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Theoretical and methodological aspects of designing prospective models for agricultural development

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Abstract. The article states that the model of rural economy and rural area development formed in the Russian Federation as a result of transition of the economic paradigm is in deep controversy with actual interests and needs of considerable share of rural population and agricultural producers. The need is reasoned for designing prospective models of balanced territorial and sectoral development of regional agro-food complexes taking into account the specific features of agrarian structure of a region, conditions of development level of agricultural production and rural areas, and aimed at creation of the conditions promoting food security of the country, growth of the efficiency of using the rural development potential, mitigation of controversies between the subjects of agrarian relations and balance of their economic interests. The expediency of using such models as part of the deepening the differentiated approach to the development of rural areas, as stated in the “Strategy for the Sustainable Development of Rural Territories of the Russian Federation – 2030,” is pointed out. It is noted that the designed models of balanced territorial-sectoral development of regional agro-food complexes will be a formalized description of the conceptual provisions that determine the evolution of agro-economic systems at the regional level, differentiated according to the structure of the agrarian sector and the development level of agriculture and rural areas, under the conditions of increasing social responsibility of agribusiness, as well as reflecting the state’s place as a natural macro-regulator in the process management system of rural development and allowing assessing the economic and social implications of alternative scenarios for the development of agro-economic systems.

The radical economic reforms of the end of the last century led to a radical transformation of the structure of the agrarian sector of Russia and the destruction of the existing model of rural development, which implied strict government regulation of the agro-industrial production system and maintaining a balance of interests between territories and agricultural sectors. Repeated changes in state priorities in the development of the country's agrarian sector (from the rate of small-scale production to supporting large integrated holding-type structures) against the background of a weak regulatory impact of the state led not only to the loss of controllability of agricultural development processes as an industry of social production, but also gave rise to several problems associated with rural development (a sharp reduction in jobs and a decline in rural employment, a deformation of the



demographic structure of the village and an outflow of the economically active population, a decline in the level of entrepreneurial and labor activity, a deterioration in the social well-being of the rural population, etc.). Realizing the scale of the degradation of rural areas as a spatial and productive basis for agricultural production, the state adopted targeted programs “Social development of the village until 2013” [15], “Sustainable development of rural areas for 2014-2017 and for the period until 2020” [16], and “Strategy of sustainable development of rural territories of the Russian Federation for the period until 2030” [12]. These documents played a certain role in stabilizing the situation in the rural Russia, but they did not indicate the position of the state to solve the problem of “redundancy” of the rural population and ensure the economic accessibility of economic and social benefits necessary for the reproduction of the human capital of the agricultural sector.

In addition, they focused on the problems of territorial development, while the development of agrarian production as a basis for the rural economy continued to be viewed in some ways from the problems of the evolution of rural territories, and the problem of increasing conflict of interests between the rural population and agribusiness remains unresolved [1].

It should also be noted a significant differentiation of the regions of the Russian Federation in terms of the development of agriculture and rural areas, due to both the differences in the conditions of development and the structure of their agrarian sectors, which largely determines the development potential of the agrarian sector. In this regard, it seems appropriate to modify the differentiated approach to the development of rural areas, as stated in the “Strategy for sustainable development of rural territories of the Russian Federation for the period up to 2030,” taking into account the actual agrarian structure of the regions and its projected changes.

In recent years, the concept of multifunctional agriculture [3, 4, 5, 6, 11, 14] has actively begun to emerge, in a certain way affecting the issues of territorial and sectoral development, but it is still at the stage of theoretical understanding. All this necessitates the development of models for the balanced territorial and sectoral development of the regional agri-food complexes, taking into account the particularities of the region’s agrarian structure, the conditions and level of development of agricultural production and rural areas.

The fundamental scientific task of the research include the study of the principles and mechanisms of mutual influence of the structure of the agricultural sector and the level of development of agricultural production and rural areas; justification of the concept of a balanced territorial and sectoral development of regional agri-food complexes, taking into account the structure of the agricultural sector; development of typed promising models of integrated territorial and sectoral development of agricultural and food complexes of the regions, taking into account their differentiation.

