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REVIEW ARTICLE

SOME JUDGMENTS ABOUT THE HISTORY OF AGRICULTURAL CULTURE IN CENTRAL ASIA

***Khurshida Yunusova, Umid O'sarov**

Department History of Uzbekistan, Teacher's Khurshida Yunusova, Umid O'sarov, National of universitety Uzbekistan

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ABSTRACT

The population of Central Asia had a lot of experience in agriculture, in particular, in the alternation of cultivated crops. Planted areas were planted several species, and after a certain time - other crops. This method played an important role in restoring the natural fertility of the earth and improving soil composition, as well as in combating various plant diseases.

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INTRODUCTION

The population of Central Asia, which created a unique school of agriculture, developing various spheres of agricultural culture and agriculture for a long historical period, fruitfully used the irrigated and non-irrigated lands existing in the region: they grew wheat, barley, rice, maize, cotton, legumes and vegetables and received harvest up to four times a year. Among these plants the first place in the area was occupied by wheat, and on yield - corn. The population of Central Asia had a lot of experience in agriculture, in particular, in the alternation of cultivated crops. Planted areas were planted several species, and after a certain time - other crops. This method played an important role in restoring the natural fertility of the earth and improving soil composition, as well as in combating various plant diseases. For example, for 3-4 years in one crop area, cotton was planted, and next year - corn, wheat or clover. With the alternation of crops, the soil condition, its fertility, the degree of salinity were taken into account, and which crop should be planted in the current year was determined by experienced farmers. The land used for farming was mostly virgin, soil, and in some places saline. That is why the land in Central Asia was often fertilized.

Corresponding author:* **Khurshida Yunusova, Umid O'sarov,
Department History of Uzbekistan, Teacher's Khurshida Yunusova, Umid O'sarov, National of universitety Uzbekistan
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Long since the irrigation of the land, the local population has used the water of rivers, because the muddy water contained various substances useful for plants. These substances contributed to the increase of soil fertility, and the soil layer increased due to silt. In general, irrigation in Central Asia has a long history of development, which is reflected in the works of scientists of the Middle Ages. These works contain information that achievements in the field of mathematics and natural sciences, in particular, in the works of the scientists of Maveraunnahr, which created a peculiar school of mathematicians, astronomers and irrigators in the end of the 8th century and during the 10th-12th centuries, played an important role in the development of irrigation and hydropower engineering. . For example, the great scholar of the Middle Ages, Abu Raikhan Beruni, wrote about the location of water sources, artificial fountains, irrigation channels along the slope, etc. in his work "Asorulbokiya Al-al kurunalholia" (Monuments left by ancient ancestors) According to the information on irrigation facilities given in such works, it can be argued that irrigation and agricultural culture in Central Asia were quite developed. For irrigators of the ancient period and the Middle Ages, who carried out their activities on the modern territory of Uzbekistan, the construction of water structures and the determination of the most suitable place for the start of large canals was one of the most difficult tasks. Since the local population had irrigation skills, water structures of various types were built in different regions of Uzbekistan, taking into account local hydrogeographic conditions.

In the Khorezm oasis, located on the right and left banks of the delta of the Amudarya River, considered one of the main sources of irrigation, agricultural traditions were of a peculiar nature. In the history of agriculture in Khorezm, a special place was occupied by the development of agriculture through artificial irrigation. Since the Khorezm farmers were well aware of the peculiarities of their lands, they, first of all, paid attention to the types of crops grown in a particular area. The Amu Darya River, which was the main source of water in Khorezm, was of great importance in the socio-economic life of the oasis. From the river, who got his start in the mountains Hindikush and quite calmly flows through the district Chorzhuy in Khorezm, water flowed into many channels required for irrigation of sown ploschadey.Na areas irrigated from these channels were grown grains of cultures, in particular wheat and maize . One-fifth of the sown land was occupied by cotton, the rest was barley, rice, millet, mung beans, flax, sesame, melon, watermelon and other crops. Therefore, the local population was well aware of the importance of the Amu Darya in an oasis, surrounded by endless deserts, and was eagerly awaiting the flow of water in the river. During precipitation occurred many flood and Amu channel width is increased from 3 to 5 km, and the height was raised to 0.6 - 1.6 m., And therefore on the banks built high dams that oasis protected from flooding. During this period, terrible currents were observed, which were called "degish", "yikkin". "Degish" contributed to the formation of new branches, the emergence of new riverbeds (Gulyamov Ya, 1959).

