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«S.Seifullin Kazakh Agrotechnical
Research University»



Water resources management policy

Astana 2025

Introduction

Climate change, population growth, and anthropogenic pressure have a serious impact on global water resources: they worsen the problem of water scarcity, disrupt precipitation patterns, and disrupt the entire process of water circulation in nature. All of this has a significant negative impact on ecosystems, the economy, and human health.

Kazakhstan is a "water-dependent" country, with only 2.8% of the territory covered by water, while two thirds are occupied by arid zones. A significant part of the water resources (more than 40%) comes from neighboring countries, which is why the issue of using transboundary rivers is vital for our country. According to UN estimates, by 2040, Kazakhstan's water needs will be covered by only half, which means a significant shortage of water resources. This is due to an increase in demand for water and a decrease in its availability, which can slow down the socio-economic development of the country and pose a threat to national security. Realizing the critical nature of the issue, our Government is taking serious measures.

In 2023, the Ministry of Water Resources and Irrigation was established, and in 2024, the Concept for the Development of the Water Resources Management System of the Republic of Kazakhstan for 2024-2030 was approved. As part of its creation, we conducted a comprehensive analysis of water consumption in all sectors of the economy of Kazakhstan. According to the analysis, on average 4.3% of the total water intake is used for municipal needs, of which 60.5% is from surface and 39.5% from underground sources. The utility sector has seen a slight decrease in water losses from 15.8% in 2020 to 15.4% in 2022. This has shown that an integrated approach to the country's water resources management is needed, water resources management is part of broader social, political and economic developments, and thus it also depends on the decisions of actors outside the water resources management sector.

The effectiveness of managing one's water resources determines the level of human health, the success of a country's economy, the sustainability of its natural environment, and its relations with neighboring countries. Rational management of water resources brings tangible benefits for the country.

Regulatory framework

Several regulatory documents and legislative acts regulating the use of water resources and their accounting are used to assess water consumption in Kazakhstan.

1. The Water Code of the Republic of Kazakhstan is the main regulatory act regulating the use and protection of water resources in order to ensure the rational use of water for the needs of the population, economic sectors and the environment, protection of water resources from pollution, clogging and depletion, prevention and elimination of harmful effects of water, strengthening the rule of law in the field of water relations.

2. The Law of the Republic of Kazakhstan "On Water Supply and Sanitation" - establishes the legal basis for providing water supply and sanitation for various consumers.

3. Sanitary Norms and Regulations (SNR) – establish maximum permissible water consumption rates for various categories of users, including educational institutions, healthcare and other organizations. These standards serve as the basis for calculating water consumption at the level of individual institutions.

3. Methodological recommendations on accounting for water consumption are documents developed by the Ministry of Ecology, Geology and Natural Resources, regulating the procedure for accounting and reporting on water use.

5. Order of the Ministry of Health of the Republic of Kazakhstan – establishes requirements for water supply and sanitation, as well as conditions for ensuring the quality of drinking water.

6. Industry Standards (SNiP) – contain standards for water consumption for various buildings and structures, taking into account their functional purpose and operational features.

The main objectives of these documents are to prevent water scarcity and preserve ecosystems, provide the population with high-quality drinking water, improve the water resources management system, modernize and develop the water supply and sanitation infrastructure. They ensure uniformity in approaches to assessing water consumption and make it possible to organize effective control over the use of water resources in the country.

Water resources management policy

1. General provisions

1.1. This Policy establishes the principles and measures of rational use of water resources at the Saken Seifullin Kazakh Agrotechnical

Research University (hereinafter referred to as Seifullin University) in order to reduce water consumption, save resources and minimize the negative impact on the environment.

1.2. The Policy is aimed at creating a sustainable water management system that meets the requirements of the legislation of the Republic of Kazakhstan and environmental standards.

2. Goals and objectives

2.1. Main objectives of the Policy:

- Ensuring efficient and responsible use of water resources;
- Reduction of water consumption through the introduction of modern technologies and practices;
- Improving the environmental culture of staff and students.

2.2. Tasks:

- Analysis of current water consumption and identification of inefficient flow areas;
- Implementation of water consumption accounting and control systems;
- Training and informing staff and students about saving water;
- Development of measures for reuse and purification of water.

3. Principles of rational use of water

3.1. Compliance with norms and standards of water consumption.

3.2. Priority of using technologies that reduce water consumption;

3.3. Prevention of water losses and elimination of leaks;

3.4. Ensuring transparency and responsibility in water resources management.

4. Measures for the rational use of water resources

4.1. Monitoring and accounting of water consumption in all departments of the University.

4.2. Implementation of water-saving equipment (touch taps, water reuse systems, etc.).

4.3. Regular maintenance and repair of plumbing systems to prevent leaks.

4.4. Organization of educational events (seminars, conferences, trainings) on water conservation.

4.5. Development and implementation of a system for stimulating responsible water consumption.

5. Responsibility

5.1. The heads of all departments of the University are responsible for the implementation of the policy.

5.2. Control over the implementation of the policy is assigned to the Department for Infrastructure Maintenance of Seifullin University.

5.3. Violations of the policy requirements may result in disciplinary measures in accordance with internal regulations.

6. Final provisions

6.1. The Policy is subject to review and update at least once every three years, taking into account changes in legislation and technological capabilities.

6.2. All staff and students are required to comply with the provisions of this Policy.

Water Resources Management Policy implementation plan

The goal of Seifullin University in the field of water consumption is the maximum rational use of water resources. We strive to reduce water consumption and reduce water supply costs. We have already begun to take certain measures to do this and plan to fully switch to a model that reduces water consumption by 20% over the next 5 years.

❖ For the rational use of water, the Seifullin University Infrastructure Maintenance Department conducts systematic monitoring of tap water consumption based on installed water measuring devices (water meters) and timely troubleshooting at water intake points and nodes, which allows monitoring the process of using water resources.

❖ Starting in 2024, a phased replacement of ordinary faucets with touch-controlled faucets has begun in academic buildings and dormitories, which saves on water consumption and sanitation. It is planned to completely replace faucets in all campuses and dormitories by 2030.

❖ On the territory of all campuses of Seifullin University, irrigation of plants is carried out by the rotary method, which makes it possible to irrigate large areas. Rotary irrigation is resistant to wind, evenly distributes moisture without the formation of puddles and over-dried areas. Rotary systems allow precise adjustment of the irrigation radius and sector, maintain optimal soil water balance, and are suitable for lawns and large

open areas. By 2030, Seifullin University plans to establish a drip irrigation system for shrub and woody plants on campus. This method is the most economical, it ensures uniform moistening of the soil directly in the root zone of plants, which contributes to the better development of the root system and protection from stress. Since the drip irrigation system supplies water at low pressure, the risk of soil erosion, root exposure, and water leaching is reduced. The slow distribution of water allows the soil to absorb it.

❖ It is planned to raise awareness among students and University staff about the importance of water conservation through information campaigns and educational events. The development of educational course programs on water conservation, water reuse, and environmental responsibility has begun.

❖ Implementation of courses on sustainable use of water resources in the University's educational programs. Since 2024, a new educational program 6B08401 Aquaculture and Water Resources has been introduced at Seifullin University. https://epvo.kz/#/register/education_program/application/60378. The educational program is aimed at training highly qualified personnel in the field of intensification and technology of cultivation of aquatic organisms in fish farms, as well as mastering the basics of rational use of aquatic biological resources.

❖ It is planned to expand cooperation with International Organizations on water conservation issues.