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Some areas of agribusiness participation to ensure food security of the Yenisei Siberia

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Abstract. The study analyzes the indicators of production and actual consumption of certain types of food in the territories of Tyva, the Republic of Khakassia and Krasnoyarsk Krai united in the Yenisei Siberia. The research makes conclusions about ensuring food security on the basis of the ratio of actual consumption, production and norms of rational food consumption and suggests some directions for agribusiness to be involved in food security.

1. Introduction

Food security of the Russian Federation (hereinafter - food security) is one of the mainstreams to ensure the national security of the country in the medium term, a factor in maintaining its statehood and sovereignty, the most important component of demographic policy, a necessary condition for the implementation of strategic national priority - improving the quality of life of Russian citizens by guaranteeing high life support standards.

The strategic goal of food security is to provide the population of the country with safe agricultural products, fish and other products from aquatic bioresources (hereinafter referred to as fish products) and food. To achieve this goal, the following tasks are set: to analyze the state of provision of the main food types to the population of the Yenisei Siberia; to identify the amount of food that must be imported from other regions to meet the needs of the population according to the norms of rational consumption; to offer entrepreneurs to use the data obtained in the course of determining the volume of food produced and purchased.

2. The method of determining food needs in the Yenisei Siberia

The guarantee of its achievement is the stability of domestic production, as well as the availability of the necessary reserves and supply.

These provisions reflect the main paradigms that the United Nations proclaimed in the Millennium Declaration, which formulates eight Millennium Development Goals. The solution of the problems in the field of food security and nutrition is deemed to be the most important of them. To meet this goal, the following components are needed:

- availability of food in sufficient quantities and of good quality, ensuring improved diet;
- political stability and the rule of law;
- absence of conflicts and civil unrest;



- stability of food prices, the absence of their excessive volatility due to fluctuations in weather conditions.

Proper nutrition contributes to human development, it helps to better realize their potential and take advantage of the opportunities provided by the development process.

The following factors affect the achievement of food safety and nutrition goals: economic growth, increased agricultural productivity, market development, and social protection. Comprehensive economic growth contributes to equitable access to food, facilities and resources, which is especially important for people in remote, hard-to-reach areas with extreme climatic conditions of the Yenisei Siberia. The latter include the Arctic and subarctic territories of Krasnoyarsk Krai and Tyva.

The issues of food security of the territories of the Yenisei Siberia have received a new round of development due to the large-scale development project of the Arctic zone of the Russian Federation in Tuva, the Republic of Khakassia and Krasnoyarsk Krai. At the same time, the conceptual foundations of the state policy of the socio-economic development of these territories can also be attributed to improving the quality of life of the indigenous population and the social conditions of economic activity in the Arctic.

It is a well-known fact that with the transition to a market economy, the negative processes in the socio-economic development of the northern territories became extremely intense and led to the destruction of the economic foundations of their livelihoods.

In the last decade, the situation has certainly started to improve, but the legislative, economic and organizational measures taken today are clearly not enough.

It should be noted that Krasnoyarsk Krai is distinguished by an extensive regional regulatory framework governing the traditional way of life and the traditional economic activities of the indigenous peoples of the North. The Development Program of Krasnoyarsk Krai until 2020 points to the need to continue the traditions of domestic reindeer breeding in Taimyr, the rational use of the region's fish resources, and the organization of deep processing of local valuable species of fish. A similar development program has been developed in Tuva and the Republic of Khakassia.

In accordance with Art. 49 of the Federal Law of the Russian Federation "On the Animal World", small indigenous peoples and ethnic communities whose original culture and lifestyle include traditional methods of protecting and using objects of the animal world, citizens belonging to these groups of people, and their associations have the right to the priority use of the animal world in the territories of traditional settlement and economic activity.

Solving the problem of food security requires an integrated approach, taking into account and realizing all the possibilities of involving the population of the Northern Territories and the Arctic.

