FROM THE HISTORY OF THE FARMING CULTURE IN LOWER ZARAFSHAN OASIS (DURING LATE XIXS AND EARLY XXS)

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Annotation: *The present article analyzes the activities of farmers in soil cultivation, yield, specific methods of agricultural culture in the lower areas of Zerafshan oasis based on several historical sources and etnographical data .*

Annotatsiya: *Maqolada quyi Zarafshon vohasi ziroatchilarning yerga ishlov berish,ekin ekib mo'l hosil olish bilan bog'liqtadbirlari , dehqonchilik madaniyatining o'ziga xos usullari manbalar va dala ma'lumotlari asosida tahlil etiladi.*

Аннотация: *В статье на основе источников и полевых этнографических данных атализируется деятелность земледельцев по обработке почвы, урожайности , специфическим приёмам земледелческой культуры в низовях Зерафшанского оазиса*

Key words: *Paykal, mill, mundi, mola, dam, shovel, hoe, yakhob, sole, sphere, chopper, white dats*

Tayanch iboralar: *Paykal, tegirmon, mo'ndi, mola. go'ja, to'gon, belkurrak, ketmon, yaxob, yagona, to'pcha, chopiq, oq jo'xori*

Ключевые слова:*Пайкал, мелница, мунди, мола, плотина, лопата, мотыга, яхоб, ягана, сфера, измельчитель, белые овес*

Introduction: At the end of the 19th and beginning of the 20th centuries, unique traditions of agricultural culture emerged in the Lower Zarafshan oasis, which included the Bukhara, Karmana and Karakul oases. These traditions were primarily associated with agricultural techniques and tools. The inhabitants of the Bukhara oasis used land and water as a team. At the same time, they cleaned all irrigation ditches together every year in the fall and early spring. The digging of large ditches and the construction of dams and embankments was carried out in large groups, using the *hashar* method. Of course, hundreds or thousands of community members used their hands to carry out these works. Human life and economic activity largely depended on agricultural production, and tools of labor were in the form of a distant past. Plowing and plowing the land or cultivating crops was carried out with the help of oxen, so the importance of working animals in the life of the Bukhara people was extremely high. Feeding and caring for working animals well became a vital necessity. During the autumn plowing, the main labor force was oxen, and the land was plowed and plowed on plows with them. In early spring, oxen, and sometimes horses, were used as the main working

animals to prepare the land for sowing and to harrow the fields. In the hot months of March and April, when spring work was in full swing, the days lengthened and the air temperature rose, and in such conditions, it was especially necessary to use the services of animals that had emerged from the winter "eti yupun bo'lib, yoki yo'g'on cho'zildi – ingichka uzildi"[1]

Land farming methods. The ancient Bukhara people, in addition to feeding their working animals well, used them in cool weather, mostly at night and early in the morning. In comparison with the oxen used in the hot spring, the expression *"gava pushtash oftoba nabinad" – Let the body of the ox not see the sun* – came from this, meaning that the oxen, and working animals in general, should not be used in the sun, but should be protected and worked in cool weather[2].

Preparing the land for sowing in early spring and planting on time also required special preparation and experience. The Bukhara *babadehkans* tried to use every moment of spring to carry out planting and sowing work on time. They sought to take advantage of every moment of spring and plant earlier. The folk saying *"do not let the sown seed touch the body of the ox"* [2] means that during spring sowing, time is lost until the seed sown in the ground touches the bodies of working animals and falls to the ground.

Extensive experience has also been accumulated in the field of tillage and crop care based on traditional methods. Our ancestors invented a number of agrotechnical methods. One of these is the method of bundling white sorghum.

It is known that the dish *goja* has existed in the cuisine of our people since ancient times, and it was mainly prepared from white millet and consumed with yogurt. The cultivation of white millet required special agricultural techniques compared to other types of crops. For this, a well-fertilized, water-friendly place was selected and planted. The distance between rows and bushes should not be less than 40-50 cm. After the crop sprouted, it was thinned out and cleaned of weeds. [3]

During the hot and dry weather conditions of Bukhara and the period of water shortage, each root of white millet, which was about one meter high, was treated separately, the bottom was softened, and the soft soil was pulled under the sun and made into a ball. As a result, moisture was retained for a long time and the bush's strength, resistance to wind and natural disasters increased. White sorghum grows to a height of 2-2.5 meters, with 3-4 heads on each stem, or at least one kilogram of harvest from each stem. Long rows of white sorghum heads could be seen hanging on the porches of Bukhara residents living in rural areas until late autumn. In the heat of summer, the white sorghum heads, which had dried up well, were crushed, the grains were scooped out, thoroughly cleaned, and stored in a separate dry place. In the autumn and winter seasons, a dish called guja was made from its grains.

