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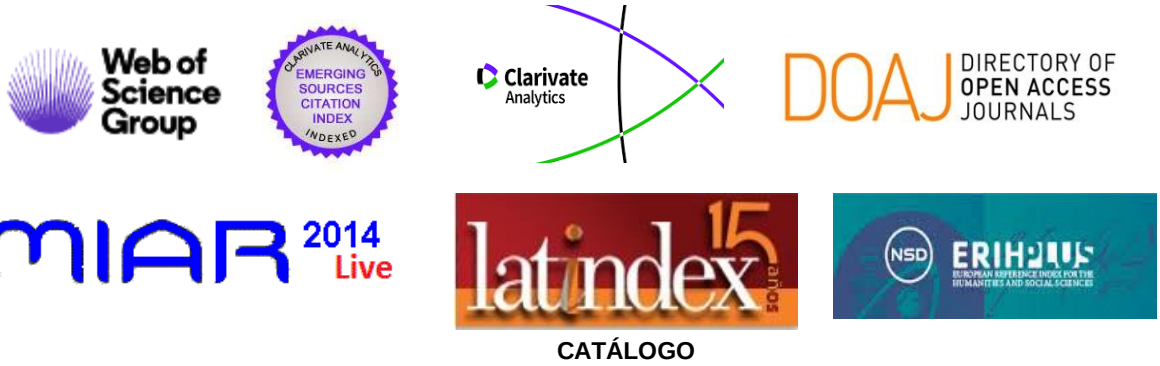

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MODELING OF THE INNOVATIVE POTENTIAL MANAGEMENT SYSTEM OF INTEGRATED AGRICULTURAL FORMATIONS OF THE MESO-ECONOMIC LEVEL

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Abstract

The aim of the study is to substantiate theoretical provisions and recommendations for the formation of an organizational and economic mechanism for managing the innovative potential of integrated agro-industrial formations on the basis of a conceptual model, taking into account the limitations associated with the management and production specifics of the internal organization of integrated agro-industrial formations. The methodological basis of the research is general scientific methods of analysis and synthesis, methods of scientific abstraction, the modeling method and theory and methodology of the systems approach.

Keywords

Agroecosystem – Integrated agro-industrial formation – Innovative potential – Synergistic effect

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Introduction

Modern conditions of globalization, growing uncertainty, market turbulence and structural transformations stimulate the development of high-tech agro-industrial formations of the meso-economic level and their involvement in a new system of relations with independent business entities based on competitive interaction. The most common forms of agro-industrial meso-economic formations are represented by clusters, industrial parks, agro-industrial polices, technological platforms, agroecosystems, functioning in the process of quasi-integration under conditions of the greatest community of interests between the participants[1].

The transition from the industrial stage of economic development to the informational, post-industrial stage is accompanied by the expansion of integration processes and the formation of innovative organizational structures that activate scientific and technical transformations and boost economic growth. The development of the modern agro-industrial complex is associated with the creation of various forms of associations of legal entities and individuals based on the intensification of the processes of agro-industrial integration. The need to study the mechanism for managing the innovative potential of integrated agro-industrial formations of the meso-economic level, focused on achieving a stable growth in agricultural production, becomes obvious; analysis and forecasting of market conditions in order to optimize material and financial flows.

The problem of creating an effective system for managing the innovative potential of integrated agro-industrial formations (hereinafter - IAF), which allows to reproduce and use scientific and technical innovations to increase the rate of economic development of the agro-industrial complex of the country in general, and regions in particular, is urgent.

In the economic literature, there is no single agreed point of view on the problems of integration processes in the agricultural sector of the economy, including on the issues of determining the essence of agro-industrial integration, its objective foundations, formal interpretation, as well as assessing the innovative potential and effectiveness of the IAF.

The role of integration forms of management in the agro-industrial complex began to be actively discussed in the late 70s - early 80s of the XX century. One of the priorities of their formation and development was considered the solution of food security problems and broader opportunities for innovative development of the agricultural sector of the economy.

The issue of the formation of integrated, including cluster formations, which is in the focus of the scientific interest of this study, was considered in the works of E. Bergman, M. Lorenzen, A. Marshall, M. Preveser, S. Resenfeld, J. Swan, M. Storper, H. Farrell , E. Feyser, M. Enright and others.

The problem of forming an effective system for managing the innovative potential of integrated agro-industrial formations, which makes it possible to generate, reproduce and use scientific and technical innovations to increase the pace of economic development and the quality of life, has become extremely important in the scientific works of foreign scientists. The study of the theory and practice of the formation of integrated agro-industrial formations in a number of countries allows us to generalize the objective economic patterns of their

[1] M. Porter, Competitive Strategy: Methods for Analyzing Industries and Competitors (Moscow: Alpina Publisher, 2011).

development, among which the most important is the positive dynamics of the integration of science, education, production and the market, which results in the intensification of internal relationships and interaction between subsystems and elements (actors) agrarian economy.

