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ISSUES OF FURTHER IMPROVEMENT OF WATER CADASTRE LEGISLATION OF UZBEKISTAN

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ABSTRACT

The article analyzes the legal basis for maintaining the state water cadaster of Uzbekistan as one of the mechanisms for ensuring water safety reveals the essence and goals of maintaining the state water cadaster, summarizes the latest trends in improving the legal and technological foundations for the formation of water cadaster information. The author presents some scientific and practical problems related to the formation of water cadaster information, the solution of which would contribute to ensuring the transparency of water information and its reliability, and studies foreign experience in this area. Based on the analysis of the current water legislation, special legal literature, as well as foreign experience, the author substantiates proposals for further improvement of water cadaster legislation and develops three draft normative legal acts aimed at legal regulation of water cadaster management.

KEYWORDS: *State Water Cadaster, Water Monitoring, Unified Information System, Water Cadaster Information, Surface Water, Underground Water, Water Use, Information And Communication Technologies, "Smart Water", And Digitization*

INTRODUCTION

Relevance of the topic

Water is a precious and essential resource for the maintenance of life on Earth. As the foundation of life, water, through its diverse uses, continues to play a major role in addressing a broader range of challenges to achieve food security, reduce poverty and improve the quality of life in the world. That's why we need to have complete and reliable information that answers questions like: How much water do we have? What is its quality? How long will it last? What is the cost of water resources?

As global environmental crises escalate, water security, which means the ability of the population to have sustainable access to an adequate amount of acceptable water quality to support human livelihoods, well-being and socio-economic development, is an integral part of a country's environmental security.[1] Water security promotes environmental protection and social justice by resolving conflicts and disputes that arise over shared water resources. And to ensure this very safety, we must first of all be provided with reliable statistics on the state of the waters.

Today, in Uzbekistan, in the conditions of water scarcity, the issue of ensuring water security will be even more relevant. In our opinion, the following problems in the field of water resources management are relevant to this issue:

1. Reduction of water resources as a result of climate change,

2. Increased demand for water due to population and economic growth,

3. further degradation of water quality.

The main problem of today's water use is the lack of reliable and transparent statistics on water and water bodies, which are concentrated in the State water cadastre (hereinafter referred to as the water cadastre). The information available in Uzbekistan on the state of water resources is far from complete and "stale" due to the lack of modern technologies in the process of collecting, processing and storing information that allow for systematic updating of water monitoring data (we outlined the use of the latest information and communication technologies in the process of collecting, processing and storing water-cadastre information only last year!!!), its outdated methodological basis (the Regulations on the procedure for developing and maintaining the State water Cadastre of the Republic of Uzbekistan were adopted already in 1998!!!) and incomplete coverage of the quality indicators of water resources (for example, the water cadastre does not contain information about wastewater flowing into large water bodies of the country and affecting its quality). For Uzbekistan, which is moving to a digital economy, the importance of reliable statistics and figures in the life of the state and society is paramount. Even in the last century, the famous Russian writer G. I. Ouspensky, speaking about the meaning of statistics, noted: "And yet it is only in these thick, boring books that the 'real' truth of our life is told in figures, about which we have completely lost the habit of speaking in human language, and it is only necessary once to get interested in these fractions, zeros, zeros, in this generally digital grain with which statistical books and tables are littered, so all of them, all this grain of numbers, will begin to take human images and it will begin to receive the meaning not of dead and boring signs, but, on the contrary, the meaning of the most versatile image of life."[2] In addition to this metaphor, I would like to add that this "digital grain" should be justified and updated, then it will have an important practical significance in environmental protection.

The degree of scientific knowledge of the topic

Existing research in the field of legal regulation of water cadaster management in domestic environmental science addresses the issue of water cadaster management from the point of view of water fund management and is reflected in the works of such domestic scientists of environmental lawyers as Fayzieva Sh. Kh. [3], Usmonov B. M. [4], Salokhiddinova A. R.[5], Chembarisov E. I. and Rakhimova N. M.[6] , etc. Part of the national research in the field of water use is devoted to the problem of the use of transboundary water resources, in particular, the

works of KholmuminovZh. T. [7], Skripnikova N. K. [8],as a new trend of modern domestic water legislation, O. Narzullaev considered the issue of water use of biological resources in the context of the COVID-19 pandemic [9], etc.

