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MAKING MANAGEMENT DECISIONS IN THE SOCIAL AND ECONOMIC SYSTEM OF DEVELOPMENT OF INNOVATION-INVESTMENT AND PERSONNEL POTENTIAL OF AGRI-FOOD ENTERPRISES IN CONDITIONS OF DIGITALIZATION

ПРИЙНЯТТЯ УПРАВЛІНСЬКИХ РІШЕНЬ В СИСТЕМІ СОЦІАЛЬНО-ЕКОНОМІЧНОГО РОЗВИТКУ ІННОВАЦІЙНО-ІНВЕСТИЦІЙНОГО ТА КАДРОВОГО ПОТЕНЦІАЛІВ ПІДПРИЄМСТВ АГРОПРОДОВОЛЬЧОЇ СФЕРИ В УМОВАХ ДІДЖИТАЛІЗАЦІЇ

Білоус Я. Ю., Перетятко Л. А., Фесенко О. М., Тютюнник В. С. Прийняття управлінських рішень в системі соціально-економічного розвитку інноваційно-інвестиційного та кадрового потенціалів підприємств агропродовольчої сфери в умовах діджиталізації. *Український журнал прикладної економіки та техніки*. 2023. Том 8. № 3. С. 51 – 56.

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The organization of management decision-making in the system of socio-economic development of innovation-investment and personnel potential of agri-food enterprises is significantly updated in the conditions of digitalization. The purpose of the study was to study management decision-making in the system of social and economic development of innovation-investment and personnel potential of agro-food enterprises in the conditions of digitalization. Modern aspects of the formation of innovation-investment and personnel potential of agro-food enterprises in the conditions of digitalization are analyzed. Innovation and investment policy is recognized as a catalyst for effective transformations in the agri-food sector. The innovation-investment and personnel potential of integration structures as a system of innovation-investment factors that create opportunities for a synergistic effect have been studied. The procedure and criteria for making managerial decisions in the design of socio-economic development of innovation-investment and personnel potential of agri-food enterprises in the conditions of digitalization, provided that a particular scale of production is observed, are analyzed. Proposals regarding the formation of an innovation-investment program for the development of enterprises in the agro-food sector were provided. The key factors affecting the process of innovation and investment ensuring the sustainability of the development of agri-food enterprises in the conditions of digitalization are determined. It has been proven that increasing the effectiveness of the formation and implementation of innovative investment and personnel potentials of enterprises in the agro-food sector can be achieved thanks to the creation of prerequisites for the rapid and effective introduction of technical innovations in all spheres of activity, the preservation and development of scientific and technical potential, the result of the necessary material conditions for the conservation of highly qualified scientific personnel of the innovative sphere.

Keywords: management decision-making, system, social and economic development, innovation and investment potential, personnel potential, agri-food enterprises, digitalization.

Організація прийняття управлінських рішень у системі соціально-економічного розвитку інноваційно-інвестиційного та кадрового потенціалів підприємств агропродовольчої сфери суттєво актуалізується в умовах діджиталізації. Метою дослідження стало вивчення прийняття управлінських рішень у системі соціально-

економічного розвитку інноваційно-інвестиційного та кадрового потенціалів підприємств агропродовольчої сфери в умовах діджиталізації. Проаналізовані сучасні аспекти формування інноваційно-інвестиційного та кадрового потенціалів підприємств агропродовольчої сфери в умовах діджиталізації. Інноваційно-інвестиційну політику визнано каталізатором ефективних перетворень в агропродовольчій сфері. Досліджено інноваційно-інвестиційний і кадровий потенціал інтеграційних структур як систему інноваційно-інвестиційних факторів, що створюють можливості для отримання синергетичного ефекту. Проаналізовані процедура та критерії прийняття управлінських рішень у системі соціально-економічного розвитку інноваційно-інвестиційного та кадрового потенціалів підприємств агропродовольчої сфери в умовах діджиталізації за умови дотримання певного масштабу виробництва. Надані пропозиції щодо формування інноваційно-інвестиційної програми розвитку підприємств агропродовольчої сфери. Визначено основні чинники, що впливають на процес інноваційно-інвестиційного забезпечення стійкості розвитку підприємств агропродовольчої сфери в умовах діджиталізації. Доведено, що підвищення ефективності формування та реалізації інноваційно-інвестиційного та кадрового потенціалів підприємств агропродовольчої сфери можна досягнути завдяки створенню передумов для швидкого й ефективного впровадження технічних новинок у всі сфери діяльності, збереженню та розвитку науково-технічного потенціалу, створенню необхідних матеріальних умов для збереження висококваліфікованих наукових кадрів інноваційної сфери.
Ключові слова: прийняття управлінських рішень, система, соціально-економічний розвиток, інноваційно-інвестиційний потенціал, кадровий потенціал, підприємства агропродовольчої сфери, діджиталізація.

