

The Irrigation System in the Lower Amudarya Basin in Ancient Period in the Sources

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Abstract: In this article, the development of irrigation systems in the Lower Amudarya basin in antiquity, one of the most important periods of human development, their role in the life of the population, and the creative potential of the ruling dynasties are widely disclosed.

Key words: Lower Amudarya, Khorezm, Koykirilgankala, S.P.Tolstov, Y.Gulomov, Kushan, Kang, Afrigians, irrigation system.

“Ancient Khorezm is the Egypt of Central Asia - Archaeologists studying the ancient places of human civilization achieved great achievements in the process of finding and studying places, fortresses and fortifications in the ancient Khorezm land. They were once again convinced of the uniqueness of the history, culture and art of Khorezm”.

S.P.Tolstov

Since ancient times, many great civilizations, great states, empires were founded and ended on the banks of Amudarya, the largest river of Central Asia. In all these historical processes, one of the most turbulent rivers - Amudarya - had a great influence. Khorezm, the largest ancient land in the Lower Amudarya basin, is particularly noteworthy for its history, ethnography, and culture. S.P. Tolstov, one of the scientists who played a major role in the study of the history and ethnography of ancient Khorezm and was the main flag bearer, described his first impressions during the beginning of the Khorezm archeology-ethnography expedition and said: “We are at the gates of ancient Khorezm , we are on the threshold of the road leading to the unknown past¹.” We can also know from the above opinion how rich is the history of the Khorezm region located on the banks of the Lower Amudarya.

It is known from the history of the past that many fortresses and fortifications, various water supply networks were built on the banks of the Lower Amudarya. Cultures of various periods related to the beginning of the millennium BC, the system of artificial irrigation facilities along the lower Amudarya (the great Greek historian Herodotus believed that more than 360 artificial irrigation facilities were built along the Oxus River in ancient times) and the city-fortresses that were the symbol of early urban development and became the symbol of Khorezm urbanism in the ancient period - Kalalikir, Kuzalikir, Dzhanbas-kala, Akcha-khani-kalesi, Koi-krylgan-kala K'irk-k'iz-kala, Mizdakh-khan, etc. are signs of ancient statehood in the Lower Amudarya basin.

In his book "Ancient Khorezm", the famous Russian scientist and archaeologist S.P. Tolstov, who deeply studied the rich history of the Khorezm region and the entire Lower Amudarya region, divides the history of ancient Khorezm into four periods:

1. Culture of the city with residential walls (VI-IV centuries BC)
2. Kanga (Kang') culture (4th century BC - 1st century AD)
3. Kushan culture (II - II centuries AD)
4. Kushan-Africa transitional culture (VI-V centuries AD)². More than 250 ancient cities and villages have been found on the right bank of the Amudarya River, and 60 on the left bank, belonging to these periods. Fortresses and fortifications such as Kankakala, Ayaz kala, Toprak kala, Djingilja, Tash-k'irman are examples of such structures.

¹ Толстов. С. П. По следам древнехорезмийской цивилизации. – М.: Ленинград, 1948. – С. 20

² Толстов. С. П. По следам древнехорезмийской цивилизации. – М.: Ленинград, 1948. – С. 120

Water is the source of life. Water plays a very important role in every era and every civilization. Therefore, the development of the irrigation network, especially the construction of water discharge devices, the digging of canals and ditches, and meeting the water demand of the population living there, is set as the most important task in the Lower Amudarya region, and in these sources, is also confirmed by archaeological findings. In the "Yasht" section of the Avesta book, the Khorezm region of the Lower Amudarya is praised as a "river with a thousand tributaries", "a land rich in lakes and meadows"³.

In ancient Khorezm, agriculture based on artificial irrigation was considered the main occupation of the population, which, in turn, demanded the development of irrigation networks on a large scale. It should be noted that this requirement was more than solved by the most powerful specialists in the field of irrigation of their time.