A number of works by foreign authors focus on the fact that flows of technology and information between people, enterprises and institutions play a key role in the development of innovative potential. Technological development is the result of a complex set of integration relationships between the participants in the system - enterprises, universities, public research institutions, institutions and policies that form the appropriate environment for innovation. According to this direction of scientific research, the main elements and systems for managing the innovative potential of the IAF are the subsystems of knowledge and education, business and entrepreneurship, as well as the subsystem of institutions. The latter include implementation services, policy tools and stakeholder platforms that transfer knowledge and information across domains[2].

The concept of the formation of innovative systems in agriculture is based on the possibility of increasing efficiency as a result of the "combined" solution of the problems of promoting products from the sphere of production to the sphere of consumption, in the process of which the participants in the integration process jointly assess the available opportunities and creatively solve the problems facing agricultural partners, based on the application new knowledge[3].

The description of integrated formations first appeared in the works of M. Porter: "... a geographically concentrated group of interconnected companies and organizations operating in a specific area and characterized by common activities and complementary to each other"[4]. M. Porter investigated the competitiveness of various sectors of the economy and countries, as a result of which the conclusion was formulated that the industries concentrated in certain regions are the most competitive in comparison with the chaotically located industries. Thus, a number of well-known theories of predecessors were confirmed - A. Marshall, A. Weber, A. Lesch, W. Isard and other scientists.

Agro-industrial integration, according to I.G. Ushachev, is "an objective economic process characterized by a certain pattern associated, first of all, with the forms of ownership, the development of the social division of labor, its cooperation and the need on this basis for interaction between branches and enterprises of agricultural and industrial production"[5]. In world practice, a number of modern scientific schools consider integrated agro-industrial formations from the point of view of the main condition for increasing the efficiency of agricultural production, the possibility of obtaining a synergistic effect by the participants of integration processes, reducing transaction costs, identifying "points of growth", achieving a balance of interest of all subjects of integration[6].

[2] D. J. Spielman y R. Birner, “How Innovative is your Agriculture Using Innovative Indicators and Benchmarks to Strengthen National Agricultural Innovation Systems”, World Bank, Paper 41. 2006

[3] B. Pound y G. Essegbey, Agricultural Innovation Systems. In, Strengthening Capacity for Agricultural Research and Development in Africa (pp. 46-58), Briefing papers, Volume 3. Accra (Ghana: FARA, 2008).

[4] M. E. Porter, Competition (Moscow: Publishing house "Williams", 2005).

[5] I. G. Ushachev, “Integration is the most important factor in the development of the agro-industrial complex of the CIS countries”, AIC: economics, management num 7 (2011): 3–13

[6] A. Chernyaev y D. Serdobintsev, “Organizational and economic mechanism of the formation of agro-industrial clusters in the Volga region”, AIC: economics, management num 2 (2012): 3-8.

According to O.A. Anichkina, the creation of clusters in the agro-industrial complex is necessary for more effective adaptation of small and medium-sized entrepreneurs to the uncertainty of the external environment, increasing their competitiveness in the product markets of the country's regions[7]. The need to create integrated agro-industrial structures in the agro-industrial complex (cluster format) in order to ensure food security is justified in the studies of O.I. Bundin, N.P. Tolsacheva, A.S. Khukhrina[8]. According to O.A. Frolova, S.P. Malakhova territorially localized, innovation-oriented integrated structures can be organized on the basis of agricultural and industrial production, the main goal of which is to create an industrial basis for increasing the competitive advantages and productivity of the food sector in the region, as well as the integrated use of the existing socio-economic potential of the territories[9].

Our point of view boils down to the fact that the main goal of the development of integrated agro-industrial formations is to create agroecosystems to ensure food and economic security of the territories with the integrated implementation of the innovative potential of economic entities in the context of optimal diversification of production activities and achieving a synergistic effect. Arshinov G.A., Loiko V.I., Laptev V.N. are devoted to the problems of the development of modern forms of integration of agricultural producers and processing enterprises of the agro-industrial complex[10]. In the studies of economists, Makhanko E.V.[11], Onishchenko S.K.[12], Rotova V.N., Korshunova L.A.[13], Telegina T.V.[14] and others, the paradigm of the integration construction of the interaction of economic entities is considered, which implies the optimal combination of competition and the association of economic agents on mutually beneficial terms within the framework of regional development. Denisova N.V., Proskura N.V. the development of integrated structures in the agro-industrial complex is associated with the problem of providing food to the population in modern economic conditions. The authors proposed a mechanism for the formation of the integration and diversification structure of the agro-industrial complex, based on the implementation of innovative activities, which will allow obtaining a positive synergistic effect as a result of their joint functioning[15].

