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Research paper



Development Problems of the Regional Agro-Industrial Complex Management System

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Abstract

The present article deals with the problems concerning ensuring the effective management of the agro-industrial complex in the region, which determines the status and development of the country's economy. The process of improving the agro-industrial complex structure is being considered, which, based on the variety of forms of management and features of land properties and other means of production, should result in the formation of mixed agrarian economy and initiate attempts to create an agricultural market with the competitive environment. The authors substantiate the necessity of state monitoring and analysis of the effectiveness of decisions taken based on new approaches to the agro-industrial complex management in the region, taking into account the numerous forms of agricultural enterprises' specialization, the competition of individual sectors, the characteristics of regional markets, foreign economic factors, as well as preferences and traditions of social medium. At that, the paramount importance is given to methods and means of forming and organizing anti-crisis management systems, which would take into account the possibility of anticipating crisis situations, assessing the likely losses of the state on the basis of monitoring of the internal and external environment of the management object.

Keywords: *Management, region, agro-industrial complex, economy, development, efficiency, production.*

1. Introduction

The agro-industrial complex and its central link – agriculture, as well as the entire national economic complex are experiencing certain recovery in the present period after a deep depression. The previous development period was characterized by a decrease in the production of the vast number of agricultural sectors and food industry. The increase in losses, disruption of existing ties, disorganization of the procurement system of products (grain, potatoes, livestock products) were accompanied by a widespread decrease in livestock and poultry, a decrease in productivity, yields and other indicators of agro-industrial complex. The effects of depression will affect yet during a sufficiently long period.

The state of the agro-industrial complex, trends in the development of its backbone elements allow talking about the presence of a systemic crisis of its management.

Management characteristics, development of effective mechanisms for the decision making and implementation are directly related to the peculiarities of the research object, which has specific characteristics in comparison with other objects. This can be referred to both agriculture and the agro-industrial complex in general.

2. Main Part

Orientation on the organization of agricultural production as a system envisaging targeted planning, justifying a large number of management personnel and implementing "large-scale" engineering and economic measures in the agriculture of the country is associated with the incorrect representation of the absence of the specifics of agricultural production.

Currently, the land is deemed as a subject of labor by analogy with agricultural labor and industrial labor. One of the main differences of agricultural production that determines the specificity of agro-industrial complex management is that the main productive force of agricultural production is wildlife, while living labor is forced to adapt to the nature development laws [1]. At the same time, making a strict separation of industrial and agricultural production into mechanical and organic processes is undesirable, since in agriculture there are quite a lot of processes associated with the separation and connection of means of production, committed by the will of laborers.

The organic component of agricultural production determines the pace and quality of production process. At the same time, it is clear that the reduction in the growth period through the use of appropriate plant varieties and their nutrition is insignificant in comparison with the acceleration of the production rate, which can be achieved in the industry.

The increase in agricultural production at the constant intensity of land cultivation is associated with the need for spatial expansion of farmland. This circumstance leads to a significant increase in the cost of the entire process and its monitoring. The quality of agricultural labor is determined based on the process results rather than immediately after work completion. In addition, unlike industrial production, the amount of product produced in agriculture cannot be increased by accelerating its pace. The number of agricultural production processes does not depend on the turnover of the cost of living labor accompanying organic process. Its acceleration and enhancement by means of agricultural machinery does not lead to an increase in the products output. There are also other features of agricultural production and agro-industrial complex management. Due to the prevailing distribution structure of the production, the agro-industrial complex enterprises have the opportunity to dictate the conditions on the labor market [2].

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According to the generally accepted classification, this situation can be attributed to a monopsony. Labor mobility in rural areas is much lower than the average level due to a number of reasons: incomparable prices for housing in cities and rural areas, the presence of factors that increase the inertia of the labor movement processes. These factors include availability of subsidiary plot, private household, etc. Thus, in this respect, there is no reason to expect rapid changes for the better. Therefore, the economy management system in general should be aligned with available resources.

Besides, the land, in addition to temporary restrictions (the above justified impossibility of significant enhancement of production), has spatial limitations as well. Unlike the industry, in agriculture it is quite difficult to shift towards producing completely different product. The set of cultivated crops is determined by climatic conditions and soil properties.

The organic component that determines the specificity of agricultural production also influences the characteristics of the discreteness of spatially related processes. The range of agricultural works is determined by the time of year. Only the production culture of various products provides an opportunity to combine the operation of sowing, plowing, growth stimulating, and harvesting.

The limited capacity of growth of cultivated plants and animals places certain limits on the fruit formation process in individual plants. The specific level of science and technology of nature cultivation provides a certain degree of process intensity, which determines the limits of surplus income, followed by a reduction in the ratio between intensity of production and income, as well as falling labor productivity. At the same time, it is necessary to note a higher degree of freedom in animal husbandry compared to the crop sector.

