

## EFFECTIVE MECHANISMS OF REGULATING TAXATION FOR THE USE OF WATER RESOURCES IN THE CONDITIONS OF WATER STERILITY IN UZBEKISTAN

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**Abstract:** This scientific article is devoted to the analysis of effective mechanisms for taxation of water resources in Uzbekistan in conditions of water scarcity. In Central Asia, and in particular in Uzbekistan, water resource scarcity is becoming an increasingly urgent problem due to factors such as economic growth, population growth, and climate change. The article comprehensively examines the causes and consequences of water scarcity, the current system of taxation of water resources, and new legislative reforms in this area. It also studies international experience and advanced models of taxation of water resources, and puts forward proposals for the formation of effective mechanisms taking into account the specific conditions of Uzbekistan. Problems in the implementation of the proposed mechanisms, existing opportunities, and practical recommendations are also discussed.

**Keywords:** Water scarcity, water resources, taxation, Uzbekistan, effective mechanisms, water management, environmental tax, water code.

### Introduction

Global on a scale and especially Central Asia in the region water resources shortage XXI century the most serious ecological, economic and social from problems to one Uzbekistan, the region's dry white in the territory location because of water of

the shortage negative consequences especially sharp feeling is doing. Population number permanent growth, industry and village on the farm development, as well as climate change effect there is water to resources was demand further increasing their to stability serious threat For example, research this shows that the population soul per head consumer goods current level preserved if it remains, the utility services for every year additional 16-20 million cube meter water demand The industry development also this in the sector to the water was demand noticeable at the level increase forecast is being done. Available situation water from resources reasonable use encouraging them to preserve-to protect providing and new infrastructures financing effective economic mechanisms current to grow necessity requirement Water from resources usage for to tax pull so from mechanisms one be, he water consumers water to save encouragement, resources value reflection to hold and water management improve for funds attraction to do opportunity This gives of the article main purpose Uzbekistan under the circumstances water from resources usage for tax order of the place current status analysis to do, international experience to study and of the country to oneself typical needs and to the possibilities suitable coming effective mechanisms formation according to offers working from the exit consists of.

## **To the topic related literature analysis**

Uzbekistan world on a scale water shortage the most sharp noticeable from countries one This is problem many factors, including rapid economic growth, population permanent growth, water resources wrong management, industry and village on the farm stable not been consumer goods and climate change negative effect with Climate change as a result in the region glaciers melting rivers are accelerating flow is decreasing, this and in the future water resources further to shrink take arrival possible. The decreasing amount of water per capita also exacerbates the problem. Water scarcity not only hinders the production of agricultural products, but also negatively affects the supply of drinking water, environmental sustainability and overall socio-economic development. To solve this complex problem, it is necessary to improve the overall use of water resources, introduce water-saving technologies in agriculture and industry, raise awareness of the population on the rational use of water, and develop international cooperation in water resources management. In recent years, the Republic of Uzbekistan has been implementing systematic reforms to increase the efficiency of water resource use, introduce water-saving technologies, and improve the condition of irrigated lands. As a result of these reforms, annual water consumption in the country has decreased from an average of 64 billion cubic meters in the 1990s to 51 billion cubic meters today. However, ongoing reforms and evolving socio-economic conditions have necessitated a comprehensive revision of water legislation. As a result,

on July 30, 2025, the new Water Code was signed by the President of the Republic of Uzbekistan Shavkat Mirziyoyev, which will enter into force on October 31, 2025. The new Water Code systematizes the main legal acts and defines the powers and functions of state bodies in water regulation. It establishes the conditions for public-private partnerships, determines liability for violations of water abstraction rules, and defines international cooperation in water relations. The adoption of this law is aimed at rational use, effective management and protection of water resources, eliminating overlapping powers of agencies, and increasing the responsibility of water suppliers and consumers. It also seeks to ensure water security, meet economic and environmental water needs, improve infrastructure in conditions of increasing scarcity, and stimulate long-term development, investment, and modernization. The new code recognizes water as a national asset and places it under additional state protection. Switzerland played a key role in developing the new legal framework, championing the principles of integrated water resources management, broad consultations, transboundary cooperation on water issues and the integration of water protection rules with sanctions. The current tax system imposes a tax on the use of water resources, which is largely dependent on the volume of water use. However, the rates of this tax may not fully reflect the true value of water, provide insufficient incentives for water users to save water, and may not raise sufficient funds to finance new infrastructure projects. The new Water Code provides a solid legal framework for reviewing and improving effective economic instruments, including taxation mechanisms. Many countries have introduced various taxation models to promote the rational use of water resources and their conservation. These models are mainly based on the "polluter pays" and "user pays" principles. For example, in the European Union, Israel and Australia, differential systems of water charges and taxes are used. In the European Union, the Water Directives require economic analysis in water pricing and promote the principle of recovery of water costs. This involves setting different water prices for industrial, agricultural and residential consumers, which takes into account the volume of water consumption and the environmental impact of each sector. In some countries, such as Germany, high fees are charged for water treatment and wastewater discharge, which encourages enterprises to invest in water treatment technologies. In countries with severe water shortages, such as Israel, water prices reflect the true cost of water, including the costs of desalination and treatment. Here, a progressive pricing system is used to reduce water demand and encourage conservation. This means that the price increases as consumption increases. Israel also provides large subsidies for water-saving technologies, such as drip irrigation, which further enhances the efficient use of

water resources. Based on international experience, it can be concluded that effective taxation models should be based on the following key principles:

**Differential rates:** setting different tax rates based on water source (groundwater/surface water), purpose (agricultural, industrial, domestic), volume of consumption, and water quality.