[7] O. A. Anichkina y O. M. Sarukhanyan, Principles of the formation of clusters of small and medium-sized businesses in the agro-industrial complex, in: Problems of modern economy: materials of an international scientific conference (Chelyabinsk, 2012)

[8] O. I. Bundin; N. P. Tolsacheva y A. S. Khukhrin, “Development of the concept of a cluster”, Economics, labor, management in agriculture Vol: 2 num 23 (2015): 29-36.

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[10] G. A. Arshinov; V. I. Loiko; V. G. Arshinov; V. N. Laptev y S. V. Laptev, “Analysis of modern forms of integration of agricultural producers and agro-industrial complex processing enterprises”, Polythematic network electronic scientific journal of the Kuban State Agrarian University num 123 (2016): 1393-1421.

[11] G. V. Makhanko, “Problems of the agro-industrial complex of the Russian Federation in the context of economic sanctions and ways to solve them”, Polythematic network electronic scientific journal of the Kuban State Agrarian University num 132 (2017): 798–817

[12] S. K. Onishchenko, “The concept of the integration transformation of enterprises in modern conditions of market relations”, Baltic Humanitarian Journal num 3 (2014): 77–80.

[13] V. N. Rotova y L. A. Korshunov, “The main aspects of the formation of modern clusters in the regional economy”, News of the Altai State University num 12 (2015): 13–17.

[14] T. V. Telegina, “Integration formations as a promising form of economic development”, Transport business in Russia num 1 (2014): 221–224.

[15] N. V. Denisova y N. V. Proskura, “Development of integration processes in the agro-industrial complex: trends, features, problems in market conditions”, Bulletin NGIEI Vol: 6 num 97 (2019): 39-51.

Certain aspects of the problem of innovative development of the agrarian sector of the regional economy within the framework of restrictions affecting the intensity of innovation processes were studied by V. Borovikov, V. Reimer[16]. Pershukevich I.P., Ryabukhina T.M. consider increasing the competitiveness and efficiency of the economic entities of the agro-industrial complex in connection with the intensification of innovative processes[17]. At the same time, the innovative potential of agro-industrial formations is considered as a set of resources, means and factors that allow them to carry out innovative activities.

According to the assumption of Gritsenko G.M., Lukyanov A.M. agricultural holding formations solve key problems of the Russian agricultural sector regarding the concentration of capital and the development of the innovative component of agricultural production. Centralization of management and economies of scale within the framework of vertical integration allow attracting large investments, promoting agricultural products to distant markets, conducting scientific research, creating new jobs[18]. However, it should be noted that along with significant advantages over small forms of business, large Russian corporations of an integrative type have negative signs, including: an agrarian lobby, offshoring profits, neglect of social problems of the village and the ecology of agricultural systems. In this regard, modeling of the management system for the innovative potential of integrated agro-industrial formations actualizes scientific research in the direction of ensuring an innovative breakthrough in the agricultural industry in a regional format.

In the works of Sandu I.S., Nechaev V.I., Fedorenko V.F., Demishkevich G.M., Ryzhenkova N.E. the organizational and economic aspects of the formation of the innovation system of the agro-industrial complex are presented, the features of the formation of innovation systems in the agricultural sector of the economy are investigated, the institutional problems of the formation of the national innovation system of the agro-industrial complex of Russia are revealed[19].

According to I. V. Shchetinina, E. I. Kendyukh. the innovative potential of agricultural organizations is a combination of resources, means and factors through which innovative activities are implemented, including scientific and technical developments for agricultural production, highly qualified personnel; material, technical and financial resources; organizational, economic, infrastructural, regulatory and other types of support[20].

Studies of the possibilities of overcoming the imbalances in the technological development of integrated agro-industrial formations of the meso-economic level on the basis of modeling the innovation potential management system are characterized by incompleteness and incompleteness, which, to a certain extent, negatively affects the state policy in this area, focused on advanced scientific developments.

[16] V. Borovikov; V. Reimer; G. Hongyu y Y. Gendong, “Innovative potential of the development of the agro-industrial complex of the Far Eastern Federal District”, International Agricultural Journal num 3 (2016): 15-17.
[17] I. P. Pershukevich y T. M. Ryabukhina, “The mechanism of innovative development of agro-industrial formations in Siberia”, Fundamental research num 12 (2015): 1036-1040
[18] G. M. Gritsenko y A. M. Lukyanov, “Institutional environment for the development of the regional agro-industrial complex: theoretical aspect”, Fundamental research num 12 (part 4) (2014): 794-798.
[19] I. S. Sandu; V. I. Nechaev; V. F. Fedorenko; G. M. Demishkevich y N. E. Ryzhenkova, Formation of the innovation system of the agro-industrial complex: organizational and economic aspects: scientific publication (Moscow: FSBSI «Rosinformagrotech», 2013)
[20] I. V. Shchetinina y E. I. Kendyukh, “On the issue of innovations in the agro-industrial complex”, Siberian Bulletin of Agricultural Science num 11-12 (2011): 85-90.

In this regard, it should be noted that in modern scientific literature, the issues of an integrated approach to managing the innovative potential of integrated agro-industrial formations at the regional level have not received sufficient coverage.

