

Investment and Innovative Development Ways of Water Resources

Sukhrob Umarov

Department of Water Resources Economy, Tashkent Institute of Irrigation and Melioration, Tashkent City, Uzbekistan

Email address

usr_79@mail.ru

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Abstract

This paper discusses with specific features of water resources development on the basis of investment and innovation and methods of government support programs to innovation in foreign countries. As well as investigated the implementation of innovative activities according to monographic studies and foreign experiences and linkage between ongoing innovative policy and socio-economic conditions of the country. In addition, given some recommendations related to implementation and structure of government programs in the development of innovations in water management system.

Keywords

Innovation, Investment, Water Resources, Development

1. Introduction

As noted by the first president of the Republic of Uzbekistan I. A. Karimov "...modernization and technical upgrading of main branches of economy gives a strong impetus for new achievements and competitiveness in world market, as well as the introduction of modern innovative technologies must target a large number of new projects" [1].

Therefore, nowadays ongoing researches on effectively use of innovative capacity in national economy became more active and effectively.

As in other sectors of the economy, agriculture and water management system is one of the main directions to the expansion of all-round well-thought-out policy of ongoing investment. Because the investments ensure the implementation of deep structural changes in the economy as well as plays an important role to strengthening of the position of national economy's branches in the external and the internal market.

Indeed, the normative-legal acts adopted by the government stimulate the investment activities in the sector

and ensure the organizational and legal conditions in modernization of the economy. After all, as noted the first President of the Republic of Uzbekistan I. A. Karimov "... there would not be any modernization and updating without investment" [2].

In this regard, doing scientific researches, attracting investments and effective use of water resources, as well as effective use of natural resources and development of innovation are the most important objectives in water management development.

2. Materials and Methods

Therefore, the volume of modern investments should gradually increase in accordance with the outlook for the modernization of agriculture and water resources. However, the analysis showed that the volume of investments increased in the absolute figure point of view, but still the growth rate is lower compared to the another real sectors of the economy.

Table 1. The sectorial structure of investments in republic.

| Indicators | 2012 y | 2013 y | 2014 y | Changes in 2014 compared to 2012 (+; -) |
|---|---------|---------|---------|---|
| Investments in fixed capital (in billion) | 22797,3 | 28694,6 | 35233,3 | + 12,436 |
| Industry | 34,2 | 34,2 | 37,4 | + 3,2 |
| Agriculture | 4,8 | 4,6 | 4,1 | - 0,7 |
| Construction | 1,2 | 1,5 | 2,3 | + 1,1 |
| Transport | 14,9 | 15,2 | 11,9 | - 3,0 |
| Communication | 2,9 | 2,7 | 2,2 | - 0,7 |
| Trade and public catering | 4,5 | 5,2 | 5,6 | + 1,1 |
| Housing | 19,8 | 20,7 | 20,2 | + 0,4 |
| Utilities | 1,9 | 2,5 | 2,5 | + 0,6 |
| Health, physical education and social welfare | 4,0 | 3,1 | 2,8 | - 1,2 |
| Education | 2,8 | 2,6 | 2,3 | - 0,5 |
| Others | 9,0 | 7,7 | 8,7 | - 0,3 |

Source: State Statistical Committee of the Republic of Uzbekistan

This table shows to us the tendency of increasing the volume of investments in the agricultural sector. However, the growth rate of investments in agriculture is remaining lower compared to other real sectors of the economy. In particular, the volume of investments in agricultural sector decreased by 0.7 points in 2014 compared to 2012. The analysis showed that the volume of investments and their achieved level of effectively use indicators in current time 3-5 times less than industrially developed countries.

It should be noted that the creation of a favorable investment environment for foreign investors in the modernization of the country and technical and technological re-equipment of main sectors, as well as the implementation of strategic investment projects in 2014. As a result, the structure of the financing of the company led to a sharp increase in the share of the population.

More than half of the total volume of investment in fixed capital, which is 54.7 percent of private investment, financed at the expense of own funds of enterprises and population. The fund for reclamation of irrigated lands is 0.3-0.45 percent in recent years.

At the same time, it should be a gradual increase in the volume of foreign investments which is directed to technical and technological modernization of agriculture. The total amount of directed investments to fixed capital was 4653.3 billion Uzbek sum in 2012. This indicator increased by 2326.8 billion in 2014 and reached to 6980.1 billion Uzbek sum. The share of sectors as follow: 67.7 percent in industry, 2.3% in agriculture, 0.3 percent in construction, 14.5 percent - transport, 8.7 percent - communications, 0.5 percent - trade and catering, 3.9 percent of the housing and communal services and 2.1% in other sectors.

