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SOI: [1.1/TAS](#) DOI: [10.15863/TAS](#)

International Scientific Journal Theoretical & Applied Science

p-ISSN: 2308-4944 (print) e-ISSN: 2409-0085 (online)

Year: 2020 Issue: 04 Volume: 84

Published: 12.04.2020 <http://T-Science.org>

QR – Issue



QR – Article



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THE ROLE OF ARTIFICIAL IRRIGATION SYSTEMS IN THE FORMATION OF USTRUSHONA RURAL AREAS

Abstract: This article mentions artificial irrigation systems, irrigation facilities, which are of great importance for the life activities of rural areas of Ustrushona.

Key words: the Central Asia region, archeological sources, Ustrushona, early medieval rural areas, artificial irrigation system, "koriz", agriculture.

Language: English

Citation: Pardaev, M. H., & Gafurov, J. I. (2020). The role of artificial irrigation systems in the formation of Ustrushona rural areas. *ISJ Theoretical & Applied Science*, 04 (84), 264-267.

Soi: <http://s-o-i.org/1.1/TAS-04-84-46> **Doi:**  <https://dx.doi.org/10.15863/TAS.2020.04.84.46>

Scopus ASCC: 1202.

Introduction

It is known from the laws of historical development of ancient peoples that great qualitative and quantitative changes occur in the creation of material goods when a progressive sphere of production is formed in society and it takes a leading position in the economy. This reality creates significant economic shifts in the development of society and even leads to the transition of the structure of society from one form to another. The field of agriculture based on artificial irrigation systems is one of the most important discoveries made in a certain period of human history, it accelerated the development of society, created the first division of labor, laid the foundation for the first political systems - states. In this sense, the role of agriculture based on artificial irrigation systems in the development of economic life of the peoples of the ancient East, including the Turanian land, is a huge historical

process that is unique, important, covering several thousand years [1. 280 p.].

During the historical and archeological researches in the central, northern and western regions of Ustrushan, along with the monuments of material culture of dozens of different periods, artificial irrigation systems and irrigation facilities were noted, which are of great importance for their life. This is because, according to the simple laws of official history, the main basis of the activity of sedentary farms is inextricably linked with the culture of irrigated agriculture. The main task of irrigation facilities built by ancient irrigators and ameliorators on the basis of natural runoff and other sources was to supply water to the fields for a long time each year. Because in the conditions of Central Asia, some crops had the opportunity to harvest twice, and some (for example, rice, cotton ...) were irrigated for a long time, a lot of water was used. Not only in Ustrushana, but in Central Asia as a whole, the characteristics of

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irrigation facilities and their associated irrigation techniques depend on the hydrology (lowlands, slopes), geomorphology (land structure, soil types) of a particular oasis and, of course, the socio-economic and scientific development of society. formed and operated on this basis. Due to these circumstances, different methods of irrigation have been implemented in Central Asia, including Ustrushna, and they have differed sharply from each other in some cases.

Materials and Methods

According to the medieval author Hamidullah Qazvini, there were basically 4 types of artificial irrigation in the East. These are: irrigation methods based on rivers, streams and springs, sewers and water wells. The first two of these methods specialize in irrigation activities based on open-flowed slopes, naturally flowing canals and ditches, water-lifting structures, and reservoirs. The method of canal irrigation is to bring groundwater to the surface through a "gallery" of special wells and a closed solder attached to them horizontally, and to discharge groundwater close to the surface through wells [2. C.138-140].

Three of these irrigation methods are widely used in Ustrushna. In northwestern Ustrushna the construction of canals and royal canals has been developed since ancient times. For example, the Tuyator tar canal, which stretches from the Raboti Khoja dam of the Zarafshan river to the Jizzakh oasis, has a total length of about 100 km and receives one-seventh of the river's water, and the ancient settlements built in its basin. To these considerations can be added the Khanbandi Reservoir, built in the 10th century at the confluence of the Ilonchisoy and Osmonsay rivers, which is preserved near the town of Band in the Forish district. 1.5 thousand hectares of land could be irrigated with the water reserves collected in this reservoir [3. 305-306 p.].

According to industry experts, the method of irrigating groundwater through wells is less common in Ustrushna.

This is due to the fact that groundwater from a depth of 3-10-12 m was mainly in the Mirzachul zone. Here, however, lalmi farming is more developed than irrigated farming. However, S. Anarbaev notes that this method has been used since ancient times, in the 60s of the last century, in the village of Yoyilma, located in the area adjacent to the desert border of Jizzakh district [4. 51-55 p.].