The stability of integrated agro-industrial formations and an increase in their competitiveness in the face of internal and external constraints is associated with the transition to an innovative model of economic development based on the concentration of high-tech production, meta-knowledge and technologies. The innovative potential formed in modern agroecosystems does not fully meet the expectations associated with the achievement of scientific and technological superiority.

In the context of the ineffectiveness of the extensive exploitation of natural resources, the integrated agro-industrial formations face the problem of developing an integrated system for assessing and managing innovative potential. Such a system must meet a wide range of requirements of the external and internal environment.

This study reveals the methodological and methodological issues of managing the innovative potential of integrated agro-industrial formations, the characteristics of management tools, the area of their use and the technology of designing innovative potential are given. The conceptual model of management of innovative potential in the development management system of integrated agro-industrial formations of the meso-economic level is considered.

At the present stage, the implementation of the innovative potential of the agro-industrial complex is not only a necessary condition for ensuring the food security of the state, but also a factor contributing to the emergence of the agricultural sector's economy to a new global level. This thesis, in our opinion, should be the basis for the concept of a mechanism for regulating the scientific and technological development of agriculture in Russia, in accordance with which the creation of integrated agro-industrial formations that ensure the achievement of the internal and external goals of agricultural development is of great importance. In other words, the new model for managing the development of the agro-industrial complex is presumably based on a set of interrelated elements (principles, functions, methods, technologies), taking into account the constraints associated with the management and production specifics of the internal organization of integrated agro-industrial formations.

In this context, a constructive condition for the implementation of the innovative potential of the agro-industrial complex is an evolving system of targets in the following directions:

- setting priorities for the development of IAS in the context of the need to ensure the country's food security;

- technological modernization of agricultural production in the field of primary and advanced processing of agricultural raw materials;

- production of high-tech equipment and material and technical devices for agriculture.

The working hypothesis of this study is based on the assumption that the model of the management system for the innovative potential of integrated agro-industrial formations

should be considered as a multidimensional phenomenon, as well as a set of interrelated elements (principles, functions, methods, technologies) and processes that contribute to improving the efficiency of their activities, taking into account features and limitations associated with the managerial and operational complexity of the internal organization of the IAF.

The purpose of the study is to substantiate the theoretical provisions and a set of recommendations for the formation of an organizational and economic mechanism for managing the innovative potential of integrated agro-industrial formations on the basis of a conceptual model, taking into account the limitations associated with the managerial and production specifics of the internal organization of integrated agro-industrial formations.

As part of the research goal, the following tasks were set:

- analyze scientific approaches to the study of the problems of integration processes in the agricultural sector of the economy, including on the issues of determining the essence of agro-industrial integration, its objective foundations, formal interpretation, as well as assessing the innovative potential and efficiency of functioning of integrated formations;

- consider approaches to the definition of the terminological apparatus and reveal the essence of the concept of "integrated agro-industrial formation", highlight the features of the functioning of integrated agro-industrial formations in territorial economic systems;

- to develop a model of a management system for the innovative potential of integrated agro-industrial formations.

Materials and Methods

The formation of integrated agro-industrial formations as innovative segments of the institutional system of the agro-industrial complex of Russia must be developed in the vector of preserving and strengthening scientific and innovative potentials, creating mobile elements of innovative infrastructure, implementing state policy, programs and innovative projects and other components of the organizational and economic mechanism.

The observed transformation of economic relations between agricultural producers, on the one hand, and developers of innovations, on the other, requires a deepening of the theory and refinement of methodological approaches to assessing the effectiveness of research, development and innovation projects. The methods applied in this case are directly related to the validity of assessing the effectiveness of scientific achievements and the level of efficiency of introducing innovations into production.

The validity and reliability of the effective part of the study, the proposed conclusions and recommendations is determined by the compliance of this work with the general logic of scientific research and ensured by the use of classical and modern works of domestic and foreign scientists in the field of management systems for the development of integrated agro-industrial formations based on the implementation of their innovative potential.

The methodological basis of the research is general scientific methods of analysis and synthesis, methods of scientific abstraction, modeling method, theory and methodology of the systems approach.

In our opinion, the important methodological principles of managing the innovative potential of the IAF at the meso-economic level are as follows:

- commitment to the evolutionary development of the IAF within the framework of an innovative development model;

- management of scientific and technical development of the IAF using methods of economic regulation that stimulate creativity, innovation, self-development of economic entities;

- structural transformations of the IAF and the development of new elements and blocks, taking into account world experience.

The fundamental principles of building a system for managing the innovative potential of the IAF of the meso-economic level are scientific, consistency and integrity.

