Investment in the Water Supply and Economic Problems: Solutions

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ABSTRACT

The article analyzes the importance of investing in the development and development of the water sector economy, and investment policy is a key area of economic development in the country. It is proposed to solve the problems of attracting investments into the sector's economy. Projects for land reclamation and land reclamation, developed by the Ministry of Water Resources, will be financed through foreign investment in the implementation of a program to improve irrigation and drainage infrastructure. In order to further develop irrigation and land reclamation measures, we believe it is expedient to strengthen investment activities in the water sector of the country and attract foreign investments into the economy of the water sector.

Keywords: Water management; irrigation and land reclamation; innovation; investments; economics; financing; efficiency.

1. INTRODUCTION

Investment plays an important role in the development and development of the country's economy. As a result of economic reforms in the Republic, economic cooperation between various sectors of the economy is developing. Today, one of the most important directions for achieving sustainable economic growth is the rational use of all domestic resources and active attraction of foreign investments. Wide attraction of investments into the economy will allow...
modernization of production, competitiveness and access to world markets, production of import-substituting and export-oriented products, employment of the population. As a result of creating a favorable investment climate for investors, special attention is paid to attracting direct investments into the real sector of the economy, and a number of measures are being taken to encourage them. As a result of the current system of privileges, opportunities and guarantees provided for them, the share of foreign direct investment in relation to investments guaranteed by the government is increasing year by year. However, along with the successes, there are a number of problems associated with attracting investment in the national economy.

It is also possible to note: ineffective activity of banks and investment funds, which can contribute positively to the development of investment activity; Insufficient activity of insurance companies reducing processes associated with investment activity; insufficient establishment of consulting, engineering, marketing and legal services centers in the regions; weak participation of some ministries to provide foreign investors with complete investment climate information on the region; Some difficulties in the tax and customs systems and so on have a negative impact on the active attraction of foreign investment [1].

Increasing the efficiency of water use in the water sector is linked to attracting long-term investments into the economy, new forms of investment and economic development of the sector. Investing in the water sector's economy also entails a number of objectives. It is necessary to find ways to direct investments, distribute and effectively use investments. Positive changes are taking place in the mechanism of attraction of investments from developed countries to the republic. They will be used to finance investment projects to modernize strategic sectors of the economy. It is necessary to undertake measures to create a mechanism for investing water in the country, which is in line with the principles of market economy. Investment policy in the water sector is an important area of economic development of the country. In order to increase agricultural production: financial support to production sectors; efficient water use, accounting and application of new water-saving technologies in irrigation networks; improvement of land reclamation and rational use of water resources; accelerating the modernization of the water sector economy [2].

Favorable conditions for research should be created to determine the effectiveness of new technologies in the water sector. It is important to introduce scientific developments in water management and to stimulate scientific institutions based on the results of scientific research, to improve the mechanism of reorienting part of the profits from the introduction of scientific developments. This mechanism should include: direct involvement of authors and scientific institutions in the implementation of scientific developments in water management; increasing the interest of the author to work on the introduction of scientific developments; providing financial resources for research activities on new topics in scientific institutions; Continuous improvement of the mechanism for encouraging scientific personnel [3].

Therefore, it is necessary to invest in the economy of the water industry and research and financing the introduction of scientific developments, and to improve the mechanism of direct participation of subjects using scientific developments in this process. Investing in Uzbekistan's intellectual potential is one of the key factors in the future development of the national economy. It is important to provide tax incentives to investors investing in water resources.

1.1 The Purpose of the Study

Improving the efficiency of water use in the water sector, attracting long-term investments into the economy, new forms of investment and economic development of the sector, investment in the economy of the water sector development of recommendations.

1.2 The Objectives of the Study

Development of proposals to improve the scientific basis for modernization of water management financing relations; - to reveal the existing problems on the basis of the analysis of water resources in the regions of the republic; development of proposals for expansion of financial resources for financing of water management research activities; to summarize the experience of foreign countries in expanding the scope of research in the water sector; to draw the corresponding conclusions on the basis
of studying of foreign countries experience on investment system in science.

2. THE MAIN PART

Without modern irrigation systems, new energy-saving technologies, and increased productivity of irrigated land, it is impossible to achieve the exact result. The water sector is a key player in the water sector, with significant changes in the structure of foreign investments into the economy and foreign investment in the economy. Attraction of foreign investments into the economy of the water sector of the country is aimed not only at the implementation of promising projects in cooperation with foreign countries, implementation of new modern technologies and technologies, and thus ensuring the high quality of the products.

