

## Socio-Economic Aspects of Innovative Development in Farming Enterprises

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**Abstract:** The article examines the socio-economic aspects of the innovative development of farming enterprises in the context of agricultural modernization. The focus is on analyzing the impact of innovative technologies on improving efficiency, product quality, and the financial potential of farming enterprises. Key factors and obstacles to innovation adoption, including access to information, financing, and technology adaptation, are highlighted. Approaches to enhancing the competitiveness of farming enterprises through modernization and government support are described.

**Keywords:** innovation, farming enterprises, socio-economic development, modernization, agriculture, efficiency, financial potential, government support.



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### INTRODUCTION

The modernization of the economy, including agriculture, and the introduction of new, more innovative machinery and equipment, has become one of the main directions of agricultural policy in the current environment. It is a key factor in improving efficiency and work quality and further enhancing the population's well-being. Today, the innovative development of agriculture, particularly farming enterprises, determines the overall state of the country's economy.

Innovative development in farming enterprises has a decisive impact on agricultural production, can bring qualitative changes to the financial potential of farming, and serves as a foundation for improving the quality of agricultural products.

The development of innovative farming enterprises fundamentally transforms labor quality. The introduction of new, more advanced machinery and tools, along with the automation of technological processes, creates a need for high professional skills, mastery of diverse abilities and knowledge, improvement in agricultural product quality, and the innovative literacy of farming enterprise workers.

**Literature Review:** The innovative development of farming enterprises is a key factor in improving the efficiency and sustainability of the agro-industrial complex (AIC). The adoption of modern technologies and methods enables adaptation to changing conditions and enhances the competitiveness of agriculture.

Among the main factors contributing to the innovative development of farming enterprises are:

- Access to information and knowledge: Educational programs and advisory services increase farmers' awareness of modern technologies and their applications. Innovations in family farming affect all aspects of the production cycle and contribute to increased efficiency [1].

Despite its advantages, the process of introducing innovations in farming enterprises faces several challenges:

- Limited financial resources: Many farmers lack sufficient funds to invest in new technologies. This is particularly relevant for small-scale farms, which face difficulties in attracting capital.

- Requirement for significant investments: The implementation of new technologies requires substantial financial outlays, which can be challenging for small farms [2].

- Need for adaptation to local conditions: Technologies developed for large agricultural enterprises are not always suitable for small farms and often require adaptation [3].

Analysis and results. A concrete manifestation of the innovative development of a farming enterprise is the continuous updating of tools and other means of production, the introduction of progressive technology and production organization that ensure, based on the achievements of science and practice, a significant improvement in product quality and a reduction

in production costs per unit of agricultural output. There should be a close connection and interdependence between these factors. They should complement each other, and the level of their development determines the overall effectiveness of innovative development. The introduction of new, modern machines should create the prerequisites for changing the existing technology and product quality, particularly for import-substituting products. At the same time, innovative technologies and production organization can only be successfully implemented through the introduction and use of production tools for agricultural products. The greatest economic effect is usually achieved when the necessary proportions between these components are established, and their development occurs based on the achievements of modern science and technology.

Therefore, the main criterion for the innovative development of a farming enterprise should be the growth in the production of high-quality import-substituting agricultural products. However, achieving such indicators must be accompanied by a reduction in costs and an increase in profits, which are essential sources of innovative development. As for the reduction of specific cost areas in a farming enterprise, they can be achieved through the growth of the following indicators: energy intensity, capital intensity, and technical equipment of labour, the availability of energy resources, the level of mechanization, specialization, and concentration of production, etc.

The set of these indicators reflects the level of innovative development of farming enterprises and agriculture as a whole.

Thus, the decisive role in the innovative development of a farming enterprise belongs to innovative means, the combination of which can be called the vital system of the farming enterprise. Innovative and technical means are the most active elements of product production and, therefore, contribute much more than others to reducing costs and using resources effectively.

The level of development of innovative machinery and equipment, and the extent of its use, undoubtedly reflect the achievements of human scientific and practical thought, and significantly influence the organization and final results of a farming enterprise, especially the growth in the production of high-quality agricultural products. This, in turn, is the foundation for expanding and improving production efficiency, strengthening their financial potential, and most importantly, it is crucial for expanding the innovative activity of the farming enterprise. A farming enterprise can be competitive because innovative activities create new, much higher labor productivity and high-quality products.