Many foreign researchers emphasize the need to involve the population of the Arctic and other extreme territories and local resources in ensuring food security of the Yenisei Siberia.

Canada and Newfoundland Food Safety specialist Kristen N. Lowitt [1], citing the research done by Eriksen P. and Nelson C. [2] et al. [3] highlights the need to take into account the contribution of local fisheries to the food security of the communities.

According to Canadian researchers, food security in the Arctic is a long-standing problem, the most important criteria of which are geography, food contamination of countries through pollutants, the impact of climate change and economic vulnerability.

To solve food security issues is necessary in view of the capabilities of the population of the Northern Territories in the production of basic agricultural products. Knowing the volumes of our own production, we can determine which types of food should be imported from other areas of the Yenisei Siberia, Krasnoyarsk Krai and the Russian Federation.

Determining the percentage ratio of actually produced to rational consumption rates and the norms of actual food consumption makes it possible to establish the volume of production in general, to establish the amount of food necessary to be imported from other territories [4].

In the course of calculations, the following method was used: the annual consumption standard for the district is established by multiplying the annual consumption standard of one person by the number

of inhabitants of a particular territory of Krasnoyarsk Krai, Tyva, and the Republic of Khakassia. The percentage of food produced by the annual standard rational consumption of the territory is determined. Rational consumption standards are established by the Order of the Ministry of Health and Social Development of the Russian Federation of August 2, 2010 № 593n “On approval of recommendations on rational food consumption standards that meet modern requirements for healthy nutrition.”

An important aspect of food security is also the elemental composition of food [5]. According to the Center for Biotic Medicine in the Yenisei Siberia, the main deficient elements are cobalt, magnesium, copper, and iodine. To compensate for their deficiency in food, you should eat fruits (apples and feijoa), vegetables (potatoes, carrots, beets, radishes, green onions, peas), garlic, walnuts, cashews, milk, liver, buckwheat, mineral water, etc. The number of necessary products per municipality can be calculated based on the norms of a balanced diet. It is very important that, in addition to sea kale, seafood and apples, all other types of products are produced in the Yenisei Siberia.

The elemental and vitamin balance could be replenished by vitamin preparations, but they are not imported in sufficient quantities.

Research confirms the possibility of almost complete problem solution of compensating the imbalance in the required elements through food products, which are produced in the Yenisei Siberia and Krasnoyarsk Krai [6].

3. FAO requirements and food security

Solving food safety problems imposes a wide range of requirements from adhering to the “Five Essential Principles of Safe Nutrition” developed by the World Health Organization which are: to maintain cleanliness, to separate raw food from cooked one, to roast and boil food well, to store food at a safe temperature, to choose fresh food with a short shelf life, up to taking into account the possibilities of self-sufficiency of the population and the involvement of indigenous peoples in this process, and the results of their traditional forms of vital activity.

To ensure quality nutrition in accordance with international standards in educational institutions and public catering organizations in the Yenisei Siberia, it is necessary to create conditions for eating foods in accordance with the taste preferences of the population and indigenous peoples, as well as filling the elemental and vitamin deficiency.

The International Food and Agricultural Organization (FAO) defines food security as a situation in which the population has physical, social and economic access to safe food at any time. For all that, nutritional needs and taste preferences for an active and healthy lifestyle are satisfied.

In Russia, food security refers to such state of the country's economy, which ensures food independence of the Russian Federation, guarantees the physical and economic affordability of food products that meet the requirements of legislation on technical regulation, in the amount of not less rational consumption norms necessary for an active and healthy lifestyle. Comparing these approaches, we see that physical and economic affordability of food remains the general criteria for food security.

The report of the Food and Agriculture Organization of the United Nations “The state of food insecurity in the world” sets out that in different regions of the world the proportion of undernourished people varies from 5% to 20% (No data for the RF available).

Food security is determined by several indicators:

- physical accessibility (food availability)
- economic affordability (money opportunity to purchase food)
- compliance of products with safety requirements.

