

Discourses on the history of the irrigation of Bukhara oasis

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Abstract. The following article discusses the hard work of the peasants of the Bukhara Oasis, the issues of crop irrigation and water scarcity, the causes and factors of the lack of water in the Bukhara Oasis, especially the efforts done to eliminate water scarcity as the result of the diminishing of the water resources of the Zarafshan River year by year, which provides water to Bukhara during the occupation of the Russian Empire, to reduce water year by year.

1 Introduction

Since the Bukhara Oasis is surrounded by deserts and sand dunes, irrigated farming plays an important role in its territory. To the hard work and factor of the Bukhara peasants, as early as the early Middle Ages, world tourists and merchants (Ibn Hawqal, Ibn Batuta, Ibn Fadlan, etc. those who write down in their reminiscences. As a result of the feudal warfare of the late Middle Ages and the invasion of the Turkestan territory by the Russian Empire, farming in the Bukhara Oasis begins to decline. The introduction of the Bukhara oasis into the Russian Empire by the upper reaches of the Zarafshan River, the source of irrigation, made irrigation work in Bukhara difficult. During the government of the Russian Empire, a number of data were cited in the “Turkestansky Sbornik” (“Turkestan collection”) on the irrigation works of the Bukhara Oasis.

2 Materials and methods

The sources on the history of the irrigation of the Bukhara Oasis article and research in the source “Turkestan collection” (“Turkestansky Sbornik”), created during the period of the government of the most Russian Empire (1867-1917), reports and articles of the press bodies “Bukhara sharif” and “Turon”, published in Bukhara in 1911, the results of the scientific research of the famous scientists such as R.A. Muhammadjanov and F.H. Qosimov were used. Also, methods such as comparative analysis, principles of chronological coherence, impartiality, systematic approach were used.

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3 Results and discussion

The inhabitants of the Bukhara Oasis have long been famous for their progressive peasants and advanced gardeners. In medieval sources, tourists (Ibn Hawqal, Ibn Battuta, etc.) visited the prosperous farming settlements of Bukhara Oasis.) many information can be found in their memory. During the reign of Amir Temur and Timurids, important practical actions were taken to irrigate the Bukhara Oasis, turn it into a prosperous and prosperous place, and organize a garden, attic, nature reserves. However, the main source of irrigation of Bukhara was the Zarafshan River, and this source of water, called the Blue River during the Timurid government, could not always reach Bukhara. Especially in the summer season, it is possible to find out on the basis of data from historical sources that the waters of the Kohak River did not reach lower reaches for 3-4 months in the season when crops were watered, water was in high demand [1].

The water scarcity was also remained in later centuries. In particular, after Samarkand was occupied by the military of the Russian Empire, the shortage of water was felt even more strongly, and many residents left their addresses and left for water-rich territories. For example, in one of the articles presented in the materials of the “Turkestan collection”, in 1870, the Romitan (Somjan) district was also a According to the views of Russian specialist in irrigational affairs L.N. Sobolev, for the past four years (1868-1872), data related to the increase in the migration of peasants who were bankrupted from Bukhara to Zarafshan district due to the sand dunes impacted and pressing of their lands, and their total number reached 60 thousand people show how deplorable the agricultural work in the Bukhara Oasis was [2].

For the first time, this situation was realized by Ahmad Donish, the last encyclopedist scientist, state and public figure of Bukhara, and it is through his research that we can see that the unified information about the irrigation facilities of the Bukhara region of the era of Amir Temur and Timurids has been restored. Ahmad Danish then repeatedly appealed to Emir Muzaffarkhan and Abdulakhad Khan with a proposal that it was necessary to extract water from the Amu Darya several times, that Zarafshan Water Control had passed into the hands of the Russians, so that it was necessary to restore economic power. Even Ahmad Danish Turkestan Governor-General F.Kaufman was also approached in this regard. Kaufman’s response stated that the Bukhara emirate lands between Karshi and Karakul were located slightly higher than Amudarya and that it was impossible to extract water from this river, that there was a plan to dig a canal near Chinoz from Syrdarya in order to supply water to Bukhara and supply it through the northern part of the Ishtikhan mountains to the south-western districts of Bukhara, namely up to Karakul [3].

