PRACTICAL METHODOLOGICAL ISSUES OF WATER USE MANAGEMENT IN TERRITORIES

Berdiyev Anvar Abdivalievich
Researcher of Karshi State University

Abstract. *This article highlights the new paradigms of water use management in the regions of our country. There is an urgent need to establish strong international mechanisms to prevent the global water crisis from spiraling out of control. Water is our common future and it is essential to act together to share it equitably and manage it sustainably.*

Key words: *water resources, population, territory, economic and social efficiency, use of water resources.*

Globally, 2 billion people (26% of the population) do not have safe drinking water and 3.6 billion (46%) lack access to safely managed sanitation, according to the report, published by UNESCO on behalf of UN-Water and released today at the UN 2023 Water Conference in New York.

Between two and three billion people experience water shortages for at least one month per year, posing severe risks to livelihoods, notably through food security and access to electricity. The global urban population facing water scarcity is projected to double from 930 million in 2016 to 1.7–2.4 billion people in 2050. The growing incidence of extreme and prolonged droughts is also stressing ecosystems, with dire consequences for both plant and animal species.[1]

This creates the need to research new approaches to water use management in the entire region as well as to find effective solutions.

Literature analysis to improve the efficiency of Water Resource Utilization Management in the regions has found that modern scientific bases such as Scopus, Web of science and Gogle scholar have very K'p scientific work on the subject. Among foreign authors, Xiaojun Xiang has conducted research on urban water resource management for sustainable environmental planning using artificial intelligence techniques [2].

Zhaoyang Yang, on the other hand, is credited with developing a comprehensive assessment of water resources transportation capabilities and scenario simulation model in Sian, China. [3].

Ciriacy-Wantrup S.V. [4], Briscoe S. [5], Jones W. [6], Reno S. scientific research work such as the optimal use of Water Resources in agriculture, Global Water Partnership issues have been addressed.

Russian researcher-biologist Kostomakhina E.N.having studied the environmental and economic criteria for the use of drinking water, he tried to prove the impact of drinking water quality on the average life expectancy of the population. It has also proposed an assessment of the efficiency of the water supply system in relation to the net income provided by the treatment of river water in the regions.[7]

Umarov D.M. in his scientific work, he has researched the economic efficiency of water management structures as well as reducing losses in land irrigation in Tajikistan. According to scientific results, a macro-level water use efficiency formula has been proposed for the basis and current year differences in agricultural gross yield on irrigated land, through water payments, budgetary funds for land expenditure, and the ratio to the sum of irrigation costs.[8]

Another researcher is Umarov D.M. Scientific research on improving the organizational and economic mechanisms of the effectiveness of irrigation systems in Tajikistan is based on the economic efficiency of bringing water supply tariffs in agriculture to a free market price. The author also developed recommendations for improving the information and analysis system in water management.[9]

Local scientist Akhmedov S.N. esa had proposed using the Diamond model when using sub resulrs. He also carried out a comparative analysis of the effectiveness of the use of siv resources in agriculture in Central Asian countries in his views.[10] The total land area is 44,892.4,000 hectares and is divided into 8 categories according to the purpose and order of land use, including agricultural land, settlement land, industrial, transport, communications, defense and other uses, land for conservation, wellness and recreation purposes, land of historical-cultural significance, Forest Trust Land, Water Trust land; reserve land.[8]

Uzbekistan's reliance on historically intensive irrigation and special emphasis on Acorns has created serious problems in water management. The environmental, social and economic consequences of the Aral Sea disaster underscore the need for sustainable water resource management practices. Modern reforms, International Cooperation and a diversified approach to

agriculture are an important step towards ensuring Uzbekistan's water-powered future.

Water consumption trends vary from region to region, but most areas experienced a decrease in water consumption in 2021 compared to 2004. Namangan and Samarkand are important provinces where water consumption in 2021 has a sharp upward trend compared to 2004. Significant water intake changes in each region are influenced by the expansion and contraction of agricultural activities, water use efficiency, climate factors, and regional water policy initiatives. For Uzbekistan, whose climate is arid, effective water management is very important, in some regions the efficiency of water use is declining, which reflects an increase in the efficiency of water use and a reduction in water-intensive activities. However, there are some signs that it is necessary to eliminate water shortages.

The main direction of achieving water saving is the introduction of water-saving technologies into agriculture. A significant amount of work is being done in Uzbekistan.

Depending on climatic conditions and water conditions, drip irrigation methods may also vary. As in other regions of Khwarezm, the province has experienced a significant reduction in freshwater scarcity. From such situations, it is necessary to continue work on the development of water-saving technologies, improving their effectiveness. In the future, most likely, it is necessary to continue the development of strategic directions until 2024.

Also, according to statistics, ongoing efforts to effectively manage and conserve water resources in water-scarce areas have been found to be important. In general, efforts to improve water conservation and management practices will help to use water more efficiently in the coming years.