There are a number of problems in attracting foreign investment into the water sector in the country: Stimulating the activities of water companies and effective participation in the implementation of investment projects; lack of experience and legal knowledge of water sector entrepreneurs in working with investment projects; development of consulting, marketing and legal services centers in the regions; Provision of feasibility study of investment projects in the water sector does not meet the established requirements; The main problem is that foreign countries do not provide investors with full information on the investment climate in the region [4].

Uzbekistan is one of the countries producing agricultural products. The total area of the republic is 44,892,4 hectares, and in 2019 the agricultural sector used 20761,6 thousand hectares of land under cultivation. The area of irrigated land is 4210,1 thousand hectares, and pastures - 11559,7 thousand hectares, or 46,25 percent of agricultural lands. While agricultural production in the country is intensively concentrated on irrigated land, it is an important fodder base for grazing livestock1.

The water management organizations have 4,000 watering wells. One well serves 30 hectares and costs 40-50 million sums a year [5].

Projects for land reclamation and land improvement, developed by the Ministry of Water Resources of the Republic, will be financed through foreign investment in the implementation of the Program for Rehabilitation and Reconstruction of Irrigation and Drainage Infrastructure. It was also emphasized that it is necessary to develop an improved crop rotation system based on the water supply and saving capacity of the regions. The Ministry of Water Resources has implemented a Smart Water System that enables online monitoring of water use at 61 water facilities through a $ 7 million grant from South Korea. The main indicators of land reclamation and land water supply in the country are estimated at 18,000 m3 / ha in 1991 and 10.2 thousand m3 / year in 2018. State programs on financing of investment activity will be implemented by the Ministry of Water Resources on the project. The Ministry of Water Resources works on projects mainly under state guarantee. There should be guarantees that entities that are financing the project will be able to repay their investments to a certain extent. The return on investment comes through the proceeds from the processing and sale of the produce grown. This factor should be reflected in the innovative project. Therefore, every subject involved in the innovation process should have a clear vision of his or her material interest. This is due to the mechanism for distributing the proceeds from the sale of the produce. At the same time, the funds should be distributed among the subjects in proportion to their contribution to the production of innovative products [6].

However, there are many factors that impede the attraction of investments to developed countries, such as: insufficient guarantees for a return on investment by the investor; Lack of investment needed to implement investment projects; insufficient amount of collateral provided by the enterprise to secure investment projects; low value of collateral property; lack of developed insurance market for water management; Lack of specialists in investment projects [7].

The scientific proposal for solving the problems of the water sector in attracting investments into the economy is to: - conduct in-depth marketing research on the investment project; stability of cash flows of the investment project; Positive effect on the reliability of the credit repayment source for investment project financing; It is important to use leasing as a non-credit method of financing investment projects.

1Source: Data of the State Statistics Office of the Republic of Uzbekistan.
In order to avoid problems, sustainable development of water management should focus on creating and creating a more favorable investment climate, as well as enhancing and investing in irrigation and land reclamation. The Ministry of Water Resources is the customer and contractor for the construction, reconstruction and operation of water bodies. 57 contractors in the country were excluded from the Ministry of Water Resources and merged into a separate joint stock company. Further development of irrigation and land-reclamation measures has led to the need to strengthen investment activities in the water sector of the country [8].

3. RESULTS AND EXAMPLES

Consistent measures are being taken in our country to radically reform the mechanisms for the use of water resources, to ensure their rational and effective use, to support and encourage the introduction of water-saving technologies in the economic sectors, as well as to improve the reclamation state of irrigated lands. The implemented measures, as well as mechanisms of state support allowed in 2019 to introduce an additional 33,200 hectares of water-saving irrigation technologies, which accounted for 44% of the total area of land used by such technologies.

The Ministry of Innovative Development of the Republic of Uzbekistan during the year should study the problems that investors, ministries, departments, businesses and organizations need to address, summarize and present them to the competition.

When ordering, the Ministry of Innovation Development should clearly indicate the amount of payment for scientific products and the timeframe for completing the research. It is also important to note that research work can be carried out independently between the customer and the contractor directly by the contract. However, in this case, the experts from the Ministry of Innovation Development should give their conclusion on the case.

Once a scientific solution to the subject has been resolved, it is not the search for its consumers, but rather the advancement of customers on the subject. In this case, customers participate in research and financing with their own funds. In the case of a reduction in budget funding for research, such an approach to funding would prevent a reduction in the total amount of funding allocated to R&D.

There is another issue that needs to be taken into account when funding new research activities. Deadlines for the implementation of research (orders) in water management should be determined according to the directions of the research. It is necessary to approach differentiated approach to scientific applications. It is also necessary to improve the methodology for determining the amount of funds allocated for scientific development.