Innovative development (ID) is typically characterized by the ratio of the gross output of a farming enterprise to the costs of innovation:

$$ID = \frac{VIGP_i}{CID_i};$$

here ID – output of innovative gross products per one farming enterprise, in sum;

$VIGP_i$  – the value of innovative gross products in the  $i$ -th period, in sum;

$CID_i$  – costs of innovative development in the  $i$ -th period.

After a few modifications, this formula can be replaced with the following expression:

$$OIP_i = CI_{1 f.e.} \times CP_{1 f.e.}$$

here  $OIP_i$  - output of innovative products in the  $i$ -th period.;

$CI_{1 f.e.}$  - capital intensity (value of production innovative capital) per farming enterprise, in sum;

$CP_{1 f.e.}$  - capital productivity (output of gross products per innovative production capital, in sum) of the farming enterprise.

The above formulas clearly demonstrate and reveal the main factors of the form of innovative development, their correlation, and interdependence with the indicators of innovative product productivity in a farming enterprise. In this regard, along with the increase in crop yields and livestock productivity, the decisive factors are the technical equipping of production, capital intensity, and the degree of utilization of production capital.

The most comprehensive use of this set of factors should be a key condition for the growth of innovative products and improving the overall efficiency of farming enterprises. During the transitional period in the Republic of Uzbekistan, the modernization of farming enterprises was one of the government's main tasks. In recent years, the state has directed significant efforts and innovative technology to put the most backward sectors, such as agriculture and farming, on a new innovative track to modernize them and transform farming enterprises into a leading sector of the economy based on science and innovative technology.

The foundation for solving these tasks is the modernization of agriculture and the organization of competitive farming enterprises.

Over the last 20 years, competitive farming enterprises have been established in Uzbekistan. They have received financial assistance, and leasing services have been provided on preferential terms. With the help of this, some farming enterprises now operate processing workshops (such as for the production of dried fruits, tomato paste, etc.).

All of this, taken together, has allowed for a significant strengthening of the technical equipping of farming enterprises and an improvement in product quality within a relatively short historical period. It should be noted that the crisis caused by the coronavirus pandemic had a significant impact on the development of farming enterprises, reducing their export potential. Despite this, the government's adoption of anti-crisis measures acted as a brake on the factors of the crisis.

At the same time, there were significant qualitative shifts: old models of tractors, harvesters, and trucks were replaced with more advanced ones, with better technical and economic performance.

The technical re-equipment of farming enterprises, along with the strengthening of their workforce and specialists, ensured a significant increase in agricultural production.

With the improvement in the level of modernization, the quality of labour increased significantly, which primarily resulted in a reduction in labour costs for production.

However, farming enterprises now have considerable reserves and opportunities for further improving the quality of import-substituting agricultural products.

The calculation of financial resource costs for agricultural production has great theoretical and practical significance, as it allows for a more accurate determination of the level and dynamics of growth in the production of higher-quality products. However, despite this, the financial costs of producing the main types of agricultural products remain high.

One of the main reasons for high financial costs in agricultural production is the insufficient level of technical equipping in agricultural production. As a result, many labour-intensive processes have to be performed manually, especially in farming enterprises specializing in vegetable growing, fruit farming, and livestock breeding. In terms of asset equipment, agricultural production lags behind many other types of farming activities. At the same time, the specific characteristics of farming enterprises (seasonality of production, etc.) dictate the need for more innovative machinery than small businesses focused on industrial production, which generally yields a greater economic effect.

The conditions and opportunities available to farming enterprises to strengthen their production potential vary across different regions of the country; these are determined by natural and production factors, as well as the degree of financial relations between farming enterprises and the government.

The economic conditions for extended reproduction in different zones are most accurately and comprehensively characterized by the sum of net income per 100 hectares of land and the rate of return (the ratio of income to the sum of assets or total costs). These indicators reflect the results of financial relations between farming enterprises and the government, and they also determine the potential rates of increase in financial and production potential. From the perspective of profitability, farming enterprises in the less favourable conditions of the Karakalpakstan and Navoi regions of Uzbekistan have been at a disadvantage until recently.