Directly the issues of legal regulation of water cadaster management, the ratio of water monitoring, accounting and cadaster are reflected in the works of such scientists of the CIS countries as Bogolyubova S. A.[10], Kolbasova O. S.[11], Sivakova D. O.[12], Krasova O. I.[13], Budaragina L. V. and TishchenkoS. V.[14], V. A. Dukhovny, N. N. Mirzaev, A. I. Tuchin [15], Bekisheva S. D.[16], Petrakova S. V.[17] , etc.

The relationship between the water cadaster and water management stability is revealed by Philip P. Miklin, a professor at Western Michigan University. [18]

Analysis of legislation

The regulatory framework for maintaining the water cadaster consists of: the Law "On Water and Water Use", Resolution of the Cabinet of Ministers of the Republic of Uzbekistan "On Approval of the Regulations on the procedure for Developing and maintaining the State Water Cadaster of the Republic of Uzbekistan" dated January 7, 1998 No. 11, Resolution of the Cabinet of Ministers of the Republic of Uzbekistan "On measures for further streamlining activities in the field of underground water use" dated June 27, 2017 No. 430, Decrees of the President of the Republic of Uzbekistan "On measures for the effective use of land and water resources in agriculture" of June 17, 2019, No. UP-5742 and "On approval of the concept of water management development of the Republic of Uzbekistan for 2020-2030" of July 10, 2020, No. UP-6024, etc.

In accordance with article 109 of the law "On Water and Water Use", the water cadaster includes data on water accounting for quantitative and qualitative indicators, registration of water use, as well as data on water use accounting.

The main task of the water cadaster is to obtain and maintain reliable information about water resources and water bodies at the current level with minimal costs by constantly improving the technology of collecting, summarizing, storing and providing information.

The water cadaster consists of the following sections:

1) Surface water

2) Underground water

3) Water use

The water cadaster is maintained by three bodies:

1. The Center of Hydro meteorological Service under the Ministry of Emergency Situations of the Republic of Uzbekistan-under the section "Surface waters»;

2. The State Committee of the Republic of Uzbekistan on Geology and Mineral Resources-under the section "Underground waters;

3. The Ministry of Water Resources of the Republic of Uzbekistan-under the section "Water use".

In accordance with the Concept of Water Management Development of the Republic of Uzbekistan for 2020 — 2030, it is planned to improve the system of forecasting, accounting and forming a database of water resources and ensure its transparency, which is implemented through the following measures:

a) Step-by-step equipping of hydrological posts located on large and medium-sized rivers and says with automatic equipment based on digital technologies, expansion of the network of hydrological posts;

b) Improving the control and accounting of water in all water bodies on the basis of digital technologies, creating a transparent information system on water resources;

c) Implementation of the following measures for water resources forecasting, water accounting and data processing:

1) Implementation of the geoinformation system in forecasting water resources, conducting operational monitoring of water resources and improving the reliability of forecast data;

2) Standardization of data for water accounting at all water bodies;

3) Improvement of information systems for collecting and processing information about water bodies based on information and communication technologies;

4) Step-by-step implementation of water monitoring in water bodies using digital technologies, creation of a unified information system for all sources and water resources;

h) Improving the water cadaster and database management system with the help of information and communication technologies and ensuring their transparency.

In addition, this act provides for the creation of an Integrated National System of Accounting, Planning and Management of water Resources linked to the National Cadastral Database, which will ensure the openness and accessibility of data on water resources.

At the same time, the introduction of "Smart Water" technology in water use and water consumption accounting is also an important step in the further improvement of the water cadaster.

It should be emphasized that the next cadaster of natural resources after the land cadaster in the field of its digitalization is just the same water cadaster.

Practical problems of water cadaster management

1. Lack of a mechanism for economic assessment of water resources. In Uzbekistan, the procedure for assessing water resources is legally established, which means systematic accounting for quantitative and qualitative indicators both during the year and in a multi-year context through measurements with standard hydrometric devices, analysis of the reliability of the data obtained, their processing by standard methods and generalization by various territorial and temporary units, while the development of new criteria for the economic mechanism of water use, in particular, determination of the procedure for reimbursement by water consumers of state expenses for the delivery of water.

But we do not regulate the concept of "economic assessment of water resources", which includes the monetary form of the public utility of natural resources through production and consumption.

In the foreign legal literature, there are several concepts of economic assessment of natural resources, including water resources.

