Global Economic Review: Journal of Economics, Policy, and Business Development
ISSN: 2980-5287
Volume 2, Issue 3, March 2026
Website: ecomindspress.com

ORGANIZING THE EFFECTIVE USE OF AGRICULTURAL LAND IN THE CONDITIONS OF WATER SHORTAGE

GI. Rajabova
Teacher of Bukhara State Technical University

R. Rakhmonov,
S. Yusupova,
Sh. Umirzakov,
N. Ulig'bekov
Students of Bukhara State Technical University

Abstract
The article analyzes the issues of organizing the effective use of agricultural land in conditions of water scarcity. Modern mechanisms for managing land and water resources in the context of climate change, limited water resources, and degradation of irrigated lands are highlighted. The effectiveness of water-saving technologies, optimization of crop composition, digital monitoring, and agrotechnical measures is scientifically substantiated. The results of the study will serve to increase the efficiency of agricultural land use and sustainable management of water resources

Keywords: Water scarcity, agricultural land, irrigation, water-saving technologies, land degradation, efficient use, agrotechnologies.

Introduction

In recent years, global climate change, depletion of water resources and population growth have sharply increased the demand for water in agricultural sectors. Especially in areas based on irrigated agriculture, water scarcity has a serious impact on land fertility, productivity and food security. Therefore, organizing rational and effective use of agricultural land in conditions of water scarcity is becoming an urgent scientific and practical issue. Effective use of agricultural land implies not only the economical use of water, but also the protection of land resources, preservation of soil fertility and ensuring environmental sustainability. In this process, the importance of modern irrigation technologies, agrotechnical measures and digital management systems is

Global Economic Review: Journal of Economics, Policy, and Business Development
ISSN: 2980-5287
Volume 2, Issue 3, March 2026
Website: ecomindspress.com

increasing. Impact of water scarcity on agriculture Water scarcity has a number of negative consequences for agricultural production. First of all, the reduction of irrigated land and the violation of the irrigation regime lead to a decrease in crop yields. At the same time, improper irrigation leads to increased salinization, compaction and erosion of soils. In conditions of water scarcity, inefficient use of water on agricultural land causes economic losses and increases production costs. This situation threatens the sustainable development of the agricultural sector, especially in regions with limited water resources.

In conditions of water scarcity, drip irrigation, sprinkler irrigation, and low-pressure irrigation systems are the most effective methods. With the help of these technologies, water is delivered directly to the plant root zone, significantly reducing evaporation and losses. As a result, water consumption is reduced and productivity increases. Replacing water-intensive crops with drought-resistant and low-water-demanding crops allows for the efficient use of water resources. Proper organization of the crop rotation system is important for maintaining soil fertility and reducing water needs. The use of resource-saving methods of soil cultivation, the moderate use of organic and mineral fertilizers, and the introduction of mulching technologies help maintain soil moisture for a long time. This makes it possible to reduce the number of irrigations.

Monitoring the state of land and water resources based on remote sensing, GIS and satellite data allows for scientifically based planning of water allocation. Determining irrigation rates and timing through digital technologies increases the efficiency of water use. Effective use of agricultural land in conditions of water scarcity requires an integrated approach. It is necessary to harmonize not only technological solutions, but also organizational, economic and legal mechanisms. Fair distribution of water among water users, introduction of incentive systems and application of scientifically based management methods are important.

Conclusion

The organization of effective use of agricultural land in conditions of water scarcity is an important factor in ensuring the sustainable development of the agricultural sector. According to the results of the study, the widespread introduction of water-saving technologies, optimization of crop composition and the use of digital

Global Economic Review: Journal of Economics, Policy, and Business Development
ISSN: 2980-5287
Volume 2, Issue 3, March 2026
Website: ecomindspress.com

monitoring systems significantly increase the efficiency of land and water resource use. In this regard, it is appropriate to put forward the following proposals:

- state support for the use of water-saving irrigation technologies;
- widespread introduction of digital systems in water resources management;
- increasing the share of drought-resistant crops;
- improving agrotechnical measures aimed at protecting land and water resources.

References

1. Information on the "Uzbekistan-2030" strategy of the Republic of Uzbekistan.
2. Law on Geodesy and Cartography.
3. ASchertovskii, AK Bazarov. Sistema zemlepolzovaniya Uzbekistana. Science. 2007, 212 p.
4. Volkov SNZemleustrochtvo//Uchebnik. T 2: Vnutrikhozyatstvennoe zemleustroystvo. M.: Kolos, 2001, 648 pages.
5. S. Avezbayev, SN Volkov. Economics of land management //Textbook.TIMI, 2016.265.
6. Decree of the President of the Republic of Uzbekistan “On measures to radically improve the system of land accounting and state cadastre maintenance”. September 7, 2020 PF-6061
7. Resolution of the President of the Republic of Uzbekistan “On the organization of the activities of the Cadastral Agency under the State Tax Committee of the Republic of Uzbekistan” dated September 7, 2020 PQ-4819.
8. Decree of the President of the Republic of Uzbekistan “On additional measures to improve the system of use and protection of agricultural lands”
9. www.ygk.uz
10. www.senat.uz
11. WWW.president.uz