Statement of the problem

The agro-food sector is the basis of the national economy of Ukraine; it is the driver of its innovative development, formation of the image of a highly developed country, and integration into the international technological environment. The sector has significant potential but has partially lost its position on foreign and domestic markets due to a change of partners, disruption of logistics, the exclusion of a part of agricultural regions from the economic space, the outflow of qualified personnel, and a lack of investment in the processes of digitalization of production. Considering that the positive global experience consists of the reorientation of the agro-food sector in the direction of the development of innovation, investment, and personnel potential, the urgent task of today is the application of modern approaches to their management.

Despite the large number of works on management decision-making in the system of socio-economic development of innovation-investment and personnel potential, in particular, enterprises of the agro-food sector, specific, methodical approaches to its assessment have yet to be researched enough. The strategy of formation and use of innovation-investment and personnel potentials in war conditions, changing the priorities of state regulation in the plane of decentralization, needs scientific understanding. More attention should be paid to practical issues of organizational and functional management of innovation-investment and personnel potential, including processes of creation and functioning of scientific-production agro-industrial complexes [1-11].

Therefore, the substantiation of proposals for improving the management of innovation-investment and personnel potentials of enterprises in the agro-food sector has considerable practical and scientific significance. This is what determined the choice of topic, goal, and task of this work.

The purpose of the research

Of the study was to study management decision-making in the system of socio-economic development of innovation-investment and personnel potentials of agro-food enterprises in the conditions of digitalization.

Presentation of the main research material

Ukraine belongs to the countries with high scientific potential. Therefore, the priority for the activities of state authorities should be the creation of conditions that ensure not only an increase in innovation, investment, and personnel potential but also, first of all, their maximum realization in the interests of society. In the conditions of digitization, the state should become a direct leader of innovation and investment development, a customer and organizer of research and development in the most modern directions of scientific research and development, and promote their implementation in all spheres of economic activity [5].

The development of innovations in Ukraine is an essential element of the country's integration into the EU since the level of innovation activity, according to the Lisbon Strategy, has become a determining criterion for the readiness of each state to join the European Union, the main goal of which is to unite the scientific and technical potential of European countries for their integration into the European and global innovation network [3].

Considering the issue of formation of innovative investment and personnel potential of agro-food enterprises in the conditions of digitalization, it is possible to single out several systems of which it is a component:

1. Unity of production, social practice, and innovative activity. Modern production in developed countries is rapidly moving to an innovative path of development - systematic updating of product

technologies, research into new possibilities of their application, and maximum satisfaction of various consumer requests. This process is the main prerequisite for deploying innovative activities - producing scientific products and innovations based on them.

2. Investment field, structure, and volume of investments in the country region directed to the innovation sphere. Portfolio investments can provide many times their profitability in contrast to direct investments in the same production area.

3. Accumulation and circulation of capital. The movement of money in the innovation sphere is characterized by its peculiarity, which consists, firstly, in the fact that often primary capital must come from outside and, secondly, in the fact that due to the prolonged circulation of money, the innovation sphere without appropriate compensatory measures from the state and of regional bodies would be unattractive for capital investment.

4. The innovative infrastructure of the agro-food sector is functionally related to creative activity. It ensures the functioning and renewal of the innovation sphere, targeting the needs of the market and the efficiency of innovation activity. Its main elements include information infrastructure and organizational support infrastructure.

The first provides necessary information to novice innovators and potential news consumers. The second accompanies the innovation process with consulting services in management, marketing, leasing, taxation, legal, and assistance in finding and renting premises, equipment, etc. The task is to systematize the functions of innovative infrastructure and develop criteria and algorithms for its organizational forms in specific conditions.

Organization of innovative activities in the agro-food sector. For specific regions, the structure of organizational forms will largely depend on the completeness and cost-effectiveness of their functional connections with production and consumers. Among them are the functions of satisfying potential consumers in terms of the range and volume of new products, ensuring at the same time the minimum expenditure of time, material, and monetary resources, and maximizing profit and the personal material interest of scientists and specialists [8; 11].

Considering the innovative sphere as a component of different systems makes it possible to separate functional connections from each other, creating a particular set that allows for a more specific and constructive analysis of them to establish the necessity and methods of their practical implementation and transformation. The basis of innovative development is the scientific and creative process, which includes fundamental and applied research, research and design, project and technological developments, testing, and industrial development of innovations.

