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METHODOLOGICAL APPROACHES TO STRUCTURING AGRI-FOOD POLICY IN THE NATIONAL FOOD SYSTEM OF THE RUSSIAN FEDERATION

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Abstract

This paper aims to refine the theoretical basis of the strategic management arrangements in the development of the national food system in the Russian Federation. The authors consider the aspects of the existing state and conditions of operation, capacity building potential, food security issues, and the refinement of parameters of administrative influence based on the substantiation of the main principles of the agri-food policy. The article uses the methods of systematic and graphic analysis, as well as forecasting methods, to clarify the theoretical positions concerning the mechanism of strategic management of the national food supply system development in the Russian Federation. The results of the study allow the authors to conclude that in the formation of the food security system, it is necessary to carry out the transformation of the managerial impact on the united multi-sectoral functionally interacting sector of the country's economy.

Key words**:** *resource potential, regional differentiation, agri-food policy, food security, Russian Federation, methodological approach*

INTRODUCTION

The development of strategic management arrangements for food security based on the specifics of the national food system and prospective analysis warrants research into agri-food policies with a view to identifying the directions and priorities of development. Therefore, the object is primarily the state of the manufacturing potential in the described sector of the economy, issues related to food security, and development directions in line with the specifics of operation [1, 4].

Aspects of strategic management for food security have been widely addressed in research. However, there is no objective evaluation of the state of manufacturing potential in food security taking into account the specific aspects of the operation of the said sector.

Indian researchers A. Panghal, N. Chhikara, N. Sindhu, and S. Jaglan [8] approach food security through the lens of a production management system for food safety. They believe that the modern system of agriculture involving the use of machine-powered labor and advanced marketing fails to ensure food safety throughout food production. Moreover, a high incidence of digestive diseases highlights serious concerns over food safety. A major concern among researchers relates to unlabeled but patented genetically modified products available in the market. Amid globalization, government policies in some countries often overlook or discard the consequences for public health in food production while focusing on sustaining food supply chains. This paper offers a consideration of food security in the Russian Federation through the lens of management.

MATERIALS AND METHODS

The materials of this study include official figures from the Russian Federal State Statistics Service (Rosstat), our calculations, and analytical research materials provided upon formal requests as part of the research sponsored by the Ministry of Science and Higher Education of the Russian Federation.

In our research, we used the methods of systematic and graphic analysis, as well as the methods of modeling and forecasting of the development of Russian food security.

RESULTS AND DISCUSSIONS

The food security in the Russian Federation is regulated by numerous legislative acts, including the Doctrine of Food Security (2010) [5].

There are several specific features of the national food in the Russian Federation, which include the following [3, 7]:

-widespread geographic profile, as well as socioeconomic and natural and climatic differentiation of agriculture (there are 85 federal subjects in different natural and climatic zones and across the socioeconomic range);

-effect of regional differentiation by the state of the resource potential (the state and quality of natural and climatic, land, labor, and institutional and technology resources) manifesting in the levels of sufficiency and influence of regional subjects on raw materials production in the national food market, as well as the stability and competitiveness parameters (Table 1).

Table 1. Ranking of regions by federal districts of Russia by the relative weight of agricultural output in the national total, percentage in 2017

Federal district	Relative weight of the federal district	Number of regions in the group						Number of federal subjects
		From 0.1 to 1.0	From 1.1 to 1.5	From 1.6 to 2.0	From 2.1 to 3.0	From 3.1 to 4.0	From 4.1 and above	
1	2	3	4	5	6	7	8	9
Central	25.8	8	4	3	1	1	1	18
Northwest	4.9	8	-	1	-	-	-	9
Southern	16.2	3	2	-	1	-	2	7
North Caucasus	7.5	5	-	1	-	1	-	7
Volga	23.1	6	3	2	1	1	1	14
Urals	6.4	1	2	-	1	-	-	4
Siberia	12.7	6	2	3	1	-	-	12
Far East	3.4	9	-	-	-	-	-	9
	100.0	46	12	10	5	3	4	80

Note: The calculations were made excluding data on autonomous districts included in the regions.
Source: Calculations were made based on data provided by Federal State Statistics Service (www.gks.ru).

The issues of strategic management of development appear particularly relevant given the need to promote regional influence on the provision of the market with food products and creation of a sustainable food security system and to improve competitiveness in the global food market [6]. Enhancing production capacity in regional food systems and reducing the level of differentiation in the life quality of the regions will have a direct effect on the opportunities of the food market and an increase in the attractiveness of Russian agricultural products in the foreign markets.

The transformation of managerial influence into outcomes can be rendered in the following logical scheme [4]:

Stability → (sustainable development management system + stable operation management system) - management of objects.

Therefore, sustainability management involves the implementation of complex steps for comprehensive influence on the state of food resource potential elements of the national food system, which can be formally presented as the following process [2]:

$$S \rightarrow \frac{R_i \times Y_i}{W_i} \rightarrow S_n,$$

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where S is the basic state of the system;
S_n is the desired state of the system;

R_i is the food resource potential of the system;
Y_i is the institutional influence;
W_i is external influences.

$$Ri = [Ni \times Ci \times Ji\ ],$$

where Ri is resources;
Ni is natural capital;
Ci is man-made (produced) capital;
Ji is human capital,
where $Ji = Tec \times P$
Tec is the life expectancy of an economically active laborer;
P is the productivity of the individual, which, on average, corresponds to the per capita GDP.

