Areas of development strategy for the regional agribusiness management system

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Abstract. This paper discusses the methodological aspects and directions of the regional agribusiness development strategy related to the justification of the strategic management object, assessment of its status, trends and patterns of functioning, the formulation of a hypothesis and concept for the development of the economic system and its individual elements, the choice of methods and tools for developing the strategy, which reveal an approach to assessing the development prospects of a managed subsystem. The assessment of the current state and functioning of the management system at the state and economic level in the field of implementation of program measures for the development of the digital economy and promising areas of its implementation at the regional level is given. The priority principles of building development management in the field of regional agribusiness using elements of the digital economy are substantiated. Ways and methods of implementing the management system in the information space of the digital economy are outlined, where, on the basis of sound methods and forms, the processes of modernization of the management system that contribute to the development of the economy of the sub-sector and rural areas are formed and functioning.

1. Introduction

The formation of the conceptual foundations of the regional agribusiness development strategy should be based on the introduction of methodological and practical provisions related to the definition of an object of strategic management, a modern assessment of its condition and development trends using effective methods, laws and principles of functioning, as well as formulated effective management subsystem at the regional level and its individual elements, the choice of effective tools in the development of conceptual aspects of development strategies with the definition of an assessment of the functioning and prospects of its development as a subject of strategic management. In this regard, it is necessary to clarify the boundaries of the managed subsystem at the regional agribusiness level, its structure and interaction parameters. At present, there are various areas and approaches for the selection of strategic management objects in the system of development of agricultural production in the region, the totality of which should be determined by the specifics of the organizational and economic mechanism of management and interaction with territorial and sectoral structures in the field of agriculture.

Earlier, until almost the end of the 20th century, the USSR had a planned economy, in which district and regional agricultural administrations were singled out as territories of districts at the regional and district levels, which were integrated into a single production and economic structure producing means
of production for agriculture farms and economic entities of the agrarian sphere, as well as enterprises for processing, storage, sale of agricultural products and after-sales service data fields, and industrial and social infrastructure of the village. Therefore, with the transition to a market economy, from the 90s to the present, unconsidered and unreasonable destruction of the really existing streamlined organizational and economic mechanism in the agricultural sector as a single object of management has occurred. In this regard, under the influence of unregulated market relations, there was an uncontrolled collapse of not only regional but also the whole agriculture as an integrated structure that combines all the elements of the production, economy and social infrastructure of rural areas [1]. Therefore, under these conditions, alternative interpretations of the “agricultural sector of Russia” were adopted, where such categories as “agro-food system of Russia”, “food security”, “regional agrarian sector”, “agro holding”, “agri-food cluster” and others began to be used. Although the functions of managing agricultural entities in the formation of regional agricultural policies after the implementation of the ineffective cardinal economic agrarian reform have fundamentally changed, certain transformational changes in the system of inter-farm and inter-industry relations, as well as in the organizational structures of agribusiness on the basis of ineffective exclusion of state property and the influence of the role of the state as a regulator of the management of production and economic processes in the field of agriculture, processing, logistics and marketing of agricultural products have occurred. And in this regard, the regional agribusiness as a territorial and sectoral economic and production system of this level continues to be a single object of agrarian management, which must be modernized with the formation of an adequate and effective organizational and economic mechanism of development and impact on various elements of the management system, creating conditions for the effective use of natural, environmental, economic and other potentials of the region for production of agricultural products, raw materials and food [2].

2. Materials and Methods
Many agricultural economists, including academicians of the Russian Academy of Sciences Altukhov A.I., Serkov A.F., Ushachev I.G., Shutkov A.A. and others, in their work on this issue, note that the strategy for the integrated development of the agricultural sector in modern conditions should be developed in the form of optimizing the state and economic management of the agricultural sector as an integrated, corporate, industrial and economic system, and also focused on improving the quality of state regulation in the agricultural sector, including at the regional level. Therefore, priority in development should be ensured with an effective balance of all elements of the management system and an improvement in the mechanism of their interaction. And the development of strategic management at the level of regional agribusiness should be carried out as a multifunctional body determined by the main indicators, reflecting the main parameters of the development and functioning of production, economic, social, ecological, demographic, human, environmental and other functions. In our opinion, the development of the regional agri-food sector cannot be considered without the development of rural territories and the population living there, which should be carried out taking into account both the laws of social development and laws that reflect objective, internal, economic and sustainable cause and effect relationships between them, expressed in the form of trends, patterns that serve as the basis for the formation of an adequate management system for regional management as a whole.

