

Implementation of Supply Chain Management and Strategic Planning in Agri-food Industries

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Abstract- The article discusses the implementation of strategic planning in the agricultural sector. The aim of the study is to justify the priority development of the industry as the basis for a new level of agri-industrial complex evolution. It has been suggested that the existing in some sectors of the agro-industrial complex management mechanism is not efficient enough, since it doesn't take into account modern challenges and the requirements of a dynamically changing external environment.

Keywords- agri-food industries, strategic development, competitiveness

1. Introduction

Supply Chain Management In present times, Supply chain management (SCM) has received a great deal of attention from worldwide practitioners and researchers both from academic and industrial background. Due to the emerging trends of globalization and the increasing saturation of markets, competition has become more intense in recent years. These competitive environments have forced companies to collaborate more closely using the concept of supply chain management. Supply chain management is an approach to design value chains or marketing chains by optimizing the inter organizational flow of material, information and capital in order to reduce the system wide costs and enhance customer value. The market economy presents a lot of strategic challenges to Russian agricultural enterprises, whose successful long-term development is impossible if these problems are not addressed.

In modern conditions, strategic planning is one of the most important management functions, the foundation on which the entire system of management is built, the basis of the functional structure of management system.

Strategic planning is considered as a set of managers' actions necessary to develop specific enterprise strategies aimed at achieving target goals. It is an instrument helping to create a system of goals and to bring together all the enterprise departments to achieve them. The most important task of strategic

planning is to promote organizational and economic innovations, necessary to increase the efficiency of an individual enterprise and the national economy as a whole.

It is well known that the effective and sustainable development of the national economy should rely primarily on large enterprises, including agribusinesses. It should be noted here that at present, Russian food and processing industry (food, meat, dairy, fish, flour and feed production) is still one of the strategic sectors of national economy, which provides the population of Russia with the necessary amount of quality foods. 30 industries with more than 60 sub-sectors and types of production integrate more than 22,000 enterprises (their number has increased several times over the past 10 years) of different ownership types and capacity with a total number of employees of about 1.4 million people. The share of food and processing industries in the total industrial production of Russia is about 15%. The food industry is directly related to agriculture and is an integral part of the agro-industrial complex.

The food industry exists in all countries of the world, but it differs sharply not only in terms of its development with unchallenged leadership of developed countries, but also by international specialization.

In world practice, the food industry surprises by its diversity, and it is the reason why it will be described by individual industries.

Meat industry. The meat industry is a sector dominated by economically developed European countries (especially France, Germany, Italy, Spain, the Netherlands, Denmark and Belgium), North America, Australia and New Zealand, as well as individual developing countries - China, Brazil, Argentina and Uruguay. The largest exporters of meat products to the world market are the countries of Western Europe (about 50% of world exports), the USA, Brazil and Australia, and the largest importers are the countries of Western Europe, Russia and Japan.

Dairy industry. The dairy industry is most developed in Europe, USA, Russia, Belarus, Ukraine,

Australia and New Zealand. French and Finnish butter, sour cream from Finland and Estonia, cheeses from France, Germany, the Netherlands, Switzerland and Lithuania, yoghurts from France and Germany are widely known.

For example, in the late 1990s, the production of butter was about 6 million tons. The largest butter producers are India (about 1.3 million tons); USA (about 550 thousand tons); Germany (about 500 thousand tons). Other major butter producers are France, Pakistan, New Zealand, Russia, Poland, Australia and Ukraine. The major exporters of dairy products are European (especially Central and Nordic) countries, Australia and New Zealand, and the main

importers are the Former Soviet Republics countries and China.

Sugar industry. The world annual raw sugar production amounts to more than 130 million tons, with almost 80% of cane sugar and a little more than 20% of beet sugar. There are two major sugar regions in the world - Asia, which gives a third of world sugar production, and Latin America (1/4 of world production). In developed countries, the production of cane and beet sugar is approximately equal, and in developing countries 95% of sugar is cane sugar (Table 1).