Based on the principle of mutual correlation of factors in socioeconomic systems and considering the synergetic relation, which during the joint operation of elements, irrespective of the elements themselves, reinforces their total effect above the level of independent effects taken together, the above process can be formally presented as follows:

$$E(Ri \times Yi \times Wi\ ) > [E(Ri\ ) + E(Yi\ ) + E(Wi\ )].$$

Such an approach implemented in a system of strategic management measures helps to reframe the logical scheme into a pattern to ensure effect from focused managerial influence over the state of the national food system. It suggests that its efficiency can be positive under the following conditions. According to the universal law of transformation and accumulation of information accompanying the transformation of matter and energy (production process, economic operation or other form of control influence on the system), the amount of information generated in joint operation of control system elements is greater than the total of control influences of each individual element over the outcome. Further improvement of management arrangements in the development of the national food system is determined by the combination of influence factors over the efficiency of managerial input in line with the set objectives and observed challenges.

Among the reasons hindering the effectiveness of influence on the problems of the national food system, one can name the following [2, 9]:

-ineffectively functioning system of strategic planning of the national food system as a single economic sector and an object of interest of both internal and external trade;

-bimodal production structure of the agri-food sector of the economy as an established sector of large-scale agricultural production and poor development of small and medium forms of economic operation. The growing negative trends in rural population numbers (in terms of age and professional structure) contribute to a further change in the influence of the economic sector on the national food market in terms of the decrease of product volume in the market and the relative weight of the high-quality agricultural product;

-lack of efficient coordination arrangements between the federal and regional governance with various elements of the national food system;

-differences in the levels of the resource potential and the development of regional food systems;

-differentiation in the socioeconomic development of the Russian regions.

Ignoring the issues of further improvement of the material-technical infrastructure in the national food system (the data in the table show a considerable slowdown in the investment flow into the production facility structures) can potentially adversely affect the national cattle breeding (the volumes of cattle meat production), dairy production, production infrastructure, and sheep breeding.

Analysis of the regions by the level of changes in the production of gross agricultural output (Table 2) and the assessment of the organizational and economic bases reflecting their state and development prospects allow us to conclude the following.

The systematic approach based on the consideration of resource potential, production and consumption balances of food resources, financial support of program activities, the principles of strategic planning and the priority of strategic development directions of regional food system seems to be

the most appropriate. It allows forming a business structure that meets the requirements that will determine strategic options and identifying a set of development management practices involving federal, regional and household levels.

Table 2. Grouping of regions of the Russian Federation according to the level of changes in the production of gross agricultural output

Groups of regions in terms of changes in gross production	2016 to 2014	2017 to 2015
	Number of regions	
With a decrease in production	3	16
With an increase in production		
under 5.0%	4	16
5.1-10.0%	13	18
over 10.0%	61	31
Total number of regions	81	81

Source: Calculations were made based on data provided by Federal State Statistics Service (www.gks.ru)

As a result, the analysis of the current national food system allows to conclude that the reason behind the insufficient level of food security in terms of several products is related to the fact that the national food system has not been approached as a single multi-industry and functionally inter-operational sector of the economy commanding the production and processing of agricultural products and raw materials and supply of end products to the consumers.

This statement predicts the need for the application of the systematic approach to management strategy in the food market amid limited availability of certain types of resources in accordance with the prioritization and significance principles. The systematic approach here implies comprehensive influences exerted to address a complex problem, i.e. the establishment of an institutional economic model of the national food sector as a food production cluster within the food system. Accordingly, it is viewed as strategically important to address the processes enabling the development of all elements of the national food system, which we designate as the following development models in the regional subjects:

-management model of territorial and industry-specific systems (management strategy for regional food systems at the federal level);

-management model of functional and industry systems (development programs for regional agri-food structure and infrastructure complexes);

-management model of territorial and economic systems (enterprises, industries at the local (municipal) level);

-management model of socioeconomic development (food resources requirements or living standards at the individual level).

Modeling of food security provision in the framework of the strategic planning system must consider the complexity of the management object and includes the following:

-evaluation and analysis of the problem sectors in the regional food security system (ontological approach);

-forecasting the sequence of change in production food structures of the regional food systems.

In the existing models of management, the methodical approach to improvement and optimization of the territorial and sectoral structure normally involves:

-establishment of an economic operational complex in line with the existing scheme of distribution of manufacturing enterprises, development tasks, and analysis of influences over the market state (process approach):

-determining the amount of resources for development, allocation of resources (by priorities, industry and areas and in time), and management methods (imitation approach);

-performance analysis, review of options (cognitive approach).

CONCLUSIONS

The need to apply the described approach in managing the strategic development of the national food system and implementation of a resultant agricultural policy helps to comprehensively evaluate the state and identify existing problems of the sector. In the existing models of management, the methodical approach to improvement and optimization of the territorial and sectoral structure normally involves the establishment

of an economic operational complex in line with the existing scheme of distribution of manufacturing enterprises.

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