It is necessary to move to a large-scale introduction of the mechanism for funding research activities in the water sector through innovative projects. At the same time scientific ideas, scientific development, designing, production, processing, storage and sale of products are organized into one system.

Even when working on an innovative project, the main link in the project system is the sale of the product and the investor must return its investment. In this project, the scientific idea and scientific development is of utmost importance, and the funding mechanism of the research institutions in the project will be decided on its own. The analysis and the study of the experience of foreign countries indicate the need to change the methodology of financing research programs based on the requirements of the market economy.

It is desirable that funds allocated for innovative projects in water management should be determined based on the relevance of the topic, its importance in the development of the economy, the complexity and timing of its solution; In the process of liberalization and modernization of the economy, it is necessary to use the mechanism of financing research programs through innovative projects, taking into account the peculiarities of water management and the limited ability of the economic entity to order scientific products. Due to this, some of the budget funds will be used for training and retraining; more fully utilize the mechanism of additional research by international financial institutions, foreign research institutions and international research institutions in the development of water management research [4].

The existing mechanism requires the creation of a system of financial incentives for non-
governmental entities using scientific products to finance research activities. The use of the proposed method of financing research activities in the country will increase the amount of funds allocated for research, strengthen the material and technical base of institutions and scientific institutions.

The main purpose of water management investments in the country is to increase the investment potential of the water economy by increasing the interest of business entities, improving the structure of funding sources and establishing joint ventures with foreign countries. Water management should promote sustainable economic growth through the establishment of an effective system of government regulation and support of investment processes. It is necessary to create favorable conditions for economic activity of national and foreign investors in the water sector. At the same time, special attention should be paid to the promotion of investment activities of enterprises and the population and the broad attraction of foreign capital into the country's economy. Implementation of water management investment projects in the country will stabilize the rates of economic development of the country [9].

Economic reforms in the water sector of the country now show that for the last three years, the introduction of drip irrigation systems in the country has increased by 5668 in 2016, 9030 in 2017, 15103 in 2018 and 24800 in 2019 (Fig. 1).

One of the types of land use in the country is rent is, the land plot is given to another person under the contract-the rent payment evazi for temporary use. They are: the land shall be issued to citizens for rent in order to run farming industry, run business activity, private backyard, gardening, vegetable growing, animal husbandry and other agricultural activity; will be separated for government enterprises, institutions and organizations as well as joint ventures, international unites and organizations, individuals and legal entities; in order to run any kind of activity land owners and land user will be appeared. They are together land resources basis of the respective field of the agriculture; included in objective terms and conditions of land owning and using.

The process of using and owning the land is always changed. The most considerable is completely reforming the relationship. The conception of land using is used in general meaning in some cases and it means the process of land using or land plot which is used not linked with the legal status. The land is basis of the country’s wealth and initial source as well as the main foundation of developing all fields of agriculture and the main producing resources of the agricultural field.

In 2016, In the regions of Tashkent and Namangan regions, a layer of land was studied.

![Fig. 1. Dynamics of drip irrigation system implementation in the republic (2016-2019)](image)

Source: Data of the State Statistics Office of the Republic of Uzbekistan.
Mineralization of ground water during the vegetation period in the hydromorph and half hydromorph watered soil of the districts located in the south territories of Tashkent region reached to 0,5-0,9 h/l, their level is on 2-3 meters. The underground water of watered agricultural land areas located in such territories is hydrocarbonic, strongly salted in the type of sulphate and chloride sulfate, ground water is very closed to the land surface, as a result it is known that they are used for steaming and increased their mineralization as well as reached from 2-4 h/l to 6-7 h/l.

It was revealed that chloride sulfate and sulfate salting was developed in the hydromorph soils of the regions located at right shores of Syrdarya flowing from south part of Tashkent region and in the result gypsum layer was appeared in the watered soils of the territory.

The amount of humus in the arable layer of the dry soil is average 0,40-0,81% and it is decreased to lower layer. The amount of gross nitrogen is fluctuated around 0,020-0,074% in the genetic layer of the soil profile.

The gross phosphorus in the soils of the district where watered hydromorph soils are widespreaded is fluctuated around 0,166-0,201%, it is the highest indicator of the arable layers of the soil.

The amount of active phosphorus in the watered hydromorph soils of the region is 5,45-12,22 mg/kg arable layer and it is included the least provided group. The active phosphorus is unevenly distributed (125-274 мг/кг) in the arable layers, this amount is sharply decreased in the lower layers. The active phosphorus is 5,1-6,8 mg/kg. The amount of gross potassium is fluctuated around 3,4-5,1% in the soil profile and this indicator is the highest indicator in the arable layer. The amount of active potassium is about 178-284 mg/kg in the arable layer of the soil and it is less sometimes averagely provided with active potassium.