The scientific principle is based on an objective analysis on the platform of scientific laws, the validity and evidence of conclusions and recommendations. The principle of consistency determines the study of phenomena in the versatility, interconnection and completeness of the components and subsystems of the IAF in their system hierarchy and agro-industrial structures. The principle of integrity ensures the formation of the IAF on the basis of the unity of ideology, goals of activity, agricultural technologies, a single information space, a single economic and legal environment, integrating the role of the state in the scientific and technological development of the country. At the same time, the IAF connects all of its components, eliminates departmental “gaps”, reduces waste of time, and eliminates duplication of functions and funds.

In accordance with the outlined principles, the IAF is presented as an effective tool for enhancing and realizing innovative potential within the framework of the formation of a post-industrial, information society, a “new agroeconomy”. In this study, we propose to consider the IAF as a multidimensional structure consisting of a population of evolving economic entities of the agro-industrial complex; providing inter-farm and inter-sectoral interaction, rational allocation of production resources; allowing you to generate competitive advantages. The genome of sustainable development of regional integrated agro-industrial formations is determined not only by megatrends of the world development of agroecosystems, but also by the presence of an innovative component in strategic guidelines.

Results

In the conditions of the new agroeconomy, innovation is a key component of the process of ensuring the effective functioning of economic entities, as well as ensuring long-term economic growth, in connection with which the issues of managing innovative potential are relevant and in demand.

We propose to consider innovative activities in the agro-industrial complex in a refined version as a set of scientific, technological, organizational, financial and commercial activities aimed at commercializing the generated relevant knowledge, created technologies and equipment, as a result of which new or additional developments (goods, services) or developments appear. with new qualities.

The innovative activity of business entities in modern agroecosystems is the main competitive advantage of the IAF, in connection with which there is a need for permanent monitoring of the economic situation. However, at present, it should be noted the innovative passivity of economic entities, which is caused by a number of constraining factors:

1) high risks of conducting innovative activities associated with an indefinite state policy and economic conditions in general;

2) a high level of wear and tear of agricultural machinery and equipment, due to the lack of modern domestic production technologies;

3) shortage of qualified personnel with experience in implementing innovations in agriculture;

4) inconsistency of the business model of economic entities of the agro-industrial complex with the selected innovation strategy;

5) lack of cooperation of economic entities of the agro-industrial complex with scientific and scientific-educational institutions, innovation and research centers in the field of collective implementation of innovative projects in the agro-industrial complex;

6) systemic defects in the construction of innovative infrastructure in agroecosystems of the meso-economic level.

The selected factors substantiate the need to study the problems of managing innovative activities, as well as developing management influences (decisions, models, mechanisms, tools) to improve its efficiency.

The multidimensional task of managing the IAF's innovative activities, which includes planning, organizing, coordinating and controlling the generation of new knowledge, new developments, training, involves solving the problem of managing innovative potential, considered as an indicator reflecting the quality of implementation of the IAF's innovative activities and the prospects for its development.

Thus, the implementation and development of the IAF's innovative activity is associated with the formation of an effective organizational and economic mechanism for managing the innovative potential, which is a prerequisite for ensuring the stability of the implementation of the innovation process in territorial economic systems.

To substantiate the essence, content and conditions for the development of the organizational and economic mechanism for managing the innovative potential of the IAF, it is necessary to focus on the concept of “a system for managing innovative potential”.

We propose to consider the system for managing the innovative potential of the IAF in horizontal and vertical formats as a set of means and methods for regulating the economic and economic joint activities of economic entities in order to realize the innovative potential and prepare a platform for the implementation of innovations.

Analysis of modern concepts and theoretical foundations of management made it possible to define the IAF innovation potential management system as a set of components, including the subject and object of management, strategic attitudes, functions, principles,

resources and tools, interconnected and forming a mechanism for influencing the IAF innovation potential in order to increase efficiency innovative activity. The organizational and economic mechanism is formed by the IAF innovative potential management system through the listed components. The model of the IAF innovation potential management system, which determines the disposition of the organizational and economic management mechanism, is shown in Figure 1.