In particular, S. G. Strumming proposes to evaluate all natural resources by their costs for their development, the main criterion of which is net income and differential rent. [19]T. S. Khachaturov suggests estimating natural resources from the costs that we spend to get the effect of the resource used.[20]

A mixture of these two theories can be observed in the example of the Republic of Kazakhstan, where the base price of water resources is set from the ratio of the cost of protection and reproduction of water resources to the total intake from water sources.[21] At the same time, water quality is not taken into account in prices, which gives rise to a one-sided attitude to setting prices.

In the domestic environmental legislation, there is an economic mechanism for nature protection, which provides for the collection of fees for special use of natural resources, for pollution of the environment (including waste disposal) and other types of harmful effects on it; tax, credit and other benefits provided to enterprises, institutions and organizations, as well as individuals when implementing low-waste and resource-saving technologies, carrying out activities that give environmental and natural restoration effect; obtaining licenses (permits) for the right to release, discharge substances polluting the environment or to carry out other environmentally harmful activities, etc.

We support the position of the International Institute of Water Resources Management, according to which the economic assessment of water resources should be carried out in several stages in order of increasing complexity. A multi-stage

The main issues of the mechanism of economic assessment of water resources, in our opinion, should be:

1. Definition of the main criteria for economic assessment

2. Identification of the competent authorities involved in the assessment.

We propose to take the quantity and quality of water resources, the availability of irrigation structures, as well as the size of the differential rent for water use as the evaluation criteria. Note that this system of criteria is conditional, has a general character and can be updated depending on the individual properties of water resources and the powers of the competent authorities.

Recognizing that Uzbekistan's water resources and facilities are diverse in terms of water volume, background pollution, climate, geographical and landscape conditions, the development of common criteria for conducting an economic assessment of water resources is a very complex process. But at the same time, in the conditions of increasing scarcity of water resources for the purpose of rational use of the remaining resources, the regulation of the economic assessment of a natural resource is one of the main tasks of the natural resource cadastral system in the context of the transition to a "green economy".

2. There is no procedure for providing water cadaster information to interested individuals and legal entities, which prevents the full exercise of the constitutional right to receive information. In accordance with Article 17 of the Law "On State Cadastres", information from state cadastres

is provided to state authorities free of charge, and to other legal entities and individuals in accordance with the established procedure, for a fee, while the very concept of "established procedure" is not disclosed by law. The law "On Water and Water Use" and the Regulation on the Procedure for Developing and Maintaining the State Water Cadastre of the Republic of Uzbekistan do not disclose the procedure for providing water-cadastral information, which is a serious gap in the water-cadastre legislation. Article 29 of the Constitution of the Republic of Uzbekistan reads as follows:"Everyone has the right to seek, receive and disseminate any information, with the exception of information directed against the existing constitutional order and other restrictions provided for by law." If we proceed from this norm, then the lack of a mechanism for providing water-cadastre information is an obstacle to the implementation of this constitutional norm.

3. **Insufficient validity and unreliability of information on the quality of water resources**. This primarily concerns information on wastewater (in particular, information on wastewater entering the Chirchik, Akhangaran, and Bozsu rivers), which reflects the discharge of specific harmful substances into reservoirs and assesses the actual pollution of natural waters. These rivers are polluted by wastewater from many industrial enterprises, municipal and collector-drainage runoff from irrigated fields. Of particular concern are the unaccounted-for wastewater that is not provided for in the design of treatment facilities and the rules for the acceptance of wastewater and is a concentrated discharge. And with the growth of urbanization, this problem is even more urgent

4. **In the water cadastre, there is no information reflecting the socio-economic and environmental efficiency of water resources, we evaluate only its raw materials.** The time has come when it is necessary to evaluate water not as a natural good, but as a natural capital that should be multiplied.

5. **The low level of the scientific basis of the water cadastre and practical developments.** It should be noted that the modern domestic water legislation does not fully and clearly regulate water relations. And scientific research in the field of legal regulation of water cadastre management in Uzbekistan is completely absent. The legal scientific works of Russian scientists contain only references to the function of accounting for water bodies and their condition in the framework of research on the protection of water and water bodies, as well as control and supervision of the activities of citizens and legal entities in the process of water use. Some of the research is devoted to the study of transboundary waters, while the legal problems of maintaining a water cadastre are still unexplored, which in turn is a serious gap. Recent trends in the improvement of water legislation are more focused on the introduction of new technologies in the process of collecting, processing and storing water cadastral information, which is also important. At the same time, we should not forget about its scientific and methodological components

Foreign experience. After analyzing the legislative basis for maintaining the water cadastre of the **Russian Federation[22],Kazakhstan[23],** the Republic of **Belarus [24],Turkmenistan[25],** we came to the conclusion that the content of the water cadastre of these countries practically repeats each other, while the system of bodies that conduct it is diverse.