As one of the reasons for the sand storms of the agricultural areas of the Bukhara region, L.N. Sobolev in his research suggest that the Turkmen and Kyrgyz living in the north of the districts of Ghijduvan, Shafirkon in later times, in order to obtain coal, many saxaul forests were being destroyed, and it s in its turn naturally surrounded these districts, accelerating and intensifying the pressing the issue of the sand dunes.

Also, when the author studied the desert-steppe lands between Jizzakh and Chinoz, he suggested that the representatives of the older generation of the population here once told the story that the canal derived from Syrdarya not only watered the steppe, but also flowed to the Northern Districts of Bukhara, providing them with Syrdarya water [2]. This is the first information about the supply and delivery of the water resources to the Lands of the Bukhara Oasis, after which the authorities of the Russian Empire found their expression in the materials of the “Turkestan collection”, which in many expeditions and searches made every effort to search for an ancient channel stream flowing from Syrdarya to Bukhara, to launch it if possible. The canal which originated from the Syrdarya, receiving water from

Syrdarya and served to water part of the Bukhara Oasis. N. Sobolev's information suggests that it was dug by Order of Mirzo Ulugbek. Even in historical source and fundamental literature, the presence of information relates to the fact that a canal was dug on the orders of the Mirzo Ulugbek to beautify the Samanchik steppe in the south-west of Bukhara encourages further attention to this issue [4].



Fig. 1. restored Tuyatortar channel.

In the studies carried out by L.N. Sobolev, he tried as much as possible to determine the place and direction of the beginning of the channel flowing up to Bukhara. In his opinion, the middle stream of the canal Syrdarya begins near the village of Kosta Koz (where the beginning of the ditch saw its neighbor with his own eyes, and it is called Urinboy) in Khujand uezdi, a swan to the south, forming a small slope, crossing the postal road between the Malik and Mirza rabot wells of that time, approaching the the fact that it flows down to karakul, flowing 24 miles west of Vardonze (Shafirkan), it can be derived from here that the dried up beds of the river is still known today, while the time and reasons for the destruction of the canal have come to the conclusion that it was the consequence of the Kazakh attacks during the reign of Abdullah Khan [2].

One of the persons who studied the irrigation of Bukhara oasis with Syrdarya water somewhat more seriously was N.A. Ivanov, he is considered one of the first people to study the irrigation of the Zarafshan Oasis on scientific grounds. At the time of studying the irrigation of the Zarafshan Oasis, N.A. Ivanov also conducts research on the structure of irrigation systems in the uyezd of Jizzakh, interested with districts and other regions. As a result of his research, he came to the conclusion that the steppe-steppe mint and the western and southern districts of Bukhara were also irrigated and farmed through the canal water, which was dug in ancient times from Syrdarya [5]. The direction of flow of the channel was also indicated by N.A. Ivanov. We cited above. We did not consider it necessary to mention on this issue precisely because it was repeated with the direction L. N. Sobolev described.

All the water needed to irrigate the fields is taken from the river and it does not flow into the sea. Further, the same author says: since this river dried up in several places of its course during the summer heat, the Turkmens imagined that by building a dam at its mouth

they would save its upper parts from low water, but the opposite happened, the waters did not have enough current strength to break through the sands caused by the steppe wind into their channel, it blocked itself and now there are barely noticeable traces of it near the sea.

In one of the studies conducted by the Russian authorities; it is noted that the traces of the ancient water ditches in the burrow from Bekabad are also known at the present time. The fact that this canal is called the “Bukhara arighi” by the elderly of Bekabad believed in an allusion to that that in ancient times the vodka went to Bukhara.

Even more, a second channel in which traces of riverbed are known in the hare is caused by the fact that the Bekobodites call the “Mirza” or “Okuz” canal, which, according to the elderly, flows down to Khiva, while the Russians mistakenly call it “Urinboy”. When the authorities of the Empire were interested in the excavation and history of these ditches, the elderly could not show any documents, but this is a written document, the information is contained in Hashimkhoja eshon, a resident of Tashkent, and on the basis of information heard orally from his ancestors, the ditch was built in 979 on the account of the that is, it was 352 years prior to that fact that 1873-352=1521) was destroyed, that the idea of building a canal belonged to the Sahibqiran Emir Timur, who handed over this task to his son Shahrukh Mirzo, according to which Shahrukh Mirzo could restore the city of Bimakent, destroyed by wars, and give him his name, which led to the need to dig a canal to the steppe up to Khorezm.