Erosion process is observed in less and average level in the watered soil of mountain front and upland areas of the districts located in the north part of Namangan region, it was revealed that watered soil of region located in the north area is very less provided with humus and active phosphorus as well as potassium. Average amount of humus is 0,5-1,02%, active phosphorus is 10-25 mg/kg and phosphorus is 10-25 mg/kg and potassium is 130-231 mg/kg in the arable layer of the watered land areas of the district located in the north part. The underground water is strongly mineralized in the type of sulfate and chloride sulfate in the watered agricultural land areas located in the Fergana desert, ground water is closed to the land surface, in the result, they are used in high amount for steaming and increased their mineralization, eventually reached from 2-3 h/l to 4-5 h/l.

It was identified that the chloride sulfate and sulfate’s salting is developed in the hydromorph soils of Mingbuloq and Pop districts, in the result gypsum layer was appeared in the watered soils of the area and faced to the salting in different level. The land areas faced to the water erosion in the watered soils of the region is totally 75,6 thousand hectares (32 percent) of the watered lands, from this 16 percent is faced to less erosion, 11 percent is average erosion and 3 percent is high erosion.

The amount of active phosphorus in the soils in the hydromorph soil widespread districts of Namangan region is average 6-2 mg/kg i.e provided in less level in the arable layer. The active nitrogen is fluctuated around 4,2-5,8 mg/kg. The amount of active potassium is average provided with 180-231 in the arable layer. It was observed that erosion process is average and strong level in the mountain brown and blue soils of the mountain front and upland areas, this case was identified in the soils of Pop and Yangikurgon districts. Degradation process is strengthened in the process of depletion of humus and food substances in the high levels of the soils established as a result of average and strong level of erosion process, the amount of humus in the content of the soil dropped to 0,7-1,3%.

Soils that cause deterioration of the melioration state of the soil and a decrease in fertility, consist of various degree of salinity processes; that is, not salted, weakly salted, moderately salted, strongly salted, very strong salinity. The indicator of the separation of saline and unfertilized soils in the country is the limit of the toxicity of easily soluble salts, which is established for resistant crops.

3Source: Data of the State Statistics Office of the Republic of Uzbekistan.
The degree of salinity indicates the total amount of easily soluble salts in harmful water in the soil. The main reasons for soil salinity in the country are as follows: mainly due to the fact that groundwater does not flow out of the fields; due to the fact that the ARY-trenches do not work.

Salinity of the soil, the degree of its salinity, mineral salts, location depth of saline horizon and it differs by the depth of the groundwater. Salted soils are various genesis and featured soil groups deteriorating soil productivity and having a profile of a range of easy melting salts negatively effecting on grow and development of plants.

In the research, annual difference is a grow of non-salted land areas.

As a result, the increase in saline land across the country has increased by 2,667,000 hectares in 2009, 2212,000 hectares in 2012 and 2348.3 thousand hectares in 2018 (Fig. 2).

The main sources of water in the country is as follows: Amudarya and Syrdarya river and lakes; in the ices of the mountains of Fergana, Namangan, Kashkadarya, Samarkand, Jizzakh and Tashkent regions; the sun heats the steamed water, then it causes to rain; the value of water circulation is very big, because it not only combines parts of hydrosphere but also it combines all shells of the earth such as atmosphere, hydrosphere, lithosphere and biosphere. During the cycle the water will be in three conditions: liquid, hard and gaseous. It carries substances necessary for life.

The key indicators of effective water use in other sectors of the economy of the Republic by 2018 are 51 billion m3 [10]. Including: agriculture - 90%, utilities - 4.2%, energy - 2.5%, industry - 1.3%, fishing - 1.2%, and others - 1.0% (Fig. 3).

It should have a stable position both in the domestic and foreign markets, and increase the competitiveness of water companies internationally, and first of all, based on innovative factors in scientific, technical, intellectual and industrial environments. The activities aimed at developing the innovation process in the water management enterprises are not fully formed from the legal framework of the innovation policy, and the existing ones are general. At the same time, the policy of innovation is limited to budget financing of the most important innovation projects and the organization of exhibitions on innovation.

It is clear from the practice of developed countries that insufficient funding for fundamental and applied research and development activities is one of the major factors that impede the development of innovative activities and reduce the profitability of enterprises [11].

