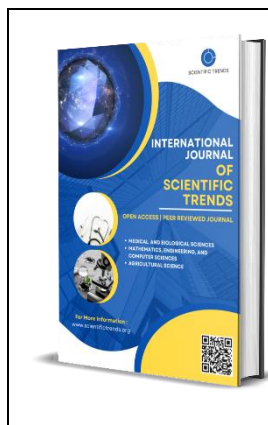


Problems of the Water Sector of Uzbekistan and the Ways of their Solution

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Abstract

The article is devoted to the consideration of significance of the tax for the use of water resources in raising the efficiency of the use of water resources. In addition, the most essential and demanding problems of the water management complex of Uzbekistan have been investigated and final conclusions have been developed in reliance upon the results of the research.

Keywords: water resources, water use, water consumption, undersurface and surface water resources.

Introduction

High inefficiency of water use, low quality of drinking water supply to the population in many water management systems, in some cases, unsatisfactory condition of natural water bodies demonstrate that the Republic of Uzbekistan is lagging behind the current level of water management development. In some cases, the approach to extensive development, lack of careful and well-grounded approach to the issues of water use efficiency, inadequate attention to the environmental aspects of the problem, and other circumstances, together with insufficient funding, have caused such outcomes are reflected in the current situation in the field of water management in our country. Definitely, this fact specified that the water management is lagging behind the world level.

Literature Review

In the opinion of B.S. Land (2010), resource taxes should be defined as an attempt to assess the impact of taxation on extractive resources in reliance upon two literary sources: the economic theory of extractive industries and the theory of optimal taxation.

From the point of view of J. Poterba (2010): “The performance of any system of resource taxation depends on its ability to increase revenue, possible distortions of private investment that reduce the value of the resource, and the resulting distribution of risk between the state and the investor. In order to fairly assess these factors, it is necessary to recognize the many ways in which taxpayers adjust their activities to minimize tax”.

The spatial and temporal uneven distribution of water resources, frequent drought disasters, human activities that interfere with the water cycle, and low water use efficiency are gradually becoming the main factors that hinder China's green and sustainable development (Wang, Y.; Yang, J.; Chang, J., 2019).

To solve this problem, the government is studying the development of new policy initiatives for water resources management, trying to shift from water resource fees to water resources taxes, and trying to create a water resource protection tax system in the country.

Water administration departments and scholars generally believe that the current design of water resource tax should not only take into account its financial benefits, but should also pay more attention to its essential role in saving resources and protecting the environment (Majeed, A.; et al., 2023).

On the one hand, the water resource tax is an efficient compensation for the use of natural resources, which focuses on the labor value, service value and environmental value of water resources, and on the other hand, the water resource tax effectively limits the unreasonable demand for water in the region. It enhances the efficiency of water use and reduces the use of groundwater, which plays an essential role in the protection of water resources, thereby helping to protect the environment to some extent.

In addition, the effect of economizing water from various practices of taxation of water resources in foreign countries is also significant (Berck, P. et al, 2016), but it makes a serious negative impact on agricultural production as well (Mushtaq, S.; et al, 2008).

Therefore, the effect of saving water should be combined with the actual situation of the country. If there is a lack of experience and inefficient management of water resources, the policy impact of a water tax may be unsatisfactory (Kilimani, N.; van Heerden, J.; Bohlmann, H., 2015).

Analysis and Discussion

At present, the most urgent and crucially important problems of the water management complex of Uzbekistan include the following: a) unsatisfactory level of water quality in most of the used water facilities; b) insufficient improvement of the current system of water facilities quality assessment, its incompatibility with management tasks; c) unsatisfactory state of the farm-drinking water supply system; d) deterioration of the technical condition of hydrotechnical facilities - the main production funds of water management; e) low efficiency of water-cleaning facilities or their non-existence; f) in some cases, water is being used indiscriminately and there is no ecologically based management of the water regime; g) insufficient efficiency of management of water resources and water management systems; h) the small amount of work on the development of monitoring of water bodies and in some cases, their non-existence; i) unsatisfactory status of ecological and hydrological monitoring systems; j) insufficient protection from the negative effects of water; k) pollution of water bodies for various reasons; l) poor supply of water management bodies with information, insufficient level of scientific, technical and design provision, etc.