Increasing the efficiency of the scientific and innovative sphere can be achieved thanks to the creation of prerequisites for the rapid and effective introduction of technical innovations in all spheres of activity, in particular the agro-food globe, the preservation and development of scientific and technical potential, the creation of the necessary material conditions for the conservation of highly qualified scientific personnel of the innovative sphere and the maintenance of the appropriate level competitiveness.

It is also worth noting that different countries' tax systems use various means of stimulating innovative activity. The most effective of all methods of tax incentives, as the experience of foreign countries shows, is the use of an investment tax credit to ensure technological renewal [5].

At the same time, in Ukraine, according to survey data at agro-food enterprises, the main reasons for low innovativeness are insufficient funding (89–90% of respondents), lack of funds from the customer (49–51%), and lack of state support. Although innovations were implemented by more than 12% of Ukrainian enterprises, the volume of innovative products sold was only 3.3% (only 1.5% were sold abroad) [2]. This necessitates the application of a single basic methodology, which will not only provide an analysis of the state's existing state of innovation but also provide an opportunity to forecast the prospects for its development. In Ukraine, there are also such problems as inconsistency of legislation in the innovation and investment sphere, a significant decrease in innovative activity and a general deterioration of the creative culture of society, ineffectiveness of the mechanisms of the legal protection of intellectual property, lack of a proper system for forecasting scientific, technological and innovative development; the spread of the practice of ignoring the legislation or suspending the articles of the laws that related to the financial support of creative activities.

Therefore, to solve the problem of state management of innovation and investment policy, it is necessary to single out the following strategic directions: adaptation of the innovation system of Ukraine to the conditions of globalization and increase of its competitiveness; creation of a favorable investment climate; reorientation of the innovation production system to market demand and the consumer; design of attractive conditions for creators of innovations, stimulation of innovative activity of

entrepreneurship; liquidation of dispersal of funds and concentration of finances on the main creative directions; application of a system approach in the management of innovative development in conditions of digitization [4].

An innovative investment portfolio is formed based on several criteria that the investor sets for himself - profitability, urgency, level of risk, and appropriateness of financial resources like every project that will be financed and is part of this portfolio [6]. The procedure for forming an innovation-investment portfolio (Fig. 1) is a multi-criteria task that must be performed in the future. Therefore, it is based on forecasts. There are no clearly defined implementation methods for this task, but there are typical procedures, general recommendations, and practices of projected calculations.

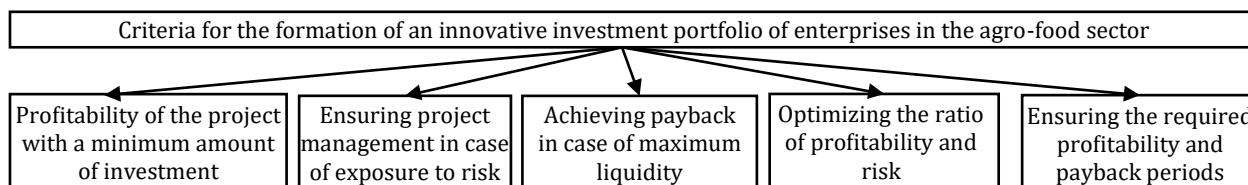


Fig. 1. Criteria for forming the innovation and investment portfolio of enterprises in the agro-food sector

We will present the main criteria for forming an innovation and investment portfolio. The measure of profitability is reflected in the expected increase in income due to either the increase in the value of the investment object itself or high and regular dividends on the invested capital. The criterion of the urgency of achieving innovative investment goals determines the investor's requirements for the terms of investment implementation, the achievement of the required profitability and return on investment, and the life of investment objects.

Here is a typical sequence of actions for the formation of an investment portfolio: development of an investment activity strategy; determination of the composition and type of investment portfolio; analysis and preliminary selection of investment projects; final selection of investment projects; calculations and justification of the efficiency of the formed portfolio; development of the organizational plan for the implementation of the investment portfolio and its management technology [3; 6]. Thus, the ratio of expenses for simple and extended reproduction of fixed assets, equal to 35 and 65% of the total volume of gross capital investments, can be optimal. In this proportion, it is possible to form a reproductive structure of gross capital investments [8]. The predominant direction of capital investments for technical rearmament, reconstruction, and expansion in the agro-food sector will continue shortly after post-war development.

Agri-food enterprises need to adhere to a particular scale of production and at least a minimal effect of production. It is defined as the smallest production volume according to which a business entity can minimize its production costs. In other words, an agro-food enterprise should always minimize its internal and external costs for involving resources in the production process with their further use and obtaining maximum profit. At the same time, one should take into account the effect of the law of diminishing returns, according to which, starting from a particular moment, the gradual addition of units of a variable resource to an unchanging fixed resource leads to a decrease in the additional or marginal product for each subsequent division of the variable help, and in the end, this return will be equal to zero [5]. Therefore, it is necessary to take this provision into account and to attract to the production system the number of investments that, in the case of their practical use, will give the maximum return, increasing the profitability and market value of enterprises in the agro-food sector. All the above actions must be presented as an innovation and investment program to develop agro-food enterprises.

