International Journal of Diplomacy and Political Relations, 2025, 10-15
https://pubjournals.com/IJDPR
Volume: 2 | Number: 2 (2025) April

Subject and Methods of Groundwater Protection and Use

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Received: 21-02-2025
Accepted: 21-03-2025
Published: 21-04-2025

Abstract

It is necessary to clearly define the subject and legal methods of groundwater protection and use in legal documents, and to develop a mechanism for their implementation. Groundwater plays an important role in maintaining ecological balance, ensuring economic stability, and protecting resources necessary for the supply of drinking water to society. Legal regulation of groundwater is not only an important mechanism for ensuring environmental safety, but also a key mechanism for controlling their fair and sustainable use, preventing pollution, and taking necessary precautionary measures. This article analyzes the subject and legal methods of regulating groundwater protection and use.

Keywords

Groundwater, Subject, Methods, Natural Resources, National Legislation, Mining Law.

Introduction

Each natural object and natural resource is unique in the variety of functions it performs for society and nature. The task of law is not only to perceive and reflect this uniqueness in legal norms, but also to ensure the uniqueness of the protection of this or that natural object and thereby contribute to the rational use of its natural resources.

Groundwater determines the resistance of the subsoil to anthropogenic influences, the state of the earth's hydrosphere and other ecosystem objects. We can see the inextricable connection of groundwater with many natural components, their impact on the state of the environment, the state and implementation of the environmental rights of citizens. Russian scientist V.I. Vernadsky defines “an important feature of groundwater as an integral part of many processes occurring in nature and their role as an object of ecological and natural resource relations” (Vernadsky, 1960).

The main regulatory legal document for the protection, preservation and control of the environment in Uzbekistan is the Law "On Nature Protection", Article 2 of this Law is called "Nature Protection Objects and Protected Natural Areas", and in accordance with its paragraph 1, it is established that "Nature Protection Objects (land, subsoil resources, water, flora and fauna, atmospheric air) must be protected from pollution, degradation, damage, depletion, destruction, extinction, and irrational use" (lex.uz. Thus, groundwater is an object of nature protection and ecological relations within the water fund.

Methods

There are different opinions in the scientific literature about which area of ecological law the use of groundwater and its legal protection belongs to. Several approaches have emerged among scientists on this issue, and debates are still ongoing.

One group of russian scientists **(A.A. Ruskol, N.A. Sirodoev, L.A. Zaslavskaya)** believes (Golovina, 2023). that the issue of legal regulation of groundwater belongs to two areas at once - mining law and water law. In their opinion, groundwater is related to mining law because it is located deep in the earth, but since its main function is a source of water, it is also regulated within the framework of water law (Goldfarb, 2020).

Other scientists **(for example, O.S. Kolbasovna, T.Y. Titovnina)** approach this issue differently. According to their firm opinion, groundwater is only an object of water law, and it is scientifically incorrect to include it in mining law. They believe that groundwater should be valued and managed as a natural resource, specifically within the water resources system.

Thus, there is no single approach to the legal status of groundwater. The approaches of science to this issue have not yet been consistently formed, and whether they should be assessed within the framework of water law or together with mining law remains an open question in science. The emergence and development of discussions about which area of ecological law includes the use and protection of groundwater originated in the period of discussion and formation of natural resources legislation in the 60s-80s of the last century. Thus, A.A. Ruskol and L.A. Zaslavskaya believed (Zaslavskaya, 1977) that the legal regulation of groundwater should have a dual character, that is, if the issues of legal regulation of the use and protection of groundwater are separated between these areas of law, then they should be subordinate to both areas of water and mining law.

American scientist Samuel Mandel considers groundwater to be a type of water that can be located both in the depths of the earth and on the surface, and can flow from the depths of the earth to the surface and vice versa. Consequently, he argued that the legal regime of groundwater should be subordinate to the regime of the subsoil in terms of the integrated use of the subsoil, the protection of underground structures from the harmful effects of water, as well as the search and exploration of groundwater (Mandel, 2012).