The model of development of the rural economy and rural territories of the Russian Federation that has emerged as a result of the transformation of the economic order is in deep contradiction with the real interests and needs of a significant part of the rural population and agricultural producers. In the agrarian structure of developed agricultural regions, two opposing forms prevail: large integrated agro-industrial formations and households. The intermediate link between these forms – the small and medium-sized agricultural enterprises and farms, which are the basis of agricultural production in the developed countries – are developing at extremely low rates and feel serious limitations in realizing the potential of their development. Based on their own economic strength and state support, integrated holding-type structures compete fiercely with independent producers, often considering them as resource donors. In turn, smallholder farming is given over to the production of low-margin and low-tech agricultural products, which leads to a “vicious circle” situation: small forms of management are forced to convert the available labor resources time after time to maintain an acceptable standard of living. In agricultural regions with worse conditions of production, the farming sector began to occupy a leading position, having to reduce cost-intensive industries and, at the same time, minimize its social obligations.

The impossibility of accurate statistical accounting of agricultural products produced in households allows the regional authorities, through manipulation of production volumes, to conceal the low rates of development of individual sectors of the agricultural sector and overestimate the consumption level

of basic food products, distorting the actual volumes and structure of the resource base of the food market. Despite the relatively high level of per capita production of a significant number of agricultural products, Russia's food security continues to be under threat, since, in addition to distorting the actual data on the volumes of production and consumption of food resources, for certain segments of the population and their social groups continue to exist restrictions on ensuring the economic availability of food of adequate volume and quality. Conditions for the sustainable expanded reproduction of the national food system have not been created. A significant differentiation of the Russian regions in the level of development of the food supply system and consumption of basic foodstuffs remains.

This situation also contributes to the growth of the complex of socio-economic problems of the village, which include: deformation of its demographic structure, increased outflow of the economically active rural population, low rates of diversification of the rural economy, contraction of the health and education infrastructure, critically low occupancy of the budgets of rural settlements and municipal areas etc. The high level of depressiveness of the rural economy and rural communities in certain regions of the country threatens the effective use of the potential of the rural territories of Russia and the preservation of social control over them, and also causes a self-replicating fall in the standard of living of a significant part of the rural population.

The problem of resolving the contradictions of rural development processes is of particular relevance in the conditions when society and the state are facing major challenges due to the need to move to an innovation-oriented path of development. Perspective models of integrated territorial and sectoral development of regional agri-food complexes are focused on creating conditions for the growth of the country's food security, increasing the efficiency of using the potential of rural development, mitigating the contradictions existing between the subjects of agrarian relations, and balancing their economic interests.

Under these conditions, there arises an objective need to develop promising models for the balanced territorial and sectoral development of regional agri-food complexes, taking into account the peculiarities of the agricultural structure of the region, the conditions and level of development of agricultural production and rural areas and focused on creating conditions for the growth of the country's food security, increasing the efficiency of using the potential of rural development, mitigating the contradictions that exist between the subjects of agrarian relations, and balancing their economic interests.

Each macroeconomic system tries to implement its own model of rural development, taking into account the structure of the agrarian sector, the level of concentration of agricultural production and technical and technological development of agriculture, the density of the rural population, national, historical, religious, cultural and other traditions. But, as a rule, these models belong to three main types: sectoral, territorial or integrated development. Industry-type models reflect rural development through the prism of agrarian production development and define rural areas as its resource base. The territorial-type model describes rural development through a system of interconnections that exist within the framework of localized territorial entities, regardless of any branch of social production. Models of a complex type have many varieties, determined by the specifics of agro-economic systems. For example, in the countries of the European Union, this model was called redistributive, since it is focused on creating conditions that would reduce the initial lag of rural areas from urban living standards and bring the level of profitability of agriculture closer to the level of other sectors of social production.

At the beginning of the two thousandth, when developing the state policy of rural development of the Russian Federation, preference was given to the territorial model, which implies a concentration of efforts and resources to ensure sustainable development of rural areas. Significant amounts of budget funds allocated under the Federal Target Program "Sustainable development of rural territories for 2014–2017 and until 2020" allowed modernizing the village's social and engineering infrastructure to some extent, but failed to solve the problems of rural employment and his income. The diversification potential of the rural economy turned out to be extremely low and realizing it without substantial

amounts of state support turned out to be extremely problematic. That is why in the Sustainable Development Strategy for Rural Territories of the Russian Federation for the period until 2030, a section was outlined that describes the specific features of rural development in regions with different levels of agricultural production development: “in regions with predominantly agrarian specialization of rural areas, favorable natural and social conditions of its development; to regions with a multifunctional rural economy, suburban-type agriculture and favorable social conditions for the development of rural areas; in regions with unfavorable social conditions for the development of rural areas and vast areas of socio-economic depression; in regions with weak focal development of rural areas and adverse natural and climatic conditions of its development” [12].