Reasons for the problems of water management complexes as a result of the lack of improvement of the water resource management system include the following focus areas: insufficiently developed legal framework; regulatory and legal framework is incomplete, and in some cases, its quality is low; organizational structures and management mechanisms do not comply with the

modern requirements and trends; inability to adapt and respond to possible changes in operating conditions; lack of coordination of water use in various national economic sectors and subjects of economic activity; lack of improvement of the economic (including financial) mechanism in the areas of use and protection of water economic entities (Umrzakov U.P., Abdurakhimov I.L., 2008).

The complexity in this regard is that, despite the fact that at the same time there are interrelated elements of a single system, all existing problems correspond to different functional areas and they differ from each other in terms of the sphere of influence. This, in turn, determines the strategy to overcome the next shortcomings of the current system of water resources management, aimed at gluing together the fragmented elements of a single, integrated mechanism intended to maintain a stable, rational and fair situation in the field of water use. That's why planning and regulatory actions are different, despite the fact that the expected goal is to meet the requirements of the general ecological and sustainable development. Innovations and changes to be made in ecological-social-economic relations should be harmoniously connected with the needs of all interested parties. It is particularly important to fully understand that one participant's failure to take into account aspects important to others will ultimately result in the non-realization of a situation in which his own interests are essential. This may eventually lead to the failure of economic activity at all. Therefore, in order to get out of such a precarious situation, in our opinion, the following tasks must be solved:

1. Intensification of the use of water resources, abandoning the continuation of extensive water consumption or minimizing it. In our opinion, the development of market relations plays a decisive role in achieving this goal. However, this process should not be carried out spontaneously. Because water resources are extremely socially and ecologically important, every step that needs to be taken in the field of developing market relations requires serious analysis and research. At the same time, it is necessary to abandon the administrative-command system in water management as soon as possible. In our opinion, in this regard it is necessary: a) to ensure the transition from the calculation of water consumption fees (charges) according to norms to the payment of water consumption fees (charges) according to the amount of water actually received (used) for all consumers; b) development and implementation of a program of continuous increase of payments for consumed water up to the level of full indemnity (compensation) of all costs of water consumption provision; increase the fees (charges) for all types of water use to a level that enables full financing of measures designed to sustainably reproduce the quality of water resources and support all related environments; herewith, extensive use of theoretical developments on the formation of rent in water use; c) encouraging water users to actively implement water-saving technologies through water use fees and tax incentives, payment for any negative impact on water bodies, use of "stepped" functions for calculating fees, calculation of base rate intervals and other elements of the financial mechanism (stimulation); d) it is necessary to develop competitive forms of demand supply among all types (forms) of water use, etc.

2. Ensuring a reliable, safe and stable supply of drinking water (Dukhovnyy V.A., Sokolov V.I., 2002). For this, it is necessary to use both surface and subsurface sources in the drinking water supply system. In this regard it is definitely important to strictly adhere to ecological norms that allow them to be used in an endless way and to use modern technologies of water preparation. Moreover, economizing water plays an important role in solving this task.

3. Development of a system to protect the population and economic objects from the harmful effects of water and, above all, from water floods. This science-intensive direction involves improvement of methods clarifying the mechanisms of the origin and development of floods, improvement of methods of predicting floods and their consequences, hydrometeorological observation (monitoring) systems, as well as capital-intensive activities for the reconstruction of a number of reservoirs, cities, villages and economic facilities. In addition, it requires protection, and in some cases, improvement of activities related to the evacuation of settlements from dangerous areas. When allocating areas for the construction of new water bodies for various purposes, the probability of damage caused by flooding, floods, the need for insurance, etc. should be taken into account.

4. Development and implementation of a system of measures aimed at restoration of water quality in water management entities impacted by excess of the norms. Improving the wastewater treatment system cannot completely solve this problem. Therefore, in this regard, it is necessary to implement the appropriate procedure in water intake facilities, to strictly observe the established legal procedures regarding restrictions on economic activity and nature use in water protection areas and coastal areas, to implement special rehabilitation measures, as well as to eliminate the consequences of the negative effects of hydromelioration. This activity should be performed under the guidance and strict control of the public authorities of environmental control and water management. However, it can be fully implemented only with the active participation of local self-government bodies, the general public and business.

5. Furthermore, it is necessary to significantly increase a) water treatment complexes, in particular, implementation of support systems for quick engineering decisions, the use of advanced methods of water disinfection, the latest chemical means, water quality monitoring system in water transmission networks; b) industrial and municipal water treatment systems to guarantee the standard quality level of discharged water; c) technical level of agricultural irrigation systems.