In addition, the protection of groundwater, the procedure for their use and legal relations related to them are usually carried out using the subsoil. Therefore, it would be more correct to regulate such waters not only within the framework of water law, but also on the basis of mining law, that is, through legislation related to subsoil resources.

The management of groundwater through mining structures is in harmony with their natural state, mechanisms of formation and measures for their protection, and provides a

systematic approach (Raghavendra et al, 2015). Therefore, we believe that it is necessary to regulate them within the framework of mining law.

In our opinion, waters located in the depths of the earth, that is, groundwater, by their nature are directly part of the subsoil and should be considered as subsoil resources. Since they are located between the layers of the earth and are inextricably linked with rocks, it is appropriate to evaluate them not as a separate water resource, but as part of the system of subsoil resources.

At the level of state policy, we can see in reforms that all ecosystems are interconnected and form a coherent chain. Accordingly, through the interdependence of environmental elements, they create life on Earth and provide favorable conditions for living creatures. As part of this, the conservation and rational use of groundwater is largely dependent on the rational use of other natural objects, their natural resources, and the environment as a whole.

The use and protection of groundwater is the subject of legal regulation of this area. **We can divide it into two: direct and indirect subjects** (Burchi, 2017). The direct subject is the process directly related to the use and protection of groundwater (the use of well water in everyday life or the use of borehole water with the installation of meters).

The object of the indirect subject is activities that do not have a direct relationship with groundwater, but have an indirect impact (mining of minerals, placement of hazardous waste underground, etc.). Groundwater as an object of ecological relations is manifested in several different forms: 1) as a whole natural object; 2) natural objects and components; 3) as part of groundwater in the form of geothermal or mineral waters (Lachassagne, 2021).

Theoretical and legal relations of the interaction between society and nature form the basis of environmental law and have repeatedly been the subject of discussion in the field (Delaney, 2003). Groundwater as an object of legal regulation determines the specific features of the subject of legal regulation of relations in the field of groundwater use and protection, which is determined by the fact that **groundwater belongs to several natural components at once: water, subsoil, land** (Yazicigil, 2020). These natural components correspond to separate - "specific" branches of natural resource law and legislation. Scientists have noted that each of the branches of natural law is primarily associated with one natural object in its existence. However, the absence of a separate branch of law and legislative acts devoted to the legal regulation of groundwater does not reduce the importance of groundwater in ensuring the socio-economic development and environmental safety of the state.

Until recently, the problems of groundwater protection and use were poorly regulated. The increasing anthropogenic load and the lack of standards for ensuring effective groundwater protection have led to the problems of a shortage of clean drinking water and the inability to adequately meet the needs of water-intensive industrial enterprises (Burri et al, 2019).

Groundwater is used for various purposes. For example, for drinking water supply, recreation and treatment (recreational and sanatorium purposes), water supply for industrial enterprises, and in the fuel and energy sector. This multifaceted use requires the application of laws related to groundwater not only to one sector, but also to various other legal areas and legislative acts.

Results and Discussion

Based on this, we can say that the protection of groundwater and its rational use are of

several types. First of all, the main thing is to establish a legal order in the field (Younger, 2009). In our country, the legislation related to groundwater is regulated, first of all, by the Constitution of the Republic of Uzbekistan, the Laws on Nature Protection and on Water and Water Use, a number of resolutions of the Cabinet of Ministers of the Republic of Uzbekistan and internal regulations. It is expected that the draft Water Code, which is currently under discussion, will be included in these. They are mainly composed of imperative norms.

Currently, social relations in the field of water resources management, use and protection are regulated by about 10 legislative acts, as well as more than 20 subordinate legal acts (parliament.gov.uz).

Although these documents are the basis for the legal regulation of water relations, they have not been able to sufficiently ensure the formation of a single coordinated system of water legislation. Based on this, the draft Water Code, developed to create a single legal document in the field of water and water use, reflects a number of important norms. In particular, norms are being established aimed at rational use of water, increasing the responsibility of water suppliers and water consumers, and simplifying the procedure for obtaining permits for water use.

