

## Analysis of Water Prices and Market Mechanisms in the Republic of Uzbekistan, Prospects in the Near Future

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**Abstract:** In this article, water prices and market mechanisms in the Republic of Uzbekistan are comprehensively studied, their current situation is clarified, and prospective changes in the present and near future are studied. As a Central Asian country facing water shortage problems, Uzbekistan has launched various initiatives to solve water resource management problems. The study analyzes existing water pricing structures and market mechanisms, explaining in detail their efficiency, equity and sustainability.

**Keywords:** water resources, water prices, market mechanism, Uzbekistan, industry, farmers, innovation, technology.

As in many countries of the world, the shortage of drinking water is one of the urgent problems in Uzbekistan. It is not difficult to understand that the level of drinking water supply of the population is 74.4 percent. In particular, the supply of drinking water in Surkhandarya and Jizzakh regions is around 60%.<sup>1</sup>

Drinking water is primarily a limited resource. In addition, it belongs to the category of very expensive social costs. Therefore, in order for water to reach everyone, it is first necessary to save it at the national level. With this in mind, the importance of efficient pricing and market mechanisms in solving the above water problems is very high.

### 1-appendix

<b>Supply of drinking water to apartments (houses) by region</b>					
<i>by the end of the year, in % of total apartments (houses).</i>					
*) Calculated according to the results of the gross calculation conducted by the enterprises of "Uzsuvtaminot" JSC					
<b>Areas</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
Republic of Uzbekistan	<b>82.5</b>	<b>81.4</b>	<b>67.4</b>	<b>68.3</b>	<b>71.6</b>
Republic of Karakalpakstan	69.6	67.7	56.7	57.5	66.1
Andijan	89.8	91.9	82.3	77.3	79.4
Bukhara	61.0	57.7	41.7	50.9	55.6
Jizzakh	74.1	70.3	72.7	63.2	63.8
Kashkadarya	82.1	73.9	34.8	35.8	37.1

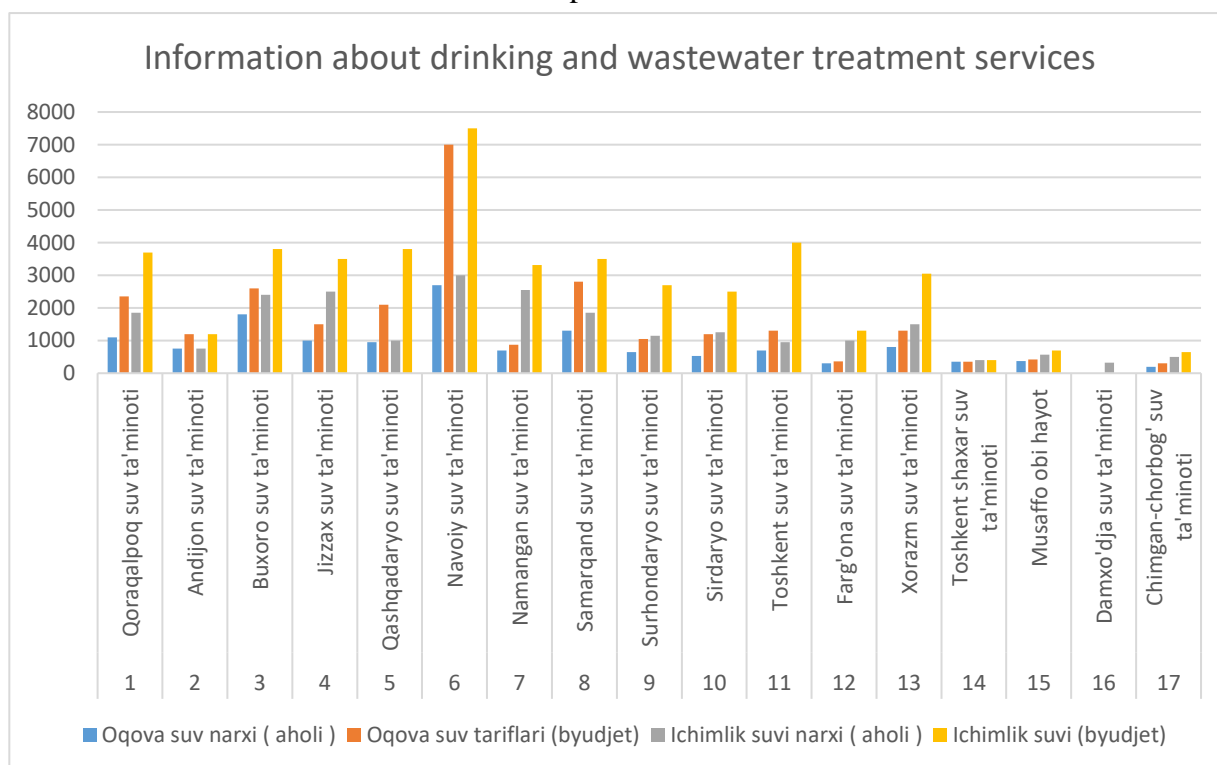
<sup>1</sup>stat.uz. Supply of drinking water to apartments (houses) by region. It was calculated according to the results of the general competition held by "Uzsuvtaminot" JSC enterprises.