The kashkadarya region also showed a positive trend over the years, despite relatively lower water-saving technology implementation rates compared to other regions. Data shows that the introduction of water-saving technologies can vary significantly from year to year, as a result of the reforms carried out to modernize agricultural and irrigation practices. There are cases of significant growth in the practice of applying water-saving technologies in certain years, indicating targeted initiatives or policies.

The introduction of water-saving technologies has been linked to a variety of factors, including government policy, incentives and the need to address water shortages and promote sustainable agriculture. The positive link between the application of water-saving technologies and water-saving practices has been linked to the effective implementation of Water Resource Management and means that it is gaining high importance.

According to experts ' forecasts, over the next 30 years, irrigated land areas can shrink by another 20-25 percent.Insufficient land use rights are preventing farm management from improving efficiency and limiting investment attraction. Currently, clear and transparent mechanisms for the distribution of land plots and the protection of land users ' rights have not been fully created. Also, the fact that land plots are not provided for by secondary leasing is preventing agricultural land from passing to users of relatively potential land. About 80% of the country's water resources are formed at the expense of cross-border water bodies. This situation determines the importance of regional cooperation for the sustainable management of Water Resources in Central Asia, in particular in the Republic of Uzbekistan. 70% of irrigation networks in the country do not have an anti-filtration coating, as a result of which part of the water is lost in the process of reaching the field. The existing irrigation infrastructure, a large part of the pumping stations, is in use for more than 30-40 years and needs reconstruction or overhaul. At present, drip irrigation has been introduced in only 1.7% of irrigated land. The situation can be further complicated by the continued use of traditional irrigation techniques due to the high dependence of Agriculture on irrigation, as well as the sharp intensification of drought as a result of climate change. According to the forecast of the World Resources Institute, by 2040 Uzbekistan will become one of the 33 countries with the highest water scarcity. The decrease in productivity has serious negative consequences for food security and balance of payments, which creates the need for sustainable management of Water Resources and the application of resource technologies in the cultivation of agricultural crops.

The effectiveness of Uzbekistan's water use, as reflected in the information provided, reveals a complex correlation between agricultural needs, environmental problems and resource management.

The bulk of the water resources used in our country (more than 90 percent) are used for irrigation purposes. Of the rest of it, it is used in industry and for domestic and municipal purposes. It is known that all three of the above directions require more water from year to year, and therefore the water problem in our country is becoming more and more steep. In such conditions, the main task remained to save and use water, to avoid its inefficient loss, to make good use of repellent and wastewater, and most importantly, to keep water sources from contamination and excess mineralization.

Bibliography:

1. https://www.unesco.org/en/articles/imminent-risk-global-water-crisis-warns-un-world-water-development-report-2023.
2. Xiang X. et al. Urban water resource management for sustainable environment planning using artificial intelligence techniques //Environmental Impact Assessment Review. – 2021. – T. 86. – C. 106515.;
3. Yang Z. et al. Comprehensive evaluation and scenario simulation for the water resources carrying capacity in Xi'an city, China //Journal of environmental management. – 2019. – T. 230. – C. 221-233;
4. Ciriacy-Wantrup S. V., Bishop R. C., Andersen S. O. Water policy and economic optimizing: Some conceptual problems in water research //Natural Resource Economics. – Routledge, 2019. – C. 67-76;
5. A Briscoe S. Global Water Patnership // l)K.Rosengrant and Binswanger.- Dublin Statement- 2000.-p.25-26;
6. Jones W.l. Global Water Patnership // Ж-Rosengrant and Binswanger.- Dublin Statement.- 2000 - p. 25-26;
7. Костомахина Е.Н. Эколого-экономические критерии использования систем подготовки питьевой воды для нужд населения омской области. 03.00.16 – экология, Автореферат диссертации на соискание ученой степени кандидата биологических наук.2004.
8. Умаров Д.М. Эффективность использования водных ресурсов в орошаемом земледелии Республики Таджикистан. Автореферат диссертации на соискание ученой степени кандидата экономических наук. Душанбе 2007.
9. Султанов Н.М. Организационно-экономические аспекты эффективного использования оросительной воды в Согдийской области Таджикистана. Автореферат диссертации на соискание ученой степени кандидата экономических наук. Душанбе 2010.
10. http://interfinance.tfi.uz/?p=3735.
11. Saidov, Mashal Samadovich. Improving Management Efficiency at Oil and Gas Industry Enterprises in Uzbekistan // Academic Journal of Digital Economics and Stability Volume 25, Jan-2023. http://eprints.umsida.ac.id/11063/1/622-Article%20Text-1754-1-10-20230113.pdf
12. Saidov Mashal Samadovich Renewable Energy Sources and Ways of their Implementation in the Republic of Uzbekistan // International journal on economics, finance and sustainable development ISSN (electronic): 2620 - 6269/ ISSN (printed): 2615 – 4021 Vol. 5 No. 1 | January 2023. https://journals.researchparks.org/index.php/IJEFSD/article/view/3879/3668