



# SUPPORT FROM A SCIENTIFIC POINT OF VIEW OF THE AGRARIAN SPHERE IN THE REPUBLIC OF UZBEKISTAN AND ITS EFFECTIVE DEVELOPMENT: IMPROVEMENT OF THE FINANCING SYSTEM

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## Abstract

The article presents the existence of problems in financing research work in the agrarian sphere of Uzbekistan and the scientific basis for improving its system. In the field, it is necessary to conduct special research aimed at improving the quality and competitiveness of agricultural products. **Purpose of the research.** The theories of scientific supply of the agrarian sphere of Uzbekistan have been considered and the weakest link of it is this scientific development, the introduction of scientific solutions into practice, the conversion and sale of scientific product into a commodity, it consists in finding an effective and scientific solution to agrarian problems. **Research methods.** Use and analysis of special methods in the agricultural economy of Uzbekistan. **Results of the study.** It is characterized by the structure of specific tasks associated with the scientific support of effective development of agricultural sectors, the diversity of various natural-climatic and soil conditions, the level of scientific potential of the regions. The problems that hinder the effectiveness of research work, the causes and solutions of their occurrence have been shown and it has been proven to raise the level of scientific supply to a new level. Scientific research work is carried out on a commercial basis as an integral part of the agrarian market, which in turn requires the development of cooperation of scientific institutions with the subjects of the on-site sphere. The sphere is based on the participation of interested parties in the research process, on a single system of stakeholders in the implementation of scientific developments and methodological work to determine the cost of scientific products. **The following are the scientific novelty of the study:** the mechanism of interaction of the "Fund for the acquisition of scientific developments" with sellers and buyers has been developed; a methodological approach has been developed to determine the cost of scientific products; the economic efficiency of the scientific solution is proposed. **Conclusion.** It is necessary to carry out drastic measures to modernize and develop all branches of Agriculture of Uzbekistan, to provide scientific institutions with funds, to increase the income of farmers and farmers, to improve the standard of living of the entire population. It is recommended work together with the purchasers and implementers of scientific developments. Scientific provision of the agrarian sphere necessitates the development of a long-term strategy of the long-term goals and objectives of the scientific innovation development of Agriculture, the definition of scientific-technical and Agrarian Policy, the justification of priorities, the development of quality product production of farmers and farmers



**Keywords:** agrarian sphere, scientific research, scientific support, scientific developments, scientific product, evaluation, development, financing, improvement, economics.

## Introduction

The high level of attention to the scientific supply of the agrarian sphere of the Republic of Uzbekistan revived the development of scientific research in networks of agriculture, as well as the introduction of research results into production in all spheres.

It is necessary to strengthen the interaction between science and production in the agrarian sphere, to increase the efficiency of agricultural production in the conditions of transition to a market economy, to encourage the responsibility and influence of scientific institutions, ultimately speeding up the economic reforms of industries.

The deepening of economic reforms in the agrarian sector, new techniques, technology, new varieties and breeds for the sustainable development of the agricultural sector, requires an increase in the efficiency of resources and the competitiveness of the products being grown. So far, the main part of the research work in the scientific institutions is focused on the increase in the cultivation of productstirishga, now the main emphasis and direction in the scientific research should be focused on the activities related to the process after the cultivation of the product. Because the sale of products grown in the conditions of a market economy and the creation of added value from it can only be the basis for the economic sustainable and efficient operation of agricultural enterprises. This requirement, in turn, requires an increase in the volume of funds allocated to scientific supply.

It is necessary to study in depth the existing problems in the sectors that fall into the agrarian sphere and develop scientific and practical directions for further development of the network, to direct scientific potential to the solution of practical tasks of agricultural commodity producers.

It is necessary to deepen economic reforms in the agrarian sphere, to form a highly productive and socially oriented multi-ukladian economy, to expand the economic independence of producers of goods, as a result of which it is necessary to develop ways to solve the problems of private entrepreneurship and formation of small business in the village [1].

When determining the strategic direction of the development of Agrarian science, it is important to take into account the conditions. In the development of Agrarian science, the improvement of the scientific supply system and the new approach system are also required [2].

The main directions of the development of Agrarian science are the conduct of fundamental and priority practical research, the update of techniques and technologies [3].

90% of the research work carried out in agriculture in China is on production technology. 55% of the research work carried out in agriculture is carried out falls on the field of farming [4].

The main directions of scientific research are the basic principles of the software, the definition of the right of the customer and its functions, the need to develop a clear system of orders in the agrarian sphere [5].

The link between science and production holds an important place in the agrarian sphere [6].

Although the practical work carried out in scientific institutions had a certain positive impact on the development of scientific supply in the agrarian sphere, however, it could not have had a positive impact on research related to the training of personnel in the field and their professional development. One of the main reasons for this is the decrease in the level of financing of scientific work, the lower the monthly salaries of scientific workers compared to other sectors of the economy.

The fact that professors and teachers and academics in scientific institutions today are in retirement age, constant decrease in the number of scientific staff and researchers, facing financial problems in the defense of candidate and doctoral degrees, there are renounces without being able to protect their dissertations on topical issues, unable to defend his dissertation on topical issues, he



refuses, which led to a decrease in the scientific potential of the agrarian sphere. These trends have a negative impact on the development of the agrarian sphere of the Republic and the improvement of the system of scientific supply [7].

It is necessary to develop a fundamentally new mechanism of interaction between agrarian science and agricultural production. As well as: implementation of the implementation of scientific developments in practice mainly through a program in the field and timely coordination of research; the fact that the developed programs include specific measures for the implementation of the completed scientific product into practice, including its financing and control; it should create a system of effective introduction into the production of ready-made scientific developments, interacting with the production of Agrarian science.