6. Development and implementation of water resources and water management systems (in particular, at the basin level) based on information-calculation complexes using hydrological, economic and economic-mathematical models. This focus area requires more budget expenditures on: a) equipment and machinery; b) science-based research; c) development of models and software tools and g) personnel training.

Inadequate attention to the need to spend more than the budget on personnel training and the lack of recognition of its importance is the reason for the underfunding of expenses in the first three focus areas. The objective trend in this focus area (climate changes, raising water scarcity in the most developed districts, continued growth of the load on water systems, etc.) is that the complexity of water resources and water management tasks is increasing.

7. Improving the quality of hydro-forecasts, which is necessary to improve the efficiency of management of all types of water use, in particular, hydroelectric power plants. The predictability and accuracy of hydro-forecasts in Uzbekistan is slightly behind the modern level. In particular, it is necessary to fundamentally modernize the information base of the hydrometeorological network. The task here is not to restore it, but to optimize it in reliance upon modern technologies of monitoring and, above all, aerospace technologies.

Solving the above-mentioned tasks, in our opinion, should be based on the following: a) the main role in water resources management should belong to the basin approach, and the basin agreement

should be adopted as an effective lever for its implementation; b) in order to provide information for water resources management (setting the goal, determining tasks and methods of regulation, using water bodies and their protection, evaluating the effectiveness of relevant measures), it is necessary to select indicators that characterize significance and condition of water management entities from an ecological, social, and economic point of view on a scientific basis; c) for these purposes, reliable information is needed about economic objects - water users, location system, infrastructures, etc.; d) reasonable demarcation of the functions of water users and republican and local state authorities and self-government bodies in terms of water resources management should be legally determined.

Now let's try to consider some specific aspects of economic and administrative mechanisms.

1. In our opinion, the system of payments for water pollution in our country is less efficient and administratively complicated. However, their excessive complexity is determined not by the difficulty of calculating system sizes (such difficulties cannot be avoided), but by the fact that they cover a large number of emission sources and pollutants, which, in turn, are subject to different tariff rates. Moreover, the payment rates are very low, being less than 10 percent of similar rates in Belarus, Georgia, Moldova and Kazakhstan in 2014, and only 0.2 percent of rates in Denmark and Sweden. Therefore, the problem at the moment is not only to legislate an effective payment system for the disposal of contaminated objects, but also to distinguish the main ones of a limited and priority nature from among the contaminated objects, which allow their monitoring to be carried out within reasonable costs. For example, in Denmark, the taxation base of the water pollution tax applies only to 3 pollutants: nitrogen, phosphorus and organic matter. In our opinion, there is no need to use a "large-scale" monitoring system and fees for small sources of pollution. Herewith, in our opinion, declarations of contaminated discharges and their respective charges and selective verification of these declarations should be sufficient.

We believe that water pollution charges can be effective if they are targeted primarily at the largest polluters (sources) located at a few stationary points. If the problem is caused by a large number of small sources, then pollution charges are inefficient due to the need to maintain large administrative staff to enforce payment, control and monitoring. Therefore it is appropriate to solve this problem as follows: payments for small and especially mobile sources of pollution should be replaced by an environmental tax, which is established in relation to the product, as in the developed countries of the world. Furthermore, in reliance upon the above-mentioned considerations, in determining the taxation turnover of pollution charges in Uzbekistan it is recommended to focus on the organic measured substances, nitrogen, phosphorus and several other heavy metals as priority pollutants.

2. From our point of view, the biggest shortcoming of the current system of water resources management in Uzbekistan is that it is still highly centralized. In addition, this deficiency is aggravated by the fact that the possibilities of financing decisions and monitoring their implementation are sharply decreasing. While acknowledging that some changes have been made, it is worth noting that we do not think drastic changes have been made in this regard. Functions that cannot be performed by the center are not given to anyone. It is true that in some cases they are partially implemented in some regions where there is a financial possibility, but this process is carried out outside the current legislation and without the participation of the structural subdivisions of the official public authorities of water resources management. In this regard, the

top-management remains too busy with the small details of decision-making, which in most cases are not carried out. Its lower levels do not have the necessary powers and funds to perform a number of necessary functions and, therefore, do not have the ability to implement appropriate water management measures. Its lower levels do not have the necessary powers and funds to perform a number of functions required and, therefore, do not have the ability to implement appropriate water management measures.