**Progressive taxation:** increasing tax rates as water consumption exceeds a certain set threshold.

**Polluter-pays:** imposing high fees or fines for activities that damage or pollute water resources.

**Subsidies and incentives:** providing tax breaks or subsidies to businesses that implement water-saving technologies or reduce water consumption.

**Targeted use of revenues:** direct tax revenues to develop water infrastructure, protect water resources, invest in water-saving technologies, and improve the water management system.

## Research methodology

This study is based on a comprehensive and systematic approach and includes the following methodological principles: First, the available scientific literature, statistical data, government documents and policy strategies were studied to conduct an in-depth analysis of the state, causes and consequences of water scarcity in Uzbekistan. Second, the current water legislation of Uzbekistan, in particular the newly adopted Water Code and the legal and economic foundations of taxation for the use of water resources, were studied in detail. Third, international experience in the field of taxation of water resources, in particular advanced models of countries that have succeeded in solving the problem of water scarcity, were comparatively analyzed. These experiences allow us to identify best practices that are suitable for the conditions of Uzbekistan. Finally, based on the results of the analysis and comparative study, proposals were developed to form effective mechanisms for taxation of water resources use in Uzbekistan. These proposals are intended to have practical significance, taking into account the economic, social and environmental conditions of the country.

## Conclusion

The adoption of the new Water Code in Uzbekistan creates favorable conditions for improving the system of taxation of water resources. Taking into account the specific conditions of the country, the following proposals are put forward for the introduction of effective tax mechanisms:

**For agriculture:** Agriculture is currently the main consumer of water. Tax rates for water use in this sector could be gradually increased and tax breaks or subsidies could be provided for farmers who implement water-saving technologies (e.g., drip irrigation,

sprinkler irrigation). Applying progressive rates for water consumption above the established norm would encourage water conservation.

industry: Differentiated tax rates should be introduced for industrial enterprises based on the water source (groundwater or surface water), water quality, and wastewater purity. Tax incentives for enterprises that reuse water or implement closed-loop systems will help increase efficiency.

For domestic consumers: A certain norm can also be set for domestic water consumption and progressive rates can be applied for consumption in excess of this. This will teach the population to save water and increase responsibility for water.

The new Water Code establishes liability for violations of water abstraction rules, creating a basis for introducing more serious financial sanctions for water pollution. The establishment of high fines and fees, based on the polluter-pays principle and depending on the level of damage caused to water, will encourage enterprises to invest in treatment facilities. The fact that funds from taxes on the use of water resources will be directed to a separate Water Fund and used exclusively for the modernization of water management infrastructure, the introduction of new water-saving technologies, the protection of water resources, and financing environmental projects will ensure transparency and increase public confidence. The introduction of modern digital systems (e.g. smart meters, geo information systems) for accurate accounting and monitoring of water consumption will ensure fair and effective taxation of water resources use.

**Socio-economic impact:** The increased tax burden on agriculture, especially on small farms, may increase production costs in the early stages.

**Administrative capacity:** Skilled personnel and effective administrative structures are required to manage and monitor the new system.

**Data availability:** The lack of reliable and accurate data on water consumption and pollution can make it difficult to set tax rates fairly.

**Public acceptance:** There may be resistance from the population and businesses to the new tax.

**Ensuring water security:** By encouraging rational use of water, the country's water security will be significantly improved.

**Sustainable development:** Conservation and rational use of water resources will become a key factor in sustainable economic and environmental development.

**Infrastructure development:** Tax revenues will be used to modernize water management infrastructure and implement new projects. will stimulate the development of science and innovation.

**Phased implementation:** It is important to introduce new tax mechanisms gradually, rather than all at once, continuously monitoring the impacts and making adjustments as necessary.

**Communication with the population and business entities:** Extensive outreach and public discussions should be conducted to explain the benefits and objectives of the new mechanisms.

**Database creation and modernization:** Create and continuously update an accurate database on water consumption, water sources, and pollution levels.

**Subsidies and incentives system:** Create a system of subsidies and tax incentives, especially targeted at agricultural and small business entities, to encourage the introduction of water-saving technologies at the initial stage.

**Expanding international cooperation:** Further strengthening cooperation with international organizations and countries (e.g., Switzerland) in studying and implementing advanced international practices in water resources management and taxation.

Water scarcity in Uzbekistan is one of the most pressing problems of our time, posing a serious threat to sustainable socio-economic development. This article analyzes the causes and consequences of water scarcity, as well as the current system of taxation for the use of water resources and the significance of the new Water Code in this regard. An analysis of international experience has shown that tax mechanisms play an important role in ensuring the rational and efficient use of water resources. The proposed mechanisms, such as differential and progressive tax rates, increased fees and fines for water pollution, and targeted allocation of tax revenues, can create a solid foundation for optimizing the use of water resources, encouraging water conservation, and developing water infrastructure in the conditions of Uzbekistan. Although there are certain difficulties in introducing these mechanisms, their gradual, thoughtful, and public implementation has the potential to ensure the country's water security, achieve sustainable development, and preserve water resources for future generations. The new Water Code serves as a solid legal basis for these reforms and creates the basis for improving water management through economic means.

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