3. Results
In carrying out the transformation of the regional agribusiness as a subject of management and increasing the manageability of agricultural economic entities, it is necessary to formulate an effective, understandable agricultural policy both at the federal, regional, and municipal levels, which should include a number of integrated areas, including agricultural strategy, growth dynamics of incomes of agricultural and agrarian business, as well as working and living population, effective development of market infrastructure, improvement of state management (control) in the sphere of improving the sectors and segments of the food market. Therefore, only a comprehensive approach to the implementation of these areas will allow formulating an adequate regional agri-food policy, which should reflect the real
economic situation. And the development strategy of the regional agribusiness management system should be considered as a combination of fulfilling medium-term and long-term formulated goals, as well as developing strategic managerial decisions related to the distribution of all types of resources that contribute to the achievement of effective competitive advantages in conditions of unstable environment associated with the introduction of sanctions against us by the United States, the European Union and other countries, as well as mirrored countermeasures from Russia to these countries. In this regard, the strategic directions of development of the regional agricultural sector should be based on the effective functioning of the agrarian business, sustainable development of rural areas, and most importantly, improving the quality of life of the rural population [3].

When analyzing and assessing the current state of management, it is necessary to identify the most significant trends and patterns of functioning of the regional agribusiness, where an integrated approach should be used that reflects various areas of its development. Firstly, an exhaustive description of the development of individual sub-sectors of the regional agribusiness, its production infrastructure, as well as individual regional product sub-complexes should be defined and given. Secondly, the functioning of economic entities of various levels and areas, including various forms of agricultural organizations, agricultural cooperatives, peasant farms, individual agricultural entrepreneurs and personal subsidiary farms, as well as fundamental changes in the structure of regional agricultural production and management should be assessed. Thirdly, to assess the agricultural business at the level of municipalities (districts) in the field of providing substantial assistance to agricultural business by the municipal authorities in the aspect of the development of agribusiness at the regional and municipal levels. Fourth, it is necessary to establish the level of participation of the region and its business entities (agricultural business) in the interregional system of integration of the single economic and information space of Russia. Fifthly, to assess the interaction of management systems at the federal, regional and municipal levels in the context of the development and implementation of targeted innovative development programs and structural transformations in the production, economic and social areas of the regional agricultural sector and rural territories using the digital economy in medium and long term. Therefore, on the basis of the analysis and assessment of the existing state of management, it is possible not only to identify problem areas, but also to establish a mechanism that affects the interaction of different levels of management and factors to ensure the achievement of optimal production and economic proportions for the development of regional agribusiness and receiving a multiplicative effect.

It should also be noted that the composition of the priority types of activities of sub-sectoral divisions in the field of regional agribusiness, as a rule, for existing production facilities operating in the region, should proceed from the prevailing production and economic conditions for the inter-territorial distribution and specialization of agricultural production, where the formation of growth points in determining the conceptual foundations of a regional agribusiness development strategy should be based on the allocation of strategic management zones that associated with a positive transformation of economic entities and the functioning of the region’s economy, if there are additional sources of financing, the introduction of promising investment projects by increasing the innovative and investment attractiveness of the region, increasing the revenue of the regional budget, and ensuring the full financing of the social sphere of rural areas, increase the activity of the rural population while creating additional industries and national crafts that will be joint to contribute to the further development of interregional and foreign economic relations and their interactions.

The quality of developing a regional agribusiness development strategy depends on the reliability and effectiveness of the proposed hypothesis, its implementation in a given direction, strategic planning and forecasting. Therefore, a number of requirements are made to the hypothesis, which include such elements as systematicity, relevance, predictability, consistency, continuity, practicality, as well as ease of understanding and application based on the use of a reliable and sufficient amount of incoming and outgoing information for obtaining objective conclusions and making proactive managerial decisions related to possible changes [4].

