

Self-Sustainment as a Basic Component of Food Independence and Security of a Country

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Abstract — A country's food security is associated with the problem of protecting its national interests, which includes meeting the demand of the population for high-quality food products and ensuring socio-economic stability in general. Therefore, the government at the federal and regional levels must create the necessary conditions for both the development of agricultural production and its service industries, and the development of rural areas, thereby ensuring socio-economic stability in the society. At the same time, to ensure food security, it is important to reduce to a reasonable extent the volume of food and important agricultural resources imports. At the same time, it should create balanced structures for food export and import, as well as its sufficient reserves. The studies of the agricultural production and consumption in Russia made it possible to substantiate and specify the factors and principles of self-sufficiency in agricultural raw materials and food. It is substantiated that the national food security and independence take into account zonal specialization; levels of regional self-sufficiency in basic foodstuffs, market infrastructure development; the global agro-food and major resource markets impact, as well as the globalization processes, and increased agricultural policy protectionism agricultural policy; the need to strengthen state regulation of the agricultural sector.

Keywords — *food independence, food security, agrarian self-sufficiency, agricultural economy, sustainable development.*

I. INTRODUCTION

The socio-economic transformations carried out in the national agricultural sector in the strategic prospect are aimed at the creation of the consistently market, but also socially oriented agrarian relations with adequate methods and mechanisms of the state regulation that take into account the specifics of the reproduction process in agriculture. The formation of such relations in the context of globalization of the world economic relations requires overcoming the forces of inertia in the economic thinking, methods and mechanisms of management, the formation of the system of the state and economic management that can protect the interests of domestic producers and consumers, as well as ensure national food security as a whole.

II. RESULTS & DISCUSSION

Market transformations started back in the early 1990s are characterized by the combination of the negative consequences for the agro-industrial complex and the achievement of the positive results of the ongoing market reforms. On the one hand, there have been radical changes in the relations and the structure of property, and, accordingly, in the social structure of the agricultural sector – business entities freed themselves from the administrative dictatorship and received the desired economic freedom. On the other hand, the economic and social costs of the reform turned out to be irreplaceable, especially in the agricultural sector, since the market transformations in Russia, as well as in many other CIS countries, were not preceded by deep and comprehensive conceptual development, their priorities and consistency were worked out under the influence of the macroeconomic conditions against the background of the uncontrolled processes at the micro level and serial bankruptcy of agricultural producers. This concerned both the concept and the strategy of establishing the market system of the economic (including agrarian) relations, as well as the system characteristic of these relations and specific mechanisms of the state regulation of agriculture and mechanisms for its protection [1].

As a result, Russia's high supply of cultivated areas, qualified personnel, and huge (albeit largely outdated) production capacities in the field of processing of agricultural products, chemization of agriculture, and agricultural engineering did not provide a solution to the problem of food security and food security. The authors consider it important to continue research on the transition period of the market transformations in order to objectively assess the causes and factors of the economic crisis, especially in the agricultural sector.

In our opinion, this crisis is partly a continuation and deepening of the crisis of the administrative economy, when significant capital investments in the agriculture of the USSR did not give corresponding returns, and all financial support systems (especially the endless write-offs of debts every five-year period) did not stimulate the growth of agricultural production.

The situation in the agro-industrial complex was especially aggravated during the proclamation of the principle of free trade, including foreign trade, which did not take into account the urgent need for protectionist policies. Moreover, the growth of imports was absolutely and relatively regarded not as a dangerous dependence on the world market, but as a natural result of the increased participation of Russia in the world economy with the export of energy resources and food imports. As a result, by the end of the 1990s, all oil exports were only sufficient to cover the food imports. In particular, in 1998, oil exports yielded \$ 12 billion. The same amount was spent on food imports. It is characteristic at the same time that in dollar values, the amount of the gross domestic product of agriculture was also \$ 12 billion.

At the present stage of the development of market relations, the country's food supply and its economy are still dependent on energy exports. The danger of this situation lies not in the food supply mechanism itself, but in the fact that energy prices, primarily oil prices, are subject to sharp fluctuations, that is, nothing guarantees their long-term stability at the desirable level.

The need to create our own model of the mechanism of the state administration of the agricultural sector and related industries, including the system of measures of the state influence on economic relations, follows from the place of this sector in our country's economy and (finally) recognition of its special role. We believe that the restoration of manageability of agricultural development is one of the main factors in increasing the efficiency of both individual agricultural producers and the industry as a whole.