One of the most important features of agricultural production, which influences the formation of the management mechanism, consists in the characteristic of specialization, determined by the conditions of geographical differentiation and division of labor. The multistructurality in the modern agricultural sphere does not allow defining this characteristic just from the standpoint of economic efficiency. At that, it is necessary to take into account the numerous possible forms of agricultural enterprise specialization, the competition of individual sectors or products in the use of these production conditions, and the characteristics of regional markets, foreign economic factors, as well as preferences and traditions of social medium. Whereas in a planned economy conditions, specialization in agricultural enterprises was static in time and space, in a market economy, specialization of enterprises in the region may vary within short time periods of 1-3 years, as well as in space due to the consolidation and downsizing of agricultural enterprises, change of their forms of ownership, etc.

The need for specialization in agricultural production increases as the degree of work mechanization and the production output increase in value terms.

The close connection between the production process and the natural conditions, the relatively long duration of the production cycle, the interdependence of individual sectors of production are factors that contribute to the emergence of specific features that are characteristic of agricultural production.

The organization of production processes manifests another fundamental feature of agriculture, which consists in the implementation of various forms of management. It is exactly this aspect that allows judging efficiency of multipurpose labor in comparison with industrial labor.

Currently, despite the evidence of ineffectiveness of traditional methods in organization of large-scale production in agriculture, there are supporters of collective forms of labor. The experience of contemporary developed countries, where large capital could have long ago dislodged the farmer from the agricultural sector, shows the successful and efficient operation of farms of various forms of organization, such as classical private property, long-term lease, and family-farmer contract. The effectiveness of various forms of relations and ownership of agricultural producers is largely determined by regulatory mechanisms and incentive measures on the part of the state [3]. At that, we mean the implementation of an effective investment and tax policy.

Investment opportunities in the sectors of agro-industrial complex are determined, first of all, by the level of income of the population, namely employees of all the economy sectors, as well as employees of the public sector and the state. Base investment potential of the enterprises of agro-industrial complex in modern development conditions is very limited. Therefore, currently there is an acute problem of solving investment support on the basis of competitive selection of the most attractive projects. At the same time, the problem of searching for funds intended for the accumulation and qualitative changes in the production structure is largely social. The change in public opinion of the society in terms of limiting their own consumption in order to invest in investment projects is quite slow. Most of the owners' income is directed to the creation of cash and inventories, as well as to the housing sector, while neither new production facilities are created, nor the existing ones are practically reconstructed. That is, as P. Samuelson noted "… poverty breeds ... poverty" [4].

Currently, the agro-industrial complex management system is declared as a program-target system, which should be based on certain principles and above all, the principle of "unity of purpose". Surely, this principle is not implemented in the most of objectives of the existing agro-industrial complex management system [5].

When organizing this system, it was assumed that the management of the region basically should be reduced to the solution of relatively independent challenges though interconnected by unity of strategic goals. At present there is no such unity. There is no such important managerial element as strategic planning. While some strategic programs and plans are being developed at the regional level, they are simply not available at the district level. The problem of planning is compounded by the absence of an indicative planning system to better implement the market-based management concept [6]. This means that regional development programs do not adequately represent the goals and directions of agro-industrial complex development.

Substantially, we are talking about the need for conceptual development of territorial space, more full use of information and analytical technologies and innovating management system [7].

The agro-industrial complex management system, like any other object, cannot be effective without an effective monitoring mechanism of the development of the external and internal environment. In the current context, such a mechanism linking the agro-industrial complex enterprises, regional agricultural administration, and regional ministry is absent. The formation of such a unified monitoring management system is possible only on the basis of new information technologies.

The subject-matter of the effective agro-industrial complex management system of the region in the market economy conditions is proposed to be considered as the following range of actions:

- organizing and ensuring monitoring of socio-economic characteristics of the agricultural sector development in the region;
- analyzing and assessing the situation in the food market of the region and the impact on its development in order to stabilize;
- elaborating strategic development programs of agricultural production in the region, and strategic decision-making;
- providing operational management of the strategic programs and decisions.

Analysis of the implementation of these actions at the current stage allows concluding that their content is incomplete or inadequate at the present stage of development of the agro-industrial complex management systems of the region.

Organizational management can be carried out using a dozen of technologies. Each of these technologies has corresponding advantages in certain problematic situations [8]. However, it is worth noting that the most important factor determining their overall effectiveness is the development degree of the information support and monitoring system of the subject of management.

One of the reasons for the ineffective preparation and management of decision-making is the lack of modern methodological support for the development, implementation, and the use of information processing capabilities, starting with the definition of the necessary data structure, formulation of management problem, the use of mathematical methods and tools, and elaboration of recommendations for analytical support of decisions taken [9].