Based on the validity of the hypothesis, conceptual areas of the strategic development of the regional agricultural sector are developed, within the framework of which certain problems of the functioning of
the regional agricultural sector are identified and formulated, where the main goal and specific tasks of the conceptual directions are formulated, a set of measures is developed, the implementation of which will ensure the achievement of the goal, the volumes of resources used are determined, necessary for the implementation of the developed areas and the system of integrators, in which the changes are expected in both quantitative and qualitative indicators and characteristics throughout the strategic forecasting and planning, and industrial, economic and social effect on the implementation of the proposed conceptual framework should be determined. The development strategy of the regional agribusiness should be developed taking into account the interaction of federal and regional targeted innovation programs for the development of agribusiness and rural territories, and also be a platform for the development and implementation of strategic, tactical and operational measures for the development of agricultural production.

Considering the conceptual foundations of the strategic development of the regional agribusiness, we believe that the mandatory application of strategic management of the region should be carried out taking into account the level of its development and spatial aspects of the formation of the regional agricultural economy, where the conceptual foundations of the development of the regional agricultural management system mean a number of basic principles and approaches to medium-term and long-term socio-economic development of the region and regional territorial and industrial management systems in the field of agriculture, as well as the mechanism for implementing the strategic plans in the region. Therefore, the strategic management of the development of the territorial and industrial management system has a dual character. Firstly, the goals and guidelines for the functioning of the regional agribusiness allow the agribusiness to assess the prospects for the development of the regional economy, the volume of state support for sub-sectors and individual areas of activity, which will greatly facilitate the formation of its development strategy and plans for the long-term functioning of the regional agribusiness. Secondly, the rural population of the regional and municipal levels through the concept of strategic development of the region or municipality should be able to verify the likely changes in their living conditions and infrastructure of rural areas for the better.

Modern economic science presents a number of methods for developing strategies for managing the development of regional agribusiness, each of which will allow scientifically substantiating various aspects. These include the widely used method of SWOT analysis, STEP, PEST, SNW, the analysis of the model of five competitive forces, the development of core competencies, the matrix method, etc. It should be noted that all these methods work effectively, first of all, at the level of a commercial organization, as well as medium and large agricultural structures, and do not allow choosing an effective strategy for socio-economic development of the entire region. Therefore, the problem of developing a management strategy at the regional level should be within the competence of the region’s strategic management and should be based on the use of complex methods, such as strategic analysis, strategic forecasting and planning, etc.

A strategic analysis of development at the regional level is a function of strategic management, which is implemented in the form of a set of analytical developments that allow assessing the main results and identifying the problem and development trends of the regional agribusiness [5]. At the same time, the main task of strategic analysis should be a comprehensive assessment of the potential of strategic management, which forms a regional sectoral system with the identification of competitive advantages and growth reserves. Strategic forecasting and planning should be focused, first of all, on the development of regional agribusiness in the field of production and the agrarian economy, the definition and effective consumption of all available resources necessary to achieve the formulated main strategic goal, and coordination of the interests of the agrarian business and rural areas, the identification of strategic alternatives and effective directions for the implementation of the managed subsystem and its elements with changes in the internal and external environment operation, as well as the actual justification of the rate of development and management of regional agribusiness.

The main functions of strategic management of the development of regional agribusiness include: the formulation of the main managerial task, the formation of an effective management system using progressive methods, principles and patterns, the distribution of powers and coordination of activities
of all subjects of the regional sub-branch management system, the rationale for an effective mechanism of interaction in the regional agribusiness, the definition of organizational structures at the regional and municipal levels and etc. It should also be noted that measures in the field of strategic accounting, strategic monitoring and control should be used as part of the management of the process of implementing the formulated strategy, and the process of improving and adjusting the existing strategy should be an integral part in the continuous forecasting of changes in the functioning environment. Therefore, each method should involve the use of certain tools necessary for practical implementation and obtaining reliable results in the framework of specifically substantiated tasks. The choice of tools is determined by the degree of readiness and validity of knowledge in this area, the possession of laws and patterns within the framework of the problem being studied, the level of informatization of the processes, the possibility of mathematical support in the development of systems.