Navoi	79.3	80.1	75.7	72.5	76.1
Namangan	75.9	77.5	87.2	85.5	86.2
Samarkand	84.6	86.6	58.7	63.7	64.5
Surkhandarya	81.3	80.5	72.5	78.4	80.2
Syr Darya	80.5	82.4	82.2	84.0	82.4
Tashkent	81.2	78.8	74.0	75.4	78.9
Ferghana	91.2	89.8	68.8	68.7	72.4
Khorezm	63.6	67.5	40.6	40.6	61.3
Tashkent c.	99.9	100.0	98.1	97.2	96.9

According to the development strategy of New Uzbekistan for 2022-2026, approved by the Decree of the President of the Republic of Uzbekistan No. PF-60 of January 28, 2022:

- to increase the level of provision of drinking water for the population of the republic to 87%, to update wastewater systems in 32 large cities and 155 district centers;
- information that development of project proposals and improvement of drinking water supply are defined as the main target indicators at the citizens' meetings of 4,658 partially supplied with centralized drinking water and 2,263 neighborhoods that are not provided with centralized drinking water and acceptance for execution;

provided.<sup>2</sup>



1-figure

Based on the information of the Uzsvtaminot company this year, 2023, the regions for water prices, waste water and drinking water will be as follows: (Fig1)<sup>3</sup>

Based on the above data, the lowest indicator is the Damkhoja water supply located in the Bukhara region, which is the lowest indicator in both drinking water prices and wastewater

<sup>2</sup> Decree of the President of the Republic of Uzbekistan, dated 24.05.2022 No. PQ-257

<sup>3</sup> According to the order of the Cabinet of Ministers of the Republic of Uzbekistan dated February 13, 2023 No. 05/1-4774, the amounts of special surcharges for drinking water and separate sewage services in 2023 are 50 som/m<sup>3</sup> for the Republic of Pakistan and regions and 100 som/m<sup>3</sup> is set for the city of Tashkent.

prices. Navoi water supply has maintained its superiority over other regions with the highest indicator.

It is known that today in Tashkent, residents pay 400 soums for 1 cubic meter (1000 liters) of drinking water, and 350 sms for sewage services. The current tariff was changed 3 years ago, and today, due to the increase in the value of the factors that determine the cost of drinking water, payments for drinking water provided to the population do not cover their costs. Taking this into account, the People's Deputies of the city of Tashkent submitted to the Tashkent City Council the price of 1 som 40 tiyin for 1 liter of drinking water (actually 40 tiyin) and 1 som (actually 35 tiyin) for waste water. . That is, now it is expected that consumers in the capital will pay 1,400 soums for one cubic meter of water, and 1,000 soums for wastewater.

The prices of water and sewage, which are expected to increase in Tashkent, remain lower than the prices of the same day in some other regions of the republic. (Appendix 2)

## 2-appendix

№	Regions	Wastewater price (population)	Wastewater tariffs (budget)	Drinking water price (population)	Drinking water (budget)
1	Karakalpak water supply	1100	2350	1850	3695
2	Andijan water supply	750	1200	750	1200
3	Bukhara water supply	1800	2600	2400	3800
4	Jizzakh water supply	1000	1500	2500	3500
5	Kashkadarya water supply	950	2100	1000	3800
6	Navoi water supply	2700	7000	3000	7500
7	Namangan water supply	700	875	2550	3315
8	Samarkand water supply	1300	2800	1850	3500
9	Surhondarya water supply	650	1050	1150	2700
10	Syrdaryo water supply	530	1200	1250	2500
11	Tashkent water supply	700	1300	950	4000
12	Fergana water supply	300	365	1000	1300
13	Khorezm water supply	800	1300	1500	3050
14	Tashkent city water supply	350	350	400	400
15	Clean life	370	420	565	700
16	Damhodja water supply	0	0	320	*
17	Chimgan-chorbog water supply	200	300	500	650

What will be the economic impact of changes in fresh water prices for various stakeholders, including farmers, industry and urban consumers?

Changes in water prices today can have significant economic impacts on various stakeholders, including farmers, industries, and urban consumers. Here is an overview of the possible effects on each group:

### Farmers:

- Production costs. Farmers rely mainly on water for irrigation. Any increase in the price of water directly affects their production costs. Higher water prices can increase the cost of planting, growing and harvesting crops, which can reduce profit margins for farmers.

