

SCIENTIFIC AND THEORETICAL BASES OF FORMATION OF INNOVATIVE PROCESSES IN THE SYSTEM OF INFRASTRUCTURE OF THE AGRARIAN SPHERE

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Abstract.

The article substantiates the features and the objective need for innovative development of rural infrastructure in the context of modernization and diversification of agricultural production and the implementation of structural changes. They also discussed issues of further improving the system of integrated management of innovative development processes in infrastructure industries.

Keywords

Innovation, investment, infrastructure, innovation process.

Аннотация.

В статье обоснованы особенности и объективная необходимость инновационного развития инфраструктуры села в условиях модернизации и диверсификации сельскохозяйственного производства и осуществления структурных изменений. Обсуждались также вопросы дальнейшего совершенствования системы интегрированного управления процессами инновационного развития в инфраструктурных отраслях.

Ключевые слова

инновации, инвестиции, инфраструктура, инновационный процесс.

Annotatsiya.

Maqolada qishloq xo`jaligida ishlab chiqarishni modernizatsiya va diversifikatsiyalash hamda tarkibiy o`zgarishlarni amalga oshirishda qishloq infratuzilmasini innovatsion rivojlantirishning o`ziga xos xususiyatlari va obektiv zaruriyati asoslab berilgan. Shuningdek, infratuzilma tarmoqlarini innovatsion rivojlantirish jarayonlarini majmuaviy boshqarish tizimini yanada takomillashtirish masalalari o`rganilgan.

Kalit so'zlar

Innovatsiya, investitsiya, infratuzilma, innovatsion jarayon.

Introduction.

Ensuring the country's food security in the context of global integration requires that the sector be flexible, adapt to the changing external environment, and influence various innovations and scientific and technological developments on the basis of sustainable agricultural development.

The modern stage of agricultural development in many developed countries of the world is the transition to an innovative model that provides a systematic integration of the agricultural sector and science and technology to increase its efficiency.

In particular, it is necessary to create a "smart agriculture" to optimize production and distribution systems and introduce new business models that allow more efficient use of land, energy and other natural resources and focus more on needs [1].

By 2050, world population will reach 9.7 billion. The global human population represents a global problem. These problems pose a serious threat to the right to adequate nutrition and the basic right of everyone to be free from hunger. Feeding the growing population and achieving the goals of sustainable development requires agricultural producers to produce more food. In this regard, innovation is about reforming the food system, saving family farmers from poverty, food security, sustainable agriculture, and the "Changing the World: September 25, 2015," adopted by the United Nations General Assembly. Sustainable Development Goals 2030". Decree "On Approval of the Innovation Development Strategy of the Republic of Uzbekistan for 2019-2021", dated May 7, 2018, PK-3698 No. 2460 "On Measures for Further Reform and Development of Agriculture in 2016-2020", as of May 29, 2018, No. PK-3751 "Mechanization and Service Providers for Agricultural Products" This research will serve to some extent in fulfilling the objectives set out in the Decree "On Additional Measures for Improving Dental Efficiency" as well as other regulations related to this activity.

As the first President of the Republic of Uzbekistan I.A. Karimov said: "... The main task for us is continuous technical and technological renewal of production, constant search for domestic opportunities and resources, deep structural changes in the economy, modernization and diversification of industry. should consist of a consistent continuation of the work "[2]

This important task is reflected in the Decree of the President of the Republic of Uzbekistan Sh.M. Mirziyoyev "On the Strategy for further development of the Republic of Uzbekistan": strengthening macroeconomic stability and maintaining high economic growth, increasing the competitiveness of the national economy, modernization of agriculture. and rapid development [3]

Indeed, in the context of modernization of the country, through the improvement of organizational and economic mechanisms for the innovative development of rural infrastructure, it is necessary to provide services to agricultural and agricultural producers at the level of demand and fully meet their needs.

Literature review.

Some scientific and theoretical and organizational and economic aspects of innovative development of various sectors of the economy, including agriculture, are provided by foreign economists: D. Aschauer, R. Wethersfield, I.R. Bright, A. Stow, L.I. Abalkin, I. Ansoff, P. Baranchev, I.K. Belyaevsky, J. Bright, W.P. Krasovsky, K.R. Mackonell, L. Bru, M. Porter, Research of scientific works of IS Sandu, B. Santo, A. Smith, R. Taker, B. Twiss, R.A. Fatkhudinov, V.F. Fedorenko, M. Huchek, F.K. Shakirov, I. Schumpeter was made.