To solve the areas of the regional agribusiness management development strategy, it is necessary to use a structural and functional approach that will ensure their conformity with the structural and functional interconnections within the territorial and industrial agribusiness management system as a whole. The final choice of strategic directions, goals and objectives of development must be determined on the basis of expert assessments, where it is necessary to use a strategic space model as a basic tool for strategic management, the development of which will allow for the positive development of regional agricultural sub-sectors and food sub-complexes, the sphere of industrial, economic and social infrastructure at the level of regions and individual municipal entities (districts).

Among the most effective tools in the development of strategic plans for the development of regional agribusiness and its elements are optimization and simulation models, a balanced scorecard model, and the most frequently used economic, statistical and other models that operate with qualitative and quantitative characteristics of studied economic systems and processes.

A mandatory element in the development of a methodology for the development of a regional agribusiness management system is strategic forecasting, which is associated with an assessment of the possible options for the functioning of various systems at the state and economic levels. The number of analyzing scenarios is determined by the quality of the used predictive interactions between control devices, the strategic prediction of the possible changes in micro and meso-economic conditions in the implementation of regional agricultural policies, the level of use of innovative and information technologies for collecting, processing and transmitting information, as well as the adoption of effective proactive management decisions based on the identified trends in the functioning of the managed subsystem of regional level.

We also note that radically increasing the efficiency of managing regional agribusiness and strengthening the competitiveness of agricultural products by domestic producers is necessary by ensuring the steady increase in the volume of agricultural production in the mode of increasing the growing domestic environmentally friendly food product with the intensification of import substitution. Despite the positive changes, there are still threats associated with the socio-economic development of rural areas and unreasonable depletion of the used natural resources, where in order to realize the optimal scenario for the development of regional agribusiness, it is necessary to increase labor productivity, reduce employment, eliminate differentiation between rural residents and urban population in terms of income and living conditions, increasing pressure from economic activities of impoverished and depopulated private subsidiary plots and rural settlements.

Therefore, the development strategy of the regional agribusiness management system should include the need to coordinate and mutually beneficial interests of all economic entities in the region, coordinate their activities in the medium and long term, as well as focus on the social development of rural territories, rational formation and use of resources, justification of the mechanism of rational and effective interaction at the state, municipal and economic levels.

The emerging management system for the strategic development of the regional agribusiness, along with the modernization of innovative processes, should become one of the main priorities of the state, agricultural business and rural areas in the process of effective formation of agricultural production, including the introduction of modern technological, economic and social areas, analysis of existing
indicators and the introduction of new management methods, as well as becoming a task of strategic importance, not only in the context of socio-economic development, but also as a factor of the growth of competitiveness of agricultural production [6].

Currently, it is believed that modern information and telecommunication technologies facilitate the exchange of information between the state, production and the rural community. Therefore, in the regional agricultural management system, it is necessary to develop broadband, high-speed Internet, as well as the implementation of various services related to it. And new technologies should become an important tool for the effective development of strategic management, which is inextricably connected with the improvement of information and communication technologies, based primarily on investments, state support and technical and technological support for the regional agribusiness and rural areas, and it should also be implemented within the entire Russian agricultural sector. This is a necessary condition for the effective application of the digital economy. Under the influence of strategic processes of agricultural development at the regional level, it is an essential condition to improve the management system in close interconnection between state, economic and local government to reduce the impact of the global impact on the development of the agricultural sector and the associated food security and independence in the construction of modern agricultural production which, on the one hand, would comply with the principles of sustainable growth, on the other, would competitively respond to the requirements of the modern agricultural market.

The concept of e-economics has begun to go beyond commercial relations. Today, this type of economic interaction includes the use of virtual processes in the framework of the activities of large agricultural companies and corporations, the social spheres of the vital activity of the rural population of the region, as well as the introduction of these processes into the work of administrative structures and state organizations [7]. Therefore, on the part of state authorities, great attention should be paid to the formation of integrated management systems based on improving the information resource at the regional and municipal levels, as well as effective interaction with business entities, while the issues of transition to a new digital model for building an agricultural economy should be an integral part of its priority functioning and development.