The analysis showed that the growth rate of foreign investments in agriculture remains low compared to other sectors of the economy. In particular, the volume of investments in agricultural sector decreased by 0.7 points in 2014 compared to 2012. But this time, the volume of foreign investments in network has increased in total index point. In other words, the sum of foreign investments was 134.9 billion in 2012, and this rate reached to 160.5 billion Uzbek sum in 2014. According to these analyses we can see the tendency of increasing the volume of investments in the

agricultural sector.

Investments in the agriculture is positively impacting on the growth of economic sectors in the country, as well as the technical and economic development of water management, production efficiency, land and water, the use of labor and technical potential and other sectors. In particular, on the basis of the presidential Resolution N: 2264 on November 17, in 2014: "Investment program for 2015 of the Republic of Uzbekistan" achieved 81.54 million US dollars investment capital under the new 18 projects in the Ministry of Agriculture and Water Resources system [3].

Due to investments in the network, were spent over than 1648.0 billion for ameliorative activities in 2008-2015 years. These funds include 6.7 thousand km of pipelines, 170 pumping stations, and 1255 units of vertical drainage wells, besides the 5593 observation wells have been built and reconstructed. At the same time, 106.1 thousand km of pipelines, 246 pumping units, 6751 units of vertical drainage wells, 348 units of water facilities have been repaired and restored. Additionally, 1950 pieces of modern equipment supplied by the leasing company "Uzmeliomashleasing" during this period. From these 780 are excavators, 240 bulldozers and 930 are other techniques.

In overall results, due to investments in water management system during the 2008-2015 years, have been developed innovative activities and improved the reclamation condition of 2 million40 thousand hectares of irrigated lands in the country's agriculture. This caused to higher productivity in cotton3-4 and in wheat by 4-5 quintals. In addition, as a result of the ongoing reclamation activities have been improved the land condition of 100.0 thousand hectares of population land plots [4].

As we know, introduction of modern technologies became as main tool and necessity in the development in all sectors of the economy such as production in water resources, supply and services in all areas of activity, advanced ideas, researches and development. Due to implementation of these activities required to hire employees with high scientific potential.

The number of scientific-research and experimental-development agencies decreased by 2.2% to 306 units in 2014 compared to 2012. Especially, the scientific-research

institutions plays great role among the experimental development agencies in the republic. But the number of scientific-research institutions is decreasing, such as it was 142 in 2012 and decreased by 4.9 % to 135 units in 2014.

Table 2. The analysis of scientific-research and experimental-development agencies activities in the republic.

| Types of organizations | 2012 y | 2013 y | 2014 y | Changes in 2014 compared to 2012, % |
|----------------------------------|--------|--------|--------|-------------------------------------|
| Scientific-research institutions | 142 | 141 | 135 | 95,1 |
| Design organizations | 2 | 2 | 1 | 50,0 |
| Project and design organizations | 12 | 10 | 10 | 83,3 |
| Higher education institutions | 78 | 78 | 82 | 105,1 |
| Industrial enterprises | 8 | 6 | 9 | 112,5 |
| Others | 71 | 67 | 69 | 97,2 |
| Total: | 313 | 304 | 306 | 97,8 |

Source: State Statistical Committee of the Republic of Uzbekistan

At the same time, professors and teachers of the universities play an important role in the implementation of scientific-research and experimental works. In addition, as a basic function of development the effective use of intellectual property and development of innovative infrastructure plays an important role in the scientific-technological and agro-industrial development of the country. Such kind of systems should serve as a bridge between intellectual property producers and industry and the sales of goods and services in domestic and foreign markets.

2.1. Monographic Studies

At present time, the main part of innovation potential in the Ministry of Agriculture and Water Resources system has formed mostly in higher education institutions. In particular, today, there are 4higher education institutions in this field.

These are Tashkent State Agrarian University, Tashkent Institute of Irrigation and Melioration, Andijan Agricultural Institute and Samarkand Agricultural Institute.

It should be noted that the system of innovative potential was formed at the Tashkent Institute of Irrigation and Melioration and the Institute of Irrigation and Water Problems Research Institute. The scientific researches and innovative activities related with water resources are mainly carried out by the professors and teaching staff in the same institutions.

In particular, the ongoing researches have been carrying out on 5 areas by the scientists of Tashkent Institute of Irrigation and Melioration. The scientific analyses showed that during the years 2006-2014, totally 175 scientific-researches have been done. We can see the results in the next table.