In the sources, it is noted that large canals were dug and used on the banks of the Lower Amudarya, and large fortified guard posts were located at the beginnings of these canals. It should be noted that the total irrigated areas in the lower reaches of the Amudarya have been very large since ancient times. The entire life and well-being of the population depended on the development of irrigation and irrigation facilities. Their preservation required the great work of hundreds of thousands of people. Slave labor has been considered unproductive in the region since ancient times. Consequently, the collective was the only means of attracting farmers to the construction of irrigation facilities and keeping them in constant operation. Irrigation - community - state - this is the main basis of the existing economic mechanism of ancient and ancient Khorezm, where the community played a key role. The whole society was interested in its preservation. It can be seen from these that the development of agriculture and livestock farming in the Lower Amudarya basin and the decent living of the population depended on the extensive development of the irrigation network.

Several archeological historians worked on the irrigation system along the Lower Amudarya, including: S.P. Tolstov, Y.Gulamov, P.P. Ivanov, B.V. Adrianov. S.P. Khorezm archaeological-ethnographic expedition under the leadership of Tolstov discovered the location of many canals and drainage structures during the inspection of old fortresses. In his works "Ancient Khorezm" and "Traces of Ancient Khorezm Culture", he provided a lot of information about the irrigation system. Y. G. Gulyamov in his work "The History of Khorezm Irrigation" notes that the publication of these works by S. P. Tolstov introduced the scientific world to the ways of development of the ancient Khorezm society, especially the dynamics of irrigational development of Khorezm⁴. The father of Uzbek archeology, Academician Yahya Gulyamov, published a work entitled "Irrigation History of Khorezm", which contains valuable information about the irrigation system of ancient Khorezm. In this work, the works carried out in the irrigation system in the lower Amudarya basin since ancient times are highlighted on the basis of archaeological materials. Senior scientist B.V. Adrianov also wrote down sharp thoughts about the history of the irrigation system of the Amudarya oasis in many works and articles⁵.

The rapid development of irrigated agriculture in the Lower Amudarya area is apparently associated with the appearance of new tools made of iron, which, in turn, is a necessary condition for the transition to antiquity. It is highly probable that it created the conditions. This transition process was first of all a great necessity, because it was impossible to further develop agriculture while maintaining the social relations based on the primitive community. Constantly changing the direction of irrigation sources is an unreliable source of irrigation, which could not fully satisfy the needs of the population. In those times, the river often changed its course, sometimes flowing to Aral, sometimes to Sarikamish, sometimes to the Caspian side. This, in turn, created a need for large canals and ditches. It is known from historical sources that the canals were dug by manual labor and the main labor force was slaves. The history of the ancient irrigation network of Khorezm, which was built with the labor of a large mass of prisoners of war, can be fully learned from the ancient irrigation monuments that have been perfectly preserved to this day⁶.