One of the links linking science and production is the supply of innovative information and advice. Currently, the country's research institutes and its branches, experience centers are trying to fulfill this task.

The exchange of experience with research institutes and scientific institutions of developed countries, training of young scientists in professional development courses abroad, increased interest of scientists in the study of foreign languages gave an opportunity to further increase the quality of scientific research and the effectiveness obtained from it [8].

In fact, agrarian science should have a strong and strategic activity. In the interests of ensuring high level competitiveness, it is necessary to contribute to the production of agricultural products, increase the efficiency of the processing and marketing system [9].

Political decisions made in the agrarian sector without scientifically based analysis have a positive impact on cooperation with agricultural tavor producers, subjects and foreign partners [10].

At the same time, it is very important to attract young specialists with education and scientific training abroad. He should be interested in comprehensively addressing many important issues for his industry in agricultural sectors [11].

Specific businesses should be involved in the innovation process by balancing their own interest priorities [12].

The agrarian sector will have to solve a wide range of tasks to strengthen its fundamental and Applied Research [13].

In order to develop the research work that forms the basis of the development of the agrarian sector and improve the system of scientific supply in the field, it is necessary to carry out the following: strengthening the scientific potential of the country's agriculture, expanding the scope of fundamental and Applied Research; benefiting from the potential of Agrarian science, achievements of Science and technical development in the solution of issues of agrarian sphere; increase soil fertility, storage of varieties of agricultural crops and the gene pool of livestock and their adaptation to the existing conditions; creation of new technologies designed to grow and process products, new organizational economic methods of Economic Conduct; scientific justification of ways to solve rural social problems; providing environmental protection; creation of a scientifically based system of agrarian production; establishment of a new market of scientific and technical products on the basis of creation of an innovative system and promotion of activities of innovation subjects.

### **The implication of a scientific problem**

Today, the Ministry of Agriculture, the Ministry of water resources, as well as the Center for scientific production of Agriculture and food supply, at the same time, it is appropriate to consider research in the field separately.

Research institutes in every aspect of the agrarian sector's scientific supply will need to carry out extensive research today not only on the problems that need to be solved scientifically, but also on the problems that are associated with the development of the agrarian sphere in the future.



Proceeding from this, it will be necessary to radically revise and improve the selection and financing of research topics of scientific institutions and scientists.

Taking into account the fact that this issue affects the agrarian sphere of the country, it will be necessary to implement this program or project from the account of funds received from other sectors of the economy as well as credit funds of international financial organizations.

The structure and implementation of this program will provide an opportunity to raise the scientific supply of the country's agrarian sphere to a new level. The problems facing the country's agrarian science can be summarized in one system as follows (Table 1).

**Table-1.**

**Classification of problems hindering the increase in the effectiveness of research work in the agrarian sphere<sup>1</sup>.**

**Problems hindering the effectiveness of research work in the agrarian sphere in the conditions of economic reforms, the causes and solutions of their occurrence<sup>2</sup>.**

<b>№</b>	<b>Problems</b>	<b>The reasons for the origin.</b>	<b>Solutions</b>
1	Low coefficient of introduction of completed scientific work; scientific developments, lack of balance between supply and demand for fan-tech achievements.	Lack of balance between supply and demand for scientific developments, achievements in science and technology has led to low implementation coefficient. Most of the current scientific developments is aimed at increasing the production of products (cotton and grain). The main emphasis is on the technology of production. 90 percent of the research work is carried out in the same thing, including 55 percent in the field of plant production. The technology of the periods before and after the cultivation of the product was not sufficiently trusted. The level of implementation of the completed research results is 30-40 percent the same can be explained.	The results of the finished research are explained by their introduction into practice. As a result of the financing of Agrarian science on the basis of market requirements, the development of science is accelerated and the return to production is increased.
2	Agrarian science system and the lack of improvement in the method of conducting research.	In the process of choosing a subject in the field, confirming it and conducting research, superficial approaches continue. The prioritization of the number indicators leads to an increase in the income of farmers, the maintenance of Environmental Protection, the low competitiveness of the products of the agrarian sphere in the halkoro market and a decrease in the level of development.	The development of the agrarian sphere in our country on a scientific basis, the increase in competitiveness of agricultural products, the increase in the income of farmers and farmers leads to the improvement of the standard of living of the population.

<sup>1</sup>Source: Developed on the basis of research by the author.

<sup>2</sup>Source: Developed on the basis of research by the author.



3	Lack of improvement in the management system of Agrarian science.	The administrative and on-site division into agrarian science and Technology, Education, Science and technology innovation is huge. Between research institutes, universities and manufacturing, there is no linkage on administrative and economic relations. In the research work, there is one repetition of the other, the transfer of funds on the topic of small scale, there is a lack of coordination between the sectors, ministries and departments, the human factor and other resources low productivity is an obstacle to innovation development.	As a result of the inalienable linkage of Science and production, the use of human factor and other resources, the introduction of innovative scientific works into practice, agricultural innovation develops in our republic.
4	Shortage of scientific personnel in the Agrarian Research System.	The shift of agricultural scientific technicians to other areas could lead to disruption among the elderly and young scientists as young people prefer to be more proficient in Computer Engineering, Biotechnology and economic management systems. With this condition, agrarian science can collide for the next few decades.	By encouraging scientists of agrarian sphere on the results of research work, the existing scientific potential will increase and the possibility of attracting young people to the sphere will increase
5	Non-improvement of the state program of Science and technology development in the agrarian sector.	The same factor causes a decrease in the scale of research in the agrarian sector and a decrease in the level of introduction of technical achievements in science. In the 80-ies of the XX century, scientific research work was carried out in the volume of 0.4-0.5 percent of the gross domestic product. Currently, agricultural research works are financed by 0.1-0.3 percent of the gross agricultural product, which is even lower in some years. In developing countries, this indicator is on average 0,4% of the population. In the United States, England, Japan, Italy and a number of other developed countries, this figure ranges from 1.6 percent to 2.0 percent. Laboratory equipment for carrying out research work in the agrarian sector is outdated, at a low level of the workload of scientific personnel. These are obstacles to the development of Agrarian science and the introduction of completed scientific works.	As a result of the financing of Agrarian science on the basis of market requirements, the development of science will accelerate and the return to production will increase





