



EFFICIENT USE OF WATER RESOURCES WHEN IRRIGATING AGRICULTURAL CROPS.

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Article history:	Abstract:
Received: 06 th September 2023	One of the maximum reserves for irrigation of agricultural crops and for obtaining high dressing from them and improving the reclamation of irrigated lands is the effective use of surface and groundwater resources.
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The role of Water Resources in the economy of arid regions is well known. They have become a limiting factor in the development of most sectors of the national economy in many countries.

Currently, this problem has an equal impact on all the countries of arid God, regardless of their size, social and economic status. The main reason for the appearance of this problem is the limited availability of Water Resources, their uneven distribution throughout the territory, large needs for them, their global impact on the conditions of the formation of human economic activity. A typical example of such regions is Central Asia. In such conditions, the main task of the water management is to ensure the effective use of all components of Water Resources. This can only be achieved if all the processes of formation and use of water resources are managed in order to prevent their inefficient consumption, reduction and pollution.

Currently, as a result of the growth of akholini in our republic and the rapid development of the economy, the demand for Water Resources and agricultural products is growing every year.

The main factor that leads to the unprofitable consumption and reduction of the coefficient of effective (productive) use of Water Resources is their inefficient evaporation and qualitative reduction - their contamination under the influence of a complex of human water management factors.

In the conditions of Central Asia, both inefficient evaporation and pollution of water resources are fundamentally important issues.

Inefficient evaporation of water occurs both in the urban and industrial water supply system and in irrigated agriculture. The inefficient evaporation volume in the final system has an absolute value. The surface of the plain-Valley reservoirs of the Syrdarya River Basin is estimated at 1.5 billion annually.m³ (whereupon the numbers are rounded to make it easier to understand the problem) and Amudaryo - 3 crore.M³ / year water evaporates. Inefficient evaporation is a more impressive indicator in the God of irrigated land. Thus, depending on the depth of the groundwater level (CSS), the total evaporation of cotton field per 1 (further we will talk about this crop, which is widespread mainly in Central Asia) reaches 13,000 or 15,000 m³/year, and according to physiological extioge, the water demand of cotton does not exceed 5,000 m³/year.

At the same time, the value of the total evaporation of cotton watered along the furrows by 1 in the conditions of occurrence of SSS (up to 1.0-1.5 m) is 5...With the appearance of a depth of 6 thousand m³ of sizot water (more than 2.5-3.0 m) exceeds evaporation from the same area.

If in Central Asia, the irrigated areas located near the sizot water line (SSS) are 3 million. assuming that it exceeds hectares, the cost of inefficient evaporation from these lands is 10 crore.M³ / year.

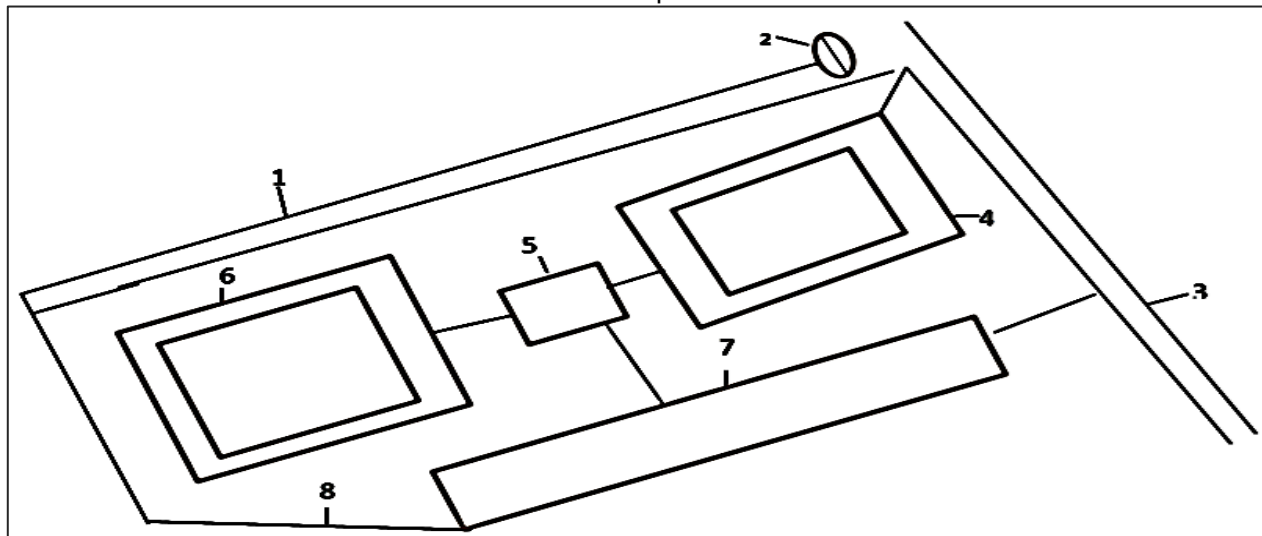
Pollution of Water Resources also significantly reduces the coefficient of their productive use. The main sources of water pollution are industrial wastewater, settlements and irrigated land.

It is known that municipal and industrial wastewater is concentrated, has relatively limited dimensions and is contaminated with a certain complex of organic and chemical elements and compounds. For this reason, they can be easily collected, cleaned and reused without serious damage to the quality of the environment.

In addition, after appropriate preparation, municipal drains can be directed to the technical water supply of industrial enterprises, where irrigation of the land or a closed water supply system must work, of course, the feasibility of doing this does not cause any disputes. Consequently, the problem of high-efficiency use of Water Resources in industry and utilities and their protection against pollution with wastewater is solved in principle. However, it is difficult to say about agriculture, where the level of productive use of water resources requires a radical

improvement, and wastewater from the Collector-drainage network (CDT) is the main pollutants of irrigated hudud waters (figure 1.1).

This is due to the large volume of drains (up to 50% of water intake), spread over large areas, strong pollution and contamination with organic and chemical elements and compounds of varying degrees of toxicity. All this is due to the fact that the use of drains of irrigated land for other purposes makes the use of traditional cleaning and disposal methods for industrial and nominal drains in ham nprofitable.



1.1.- fig. Principled water use system:

1-River; 2-vodozabor node; 3-Channel; 4-Acholi point; 5-treatment facility; 6-industrial enterprise; 7 - water distribution and collector-irrigated area with drainage network; 8-dump water collector

It is also important that there is a psychological barrier in irrigation that salts cannot be allowed through the agricultural drainage system without evacuation (salt ventilation), and also that the scientific basis and criteria for mineralization and use of waters of different composition for irrigation of different soils and crops in different soil-climatic conditions have not been developed. Of course, the template approach to solving this problem is excluded. Nevertheless, it can be solved with inefficient use in relation to the natural conditions of a given irrigated area and with a differentiated analysis of pollution cases from water resources.

In this regard, the state of water use in the exploitation period of irrigated agriculture in Central Asia is very clear, where due to the large loss of irrigation water and the resulting drainage flow, the technical imperfection of the irrigation network (low efficiency) and irrigation technology, that is, water use technology, and the main reason for the accumulation of salt in the soil, even The fight against the accumulation of salt in such conditions forces the use of a water irrigation regime, which reduces the productivity of the use of Water Resources. Therefore, in order to inefficient use of Water Resources and prevent contamination of their agricultural drains, it will be necessary, first of all, to increase the efficiency of the irrigation system and reduce the accumulation of salt in the soil (reduce the mineralization of irrigation groundwater drainage flow), reduce their level, that is, prevent inefficient evaporation from the USSR.

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