The strategic directions for the development of regional agribusiness at the state, and most importantly at the economic level, should be improved in the information space of the digital economy. At the same time, the digitalization of agricultural production should be based on the use of digital control systems and the adoption of proactive management decisions, integrated automation and robotization of agricultural processes, as well as modeling and design technologies for agricultural economic systems. These management systems should affect the reduction in the share of use of all types of resources, while increasing the factors of production and economic activity, the introduction of modern technical and technical projects based on renewable energy sources and other innovations [8]. Therefore, timely and effective adoption of strategic management decisions based on the program materials “digital agriculture” will carry out effective integrated control taking into account certification standards and requirements of compliance of management systems at the state, economic, and municipal levels.

The strategic management of the regional agribusiness must be carried out in cooperation with both municipal and federal authorities, and with the economic administration, where one of the important elements is the improvement and strengthening of horizontal ties by expanding organizational and economic relations and corporate governance. Therefore, to solve a single strategic task in the agricultural sector, it is necessary to introduce such a system for managing the development of the industry at the state, economic and local government level, which would ensure the creation of a management vertical by strengthening the subordination of structural components in a single system, while activating management methods for economic, administrative and all other components of the system, the improvement of which should accelerate overcoming of crisis events and import substitution of agricultural products related to the sanctions policy of some foreign countries, and to promote the transition of industry to innovation and investment development path.

One of the priority strategic areas for the development of regional agribusiness management, built
on the foundation of state, economic and local government, should be carried out with a combination of
digital transformation of the agricultural production itself and other sectors of the agricultural sector
with a different set of competencies, among which we can highlight the following:

- the widespread use and implementation of intelligent devices (sensors) in the equipment and units of
  sub-sectors of agricultural and processing industries at the regional level;
- management of production processes based on “cloud” technologies in combination with the
  aggregate storage of information to maximize the load of production capacities of the sub-sector of
  agribusiness and the optimization of resource management systems of agricultural organizations;
- integration of production and management processes into a single information system built on the
  principle of direct interaction of agricultural production with municipal, regional and federal
  authorities and other departments;
- stimulation and monitoring of the mandatory transition of agricultural organizations of the
  agricultural sub-sector to electronic documentation of all economic processes;
- the use of digital technologies in production management, as well as in the design, modeling in sub-
  sectors of agribusiness, capital goods, technological processes and sales of agricultural business
  products based on the use of licensed software;
- building management processes using mobile technologies for monitoring, control, and the
  prospective formation of analytical databases while optimizing the distribution of necessary
  resources and other areas;
- the use of unified databases in management processes from the level of agrarian organization to the
  Ministry of Agriculture for the operational servicing of agricultural production, quality control of
  manufactured products, monitoring the state of material and technical support of the agricultural
  business with the necessary range of resources and technologies used [9, 10].

The implementation of these strategic directions in the processes of managing regional agribusiness
will help ensure that agricultural products have equal competitive conditions in the food market with
similar products from other regions and countries, all of which will increase food independence and
security in Russia.

At present, in the Russian agricultural sector, the beginning of the formation and development of the
management system in the information space of the digital economy is beginning. Digitalization and
management of the regional agribusiness are confronted with new opportunities based on modern
information technologies. Figure 1 presents the priority principles of building development management
in the field of regional agribusiness using elements of a digital economy [10].

| PRINCIPLES OF BUILDING REGIONAL AGRICULTURE MANAGEMENT USING ELEMENTS OF DIGITAL ECONOMY |
|------------------------------------------------------------------------------------------|
| Modernization of the system of state and economic management, harmonization of functions,
  powers and structures using elements of digitalization                                          |
| The unity of the information and management system in agricultural sub-sectors at
  regional and municipal levels                                                                  |
| Open access to the information field of the functioning and management of the
  agricultural sector                                                                        |
| Standardization of the functions of the management system at the level of state and
  economic management in the agricultural sector                                               |
| Typification and modularity of software and hardware in the field of agribusiness management
  at the level of control systems                                                               |

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4. Discussion

Based on the principles formulated, we single out the main areas of the development management of regional agribusiness [6].