6	Lack of knowledge of farmers and peasants about the organization of production.	The low level of cultural and knowledge of farmers and peasant farms impedes the formation and introduction of effective demand for the product of Science and technology. This is not only a decrease in the level of the introduction of science technical achievements into practice, but also a decrease in the effectiveness of the use of new technologies, the risk of benefiting from new technology is still high.	As a result of the state support of fundamental and practical areas of Agrarian science, a solid basis will be created for the development of Agrarian science and production
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In the agrarian sphere, economic reforms and transformations are taking place, the system of scientific support is connected and aimed at solving the following problems: adapting the agrarian sphere to the market economy, increasing the production of agriculture and animal husbandry and improving its quality, improving the system of selection, seed production and breeding, introducing new technologies into agriculture, reducing the cost of production [14].

The problems that have accumulated at the present time in the agrarian sphere, scientific research should be conducted on the basis of market relations in the following areas: development of proposals for improving the country's agricultural policy; development and implementation of the main strategic directions of sustainable development of the agrarian sphere of the country for the period up to 2030; conducting scientific research to increase the income of the rural population, improve their food supply, increase the standard of living and improve the social life of the village; in recent years, there has been a deterioration in the quality of land and an increase in the area of saline land, it is necessary to expand research activities; expanding the scope of scientific research on breeding and seed production, conducting research on the creation of new high-yielding, drought-resistant and disease-resistant varieties of cotton and grain crops; adapted to the natural and climatic conditions of the country, research works to increase the area of these crops; creation of economical resource-saving technologies for growing agricultural crops; expanding the scope of scientific research on the protection of plants from diseases and pests by chemical and biological methods; expanding the scope of research on improving animal husbandry technologies, improving the breeding composition of animals, processing animal products; expanding research on the creation of new high-yielding varieties of fruits and grapes, vegetables, potatoes and other crops [15, 16].

**Definition of scientific supply of the sphere on a global scale**

One of the main factors of sustainable development of the agrarian sphere is its organization on a scientific basis and it is sign from doing wide introduction into the production of scientific and technical achievements.

Foreign leading agrarian economists and scientists expressed the following views and comments on improving the scientific supply of the agrarian sphere and its effective of development.

As noted by V. A. Fedorovich and A. P. Patron, "The extensive use of federal contracts and grants is a key aspect of the USA science and technology system, and a significant factor in its strength and viability. This makes the American system more flexible compared to many scientific and technological systems in other countries, which mainly involve state laboratories and institutes" [17].

Academic I. G. Ushachev says so, The Russian agro-industrial complex is developing positively, but there are many limitations. "As the main positive trends, it can be noted that divide into two: first, in the last five years, the index of industrial production (102,3%) and the average



relatively high growth rates of agricultural products (100,6%) in the ratio of the country's gross domestic product (100,5%); secondly, the growth of exports of agricultural products and the reduction of its imports by more than 1.7 times is an increase in the level of food security of the country” [18].

Academic V.I. Vernadsky thus understood it: “It’s [The science] content is not limited to the scientific theories, hypotheses, models created by them, it consists mainly of scientific facts and their empirical generalizations, it is mainly the scientific work of living people” [19].

G.A. Hasanov says so – “Therefore, our analysis begins with the study of the financial support of this project in order to determine the entire potential for its implementation in the future up to 2024 years, along with the natural-material indicators that reflect their planning years” [20].

As Dokholyan S. V. noted, “In the field of agricultural innovation, the following priority areas can be identified: energy and resource-saving technologies in the production, storage and processing of agricultural products; innovations in the domestic market with cheap and high-quality food products, locally produced medicines; innovations that will help to increase the reliability, efficiency, repair efficiency of agricultural machinery and agricultural machinery, their service life has been improved, productivity has increased; measures to improve the environmental situation” [21].

About the scientific supply, different scientists expressed different opinions.

In our opinion, based on the results of our research, the concept of scientific supply can be described as follows. Scientific supply – is the sum of interconnected cycles such as “formation of scientific idea, implementation of scientific research work, development and introduction of scientific developments, provision of consumers with information about this scientific product and increase their knowledge”. Scientific supply is not limited to carrying out only scientific research, it requires the introduction of it and increasing the knowledge of consumers of scientific products<sup>3</sup>.

Agrarian sphere scientific supply the need to improve the system: first of all, it is determined by the role of the agricultural network in the country's economy, which in turn determines the prospects for the development of the industry; secondly, ways of developing the sphere on a scientific basis; third, to determine the priority areas of research work; from the four, however, there is also the need to increase the effectiveness of funds directed to finance research work and research; in four, the funding of research work and the need to increase the effectiveness of the funds directed for the study also arises.

## Materials

The Republic of Uzbekistan should pay special attention to improving the system of scientific support for the agrarian sphere. The system of scientific support for the effective development of the agrarian sphere as a strategic goal of agricultural science is characterized by the structure of its specific tasks, due to the huge variety of natural, climatic and soil conditions, the level of bioclimatic potential in the regions of the Republic. This determines the difference between the activities of agrarian science and the science of other sectors of the country's economy [22].