![Fig. 2. Dynamics of increase in saline soils across the country (2009, 2012-2018)⁴](image_url)

⁴Source: Data of the State Statistics Office of the Republic of Uzbekistan.
At least 1% of GDP should be allocated to finance this agrarian sector for active innovative activity. For this activity, the GDP of developed countries, including the European Union, amounts to 1.8%, the USA - 2.8%, Japan - 2.9%, and Israel - more than 4%.

Part of the fundamental and applied research on agricultural research and development activities was funded by grants or sponsorships from budgetary and extra-budgetary funds. Continuous formation and improvement of innovation market management based on government order for innovative products [12].

The constant interaction of research activities is the basis for the development of each sector. This is necessary for the application of new and up-to-date technical processes throughout the production cycle, and for sustainable water management. At the same time, the final results may vary: increased efficiency; optimal use of available financial, labor and material resources; profit margin and cost reduction. The use of widespread tax incentives is important in harmonizing investment activities and advanced government practices. The incentives are given to companies investing in R&D and new technologies. These benefits may include: exemption from income tax on R&D and capital investment in new technologies; inclusion of expenditure on specific types of techniques used in research activities to current costs [13].

It is necessary to identify problems in the water sector and identify the most relevant ones. In order to solve problems, it is necessary to do research and development activities. Positive effect of the innovation process is the implementation of the results of research and the solution of existing problems through the use of experience in production. The current state of the country needs to accelerate the pace of implementation of innovative changes in the water economy. In the conditions of modernization of the water industry, the creation of innovative activities will be driven primarily by the sectors that provide economic growth, which in turn will stimulate the agricultural sector to reduce its raw material exports, develop its processing, save currency, and increase employment will be. The achievement of these factors, in turn, can be achieved through proper regulation of investment in the development of innovative activities [14].

In view of the above, the purpose of investment should be to improve the processes of reproduction, strengthen the material and technical base of the country, to increase its economic potential, and to create an effective system of government regulation and support of investment processes aimed at achieving the overall economic development.

4. CONCLUSIONS AND RECOMMENDATIONS

The mechanisms that ensure the interdependence of production and science on the basis of the peculiarities of the water sector of the economy must be fully reflected. Unless the implementation of scientific achievements is...
not a whole set, it is difficult to achieve the desired results. Therefore, special programs for the implementation of scientific developments should be created, as a set of measures that can be conceptualized and implemented at the national, regional, regional and district levels.

Expected results from the introduction of scientific achievements through a comprehensive program will be: Increasing the economic efficiency of water management; scientifically-based implementation of scientific and technical achievements in the development of water management; accelerating regional economic development; improvement of material and technical base of water management on the basis of scientific recommendations; improving staff knowledge and professionalism of workers; greater attraction of foreign investment. For this purpose, it is important, first of all, to stimulate research institutions in the water sector based on the results of scientific research. This mechanism, on the one hand, facilitates the participation of authors and research organizations in the process of introducing their products into practice, allowing them to monitor the process; on the other hand, to stimulate the author's interest in working on scientific solutions; and thirdly, to provide funding for research on new topics.

The scientifically justified basis for the use of water management technology in the water sector is as follows.

In conclusion, it is important to note that investment is an essential prerequisite for innovation, and that investment without innovation can lead to ineffectiveness and continued production of non-competitive products. Investments cannot be made without innovations, because they cannot be found in the market without the replacement of outdated equipment. Therefore, the main source of innovation is investment in fixed assets.

Since there is no investment in innovation and innovation without investment, special attention should be paid to the normative distribution, taking into account the relationships between them.

Improvement of the mechanism of attraction of investments to the economy, development of investment processes, growth of the manufacturing sector, economic development of the country and further development of the water sector plays an important role in the country's economy.

The following scientific proposals have been developed to address the challenges of attracting investment in the water sector: - Conducting in-depth marketing research on investment projects; sustainability of the investment project's cash flows; Positive effect on the reliability of the credit repayment source for investment project financing; It is important to use leasing as a non-credit method of financing investment projects.

A practical recommendation to solve problems in water management research is to: Exemption from tax benefits of funds that participate in the modernization of the main funds of Water Enterprises – The water companies shall be interested in carrying out this kind of activity. Water companies can save on taxable interest. These funds are the purchase of modern techniques and technologies, payment and promotion of wages to workers and employees, conduct research with scientific institutions and direct them to new production. It is planned that the funds will be spent on the necessary and other types of activities for the company; reduction of interest rates on loans for modernization; exemption from tax privileges granted to foreign investors; exemption from taxation of imported machinery and equipment for modernization of production enterprises in the water industry; to provide incentives to producers who implement innovative activities on a consistent and systematic basis through preferential taxation.

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COMPETING INTERESTS

Author has declared that no competing interests exist.

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