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Some features of the history of agriculture in the Ferghana valley

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Abstract: This article explores the distinctive features of the agriculture and history of the Fergana Valley population, highlighting their extensive experience in the effective use of land and water resources based on an analysis of scientific literature on the subject. Additionally, the article examines the geographic regions of the valley that are favorable for agriculture and farming, as well as the climatic conditions, soil composition, and methods of land use, utilizing various scholarly sources.

Keywords: Fergana Valley agriculture, water resources, rain-fed lands, climatic conditions, farming, waqf, canal, ena ariq, shokh ariq, uqarik, juyak taqsim, tonop, mirobs, silkworm, compass.

Introduction: The Ferghana Valley is one of the key agricultural centers in Central Asia, having developed since ancient times due to its favorable geographic location and climatic conditions. According to archaeological evidence, one of the earliest agricultural centers in Central Asia, the “Chust culture” was located in the Fergana Valley. As early as the Bronze Age, irrigation farming and animal husbandry had already emerged in this region [1]. In the subsequent periods of development, fields such as farming, animal husbandry, and horticulture flourished in the Fergana Valley, and the Fergana peasants were rightly known as farmers who mastered the secrets of agriculture.

RESULTS

Information about ancient Fergana can also be found in Chinese sources. The earliest known traveler to Fergana was the Han Dynasty ambassador Zhang Qian, whose trip to Fergana occurred in 129-128 BC. After returning home, the ambassador wrote a written report, which has not survived, but his writings are preserved in the "Shiji" (Historical Memoirs) by the court historian Sima

Qian, written in the late 1st century BC. According to Sima Qian, Zhang Qian describes the Fergana Valley as follows: “The Great Parkana (Dai-yuan/Dawon) is located southwest of the Huns or 10,000 li (5,760 km) from west of the Han (country). There (the population) is engaged in agriculture, grows rice and wheat, and makes wine from grapes” [2].

Researcher M. Jabborov, emphasizing that the agricultural territories of the Fergana Valley are likened to a continuous ribbon, cites the following opinion of Russian scientists: “This ribbon begins 30 versts (1 verst is 1.06 km) west of Kokand city, passes through Kokand Rishton, turns northeast from Margilan, reaches Andijan through Asaka, then through Shakhrikhan, and from there changes its direction to the west, ending 14 versts before the village of Turakurgan after Balykchi and Namangan. This continuous ribbon of the Fergana oasis is more than 250 versts long and 30 versts wide. This oasis is irrigated mainly by the left tributaries of the Syrdarya flowing from the Alay ridge. These are Isfara, Sokh, Shohimardon, Isfairam, Nookat and other streams” [3]. The Syrdarya, which gives life to the valley, along with streams formed by numerous tributaries flowing down from the mountains, has served as the main source of irrigation farming [4] The lands around the city of Namangan in the Fergana region also consisted of loam, sandstone, and marshy soils. The lands around the city of Namangan were irrigated through the Peshkurgan, Navkent, and Karapolvan branches of the Padshok Ata stream. There were many springs in the areas around Namangan, such as the Naryn and Syrdarya, Namangan and Girvansoy, and Kosansoy, and there were 16 streams and several brooks on the slopes of the Chatkal and Kurama mountains. The largest and most abundant of these were Kosansoy, Padshok Ata stream, and Namangan stream. They were mainly saturated with ice, snow, and rainwater. In general, the Fergana Valley, surrounded by the Alai mountain ridges from the south and the Fergana and Chatkal mountain ranges from the north [5], also played a leading role in the Turkestan region.

The first cold days in the valley began in October, October-November were months with a lot of precipitation, and from December onwards the days became colder, but did not drop below zero degrees. The snow that fell in these months did not last long and melted quickly, and such days lasted until March, and the rapid melting of the snow and the warming of the earth allowed for plowing and preparation for farming, which also allowed for high yields. In spring, there was more rain than in the autumn months, and it lasted until May. In the following months, there was less rain and dry days began.

Farming began in early spring with the cleaning of ditches. Over the years, in villages where ditches were built and canals were built, the population paid constant attention to the cleanliness of the ditches, and the cleaning of the ditches depended on the size of the irrigated land. As the ditches were cleaned, expanded, and multiplied, the cultivated land reclaimed and expanded. According to researcher S. Boltabaev, during the time of the Central Asian khanates, abandoned lands were reclaimed by the wealthy as a result of digging ditches and conducting water. In particular, during the reign of Umarkhan, Eshan Mir Abdurahim Khalifa had a ditch dug from the “Sokh” stream and reclaimed land. In 1816-1817, Umarkhan exempted this ditch from all taxes, and Muhammadalikhan exempted the lands belonging to the son of Eshan Mir Abdurahim Khalifa from taxes. In 1859-1860, Malla Khan approved a document exempting this ditch from taxes. Later, the ditch, dug by the eshan Mir Abdurahim Khalifa, was declared as a waqf property between the reigns of Muhammad Ali Khan and Malla Khan [6].