Secondly, state control, cadastre and monitoring systems in groundwater management are necessary tools for maintaining ecological stability, ensuring proper management of water resources and preventing groundwater pollution. These systems regularly monitor the quality, quantity and use of groundwater. This, of course, plays an important role in the management, regulation and protection of the sector. In particular, the initiatives of the head of state are important in the development of this method. The Decree of the President of the Republic of Uzbekistan "On the State Program for the Implementation of the Strategy "Uzbekistan — 2030" in the Year of Environmental Protection and "Green Economy"" set the following tasks for providing the population with drinking water in the sector:

"Construction and reconstruction of 1.8 thousand kilometers of drinking and wastewater networks, 77 drinking and wastewater facilities;

Replacement of 746 obsolete pumping equipment in the drinking water system with energy-efficient ones, installation of 65.2 megawatt solar panels in the regions, installation of 955 modern water meters in water facilities and main water networks;

Conduct quality monitoring and creation of data management centers at all drinking water supply enterprises;

Ensure enhanced control over the discharge of various pollutants into rivers, lakes and canals" (The Decree of the President of the Republic of Uzbekistan). All of this has raised the issue of the welfare and health of our people and satisfying them by providing them with quality services to the state level.

Thirdly, it is necessary to increase the environmental culture of groundwater users. The indicators of the implementation of legislation in states and their full compliance with them are reflected in the legal culture of citizens. Compliance with environmental regulations is reflected in the environmental legal culture of citizens. Increasing environmental culture among citizens is the process of forming environmental awareness, careful treatment of natural resources, ensuring environmental safety and developing responsibility for environmental protection.

Today, environmental problems, climate change and resource depletion are becoming increasingly serious on a global scale, therefore, increasing environmental culture is becoming a

priority task not only for states and international organizations, but also for every citizen. Increasing environmental culture requires the formation of a responsible and conscious attitude towards the environment of every citizen. For the effective implementation of this process, education, propaganda, legislation and active participation of the public are necessary. Improving ecological culture is important not only for nature protection, but also for ensuring sustainable development, strengthening social justice, and maintaining economic stability. It is an important task to educate every citizen in environmental responsibility and to educate them as environmentally conscious individuals.

Since groundwater is part of the subsoil, relations related to the use of water, land, groundwater and their protection are partly the subject of legal regulation in the fields of mining, water and land law. Therefore, on the one hand, a differentiated approach is used in the legal regulation of groundwater, based on the specific features of the legal regulation of the use and protection of individual natural resources.

On the other hand, all natural components are interconnected, and the constant use of one of them affects the use and protection of the other. As part of the rocks, groundwater remains part of a single hydrosystem (Pacheco, 2015) the state of vegetation, soil and surface water depends on the regime of groundwater use (Sophocleous, 2002). Since groundwater is a natural component, the legal regulation of groundwater is also based on an integrated approach. The simultaneous use of complex and differentiated approaches to the legal regulation of groundwater use and protection allows us to better understand the role of groundwater among other components of environmental protection, to increase the number of methods for scientific research into the problems of legal regulation of groundwater use and protection. Thus, a complex approach allows us to systematically analyze the processes associated with the use of groundwater in nature and to strengthen the relevant legal regulation in legislation. In turn, a differentiated approach allows us to more thoroughly understand the sphere of regulated social relations.

Conclusion

According to its intended use, water consumption is divided into drinking, utility, medical, resort, recreational, fishery, industrial, energy, agricultural water consumption and other types. Depending on the amount of water withdrawn from a water body, water consumption is divided into general and special water consumption. Since the mechanism of use of the above types differs from each other, as well as depending on the water structures used, a separate approach is required for each type. This would ensure full protection of groundwater and prevent the resulting deficiencies and problematic situations.

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