Table 1. World largest producers, exporters and importers of sugar in 2017

Largest producers		Largest exporters		Largest importers	
Countries	Production (mln. tons)	Countries	Exports (mln. tons)	Countries	Imports (mln. tons)
1. Brazil	21	1. Brazil	4,9	1. USA	2,9
2. India	17	2. Australia	4,5	2. Russia	2,6
3. China	8	3. Cuba	2,6	3. Japan	1,9
4. USA	7,5	4. Thailand	1,5	4. South Korea	1,4
5. Australia	6	5. Guatemala	1,3	5. Great-Britain	1,3
6. Thailand	5,5	6. South Africa	0,9	6. Malaysia	1,2
7. France	5	7. Columbia	0,7	7. Egypt	U
8. Mexico	4,8	8. Mauritius	0,6	8. Canada	1
9. Germany	4,5	9. Mexico	0,3	9. China	0,9
10. Pakistan	4	10. Dominican republic	0,3	10. India	0,6

The largest world producers of raw sugar are Brazil, India, China, USA, Australia, Thailand, France, Mexico, Germany, Pakistan and Cuba. The main sugar exporters are Brazil, Australia, Cuba, Thailand, Guatemala and Western Europe (especially France, Germany and Belgium).

Analysis of the above data showed that Russian production decreases and, as a result, the country becomes increasingly dependent on imported food supplies.

Analysis of food industry development brings to the conclusion that the food industry needs state support. First of all, it is necessary to revive investments in the agricultural sector and to support the processing industry.

It is necessary to establish the State system for regulating the food industry development, including a range of economic regulators: planning of scientific and technological progress, selective taxation, flexible depreciation policies, favorable crediting and pricing, methods of addressing over-concentration of production and sales monopoly. The medium-term strategic development program of the industry should concentrate on these issues.

Considering issues related to the strategic planning in agro-based industrial enterprises, it should be noted that the management system of an enterprise of the beginning and the end of the last century differs fundamentally from the management forms applied at the present stage, both quantitatively and qualitatively. From this point of view, the top management of Russian enterprises should understand that there is an urgent need for the introduction of advanced management methods and scientific innovations in their economic activities, especially since the

interaction at international level allows to understand and to accept the experience of that kind of management.

However, most of Russian food industry enterprises have some special features in their strategic planning. Initially, producers of primary processed foods directly depend on agribusinesses - suppliers of raw materials. The activity of agricultural enterprises has a strong seasonal pattern, it is characterized by a high degree of uncertainty (harvests always depend on natural conditions). Therefore, making strategic decisions is quite difficult.

Food production is a material-intensive industry, which has an important methodological aspect in strategic planning. The share of material cost in the cost of production is 60 to 80%. In this regard, prices, quality and terms of supply of raw materials are of particular importance for the operation of enterprises. It determines the formation of the interaction strategy and long-term contracts with suppliers, and also requires strict planning of the volume of raw and packing materials, etc. For example, in sugar, oil and fat industries, as well as in fruit and vegetable processing, there is an objective need of a large stock of perishable basic raw materials, which diverts a significant part of financial resources. In addition, significant material consumption forces companies to develop and implement resource saving strategies, to search for ways to reduce material costs.

Many food enterprises are characterized by a time lag between investing in raw materials and receiving payments for finished products. This creates a particular role and importance of strategic financial planning.

Some food enterprises are characterized by fluctuations in demand for finished products. Thus, the

enterprise strategy should be developed taking into account the elasticity of demand for products and seasonality.

The population is the main consumer of food products. Currently, it is a low solvent demand that holds back the development of many enterprises, and that is why rigorous planning of production costs and the search and implementation of reserves for reducing costs come to the fore.

Food industry enterprises are based on a system of basic technological processes, the replacement of which would lead to a change in enterprise specialization. The evolutionary change in food technologies for businesses can only be the result of a long process of research and development. Therefore, the most important structural element of strategic plan should be the technological strategy and the strategic plan of R&D.

