Strategic guidelines for the development of the agricultural cluster in the region

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Abstract. The article discusses the strategic guidelines for the development of agricultural enterprises in the region within the cluster structure. Priority directions for the development of agriculture in the framework of the digital agriculture project have been identified. It is proposed to solve the key problems of the region's agricultural development by integrating agricultural enterprises into the agricultural cluster. The stages of determining strategic guidelines for the development of agricultural production in the region within the cluster structure are presented. The advantages of integrating agricultural enterprises in the region into the agricultural cluster for the purpose of exporting agricultural products are revealed. The article presents the study results of agricultural production in the Krasnoyarsk region by category of farms. The article discusses the possibilities of exporting agricultural products of the agricultural cluster to Asian countries.

1. Introduction

Strategic planning for production activities of agricultural enterprises in the region allows you to determine strategic guidelines and directions of development, taking into account changes in the external environment [1,2,3,4]. Strategic guidelines for the development of enterprises that produce agricultural products are reflected in the development and implementation of the state program for the development of agriculture in the Russian Federation. Defining strategic directions in the implementation of the agricultural policy of the Russian Federation allows us to fully realize the internal potential of the agrifood complex and develop an effective strategy adapted to the current conditions of transition to a new level of innovative development for agricultural production [5].

Digitalization of the agro-industrial complex is an urgent problem of modern agriculture that requires priority solutions. The introduction of information, innovative, resource-saving technologies helps to reduce the cost of agricultural production, improve its quality, and expand the range and volume of agricultural production [6]. Since 2019, the ministry of agriculture of the Russian Federation has been implementing the project "Digital agriculture".

The project implements the following areas:
1. "Effective hectare" — creating a unified information system for agricultural land.
2. "Smart contracts" — creating personal accounts and automating the process of providing subsidies and other types of state support based on smart contracts.
3. Agroexport "from field to port" - modeling export flows.

4. "Agro solutions for agribusiness" includes a complex approach: "Smart farm", "Smart field", "Smart herd", "Smart greenhouse", "Smart processing", "Smart warehouse", "Smart agrooffice" [7,8].

5. "Land of knowledge" — creating an electronic educational system for training specialists of agricultural enterprises» [9, 10, 11, 12, 13, 14, 15,16, 17, 18].

2. Integration of regional agricultural enterprises into the agricultural cluster

It is advisable to implement key areas of agricultural development in the regions of the Russian Federation within the framework of integrated structures. Integration of regional agricultural enterprises into agricultural clusters of a certain specialization: animal husbandry, vegetable growing, crop production, poultry farming, chicken farming will allow agricultural producers to join forces to solve agricultural problems and choose strategic guidelines for the introduction of production innovations in agriculture.

Advantages of regional enterprises integration and agricultural cluster allows to expand the boundaries of agricultural enterprises interaction in the region and increase the range of agricultural products produced within the cluster [19]. Creating conditions for activating the clustering process of agricultural enterprises is a priority task of regional government bodies [20,21].

In order to determine the strategic guidelines for the development of the agricultural cluster in the region, it is necessary to identify key tasks that should be implemented in stages.

1. Identification and assessment of the production potential for agricultural enterprises in the region.
2. Identification of key success factors in the production of agricultural products in each direction of agricultural production.
3. Selection of strategic directions for the development of agricultural enterprises.
4. Determination of growth points for agricultural production in each direction of agriculture.
5. Assessment of conditions for the development of agricultural enterprises in the region within an integrated structure, an agricultural cluster.
6. Drawing up a roadmap for the integration of agricultural enterprises in the region into the agricultural cluster.
7. Organization of agricultural enterprises interaction in the region within the cluster structure.