Another method of traditional Bukhara farming is the *"Varqoni" method* used to grow melons and watermelons from melon products. We did not find information about this method in historical written sources. We relied on the memories of informants.

In the specific climate and soil conditions of the Bukhara oasis, growing melon products required special diligence and experience. The fertile soil of the Zarafshan River and the areas around the dams of large canals were rich in water, moist and soft, saturated with the silt flowing from rivers and canals, and their fertility increased. In such places, melons and watermelons were planted from melon crops, which gave high yields. When the planted melons sprouted, sprouted and began to flower, they were watered by dipping them in water or, if there was a flood, they were left under water. In this case, when the land reached the bottom, they were turned upside down and a lump of soil was made under each bush. This method was called "Varqoni" after the name of the head of the water structure, or in the ancient Sogdian language "varq" - "dam". Varqoni - the head of the dam was a farming area, and the melon products grown were rich and extremely tasty. [1]

Plant growing methods. In traditional Bukhara farming, special attention was paid to the unification of melon crops. The popular expression "two melons from one palak, one melon from two palak" indicates the urgent need to unify melons, watermelons, squash and other crops in a timely manner.[1]

According to tradition, every year in early spring, before the start of field work, the villagers of the oasis gathered on their communal lands and elected an elderly, authoritative and experienced person from among them as an elder. At this meeting, *a mirab, a dorugha,* and even a barber were also elected. Only married people were taken into account and divided into *paykals.* Each paykal consisted of 8 people ("tan").[9] So, these 8 people performed all the light and hard work related to the paykal. *Hasharchi*s were taken from the paykals depending on the length or shortness of the *arik* and *anhor*. Members of the paykal took turns cleaning the waterways under strict discipline.

The waste lands, that is, the empty lands that did not enter the lake and where it was difficult to drain water, were called *"posira"*, and the workers on them were called *"posirakors"*. Growing crops on posira lands was very difficult. Initially, these lands were planted with slushy crops and irrigated with snow and rainwater. In rare cases, farmers irrigated their lands with running water once or twice, that is, the crops planted on such lands were irrigated with great difficulty. For this reason, posirakors rarely participated in the arrangement of water structures.

The importance of land types in farming. In addition to the communal lands and posira lands, the villagers belonging to all *bekliks* in the oasis also had their own

plots. In the villages, these lands were surrounded by a 5-pakhsa wall or turf wall. In the steppe regions of Karakul, Alat and other districts, since there was no need for fencing, certain markings were made, and such lands were usually called *"hayat"* [2]. As in other regions of Central Asia, the Bukhara oasis was also experiencing water shortages. Therefore, the local people were well aware of the rules and methods of using irrigation channels [2]. Peasants strictly adhered to the use of water in areas with a water shortage. The amount of water was measured in a certain order. For example, such water measurements as "the water that flowed from one water-ditch during one day or night: *"bir teymirmon" or "tosh" - the water that is needed to grind one pound of grain in a mill; "bir qosh" - the water that is enough to irrigate the land plowed by one pair of oxen"* were widely used. In the water-scarce districts of Bukhara, the amount of water supplied to a single plot of land in the community's paikals was measured with a "mundi". A mundi is a simple earthen jar with a hole in the bottom, holding about ten liters of water, and the amount of water was measured depending on how much water was flowing out of it. It should be noted that one or another method of irrigating paikal and hayat lands was chosen depending on the abundance or scarcity of water. In the central part of the oasis, farmers used the "one-ear" method of irrigation more often. In this case, the time calculation was determined by the movement of the sun. The *mirabs* knew very well how much land the paikal members had and allocated time accordingly. By the beginning of the 20th century, wealthy people, taking advantage of their position, sometimes violated the established procedures.[2]

In the village of Kurgan in the Romitan district, there were 50 paikals, and three paikals had to be irrigated every day and night. Two paykals were irrigated during the day and one at night. Each paykal had its turn once every 16-17 days. In the neighboring village of Romish, there were about 37 paykals. Under the leadership of the village elder, the *chokbash (paykalbashi in this village)* gathered and determined the turn of water. They pierced the bottom of a medium-sized earthen jug that held a bucket of water and let the water flow. This was exactly the case in other villages.