In this regard it should be noted that the administration of many districts of the Republic of Uzbekistan our country has detailed information about local water management. They are able to carry out the necessary measures in water farms, small rivers and other water bodies located within their territory, relying on the forces of the enterprises concerned with them. That is why it is possible to effectively resolve the issues related to the rights of granting and terminating the lease of hydrotechnical devices and other water facilities or the right to use them at the local level. At this level, it is possible to easily monitor the details of water management decision-making and execution. However, the current system of investing in water resources does not provide for similar functions at the local level, and in practice, all the details of management are mainly considered at the national level. In our opinion, transfer of some tasks of water resources management to the local level would have served to increase the efficiency of water management activities as a whole. For example, at present, republican authorities are considering many issues of water management not only at the level of basins, but also at the level of water management districts, their parts and even sections of water management plots taken separately. The unproductiveness of the above-mentioned situations is clearly manifested by the complications arising in the conclusion of agreements between water management entities on the scale of large water farms belonging to several administrative entities of Uzbekistan.

3. The reasons for the low efficiency of the water resources management system go back to the dysfunctionality of the basin principle (principle), which consists of the Uzbekistan version of resource management. Basin water management departments are formed at the level of large water management sections (for example, in the basins of the Syrdarya, Amudarya or Zarafshan rivers), and they cannot perform the functions of solving conflicting problems of water use that arise between subjects in the regions of the Republic of Uzbekistan. This fact is particularly relevant in the current situation, as the water management administrations are not provided with legal rights, financial opportunities, or adequate personnel. In our opinion, the transfer of these functions to the Ministry of Agriculture and Water Management of the Republic of Uzbekistan or another relevant organization at the republican level is not promising. Because considering all the problems that may arise in this regard at the level of the republic and finding the necessary alternative is a very difficult and complex issue.

It is known that the regions of our country are formed according to its territorial administrative division. It does not take into account specific peculiarities of water resources problems. The geographical boundaries of the provinces do not correspond to the boundaries of water basins, and this does not allow to fully solve the problems of these basins.

Currently, the regions are mainly given control functions at the local level. In the field of water use, the resolution of problems between the districts that are part of the regions belongs to the structural subdivisions at the regional level. In this case, the need to give arbitration functions to the structures of the regions to resolve or coordinate conflict situations in water management

activities is indisputable. Granting such rights to the regions would not only simplify mutually beneficial decision-making, but also serve to ensure the connection of effective economic mechanisms with the traditional methods of administrative management.

The fact that the administrative division of the regions of our country and the work of the basin division do not correspond to each other requires that there be special measures and procedures for the coordination of decisions made at different levels of management. First of all, it is necessary to coordinate the financing of water management activities in the regions with multi-level organizational supervision. For this, the following sequence and interrelationship of the decisions to be made is appropriate (Figure 1).