Some of these issues are from the economists of the Republic of Uzbekistan B.B. Berkinov, K.D. Mirzaev, Ch. Partially studied in scientific works of Choriev, R.H. Ergashev, S.S. Gulomov, A.M. Kodirov [4] and others.

Research Methodology.

In Uzbekistan, too, much attention is paid to the provision of all the conditions for activating innovation processes in all sectors of the economy, including agriculture. Innovative development will allow solving existing problems in agriculture, as well as radically changing its

appearance, and moving to a new stage in the development of agriculture and its infrastructure. In the context of modernization of the country, it is necessary to "restore the lost old varieties, rational and effective selection, wide introduction of scientific achievements and innovations in the field"[5] and "farmers who are well versed in modern technologies of production and innovation in agricultural technologies." water and air needed" [6]. At the same time, the methods and mechanisms of innovative infrastructure development must meet not only the modern market principles of the national economy, but also take into account the specifics of each region. In general, a comprehensive review of innovation activities and processes in the agricultural infrastructure sector, critical review of the practice and innovative development of the agricultural infrastructure are becoming an objective necessity.

Investment and innovative development of agriculture is a wide-ranging process, using financial resources, attracting additional sources of financing, investing in new knowledge and ideas, applying new technologies, introducing services, and introducing new forms of infrastructure management. are closely related. This problem can be solved only when investment is compatible with innovation, and balanced development of investment and innovation processes.

This approach entails studying investment and innovation as a system, and its successful development and functioning is closely linked to the infrastructure and services provided by agriculture and the level of economic growth and sustainable development.

The concepts of innovation, innovative activity, innovative process and so on are firmly entrenched in our daily lives, business activities and various aspects of the economy. Innovation is one of the important factors in increasing the competitiveness of enterprises in developed countries, strengthening its position in the market and the production of consumer goods.

In the implementation and implementation of innovative activities, first of all, it is necessary to clarify the basic terms and concepts.

In our opinion, innovation is an investment based on the use of scientific achievements and best practices, the process of improving and developing social production, the formation of new consumer products (goods, products, equipment, technology, other organizational forms and tools), implementation and is the materialized end result of creative activity, contributes to the satisfaction of market and social needs, saves costs, and ensures that people are productive in different areas of life and activity.

Innovative development of rural infrastructure is a system of measures aimed at increasing the level of competitiveness of the industry, improving the quality of services, increasing profitability, conducting a set of research and development, creation and implementation of innovations.

Innovation policy in infrastructure development is part of the state's innovation policy in the agricultural sector and is a form of implementing the country's innovation strategy to modernize the country, achieve the sector's stability and competitiveness.

Innovative infrastructure is a set of organizational and economic institutions that provide the conditions for the implementation of direct innovation processes based on the principles of economic efficiency. Management of the process of formation and development of innovative infrastructure is one of the main tasks of the problem of effective management of the agricultural sector.

Innovation is described in the economic literature as follows. Innovation is the end result of innovative activity, a product that emerges and is introduced to the market in a new or improved form, a new or improved technological process used in practice, interpreted as a new approach to social services based on the results of the latest research or inventions.

Innovative activity is the introduction of a new or improved type of product in production, the introduction of a new or improved technological process, the production of products with a higher quality content for consumers or to increase the competitiveness of the product.

Innovative infrastructure - consists of organizations that provide services for the organization of the introduction of new or improved products in production, the introduction of new or improved technological processes.

Innovative development of rural infrastructure and increasing its economic efficiency requires a thorough and comprehensive study of innovations.