If the water legislation of the post-Soviet countries still revolves around automated water cadastre systems, the proposals of scientists from the United States, Europe and Asia to improve

the formation, collection, processing and storage of water cadastre information at the current stage of development are based on the use of the latest nano-technologies.

In particular, in the collective work of American scientists, special attention is paid to the state of such a water body as a water reservoir and it is proposed to widely use satellite systems in tracking the quality of water resources, referring to the fact that a complete database on water resources in all countries does not yet exist. Since sensor data is not available worldwide, US scientists suggest using NASA's new satellite mission, ICESat-2, to obtain information on water quality, which they believe will be an important component of any global inventory of reservoir levels and will provide new insights into how reservoir management responds to climate variability and rising human demand.[26]

In the collective work of English scientists, it is proposed to use the new mobile infrastructure of eco-accounting as the basis of natural resource inventories, including the water cadastre, consisting of four modules: eco-consumer account, eco-shopping, eco-processing and eco-incentives.[27]

In the next collective work of American scientists, it is proposed to use remote sensing to catalog lakes in order to characterize the morphology and build a typology using cluster analysis. This method can be used to identify environmental research needs, adapt water monitoring and management programs, customize environmental programs, and use the conservation of available water resources more effectively to achieve large-scale management goals.[28]

The collective work of Mexican scientists examines the mapping and monitoring of fresh (surface) waters in the largest mountain range of Mexico-the Sierra Madre Occidental (SMO), covering the states of Chihuahua, Sonora, Sinaloa, Durango, Nayarit, Zacatecas and Jalisco, which are of great importance for understanding hydrological processes and water management. In this study, 120 Sentinel-2 satellite images were used. [29]

The problem of insufficient data and the need for a more reliable data inventory is also raised in the work of the Tunisian scientist BeljamAzhoubi. It proposes to develop and build scientific capacity through regional and international partnerships, as well as to implement rational water resources management for sustainable development based on gis technologies and the GALDIT index system. [30]

In the joint work of Argentine and Colombian scientists, the issue of delineation of water bodies is raised, which is not a clearly solved problem, as a result of which it is proposed to develop a conceptual model of water bodies of the LLO type with dynamic boundaries, based on the legal definitions of coastal boundaries in the future 4D LLO. [31]

In the collective work of Chinese scientists, water-saving technologies have long been seen as an effective method of reducing irrigation water use and alleviating regional water scarcity. However, the growing number of reports of more severe water shortages and the increasing use of water-saving technologies around the world have required a reassessment of water-saving practices in agriculture. This study develops a simple method based on satellite ET partitions to estimate water intake, consumption, and backflow from the 1980s to the 2010s, and quantifies water savings across the world and four hot irrigated areas at both field and regional scales based on a water accounting system. [32]

Summarizing foreign experience, I would like to note that Uzbekistan has something to borrow to further improve the mechanism for generating reliable information about water resources and providing it to potential consumers by deepening liberal reforms in the field of water resources management.

In particular, Uzbekistan has already taken the first steps to implement public-private partnership in the field of water management, consolidating the system of outsourcing in the use of water bodies. The next stage of this process, in our opinion, should be the participation of business entities in the formation of water-cadastre information on the basis of an investment agreement, which would allow updating the technological basis of water-cadastre activities and improving the quality of the information provided.

Proposals for the improvement of water cadastre legislation.

Based on the above, in order to further improve the water cadastre legislation, we consider it appropriate:

first, to introduce a separate chapter on the state water cadastre in the draft Water Code, which, in our opinion, should look something like this:

"Article X. State Water Cadastre"

The State Water Cadastre is a geoinformation database on surface and underground water resources, consisting of several independent subsystems, intended for fiscal, legal, informational and administrative purposes, including qualitative and quantitative indicators, economic assessment, information on the geographical and legal status of water resources, as well as water users and water consumers.

Article X. Bodies that maintain the state water cadastre

The State Water Cadastre is maintained by:

Center of Hydrometeorological Service under the Cabinet of Ministers of the Republic of Uzbekistan - on the division of surface waters;

State Committee of the Republic of Uzbekistan on Geology and Mineral Resources - on the division of underground waters;

Ministry of Water Resources of the Republic of Uzbekistan-under the section of water use.