³ Авесто. Яшт китоби. М. Исҳоқов таржимаси. – Тошкент: "Шарқ". 2001. – В. 30

⁴ G'ulomov.Y. G'. Xorazm sug'orilish tarixi. – Toshkent: 1959. – B. 18

⁵ V.N. Yagodin and A.V.G. Betts. The golden ring of Khorezm.2009. – P. 47

⁶ G'ulomov.Y. G'. Xorazm sug'orilish tarixi. – Toshkent: 1959. – B. 76-107

Archeological research has proven that many canals and dams were built in the Lower Amudarya basin in ancient times. Around the beginning of the 1st century AD, the Kushans began to invade Khorezm. Even after becoming part of the Kushan state, Khorezm did not lose its independence, and its economic and cultural growth continued. The development of irrigation networks did not stop, old castles were rebuilt, new castles and settlements were created. For example, the northeastern corner of Bazarkala, one of the largest fortresses, became a small new city. New defensive structures typical for the Kushan era were built there. A number of new fortresses were being built on the outskirts of the oasis, including Govurqala in lower Chirmonyop, the Kushan part of Kandumkala, Devkeskan fortress in the Ustyurt mountains, and others. During this period, the Kyrgyz and Tuproqkala canals, equipped with large water barrier structures, were probably built. The expansion of irrigation networks led to the construction of well-fortified cities and fortresses such as Shorakhan, Gul'dursun-kala Bolshaya, Mal'ii K'irk-k'iz-kala, Toprak kala, Kizil kala, Ayaz kala, Kurgashin-kala. Archaeological excavations revealed the entire development scheme of this activity; in accordance with this scheme, a strong fortress was built in front of each small town that came out of the canal; At the end of each channel, such a fortress was built⁷.

From these sentences in the work of academician Y. Gulyamov, we can know that the development of the irrigation system, in turn, was the basis for the development of urban development. The fact that the digging of canals and their protection was the biggest responsibility of the population, the fortresses built at the beginning and end of the canal, in fact, the defense fortress, in turn, was the living space of the population, and we understand how important the irrigation system was for the area. It was very important for the settled, nomadic and semi-nomadic peoples of the Lower Amudarya to organize the irrigation system well, because it is an important process to be able to use the same water resource for all⁸. We can assume from the above opinion that all the above classes of the people of the region had very close and good relations with each other.

S.P. Tolstov with the Khorezm archaeological-ethnographic expedition thoroughly researched the irrigation system of the old fortresses and fortifications in the Lower Amudarya basin. The ancient irrigation system was studied in depth. The great scientist writes in detail about this ancient irrigation system in his book "Ancient Deltas of Ox and Yaxart". It is in this work that the scheme of the ancient irrigation system of the Lower Amudarya region, that is, the Ancient Khorezm region, is presented (Fig. 1)⁹. The ancient irrigation system is clearly described in the scheme, and the shapes of the forts and the cultivated fields around them are presented. It is very easy to visualize the irrigation system in ancient Khorezm during the reign of the Kang state and the reign of the Kushan Empire through this scheme.

The ancient irrigation network covered the entire territory of the Sarikamish delta of the Amudarya and the Southern Akchadarya delta, and the big forts on the right bank of the river: Kiz'il-kala, Toprak kala, Ayaz kala, K'irk-k'iz-kala, Kurgashin-kala, Bazar kala, Dzhanbas-kala and Gyaur-kala, Kanqa kala, Mangir kala on the left bank of the river, an unnamed large settlement and the lower reaches of the middle Daudan, two ancient fortress in the Butentau mountains show the level of development of the territory of the ancient deltas in ancient times¹⁰. Therefore, the irrigation system of the castles is located mainly along the deltas of the Amudarya and occupies a very large area.

The Amudarya and its water facilities played a major role in the development of agriculture, horticulture, crafts, and urban development of the Lower Amudarya peoples.

⁷ G'ulomov, Y. G'. *Xorazm sug'orilish tarixi*. – Toshkent: 1959. – B. 105

⁸ Исо Жабборов. *Древний Хорезм – страна высокой культуры и уникальной духовности (Этно-исторические очерки)*. – М.: 2014. – P. 42

