using Jizzakh reservoir. 8,300 hectares of new land are planned for further development.

After that, the inter-republic General Directorate for desert development was established. It was called "Glavgolodnostepstroy" at that time.

In 1957, the "Srednazgidrovodkhlopok" design institute created a scheme and master plan for development and irrigation of 300,000 hectares of reserve land. In 1956-1958, many works were carried out by the organization "Glavgolodnostepstroy". In particular, the main canal named "Kirov" was renovated, the construction of the "Southern Mirzachul" canal was started, the first line of land along the canal of South Mirzachul was prepared for irrigation and development.

During the development of new reserve lands in Mirzachul, the experience of previously irrigated areas was taken into account and used. Industrial new methods of irrigation and land reclamation were used in the new lands. In 1960, "Srednazgidrovodkhlopok" Institute, after being designated as the leading designing organization, developed "Five Plans" of "Mirzachul Land Irrigation and Agricultural Development".

According to the project, it was planned to build the largest southern "Mirzachul" (now called Sarkisov) canal to irrigate 357,000 hectares of land. (The length of this channel is 127 kilometers, the water consumption in the main part should be 300 cubic meters per second). The first line of the canal (92 kilometers) was completed at the end of 1960. The construction of the canal (under the name of Boyovut canal) actually started much earlier and by 1958 it provided water to 40 thousand hectares of land. According to the new project, the new zone of Mirzachul was divided into south-east, south-west and central parts. For each of them, an independent irrigation and development complex project was created. Mirzachul has become an experimental field for testing innovations in the fields of irrigation and land reclamation, in addition, many

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new factories and workshops have appeared in Mirzachul, scientific research has expanded, the scale of construction has increased, and new farms and settlements have begun to appear.

Conclusion

In 1961-1965, a group of designers-engineers of the "Srednazgidrovodkhlopok" institute conducted exploration and inspection works for the irrigation and development of Jizzakh oasis.

In 1965, under the leadership of engineer K. Turbin, the project "Providing Jizzakh machine channel from the Farhod facility" was prepared. The project was presented in three variants, namely:

1. Receiving water from Jizzakh machine channel from the upper barrier of Farkhod dam.
2. Taking water from the drainage channel.
3. Taking water from South Mirzachul canal.

In developing the oasis, the first option was more economically significant than the others.

In this option, the head of Jizzakh machine channel (DM-1) started from the upper part of the Farkhod dam. The first pumping station was installed here, and it was necessary to pump 220 cubic meters of water per second to a height of 25.6 meters.

The Jizzakh machine channel (DM-1) is 153.8 kilometers long, 14 meters wide, 2.3-2.6 meters deep, and 1.2-0.5 meters wide. It was completely concreted.

In 13 kilometers of the canal (Tajikistan), 30-35 meters of water per second are received. 75.5 kilometers from Kalan, pumping stations will be built near Obruchaeva station, and water will be raised 25.5 meters through stations NS-2 and NS-2-2. 99.6-115 cubic meters of water per second are released into the Jizzakh machine channel (DM-2). The DM-2 channel is 68.5 kilometers long, 3-1.5 meters wide, 4.4-2.5 meters deep; 0.6-0.4 meters of the embankment will be concreted. At 46-57 km, the canal crosses the Great Uzbek tract and the Central Asian railway, and in winter, the canal water is poured into the Jizzakh reservoir. NS-3-1 and NS-3-2 pumping stations pump 30-35 cubic meters of water per second 17.8 meters up into the DM-3 channel in two stages.

TTTu 57.4 meters of water is taken up from the ground through NS-4, and 24 cubic meters of water per second goes to DM-4 and DM-4-1 canals. All channels are concreted.

THE JIZZAKH MACHINE CHANNELS[1]

Name of channels	Length km	Irrigated areas (thousand hectares)	Starting in cubic meters per second	
			Maximum amount of water	Average amount 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
DM-4	-	-	3	-
DM-4-1	46,7	24,5	24	21

Thus, between 1970 and 1975, 184,000 hectares of new land was developed due to the construction of Jizzakh canals. The construction of the southern Mirzachul canal was of great importance in supplying water to the Jizzakh steppe. In 1956-1960, the first line of the southern Mirzachol canal (93 kilometers) was commissioned and supplied water to 351,000 hectares.

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