We will also see that Sahibiron Timur, during his return from the Chinese campaign, also explained that the construction of the canal was completed, and the narratives related to the fact that Jaimi spent seven years on the construction of the canal were recorded from the memories of the local elderly. In addition, L.N Sobolev also cites data related to the fact that in Bukhara he checked the dried-up core of this canal near Vardonze (Shafirkan) for a distance of 70 miles. The author believes that the elderly could not show any documents, but this is a written document, the idea of building a canal based on the fact that the information is in Hashimkhoja eshon, a resident of Tashkent, the information heard from his ancestors, belongs to the Sahibqiran Amir Timur, who handed over this task to his son Shahrukh Mirzo, according to whom Shahrukh Mirzo could restore the city of Bimakent destroyed by the wars and give it its name, dig a canal to extract water from the steppe and bring it to Khorezm [6].

We will also see the narratives related to the fact that the construction of the canal was completed during the return of Sahibkiran Amir Timur from the Chinese campaign, seven years were spent on the construction of the canal, recorded from the memories of the elderly. Also L.N Sobolev also cited data related to the fact that he checked the dried-up core of this canal near Vardonze (Shofirkon) in Bukhara for a distance of 70 miles. During the reign of Amir Timur, The canal originated from the Qizil River (Syrdarya) was also listed in the work of Gumbolt “Asie Centrale 1843a”, which was stretched up to Bukhara [7].

M.A., a well-known scientist of that time, who studied the activities of the Russian Empire in the Turkestan region, the processes of competition with England for Turkestan. Terentev mentioned that the main riverbed of the stream leading to Bukhara was between the villages of Bekobot and Koshtegirman. In order to justify his opinions, we can read the information related to the fact that he cited the high horizon of the Syrdarya and based his opinion on the fact that the dried-up core of the channel is also located in this area [8].

From the information presented, it can be concluded that the authorities of the Russian Empire did not spare forces and opportunities on the way to get rid of external dependence on cotton raw materials by irrigating the steppe and steppe regions of the Turkestan territory and growing cotton raw materials on these lands. In 1874, the Kyzylkum Desert

was investigated by the N.A. Sversov forerunners cite the fact that a large part of the desert was irrigated and even, the karakul area of Bukhara was irrigated through a channel released from a new river, which was one of the shares of Syrdarya, which was divided before it poured into the island. In his data, this channel says that when it received water from Yangi Darya, it circled the Bukantau mountains from the West and entered Karakul from the North-West. Even during Abdullah's reign, as there were 7 districts of Bukhara to be irrigated, in 7.5 districts of Karakul, watering attempts to point out as the reason why the arable land is larger than Bukhara because of the channel flowing from Yangi Darya [2]. Irrigation of Bukhara lands through Syrdarya is also mentioned in the historical literature of the Russian state, and the work "Kniga bolshomu chertyoju" contains information on the import of water from Syrdarya due to dehydration of Bukhara lands [9].

The population of the Bukhara oasis perfectly mastered the art of artificial irrigation. Water was used rationally, wheat, barley, millet, sorghum, corn, rice, mung bean, beans, sesame, flax, cotton, alfalfa were grown on the lands of the Kokand Khanate; from gourds: melon, watermelon, cucumber, pumpkin; from fruits: grapes, apricots, peach, apple, pear, quince, walnut, plum, cherry, sweet cherry; from vegetables: carrots, onions, beets and others. Wheat was the main cereal.

Based on the above considerations, it can be concluded that the largest of the main canals and ditches, which served the irrigation of the Bukhara Oasis, and later, as a result of burying and pressing sand, which remained unused in political processes, were built during the reign of Amir Timur and the Timurids. In addition to the canal flowing from Syrdarya, there was another canal that was taken out of the local waters, the Zarafshan River, which was also built on the order of Amir Temur, only evidence that it was built. In the research of famous scientist, professor F.H. Kasimov; Information related to the fact that the channel released from Kagan in the south-eastern direction was preserved in the memory of the people as Timur Ariq Russian scientist it is based on P.F. Sitnyakovsky's reports to the Russian Geographical Society [3].