Improving the level of the system of scientific support for the agrarian sphere and accelerating the introduction of scientific solutions in production, the scientific and production center for agriculture and food security was established. Strengthening the connection of scientific institutions between foreign scientific organizations was of great importance for many domestic scientists to familiarize themselves with foreign research methodologies and to develop a system of scientific support for agricultural production. The Research and Production Centers of Agriculture and Food Security receive grants to Finance Ministries for the implementation of fundamental research, which

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<sup>3</sup>Source: developed on the basis of research by the author.



is expanding from year to year. Budget financing of scientific activities of agrarian science, unfortunately, is carried out in insufficient quantity [23].

Increase of project financing of scientific research using the mechanism of departmental target programs, development of large long-term scientific and technical programs in priority areas of budget and extra-budgetary funds. It is necessary to optimize the basic, program-targeted and competitive funding to create a competitive environment in scientific organizations. Improving objectivity in the selection of promising and priority areas of scientific research, based on the principles of project organization of research, competitive, thorough expertise, and systematic reporting [24].

The Republic's research activities in agriculture were financed from several sources. The share of funding from the budget has decreased. The reason for this phenomenon can be justified as follows: the unwillingness of consumers to implement scientific and technological achievements, the slow process of turning scientific solutions into marketable products, the introduction of a new methodology, the holding of a competition for scientific research papers, while not covering the desire and opinion of customers - consumers, and others.

Consumers of scientific products passively participate in the selection of topics, in the development and implementation of ready-made scientific solutions. There is no mechanism: negatively affects the development of scientific support for agriculture; untimely development of scientific solutions, current problems in the industry, ultimately negatively affects the development of the agrarian sphere.

The share of funding from the budget of research programs is reduced, it is necessary to finance only basic research and training from the budget, and it is advisable to finance applied research at the expense of consumers, customers or from other sources, which will ensure the sustainable development of the country's economy. The share of expenditures on fundamental research in the total budget allocated for scientific and technical programs should not be less than 45-50%, and the share of expenditures on scientific research programs in the gross domestic product should be reached to 2.5-3.0 % [25].

During 2018, the share of funds allocated for basic research in the total budget amounted to 20.0%, respectively. The main directions of fundamental and priority applied research in the development of agrarian science in the agrarian sphere are defined by the Republic of Uzbekistan. The development of science and technology in the future includes: the development of fundamental science, the most important applied research and development; improvement of state regulation in the field of science and technology development; the formation of a national innovation system; improving the efficiency of using the results of scientific and scientific-technical activities; preserving and developing the human potential of the scientific and technical complex; integrating science and education; developing international scientific and technical cooperation.

The strategic directions of the development of agricultural science should be considered: the definition of the main directions of fundamental and priority applied research to create competitive scientific and technical products, the modernization of the management system of research institutions and the coordination of work, the development of an innovative mechanism for the participation of science in the process of mastering scientific developments.

The system of scientific support for the agrarian sphere of the Republic includes: the economic basis for the development of innovative activities in the agrarian sphere; the economic mechanism of functioning of the agrarian sphere and the arrangement of rural areas; the system of reproduction of soil fertility, prevention of all types of its degradation, adaptive landscape systems of agriculture; the study, conservation and mobilization of the gene pool of plant resources; effective biotechnologies for creating new forms of cultivated plants and source material for breeding with high productivity and resistance to adverse environmental factors; study, conservation and mobilization of the gene





pool of animal resources; safety and quality control of agricultural raw materials and food products [26].

The effectiveness of the development of the agrarian sphere of the Republic of Uzbekistan is largely due to the promising, meeting modern requirements of scientific support provided by agrarian science, including the organization and conduct of fundamental and priority applied research, in order to develop competitive scientific and technical products intended for development in production.