The crops in the paykals were irrigated depending on the amount of water. If there was little water, they were watered by making straw and pressing it. If the water flowed for a long time, the crops were watered through ditches or furrows. Particular attention was paid to the fact that the crops drank water. The method of watering paykals through furrows was often carried out at night. In the conditions of the Bukhara oasis, farming was based on artificial irrigation. The fertility of the land and the yield of crops increased from year to year due to artificial irrigation, the extension and expansion of ditches. By the end of the 19th century and the beginning of the 20th century, attention to irrigation networks decreased. Due to the lack of river water, the ditches and branches (smaller than the ditches, waterways that irrigate some paykals

and lands in the village) were covered with sand, silt and algae. As a result, the amount of irrigated land decreased from year to year. This was due to a number of reasons and factors. When a large part of the land passed into the hands of large landowners, irrigation work was neglected. After wheat or barley was sown on the land in one season, the fields were turned into meadows. Over time, a number of ditches and ditches were buried and lost their significance.[3]

Farming tools. Human life and economic activity largely depended on agricultural production, and labor tools were in the form of a distant past. Plowing the land or cultivating crops was carried out with the help of double oxen, therefore the importance of working animals in the life of Bukhara was extremely high. Feeding working animals well and taking care of them became a vital necessity. During the autumn plowing, the main labor force was oxen, which plowed the land with plows. In early spring, oxen, and sometimes horses, were used as the main working animals for preparing the land for sowing and for harrowing. In the hot months of March and April, when spring work was underway, the days lengthened and the air temperature rose. In such conditions, it was especially necessary to use the services of animals that had emerged from the winter "with their flesh stretched out, or their thick skin stretched out - their thin skin was cut off" [3], as well as to protect and care for them.

The ancient Bukhara people, in addition to feeding their working animals well, used them in cool weather, mostly at night and early in the morning. The expression *"gava pushtash oftoba nabinad" (Let the ox's body not see the sun)* was derived from this, referring to the fact that oxen, and working animals in general, should not be used in the sun, but should be protected and work should be done in cool weather [4].

Preparing the land for sowing in early spring and planting on time also required special preparation and experience. The Bukhara Babadekhons tried to use every moment of spring to carry out planting and sowing work on time. They sought to seize every moment of spring and plant earlier. The popular expression *"let the sown seed not touch the ox's body"* [5] meant that during spring planting, time was lost until the seed sown in the ground touched the bodies of the working animals and fell to the ground.

Extensive experience has been accumulated in traditional methods of tillage and crop care. Our ancestors invented a number of agrotechnical methods. One of them is the method of baling white sorghum.

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Another method of traditional Bukhara farming is the “Varqoni” method used to grow melons and watermelons from melons. We did not find information about this method in historical written sources. We relied on the memoirs of informants [7].

The cultivation of melons in the unique climate and soil conditions of the Bukhara oasis required special diligence and experience. The fertile soil of the Zarafshan River and the areas around the dams of large canals were rich in water, moist and soft, saturated with the silt flowing from the rivers and canals, and their fertility increased. In such places, melons and watermelons were planted from melon crops, which gave high yields. When the planted melons sprouted, sprouted and began to flower, they were watered by dipping them in water or, if there was a flood, they were left under water. In this case, when the land reached the bottom, they were turned upside down and a lump of soil was made under each bush. This method was called “Varqoni” by the name of the head of the water structure, or in the ancient Sogdian language “varq” - “dam”. Varqoni - the head of the dam was a farming area, and the melon products grown were rich and extremely tasty.

In traditional Bukhara farming, special attention is paid to the unification of melon crops. The popular expression “one palm makes two melons, two palms make one melon” [4] indicates the urgent need to unify melons, watermelons, squash and other crops in a timely manner.

The mola was used to crush the clods of plowed land, level the land, and rake the soil after sowing. There were *two types of mola: a large one, 3-3.5 m long. made of perennial mulberry or apricot wood (thick-bodied mulberry or its body was smoothed with a poytesha)*. The mola was 40-60 cm wide. The mola was pulled by oxen. The oxen were led by one person, and one person also sat on the mola. The mola was used mostly on loamy, stony and grassy lands. In the lands where spring crops

were sown, a small tree trunk with branches was used instead of a mola. Poor farmers who could not afford to make a mola used the plowshare as a mola. The smallest mola was about 2-2.5 cm. It was pulled by a pair of oxen, horses, or camels.[6]

The shovel, which has been used since ancient times in the Bukhara oasis, is a tool for loosening the soil. This tool is made of iron and has a special ear, depending on the user's preference. The ear was on the right or left side of the shovel. Some households had a shovel with two ears. The shovel was used for digging the ground, loading manure or soil into a cart, digging ditches, and building a wall. The length of the shovel was 25-27 cm, and the width was about 20-23 cm. The length of the handle was 1.3-1.5 meters. In clay work, a hoe, which was different from the shovel and was easier to cut clay and lighter, was used.[12]

In ancient times, a hoe was a widely used tool in agriculture. This tool was also of great service to the farmers of the Bukhara oasis. Hoes were used in gardening, melon growing, vegetable growing, and grain growing, and in general, in land work. Hoes also differed in shape and size. Hoes with a width of 30-32 cm and a length of 25-27 cm were used more often in soil loading, especially in furrowing, raising ridges, plowing, and leveling the land. Smaller hoes were used to soften and chop the base of plants. The hoe handle was mainly made of willow. Oasis farmers cultivated the land to get more yield from it. Entrepreneurial rich people plowed the land once or twice in the fall. Mulching, watering the fields, and applying local fertilizers were also carried out with the advice of experienced farmers. Crop rotation was also a major part of farming. Based on the seasonal characteristics of plants, they planted one plant in place of another. Of course, in this process, the weather and the specific characteristics of the soil were also taken into account.