Obviously, a document of this level cannot provide answers to questions related to the possibilities and the need for structural changes in agro-economic systems at the regional level and assessing their impact on the development of rural areas, solving the issues of increasing employment and self-employment of the rural population and its income, and increasing the agricultural potential of the regions. In addition, a mechanism is needed to harmonize the interests of subjects of territorial and sectoral development, ensuring increased social responsibility of business and the formation of a public-private partnership system.

It is within the framework of deepening a differentiated approach to the development of rural areas, stated in the “Strategy for Sustainable Development of Rural Territories of the Russian Federation for the Period until 2030”, that it proposes the development of promising models of balanced territorial and sectoral development of regional agri-food complexes (rural development models), reflecting the specificity of regions, their agrarian structure, the level of development of agriculture and rural areas.

The development of models of balanced territorial and sectoral development of regional agri-food complexes (models of rural development) involves the solution of such tasks as: substantiation of theoretical and methodological aspects of modeling processes of rural development, reflecting its structure and content, as well as the specifics of existing and prospective models of rural development; the study of modern problems of rural development, the identification of patterns, trends and interrelations of development of the agricultural sector and rural areas, as well as a system of contradictions arising from the uncoordinated implementation of sectoral and territorial development models; carrying out a typology of regions taking into account the existing agrarian structure, levels of development of agrarian production and rural territories; development of methodical and instrumental support for the study of the processes of territorial and sectoral development of agrofood systems based on the use of a set of statistical, simulation and optimization models; substantiation of perspective parameters for the development of regional agri-food complexes based on the use of developed typed models of territorial and sectoral development.

The scientific idea of this study is to develop models of balanced territorial and sectoral development of regional agri-food complexes, allowing to justify the forecast parameters of the integrated development of agricultural production and rural areas in their natural relationship, taking into account regional specifics, and the scientific problem is the need to develop a conceptual approach to the formation of mechanisms for managing rural development, ensuring smoothing the contradictions between the goals of territorial and sectoral development and maintaining the balance of interests of the rural population and agribusiness.

The solution of the stated problem implies: disclosure of the composition, structure and functions of the rural development management system, and justification of the directions for its improvement; assessment of patterns and trends in the structure of the agrarian sector of the regions and interrelations of the development of agricultural production and rural areas; actualization of the set of tasks of rural development in the medium and long term, taking into account the differentiation of regions in the structure of the agricultural sector; building theoretical and empirical models for the integrated development of agro-economic systems of various levels; development of a mechanism for coordinating the interests of subjects of agrarian relations in the framework of managing the processes of territorial and sectoral development; development of model models of balanced territorial and sectoral development of regional agri-food complexes; development of a set of statistical, simulation

and optimization models, allowing to justify the predictive parameters for balancing the development of regional agri-food complexes.

The study of the problems of developing rural development models is based on the hypothesis that the state management of rural development can be effective only when implementing the models of balanced territorial-sectoral development that are adequate to the structure of the agrarian sector, the level of development of agrarian production and rural areas, ensuring the coordination of interests of rural communities and business structures in the framework of using the resources that form the spatial and productive basis of agro-economic systems. Rural development is considered as a process of mutually beneficial functioning of rural communities and economic entities of the agrarian sector, ensuring their reproduction through the effective use of the agrarian potential of rural territories and the potential of other sectors and spheres of the rural economy.

The scientific novelty of the proposed approach is to systematize the problems of rural development for the regions with different structures of the agricultural sector and the level of development of agriculture and rural territories and to justify the ways to solve them, taking into account the territorial and sectoral specificity of regional agri-food complexes.

As part of the research campaigns that dominate today in domestic economic science, rural development issues, as a rule, boil down to the problem of ensuring sustainable development of rural areas and diversifying the rural economy [2, 7, 8, 9, 10, 13, 17]. However, attempts to solve the problems of rural development without close connection with the development of agricultural production and agrarian production give rise to contradictions associated with the discrepancy between the interests of the subjects of territorial (rural communities) and sectoral (business structure) development. It is necessary to prepare a comprehensive program of territorial and sectoral development of regional agri-food complexes, involving the development of a concept for balancing the interests of subjects of territorial and sectoral development, the formation of mechanisms for managing rural development, increasing the agrarian potential of agro-economic systems, and increasing its use. Successful solution of these issues is impossible without improving the methodology of the study of rural development management in terms of clarifying goals, objects, subjects, functions, general and particular principles, mechanisms for implementation, distribution of competences and powers, etc.

