BG Pulse Journal USA
ISSN:1947-2536 http://www.bgpulseusa.com/index.php/bg
BG PULSE JOURNAL

WAYS TO IMPROVE THE ECONOMIC EFFICIENCY OF WATER RESOURCE CONSUMPTION

Mirjamilova Hulkar Nurali qizi

University of Economics and Pedagogy
mirjamilovahulkar.gmail.com
Doi: https://doi.org/10.5281/zenodo.22642755

Abstract: In order to ensure the efficient use of water resources, it is important to deeply reform land and water relations and accelerate practical measures for their liberalization.

Keywords: water-saving technologies, water loss, water-scarce regions, transboundary rivers.

INTRODUCTION. The issue of the efficient use of land resources also requires the rational use of water resources. The unified state water fund of the Republic of Uzbekistan includes rivers, lakes, reservoirs, various surface water bodies and sources located on the territory of the country, as well as canals, artificial reservoirs, groundwater reserves, and glaciers. Today, 1/4 of the world's population, or about 1.6 billion people, live in areas where water is scarce. This, in turn, encourages finding solutions to problems arising in the irrigation system. In general, the agriculture of our country is mainly carried out on irrigated lands, and since the agriculture of our republic is mainly based on irrigation, the role and importance of water is incomparable. Although 72% of the Earth's surface is occupied by the World Ocean, the amount of freshwater is very limited. The total volume of surface freshwater is 360,000 km3, accounting for only 0.25 percent of the hydrosphere.

REVIEW OF LITERATURE ON THE TOPIC. S. Dzhalalov, who has been engaged in the development of irrigated agriculture in conditions of water scarcity, emphasizes in his scientific works that when positioning agriculture as a sector, it is necessary to take into account the characteristics specific to irrigated agriculture [1]. According to Z.S. Shokhodjaeva, "water resources consist of all fresh and moderately mineralized groundwater and surface water, varying in economic stages, and represent the sum of water sources used and capable of being used in all sectors of the economy, including agriculture" [2], explaining the need for efficient and rational use of water resources—their use in full compliance with all laws and regulations on water use and its protection. A. Akhmedov noted that the state provides financial support to achieve high efficiency in the application of water-saving technologies in agriculture. To achieve high efficiency in the application of water-saving technologies in agriculture, A. Akhmedov proposes improving the system of state financial support, specifically the allocation of subsidies [3]. In particular, he draws attention to the fact that soil fertility depends on its mechanical composition, the irreplaceability of water in agriculture, the calendar periods and sequence of technological processes in crop cultivation, the quality of water resources, and many other natural factors. It also emphasizes that the quality, economic, and legal structure of land resources changes over time; that is, an increase in the size of land plots allocated to one category of land users leads to a reduction in the land areas of other categories of land users.

RESULTS AND DISCUSSION. Starting from 2019, a new system of state support for the implementation and management of water-saving technologies—a mechanism for allocating subsidies—has become a major incentive for farming and cluster organizations. Another problem causing water losses is that today only 2 percent of more than 3,000 water meters and 2.5 percent of

400 large reservoirs have automated control systems. For this purpose, it is planned to level 9,800 hectares of land in the region this year using laser equipment. To date, the Republic of Uzbekistan ranks 25th among 164 countries in the water impact ranking.

Also, according to the forecast of global climate change, the total mass of water resources of Uzbekistan is expected to decrease by 7-8 km cubic meters, in the next 10 years, rational use of water resources in agriculture, digitalization of their management processes will play a special role.

The average annual flow volume of surface waters formed on the territory of our country is 10 km3, with an additional 89 km3 of water coming from the surrounding area. At the same time, if we pay attention to the distribution of water by sector, we can observe that 5.5% of total water consumption is spent on household services, 7.7% on energy, including 0.2% for full consumption, 1.5% in industry, 0.8% in fish farming, and 84.3% in agriculture.

Table 1

Maximum water withdrawal (limit) from water sources by regions of the Republic of Uzbekistan,[1] *mln.m³*

	Total annual limit amount of water (limit)	**From this**			
		From riverbeds	**From streams and springs**	**Groundwater**	**Drainage water**
Total for the republic	**56190**	**34847**	**19953**	**469**	**922**
Republic of Karakalpakstan	8335	8335	-	-	-
Regions:					
Andijan	3120	945	2115	10	50
Bukhara	4373	3960	273	60	80
Jizzakh	2803,9	2241,6	530,3	2	30
Kashkadarya	7021	4400	2381	170	70
Navoi	2490	504	1877,5	38,6	70
Namangan	3087	2577	410	48	52
Samarkand	3186	-	2953	13	220
Surkhondarya	4270	1570	2600	20	80
Syrdarya	3119,2	3041,2	-	28	50
Tashkent	5342,2	588,2	4590	14	150
Fergana	4358	2000	2223	65	70
Xorazm	4685	4685	-	-	-

[1] Author's development based on data from the Ministry of Water Resources

According to forecasts, the volume of water in the part of the Amu Darya flowing into our country from transboundary rivers is expected to decrease sharply in the next 20-30 years. Analysis shows that due to the sufficient amount of precipitation in 2024, the water level in the Amu Darya is expected to be within normal limits (Table 1). Analysis of the table shows that the largest part of the water is drawn from riverbeds. In the Republic of Karakalpakstan, Khorezm, and Syrdarya regions, all water is drawn from riverbeds. In the Samarkand, Navoi, and Surkhandarya regions, the share of water from streams and springs is high. The use of groundwater is minimal, with the highest use observed in the Tashkent region (14 million m3). The use of drainage water is relatively high in the Samarkand and Syrdarya regions.