It should be noted that the geographical term North-West Ustrushona refers to the irrigated agricultural oasis between the Sangzor and Zaamin rivers. Sangzor, which stretches from the Chumkartov ridge of Turkestan Mountain to Haydarkol (150 km), crosses the three rusts of the medieval Ustrushna - Burnamad, Harakana, Fagnan, and has long been the main source of water for these cultural oases.

Zaamin is used for drinking water and irrigated agriculture in Zaamin-Sarsanda, which is second only to Bunjikat, the capital of Ustrushna. According to the research, the river water reached the monument to the city of Qoratepa (60 km) on the borders of Mirzachul.

Researchers have acknowledged that sedentary life and irrigated agriculture have existed since ancient times in the central part of Ustrushana. As noted by O.I. Smirnova - "Greek authors testify that in Central Asia, especially in Ustrushna, AD. As early as the 4th century, urban life developed, and agriculture based on artificial irrigation systems developed. The city of Kiropol, the largest and most famous among the cities of Central Asia at that time, was located in Ustrushna. In addition to Kiropol, historians report five other cities between Alexander's camp and the Syrdarya, and only one of them mentions the city of Gaza "[5. C.-188.].

The oldest irrigated agricultural oasis in northwestern Ustrushana, identified so far by archeological research, is a cultural site associated with the rural areas of Khontepa, Saganoptepa I, II in the Khojamushkentsoy basin. These two monuments are located on the right bank of the river, in its lower reaches, and date back to the V-IV centuries BC [6. C.19]. Although the lower reaches of the Khojamushkentsoy are now diverted in a west-easterly direction near the Khantepa area by a concrete ditch, the width is 50-60 m. e, depth 3-5 m. The old, dry riverbed from south to north is still preserved.

In the oasis between Sangzor and Zominsuv, a monument similar to the first ancient Khantepa and Saganoptepa was found in the rural area of Korpasay in the late 1990s and has not been recorded yet.

In northwestern Ustrushna, after a periodic break with the date of the year of Hontepa, a group of settlements will rise around it. These areas are built on the banks of two rivers, on the banks of large streams and springs, the main source of water of the oasis, in accordance with the simple laws of irrigated agriculture. It is no coincidence that the site of Zaamin, one of the well-known and famous cities of Ustrushna, was found in Kurgantepa (Ordatepa) [7. S.63-66.]. At this stage of antiquity, the construction of urban and rural areas in the agricultural area associated with the Sangzor River became relatively widespread. During this period, the largest and well-preserved town of Qaliyatepa in the oasis and several rural settlements built around it were preserved. According to the results of excavations carried out at several sites of the monument, er.avv. As early as the III-II centuries, the features of urban planning - the arch, the defensive wall, the shahristan (area 5 ha) are clearly visible. Given that statigraphic studies have not been completed, this periodic date may be even older [8. C.87-89]. The identification of irrigation systems in the agricultural oases of Qaliyatepa and its environs is somewhat perfect. The monuments of this city are located in the eastern slope of the Jizzakh

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oasis, 3 km from the nearest place of the present river Sangzor. The ancient Molkanlik canal, which is still in operation today, supplied water to the Kaliyatepa settlement and the surrounding agricultural lands. "Kaliya Molkanlik" is an ancient water supply system. The following factors serve in favor of these ideas. First of all, the "Kaliya Mulkanlik" royal canal started from the upper part of the river, not from the "Five pipes" watershed dam built in Sangzor in the Middle Ages. The water flowed naturally towards Qaliyatepa, not through the dam. Second, more than 10 early medieval fortresses were later built in the basin of the Kaliya Molkanlik canal. So, the water capacity is 2.0-2.5 cub. m. the "Kaliya Molkanlik" channel has been operating since ancient times and continued its activities in the early Middle Ages and the Middle Ages. [9. 230 p.].