Since food enterprises build their strategy on the basis of a certain technology, the change of which can require a significant investment of time and resources, the limits of market economy for them should be pushed as far as possible. This allows eliminating uncertainty, preparing production facilities for technological developments, and improving the quality of finished products. Therefore, vertical integration is of great importance for food industry enterprises, and the integration strategy should be aimed at bringing together the long-term goals of integrated enterprises and increasing the effectiveness of their interaction.

However, apart from specific objective conditions for agro-industrial complex functioning, there are challenges that have an impact on many sectors of the national economy as a whole.

In particular, Russian agricultural enterprises were involved in a range of economic reforms, which resulted in a high level of environmental uncertainty, aggravated by such factors as negative trends and crises in national economy, particularly in its sectors related to agriculture, as well as often unjustified and unfounded actions of Russian authorities adopting laws or regulations that introduced uncertainties into the legal framework. All these factors impeded the establishment of a balanced and efficient structure of national economy as a whole and not only its agricultural sector.

In such conditions, there is a real need for a development strategy, but at the same time the process of its creation is very complicated due to the instability of the external environment.

The difficulty of organizing strategic planning at agricultural enterprises is largely due to the peculiarities of their organizational and economic situation. The strategic planning system is based on contradictory factors (interests of management and owners, competition, innovations, culture).

Due to organizational contradictions, an instability factor arises in enterprises activities. The complexity of tasks increases due to a decrease in the resources flow flexibility and a change in requirements for the enterprise management system [3].

2. Method

Supply chain performance measurement is a management strategy that helps companies to enhance their performance levels in all the desired areas of the supply chain network. The idea behind the performance measurement technique is to first optimize the desired goal then to prosper, to get high operational excellence. Considering the peculiarities of agricultural activities, the strategic planning system should be based on a number of principles.

The first principle consists in early strategic diagnostics which is an information base for drawing up a strategic plan. Diagnostics provides a comprehensive analytical conclusion about the current and future financial situation of the enterprise and the viability of planned activities [2].

Since instability entails loss of control and negative social consequences, it is necessary to strengthen the strategic planning system in key areas of enterprise activities. One of the reasons of strategic planning failures is the use of time-delayed data or an incorrect diagnostics.

The second principle: the strategic plan should include leading indicators of response to instability factors. In case of the deepening crisis, the enterprise resource capabilities will be reduced, and the risk of bankruptcy will increase. Thus, an early elaboration of management decisions and an assessment of their consequences are necessary.

The third principle is the adequacy of planned measures in relation to a real threat. Since crisis management is associated with costs and losses, the costs of anti-crisis measures should be weighed against the risk level. If the measure is insufficient, the threat cannot be eliminated; if it is too firm, then the losses can exceed the threat itself. At the same time, anti-crisis plans can be implemented, while providing all the necessary resources.

The fourth principle is a strategic response to volatility factors. It consists in using diverse internal and external resources to improve the enterprise situation.

In the strategic planning process, the intellectual and physical resources of the enterprise should be concentrated, a clear sequence of actions to achieve the goal should be developed, and external conditions for achieving development goals should be created (for example, debt moratorium). This principle also implies a constant monitoring and control over the program implementation, its adaptability to changes in resource potential and external or internal conditions.

The fifth principle consists in a balanced resource support to the program. The need of resources and the sources to providing these needs should be in equilibrium and correspond to each other.

The sixth principle implies a professional approach to the development and implementation of strategic program that can be developed by both company's specialists and external consultants. Organizational support to the strategic planning mechanism requires special managerial competencies,

which are under the influence of external conditions, enterprise specifics, structure and business processes.

The seventh principle involves a good presentation of the strategic plan, which is necessary to attract financial support from investors interested in a stable business operation. The presentation should be positive, highlighting the program strengths and investments efficiency.

Taking into account the features and principles listed above, the following stages of strategic planning organization can be distinguished.

