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Legal Issues Of Reuse Of Water Resources

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Abstract

This article examines the legal aspects of water resource reuse, focusing on the regulatory frameworks, challenges, and opportunities associated with sustainable water management. It reviews existing national and international laws governing water reuse, highlights gaps and inconsistencies, and explores the implications for environmental protection, public health, and economic development. Special attention is given to the legal mechanisms that support or hinder the implementation of water reuse projects, as well as the rights and responsibilities of stakeholders. The study underscores the need for comprehensive and adaptive legal approaches to facilitate effective and safe water reuse, promoting resource conservation and addressing growing water scarcity.

Keywords: Water reuse, legal regulation, water resource management sustainable development, water scarcity.

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1. Introduction

In recent years, the Republic of Uzbekistan has been implementing systematic measures to green up settlements and expand green areas. In order to protect trees and shrubs, a moratorium on the felling of valuable species of trees and shrubs, as well as increased responsibility for illegal felling, also serve the purpose of preserving and further expanding green areas in our country. Greening (i.e. planting trees, flowers, lawns and other plants) is of particular importance in reducing the environmental burden on settlements as a result of the large-scale investment activity in our country, the sharp expansion of industrial production, construction, urbanization and creative activity. Greening is an important factor in providing settlements with clean air, mitigating climate change and ensuring sustainable development of regions.

In our republic, the "Green Space" nationwide project aimed at increasing tree plantations is being implemented in accordance with the Decree of the President of Uzbekistan No. PF-46 dated December 30, 2021 " On measures to accelerate greening in the republic and further effectively organize tree protection." This decree also provides for the issue of "revising the tree irrigation system and ensuring its effective functioning," which is not without reason. In the conditions of increasing water resource scarcity, increasing the efficiency of water resource use by saving water and reducing its waste is one of the most important tasks facing us. The use of treated wastewater in greening is a very good opportunity to save resources, stabilize water supply, and increase environmental efficiency. In the experience of foreign countries, treated wastewater is widely used in agriculture and greening territories. For example, the Gulf Cooperation Council (GCC) use of treated wastewater in countries (~1.8 billion m³/year) has become an important

direction for saving fresh water. The use of treated wastewater is also used in the experience of the United States and European countries.

In our country, as part of measures aimed at preventing water shortages, serious attention is being paid to the issue of wastewater use. In particular, the Decree of the President of the Republic of Uzbekistan dated September 11, 2023 The development of wastewater management is planned in the "Uzbekistan - 2030" strategy, approved by Decree No. PF-158. The President's Decree No. PF-16 of January 30, 2025 on the State Program for the Implementation of the "Uzbekistan - 2030" Strategy in the Year of Environmental Protection and "Green Economy" set the goals of implementing a harmonious "green transformation" of sectors and industries and transitioning to a new "green development" model of economic growth. One of the goals was to improve the ecological image of neighborhoods, increase the level of greenery on the streets, and create an environmentally friendly and prosperous living environment, including the effective use of rainwater and wastewater.

The legislation of our republic stipulates the conditions for repeated use of water for greening of territories.

Wastewater is water that is consumed by humans for domestic, industrial, or agricultural purposes and is discharged as waste after use. It contains various pollutants (organic, chemical, and mineral) and microorganisms and requires treatment before being released into the natural environment. Using wastewater without treatment can harm the environment and human health.

Wastewater comes from a variety of sources:

Domestic wastewater - water used in the household (for example, washing, washing dishes, toilet).

Production (industrial) wastewater is waste water after technological processes in plants and factories.

Rain and snow flows are water flows that appear after rain or snow melt, water that flows from streets and roofs.

Akava waters own in the composition various substances to keep possible:

- ✓ Organic matter (for example, food residues, pollutants)
- ✓ Inorganic substances (salts, sand, metals)
- ✓ Microorganisms (bacteria, viruses and others)
- ✓ Harmful chemical substances (industry akava in the waters)

Akava waters for reuse or return to the natural environment (runoff water) from being expelled before special in buildings clean nadi. This process usually consists of several steps:

- ✓ Mechanical cleaning (separation of large waste)
- ✓ Biological cleaning (bacteria using organic substances loss)
- ✓ Chemical cleaning (special) substances joined harmful substances loss