To qualitatively characterize the factors that determine the possibility of increasing the efficiency of the use of innovative investment and personnel potential of agro-food enterprises in the conditions of digitalization, we offer the following grouping of them:

1. Technical and technological resources. In this direction, the aspects of management of fixed assets are taken into account with the determination of the production capacity indicator, which depends on the following factors: the number of equipment, equipment performance, mode of operation, qualification level of workers, structure of fixed assets; specifics of depreciation policy; the level of innovation of production equipment; labor empowerment; technical armament of labor; electrification of delivery; the share of innovative products in the overall production structure; the ratio of fixed assets that are involved in the production process at the expense of own and borrowed capital [6].

2. Personnel resources. The following is determined taking into account this group of indicators: personnel potential, which is the totality of workers of professional and qualification groups employed in the field; the structure of personnel potential - the gender composition and quantitative ratio of individual categories and groups of workers in the area; a system of methods of effective regulation of

labor in the field; labor-saving under the influence of technical and economic factors; personnel motivation system in the area; the level of scientific organization of work, which is based on the use of the latest achievements of science and technology; the share of personnel involved in R&D; the cost of fixed assets per employee, which is the main factor that determines the dynamics of labor productivity.

Over some time, it is possible to increase the productivity of personnel in case of an increase in the cost of fixed assets, but if the number of the workforce grows faster than the cost of fixed assets, labor productivity will fall in proportion to the decrease in capital equipment. Investments in human capital are an essential means of increasing labor productivity [6]. The improvement of resource allocation will mean that gradually, over several years, the labor force will be redistributed from the low-productivity to the high-productivity sphere of production, which, in turn, will be caused by the redistribution of investment resources between potentially attractive branches of the agri-food enterprise. However, it is possible to increase labor productivity only at the expense of technical progress - to increase the level of armed forces and improve the workforce quality. At the same time, there is a negative, manifested in man's direct dependence on technological progress. These technologies provide economic growth and the means for human life, but under such conditions, human alienation occurs. A person becomes only a controller of automatic devices.

3. Spatial resources: production premises at enterprises of the field; territories of enterprises in the field; effective communication system; the possibility of expansion of production areas at the expense of own capital or renting on the terms of operational, financial leasing, and selling.

4. Resources of the organizational structure of the management system: flexibility of the management system; the depth of labor specialization (with large volumes of production, it is better to use the work of management specialists due to their deep domain; the expansion of the scale of operations will mean that any qualified manager will be able to devote himself to the performance of his specialized functions, for the adequate performance of which he will be able to receive an appropriate reward); speed of management actions; improvement of organizational structures in the sector; introduction of new methods of labor organization; improvement of labor discipline, change of work regime.

5. Information resources: the nature of information located in the external environment; the possibility of expanding and increasing the reliability of the provided information; the presence of a public relations department; availability of Internet resources, involvement in local and global technological networks, and platforms; the speed of information collection, processing, and transmission.

6. Financial resources: state of assets of agro-food enterprises; financial stability and financial autonomy; asset liquidity; availability of credit lines according to the direction of their receipt and maturity; composition of investments by source of their income.

Funds from local budgets, extrabudgetary funds, and funds from customers from foreign countries make up an insignificant specific weight in the structure of sources of financing innovative activities of agri-food enterprises. The basis of investing in creative transformations during the war is one's funds, and there are opportunities to attract grant funds. Currently, in the conditions of digitization, it is necessary to conduct an active investment policy, first, about those enterprises that have specific opportunities to increase the competitiveness of products, introduce new types of products, carry out innovative activities, in particular, the fulfillment of state orders, orders of state enterprises, etc.

Conclusions and prospects for further investigations

Summing up, we note that increasing the efficiency of management decision-making in the system of socio-economic development, innovation, investment, and personnel potential of agro-food enterprises in the conditions of digitalization can be achieved thanks to the creation of prerequisites for the rapid and effective introduction of technical innovations in all spheres of activity, the preservation and development of scientific-technical potential, design of the necessary material conditions for the conservation of highly qualified scientific personnel in the innovative sphere.

High-quality innovative and investment components of growth are needed to increase the effectiveness of the socio-economic development of enterprises in the agro-food sector. Economic growth is related to the influence of the following factors: the quantity and quality of natural resources used in the production process; amount of fixed capital; quantity and quality of labor resources; technology.

They can be included in the group of factors that form a potential innovative investment and personnel production offer in the conditions of digitalization.

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