The most difficult task for the Khorezm irrigation authorities was to determine the most suitable place for the beginning of canals during the flooding period. At the same time, special importance was attached to the strength of the soil, where it was planned to build the canal beginning (the banks of the river consisted mainly of silt and were not strong), since during the floods or downpours the canals started blurring with water. Also, a dam was eroded to channel water into the canal. In most cases, during the period of floods, the main course of the river changed its direction and therefore the ancient irrigators tried to use the channels where the water flowed constantly and calmly. Due to frequent flooding, the canals were full of water, and in case there were few precipitations and floods were not observed, irrigators searched for other ways of water entering the canals. As Abu Raikhan Beruni wrote, there was a kind of flood calendar in Central Asia, with which signs of their approach were observed. According to the calendar, the first flood was called "the sound of blue reeds", the second - "white fish", the third - "the sound of the star", the fourth - "the sound of forty strings". Flood called "the sound of forty strings" occurred around June 25, and was considered the strongest. In the event that floods did not occur at this time, traditional prayer meetings were held under the leadership of the heads of villages and clergy. The process began simultaneously in all areas of Khorezm. Religious figures, aristocrats and tribal chiefs, experienced waterers gathered in one place and threw various "gifts" into the river. They sacrificed rams and cows (Eshchanov, 2011). The lands in the Khorezm oasis were mainly divided into 2 types: "true red soil" (highly fertile, non-saline or slightly saline lands) and "saline soil" (mainly lands located in the lower reaches of the Amu Darya). Even on saline lands, farmers regularly cultivated crops adapted to such conditions. These crops produced a good harvest, and besides, they contributed to improving the condition of the soil. Such crops include white corn, alfalfa, quinoa and others (6). If under certain conditions this method of improving the condition of the land did not help, the farmers built reclamation facilities. These structures were called "drainage ditches" and spread throughout Central Asia. In general, in the Khorezm region, you can see the peculiar complex aspects of agriculture in Central Asia. And in the Fergana Valley, where agricultural cultivation has developed for a long time, farmers paid much attention to the condition of the soil, skillfully used the land and received a good harvest. Land plots in the Fergana Valley were divided into irrigated "irrigated lands" and non-irrigated "non-irrigated lands." The population of the Fergana Valley, when building irrigation canals and irrigation ditches, used unique methods of "traditional leveling" (Middendorf, 1882). After determining the direction of the canal, areas that needed water for irrigation were used to build it. The main branch, which started in the river, was called "mother of irrigation ditch", water came from it into the "branches of the irrigation ditch", and then into small irrigation ditches. Further water through the "axial irrigation ditches" entered the irrigation ditches between the beds. In this way water was distributed among the villages. This organizational method in the valley was called the "distribution method" (Jalilov, 1977). The largest measuring unit of distributed water resources was called a "mill" or "stone" and equaled the volume of water flowing at a speed of 200 liters per second (Middendorf, 1882).

In the eastern regions of the Ferghana Valley, the "laggardon" method was used during the water shortage. According to this method, the beginning of the irrigation ditch was blocked by a board or logs placed in the formation for an equal distribution of water. And the upper part of the logs moved apart so that the water flowed in a certain volume. This method was used to uniformly distribute water, to measure its volume in cases where two or three irrigation canals originated in one place (Shaniyazov, 1974). In general, in the Fergana Valley, when water was distributed, it adhered strictly to the established rules, especially during the water shortage period. In the Ferghana Valley, there were two methods of using land. The first method consisted in the fact that after harvesting in the sown areas nothing was planted, that is, the land "rested", and according to the second method, the sown areas were plowed under the plowland. Both methods were called differently in different parts of the valley. For example, in the Suh district the first method was called "ladies dodan", and the second method was called "black plowing". Honorary member of the Academy of Sciences of Russia, Academician A.F. Middendorf, who carried out control in the Ferghana Valley in 1880-1881, wrote about the activities carried out by farmers against the salinity of the soil in his work "Sketches of the Fergana Valley," he noted that man is not afraid of salinization of the earth and will not retreat until he clears it of unnecessary salt, and that the experience of the farmers of the valley in this area should be studied (Jalilov, 1977). In the foothill areas and plains of the Ferghana Valley, mainly engaged in rice growing. The most suitable for rice growing areas were the valleys of the rivers Kurshab and Karadarya. Therefore, in areas of Jalalabadi Uzgan, located close to these rivers, rice-growing occupied 48 percent of the acreage (Middendorf, 1882). The population of these areas had a lot of experience in rice growing. The valley of the Isfara River provided rice Konibodom, partially Besharyk, Yaipan, Kokand city, and the Kumushkurgan valley - Asht, Pangal, Ashobin, Maigir and Jumashui - Andijan and Namangan cities, and their environs, and Osh and Aravan - the cities of Andijan and Asaka