- Selection of crops. High water prices may influence farmers to reconsider the types of crops they grow. They can switch to more water-efficient crops or invest in technologies that optimize water use.
- Income volatility. Fluctuations in water prices can contribute to the variability of farmers' incomes. If the price of water rises during critical stages of the growing season, it can affect yields and thus farmers' incomes.

#### **Industry:**

- Operating expenses. In particular, industries that rely on water-intensive processes will experience increased operating costs if water prices rise. Industries such as manufacturing, mining and power generation may face higher costs in production processes.
- Supply chain impact. Industries that are highly dependent on water resources may see disruptions in their supply chains. Rising water prices can affect the availability of raw materials and resources, making it difficult to maintain efficient production processes.
- Innovation and efficiency. Rising water prices can encourage industry to invest in water-saving technologies and cost-minimizing practices. This can lead to innovations in water management and conservation.

#### **Urban consumers:**

- Cost of living. Changes in water prices directly affect the cost of living of urban consumers. An increase in the price of water can lead to an increase in utility bills, which can affect household budgets.
- Consumer behavior. Consumers may change their behavior in response to higher water prices. This may include adopting water-saving appliances, reducing water consumption or requiring local authorities to adopt more sustainable water practices.

**Government Policy:** Changes in water prices can affect government policies related to water management and conservation. Authorities can take measures such as limiting water use, promoting water-saving technologies, or investing in alternative water sources.

In all cases, effective water management policies and strategies are essential to balance the needs of these stakeholders. Governments, businesses and communities must work together to ensure sustainable and equitable access to water, taking into account the social, economic and environmental aspects of water management.

In recent years, there have been general trends and specific cases of rising water prices globally, including in developed and developing countries such as the United States, Australia, Brazil, India, China, and Iraq. Some of the factors contributing to this growth include water scarcity, population growth, climate change, infrastructure maintenance costs, and economic factors. Let's look at a few examples:

**Australia.** Australia faces significant water challenges, including drought. In some areas, high water consumption has introduced tiered pricing structures that lead to higher prices. This encourages residents and businesses to use water efficiently. In addition, Australia has invested in water recycling and desalination projects to increase its water supply.

**Singapore.** Despite being a small city-state with limited freshwater resources, Singapore has successfully implemented a comprehensive water management strategy. The country uses a combination of water pricing, public education campaigns and advanced technologies such as NEWater (purified recycled water) and desalination to ensure water sustainability.

**United States.** In some parts of the United States, water pricing strategies vary by region. Some regions have adopted tiered pricing structures similar to Australia, while others use market-based approaches. In California, for example, water agencies have used pricing mechanisms to encourage conservation during droughts.

Using the methods used by these countries, the cases and proposals that Uzbekistan can use in this situation are as follows:

- Investment in infrastructure. Funding for the development and maintenance of water infrastructure, including water treatment plants, distribution systems, and storage facilities.
- Regulation and application. Implement water regulations to ensure compliance with conservation measures. This may include setting standards for industrial and agricultural water use and imposing fines for violations.
- Promotion of research and innovation. Investing in research and development to find innovative solutions for water management. This includes water treatment technologies, efficient irrigation systems and sustainable agricultural practices.
- Public awareness and education. Educating citizens about the importance of water conservation and ways to reduce water consumption in everyday life.
- Adoption of water-saving technologies. Implementation of technologies that reduce water consumption in production processes. This includes adopting water recycling and reuse systems and water-saving equipment.
- Water testing. Conduct regular water audits to identify areas of water shortage in industrial processes. This helps identify areas for improvement and optimization of water use.
- Investing in sustainable practices. Support and adopt sustainable business practices that minimize water waste. This may include sourcing materials responsibly and choosing suppliers with environmentally friendly water practices.
- Study of alternative water sources. Explore and invest in alternative water sources such as rainwater harvesting, wastewater treatment and desalination to diversify water supplies and reduce dependence on conventional sources.
- Using accurate agricultural methods to optimize irrigation, applying the right amount of water at the right time. This reduces water wastage and increases productivity.
- Transferring the entire agriculture to drip irrigation. Replacing traditional irrigation methods with drip irrigation systems, which are more efficient in delivering water directly to the root zone of plants, minimizing losses through evaporation.
- Crop selection and rotation. Encourage crop selection based on local water availability and promote crop rotation practices to improve soil health and reduce overall water demand.
- Participation in water resources management programs. Collaborate with government-led water management programs to support and encourage farmers to adopt water-efficient practices.
- Investing in water conservation: Investing in on-farm reservoirs to collect and store rainwater for agricultural use during periods of drought.

Cooperation between government, industry and farmers is essential for effective water management. A commitment to sustainable practices, technological innovation and water conservation can contribute to a more resilient and water-efficient society. In addition, providing financial incentives or subsidies for the introduction of water-saving technologies and practices can further encourage widespread adoption.

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