Like all the peoples of Central Asia, the farmers of the Bukhara oasis sowed more grain crops at the beginning of the 20th century. Wheat and barley were sown on the lands plowed in the fall. The seeds were sown by hand and a harrow was pulled over them. The forest lands where grains were sown were mainly irrigated 2-3 times after the grass sprouted, before earing and after the grain turned into dough.[6]

According to our informants, white wheat was sown on the arable lands, “red wheat” and “black kiltik wheat” on the arable lands. After the harvest, mung beans, sesame, three-month-old white sorghum and millet were sown on the lands that remained vacant after the harvest. A good harvest was obtained. Some farmers preferred to plant vegetables and melons, especially carrots, turnips, and watermelons, for replanting.[9] At the beginning of the 20th century, along with wheat and barley, grain and grain crops such as peas, flax, sesame, corn, and sunflower were also planted in the main areas. Not all of the fields that were cleared of the harvest were replanted completely. This is because farmers did not always have the opportunity to replant.

Most of the fields were irrigated after harvest and plowed 2-3 times with a double plow. In late November and December, the land was given "yakho" water.[10] Of course, the irrigated fields were resting until the spring planting season began.

Cotton farming and its importance in Bukhara. At the end of the 19th century, cotton was planted on 70 percent of all irrigated land in Turkestan. Cotton fields accounted for 62 percent in the Bukhara emirate, and 2,000 hectares in the Kashkadarya oasis alone.[8] At the beginning of the 20th century, the Bukhara emirate sold various agricultural products to England and other foreign countries. Cotton was the most abundant among the products. This, in turn, led to the extensive cultivation of cotton in the Karakul, Olot, and Romitan districts of the Bukhara oasis. The varieties *"Mavri cotton" and "Malla cotton"* were planted in the oasis. The cotton harvest grown by the cotton farmers was sold by large landowners. The rich built enterprises (small cotton processing enterprises), separated the cotton from the seeds, and spun yarn from the obtained fiber. They wove silk fabrics from the yarn. Colonel Strukov, who was sent to study the development of trade with the Central Asian khanates, wrote, "The various woven fabrics brought by the Asians are very popular with the common people, because they are soft and durable, and can replace the hemp fabric that is so necessary for the army in the state."[10] These thoughts of the Russian officer are also confirmed by the information received from our informants.

No matter how difficult the living conditions were, the oasis farmers always helped each other. While digging ditches and cleaning were carried out by the Hashar method in late autumn and winter and early spring, the farmers also worked together to separate the grain from the threshing floor, chop the cotton, wash the husks, bury and dig up vines, pomegranates, and figs, and to cultivate and shape the trees.

On the eve of the First World War, the colonial policy of Russia in Turkestan aggravated the situation of farmers, as well as representatives of other sectors. Excessive taxes led to a decrease in arable land. Our informants have preserved in their memories the information that people, in order to earn a living, even joined themselves to the plow instead of working oxen, and they plowed the land with a hoe in the morning and evening.

As a result of non-observance of the tradition of crop rotation, poor care of cotton led to the depletion of the fields, a decrease in cotton yields and the deterioration of existing varieties, as well as a deterioration in other quality indicators. The weather conditions of 1916 (late and cold arrival of the poppy, drought in the summer, locust invasion) further aggravated the situation of the economy and agrotechnics of cotton growing.

It would not be wrong to say that this description given for the entire Turkestan region also reflected the situation in the Bukhara oasis.

Conclusion: In the late 19th and early 20th centuries, planting and caring for grain, cotton, or other melon crops in the Bukhara oasis was a very difficult manual labor task for farmers. The lack of irrigation facilities, the division of fertile lands by wealthy people, the excessive taxes levied by the Bukhara emir, and the simplicity of agricultural machinery and tools did not allow for an increase in the productivity of cultivated crops.

Our wise people, our enterprising grandfather farmers, have created unique methods and measures for cultivating the land and obtaining abundant harvests for thousands of years, making a unique and worthy contribution to the world agricultural culture even in the difficult natural conditions of Lower Zarafshan. Despite the difficult conditions, they managed to grow abundant crops using traditional farming methods based on their centuries-old experience.

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