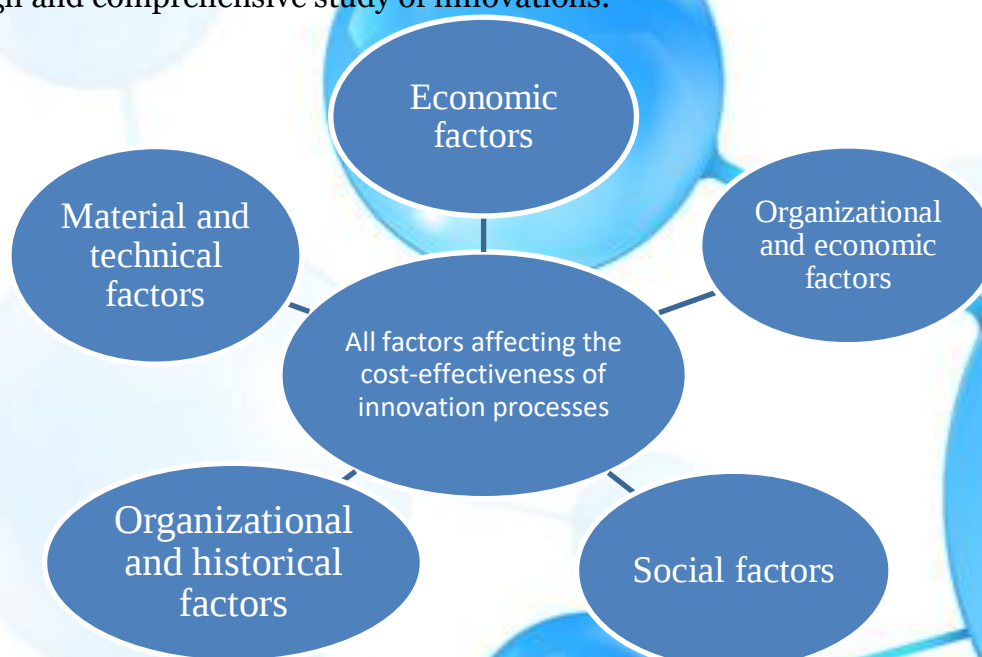


Figure 1: All factors affecting the cost-effectiveness of innovation processes

All the factors affecting the cost-effectiveness of innovation processes, taking into account the specifics of the industry, can be divided into the following groups: (Figure 1)

- natural-historical factors: improvement of soil-climatic conditions by means of chemical, ameliorative, irrigation and other means, selection, genetics and other means and factors in the field of animal husbandry and agriculture;

- social factors: factors related to the identification and development of human abilities - physical, psychological, intellectual, factors related to the development of positive attitudes to work and its results, and the exclusion of negative ones;

- organizational and economic factors: organization of production, its specialization, concentration, application of best practices, the nature and level of management systems and methods, etc .

In the current conditions of our country, the reform of the agricultural sector is one of the most important strategic goals and priorities of economic change. As mentioned above, the growth of production efficiency is influenced by such factors as soil - climatic, organizational - productive (production), technical, technological and socio-economic. Economic research focuses on the first group of factors, and the impact of socio-economic factors on production results is poorly understood. One of the reasons for this is the difficulty of quantifying them, as well as the sudden inability to determine the impact of certain socio-economic factors.

In accordance with a number of resolutions of the President and the Government of the Republic of Uzbekistan, relevant ministries, companies, commercial banks and local authorities have created a number of infrastructure facilities in rural areas, taking into account factors such as natural and economic conditions. Various benefits (tax benefits, soft loans, etc.) were also provided to infrastructure facilities, provided that they were provided with the necessary machinery and equipment, as well as qualified personnel. As a result of these benefits, practical assistance was provided to the effective implementation of the initial activities of rural businesses. In the context of modernization of the economy and the introduction of innovations, it is necessary to focus on the acceleration of innovation processes and production activities in the development of sectors of the economy, including rural infrastructure.

It is estimated that three different types of technologies will be used to intensify agricultural production:

The first is simple, traditional technologies used in farms with low economic efficiency and capacity.

Older generation machines are mainly used when operating using simple technologies.

The second is intensive technologies, which are mainly designed for high-yielding farms.

The third is high-intensity technology, which is the future of competitive agricultural production in the country.

In general, in the introduction of innovations and scientific and technological advances in agriculture, on the one hand, given the conditions for the introduction of these innovations, on the other hand, it is necessary to determine what measures should be developed for the introduction of innovations in agriculture.

The reason is that GDP growth today can be achieved, first of all, through the development of small and large innovative businesses. Given the great role and importance of agriculture in the country, the innovative development of production will bring the industry to a new level of quality. At present, there are many directions in the development of agriculture, including rural infrastructure, due to various conditions and factors, the main of which are inertial and innovative development. Inertial development is a process that takes into account the stagnation in the economy, the slowdown in economic growth, the rise in prices, the crisis associated with inflation and unemployment.

Innovative development is associated with accelerated economic growth, increased sector efficiency, expanded reproduction and improved quality of life.