At the first stage, goals and objectives of the strategy are determined. A focus on financial goals is important in view of the limited resources available, when enterprises try to use all possible reserves to reestablish its solvency with the least losses. However, financial goals alone do not allow successfully achieving the goals of enterprise economic development. The importance of marketing, production and organizational parameters [1] cannot be understated.

The second stage includes a strategic analysis of strategy objects. To open up the prospects for strategic recovery, it is important to assess the environmental factors in the context of the crisis, to identify the factors determining the negative phenomena and the possibility of preventing them in the future.

The third stage involves the strategy elaboration in detail, taking into account organizational conditions. The organization of strategic measures should be carried out by a special team of experienced managers having access to the necessary information on the enterprise [3].

At the fourth stage, the metrics architecture is developed. At this stage, the goals are specified, causal relationships between them are determined, the indicators and their values for monitoring are selected.

Then, cascading of management goals and objectives is made up based on a flexible and adaptive management structure, as well as on stimulating staff creativity and motivation. In the end, the goals of reorganization of the enterprise, its divisions, employees and the transition to specific management measures are synchronized.

The fifth stage involves the integration of strategic plans into the management system using budgets, centers of responsibility and motivation. The integration should lead to an increased staff motivation, development of their key competencies, improvement of business processes and achievement of goals.

At the sixth stage, the results of the strategy are evaluated and the need for corrective measures is identified.

Based on the considered conditions and factors, an enterprise can form an effective strategy portfolio. It allows reflecting strategies in the strategic program in the form of specified action plans and measures aimed at achieving goals at each of the enterprise management levels.

Returning to the current state of the agricultural industry, it should be noted that the agro-

industrial sector was impacted by foreign economic sanctions imposed on certain areas of activity. In our opinion, sanctions are not the best form of influence, especially for large entrepreneurs, who often have nothing to do with political processes. Sanctions should not impair enterprises and industries that only perform their economic functions.

In general, sanctions should not be considered as a modern method for today's world, in which we need to think more about the consolidation of efforts to combat very serious challenges, not only economic ones.

Nevertheless, despite the sanctions imposed by a number of countries against Russian Federation, four of the five main sectors of national economy - agriculture, retail, services and manufacturing industry increased in the first six months of 2018 by more than 2% [3].

Stabilization of the macroeconomic situation has changed the attitude of Russian enterprises management towards strategic planning. The structure of environmental uncertainty factors has gradually become similar to that of foreign industrialized countries. The departments responsible for the enterprise development strategy were formed. The main emphasis in strategic planning was placed on marketing services. However, at present, this approach reaches its limits.

Therefore, the modern integrated approach to the formation of strategic planning systems must cover all the functional areas of the enterprise and implement in practice a variety of strategic planning methods. This should make the developed plans more credible and implementable and increase their efficiency.

In the future, the revival of Russian agro-industrial complex and its individual sectors will become an important factor in the development of national economy as a whole. The processing industry is one of the most dynamic sectors of the modern economy, so, the dynamics of its development largely determine the state and prospects of other industries and the economy of any large country as a whole.

In general, the agricultural sector is going through hard times today. The recession caused by economic crisis and restructuring of the national economy has noticeably weakened the status of Russian processing industries and enterprises both in the domestic and foreign markets, which in general makes the introduction of new management forms in this area more important.

3. Discussion

A carefully designed strategic approach towards investment support is essential for good supply chain projects. According to several researchers, strategic planning of agro-industrial enterprises has its own characteristics, which are the following [1,2,]:

- Agribusiness strategic planning requires the participation of heads of all structural units being part of them;

- The strategic and operational planning should be separated. Not only different people, but also different structural units are engaged in these types of planning, therefore, the management of agricultural enterprises should be engaged in strategic planning, and production units should be involved in the operational one.

- Agribusinesses often lack the necessary links between strategic, current and operational planning.

