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Development of Integration Processes in the Traditional Sectors of Agriculture

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Abstract: The article is devoted to one of the major challenges of the development of agricultural sectors in Russia on the basis of agro-industrial integration. At present the main lines of forming the integration ties in agroindustrial complex are organization of processing enterprises by agricultural producers; organization of associations for co-processing and marketing by agricultural producers and processors; forming competitive inter-regional organizations; and establishing the agro-industrial units by different industries. Today agro-industrial integration is seen as a guideline for forming the financially independent systems with internal self-government and the efficient allocation of financial resources and investment. The paper identifies the objective causes of development of new forms of the integrated structures in the horticultural industry. The issues of the improvement and management of such structures in terms of cooperation and integration are considered. Gardening is a traditional industry of the country regions; in order to restore it, the author proposed a model for a new integrated formation, contributing to the development of economic relations at the meso- and macro levels. The authors have proved the dependence of the horticultural enterprises effectiveness on the validity and efficiency of horticultural ties and relations between industries based on cooperation and integration as well as the nature of existing ties at the industry and inter-industry production levels.

Key words: Integration % Cooperation % Agrarian sector % Integrated forms % Transaction costs

INTRODUCTION

Economic integration between enterprises, companies and corporations can manifest in deepening and expanding industrial and technological relations, combining capital and resource sharing, mutual removal of barriers and creating friendly and comfortable environment of economic activities for each other, etc.

Analysis of efficiency of agroindustrial enterprises indicates that those companies that have managed to create a relatively closed cycle "production - processing - realization" of agricultural products have a more stable economic situation [1]. In this regard, the agrarian policy of the state should be focused on the development of cooperation and agroindustrial integration.

World experience shows that the most effective and adapted to the market economy are the integrated structures, bringing together various links of the agroindustrial complex (from agricultural production to sales to final consumers) [2,3]. Efficient organizational and economic mechanism of agroindustrial integration is essential to enhance the functioning of each member through the use of progressive forms of organization of production processes, improvement of working conditions and the quality of products, the use of technological and socio-economic intraproductive reserves, training managers and reducing their number by optimizing the load of management functions [4].

MATERIALS AND METHODS

The problem of integration and cooperation in the agricultural sector is considered in the works of many foreign and domestic researchers, such as A.S. Negru-Vode, G.A. Baklazhanenko, L.V. Yarema, P. Noll, D. Grant and I.P. Shaliapina. The study has shown that the authors of the above works paid insufficient attention to the regional problems of formation and functioning of the industry integrated structures and implementation of their proposals does not always provide a synergistic effect.

All this creates a need to study the practical aspects of the development of integration processes in the agricultural sector and determines the relevance and social and economic feasibility of such a study [5].

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Works devoted to the justification of rational economic ties in the businesses of horticultural industry and organization of regional markets of fruits and berries has not yet been carried out systematically.

In this context, the aim of this work is to study the practical proposals on the organization of a new type of integrated formation and to increase the efficiency of business in the horticultural industry. In accordance with the intended objective the authors identified the following tasks:

- To identify the specific conditions and prerequisites for the creation of integrated business structures in the agroindustrial complex;
- To justify the trends of increasing business activity in the regional market of fruits and berries.

The attainment of the goals and objectives of the work was provided by the following research methods: analytic, monographic, abstract and logical, calculation and construction method and economic and mathematical modeling.

Key Part: Analysis of the experiences of the farmers in Russia and in the developed market economies has shown that effective systems of agricultural production in the modern period are the expression of the integrated mode of production [6]. The integration processes in agroindustrial production are a priority direction of agricultural development in the region, which is determined by the reduction of transaction costs, the emergence of synergies, decrease of resistance to internal and external disturbance of environments through adaptive structural changes in production and regulation of the activities of the joint production. The basis of the integrated structures wholeness is the economic interest of the participants in the results of a joint activity [7,8].

Low efficiency of horticultural industry in a number of farms in the region is due to the lack of organizational and economic, technological and technical support, which can be substantially corrected in the design and development of the integrated production, processing, storage and delivery to consumers of both fresh and processed fruits and vegetables with the specified quality parameters both at the level of the district and region [9].

Retrospective analysis of agroindustrial integration in the horticultural industry in Russia suggests that the introduction of fruit production based on inter-farm cooperation in the 80ies of the XX century has increased the gross harvest of horticultural products and increased the efficiency of the industry [10-12].

The agro-industrial synthesis in the regional gardening ensured a dynamic increase of the industry efficiency. Agroindustrial integration led to the formation of highly specialized fruit and vegetable farms and more efficient use of land. This synthesis provided even and effective use of human and material resources and allowed flexibility in maneuvering and focusing on the implementation of the recurrent and the most urgent works. And it is in horticulture, but in any other sector of agriculture, agro-industrial integration is appropriate and necessary.