V.V. In the works of Barthold, there is information about a work called "Maktuboti Olam" brought from India. The work was written by a person named Abulfazl who lived in the end of the 16th - beginning of the 17th century, and this person worked as a minister in the court of Baburi Akbar. In the work dedicated to letters, there is also a letter of Babur Akbar to Abdullah Khan of Bukhara, which contains information about the digging of a canal from a place called Kara Kamar near Kelif, the appropriation of the Karshi steppe, and the fact that Abdullah Khan settled people here and exempted them from taxes for five years. During the reign of Baqi Muhammad Khan (1603-1605), one of the first rulers of the Ashtarkhanid dynasty, the people of Nasaf revolted against the central authority. In order to punish the rebels, the canal was destroyed by the order of Baqi Muhammad. V.V. According to Barthold, during the period of Amir Haydar (1801-1826), he wanted to start the restoration of the canal. however, his followers are reported to have dissuaded him from this idea, foreseeing the possibility of renewed uprisings. V.V. Barthold also expressed his opinion in this place and mentioned that there is no information related to the digging of a canal by Abdullah Khan in the sources of the 16th-17th centuries.[10].

Irrigation of the Bukhara oasis increased in the process of dependence on the Russian Empire, and the last encyclopedist scholar of Bukhara, Amir Muzaffar, several times approached about digging a canal from Amudarya to Bukhara. He informed that when the Guzor river overflows, it flows west of Karshi, between Tayyqir, Mamajurgot, and Kogon in Qarovulbozord, and flows into the Amudarya in Narzam and Chorjoi areas. In some years, the Guzor river flows to Miyonkol (an area adjacent to the steppe of Jondor district of Bukhara region), making it easier to dig a canal, a special dam and a dam at the head of the canal. proposed to control the distribution of water by building a fort. However, Amir

Muzaffar did not accept this offer of Ahmad Donish, fearing pressure from the Russians. Also, Ahmad Donish argued that it would be possible to collect two coins of jul (emergency tax) from the people of Bukhara and spend 200,000 coins of the collected money to dig a canal from Amudarya near Kalif or Karki and bring water to Karshi, Bukhara and Mionkol. The emir of Bukhara replied that the rulers of Bukhara did not receive water from Amudarya in the past, and if this is done, Bukhara may be flooded. Ahmed Donish emphasized that the idea of flooding is groundless and gave a scientific justification that if the canal starts from Karki, the flood will flow back into the Amudarya west of Karshi, Qarovul kiri and south of Mamajughrot, passing through the sand and steppes. However, Amir Muzaffar did not take into account the opinions of the scientist. Ahmad Donish conveyed these opinions to Turkestan Governor-General von Kaufman, who was in Petersburg at that time, during his ambassadorship in Petersburg in 1873-1874. In his meeting with Kaufman on January 6, 1874, he pointed out that the Russians are taking most of Zarafshan's water from Samarkand, due to the abundance of cornices and springs in Samarkand, and that in the months of "Gemini" and "Javzo" there is no water to irrigate the crops, let alone water the animals, Kazalins of the farming population that they are moving to their territories, to help Bukhara in the water issue and to allow the emir to dig a canal from the Amudarya. [11] Kaufman's answer is abstract, and it is not difficult to understand that the Russian authorities needed a Western colony in the vortex of internal problems, not a prosperous Bukhara.

According to the information of the officials of the Russian Empire who studied the canals dug towards Bukhara, the Syr Darya flowed into deltas in the XVIII century near the confluence of the Syr Darya with the Arol, and one of them, the New River, did not flow into the Arol, but flowed to the southwest, and then it split into two, one under the name of Dovkara, and the other under the name of a small river. Several ditches were dug from the new river to the interior of Kyzylkum, and traces of them were found. The fact that there was water in them is evidenced by the fact that the reeds dried up on the banks of the streams, and it is mentioned in the 118th roof of the "Turkestan collection". According to the collection, a hundred years ago, the officials of the Kokand Khanate buried their canals so that their subjects would not obey the Khiva Khanate. This caused re-desertification of the areas to the north-west of Bukhara.

4 Conclusion

Based on the above feedback, it can be said that water shortages existed in the Bukhara Oasis as early as the 15-16th centuries. We can say that in order to prevent protests in the future on the issue of Zarafshan water, to make Bukhara prosperous and economically prosperous, Amir Temur and Temurids made grandiose plans. Indeed, such a grandiose engineering project could only be implemented by the people of a powerful state and a country where peace was established. History itself testifies to the fact that the reduction of Water Resources has had disastrous consequences for Bukhara. We hope that the problems associated with the Syrdarya and the canal, ditches, their direction, water capacity, water consumption, the volume of arable land that provides water will be revealed in our research in the future.

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