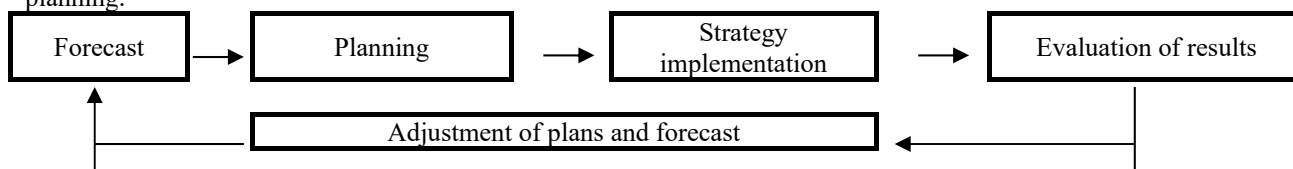


Figure 1. Organization of strategic planning at agricultural enterprises

The strategic planning system itself can be given further details in the form of a three-level system. The first level is a kind of preparatory stage, which includes actions to develop scientifically based ideas about the directions and results of enterprise

- The goal setting at many enterprises is extremely formalized, since the employees of the planning departments often work on formal data. But to draw up a competent strategic plan, a clear vision of enterprise development is necessary.

The strategic planning process at agricultural enterprises can be represented by the following diagram (Figure 1).

activities. At the second level, comprehensive measures should be developed specifying sources of finance, analyzing all the factors, and studying the alternatives. At the third level, the implementation of strategic decisions is monitored and controlled.