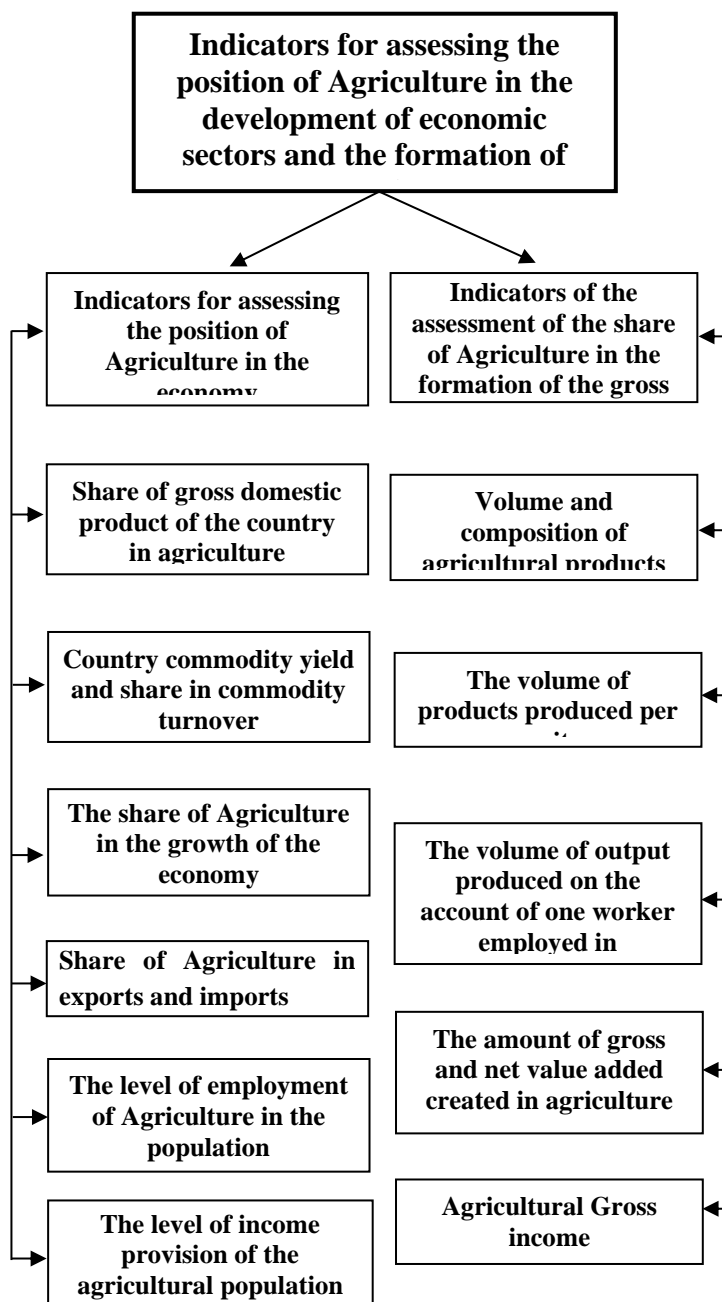
The main objectives of the modernization of the management of scientific institutions in the agricultural field of science are: the development of fundamental and priority applied research in agricultural science that meets the requirements of the world level, increasing their role in education, socio-economic development of agro-industrial production; improving the competitiveness of domestic agricultural science, conducting a mutually linked scientific, technical and innovation policy, ensuring a breakthrough in the priority areas of agricultural science; effective reproduction and use of scientific personnel, improvement of their financial situation, improvement of the system of hiring employees; improving the efficiency of the use of land and property, using the released resources for the modernization of the material, technical and instrument base of research; development of a mechanism for the participation of research institutions in the process of mastering scientific developments in agricultural production, ensuring the effective development of the agricultural sector in the Republic of Uzbekistan [27].

Research institutions that perform mainly applied research using the results of basic research in relation to the conditions of the regions are directly subordinate to the Research and Production Center of Agriculture and Food Security.

They are also assigned the functions of direct participation in the development of competitive scientific developments, as well as methodological, service and consulting and information services for large enterprises and farms.

Currently, the state order for research and development work is carried out by the Ministry of Agriculture, the Ministry of Water Resources of the Republic of Uzbekistan, mainly in the field of applied research, and the Research and Production Center for Agriculture and Food Security, Agricultural Sciences, in the field of basic research. Based on the materials of such a state order of the research and production center of agriculture and food security, a departmental program of fundamental and priority applied research for a certain period is being developed. Development of a new system of public procurement. Research and development work with an indication of the terms of implementation, the form of completion and the amount of funding for basic and applied research, responsibility for implementation. Its placement in specific production structures of the agro-industrial complex should be determined in advance so that the scientific and technical products obtained as a result of its implementation are in demand by the consumer.





**Picture 1. Indicators for assessing the position of Agriculture in the development of economic sectors and the formation of gross domestic product<sup>4</sup>.**

It is necessary to legally define the customer and its functions, to develop a mechanism for specifying the placement of the state order of the agrarian sphere [28].

Therefore, in assessing the share of the country in the gross domestic product of the agrarian sector, the three components that reduce its activity are as follows:

- production of agricultural products;
- material and technical support and service system;

<sup>4</sup>Source: Compiled on the basis of the author's research.



– it is necessary to approach taking into account the final results of processing and sale of finished products systems.

### **Method**

Science is the sphere of human activity, and its task is to develop an object of knowledge about reality and systematize theoretical ideas.

The method of scientific research is a set of methods or operations to achieve a goal, a method of solving a particular task, a practical or theoretical development of reality.

In addition to the basic general method of studying any science, special methods are applied. In the study of the agricultural economy, the following special methods are widely used: economic-mathematical modeling, creation and study of one-dimensional and multi-dimensional aggregates; economic and statistical – statistical sampling from the most common methods of research, economic grouping, calculation of statistical indicators; analysis and synthesis – summarizing the information on the state of individual aspects of the activities of agricultural organizations, identification and development of general laws, on this basis, development of recommendations for increasing the efficiency of production and trade activities; economic analysis – comparison of accurate and generalized indicators with the aim of identifying positive trends; development of economic and managerial decisions on the basis of experimental – experimental data-that is, data obtained under artificially specified conditions; abstract-logical – methods associated with the creation of abstract models, which are characterized by the most important properties of the phenomenon or object under study.

In the systematic approach to the methods of scientific research carried out in the agrarian sphere, it is important to use the most appropriate methods to clarify certain rules. In the field, several methods are used - in this case, the identified method of scientific research complements each other. It is necessary to know the possibilities of each method and apply it in practice.

### **Analysis and results**

#### **Promising sources of research works funding.**

To date, it is necessary to intensify the process of using methods of extra-budgetary financing of research work in the field of agriculture in our country. For this purpose, it is required: development of the system of using various sources of financing for the implementation of the final results of scientific research in agriculture, the widespread use of bank loans in financing the implementation of scientific solutions in the practice of agriculture, as well as the development of mechanisms for both economic and legal incentives for banks involved in this process; there is a need to improve the legal framework to increase the participation of the non-State sector, in particular private actors; further improvement of the subjects of the necessary infrastructure to work on the basis of market principles in the implementation and implementation of ready-made scientific solutions to research institutions of the agrarian sphere and consumers.