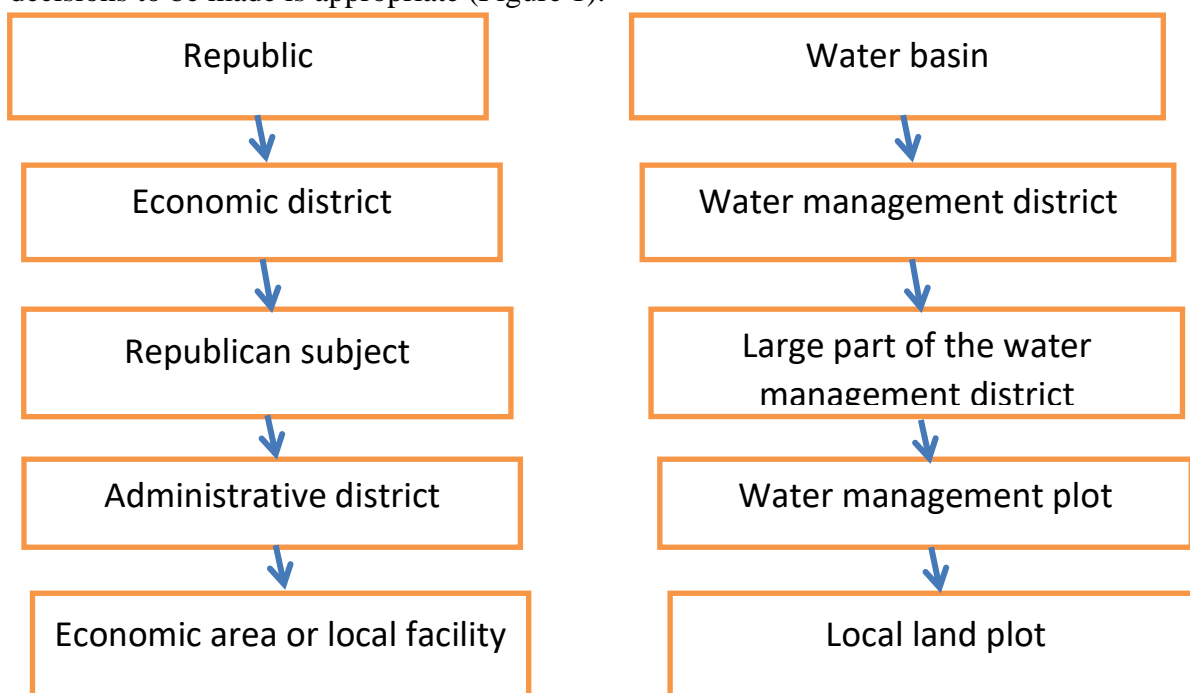


Figure 1. Water resource management information flow in current and prospective decision-making options¹

4. Measures are developed at the republican level within the framework of large water facilities. They are implemented on the basis of the contribution financing of the Center, scheduled events and facilities by the administrative entities of the republic, administrative districts and local economic entities of the regions directly affected;

5. It is necessary to clarify the structure of activities in large water bodies, which include several entities at the republican level in the Republic of Uzbekistan;

6. At the level of administrative districts within the subjects of the republic, it is necessary to implement management for water management sections and in some cases for local sections as well. At the level of economic territories and local objects, it is necessary to plan and implement the management of local land plots.

In our opinion, the main focus areas for improving water management mechanisms are: a) modernization of the legal and regulatory framework; b) improving the organizational mechanism of management; c) developing the complex monitoring system of water management entities and an automated system of data processing; d) improving economic (including financial) mechanisms

¹ Developed by the author

of efficient use of water; e) raising the level of reasonableness of decisions on the management of water management systems.

Modernization of the legal and normative basis of water use and improvement of the organizational mechanism of management should be carried out at the highest levels of administrative structures. In this regard it is required to develop new statutory acts and normative-methodical documents, as well as to clarify the existing ones. The effective functioning of the organizational mechanism of management takes place in such a legal field, according to which the authorized (competent) spheres between different levels of organizational structures must be clearly demarcated and their mutual responsibility should be precisely defined. This enables effective implementation of anti-monopoly policy in water management, effective integration of administrative and economic methods of management, coordination of actions of various water users in order to raise efficiency of water resource use with the account of the complex requirements of environmental protection and security. The ecological success of water facilities is based on the integration of basin and administrative-territorial management, as well as the limitation of economic use and organizational management functions of water resources.

Improvement of the organizational mechanism involves gradual procedures. The first steps in this regard envisage the elimination of interagency duplication of management functions and the regulation of the rules for the development of basin agreements involving the mechanism of mutual interest of the parties.

With the development of market relations in our country, the role of economic constituents in the activities of all management organizational structures is increasing. Their activities are more and more driven by non-market incentives and circumstances.

The main goal of improving the economic mechanism of water resources management is to encourage water users to reduce the anthropogenic load on water bodies - water consumption and pollutants. In order to ensure sustainable water use it is essential to encourage economic entities operating in water intake areas to comply with ecosystem impact standards. In order to achieve this goal, it is important to assess the efficiency of water use and damage to water bodies, as well as the use of appropriate tariffs, fines and incentives.

Development of market relations in water use envisages formation of the water resources market and, above all, the market in the field of water consumption and water use services. It should be noted that demonopolization of water supply, development of water industry marketing activities, insurance of the risk of water users, control of the fulfillment of license conditions (to eliminate competition based on dishonesty), stability of the regulatory base (that is, the advance notification of water users about the planned changes), etc. is required for this purpose.

In the process of reorganization of economic (including financial) mechanisms, the structure of the water management network should be improved, transparency of financial flows should be ensured, and the role of target funds should be increased.