The accumulated experience of agroindustrial integration and inter-farm cooperation in horticulture of Stavropol region suggests that, in the agro-industrial economic enterprises the efficiency of production of fruits, berries and industrial production is much higher than in the isolated agroindustrial enterprises. In the Stavropol region gardening, being highly profitable in the 80 years of the twentieth century, beginning from 1990 went into decline as an agricultural industry. Excessively high costs of farming and decline in the purchasing power of the population make production of fruit unprofitable for most households, despite the fact that the Stavropol region is one of the most favorable in the country for the development of horticulture on soil and climatic conditions.

Despite the fact that almost all researchers agree that the integrated structures in horticulture provide stabilization and increased efficiency of the industry, there is no single methodology for determining the effective ways of integration.

In our view, provided the development of integration processes in the industry Stavropol region can become, as before, the area with advanced production and processing of fruits and berries. To achieve this goal it is necessary to develop the agro-industrial integration on a new economic basis. Now the central integrating link may be not only the farm or processing plant, but also the lending institution, financial company or the wholesale agricultural trade organization. The main participants of integrated formations have to be the agricultural producers and processors. The need to create a cooperative based, for instance, on a canning factory, is due to expediency of the intermediary network reduction, the security of supply of raw materials, elimination of monopoly power of the processor.

Functioning of the integrated formation is characterized by a number of system features that let you see the horticultural production cooperative, not as a formed set of business entities, but as a well organized and controlled complex.

It is known that horticultural producer cooperative positions its organizational structure with respect to the set parameters of the existing natural resource and business environment. Its dimensional features targeted at a given level of performance are determined by the demand for fruits and berries, possibility to expand the areas of perennial plants, specialization, etc. In this context, the issue of the cooperative proportion modeling on the criterion of profitability is urgent.

The general criterion of profitability, considered as the ratio of revenue to costs is expressed in the following equation.

$$R=\frac{Mj+aNg}{aj+(a+b)g}-1 \quad (1)$$

Condition of maximization:

$$r(j,g)=R+1=\frac{Mj+aNg}{aj+(a+b)g}\rightarrow \max \quad (2)$$

where, n – the number of products not subject to processing;

g = Number of products for processing;
" = Coefficient of the output of finished products from the processed raw materials;
a = The unit cost of production of fruits and berries;
b = The unit costs for processing of fruits and berries;
M = The average price of unprocessed fruits and berries;
N = The average price of the product after processing.

Increase of efficiency of the horticultural production cooperative is provided by the increase of the price M for fruits and berries sold in unprocessed form and after processing N, multiplied by a factor ". The level of production costs of the first and second types should be the same (Fig. 1).

C Taking " = 0.75; M = 18 thousand rubles/ton; N = 42 thousand rubles/ton;
C a = 11 thousand rubles/ton; b = 22 thousand rubles/ton; the function of profitability allows determining the balance of the products sold in unprocessed form and after processing.

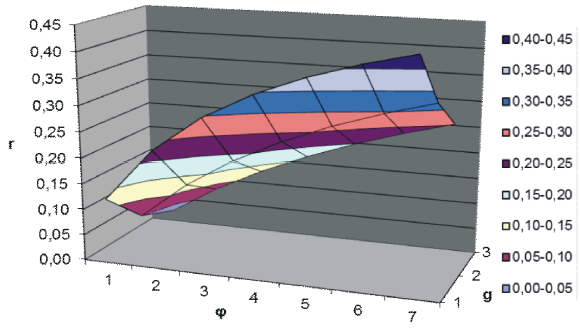

Fig. 1: Surface response for profitability at a = 0.75; M = 18 thousand rubles/ton; N = 42 thousand rubles/ton; a = 11 thousand rubles/ton; b = 22 thousand rubles/ton

Response surface shown in Figure 1 shows the expediency of increasing the sales of fresh fruits and berries; the ratio n: g at 7:1 can achieve the level of profitability at 43%. Further increase in the proportion of unprocessed products does not provide a significant growth of the rate R.

Thus, the effectiveness of horticultural enterprises is largely determined by validity and efficiency of stable ties and relations between the industries based on cooperation and integration, as well as the nature of existing ties at the industry and inter-industry levels of production [13].

Farms and private vegetable gardens can not exist without cooperation today. Only cooperation will enhance the marketability of this group of households. Vertical cooperation allows agricultural producers eliminating the chronic unprofitability, improving organization of production, optimal use of material, labor and other resources and gaining extra yield from co-operative activities at various stages of reproduction.