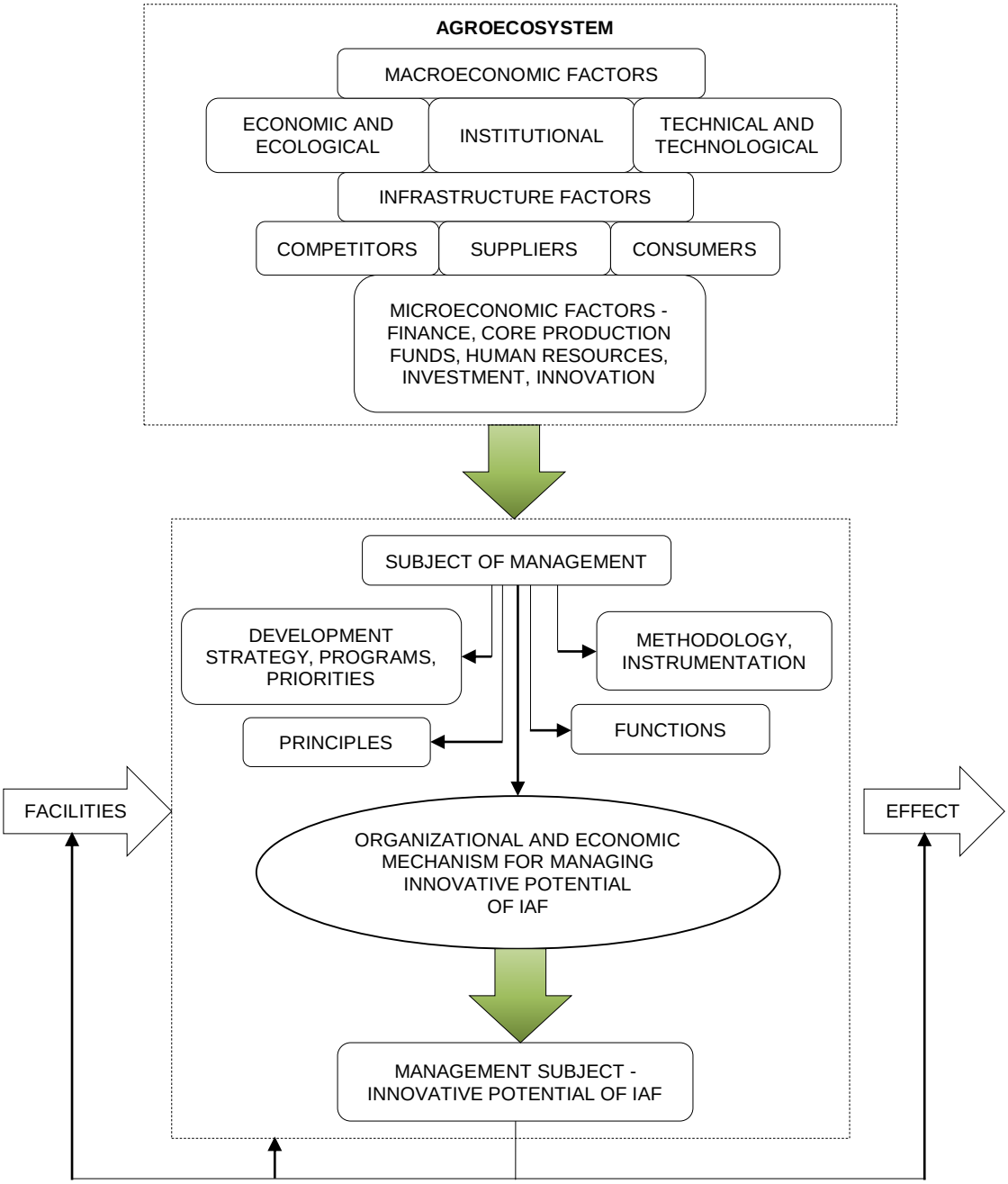

Figure 1
Model of the IAF innovation potential management system

The subject or governing body is an authorized person or a team of specialists delegated to carry out management influences in the field of managing the IAF's innovative potential. The IAF's innovation potential acts as an object of management in this format, and the result of management is its implementation, including the achievement of new or development of existing competitive advantages of the IAF in the field of innovation.

"System output" - the obtained effects (results) of innovative activity (RIA) on the basis of the produced innovative products (works, services), which become competitive in the market, as well as the achievement of the profitability of the IAF functioning. Various types of means (resources), including material, financial, labor, production, informational and others, are considered as the "input" of the system.

Macro-environment, infrastructure and micro-environment are used as elements of the external environment, which have a suggestive impact on the competitiveness, efficiency and sustainable development of the IAF within the agroecosystem. The factors of the macroenvironment, according to our assumption, can be represented in the form of three enlarged blocks, consisting of economic and environmental, institutional and technical and technological factors.

The composition of economic and environmental factors should include:

1) the dynamics of the market for innovative agricultural, including organic products. The indicator of market capacity serves as an indicator of market dynamics, which determines the prerequisites for market growth and growth of the IAF's efficiency;

2) the cost of borrowed funds for agricultural producers (monetary policy, interest rate);

3) the level of economic and environmental stability (the ecological state of agroecosystems, inflation, external and internal constraints, global trends in agroeconomics) and others.

Institutional factors include:

1) legal regulation, in particular tax, customs, environmental, patent, antimonopoly legislation, regulation in the field of prices, tariffs, sanctions and fines, as well as other legal spheres suggestively influencing the development of the IAF;

2) agro-industrial and innovation policy, which determines the priority directions of scientific and technological development of the agro-industrial complex and possible points of growth;

3) state programs in the field of support and stimulation of innovative development of economic entities of the agro-industrial complex and others.

The technical and technological factors include:

1) diffusion of innovations, including the frequency of innovative renewal of product groups and technologies in the market;

2) access to the market for technical and technological innovations and others.