Another way to finance research work in agriculture is the organization of a “Fund acquisition of Scientific Developments” and the introduction of incentive mechanisms for technology developers or creators of new various types of disease-resistant plants. To date, it is advisable to use the incentive mechanism for authors of scientific novelties and inventions as the main direction of funding scientific research.

The “Fund Acquisition of Scientific Developments” should be organized under the Ministry of Finance and initially financed from the state budget. The activities of the “Fund Acquisition of Scientific Developments” should be organized in two directions, that is, in close connection with the purchasers and implementers of scientific developments. At the same time, the implementers of



scientific developments can be research institutes, higher educational institutions, other entities engaged in scientific activities, as well as individual groups of scientists.

Purchasers of scientific developments can be producers of agricultural products, enterprises for procurement, provision and provision of services, ministries and departments (Figure 1): the foundation accumulates information from entities that acquire scientific developments about existing problems, then conducts a tender between research institutes, higher educational institutions, other scientific organizations and individual scientists to solve these problems and solve them, then, after completing research, implements scientific developments to relevant organizations and enterprises; it also purchases previously invented scientific novelties, developments, samples of scientific and technical achievements and organizes sales to the relevant ministries and departments, thereby solving the problem of putting them into practice<sup>5</sup>.

The introduction of scientific developments in agriculture and the promotion of scientific enterprises based on the results of scientific research is important in redirecting part of the income received from the introduction of scientific developments back to research activities.

At the same time, this mechanism includes the following: organization of direct participation of authors and scientific institutions in the implementation of scientific developments in agriculture; increasing the interest of authors in working on the implementation of scientific developments; creation of financial sources for conducting research activities in new areas in scientific institutions; continuous improvement of the mechanism for stimulating scientific personnel.

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<sup>5</sup>Source; Developed on the basis of the author's scientific research.

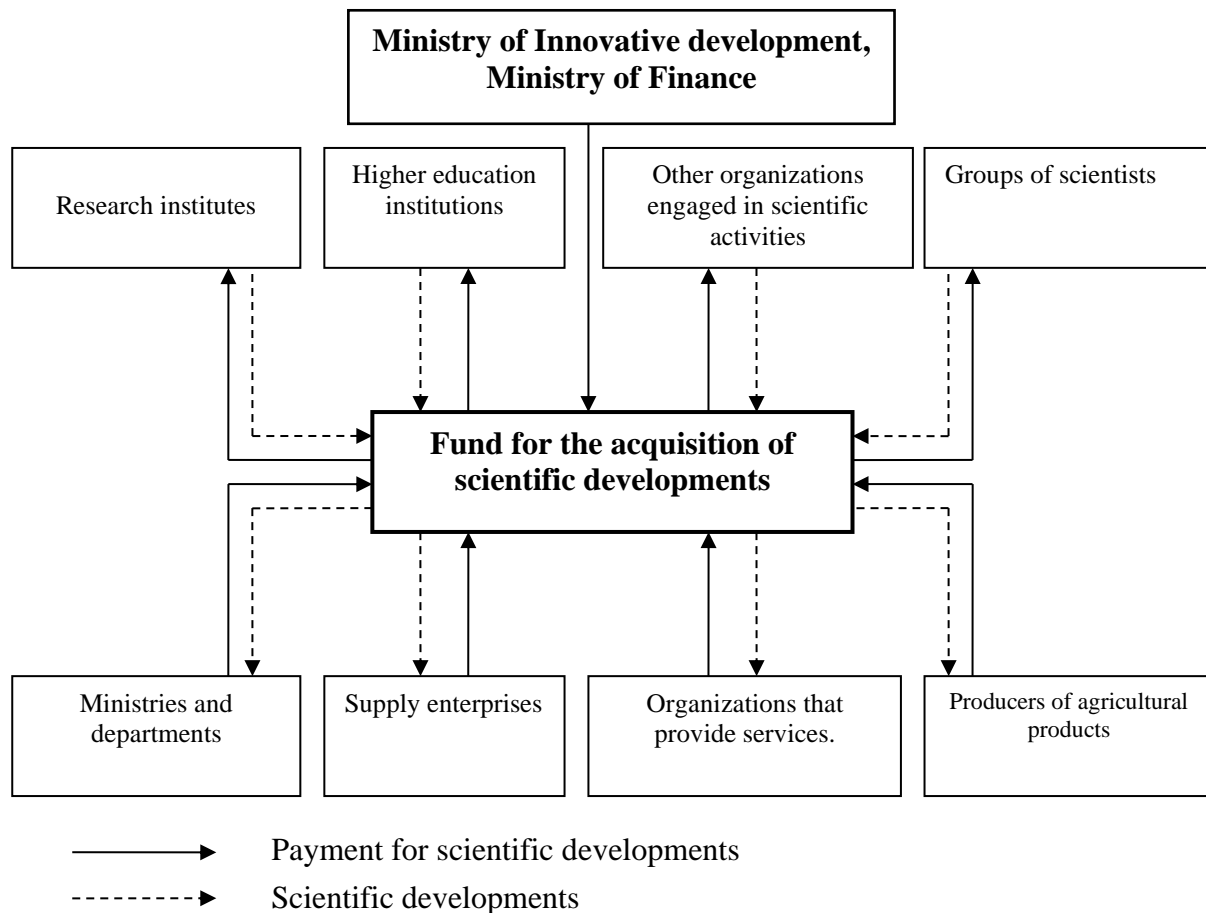
In our opinion, another way to finance research work in agriculture is the organization of a “Fund acquisition of Scientific Developments” and the introduction of incentive mechanisms for technology developers or creators of new various types of disease-resistant plants. To date, it is advisable to use the incentive mechanism for authors of scientific novelties and inventions as the main direction of financing scientific research. To date, it is advisable to use the incentive mechanism for authors of scientific novelties and inventions as the main direction of financing scientific research.