In the context of directive planning, the central administrative authorities were setting targets for all the agro-industrial complex links, based on the actual data of the previous period. At the same time, the used information system could not analyze and process the necessary information for operational management. This system only monitored the implementation of the plan without providing the aggregated information necessary for the dynamic development of enterprises. In the current conditions of agricultural development so far, no qualitative changes in the information system occurred.

Analysis of information systems at directive management of agriculture shows that they were focused on accounting and statistical service, despite the fact that there was quite significant progress in the development of mathematical methods of economic information processing and solving problems of optimal management in agricultural production.

The problem of weakening the functions of strategic management and information support of agro-industrial complex entities has a causal interactive relationship with another problem – the lack of anti-crisis management system, which is a higher-level problem [10].

The lack of anti-crisis management system, i.e. a monitoring mechanism, leads to a constant delay in the response of the entire agro-industrial complex to changes in the external environment, which directly affects the economic efficiency of farms and enterprises.

The term monitoring should be understood as accumulation of information reflecting the course of economic processes, as well as its analysis and obtaining forecast estimates of the factor values characterizing the status of the external environment [11]. At the same time, the organization of forecasting and simulation mechanisms become of the utmost importance.

Despite rational decision-making methods, the role of which increases in modern economic conditions, in the agro-industrial complex management there is no widespread, targeted use of mathematical methods of decision-making that does not allow receiving strictly substantiated development and assessment programs of economic advancement of agro-industrial complex management entities.

Optimal management of agricultural production implies that from all possible development options the best solution chosen should meet the specific conditions. At that, optimality is determined from the standpoint of the formulated and formalized goals of the socio-economic system. Only the mathematical formulation of the efficiency criterion allows determining the best solution. Several of the most important indicators can be selected as criteria for optimizing economic processes in agriculture. The following criteria apply most often: the maximum gross production, maximum finished production in kind and in value terms, maximum net income, maximum marketable output, maximum profit, the minimum total cost of labor to produce a specified amount of products, and minimum total reduced costs per unit of production [12].

Due to complicating of the agro-industrial complex of the region, many of the above criteria do not meet modern problems of agricultural development. Besides, new problems have been emerged, which led to the expansion of the list of possible functioning criteria – it is necessary to fight for the market, to stay in a competitive environment, etc. [13]. Moreover, today a situation where several criteria rather than just one, are simultaneously essential is the rule rather than the exception. In other words, the number of possible formulations of specific optimization problems increases, which leads to a situation where each enterprise, in fact, is unique: how many enterprises – so many different tasks. The calculation of management based on the use of different criteria gives different results, largely distinct from each other [14].

Currently developed and used methods and models do not allow obtaining integral solutions of optimization problems using several criteria, which would take into account the probabilistic nature of the dynamics of various external economic factors affecting the functioning of agro-industrial complex.

The efficiency of farms and enterprises of the agro-industrial complex, unlike industrial enterprises, largely depends on resources such as land, water, as well as natural and climatic conditions. At that, the entire agro-industrial complex can be represented as a complicated dynamic system consisting of individual target subsystems, characterized by a large variety of interconnections and restrictions on the use of a variety of resources. The complexity and dynamics of the agro-industrial complex development require the necessity for wide application and development of modern simulation tools, without which the effective functioning of any socio-economic system is unthinkable today [15].

3 Conclusion

Having regard to the above, it seems important to formulate the main reasons leading to the problem of improving agro-industrial complex management efficiency in the region. They are as follows:

- the lack of clear distinguishing management functions along the vertical of organizational structure;
- absence of anti-crisis management system based on the adaptive management principles;
- poor use of sound decision-making methods;
- the inadequacy of simulation tools to modern requirements of agro-industrial complex development.

To solve such kind of problems, the so-called “breakthrough” strategies are usually used. In a number of sources "breakthrough" is defined as an "impetuous advance" through the innovation of knowledge, the use of know-how, and knowledge-intensive technologies [16].

The following stand out as the main principles of “breakthrough”:

- unconventional comprehensive assessment of the problem situation;
- identification of priorities and the total development resources;
- continuous search for institutional structures and mechanism that can bring the available resources into motion.

Inherently, these principles should be fully implemented in the functioning of the innovation element of the regional agro-industrial complex – the anti-crisis management system.

The organization of the anti-crisis management system of the agro-industrial complex, which connects not only particular models of the object's functioning, but also real systems based on the organization and construction of an effective monitoring mechanism, the use of mathematical methods and new information technologies, will allow removing to a large extent a number of problems associated with stabilizing the agro-industrial complex functioning.

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