The inhabitants of the Fergana Valley knew how to use the soil, depending on its composition, and were able to obtain sufficient yields. The land areas in the valley were divided into irrigated “watery land” and non-irrigated “spring land”, “rocky land” or “barren land”. The land was used in two ways. In the first, mainly the fields that had been cleared of crops were left to rest, and in the second, the fields were plowed. Both methods were used under different names in different parts of the valley. For example, in the Sokh district of the Fergana Valley, the method of giving the land a rest was called “Dam dodan”, and the method of plowing the land was called “black plough”. Plowing began with the onset of the month of “khamal” according to the solar calendar, which fell from March 21 to April 21 according to the current calendar. Peasents used their own “traditional” methods of water extraction through irrigation canals and ditches.

Peasents also built melioration structures. The structure, commonly known as “zavur”, was widespread on all irrigated lands. When necessary, the water in the zavur was used for irrigation. In the Fergana Valley, especially around Kokand, zavurs were dug 1-1.8 meters deep. Zavurs mainly passed along the borders of each peasent’s land plots, and if the plot was large, a zavur was also dug in the middle of it. The presence of such zavurs clearly defined the boundaries of the plot, and it was cleared by at least two neighboring farms. Zavur waters were discharged into irrigation ditches, and there were no cases of crops drying out from salinity or yield reduction. The land in plots with zavurs was flooded throughout the winter. Low salinity lands are washed once or twice, highly saline lands up to 5-6

times, some lands are not washed at all, because the soil salinity is washed away due to winter and spring rains and watering before sowing. In the winter and spring seasons, water from the zavur was also used for drinking [7]. Such methods were convenient for washing the salt of the land.

A.F. Middendorf emphasized that the peasents of the valley were not at all afraid of excess salt in the soil, knowing that salt itself easily leaches from the soil, and in this regard, it is necessary to study the experience of the peasents of the Fergana Valley [8]. The author calls on his contemporaries to study the experience of the peasents of the Fergana Valley and use it in practice. He is especially impressed by the intelligence of the elderly. The experience of the peasents of Fergana inventing many innovations in irrigation and land reclamation, and in producing high yields is also reflected in their knowledge of local methods of fertilization to improve the agrotechnical condition of the land. For example, in the Fergana Valley, fertilization of the land mainly lasted from late autumn to early spring. One of these methods was to fertilize the land by pouring the topsoil of old mud-built houses into the field [9]. According to researcher U. Dzhakhanov, this method of fertilization was also called “salty” in some parts of the Fergana Valley [10].

Another method of fertilizing the land in the valley was by applying manure to the land. In the late 19th and early 20th centuries, manure was considered the main fertilizer for the peasents of the valley [11]. The nomadic population of the Fergana Valley even brought manure to the markets for sale and sold it for 10-15 kopecks [12]. Another method of fertilization was called “fecal”, which consisted of using the droppings of silkworms and various birds. Also, in order to increase the productivity of land, another method of fertilization which was composting human hair fibers, old skin, wool and other products by burying in the ground was used [13].

Fertilizers were rarely applied to the fallow lands in the valley, or wheat fields were not fertilized at all. A. Middendorf, who also got acquainted with the experiences of local peasents in this regard, writes that “Fergana peasents were far ahead of Western Europe in improving the land reclamation conditions and preparing local fertilizers” [14].

The local population also paid special attention to the factors that were harmful to agriculture. For example, there were strong winds - gales, which damaged crops and led to the drying out of crops. Although this wind did not occur every year, sometimes repeated several times a year. Gales occurred in June, July, and August, and the local population believed that 10-15 minutes of such a wind was enough to dry out crops. Gales usually lasted 5-6 hours at sunset. Well-irrigated cotton was not damaged by the gales, but this wind had a more harmful effect on rice [15]. According to Professor K.M. Mirzajonov, peasents in the Fergana Valley took all measures to prevent similar harmful situations. For example, a large number of trees were planted in the Fergana Valley from ancient times. They allowed for regular monitoring of land reclamation.

CONCLUSION

To sum up, agriculture has been developed in the Fergana Valley since ancient times, and the valley was distinguished from other historical and cultural regions of Central Asia by a number of features, such as natural and geographical conditions, the fact that the majority of the population has been living a sedentary lifestyle since ancient times, and the diversity of its ethnic composition. In the past, this region had potential in Central Asia due to its moderate climate, abundant water resources, and favorable natural conditions for growing agricultural crops. The inhabitants of the valley also had unique historical traditions in the development of agricultural culture. Undoubtedly, the experience and observations accumulated by representatives of the local population over several thousand years served as the basis for this. It is on the basis of this experience that the peasents laid the foundation for the method of incorporating the ethno-national traditions and technologies of productive use of natural resources, especially land and water, and the cultivation of crops with hard work.

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