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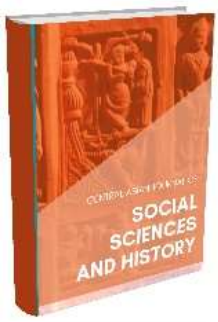

DEVELOPMENT OF IRRIGATION SYSTEM IN THE HISTORY OF THE ANCIENT WORLD

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ABSTRACT

This article describes the history of the development of irrigation systems in the ancient world, the construction of the first dams, the construction of the first canals, the importance of water in agriculture

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INTRODUCTION

Water is the most important and integral part of human life. The role of water in agriculture and animal husbandry is invaluable. It is known from history that the foci of ancient civilization originated in the Nile River, the Frot and Tigris rivers in Mesopotamia, the Indus River in the Indian Valley, and the Yellow River and Yangtze River basins in China. As the population grew, so did the demand for water, as did the demand for food. As a result, techniques for digging canals from rivers for water use in agriculture, the construction of various waterworks will be created, and new irrigation systems will be improved over the centuries.

Mil. avv. The flooding of the Nile River in the 3rd millennium was very terrible for humans. Hundreds of villages were destroyed from Egypt's southern borders to the Mediterranean coast, leaving thousands of Egyptians homeless. Crops in flooded fields were damaged and many people died of starvation. The natural disaster devastated the Egyptians, but the Egyptian capital, Memphis, survived the

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natural disaster. He was rescued by a 15-meter dam around the city. [1] According to legend, the first ruler of Egypt, Menes, built the world's first dam to regulate the Nile River. The Egyptians established strict laws of water use and paid close attention to irrigation systems. [2] Under Menes 'decree, canals were dug and dams built in Egypt, resulting in increased soil fertility and high yields. All the canals and reservoirs of Egypt were in the hands of the ruler. Governors and government officials were responsible for the entire irrigation system. In ancient Egypt, water was delivered to high fields where water could not pass through canals through shadufs (water lifts). To this day, Egyptian farmers use shaduf to irrigate their land. [4]

Ancient civilizations originated in the Mesopotamian valley, between the rivers Frot and Tigris. In ancient Sumer and Akkad, the population was well versed in irrigation farming techniques in addition to engineering. Mil. avv. In 2400, a dispute arose between the inhabitants of Ummah and Lagash over the sharing of the waters of the Frot River. As a result, the people of Lagash dig a new canal for themselves, but as a result of this canal causing great damage to them, the Lagash people are forced to leave the city. [2]

In ancient Mesopotamia, agriculture was based on irrigation canals, reservoirs, ponds and dams. Channels performed two different functions. The first task was to divert excess water to reservoirs and reservoirs during floods, while the second task was to deliver water from rivers and reservoirs to fields and orchards during the dry season. [5]

Main part.

In ancient Mesopotamia, they controlled the flow of the waters of the Frot and Tigris rivers with great effort. Otherwise, its transportation could have caused huge losses to the population. They dig canals from the river and regulate the water level with dams. Failure to pay attention to the canals would have led to a decline in yields and the quality of life of the population. So the rulers themselves tried to focus on the canal system. Hammurabi, the ruler of Babylon, stated in his laws that he "provided water for his people." [6] Hammurabi paid great attention to the construction of more canals, for without canals it would not have been possible to imagine irrigating the fields during a drought. The main crop in Babylon was grain, and it was the main wealth of Babylon. The Babylonians sold grain to neighboring countries, and they brought wood, copper, and stone from Phenicia instead. The rulers focused on protecting the irrigation system in the country and building new canals. The largest canal, built by Hammurabi's decree, is called "Hammurapi - the blessing of the peoples." Water from this canal was distributed through many small canals, irrigating hundreds of hectares of land. [3]

Hammurabi firmly states in his laws to be fair in the use of water.

If a person does not prevent flooding in the area he is irrigating, and landslides occur, and the water damages the neighboring crop field, he will compensate them for the resulting grain damage;

- If a person opens an irrigation ditch, but due to negligence, the water hits the neighbor's field, then he measures how much damage he caused depending on the neighbor's harvest.

- If a person opens the water and this water floods the neighbor's crops, he pays 10 gur (1 gur = 252.6 l) of grain for each bur (1 bur-6.35 ha). [7]

In ancient China, the abundance of crops in the fields depended on water. In China, mil. avv. Since

the 4th millennium, people in several countries have been mastering convenient ways to irrigate crops and use water. The legend of the Great Yu, an engineer who reports on the history of ancient China, has come down to us. The ancient Chinese began to build earth dams to protect themselves from floods, but this did not give good results due to their lack of experience in building dams. Engineer Yu comes to Emperor Yao and presents his project for the control and regulation of rivers, as well as the regulation of terrible floods. Mil. avv. In 2283, the emperor entrusted Yu with the leadership of water construction throughout the empire. Yui was the first in China to use the method of clearing and deepening riverbanks, opening canals with the help of a large number of workers. As a result of the Yui project, the country's economy has risen to its highest level in eight years. The great engineer quickly gained fame throughout the country. After the death of Emperor Yao, Yu was elected emperor in gratitude for his services. Later, the services of the Great Yu became a legend. [8]

Demand for water is increasing in ancient Chinese regions. Growing millet, wheat, barley does not require additional moisture. Rice is grown in the Yangtze Basin, where rice cultivation requires a large amount of water. This increases the need for artificial irrigation and leads to the construction of new canals. During the Zhou Dynasty (1100 BC), canals began to be built to meet the demand for water. The book "Zhouli", written at that time, has a section aimed at improving the reclamation of lands. This book gives a clear scheme of the organization of the irrigation system with the dimensions of canals and ditches. [9]

The Yellow River in China was of great importance in agriculture and transportation. In ancient times, the Chinese also used ditches dug to irrigate fields as communication routes. Later, as a result of the connection of separate channels, the "Great Channel" was formed. The Chinese built the "Great Canal" in avv. Construction began in the 6th century. [4] This canal was built in the XIII century AD. Today its length is 1782 kilometers.

Ancient Indian civilization originated in the Indus Valley. The inhabitants of the Indian Valley built the cities of Harappa in the Punjab region and Mohenjadaro in the Sind region. The city had water supply and sewerage. Residents built dams to protect the city from floods. Archaeologists have excavated the city and found that the city was flooded five times. Mohenjadaro archaeologists find an ancient stone dam 10 meters high and wide. This dam protected the city from floods. [10] It is evident that the ancient Indians built a complex irrigation system for that period in order to protect the city, and made great strides in irrigation.

In countries where early civilizations emerged, attitudes toward irrigation systems rose to the level of politics. They create the first dams and canals against the overflow of rivers. These first earthen dams have been polished for millennia and will serve as the basis for the creation of future dams.

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