With the aim of ensuring sustainable development of the water industry, interrelated measures are required for the development of monitoring of water bodies. Development of a complex monitoring system and an automated system of data processing envisages improvement of the system of analysis and monitoring of the state of surface and subsurface water, monitoring of sources of pollution and the environment, as well as meteorological support. At all levels of water management it is necessary to incorporate a comprehensive information-diagnostic system for

monitoring water facilities. This is achieved on the basis of coordination of monitoring, control and analysis systems at different levels of management and for different agencies. The effectiveness of monitoring is provided by the uniformity of the methodological, analytical and instrumental base.

The monitoring interval, duration and detail are determined based on the scale and importance of water bodies, intensity of anthropogenic loading, the nature of the processes occurring in natural systems, planning horizons, the accuracy and timeliness of management decisions.

In our opinion, currently improvement of the monitoring system of water facilities requires execution of the following tasks: a) creation of additional networks of observation points (on hydrology, hydrochemistry and hydrobiology of water facilities); b) development of an analytical base, especially on highly toxic products; c) creation of an operational monitoring system in districts and large cities that extract and export oil and other environmentally hazardous products based on an automated system of monitoring, control, processing, storage and data transmission. Such systems are especially important in drinking water supply sources; d) ensuring coordination and interaction of various departmental systems of monitoring; e) developing the tools and devices appropriate communication networks; f) using water-consuming enterprises laboratory network and mobile laboratories; g) using of remote sensing to monitor watersheds and coastal zones and their changes.

General management of the state monitoring system, in particular, its methodical support, should be performed by the “Uzgidromet” (“Uzbek hydrometeorological station”) organization. At the same time, this system can be administratively subordinated to other bodies of the executive power for some branch aspects (for example, monitoring of pollution sources, monitoring of drinking water quality, etc.). It is also possible to form territorial systems of monitoring that perform specific tasks for specific regions in structural subdivisions at the regional level.

Herewith, based on the actual situation in our country, it is necessary to focus on the issues of ensuring the consistency of directives and economic methods of water resources management. In this regard, it should be noted that the results of our research demonstrate that the following three approaches can be used to modify the water resources management system based on the modern requirements of the market economy: a) expansion of direct (indirect) participation of the state; b) decentralization of water resources management and its transfer to lower levels, including operational functions to privatized enterprises; c) use of a compromise option that ensures the compliance between both of the above options.

In expanding the direct participation of the state, almost all decisions and their control are made at the republican level. This, in turn, complicates the management of water resources to a certain extent and sharply raises the costs of the state budget and makes a negative impact on the level of implementing the decisions. This results in a decrease in private business activity in the field of water use, and slows down the search and implementation of local economically efficient solutions.

In case of decentralization of water resources management and assigning it to lower levels, including operational functions to privatized enterprises, it can be in the public interest only under the conditions of the investment attractiveness of the objects being privatized and in the presence of a competitive environment. In this, unfortunately, there is no doubt that the basin principle of management is violated. This, in turn, reduces the efficiency of managing water resources as a

whole, makes it difficult to implement large-scale measures to protect water facilities and defend them from the harmful effects of water, and may even destroy their implementation when the interests of two or more entities of the republic do not coincide.

Under the option of the agreement providing the compliance of two options specified above, it is necessary to attract the budgetary funds for delimitation of powers at different levels of water management, economic stimulation of efficient and rational use of water management, activation of state participation in ensuring favorable economic conditions, attracting budget funds for the implementation of measures to protect water facilities and defend them from the harmful effects of water. In our opinion, this option of water resources management is the most relevant.

In Uzbekistan in the recent past time the administrative and command methods related to water resources management have been directed to the implementation of certain water use technologies, which have been selected in a planned manner, and to the implementation of stream cleaning, which ensured the reduction of water withdrawal and the reduction of the discharge of polluted water. Economic methods, which are alternative to management based on administrative-command methods, provide a high level of coordination of the interests of economic entities with the interests of the public. In practice, the achievement of such compatibility is hindered by various and at the same time, inextricable reasons, which are officially reflected in the “disobedience” of the real economic system to the theoretical requirements. Due to the inadequacy of not only administrative-command, but also economic methods, their joint application should be achieved by strictly limiting their spheres of movement. This is provided by the agreement option of organizing water management systems.