Research and analysis of statistical data of the Federal Service for State Statistics (Rosstat) on the territories belonging to the Yenisei Siberia indicate that in 2017 the physical accessibility of food was

achieved to a certain extent. But its own food production in the Yenisei Siberia allowed it to fully meet the needs for rational consumption standards only for eggs in Krasnoyarsk Krai (106%) and for milk in the Republic of Khakassia (106%). For other types of food, the percentage of production to rational consumption rates ranges from 59% to 95%. On average, in the Yenisei Siberia, the production indicators in percentage of rational consumption standards for certain types of food are as follows: meat - 66.7%, milk - 85.6%, egg - 89.5%, vegetables - 80.3%.

At the same time, indicators of actual consumption per person per year exceed the rate of rational consumption of only one product - meat. In the Republic of Khakassia and in Krasnoyarsk Krai, it is 102% and 122%, respectively. In general, in the Yenisei Siberia, the actual meat consumption per year on average per person amounts for 104% of the rational consumption rate. At first glance, the indicator seems quite prosperous, but its fluctuations by region are very significant. In Krasnoyarsk Krai, meat consumption is 33% higher than in Tuva. The data on the production and actual consumption of meat show that the satisfaction of the need for it is carried out both from its own production and due to the import of almost the same amount from other territories, as well as from abroad.

In terms of meeting the need for percentage to the norms of rational consumption and other food products (from those analyzed), the situation in the Republic of Khakassia is the best: 95% for milk, 82% for egg, 94.8% for vegetables. It is true that the Republic of Khakassia has the most favorable climatic conditions for the cultivation of raw materials and food production.

In Tuva, actual consumption is 39% for milk, 81% for egg and 36.9% for vegetables, which is clearly not enough for rational consumption norms.

According to the Federal Service for State Statistics (Rosstat) data on the actual food consumption for the analyzed items, the need for food in percentage to rational consumption standards is satisfied for the Yenisei Siberia in general for meat by - 104%, milk - 69%, egg - 83%, vegetables - 85.4%.

The Republic of Khakassia looks the most favorable; food safety of Tyva is of the greatest concern.

Krasnoyarsk Krai, in spite of quite acceptable average indicators fails to provide the standards for rational food consumption at the expense of its own production in all its territories. This is especially true of the Northern areas of the region. Thus, the self-sufficiency of the main agricultural food products in Turukhansk district in 2017 was: meat - 30%, milk - 36%, egg - 13%, vegetables - 17%.

In Taymyr Dolgan-Nenets municipal district: meat amounts for 14%, milk - 0.4%, eggs - 0.7%.

In Evenkia: meat - 9.4%, milk - 12%, eggs - 4%, vegetables - 25%.

Even more significant indicators of Turukhansk district remain far from the average for Krasnoyarsk Krai and the Yenisei Siberia as a whole.

4. Conclusion

To increase the level of food security of the macro-region of the Yenisei Siberia and its constituent territories of Tyva, the Republic of Khakassia, Krasnoyarsk Krai it is necessary to:

- to conduct a more detailed analysis of the possibilities of food self-sufficiency in specific areas;
- to study and rationalize logistic food supply schemes for leveling the security of territories;
- to identify the volume of purchases of the necessary types of food to bring them at least to the norms of rational consumption;
- to increase the efficiency of sales of food raw materials abroad, taking into account the domestic consumption of the Yenisei Siberia;
- to develop measures of state support for food production in various regions of the Yenisei Siberia;
- to stimulate the development of traditional types of vital functions of indigenous peoples of the North and indigenous peoples of Tyva and the Republic of Khakassia to increase their self-sufficiency in traditional food.

Agrarian enterprises of various forms of ownership can play a major role in addressing the food security issues of the Yenisei Siberia, which will start taking into account statistical data conclusions and the need for production and distribution of food flows, with regard for the needs of the population of the respective territories.

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