Analysis and results. The specificity of innovative processes in agriculture stems from the specific nature of the industry. At the heart of the distinctive features of the industry are, first of all, the natural-biological characteristics of agricultural production (land is the main tool, the use of living organisms as a means of labor - plants and livestock, dependence on natural-climatic conditions, etc.). Due to natural and biological factors, the technical and technological characteristics of the industry (seasonality of production, length of work, etc.). Due to these differences, in the process of long-term development, specific socio-economic features and characteristics of the industry have been formed. From the point of view of the innovation process, they are:

- Due to limited land resources, instead of extensive development in agriculture, it is necessary to pay attention to intensive factors, ie to get more per unit of land;

- The level of specialization of agricultural enterprises is lower than in other sectors, which is due to the need for efficient use of land, the seasonal nature of agricultural production, resulting in the organization of full use of labor, machinery and other means of production throughout the year; > Peasants, farms and private farms are not able to independently develop measures to develop production, which, as is well known, requires significant investment;

- At present, a number of works in the production process are carried out by special services, ie infrastructure facilities (tractor fleets, agrochemical service, fuel and lubricants sales outlets, processing plants, veterinary services, etc.); Special forms of state support and influence are required in different ownership conditions (scientific and technical policy, information base, tax and credit policy, etc.);

- The specificity of agricultural production and the introduction of innovations increases the need for highly qualified personnel or professional advice;

- A part of agricultural products is directed to agriculture itself for reproduction, and the fund for reproduction is formed on the basis of this product and the state. However, the volume of production varies over the years, so it is necessary to establish large insurance funds in order to ensure the continuity of the production process;

- the length of the technological process and its dependence on natural and climatic conditions make it difficult to predict the outcome of production;

- The probabilistic nature of production leads to the probabilistic nature of the results of the introduction of innovations. Changes in factors of production or the economic situation in general can lead to unintended negative consequences, so a thorough in-depth analysis is required before introducing innovation achievements into agricultural production.

In agriculture, in addition to the sectoral characteristics of innovation processes, it is necessary to take into account the essence of the innovation process itself. An innovative process is a single and integral stream of transformation of separate technical or technological ideas based on scientific developments into new technologies and their delivery directly to the use in the production process in order to obtain a new quality product. Through the implementation and implementation of innovation policy, society manages innovation processes in whole or in part in each area. The main purpose of this is to put scientific and technical developments into practice.

The innovation process is cyclical. The economic and technological impact of innovation processes is only partially reflected in new products and technologies. The main part is manifested in the increase of economic and scientific-technical capabilities (purchase of new equipment), ie the technological level of the innovation system increases, which leads to an increase in demand for innovation.