Economical methods of organizing water management systems include collecting fees for the use of water resources and for the disposal of polluted substances, as well as the imposition of appropriate fines for violating the norms of water use and their collection, increased efficiency of water use, reduced water consumption, and decreased the negative impact on water facilities in reliance upon the introduction of rewards for etc. As mentioned above, in accordance with the Law of the Republic of Uzbekistan “On Water and Water Consumption”, the right (payment) of water use is declared as the main principle of the economic regulation of the use, restoration and protection of water facilities. However, the introduction of fees for the use of water and the discharge of pollutants into the water cannot encourage enterprises to implement the best water-saving and water-purifying technologies and fully fulfill the tasks of long-term development of the water industry.

Establishing tax and other incentives for enterprises that have introduced low-output technologies, applying incentive measures and bonuses for the production of environmentally friendly products, preferential lending to enterprises that are effective in protecting the natural environment are also included in the economic methods.

One of the mechanisms that ensure the connection of administrative and economic methods of management is implemented through special funds (budgetary and extrabudgetary). It provides that the funds received in the form of fees (payments) for the use of water resources and negative impact on them (in particular, the disposal of polluted materials) will be used to finance measures to reduce water consumption and water allocation, which can be carried out by state and local organizations and private enterprises.

The administrative mechanisms imply the following measures as a) ensuring responsibility of legal entities and individuals whose actions or inactions caused the emergence of an acute natural and economic situation; b) permitting and licensing of activities related to water use and harmful effects on water; c) setting limits for the use of water resources; d) improving the legislation related to these processes; e) creation of environmental funds and control of their targeted use.

In addition, they also envisage the selection of activities that are performed due to the budget financing outside the border where market relations are the priority. These include hydraulic installations, water protection measures, and sanitation measures for commercial structures that are not covered and designed to protect against the harmful effects of water. In this case, the methods of implementation of all such activities can fully correspond to the market mechanisms after the determination of the budget customer.

Conclusion and Proposals

In reliance upon the considerations specified above, it should be said that the main complications of reforming the water resources management system in Uzbekistan are the limited financing of water management and water protection activities, low investment attractiveness of water management projects, limited privatization (usually, it can be economically effective only for water-using sectors) due to the emergence of natural monopolies in the use of water resources and their distribution. Solving this set of problems requires dividing the total activities to be carried out into several stages, identifying the first level tasks. In our opinion, it is appropriate to implement the improvement of the water management system in the following three stages:

Stage 1. It is required to create legal and organizational-economic infrastructure in compliance with the modern economic system of the Republic of Uzbekistan. In this regard, first of all, it is necessary to reform the management system and improve the organizational and economic mechanism, to introduce effective economic mechanisms, develop of regulatory and legal framework, to eliminate negative trends in the water management complex and stabilize the situation in order to provide water to the population and economic complexes.

In order to solve the tasks of stage 1 the following measures need to be implemented: a) development of the legal, legal and regulatory framework for the regulation of water and land use in areas with a risk of floods; b) elaboration of standards in reliance upon the assessment of the maximum permissible anthropogenic load on water bodies; c) certification of the main types of water use; g) development of the system of standards and norms for all main types of water use and anthropogenic impact.

Stage 2. Implementation of measures to ensure rationalization of water use in industry and agriculture, reduction of pollution of water facilities, losses from floods and other harmful effects of water.

With the aim of solving the tasks set in stage 2 it is crucially important to: a) shift to market relations in water management; b) provide self-financing of the industry; c) create a competitive environment in water use and water allocation; d) introduce water management and ecological insurance system; e) restore biodiversity in and around water bodies; f) develop the mechanisms for restoration and protection of small water facilities; g) create environmental and water management monitoring systems of water facilities; h) develop mathematical models of effective use of water resources and their quality management based on adaptation to specific objects.

Stage 3. Effective collective use of water resources and their reproduction, restoration of water facilities and their ecosystems, elimination of the harmful effects of water and warning about this, implementation of promising measures to ensure the development and improvement of the water management complex.

Solution of the tasks of the stage 3 requires implementation of the following measures: a) comprehensive use of water resources in the main basins and development of various options for protection of these resources and their harmful consequences; b) working out action plans for subjects of the Republic of Uzbekistan based on these options; c) introducing payment for water use based on the collection of water rent by the state; d) improving the ecological situation in water facilities and adjacent areas; e) envisages the promotion of voluntary environmental activity system.

Implementation of all stages of improving the regulation and governance in water management requires mutual coordination of the activities of republican and local management bodies related to the development of the water management complex and implementation of water resources management tasks.

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