Akava the waters cleaning complicated, many gradual process is ecological balance to keep and to the environment the effect to reduce directed. Modern technologies not only water effective clean it up again use possible gives, this and global water shortage under the circumstances is important. For example, in Tashkent city there are 3 water treatment plants that process (treat) sewage water. The Bozsu water treatment plant is located in the Zangiota district of Tashkent region and processes 600-620 thousand cubic meters of water per day. This on the ground sewage water in 5 districts of the capital again is processed. Sergely in the district located Sal a r water cleaning facility and sewage water of 6 districts cleans. New organization New life District sewage both to this very facility redirection intended. The Bektemir water treatment plant is designed to process water only from the sewage systems of the Bektemir district. The largest of the water treatment plants is Salar, which is the largest water treatment plant in Central Asia. Sewage water entering the facilities from the districts is treated in the following stages: sedimentation, settling, sludge removal, oxygenation and disinfection with hypochlorite. Chlorine production workshops operate at each wastewater treatment plant. Chlorine produced in the workshops is used to purify and disinfect water. Waste in water coming from the city is separated in special large and small screens and sent to farms. That is, this water is used as feed for crops.

The wastewater treatment plants treat about 2 million cubic meters of water per day from the population. This includes water that is not only purified from the population but also from nearby industrial enterprises. According to experts, the amount of waste in water from

enterprises is higher than the amount of pollution in water from the population.

Water in these facilities natural road with will be cleaned and special in the laboratory from inspection will be held. Again worked water use for suitable is considered Him consumption as if not, in the landscaping of settlements, fishing in basins, in agriculture use can Cleaned up waters Bozsu, Salor channels, Chirchik river through city around irrigated to the lands is issued.

Akava from the waters correct use one row advantages gives:

1. Cleaned water from the waters reuse, natural of the waters consumption reduces.

2. Recycled water may contain substances such as nitrogen and phosphorus, which also act as "fertilizers" for growing plants.

3. After wastewater treatment again application of the sewage system annual download reduces.

4. Beneficial reuse of wastewater without sending it to forced emissions reduces pressure on natural ecosystems.

The article we are analyzing stipulates that the use of wastewater for landscaping areas is allowed only if there is a positive conclusion from the environmental authorities and in agreement with the sanitary and epidemiological well-being and public health authorities. This is due to the presence of certain risks in the use of wastewater and the need for strict control over their use. For example, bacteria, viruses and parasites that may be found in wastewater can pose a threat to human health if the water is not fully treated. Or, recycled water (wastewater), if it is too salty, can increase the electrical conductivity and sodium content in the soil, which can have a detrimental effect on the soil. A two-year observation in Italy showed that the sodium content and electrical conductivity of lawns where treated wastewater was used increased. This situation certainly requires caution when reusing wastewater.

Within the framework of the urban planning norms and rules of the State Committee for Architecture and Construction of the Republic of Uzbekistan, on December 23, 2009, the Resolution "Urban planning. Planning for the development and construction of urban and rural settlements" was adopted. Document No. 2.07.01-03 was approved. Paragraph 273 of this document states that “surface waters (canals, rivers, lakes, reservoirs), underground - seepage waters and wastewater purified in sand filters of the sewage system are used as water sources for irrigation of settlements.” If we take into account that these norms and rules apply to the design of new urban and rural settlements and the reconstruction of existing ones, then the use of wastewater is one of the main requirements for taking into account in the planning and construction of settlements.

In our country, great attention is paid to studying the experience of foreign countries in the application of wastewater treatment and reuse technologies. In particular, the Jokaso technology purification system, financed by the Japanese government and implemented in Karakalpakstan in cooperation with the UNDP and the Ministry of Agriculture of Uzbekistan, makes wastewater safe and allows it to be reused in agriculture. From March to July 2025, 16,400 cubic meters of wastewater were purified through three Jokaso systems in Karakalpakstan. This and 12-13 hectares of land to irrigate meat water reserve means This system is economical and expensive of constructions ahead take, institutions and families for financial ease created.

Japan, UNDP and Uzbekistan government cooperation through this experience of the country other water to the lack of shower coming in the territories both wide current being planned.

Today climate change, water shortage like serious problems with for our Republic, which is facing us, to clean and reuse wastewater for irrigation purposes, safe, green and stable life creation for wonderful It is an opportunity.

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