⁹ Толстов. С. П. *По древним дельтам окса и яксарта*. – М.: 1962. – С. 90

¹⁰ Толстов. С. П. *ПО ДРЕВНИМ ДЕЛЬТАМ ОКСА И ЯКСАРТА*. – М.: 1962. – С. 89

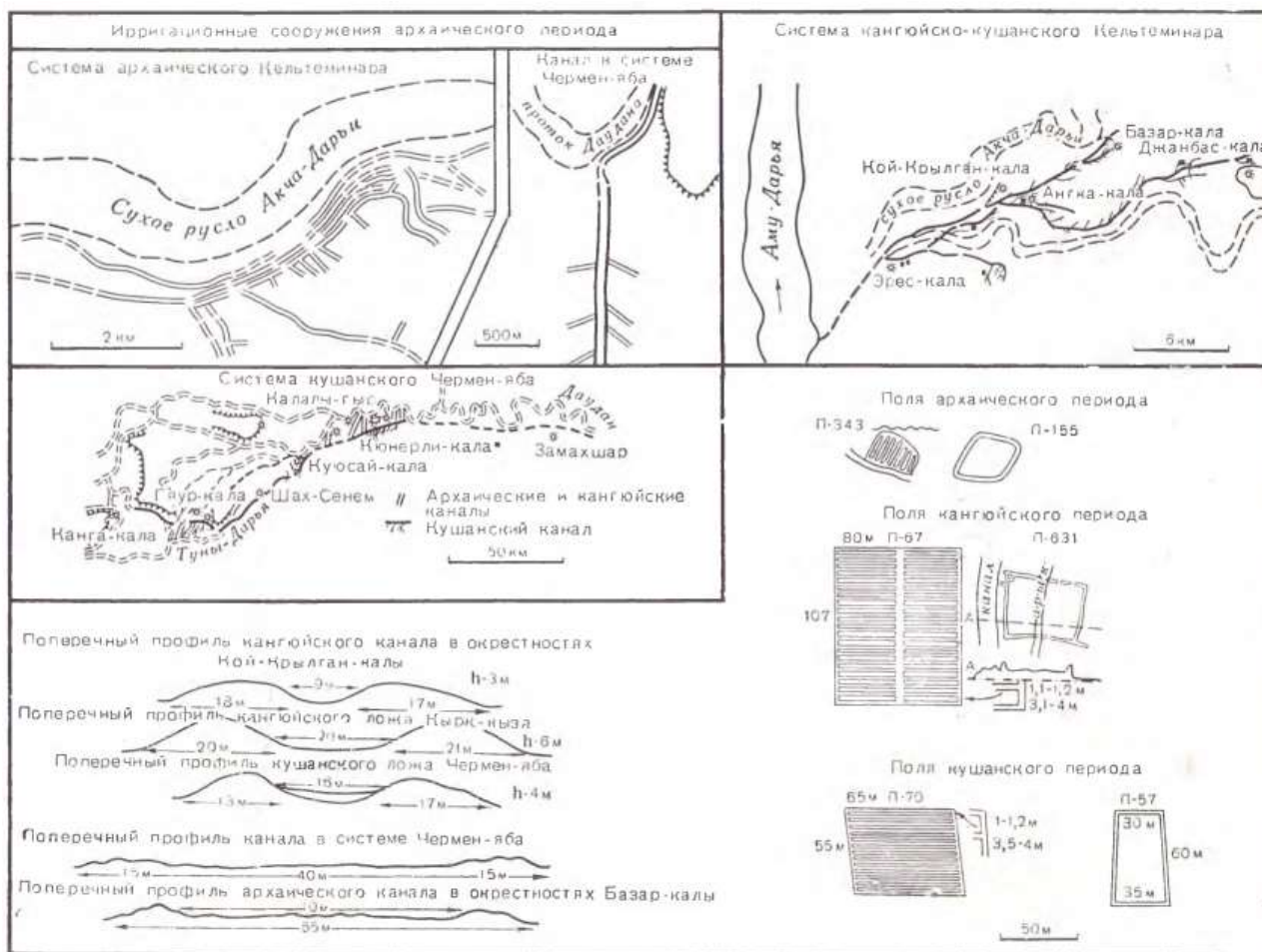


Figure 1: Ancient irrigation system in Khorezm.