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- first, the implementers of scientific developments can be research institutes, higher educational institutions, other entities engaged in scientific activities, as well as individual groups of scientists;
- secondly, the purchasers of scientific developments can be producers of agricultural products, enterprises for procurement, provision and provision of services, ministries and departments.





**Figure 1. The mechanism of interaction of the "Fund for the Acquisition of Scientific Developments" with sellers and buyers<sup>6</sup>.**

Therefore, in financing the implementation of scientific research and the implementation of its results, it is necessary to improve the mechanism of direct participation in this process of subjects using scientific developments. Given that in market conditions, scientific developments turn into a marketable product, it is necessary to develop a mechanism for selling or buying it. At the same time, developments as intellectual property can implemented several times. This, in turn, leads to the introduction of a mechanism for the possession and use of intellectual property.

**Improving the methodological framework for determining the price of scientific products.**

The introduction into practice of the achievements of agrarian science and technology, the development and implementation of mechanisms for providing scientific personnel to the system of scientific support for the agrarian sphere is an important factor in improving production efficiency in the industry. At the same time: the system of providing scientific personnel for the agrarian sphere is determined by the introduction of scientific developments of science and technology into practice and best practices in the in the agricultural sector; with the help of the system of providing the agrarian sphere with scientific personnel, it makes it possible to introduce scientific and technical innovations, based on the conditions prevailing on the ground, as well as the direct connection of the scientific and technical industry with production.

<sup>6</sup>Source; Compiled on the basis of the author's scientific research.





In today's conditions, when improving the financing of the educational process in higher educational institutions of the agrarian sphere, it is necessary to introduce a multi-level system. At the same time, it is necessary: to strengthen the scientific and technical base of educational institutions at the expense of the state budget, it is advisable in the future, on the basis of selection, to switch to a system of financing at the expense of the state budget of higher educational institutions; strengthening the scientific and technical base of educational institutions at the expense of regional and local budgets and financing part of municipal expenses; at the expense of extra-budgetary sources to finance services of additional education, introduction of scientific developments, to develop advisory services and the branch of scientific and information support; wide use of the system of training of narrow specialists on the basis of contracts by the subjects of the agricultural industry; it is necessary to activate the system of training specialists at the expense of sponsors, foundations, organizations and educational loans; the amount of funding at the expense of trainees should not exceed 50 percent of the number of quotas of trainees. Since exceeding this limit can lead to a sharp decrease in the number of specialists and a decrease in quality.

Determining the cost of scientific products in the agrarian sphere of the republic, in turn, determines the development of a mechanism for setting the price of scientific products, based on the directions of the industry and the development of a different model for determining the cost of scientific products. The first condition for assigning the cost of scientific products, as mentioned above, is to ensure that the interests of each of the parties are taken into account. At the same time, it is important to take into account the flexibility of prices, especially when determining the costs of scientific research and the acceptability of scientific products to the consumer, as well as the conditions that facilitate their introduction.

When determining the cost of scientific products, there are several methodological approaches. However, the price of scientific products:

- should cover the costs spent on scientific research and provide some degree of profit for the researcher;
- the profit received from the introduction of scientific developments by the consumer should exceed the benefit received from the use of current technology and cover the costs in a short time.

Funds allocated for scientific research should be divided into three parts: funds allocated directly to conduct the research, it should not exceed 50 percent of the total allocated funds; For the introduction of funds 40 percent should be allocated and 10 percent for the training of consumers. Only in this case, the possibility and effectiveness of implementing the results of the study increases.

The price determined for scientific products performs stimulating, distributive and control functions for the rejection of existing economic relations, their organization based on the requirements of market relations. Negotiated prices based on the efficiency gained from the introduction of scientific novelty prevents the mutual difference between researchers and consumers associated with the price. Or, this situation develops in such a way that the contractual price is formed not based on the cost of research, and the real effect obtained on the farmer's field from the introduction of a scientific novelty<sup>7</sup>.

### **Conclusion, scientific proposal and practical recommendation**

As a result of the above research, the following main scientific conclusions were developed.

In addition to the main tasks of Agrarian science – the implementation of fundamental and Applied Research, expansion and deepening through the reinforcement of the training component, effective implementation of innovation capacity of Agrarian science, expanding and strengthening the coordination role of the Center for Agricultural and food scientific production in the field of

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<sup>7</sup>Source: Developed on the basis of the author's scientific research.



fundamental and Applied Research, also expand and increase the importance of expert activities, the development of Science and technology in the priority areas, improve the effectiveness of management and use of Agrarian science, in particular, the development of its material and technical and social base.

In our opinion, there are many opinions and approaches to determining the price of scientific products. First, it is known that the price of scientific products is determined based on the costs, the creator of scientific developments and the profit received. Secondly, the price offered to consumers is its solvency and the amount of profit expected from the introduction of scientific development. This means that it is appropriate to take as a basis the economic efficiency obtained from one hectare of land based on one scientific solution.

As a result of the research, the following scientific proposals were developed aimed at improving the system of scientific support for the agrarian sphere: Another way to finance research work in agriculture is to organize a “Fund Acquisition of Scientific Developments” and introduce mechanisms to encourage technology developers or creators of new various types of disease-resistant plants. To date, it is advisable to use the incentive mechanism for authors of scientific novelties and inventions as the main direction of funding scientific research.

The price determination of a scientific product in turn requires the development of scientific product in the direction of the sphere, the development of price determination mexanizmini and the development of various models of price determination mexanizmini.