Figure 1. Stages of determining strategic guidelines for the development of agricultural production in the region within the agricultural cluster.
The stages of determining the strategic guidelines for the development of agricultural production in the region within the cluster structure are shown in the figure 1. The Krasnoyarsk region has a huge potential for the development of the agro-industrial complex within the cluster structure. Results analysis of agricultural enterprises in the Krasnoyarsk region revealed trends in sustainable growth of agricultural production in the region’s agricultural sectors. The size of agricultural production in farms of all categories (agricultural organizations, farms and individual entrepreneurs, households) in 2019 at current rates collected 76518.9 million rubles, or 103.1% by 2018, including in crop production – 109.9%, livestock - 99.1% in 2019, in farms of all categories, the gross grain harvest amounted to 1890.0 thousand tons, the gross harvest of potatoes increased by 5.5%, vegetables of open and protected ground - by 11.9%.

Table 1. regional agricultural products by category of farms, 2015-2019 (in actual prices; millions of rubles)

|                          | 2015  | 2016  | 2017  | 2018  | 2019  |
|--------------------------|-------|-------|-------|-------|-------|
| **Agricultural organizations** |       |       |       |       |       |
| Agricultural products    | 66302.4 | 76204.2 | 80982.7 | 71934.7 | 77914.1 |
| including:               |       |       |       |       |       |
| crop production          | 28804.1 | 34445.9 | 35095.6 | 26990.9 | 31194.6 |
| animal husbandry         | 37498.3 | 41758.3 | 45887.1 | 44943.8 | 46719.6 |
| **Peasant (farmer’s) organizations** |       |       |       |       |       |
| Agricultural products    | 2886  | 3817  | 5157  | 4403  | 5105  |
| including:               |       |       |       |       |       |
| crop production          | 2292  | 3262  | 4412  | 3349  | 4073  |
| animal husbandry         | 574.1 | 554.9 | 744.6 | 1054.0 | 1032.1 |
| **Organizations of all categories** |       |       |       |       |       |
| Agricultural products    | 31206 | 37996 | 42377 | 39114 | 43370 |
| including:               |       |       |       |       |       |
| crop production          | 14870 | 19484 | 21029 | 15927 | 17826 |
| animal husbandry         | 16355 | 18512 | 21348 | 23187 | 25544 |

In the Krasnoyarsk region, the southern regions have the maximum potential for developing cluster relations for the introduction of innovative technologies in agricultural production of various directions. As part of the plan implementation for the development of the “Yenisei Siberia” macro-region, the leading role in the process of creating an agricultural cluster is assigned to the southern regions: Ermakov, Indri, Karatuz, Krasnoturansk, Kuragino, Minusinsk and Shushensk districts are active participants in the clustering process. These areas account for 5429 thousand hectares of agricultural land. The sales volume of agricultural products for crop production amounted to 3869 million rubles, for animal husbandry 9591 million rubles. The creation of an agricultural cluster in the southern regions of the Krasnoyarsk region will make it possible to produce high-quality agricultural products and sell them for export to foreign markets [22, 23, 24, 25, 26]. The greatest potential in terms of export sales can be considered cereals and legumes, which are in great demand in the Asian market. [27,28, 29]

As a result of the current state study for agricultural production by agricultural enterprises in the region, the following strategic guidelines for the development of exports in the region should be identified:

- identification of priority commodity groups for agricultural products that are in demand in foreign markets;
- identification of the region’s export potential;
- determining the geography and volume of export deliveries by key product groups;
- identification of opportunities to expand the list of product groups in order to increase the range of export - attractive agricultural products.
The implementation of the selected strategic guidelines for the development of the agricultural cluster and export orientation in each region of the Russian Federation will allow implementing the priority federal project "Export of agricultural products". Increasing the volume of agricultural exports by 2.1 times makes it possible to reach the planned indicators of agricultural products sales for export up to 45 billion US dollars by 2024.

3. Conclusion
Analysis of statistical materials on the results of agricultural enterprises functioning revealed the possibility of combining agricultural enterprises into an agricultural cluster that allows producing agricultural products using innovative, resource-saving technologies and selling products for export. Defining strategic guidelines for the development of agricultural enterprises in the region within the cluster structure will allow us to use the production and export potential, increase sales of agricultural products and enter key foreign markets: China and Mongolia. Participation of agricultural enterprises of the region in the agricultural cluster will allow realizing the economic interests of agricultural producers and the region.

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