In his work, Academician Y. Gulyamov mentions cases of worshiping and deifying the Amudarya River in the pre-Islamic period. This opinion is most probably correct, and water was considered a sacred element in the Zoroastrian religion, which was widespread among the peoples of the Lower Amudarya before Islam. In the Zoroastrian religion, Anahita was considered the goddess of water and was worshiped by the population. According to the sources, religious belief is the reason for the development of the irrigation system, i.e. the worship of water and the river is also the reason for respect for water, keeping it clean, using it correctly, not wasting it, etc. and the people followed those aspects very well. In Central Asia, "ancient irrigated lands" have been known for a long time in the vast areas of the desert, especially in the part of Kizilqum and Karakum surrounding the Khorezm oasis. We can tell by the traces of irrigation and many ruins. They are also noted by many travelers. Most of them are drawn on geographical maps. The origin of these lands and the reasons for their destruction have long been of interest not only to historians, but also to geographers and geologists who are familiar with the historical and geographical secrets of ancient Central Asia¹¹. It means that the irrigation system in the Lower Amudarya region did not appear suddenly, but it has a long history and we should not think that the irrigation system began to develop only in antiquity. It is not difficult to understand that they existed prior to antiquity from the traces of canals and water structures that passed by the ruins.

It is known from the sources that the construction of large irrigation systems played a decisive role in the development of urban civilization and the high culture of agriculture in the Lower Amudarya region, a region where irrigated agriculture, crafts and trade have been developing since ancient times. The creation of complex irrigation systems was possible with a strong centralized state power and extensive use of forced labor. The ancient Khorezm civilization flourished from the 4th century BC to the 3rd century BC. In the

¹¹ Толстов, С. П. По следам древнехорезмийской цивилизации. – М.: Ленинград, 1948. – С. 26

second half of the IV century BC, the state of Khorezm was freed from the oppression of the Achaemenids. With the growth of the economy, agriculture, urban crafts and trade developed in it. On the right bank of the Amudarya, the Koi-kril-gan-kala and Dzhanbas-kala canals were built, which supplied many castles and neighboring fields with water. It is estimated that the total area of irrigated lands in the lower reaches of the Amudarya and Syrdarya in the IV century BC was approximately one million hectares. Here, millet, wheat, barley, watermelon, sweet potato, pumpkin, technical crops were cultivated¹². Apricots, plums, peaches, grapes, and pomegranates were grown in the gardens. In the canals and tributaries of the Amudarya, many settlements and fortified cities were built with strong walls and complex labyrinth-like gates. There were a lot of trade, handicraft and cultural centers in the Lower Amudarya region. One of the important settlements of this period was the Koi-kril-gan-kala fortress. The fortress consisted of a circular two-story arched building in the center, surrounded by an outer wall with nine towers. There were residential buildings around the wall. In some of them, many large hummocks, where food was stored, were found. The clear examples of the ancient irrigation system can be seen in Koi-kril-gan-kala.

One of the political processes of the ancient period and one of the aspects that we should analyze is that it was during this period that Khorezm's struggle with the Kushans and the conflicts of internal political forces paved the way for a powerful dynasty to take over the power, this dynasty was the Afrighid dynasty. It was the Afrighids who brought the development of the irrigation system to a higher level in the region, they dug canals and built large castles and cities around them. The new kings of Khorezm dug the Kat canal in the 3rd century and then built the city of Kat around it and moved their residence here.¹³ It is a historical fact that every dynasty carried out creative works in every field in order to demonstrate its power and strengthen its authority in the country.

In conclusion, we can say that the Lower Amudarya region has been a center of civilization and development since ancient times. During all periods of Khorezm statehood, irrigated agriculture, crafts, trade, and architecture developed. The irrigation system on the banks of the Lower Amudarya has achieved great development in the current period. The emergence of small oases around each irrigation system is a characteristic feature of the Lower Amudarya region. Scientific literature and archeological studies clearly show us how developed the irrigation system in this area is. It is our ultimate goal to make big news and open the undiscovered aspects of our history in further scientific research.

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¹² Kidiriyazov M.Sh, Kidiriyazov O.Sh. Antik davr Xorazm sivilizatsiyasi tarixi. – Nukus:. 2014. – B. 83

¹³G’ulomov.Y. G’. Xorazm sug’orilish tarixi. – Toshkent:. 1959. – B. 115