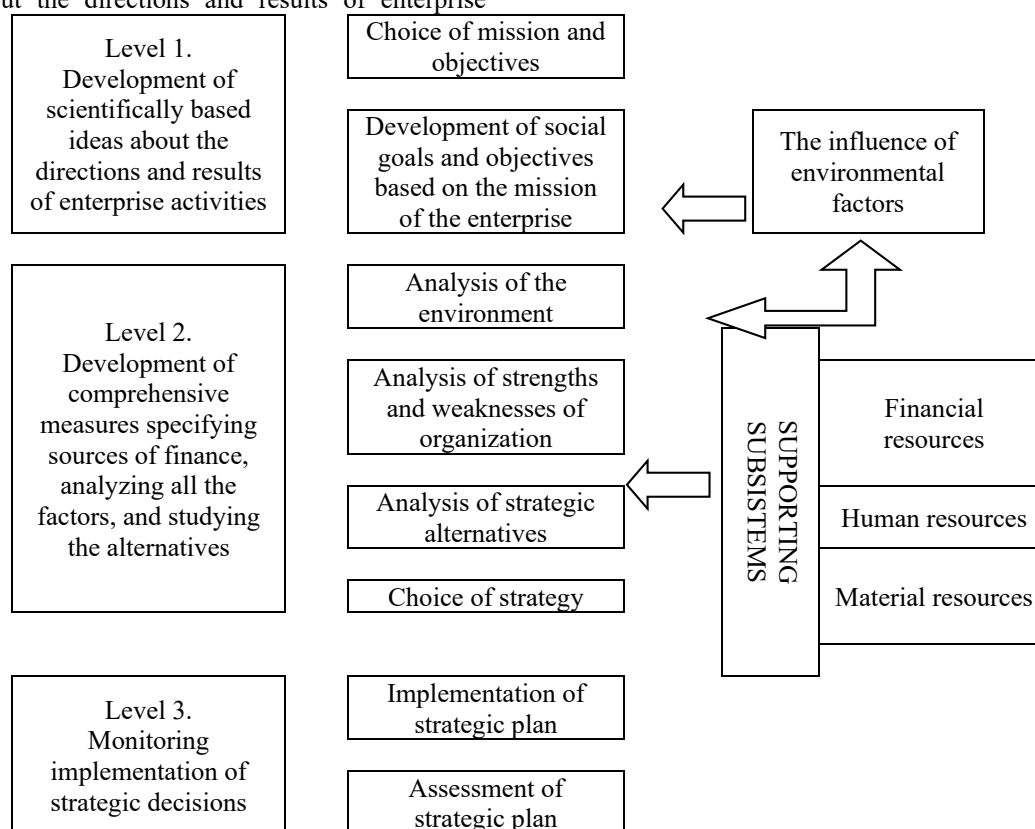


Figure 2. Algorithm of strategic planning at agricultural enterprises

This three-level system described above could be presented in the form of a flow chart showing the planning strategy for processing industries. We suggest that it can be applied to other related industries, as it is universal in nature and can be used taking into account some changes under certain conditions.

Based on the results obtained from a rating of factors affecting the competitiveness of an enterprise, we included the development of social goals and objectives based on the mission of processing industries as one of key parameters.

At the first stage of planning, the choice of strategic objectives is of great importance. The main overall goal of the enterprise, i.e. clearly expressed reason for its existence is designated as its mission (sensitive task, role, assignment). In order to fulfill this mission, goals and objectives are developed. The mission details the enterprise status and provides guidance for setting goals and strategies at various organizational levels.

Highly skilled professional team is an important prerequisite to implementing strategic plans.

Employees of planning department and managers of agricultural enterprises must be able to use modern methods for strategic planning and be informed about the activities of agricultural enterprises in modern economic conditions.

Thus, strategic planning allows identifying the most promising sectors for investment and expansion of production. As a result of its implementation, the enterprise receives relevant and reliable information that allows prioritizing and determining the line of action for the short term. National agricultural enterprises, for which strategic planning is rather an exceptional case than current practice, often focus on this stage.

This leads to inadequate organization of long term activities and negatively affects the competitiveness of enterprises. It must be borne in mind that the analysis of the enterprise's potential, firstly, is only a stage of strategic planning, dwelling on which means insufficiently assessing the prospects of the enterprise at a strategic level, and secondly, it requires constant monitoring and matching current market trends, since the assortment of products is largely dependent on market trends, innovative activity of other companies, and other volatile factors that it is necessary to take into account.

An efficient and complete analysis of processing enterprises development strategies requires identification and evaluation of their activities specifics, features or unique so-called characteristics of internal processes and systems, which will be the main advantage for an individual enterprise compared to competitors [1].

It must be understood that the strategic planning process in agricultural industry has a number of advantages; it allows determining the most effective aspects of further development. As it has been noted above, the presented mechanism of strategic planning is universal and can be used both in the implementation of strategic planning and in other sectors of the agricultural complex. The feasibility of dividing the algorithm into two stages is due to significant differences in goals and methods for each stage of strategic planning. Each stage involves the specialists of different departments of the enterprise. Responsibility for conducting research is also shared (it is assigned to the heads of structural units), which helps to improve its quality.

Thus, the main factor influencing the effective functioning of an agricultural enterprise is a long time lag in the process of adapting them to the changes in external and internal environment, as applied to all stages of the reproduction process. This will allow enterprises not only to constantly monitor the situation and protect themselves from unforeseen adverse factors affecting the competitiveness, but also to progressively move towards a designated and clearly formulated goal, gradually strengthening their market position.

4. Conclusions

Supply chain has a crucial meaning for contemporary agriculture. Its development is necessary for satisfaction consumer's and farmer's demands. The study of modern aspects of strategic planning in the agro-industrial complex allowed to draw the following conclusions.

In modern conditions, strategic planning is one of the most important management functions, the basis of the functional management structure for agricultural enterprises.

Strategic planning in the agricultural sector is determined by the characteristics of agricultural production, as well as by specifics of its sectors. The strategic planning process in agribusiness can be represented as a sequence of its constituent elements: forecasting, planning, strategy implementation, analysis of results, adjustment of forecasts and plans. In modern market economy, strategic planning should be based on the development programs for individual industries and enterprises. Moreover, development strategies should be created on an innovative basis, ensuring high-tech and efficient production in the agricultural sector.

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