Infrastructure factors are factors related to the closest environment of the IAF, including competitors, suppliers of agricultural raw materials, equipment, components and consumers of agricultural products, the ecological component of the agroecosystem:

1) the level of competition in the market for innovative products (works, services);

2) the perception of innovative products (works, services) produced by the IAF by consumers;

3) type of consumption;

4) geographical concentration and remoteness of resource providers;

5) the quality of the supplied resources;

6) the quality of the natural environment in the agroecosystem.

The effect of microenvironmental factors is determined by the influence of elements of the internal environment of the IAF, including:

1) the degree of innovative perception and innovative activity of the enterprises belonging to the IAF;

2) the financial condition of the organizations included in the IAF;

3) technical and technological development of the organizations included in the IAF;

4) the provision of highly qualified personnel to the organizations of the IAF;

5) the investment potential of the IAF member organizations;

6) the organization of business processes and the degree of development of relationships between organizations belonging to the IAF.

The influence of the selected elements of the external environment determines the presence of restrictions in terms of the development of the IAF's innovative potential management system. Limitations in an extended meaning are represented by a group of factors that determine the quantitative and qualitative limits of setting and achieving economic development goals, choosing the options for achieving goals, costs and results of agricultural production. The levels of restrictions corresponding to the elements of the external environment of the IAF innovation potential management system are shown in Figure 2.

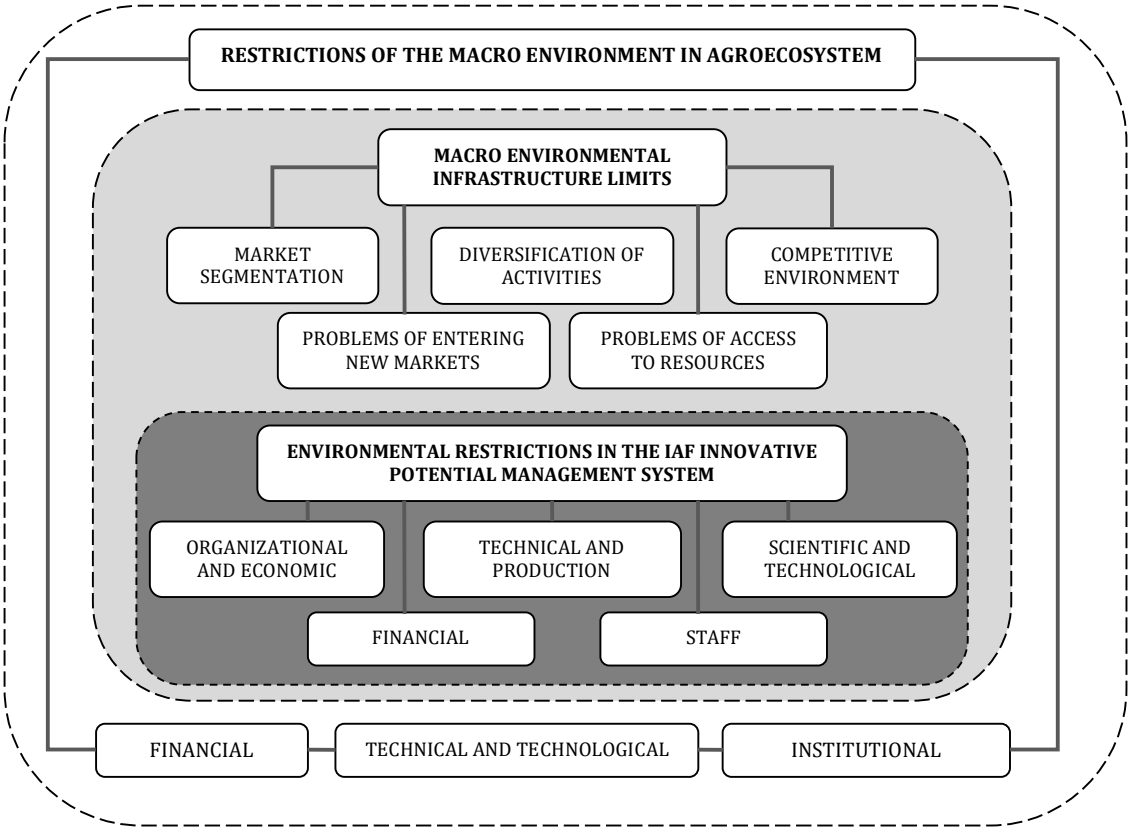

Figure 2
Limitations of the IAF innovation potential management system

Discussion

The study made it possible to identify the limitations that affect the functioning of the IAF innovation potential management system. Financial, technical and technological and institutional constraints are highlighted as macro-level constraints. Financial restrictions are associated with the generation of monetary resources through loans, placement of securities, receipt of budgetary appropriations, etc.; technical and technological limitations envisage problems of timely replacement of equipment and technologies due to their obsolescence; institutional constraints are due to the regulations governing the IAF.