(Batrakov, 1955). The rice grown in Uzang Suzak was known not only in the Kokand Khanate, but also throughout Central Asia. For the gardening and viticulture, the western part of the valley was considered to be the most suitable (Middendorf, 1872). In the foothill areas and plains of the Ferghana Valley, mainly engaged in rice growing. The most suitable for rice growing areas were the valleys of the rivers Kurshab and Karadarya. Therefore, in areas of Jalalabadi Uzgan, located close to these rivers, rice-growing occupied 48 percent of the acreage (Middendorf, 1882). The population of these areas had a lot of experience in rice growing. The valley of the Isfara River provided rice Konibodom, partially Besharyk, Yaipan, Kokand city, and the Kumushkurgan valley - Asht, Pangal, Ashobin, Maigir and Jumashui - Andijan and Namangan cities, and their environs, and Osh and Aravan - the cities of Andijan and Asaka (Batrakov, 1955). The rice grown in Uzang Suzak was known not only in the Kokand Khanate, but also throughout Central Asia. For the gardening and viticulture, the western part of the valley was considered to be the most suitable. The population living near the city of Kokand also had a lot of experience in improving the agronomic condition of the land. Middendorf, who studied the experience of local farmers, wrote: "In improving the meliorative condition of the land, Ferghana farmers far outstripped Western Europe" (Middendorf, 1872).

There were several methods for improving the meliorative state of the earth, one of which consisted in fertilizing the acreage with clay mud walls of old houses. In due time this method was given a positive evaluation (Virsky, 1896). Another method of fertilizing the land was applied, fertilization with manure. In the late XIX - early XX century in agriculture in the valley of manure was considered the main fertilizer (Horoshkhin, 1876). During this period, one cart of manure cost 25 kopecks. According to AI Shakhnazarov, the nomadic people of the valley even brought manure to the markets and sold it for 10-15 kopecks (Shakhnazarov, 1908). Another method of fertilizing acreage, which was called "fecal", consisted in the use of silkworm litter and various birds (Isakov, 2011). In addition, to increase the yield of land, farmers used a different method - they buried in the ground people's hair, old unnecessary things from leather and fur, etc.

Various measures to improve the irrigation system were carried out in the Bukhara emirate. In the sown areas of the emirate, mainly, wheat, rice and oats were grown. Also, large areas were occupied by corn, which was the staple food for the poor, and its stem for livestock, and sesame for sesame oil. In addition, farmers tried to grow more cotton, as it was the main raw material for many kinds of crafts of the region and the demand for it was great. In Bukhara, Shakhrisabz and Kattakurgan, cotton was grown more than in other regions. The population of the emirate also actively engaged in gardening, viticulture, cultivation of melons and tobacco. Bukhara fruit, grapes and dried fruits were known throughout Central Asia. Thus, in the territory of Central Asia, local farmers formed agricultural traditions taking into account natural geographical opportunities and local conditions, for example, the Zarafshan River, which was the largest water structure in the region. The canals that took their origin in the river were sent for irrigation of 400,000 hectares of planted area, of which 268,000 dessiatines were at the disposal of the Bukhara emirate. The local population had great skills in agriculture, so for irrigation used, mostly, muddy water. Such water contained many minerals necessary to increase the fertility of the earth. Only in the Bukhara oasis, agricultural crops of 32 species were cultivated in areas suitable for agriculture due to irrigation with muddy water (Muhammadjonov, 1972). In the Zarafshan River, which provided water for these lands, in addition to log fencing, dams were built from stones. The dams were of two types: dams erected in the upper and middle currents of the river and intended to change the direction of the riverbed, and lock dams, which are mainly built in the lower reaches of the river.

According to ancient authors, locks were widely used in the lower reaches of the Zarafshan River. The first information about them is given in the works of the Arab geographer of the 20th century, al-MacDisii, which describes the irrigation system of Bukhara and its environs. According to him, the canal was entering the city from Kallaabad, that is, from the north-eastern side. There they built a dam, built wide sluices and barriers from logs. With the beginning of summer, when the water began to rise, the logs were cleaned one by one, depending on the water level, and thus most of the water flowed through the gateway and reached Poikent. This was necessary to prevent the threat of flooding the city with water. The place where the dam was erected was called "fochun". Similar gateways were built outside the city and they were called "ras- al Varg" (the beginning of the dam). In general, the territory of modern Uzbekistan in ancient times, there were the largest irrigation systems, the length of which was several thousand kilometers. The population of Central Asia for centuries studied the natural conditions, experiences and methods and in the late XIX - early XX century formed a kind of agricultural culture and developed certain skills in this area. Particularly great is the merit of the ancient irrigators, who, when choosing the place for the beginning of the main canals, took all measures to prevent the erosion of the beginning of the irrigation system. The peculiarity of the territory of Central Asia contributed to the development of local people's skills such as cultivation of land, cultivation of crops and the achievement of high yields under certain climatic conditions and the development of agriculture in the region.

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