The developed models of balanced territorial and sectoral development of regional agri-food complexes will be a formalized description of conceptual provisions determining the evolution of regional-level agro-economic systems, differentiated by the structure of the agricultural sector and the level of development of agriculture and rural areas, in the context of increasing agribusiness social responsibility, as well as reflecting the place of the state as a natural macro-regulator in the system of management of rural development processes and allowing to evaluate the economic and social consequences of the implementation of alternative scenarios for the development of agro-economic systems.

These models will allow substantiating the mechanism for coordinating the economic interests of subjects of territorial and sectoral development, describe its structure and functionality, a system of indicators that formalize the global and local development goals of agro-economic systems at the regional level, a set of methods and tools used to create the necessary conditions for effective development, as well as form an informational basis for predicting trajectories ensuring the achievement of goals.

Models of balanced territorial and sectoral development of regional agri-food complexes can be an effective tool for implementing a differentiated approach to the development of rural areas, embodied in the “Strategy for Sustainable Development of Rural Territories of the Russian Federation for the Period until 2030”, especially in terms of assessing the agricultural potential of the regions and the possibilities of using it from the standpoint of solving the social problems of the village, increasing employment and self-employment of the rural population and maintaining social control over rural areas, especially in areas of depressed and focal agricultural development.

Attempts of large-scale diversification of the rural economy have been unsuccessful due to a number of objective and subjective reasons, but the agricultural potential of rural areas remains quite significant, since the productive land and human capital of the agricultural sector in large areas are not rationally used due to the high level of capital deficit production. Models of balanced territorial and sectoral development of regional agri-food complexes will allow identifying priority directions for the development of agrarian production sectors, ensuring the maximum multiplicative economic and social effect from the use of limited investment resources and state support funds [19].

The proposed approach to solving the stated problem involves:

- Updating the methodology of rural development research;
- Identifying patterns of development of agro-economic systems at various levels in the context of transformation of the structure of the agricultural sector and the degradation of a significant part of rural areas;
- Justifying the methodology for the development of conceptual models of rural development of regions with different structures of the agricultural sector;
- Developing a methodology for the typologization of regions, differentiated by agrarian structure, level of development of agrarian production and rural territories;
- Developing conceptual and empirical models for the integrated development of agri-food complexes of regions with different structures of the agrarian sector and the level of development of agriculture and rural areas.
- Developing a set of economic and mathematical models for solving problems of research of rural development processes;
- Substantiating the methodology for developing models for the balanced territorial and sectoral development of regional agri-food complexes;
- Developing a methodology to substantiate the forecast parameters for the development of a regional agri-food complex in the context of balancing the interests of territorial and sectoral development.

The results of the study can be presented in the form:

- Systematizing problems and tasks of the integrated territorial and sectoral development of regional agri-food complexes;
- Identifying depressors of agrarian development, i.e. factors that limit the development potential of agriculture and rural areas;
- Evaluation of trends and interrelationships of the development processes of agri-food complexes and rural areas as elements of a rural development system;
- Regional typologies in terms of the level and development potential of the agrarian sector and rural territories, taking into account the differentiation of the agrarian structure;
- A conceptual model of development of regional agri-food complexes of various typologies;
- A complex of economic and mathematical models to substantiate the forecast parameters of the territorial and sectoral development of regional agri-food complexes of various typologies;
- A methodological support of the modeling processes of perspective parameters of rural development;
- Scenario forecasts for the development of regional agri-food complexes of various typologies.

The theoretical significance of the research will consist in the development of the theory and methodology of research on the problems of integrated development of agriculture and rural areas; systematization of socio-economic problems and tasks of rural development and identification of factors limiting its potential, and of practical importance in assessing trends, problems and mechanisms of interaction between the development of agriculture and rural areas as elements of the rural development system of regional-level agro-economic systems, regionalization according to the level and development potential of the agrarian sector and agrarian structure, development of typed

models of balanced territorial and sectoral development of regional agri-food complexes. The research results can be used in the development of regional development strategies, forecasting and planning the development of the agri-food complex, the rural economy and rural areas as a spatial and productive basis for agricultural production.

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