The recommendations include:

- the first condition for determining the price for a scientific product is to ensure that the scientific product can be repeatedly sold, unlike other commodity products, while the second condition is to take into account the interests of both parties. Such a price should be flexible, especially when determining the cost of research, and also take into account the parties that make the scientific product acceptable to the consumer and facilitate its introduction;

- the price of a scientific product, the expenditure of the creator of the product, the amount of profit on the second hand, the price offered by the consumer, on the basis of its purchasing power, includes the amount of profit provided for in the introduction of a scientific product. Hence, it is worthwhile to take into account the new scientific solution as a basis the economic efficiency obtained from one hectare of land;

- in such a method, the cost of setting a price for a scientific product is based on economic mexanizmga, while increasing the responsibility of researchers for the quality of a scientific product, as well as reducing the dependence on budgetary financing, ensuring that researchers have guaranteed funds to consolidate their salaries and the modal-technical base of institutions.

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### References

1. Xusanov R. H. Agrarian reform: theory, practice, problems. - Tashkent, 1994. -72 p.
2. Trushin Yu. (2008) The volume of financial support for the agro-industrial complex is growing. // AIC: economics, management. Moscow: No. 4. – Pp. 7-11.
3. Yang Yin. T (2008) He Chinese economy will grow 8-9% next year. // China. No. 12 (38).
4. Lin Cfu, Choi Fan, Li Zhou. (2001) "The Chinese Miracle", Economic reform, development strategy. - Moscow. 68 p.
5. Babadjanov A.M. (2013) Agricultural research for development: investing in Uzbekistan’s future. J: “Agricultural Sciences”, -USA.: VoI. 4, No.2, - Pp. 62-65.
6. Burlakova S. (2008) Features of financing the agricultural sector of the EU. // AIC: economics, management. Moscow; No. 10. – Pp. 61-63.



7. Davydova L. (2007) Formation and development strategy of the investment potential of the region based on the assessment of investment processes. // Economic analysis, Moscow: No. 13 p.
8. Dolgushkin N. (2009) Personnel potential as a factor in the innovative development of the agro-industrial complex. International Agricultural Journal. – Moscow; No. 5. – Pp. 10-11.
9. Zubareva L. (2007) Analysis of the impact of investment policy on the formation of the structure of fixed capital. // Economic analysis, Moscow: No. 13 p.
10. Ushachev I.G. (2005) Problems of the formation of the innovation management system in the agricultural sector // Materials of the international scientific-practical conference "Innovative activity in the agricultural sector: experience and problems" (January 13-14, 2005). Moscow; 3 p.
11. Ogloblin E. (2006) Financing innovative processes in the agricultural sector. AIC: economics, management. Moscow; - Pp. 13-15.
12. Kuznetsova A. (2009) Problems of reproduction of qualified personnel potential of the agricultural sector. International Agricultural Journal. Moscow; No. 4. – Pp. 21-24.
13. Ogarkov A. (2005) Scientific research and the efficiency of agricultural production. // "Economist". - Moscow: LLC OID Media-Press, No. 4. – Pp. 91-93.
14. Rybak O. (2002) The main trends in investment activity. // Economist, Moscow: No. 12.
15. Sandu I.S. (2009) Activation of innovation in the agricultural sector. // AIC: economics, management. Moscow; №10. – Pp. 73-79.
16. Grigoryev L. (2009) Investment process: accumulated problems and interests. // Issues of Economics, Moscow: No. 4.
17. Fedorovich V. A. (2008) Patron A. P. " USA: State and Economy", Moscow.
18. Ushachev I. G. (2017) Strategic directions of sustainable socio-economic development of the agro-industrial complex of Russia. "Moscow Economic Forum-2017" international scientific and practical conference " Agricultural sector of Russia: development strategy". Moscow. March 30-31, 2017.
19. Vernadsky V. I. (1998) Philosophical thoughts of a naturalist. Moscow: Nauka. 520 p.
20. Hasanov G. A., Hasanov T. A., Eminova E. M. (2020) " Digital agriculture-problems with balancing economic indicators" Journal. Regional'nye problemy preobrazovaniya ekonomiki. - №6. – Pp. 14-23.
21. Dokholyan S. V., Petrosyants I. Z., Sadykova A.M. (2020 "Mechanisms of implementation of innovative activity in modern conditions of limited resource capabilities of the agro-industrial complex". Journal. Regional'nye problemy preobrazovaniya ekonomiki. - №2. – Pp. 11-19.
22. Golichenko O. (2004) Russian innovation system: problems of development. // Issues of economics. Moscow; No. 12. – Pp. 16-34.
23. Babadjanov A.M. (2010) The main directions of the transition of agriculture in Uzbekistan are the scientific basis. Journal: "Economics and Finance". Moscow; No. 11-12. – Pp. 48-49.
24. Kokurin, D.I. (2001) Innovation activity [Text] / D.I. Kokurin. Moscow; - Pp. 73-74.
25. Babadjanov A.M. (2011) Improving labor productivity and improving the training system are important factors in increasing the competitiveness of agriculture. Journal: "International Agricultural", Moscow: No. 5, - Pp. 16-17.
26. Babadjanov A.M. (2007) Improve the financing of agricultural science. // AIC: economics, management. Moscow; No. 3. – Pp. 12-13.
27. Babadjanov A.M. (2011) Effective use of scientific cum technologically achievements and financing innovative projects in the agricultural sphere. Journal: "Agricultural Sciences", -USA.: VoI. 2, No.1, - Pp. 28-33.
28. Romanenko G. (2007) Advanced scientific developments - agricultural production. // AIC: Economics, Management, Moscow; No. 3. – Pp. 3-6.