The Qurghontepa, recorded in the middle reaches of the Sangzor basin, and the Dunyotepa monuments in the lower reaches of the Qili have periodically emerged as integral successors to the sedentary lifestyle and agriculture in the region. Qurghontepa er.avv. II-I; Dunyotepa dates back to the first century AD [10. C.10-11]. In the upper reaches of the river, Kurgan and Oydinsoyepa of the same period will be built. It should be noted that the ruins of Oydinsoyepa are located on both banks of the Sangzor. The economic life of these settlements was based on irrigated agriculture and had favorable natural conditions for this. In the following periods, they became the capital of the administrative-territorial subdivisions of the Ustrushna state-rustaks and took their place on the stage of history. In particular, Qaliyatepa-Dizak (Fagnan), Kurgantepa-Kharakana (Kharakana), Qurghontepa (Ordatepa) - Zomin-Sarsanda (Zaamin), Xontepa-Sag'anaqtepa, Kultepa-Savat (Sabat).

Hence, we can conclude for the ancient period that it was found that the prelude to the north-western Ustrushona irrigated agriculture was originally associated with the settlement of Hontepa in the post-Nurtepa and post-Nurtepa stages. After a short break, the culture originated in the Qaliyatepa area of the lower reaches of the Sangzor, a process that moved to the middle and upper reaches of the river, the basins of the Zominsuv and Kili rivers, and continued to develop further in the early Middle Ages.

According to the analysis of our research, the migration of nomadic desert peoples in the early Middle Ages to the cultural, agricultural oases in the III-IV centuries, often ended with their transition to a sedentary lifestyle. This situation became widespread in the V-VI centuries (11. P-180).

The process of mass settlement can be linked to changes in the internal social systems of nomadic society. That is, factors such as increasing property and social stratification in desert society, impoverishment of the main population, and lack of pastures often led to their settlement as a result of the

exposure of herders to highly cultured sedentary populations [12. 68-69 p.].

The implementation of mass settlement in the early Middle Ages naturally led to the expansion of irrigated agricultural lands, which in turn led to the development of irrigation networks and the construction of new irrigation canals. A.I. Bilalov admits that "irrigation systems and facilities built in the early Middle Ages have served for hundreds of years with almost no major changes, some of which are still in use. In the early Middle Ages, irrigation networks with a total length of 3,000 km operated throughout Ustrushna, on the basis of which it was possible to irrigate 200,000 hectares of land "[2. C.-138].

In northwestern Ustrushana, the first medieval irrigated agriculture developed independently in each small oasis and adjacent cultural plains, depending on the characteristics of the water sources (rivers, streams, springs) of the same area, the geomorphological structure of agricultural lands. As this situation is specific to all agricultural areas of Ustrushna, it does not allow to build integrated, common, centralized irrigation systems in the study area. These ideas were confirmed during the search for the creation of a complex of archeological monuments of the oasis. The monuments are gathered around the city, which serves as the administrative, cultural center of a certain small oasis. This was done taking into account the military strategy of the temporary management of the small oases mentioned above, especially the defense of the central city for.

An irrigation system based on a system of sewage wells was also in operation in the areas of Ustrushona where there is a problem with running water sources.

In mid-September 2011, the head of the Jizzakh expedition of the Institute of Archeology of the Academy of Sciences of Uzbekistan M. A small scientific team led by Pardaev studied an unknown underground structure found by chance near the village of Novka in Bakhmal district. It is known that the structure is 1.6-1.7 m in diameter, with a storage height of 2 m, after a distance of about 15-16 m, inwards, from the opening of the structure to the south-east. connected to a well-shaped structure. At the top of the walls of the building there are circular "bird's nest" -shaped pits with a diameter of 10-12 cm every 60-70 cm. These pits are the place of protective barriers to prevent the movement of the upper layers, and the presence of dark brown remnants in some of the pits, similar to wood chips, indicates that wooden materials were also used in the construction of this structure. The structure is hand-excavated and its lower part is covered with a layer of blue, fine sand, which is formed under running water.

As a result of comparative studies, it was found that this ancient structure, located in the village of Novka, Bakhmal district, in the past was a sewage

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system used to provide the population with drinking water, artificial irrigation of arable land. According to our subsequent analysis, in particular, the periodic date of the archeological heritage sites of this region, it can be considered that this koriz operated in the XI-XII centuries [13. 110-111 p.].

Conclusion

For the first medieval irrigated agriculture of Ustrushna we can conclude the following. Thus, this period of irrigated agriculture developed in close

connection with the political, socio-economic and cultural relations that are characteristic of this period. As noted above, this period is characterized by the process of mass settlement of cattle-breeding peoples along the Central Syrdarya throughout the Central Asian region, including the nearest neighboring Ustrushna. Ustrushona, which is the closest "contact zone" for the peoples of the Syrdarya region, was one of the first to be involved in these settlement processes and took an active part in these processes.

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