Table 3. Scientific-researches on innovative development of water resources (in 2006-2014 years) [6].

| Science (research) areas | Fundamental | Practical | Innovative | Aggrements | Total |
|--|-------------|-----------|------------|------------|-------|
| 1. Water-saving technologies in irrigation, efficient use of drainage systems and improvingthe ameliorative condition of irrigated lands | 2 | 22 | 5 | 35 | 64 |
| 2. Improvementof hydroelectric structures, calculation, design and development principles to ensure the safety | 2 | 8 | | 23 | 33 |
| 3. Problems relatedwith mechanization, electrification and automation in water use | 1 | 26 | | 24 | 51 |
| 4. The improvement of methods for the creation of the efficient use of land resources in Uzbekistan | 1 | 8 | 3 | | 12 |
| 5. Organizational and economic feasibility of the use of waterin agriculture | | 8 | | 7 | 15 |
| Total: | 6 | 72 | 8 | 89 | 175 |

Source: Scientific -research plans of Tashkent Institute of Irrigation and Melioration.

This table showed that the scientific-researches totally 175 units and which are 6 (3.4%) on the basis of fundamental, 72 of them (41.1%) of the grant, and 8 (4.6%), of them are innovative and 89 (50.9%) were carried out on the basis of economic agreements. So we can conclude that, the scientific-researches mostly carried out on economic agreements and the practical problems by the scientists and attention to implementing fundamental and innovative researches was not enough. In general, the scientific-researches on water resources are carrying out well enough but still there are some problems with their implementation in practice.

2.2. Foreign Experiences

It should be noted that, government policy has an important role in support and developing strategies to ongoing innovative activities. In this regard, there are various strategies for the development of innovative policies and organizational and economic elements in foreign countries. In particular, government support differentiates in two direct and indirect methods to innovative activities in developed countries [7].

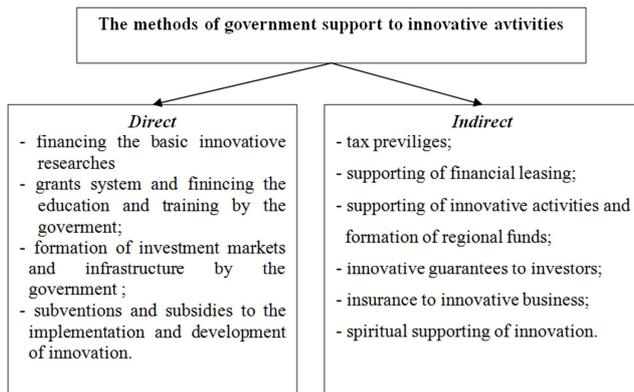


Figure 1. The methods of government support to innovative activities.

As a summarize of analysis in the development of innovative activities in foreign countries we can note that the scientific-technic and innovative policy envisages two important objectives, which are:

- Constantly developing and keeping the scientific and technical capacity of targeted areas. In that case, the primary focuses should be directed to fundamental researches.
- Organizing the favorable “innovative environment” on the basis of accepting organizational and economical measures.

As well as the experiences of developed countries shows that, in the innovative development of the economy, agriculture and water resources conditions requires from the government to constantly increasing the level of funding and developing the science and education system.

3. Conclusion and Recommendations

In conclusion from the above, the support to innovation and implementation of innovative policies should be related to the country’s socio-economic development conditions. As well as, the basic principles of innovative policy should be implemented under the macroeconomic policy of the country. Because, any kind of socio-economic development initially carried out at macro level and then step by step in other sectors of the country.

According to results of implemented researches, it is necessary to think about innovative policy in water management system through these principles:

- constantly developing of legal basis of the formation of innovation in system;
- supporting the higher and secondary education and training systems;
- developing of innovative infrastructures in the system;
- creation of favorable conditions for development of innovative business;
- supporting the owners of intellectual property and improvement their legal basis;
- providing innovative information and development of processes regarding to sharing knowledge and exchanging experiences;

Implementation of innovative policy mechanism includes

short, medium and long terms and carried out under support of state and regional innovative development programs. From this point of view, arises necessity to formation of government programs in long-term development of innovation in water management system. In this regard, the structure of government program in the development of water management system should be as follow:

- *Researches related to innovation in water management system:* water-saving technologies, effective use of drainage system and creation of scientific basis of improving the ecological and ameliorative conditions of irrigated lands; the improvement of hydroelectric structures, calculation, designing and ensuring the safety; mechanization, electrification and automation problems in agriculture and water management system; the improvement of methods for the establishment of efficient use of land resources; organizational and economic feasibility of the use of water resources for irrigated agriculture.
- *The main directions of formation of the innovation system in water management:* improvement the education system in water management; development of science in agriculture and water management; promotion the participation of private sectors in innovative processes; modernization of high-tech industries in the system; development of innovative infrastructures in water management system; development of international cooperation in innovation system;

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