AGRO-ECO-ECONOMIC PROBLEMS OF SURFACE AND UNDERGROUND SEEPAGE WATER (IN THE EXAMPLE OF SURKHANDARYA REGION)

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Annotation. This article discusses the scientific use of underground surface water, the main sources of water pollution today, and the area of land that can be irrigated. The article focuses on the cause of the problem of clean drinking water in Surkhandarya and the issue of finding a solution.

Keywords. Surface and underground waters, water degradation, irrigation-melioration, natural-geographical, hydrogeological, "Topalang" water reservoir, Water degradation, water reservoirs, irrigation.

Various factors influence the production of agricultural products, which are the lifeblood of agro-economy of Surkhandarya region. In particular, the lack of water does not allow growing the planned crop. Therefore, it is necessary to use underground and surface waters on a scientific basis, to eliminate water wastage in domestic irrigation networks, to build modern irrigation networks and facilities, to improve the repair and restoration of existing ones. In the irrigated agricultural soils of the Surkhan oasis, which is located in the desert, biological processes are accelerated due to the extremely high temperature. Therefore, microorganisms in the soil are very active in the summer months, and the organic matter in the soil quickly rots and turns into a mineral state. Such a situation causes a sharp decrease in humus (humus) in the soil and deterioration of agrochemical and agrophysical properties.

Surface water. Water is the creator of all living organisms. This is also confirmed by secular religious sciences. For example, it is mentioned in the Holy Qur'an that "We created life in water." Water makes up 65-70% of the human body, 50-99% of the composition of plants. Three-quarters of the human world is made up of water, 92-96% of which is in oceans, 1.73% in permafrost and 1.70% in underground fresh water reserves. According to the information provided by the UN, 1 billion people of our planet. More than 100,000 people live in conditions where there is a shortage of clean drinking water, and 60-65% of them live in conditions that are insufficiently supplied with clean drinking water. It should be openly acknowledged that by the second half of the 20th century, the problem of clean drinking water is becoming increasingly acute day by day due to the rapid increase of humanity on earth, the progress of science and technology, and the fact that the industry has not switched to waste-free technology. Today, the main areas that cause water pollution are:

1. Industrial enterprises.
2. Household service networks.
3. Enterprises of mineral resources with ore and without ore.
4. Mine oil mining networks.
5. Cities and agriculture.
6. Chemical industry.

7. Logging or logging farms.
8. Livestock, poultry, pig breeding industries.
9. Power stations and water transport networks and other facilities.

Touching on the problem of clean drinking water on our planet, G. Liebman said: "Not technical miracles, but clean water suitable for drinking is enough for people to stay healthy on our planet." Today's generation is careless about water and wastes it a lot. For example, in 1914, Moscow consumed an average of 60 liters of water per person per day, and by 2020, this indicator will be 600 liters, and 250 liters in London and Copenhagen. The main reason for this is that in the summer months we turn on water taps to cool our homes, water our fields with drinking water, etc. Unfortunately, today 5.5-6 mln. Inhabited Hong Kong receives fresh water from China through special pipelines. If we continue to neglect fresh water at the current level, there is no doubt that the "Water Decline" will begin in the next 10 years.

Based on the natural-geographical, hydrogeological, climatic and other conditions of the region, we see that surface water pollution does not depend much on the amount of polluted wastewater discharged from industrial and large production facilities, that is, the negative impact on the quality of water sources receiving wastewater is not significant.

There are opportunities to increase the total irrigated land area in the region from the current 330,000 hectares to 480,000 hectares. As of January 1, 2018, there are 330,000 hectares of irrigated land, including 288,000 hectares of cultivated land. Currently, the homestead land of the population is 61.4 thousand hectares, of which 42.3 thousand hectares are cultivated, 9.12 thousand hectares are orchards and other fruit trees. The areas occupied by buildings and constructions make up 10 thousand hectares, 2.0 thousand hectares of these lands are in poor melioration condition and 2.22 thousand hectares are among the estates without water supply.

There are Topalang, Karatog, Surkhan, Sangardak, Oltinsoy, Sherabad, Obizarang, Kafirnihon rivers, which are considered the main water sources for agriculture and the national economy of Surkhandarya region, and to eliminate the water shortage, additional water is partly obtained from Amudarya water, land It is supplied through the "Hisor" canal, which is designed to receive water from the groundwater and the neighboring Republic of Tajikistan.