First area. To implement this type of management, a unified system should be formulated that allows creating an information space for business entities of sub-sectors of regional agricultural production. At the same time, the formation should be carried out by creating a unified system of analysis, collection and processing of statistical, industrial, financial, economic and other types of reporting that has unified access for agricultural production sectors, information management structures, science, education, potential investors and taxpayers. It should also be provided with cloud-based information storages accompanied by a number of information and investment developments, consulting services, scientific publications, regulatory support, remote provisioning capabilities, a whole range of variations, application software packages for subjects of agricultural regional business, taking into account their sub-sectoral interest. This information platform should have a synergistic effect of interaction between federal and regional research institutes, agricultural universities, state and municipal governments, organizations engaged in agricultural production, processing, marketing, etc.

The effectiveness of the management system in the development of regional agribusiness depends on information support at all levels. The main supplier of information for development management is an accounting and analytical system, which is a source of reliable data of paramount importance for the adoption of managerial, economic, production and other strategic tasks. Therefore, the effectiveness of the analysis of events, assessment of the current situation and the degree of validity of managerial decisions in the field of agribusiness in the region depend on timely and high-quality information.

Second area. Access to this information platform should be open in the Internet system for the purpose of accelerating the pace of economic growth initiated by the interest of both external and internal users employed in regional agricultural sub-sectors. The primary sources and at the same time carriers of information in the information space of the digital economy should be agrarian organizations, peasant (farmer) and private subsidiary farms, agricultural entrepreneurs, state and municipal governments forming a database on ensuring agricultural production with necessary resources, including material, technical, technological, financial ones, as well as the level of employment in the agricultural sector, the saturation of food markets, etc. Therefore, the totality of this information will serve as an indicator for district (municipal), regional agricultural administrations and, in general, for the federal ministry of agriculture and other departments related to the formation and functioning of effective management decisions.

Third area. The management system for the development of the regional agribusiness using the digital economy should be standardized, while its boundaries, management functions, information resources should be defined, and the developed standards should comply with the international
management standards ERP, MRPII, CSRP. At the same time, on the basis of agricultural organizations and other participants in the agricultural business, the system of their interaction with the municipal and regional structures of agribusiness should follow the path of an integrated approach to the design, development, implementation and functioning of information systems, as well as the timely training of specialists of various sub-sectors of agribusiness in IT technology.

**Forth area.** The management of the regional agribusiness development should be based on the principle of universality of the applied software and the use of information resources for the collection, processing and analysis of information. Therefore, the applied software and technological management tools in the field of the regional agribusiness should go along the path of typing and cheaper software security used in the sub-sectors of the agricultural sector at the state and economic levels, as well as in the field of education and science of the region.

**Fifth area.** The use of information systems and resources in the management of the regional agribusiness, especially at the level of economic management, should be carried out without the participation of intermediary structures, regardless of the territorial location of agricultural business entities, information and consulting services, municipal (district) bodies and other interested users.

**Sixth area.** The digitalization of economic relations in the regional agribusiness should be carried out comprehensively both in agricultural production and in processing, logistics, marketing of agricultural products, in the fields of agricultural science, training, infrastructure development, etc. Also, it should have scientific support, a technical and technological base, an optimal organizational structure and be an integral part of improving agricultural production, developing rural territories and improving the life of the population.

5. **Conclusions**

Thus, when considering the strategic directions of development of the regional agribusiness management system, we note that along with the modernization of innovative processes, they should become one of the main priorities of the state and agricultural business, including the introduction of modern technological processes, forecasting and introducing new management methods that would ensure the creation of a management vertical by strengthening the coordination of structural components in a single system, while activating management methods, primarily economic and administrative ones, as well as all the constituent elements of the system, the improvement of which should accelerate the overcoming of crisis phenomena. To build an effective system for managing the development of the regional agribusiness adapted to function in the information space of the digital economy, it is necessary to develop digital infrastructure not only at the regional level, but also in all areas of the agricultural sector by ensuring its availability, effective implementation, to fully support the development of the digital sector of the economy, to encourage the subjects of agricultural business using digital technologies. Therefore, with the introduction of these areas, we assume a positive economic effect, especially in terms of increasing labor productivity, the efficiency of managerial decisions, the widespread use of electronic trade in agricultural products and the automation of a number of production and management structures in the sub-sectors of the regional agribusiness [10].

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