In order to ensure the effective use of water resources, it is important to deeply reform land and water relations and accelerate practical measures for their liberalization. In this regard, it is necessary to determine the amount of payments and taxes for water and land resources based on more fair and realistic economic indicators. Along with the organization of this process based on the principles of a market economy, factors such as the natural limitation of land and water resources, their irretrievability, current state and quality, the distance to the consumer, the level of provision with production infrastructure, the volume of products obtained, and economic efficiency must also be deeply analyzed. This will increase the efficiency of resource use and ensure economic interest.

It is advisable to introduce market principles when using irrigation water. Today, the government of the republic is studying the experience of foreign countries in order to properly organize the use of water, prevent waste in the current conditions of increasing water scarcity, improve the management of water resources, and evaluate water in agriculture.

In order to implement market mechanisms and principles in water management, ensure the efficient use and reliable operation of irrigation facilities, and account for water consumption, a transition has been made from the administrative-territorial principle of irrigation systems to the basin principle.

While under the previous management system, water resources were distributed to consumers administratively from the center, without considering their needs, today water is supplied to consumers from relevant canals through water distributors in accordance with mutually concluded contracts based on the basin principle. "The sources of funding for the basin administrations of irrigation systems are state budget funds, revenues from economic activities and the provision of services to water consumers, as well as funds received from other activities not prohibited by law" [4].

Now, the direct interest of the basin administrations of irrigation systems in the timely delivery of water to consumers at the required level has been ensured. Organizational and economic foundations have been established for the timely receipt and rational use of the necessary amount of water by consumers.

The practice of Water Consumers Associations, which are non-governmental, non-profit organizations established on a voluntary basis to coordinate activities in the field of water relations within the water management system, as well as to represent and protect common interests, carry out their activities on a contractual basis with farms, dehkan farms, and other economic entities, and have the status of a legal entity, has allowed for many shortcomings during their activities.

First of all, the activities of associations were not organized in accordance with the tasks assigned to them. The executive bodies of the associations were not provided with qualified leaders and specialists in the field. Heads of associations were entrusted with agricultural and other related tasks, while the main tasks of water management were neglected;

secondly, contractual relations between associations and water consumers regarding water consumption have not been established at the proper level, and systematic control over the fulfillment of contractual obligations has not been established. Payments for the services provided by the associations were not made in a timely and full manner. As a result, the financial condition of associations deteriorated, and debts for wages, budgetary and extra-budgetary funds, electricity, and other mandatory payments remained high;

thirdly, khokimiyats and responsible organizations have neglected other organizational issues related to providing associations with premises, strengthening their material and technical base, and the effective organization of their activities;

fourth, insufficient attention was paid to equipping water intake points of water consumers with water management and metering devices, repairing irrigation networks and hydraulic structures on them, and the widespread introduction of water-saving technologies; water accounting remains in an unsatisfactory state.

CONCLUSIONS. It has been established that within the structure of the Ministry of Water Resources of the Republic of Uzbekistan, the Ministry of Finance, the Council of Ministers of the Republic of Karakalpakstan, and the irrigation departments of regions and districts (and other relevant water management operating organizations in districts where irrigation departments do not exist), a special service without the status of a legal entity shall be established to organize water supply to water consumers, the operation of inter-farm irrigation networks, their repair and restoration, and the provision of other water management services (hereinafter referred to as the special water management service).

In arid regions like Uzbekistan, water resources are limited. More than 90% of water is used in agriculture. Therefore, it is vital to ensure the targeted and efficient use of every drop of water.

References

1. Джалалов С. Дефицит водных ресурсов: проблемы и решения // Экология ахборотномаси. –Тошкент. -2001. -№ 2. -С. 12.
2. Shoxo‘jayeva Z.S. Agrar tarmoqda suv resurslaridan foydalanishning iqtisodiy samaradorligi / Monografiya – Toshkent, 2012. – 25-b. [3] Ahmedov A.K.Qishloq xo‘jaligida suvni tejovchi innovatsion texnologiyalardan foydalanish samaradorligini oshirish. Iqtisodiyot fanlari bo‘yicha falsafa doktori (PhD) ilmiy darajasini olish uchun tayyorlangan dissertatsiyasi. T-2018-yil.
3. ZS Shokhujaeva, HN Mirjamilova. Innovative processes in the water sector and factors influencing their development. Asian Journal of Research in Business Economics and Management. Том 12. №5. Стр.18-27
4. NJ Mamanazarova, H Mirjamilova RESURSTEJAMKOR TEXNOLOGIYALARDAN FOYDALANISHNING TUPROQ UNUMDORLIGI VA EKINLAR HOSILDORLIGINI OSHIRISHGA TA’SIRI Экономика и социум, 248-254
5. Z Shokhujaeva, N Mamanazarova, H Mirjamilova Ways of efficient use of water in conditions of water resources shortage E3S Web of Conferences 463, 02035
6. Mirjamilova H.N. Qishloq xo‘jaligida suv tejovchi texnologiyalarni qo‘llashning ahamiyati. Yosh olimlar axborotnomasi №4(4)2023. ISSN 2181-5186