The most important infrastructural constraints of the IAF's innovation potential management system include segmentation of the agricultural market; the presence of problems associated with the development of new markets and the expansion of the sphere of influence; competitive environment in the market; problems of access to resources, including natural resources, taking into account market (suppliers) and non-market restrictions (government regulation).

The elements of the IAF's internal environment, represented by the spheres of management influences on:

1) organizational and economic potential - limited opportunities, knowl edge, skills, skills related to the management of the IAF as a whole, as well as the organization,

coordination and control of innovation activities of all economic entities in the structure of the IAF;

2) technical and production potential - limitation of production possibilities due to production factors and technical resources;

3) scientific and technological potential - the limited ability of the IAF to generate new scientific and technical ideas, carry out their scientific, design and technological development and implement them in the production process;

4) financial potential - the limited financial capacity of the IAF, associated with the inability to build up its own capital and attract additional contributions to the authorized capital;

5) human resources - the limited ability of personnel to solve the challenges they face in the field of innovation, due to their qualifications, professional qualities, restrictionism.

The identified limitations make it possible, in general, to determine the defects of the IAF innovation potential management system; formulate tasks, principles and functions of management. Massive and targeted impact on restrictions makes it possible to solve the problems of enhancing innovation and realizing the innovative potential of the IAF.

Thus, in the course of the study, a number of distinctive features of the IAF's innovative potential management system were identified, including flexibility and adaptability; prompt response to emerging threats and changes in the external environment; activation and stimulation of innovative activity; effective use of tools for assessing innovative potential, which allow the designated system to solve the following tasks:

1) carry out scientifically based goal-setting in the field of management of innovative potential, taking into account the priority areas of innovation and agro-industrial policy;

2) to ensure consistency, integrity, balance and internal consolidation of innovation activities of enterprises belonging to the IAF;

3) stimulate and coordinate the participation of business entities - members of the IAF in the formation of the innovative potential of the entire structure;

4) to increase the competitiveness of innovative goods (works, services) produced by the IAF in the domestic and world markets.

The IAF innovation potential management system is a highly dynamic organism with evolving characteristics. The organizational and economic mechanism for managing the innovative potential of integrated agro-industrial formations is based on a conceptual model consisting of a set of interrelated elements (principles, functions, methods, technologies), taking into account the identified restrictions associated with the management and production specifics of the internal organization of integrated agro-industrial formations.

Conclusion

The conducted research allowed to obtain the following results:

1. The key goal of the development of integrated agro-industrial formations, based on the creation of agroecosystems to ensure food and economic security of the territories, with the integrated implementation of the innovative potential of economic entities in the context of optimal diversification of production activities and achieving a synergistic effect, has been determined.

2. Important methodological principles for managing the innovative potential of the IAF of the meso-economic level, as well as the fundamental principles of building a system for managing the innovative potential of the IAF, based on scientific nature, consistency and integrity, have been formulated.

3. In accordance with the outlined principles, the IAF is presented as an effective tool for enhancing and realizing innovative potential within the framework of the formation of a post-industrial, information society, “new agroeconomy”.

4. Integrated agro-industrial formation in this work is proposed to be considered as a multidimensional structure, consisting of a population of evolving economic entities of the agro-industrial complex; providing inter-farm and inter-sectoral interaction, rational allocation of production resources; allowing you to generate competitive advantages.

5. The methodological approach to the definition of innovative activity in the agro-industrial complex, considered as a set of scientific, technological, organizational, financial and commercial activities aimed at commercializing the generated relevant knowledge, created technologies and equipment, as a result of which new or additional developments (goods, services) or developments with new qualities.

6. The factors that restrain the innovative activity of economic entities of the agro-industrial complex, justifying the need to study the problems of managing innovative activities, as well as the development of managerial influences (decisions, models, mechanisms, tools) to improve its efficiency are highlighted.

7. The system for managing the innovative potential of the IAF in horizontal and vertical formats is proposed to be considered as a set of means and methods for regulating the economic and economic joint activities of business entities in order to realize the innovative potential and prepare a platform for the implementation of innovations.

8. A model of the IAF innovation potential management system has been developed, which determines the disposition of the organizational and economic management mechanism. This model is presented as a set of components, including the subject and object of management, strategic attitudes, functions, principles, resources and tools, interconnected and forming a mechanism for influencing the innovation potential of the IAF in order to increase the efficiency of innovation.

9. The limitations (limits) of the macro- and microenvironment, which generally have a suggestive impact on the functioning of the IAF's innovation potential management system, and in particular on the competitiveness, efficiency and sustainable development of the IAF within the agroecosystem, are highlighted. The identified limitations make it possible to identify defects in the IAF innovation potential management system; formulate tasks, principles and functions of management.

10. A number of distinctive features of the IAF innovation potential management system have been highlighted, including flexibility and adaptability; prompt response to emerging threats and changes in the external environment; activation and stimulation of innovative activity; effective use of tools for assessing innovative potential, which allow the designated system to solve a number of strategic tasks.

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