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From the History of Irrigation Structures in the Surkhan Oasis

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If we look at humanity's historical development, our ancestors from ancient times considered water the source of their way of life. They realized that well-preserved irrigation facilities could be achieved only through the selfless work of many people.

The earliest irrigation structures in the Surkhandarya oasis can also be traced from the artificially constructed irrigation structures found as a result of archaeological research. The traces of canals and ditches found by archaeologists around the cities and fortresses of Bandikhan and Kyzyltepa, dating back to the 1st-3rd centuries BC, can also be traced. With the help of these canals and ditches, the population watered large fields and engaged in agriculture.

The irrigation system of the Surkhan Oasis, ancient canals, water structures, dams, and other sources related to irrigation go back to the distant past.

The "Avesta" also mentions the widespread use of irrigation systems in the agriculture of the Surkhan Oasis since ancient times. The oldest canal in northern Bactria is Bandikhan, which, according to Academician Rtveladze, was dug during Kuchuk 1[1].

According to the Greek historian Herodotus, 2,500 years ago, reservoirs, river dams, canals, and corridors were built in Bactria. Traces of some of those old reservoirs are now preserved. An example is Nondahana, about 10 km north of Sherabad[2].

The inhabitants of the oasis developed new lands and paid great attention to digging canals and ditches. According to archaeological evidence, life in ancient cities moved from Shahristan to Rabat. Thus, this process intensified, creating an opportunity for the widespread spread of the population throughout the region and transforming the oasis into the main agricultural area. This was facilitated by the following factors.

First, the abundance of water for the development of agriculture in the oasis, that is, each region has its water source (Surkhan, Tupalang, Sangardak, Kyzylsuv, Sherabad).

Secondly, the climate of the oasis is the hottest in Central Asia, and it is possible to grow all agricultural crops.

Thirdly, many vacant and fertile lands have not yet been settled[3].

The development of agriculture based on artificial irrigation structures in the Surkhan Oasis also depends on its geographical location. The oasis area consists of an intermontane oasis flowing through the Sherabad and Surkhandarya rivers. The Surkhandarya oasis has plains, deserts, and foothill zones. The hilly latitudes of the oasis gradually decline from north to south, converging into plains. The Surkhan oasis is surrounded on three sides by mountain ranges, from which the

[1] Пугаченкова Г.А. Ртвеладзе Э.В. Северная Бактрия-Тахаристан. Очеркки истории и культуры (древность и средневековье)- Ташкент. Фан.1990.с-22
[2] Виткович В. Совет Ўзбекистонига Саёҳат.-Тошкент.1958. б-240-241
[3] Сурхон воҳаси хўжалиги. Э. Қобулов.Тошкент : Академикнашр, 2012.116-бет

Tupalang, Khojaulkan, Sherabad, and other rivers flow. The oasis, due to its climatic conditions, has proven to be one of the regions of Central Asia that has been based on irrigated agriculture since ancient times.

The Surkhan Oasis had the following main types of agriculture:

1. Irrigated agriculture, rainfed crops, and livestock farming in large oases and along large rivers.

2. Irrigated agriculture and rainfed crops in relatively small valleys - mainly wheat, pasture livestock farming in the middle mountainous regions.

3. Irrigated and rainfed agriculture, as well as pasture livestock farming in the Middle Highlands.

4. Irrigated and rainfed agriculture in high-altitude regions was carried out in harmony with pasture livestock farming.

5. Arid and conditionally irrigated agriculture. Pasture livestock farming in the foothills developed alongside production.

Livestock farming on wide meadows was rarely accompanied by irrigated lands and dryland farming[4].

In the agriculture of the Surkhan Oasis, arable land also occupies a special place. Water is brought to the arable land, that is, irrigated by artificial means, by human hands. Ancient, high terraces of foothill plains and large rivers are convenient for growing various crops. These lands, as a rule, were developed through canals that collected water from tributaries along the banks of large rivers, and grain crops and melons were grown. In addition, gardens and vineyards have been created and mulberry trees have been planted.

From an economic standpoint, arable land is divided into two types.

The first type of arable land is of minor importance, including lands irrigated by small mountain tributaries, streams, and ridges.

Koriz is of great importance in the economy of mountain villages. Because Kariz provided drinking water for crops, livestock, and the population[5].

The second type of irrigated agriculture is mainly on the banks of large rivers fed by snow and rainwater, from which water is drained to the fields through complex irrigation networks[6].

In the oasis, water has been preserved since ancient times by collecting water in basins and ponds, discharging water upstream through ditches, and digging canals, and ditches. The method of plowing water into canals and ditches is very common.

The technique of draining water from rivers by constructing simple dams into large and small canals and ditches is widespread[7].

The development of irrigation facilities in the oasis can also be seen from the following sources.

Ibn Battuta, an Arab traveler who visited Termez in 1333, wrote in his travelogue: "Ancient Termez was founded on the banks of the Jayhun." After Genghis-Khan destroyed this city, a new city was built two versts away. This city has bustling bazaars and magnificent buildings, it is crossed by many canals, and it has many gardens. Especially the grapes and quinces of this place are very sweet."

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[4] Кармышева Б.Х. О торговле в восточных бекствах Бухарского ханства в начале XX и.в связи с хозяйственной специализацией. Товарно-денежных отнашения на Ближнем и Среднем Востоке в эпоху средне вековья –М. Наука. 1979.стр 115-116

[5] Сурхон воҳаси хўжалиги. Э. Қобулов.Тошкент : Академикнашр, 2012.136-бет

[6] Рассудова Р.Я.. О видах поливных и неполивных земель в Средней Азии. Хозяйственно-культурные традиции народов Средней Азии и Казахстана.-М. Наука. 1975.с-130

[7] Сурхон воҳаси хўжалиги. Э. Қобулов.Тошкент : Академикнашр, 2012.150-бет

In 1404, Rui Gonzalez de Clavijo, who arrived at the court of Amir Timur as an ambassador on behalf of King Henry III of Castile, provided the following information. "Our territory is very wide and densely populated. The city is surrounded by gardens, and many canals cross it.

Thus, the artificial irrigation system in the Surkhandarya oasis was formed in ancient times, and simple irrigation methods were used before and after the emergence of new irrigation structures.