What needs to be done to eliminate the significant differences in conditions and opportunities for strengthening the financial and technical potential of farming enterprises located in different regions? First and foremost, this involves further deepening the specialization of farming enterprises based on agro-industrial integration and modernization of their activities. Solving these issues contributes significantly to leveling the economic conditions of farming enterprises with varying levels of profitability, which are part of different integration associations.

In this regard, the cluster [7] is of great interest as it contributes significantly to the success in the development of farming enterprises.

At the same time, the issue of improving and establishing economically justified market prices for farming products remains a pressing problem. In our opinion, there are still significant shortcomings in this area, and the production of some very important types of products requires improvement and refinement [8].

Studies and the experience of leading farming enterprises show that to ensure the necessary pace of expanded reproduction, the profitability level (depending on the specialization of the enterprises) should be at least 30-35%. However, it currently requires increase and sustainable development [10].

Further improvement of prices for farming products, their intra-zone differentiation, and the levelling of economic conditions for farming operations will significantly increase the profitability of farming enterprises, which is one of the decisive factors in the technical re-equipment of farming enterprises. It should also be noted that the basis for increasing their income is the growth of production and the reduction of costs for agricultural production.

Improving and establishing economically justified prices for products, particularly industrial production, and increasing their role in stimulating and modernizing farming enterprises is of great importance, although prices for many types of agricultural machinery remain high. Often, with the introduction of new tractor models, contract prices rise more than the output. All this, of course, does not meet the requirements of innovative development in farming enterprises and reduces the effectiveness of their modernization.

Undoubtedly, the low effect achieved in farming enterprises from replacing old machinery models with newer ones is primarily explained by the fact that insufficient attention is paid to the comparative evaluation, quality improvement, and technical and economic performance of the machines during the development and implementation of new innovative models of machinery. There are cases where, during testing of new machinery, more attention is paid to agro-technical and energy evaluation, and the economic efficiency of implementing new types of equipment is overestimated. This leads to farming enterprises being provided with insufficiently advanced machine designs, which require substantial additional financial investments for refinement and increased efficiency. As a result, the cost of agricultural products increases significantly, and thus the new price of the machinery.

To eliminate this shortcoming, it is necessary to improve the organization of state testing of new machinery. This should be done in such a way that the evaluation of a particular innovative model is based on an analysis of extensive factual data, objectively reflecting the advantages of the new innovative machinery compared to the one it replaces.

From the perspective of the objective requirements and conditions of the instability in the development of the agricultural sector, the introduction of new innovative machinery should be beneficial both to producers and farming enterprises as consumers. Prices for new products must be set based on the real economic effect [4] that can be obtained from their use.

The savings during the operation of new machinery should not only compensate for the additional investment costs that may be associated with purchasing the equipment, but also provide a certain increase in income based on the reduction in the cost of tractor and other technical work. Only in this case can the efficiency of farming enterprises be improved and their competitiveness ensured.

Conclusion. The issue of economic incentives for the implementation of new innovative machinery needs to be given attention based on the experience of foreign countries. A variety of techniques and methods can be applied for this purpose. To accelerate the process of updating production assets and avoid the negative effects of moral obsolescence, it is necessary to rely on the so-called accelerated depreciation method, which involves applying higher depreciation rates in the first period of operation than in the last, allowing a larger portion of the asset's cost to be recovered in the early years of its service, thus helping to avoid losses that may occur due to the appearance of newer, more productive, and advanced machinery [6], as well as the reduction of their unit cost.

For the successful innovative development of farming enterprises, the following is recommended:

- Strengthening state support: Expanding subsidy and grant programs, as well as creating favorable conditions for investment in agriculture. State support plays a crucial role in stimulating innovative activity.
- Development of educational initiatives: Organizing training programs and workshops for farmers on the application of modern technologies and farming methods. Increasing knowledge and skills contributes to more effective use of innovations.
- Creation of cooperatives and clusters: Uniting farming enterprises into cooperatives for joint use of resources and technologies, which reduces costs and risks. Cooperation allows small enterprises to access advanced technologies and markets.

Innovative development of farming enterprises is a necessary condition for improving the productivity and sustainability of agriculture. A combination of modern technologies, state support, and educational initiatives facilitates the successful implementation of innovations and overcoming existing barriers.

We believe that with a high level of technical equipping, in conditions of economic instability, increased depreciation rates in the first years of service of certain machines can be applied in farming enterprises in countries with transitional economies.

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