Since agriculture in the region is agrarian, land-water reserves are important in the development of its economy, and the irrigated land fund is limited by the amount of water used for irrigation. The irrigated land area in the region makes up 14% of the total land area of the region and produces more than 96% of the gross agricultural product. If we take into account that more than 100,000 hectares of land that can be developed in our oasis are suitable for irrigation and melioration, there is a possibility to increase the area of irrigated land to 450-480,000 hectares in the region. These lands are mainly more than 25,000 hectares in the "Yukori Tibit" massif of the region, 12,000 hectares in the "Poshkhurt" bog of the Kokhitang company, more than 22,000 hectares in the Kattakum massif, about 4,000 hectares in the Karakyr massif, "Khotinrobot" Although there are more than 10,000 hectares in the Khovdak massif and 22,000 hectares in the Khovdak massif, which can be developed and put into agricultural circulation, due to the problems of lack of water reserves, lack of funds for the development of new lands and the implementation of irrigation-melioration works, the irrigated areas We currently do not have the capacity to expand.

4.5-5.0 billion m3 of water will be required to meet the water needs of the regional

public economy structures, based on the water usage coefficient of the current irrigation systems, and the additional water demand will be covered from the water sources that will be taken from the Amudarya by transit through pump lifts.

One ton of agricultural products requires 1,500 m3 of water for growing wheat, 4,000 m3 for growing rice, and 3,000 m3 for growing cotton. Considering that irrigation systems have a water utilization ratio of 0.7-0.8 and below, it is not difficult to understand that it is extremely necessary to use water sparingly. It is estimated that we are wasting more than half of the water resources we receive without using them. In order to use water resources as effectively as possible and to reduce the weight of losses, it is necessary to implement complex measures, and for this, first of all, we must ensure that legal entities and individuals strictly follow the requirements of the Law "On Nature Protection" and "On Water and Water Use" of the Republic of Uzbekistan. we must achieve. Because the water supplied for irrigation is provided in return for spending the main funds necessary for the development of the region's economy on the annual construction-repair, reconstruction, mechanical cleaning of main canals and ditches, as well as operating costs of electric power, hydrotechnical structures, pumping devices.

If we analyze the water resources of the region according to the indicator, we will see that they are not distributed uniformly. Water supply in the irrigated areas of Uzun, Sariosiyo, Denov districts located in the northern regions due to the turbidity of the "Topalang", "Sangardak", "Koratog" and other rivers has solved the problems of water shortage, but in other districts of the region it is relatively insufficient and the complex to improve water supply measures should be taken.

There are 5 water reservoirs with a total water capacity of 1.23 billion m3 currently being used in the region. They are: "Janubiy Surkhan" reservoir (810 million m3), "Oktepa" reservoir (100 million m3), Topalang reservoir (100 million m3), "Uchkizil" reservoir (180 million m3), " Namuna-Degrez" (12 mln.m3) water reservoir. Currently, it is planned to build and put into operation the Khangaransoy flood and flood water reservoir with a design capacity of 12 million m3. The next stages of construction of Oktepa in Zharkurgan district and Topalang reservoir in Sariosiyo district, which are important for improving the water supply of irrigated areas in the region, and to increase the water capacity of each of them to 500 mln.m3.

Table 1

Information about reservoirs in Surkhandarya region

№	Name of reservoirs	The project volume is million m3	The volume of water used is million m3	Of this, the volume of useful water is mln.m3	Water surface km2	The irrigated area is thousand ha
1	South-Surkhan	800	503	503	65	150,0
2	To'palang	500	120	104	10,8	74,0
3	Uchqizil	160	160	80	10	5,0
4	Oqtepa	120	80	80	11,5	27,0

5	sample degrese	12,8	12,8	12,8	2,7	2,2
	Total	1592,8	875,8	779,8	100	258,2

The largest reservoir of the region is "Janubiy Surkhan" reservoir, which was put into operation in 1967 with a design volume of 800 million m3. Although 6-7 mln.m3 of mud will be deposited in the reservoir on average per year according to the project, in practice it is observed that 8-9 mln.m3 of mud will come due to the arrival of spring flood waters.

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