

**IRRIGATION SERVICES AND LAND REHABILITATION MEASURES
MUTUAL BINDER EFFICIENCY INDICATORS**

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Annotation: *The article emphasizes that organizations engaged in irrigation services and reclamation activities on irrigated lands should take into account their specific features in the process of planning, design and effective use of these services and activities. Based on the views of foreign and domestic scientists, indicators have been developed that link irrigation services and land reclamation.*

Keywords: *uneven distribution of water resources, irrigation services, reclamation activities, efficiency of services, profitability of irrigation services and reclamation activities.*

As noted by the President, the fact that all the costs of irrigation and land reclamation in the country are fully covered by the state budget is an important factor in obtaining a rich harvest of agricultural crops. More than 2 trillion soums are allocated annually from the state budget to guarantee the water supply of agricultural lands, and more than 400 billion soums are allocated to improve the reclamation of irrigated lands. These data require special attention to the development of irrigation services and reclamation measures in the use of irrigated lands.

In this regard, organizations engaged in irrigation services and reclamation activities on irrigated lands should take into account the following characteristics of these services and activities in the planning, design and effective use of irrigation and reclamation funds.

The First, there is the complexity of taking into account the biological characteristics of the growth of agricultural crops i.e. the state of water consumption at different rates for growing the same crop in the same size area. This prevents the creation of an improved service system that adapts the composition of the source of water resources for all irrigated lands to the volume of water consumption of agricultural crops.

The Second, in the cross-section of irrigated lands, there is an uneven distribution of water resources and a variety of soil and reclamation conditions in one area. Therefore, the redistribution of water between water consumers and water users leads to the expenditure of budget funds for the systematic and systematic improvement of land reclamation.

Third, timely and necessary irrigation services and land reclamation are carried out at the expense of about 80% of transboundary waters, which forces these services and activities to be formed depending on the socio-economic relations of neighboring countries, the use of resource-saving technologies, prevention of water waste.

Fourth, the use of irrigation services and reclamation measures will affect the quality of natural resources (land and water). As a result, there will be a reduction in the possibility of using irrigation water and irrigated lands, which are among the limited natural resources, in economic activities.

Fifth, the location of water consumers and water users in relation to the irrigation network has an impact on the provision of irrigation services and reclamation measures, the efficiency of agricultural production. Because of this, it is extremely important to ensure fair and proper use of water resources.

Sixth, limited opportunities to apply market principles and mechanisms to irrigation services and reclamation activities on irrigated lands. Because there can be no competition in water supply, because water is supplied from a single canal or source, where market relations are limited, in other words, it is a natural monopoly, as well as water and irrigation and land reclamation funds are state-owned, and so on.

These specific features provide the basis for the interdependent development and cost-effectiveness of irrigation services and land reclamation, as well as their consideration in the provision of services and implementation of measures to increase the efficiency of land and water resources.

According to ZA Artukmetov, 92% of the total water used in Uzbekistan is used for irrigation, 5.5% for utilities and 1.5% for industrial purposes, 0.8% for fishing and 0.2% for energy purposes [5]. These indicators for Andijan region are given in Table 1 below.

Table 1.2.1

Structure of water resources use in Andijan region [12]

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Water consumer and water user	2015 year		2020 year		2020 year compared to 2015, %
	In fact, the water obtained, mln. m3	Percentage of total, %	In fact, the water obtained, mln. m3	Percentage of total, %	
networks	2465,0	91,43	2464,8	91,23	99,99
Irrigation	2,2	0,04	2,2	0,04	100,00
Industry	122,2	2,52	122,2	2,50	100,00
Utilities	211,1	5,33	229,8	5,41	108,86
Agriculture	32,8	0,68	32,8	0,82	100,00
Fisheries	2833,3	100,00	2851,8	100,00	100,65

The table shows that the largest share of water actually received from water sources in the region, or 92 percent, is spent on irrigating crops. Therefore, the current level of use of water resources for irrigation of crops, the limited opportunities for its reproduction make it a constant necessity to implement measures to improve the use of irrigation services and reclamation measures on irrigated lands.

This, in turn, suggests that the reasons for the lack of water for irrigation of agricultural crops, ways to use irrigation water efficiently and the conditions for the formation of effective irrigation services and land reclamation measures should be sought on irrigated lands, as well as its development.