The data of the state water cadastre are provided by the Ministry of Water Resources of the Republic of Uzbekistan to the Cadastre Agency under the Tax Committee of the Republic of Uzbekistan for its further integration into the National Geographic Information System of the Republic of Uzbekistan.

Article X. Financing and procedure for maintaining the State water cadastre

The State water cadastre is financed from the State budget and other sources not prohibited by law.

The procedure for maintaining the State water cadastre is determined in accordance with the Regulations on the Procedure for Maintaining the State Water Cadastre.

Article X. Water and cadastral information

Water-cadastral information includes data on rivers, channels connecting various water systems that serve for territorial redistribution of runoff or irrigation; lakes and reservoirs; glaciers; underground waters (basins, aquifers, deposits) as well as hydroelectric facilities and reservoirs; structures for taking water from water bodies (channels, pumping installations, production wells, etc.); channels that serve for territorial redistribution of runoff; structures for the discharge of used and mine water into water bodies (collectors, drainage and drainage channels, tubular water outlets, etc.); structures for the treatment of used water.

Water cadastre information is intended to provide state authorities and management bodies, interested legal entities and individuals with the necessary data on water bodies, water resources, water regime, quality and use, as well as on water users and the contract for outsourcing of water bodies

Article X. Provision of water-cadastral information.

The provision of water cadastre information to state authorities and management bodies is carried out free of charge through the E-Government platform.

The provision of water cadastre information to interested individuals and legal entities is carried out on a paid basis through the territorial divisions of the State Services Agency.

Article X. Liability for violation of water cadastre legislation.

Officials and citizens who are guilty of violating the water cadastre legislation are liable in accordance with the established procedure»;

secondly, we propose to develop a Regulation on the procedure for providing water cadastre information to interested individuals and legal entities, which provides for:

Section 1. General provisions. This section should regulate the grounds for providing cadastral information in one place, the types of water-cadastral information, and the principles of forming water-cadastral information.;

Section 2. Types, forms and sources of formation of water-cadastral information. This section should regulate the sources of formation of water-cadastral information, the composition of water-cadastral information, the powers of the competent authorities to maintain the water cadastre when providing water-cadastral information;

Section 3. Conditions for the provision of cadastral information to interested individuals and legal entities. This section should regulate such issues as the procedure, conditions and terms of providing information to the appeals of interested individuals and legal entities, the payment procedure, the grounds for refusing to provide water-cadastral information, the procedure for reviewing appeals;

Section 4. Responsibility of officials for violation of the order of submission of information. This section should address the issues of holding officials accountable for violations of the procedure and deadlines for providing information to individuals and legal entities. "

Third, we propose to develop a Regulation on the economic assessment of water resources, which provides for:

Section 1. General provisions: This section should regulate the definition of the concept of economic assessment of water resources, objects of water resources assessment, subjects of water bodies assessment, environmental damage caused to water resources, risk factors for water resources assessment, criteria for economic assessment, etc.

Section 2. The procedure and conditions for conducting an economic assessment. This section should address such issues as the differentiation of water resources assessment based on water quality, criteria for determining the degradation of water bodies as a result of anthropogenic impact on them, the assessment of complex water resources and objects, etc.

Section 3. Assessment of water resources at the national level. This section should address the issues of determining the system of central bodies that carry out the assessment, the powers of central bodies that carry out the assessment, the amount of differential rent, etc.

Section 4. Assessment of water resources at the territorial level. This section should address the issues of determining the system of territorial bodies that carry out the assessment, the powers of territorial bodies that carry out the assessment, etc."

fourth, in order to strengthen the scientific and legal development of common problems of water resources use and protection, we propose: to intensify scientific activities in the field of legal regulation of water-legal relations by providing various types of incentives for participation in international projects; to improve the methodological basis of water-cadastre research by ordering the appropriate literature; to open master's courses in law higher educational institutions in the specialty " Water law" .

In conclusion, I would like to note that water is one of the main elements of the universe, which is located inside every earthly substance. Therefore, the lack of water has devastating consequences for people, animals and plants and negatively affects the development of the economy. The existing water problems resulting from global environmental crises and human economic activity are getting worse day by day, and the forecast of the state of water resources is disappointing. At the same time, the need for it is growing every day. Therefore, in order to build the right tactics for the rational use of available water resources and their protection, we must always have complete and reliable water cadastre information at hand.

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