In general, in the horticultural agribusiness the more advanced level of integration is the creation of groups that have a functional and technological integrity and centralized organizational and regulatory authorities based on full legal independence (Figure 2). In the creation of such agro-industrial associations there is a number of positive features, proving the feasibility of their creation:

C Guarantee of fruits and berries sales for specified prices;
C The guaranteed amount of raw materials supply, utilization of capacities of processing enterprises;

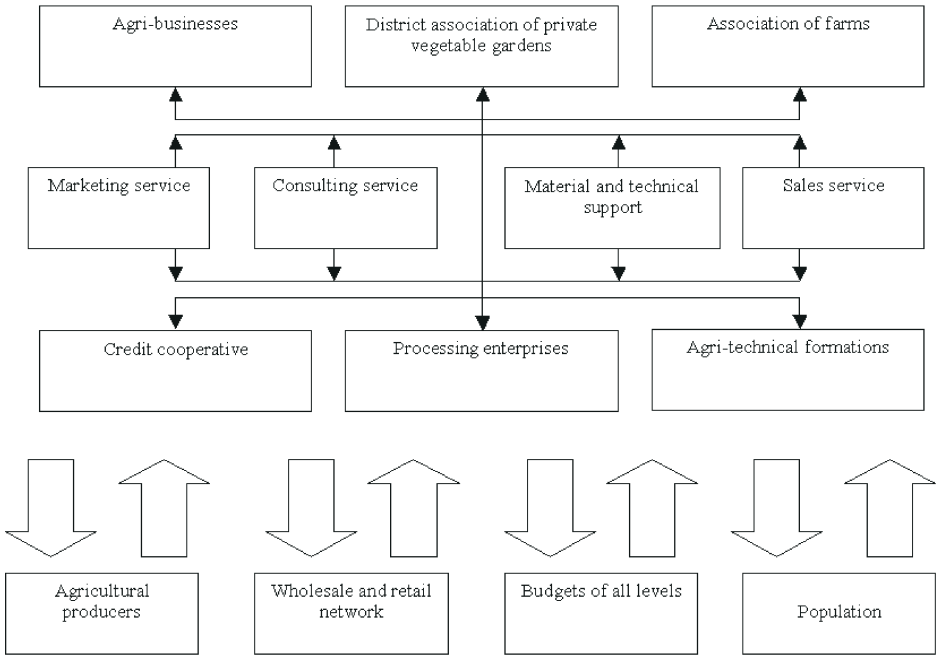

Fig. 2: Structure of integrated horticultural formation in interaction with the subjects of external environment.

- A guaranteed market and sales price of the products;
- The possibility of detailed production planning;
- The study of the demand for the products;
- Coordination of the processes of production, processing and marketing, which will allow the expanded reproduction.

The introduction of credit cooperative into an integrated formation, engaged in the production, processing and marketing of horticultural products, will allow organizing the system of multi-level rural cooperation known in the world and pre-revolutionary domestic practice.

Organization of the district integrated formation will undoubtedly contribute into strengthening of entrepreneurship in the horticulture, will engage family farms and agricultural enterprises in cooperatives on mutually beneficial terms, reinforcing their market orientation.

The primary effect of such a synergistic effect of the economic system will manifest itself in the revitalization of business, improvement of its effectiveness, increase in the production of horticultural products in the region, improvement of its competitiveness and in the overall growth of socio-economic indicators.

CONCLUSIONS AND RECOMMENDATIONS

The current stage of enhancing business activities in the production and processing of agricultural products is closely related to the strengthening of vertical integration. This process leads to the change in the organizational forms and is characterized by the necessity of interaction between the industries and enterprises of the agricultural and industrial production.

The current period of market reforms actualizes one of the most important functions of agrimarketing – the unifying one [14]. Marketing here is to serve as an integration basis capable to link the economic objectives of businesses across the entire vertical in a single process. Organization of the district integrated formation for fruit and berries production will engage family farms and agricultural businesses in cooperatives on mutually beneficial terms, reinforcing their market orientation. In general, farmers have to be able to get more complex services, to use the previously created material base of the agro-processing enterprises with a higher productivity to reduce their transaction costs and to sell the products at more favorable terms.

In order to increase business activity in the market of horticultural products there is a need in a deep modernization of its structure. There are five main areas of

institutional changes at the regional level, which will improve the business climate in the horticultural sector. These include monitoring of the state and municipal regulation of the regional and local markets; the development and introduction of financial instruments (regional futures contracts) in agricultural markets of the region; the development and introduction of modern technologies in public procurement; establishment of institutions to capitalize on the investment on the regional level; the organization of electronic trading in the wholesale market of fruits and berries.

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