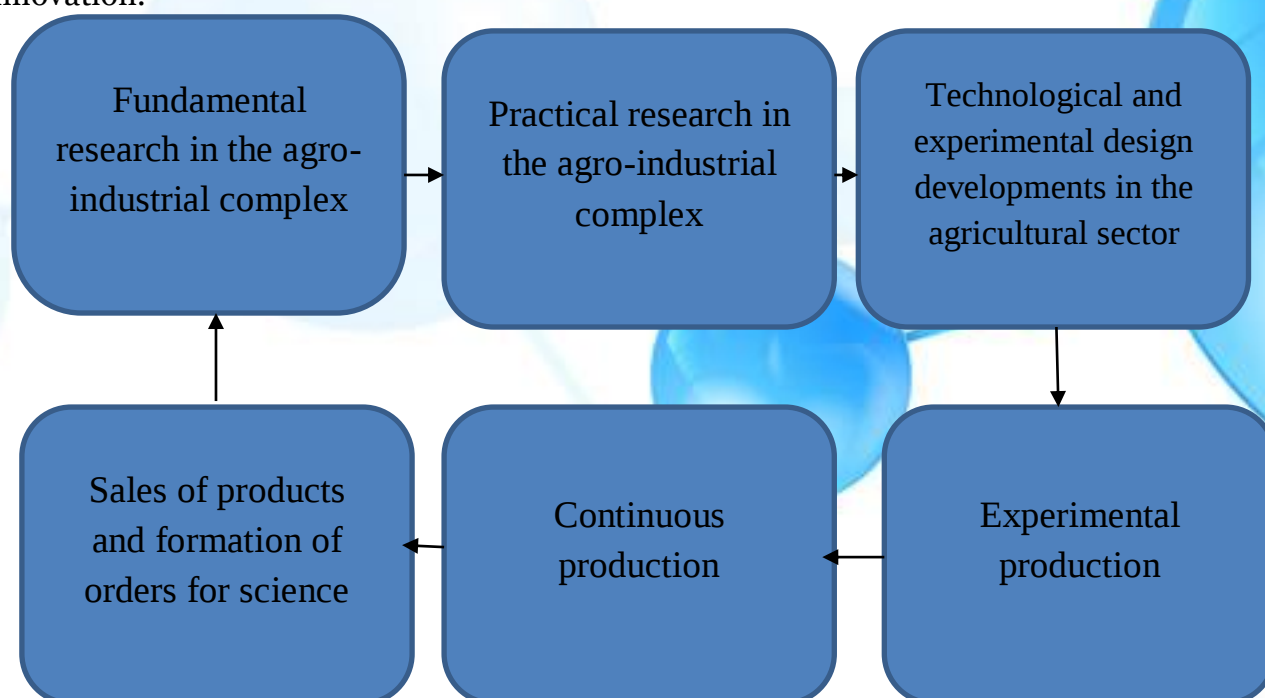


Figure 2. Stages of formation of the innovation process in AIC^[1]

A simple view of innovation processes in AIC (Agro-industrial complex) can be illustrated by the following figure (Figure 2).

The starting point of the innovation process is fundamental research, the purpose of which is to identify and study the basic laws of the compatibility of nature and technology. Fundamental research results in fundamental scientific knowledge in the form of basic principles, laws, and theories.

The purpose of applied research is the purposeful use of fundamental and derived knowledge obtained as a result of scientific and applied research. They will focus on improving new or existing hardware, technologies and products. The targeted focus of applied research and the high probability of obtaining the final result allow planning innovative activities in advance.

Technological and experimental design developments are a set of activities aimed at rigorous scientific research, design, construction, creation and testing of an experimental model. Production materializes a scientific product and then forms an order for the field of science. The common task for all stages is to process technological and managerial data in order to sell the product of scientific and technical developments in the form of a new product, a new device, a new method, a new technological process and a new system of agro-industrial complex management. In a well-designed and well-managed innovation process, all attention is focused on the sale of finished products from the field of scientific and technical research. At the same time, the elements

¹ Developed by the author.

of innovation are constantly interconnected throughout the innovation process through the exchange of information and the implementation of their processing.

As a result of the innovation process and the implementation of appropriate innovation policies in the AIC, the process of modernization of production based on scientific results is underway. This process is objective and continuous. Its foundations go back to a time when agriculture was simple and relied solely on natural factors.

Organizational forms of the innovation process in agriculture include:

- > research and production associations;
- > research and production systems;
- > small innovative firms;
- > engineering firms;
- > innovative development centers;
- > information and consultation centers and outlets;
- > agro-firms, agro-techno parks and other similar forms

Conclusions.

Positive (contributing to the development of innovative processes) and negative (impeding the development of innovative processes) factors affecting the innovative development of agriculture were identified. Obstacles:

- limited funds allocated by the state to finance science and technology, research institutes and universities;

- high interest rates on loans for innovations;
- high risk of innovative processes in agriculture;
- Lack of interaction between agricultural producers and science;
- Insufficient development of the mechanism of financial incentives for those engaged in innovative activities;

- Research is not sufficiently developed in agriculture.

The factors that stimulate innovation processes are:

- availability of natural resources;
- development of business entities based on market relations;
- scientific potential;
- capacity of the domestic food market;
- Opportunity to produce environmentally friendly, natural food products.

Investment and innovation development of agriculture is a comprehensive and active process, involving the use of financial resources, attracting additional sources of funding, the process of finding investors with new knowledge and ideas, the application of new technologies, the organization of services and new forms of governance in infrastructure. closely related. This problem can be solved only in the context of the compatibility of investments with innovations, the balanced development of investment and innovation processes.

Such an approach imposes the obligation to study investment and innovation as a system, the successful development and operation of which is closely linked to the infrastructure serving agriculture and the economic growth and sustainable development of agriculture.

According to the analysis, the volume of innovations in the agricultural sector of Uzbekistan is 0.00004% of total agricultural output, while in the field of agricultural infrastructure this figure is even lower, while in other developed countries this figure is 20-25 times higher. During 2009-2018, expenditures on technological, marketing and organizational innovations in the agricultural sector increased by 354 times, but the share of innovation expenditures in gross agricultural output decreased by 8.5 times. These funds are certainly not enough for the innovative development of the network.

Investment and innovation development of agriculture is a comprehensive and active process, closely related to the use of financial resources, attracting additional sources of funding, searching for investors, application of new technologies, organization of services and application of new forms of governance in infrastructure.

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