

## NUROTA UNDERGROUND WATER FACILITY

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**Annotation:** *In this article, the scientific and artistic historical information about Nurota Koriz is covered in detail.*

**Key words:** *Koriz, usturlob (astrolyab), Shokulli tarozi, kakh, lakhm, rez, well, maston*

Since ancient times, our ancestors have dug wells on flat lands and used a well to draw water, and in the foothills of low and high hills, they brought underground water to the surface of the earth with the help of koriz, an ancient irrigation facility connecting hundreds of wells.

The natural conditions of Nurato, including its hydrogeology, are the result of long-term observations of the local population.

Koriz is an underground water facility. The construction of such an irrigation facility was extremely difficult and complicated. Apart from the laborious lake production, it required a very accurate determination of the groundwater accumulation layer, seasonal changes in water level, and the slope of the topography of the extraction site.





At first, the experienced irrigators dug a few wells in a checkerboard pattern from the high land of the kiya to the underground water. The water in the wells is fixed from time to time. Koriz digging began in February, when the underground water was withdrawn and the water level in the wells dropped to the lowest level. The work began with determining the slope of the land, i.e. leveling. Because accurate and correct determination of the slope of the land played a decisive role in the construction of the sewage route and the flow of underground water to the surface of the earth through sewers.

Two or three people participated in leveling and marking the course of the koriz. The first man was watching over the well. The second man took a long stick or piece of wood as long as the depth of the well and held it upright on the side where the water came out. The verticality of the wood is determined by looking at the diopters of the Usurlab isode. When the tip of the log is in the same horizontal direction as the mouth of the well, the ground water in the well has flowed to the surface at that point.

A water level tool was also used to obtain the land slope. Three people took part in determining the land level using a water level. Two men were erecting the wooden beams and pulling the rope taut. The third person hangs the scales in the center of the plan and determines the slope of the land by looking at the plumb line. If the checked plane is in a horizontal position, it has kept its balance, otherwise, one side of the pendulum has deviated. By lowering the end of the string down the wooden pole on the side where the shovel is falling, and bringing the shovel to the tongue of the scale, the amount of land wear is determined. In this way, the whole Koriz highway has been marked. Therefore, special tools such as an astrolabe (astrolabe) and a shock scale (waterpass) were used to dig underground water structures - corridors. With the help of these devices, an accurate calculation of the slope of the earth's surface was obtained. This information was studied by local local historian R. Akhmedov.

After the leveling was carried out and the route of the mine was identified, a number of wells were dug every 10 meters along the route. Depending on the accumulated layer of underground water, the depth of the main wells was 18-20 meters, sometimes even more. The wells are connected to each other by means of a tunnel. The underground water collected from the main wells flowed through this tunnel. The tunnel was called "lakhm". Its height is 1.25-1.5 meters, its width is 1 meter, and its length is several kilometers depending on the slope of the place. For example, there are 280 wells of the Koriz called Maston in Nurota, the depth of the



main well is 14 meters and the length of the shaft is 3 kilometers. The upper part of Koriz between the wells is called "pushta".

Digging is the most responsible job in the digging of rice paddies, and the flow of underground water to the surface depends on the correct digging of the lakh. For this, firstly, when connecting the wells, it was necessary to be able to properly connect the wells to each other without allowing the lax dug from the opposite sides to tilt to one side, and secondly, to ensure that the underground water with coryza would flow out on the ground. Therefore, the pits are usually dug at a slope of 0.005 meters.

Several groups of Koriz miners have been thinking and digging wells for many years, excavating thousands of cubic meters of soil and gravel. For example, approximately 7-8 thousand cubic meters of soil were extracted from a medium-sized field consisting of 250-300 wells with a length of 3 kilometers.

It is known that they are cleaned and repaired every year so that water flows from the cisterns at the same rate. Corizo cleaning is one of the most laborious and difficult jobs. Because every year in the early spring, the farmers of the cornfield used to dig out the puddles that were submerged in the wells and laxms, where the water seeped through the tunnel of the cornice for 20-30 days. Often, the powder of coryza has sunk and covered a large part of the lax. In such cases, the affected part of the dam is re-excavated and strengthened by placing wood or stones in the damaged areas.

Koriz is a Persian-Tajik word derived from the combination of the words "kah" - straw and "rez" - grass. Our grandfathers used to throw straw into the first well to check that the sewage was flowing properly, then poured the straw into the water coming out of the last well and checked the water flow and the amount of water.





Koriz is an ancient hydrotechnical structure of the old shark, and koriz is considered a unique example of the farming art of our ancestors. In the past, grandfather farmer is a person who laughs at the fact that our ancestors brought underground water to the surface of the earth.

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