In this context, the relationship expressed by scientists on the specifics of irrigation services and reclamation measures is of great value. In particular, UP Umurzakov, T. Rizaev believe that the development of these services and activities on irrigated lands depends on the real incentives of those involved in its management. Water consumers incur large expenditures to maintain water facilities and ensure their reliable operation. For this reason, they will be interested in the full justification of these costs. The main factor that motivates water consumers in such conditions is the guaranteed supply of water. Water consumers do not always focus on the cheapest water, more precisely, they are always willing to pay a higher price for water if water supply and services are guaranteed [7].

Z.Shokhodjaeva argues that regular maintenance and timely overhaul of irrigation systems in agriculture will increase the efficiency of irrigation services and reclamation

measures due to the increase in water use. It also emphasizes that the irrigation system is financially dependent anyway [9].

A.Abduganiev and A.Abduganiev noted that the deterioration of land reclamation, incomplete introduction of scientifically and practically based crop rotation, the decline in the working condition of irrigation facilities, the lack of incentives for efficient use of land and water hinder the development of irrigation services and land reclamation. add to the list of reasons [3].

The centralized management system and the financing of irrigated lands from the state budget do not provide effective services to water consumers. The main reasons for this are the deterioration of irrigation networks and land reclamation, the slow growth of economic efficiency of water, land degradation, environmental pollution, deficiencies in water distribution, high water waste and so on. Therefore, the most optimal way is to entrust the economical use of land in irrigated agriculture and increase their efficiency to the entities operating on irrigated lands.

Resolution of the President of the Republic of Uzbekistan dated November 27, 2017 No PP-3405 "On the State Program for the development of irrigation and reclamation of irrigated lands in 2018-2019" Improving the regulatory framework for assessing the water supply and reclamation of irrigated lands, rational management of water resources and to ensure the timely and quality implementation of irrigation and land reclamation measures [1].

One of the important conditions for the interdependent development of irrigation services and reclamation measures is the analysis and evaluation of this activity. Accordingly, the task of achieving the determination of the effectiveness of irrigation and land reclamation services in water management using interrelated indicators is crucial. It is known that efficiency in the field of services is the coverage of the costs of resources (material, labor, natural, etc.) spent on services. First of all, let's look at the views of scientists on the effectiveness of irrigation services and land reclamation measures provided in this system. It should be noted that they did not study the effectiveness of irrigation services and reclamation measures together, but most of our scientists did not address the issue of the effectiveness of water use, reclamation measures and their interaction.

In particular, among the scientists of the CIS M.F. Kudin [10], V.S.Dmitriev, A.K.Zaikina, V.B.Yabloshinskaya, V.P.Shtyka, O.A.Lazutina [11] Z.Ya. According to Khudoiberganov, the efficiency of water resources is determined by the amount of water consumed per unit of irrigated area, costs per unit of water consumed, output per unit of water consumed, net income and profit, etc. [8].

A.Abduganiev, A.A.Abduganiev argue that the efficiency of the irrigation system is expressed in terms of the efficiency of the irrigation system, the coefficient of use of irrigation water, the efficiency of water use [3].

VS Dmitriev, ZA Syromyatnikova, NS Putyato [10], MM Farzaliev, AM Musaeu, IM Askerov [11], scientists from the CIS countries on the effectiveness of reclamation measures According to scientists A.S.Sultanov and others, the unit of reclaimed land and the unit of capital invested in it consists of the yield, output and net income [6]. S.Avezbaev and S.N.Volkov cited the increase in productivity on reclaimed lands, the cost per unit of reclaimed land, additional net income per unit of capital expenditure, the coverage of capital expenditures relative to the norms as the effectiveness of reclamation measures [4].

In terms of the above and the impact of irrigation services on land reclamation, we propose the following performance indicators for these services and activities:

→ The ratio of water actually given to 1 hectare of arable land to the norm, %

→ 1 m³ of water can be saved:

- product, soums

- profit, soums

→ Share of water-saving technologies in total irrigated areas, %

→ Additions due to the use of water-saving technologies:

- harvest, ts

- product, thousand soums

- profit, a thousand rubles

→ weight of irrigated lands with groundwater depth of 0-2 meters, %

→ weight of irrigated lands with salinity of groundwater 0-3 g / l, %

→ weight of non-saline lands in total irrigated lands, %

→ weight of lands with good reclamation condition on irrigated lands, %

→ Additional 1000 soums for irrigation and land reclamation:

- harvest, ts

- product, thousand soums

→ Profitability of irrigation services and reclamation measures, %

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