It is known that the agrarian sector, due to its specifics, cannot, on equal terms in market conditions, participate in inter-sectoral competition, since it is highly dependent on the natural factors, has pronounced seasonal, cyclical nature of production is more backward in terms of technology and gives less return on invested capital compared to the industry. Its specificity and significance are also manifested in the fact that agriculture is not only production, but also the living environment of a significant part of the population, and the development levels of agricultural production, its production and system-forming infrastructure directly affect the state of food security in the country. Moreover, at the present stage, agriculture is strongly "tied to the import supplies of such important resources as seeds (sugar beets, corn, etc.), breeding animals, plant protection products, etc." [2]. Therefore, the problem of the formation of the agrarian policy in Russia, ensuring its food security and independence, is of particular importance. It requires a solution in connection with the globalization of the agro-food market, increased competition for the sales markets and the active involvement of the political instruments in this process.

Despite the significant amount of research on this issue, the questions of substantiating scientific, methodological, and practical approaches to the formation of the basic components of the food security and independence of the country on the basis of assessing their relationship and importance, as well as their role in international competition, remain insufficiently developed.

According to the forecast data, by 2025 the world's population will reach 8.5 billion people, 83 % of which will live in developing countries, and about 800–1200 million of the latter are doomed to malnutrition and even hunger. Therefore, food security and independence are important factors in the national security of any state, its political and economic sustainability, as well as a guideline for the development of the agrarian sector of its economy.

Slow adaptation of agricultural production to domestic and international competition, the monopoly of resource suppliers, and the financial instability of most agricultural commodity producers necessitate the implementation of the principle of self-sufficiency.

The interrelation of categories of food security, independence and self-sufficiency is presented in Table I [3, 4].

The need for implementation of the self-sufficiency principle in Russia is reasoned by the following:

- objective difficulties in the development of the agro-food market due to the political and economic opposition from a number of developed countries;
- slow adaptation of the agricultural production to the domestic and international competition;
- monopoly of the resource suppliers;
- financial instability of the most of agricultural manufacturers

However, the relationship of self-sufficiency of a country or its individual region with agricultural products and the development of the agro-food market is dual.

On the one hand, the formation of the market should be based on local production and self-sufficiency in the products for which production the regions of the country have the required conditions. On the other hand, in the course of formation of the agro-food market, it should be borne in mind that self-sufficiency should be optimal or expedient (self-sufficiency of a country or its region alone cannot and should not be complete, otherwise the economy will gain closed nature with a naturalization tendency that is not only contrary to market principles of management, the conditions of the interregional and intergovernmental division of labor, but also can have negative impact on their socio-economic development, including reduction of the level of quality and competitiveness of domestic production.

The country's self-sufficiency in important types of agricultural raw materials and food is an integral part of its food independence, that is, the state of the economy, in which the domestic production of vital food types for the year amounts to at least 80 % of the population's annual demand for them in accordance with physiological norms of consumption [5, 6].

The specified threshold value, according to experts, allows determining the degree of a country's independence from imports for each individual product, and on the other hand, to interpret conclusions about the rapid quantitative development of Russian agricultural production [7].

TABLE I. THE ESSENCE AND IMPORTANCE OF FOOD SELF-SUFFICIENCY IN THE COUNTRY'S FOOD INDEPENDENCE AND SECURITY

Academic categories	Summarized essence	Objects
National security (the basis is availability of the resources necessary for protection of the rights and interests of the state in general and any of its citizens)	This is the ability of a state to adequately respond to the constant destabilizing effects of military, economic, political, informational, demographic, and psychological factors, as well as implement the measures aimed at protecting the interests of the individual and the state as a whole, and at eliminating threats and dangers for them for a considerable historical period.	Individual state and its every citizen.
Food security (the basis is availability of the resources necessary for food procurement for all population)	First of all it is the guarantee of the following: 1) sustainable food procurement for the population over the long term; 2) physical and economic availability of the food; 3) the level of positive needs for population's health provision based on the scientifically grounded nutritional standards; 4) food safety in terms of quality.	World community, individual state, and its every citizen.
Food sovereignty (the basis is availability of the resources necessary for food procurement)	It is the provision of the domestic market of the country with food products exclusively (or mainly) through domestic production. The key indicators of the food sovereignty: 1) production volume of agricultural products, raw materials and food; 2) population's need for food based on the scientifically grounded nutrition standards of food consumption; 3) the level of self-sufficiency with food calculated based on the scientifically grounded nutrition standards for certain population groups taking into account the natural and economic conditions of the dwelling territory, instead of the consumer basket standards.	Individual state, region as administrative entity.
	Food self-sufficiency is an economic condition where annual domestic production of the vital food types is at least 80% of the annual population's demand for them according to the scientifically grounded nutrition standards.	

Nevertheless, agreeing with this position of the authors, we note that the achieved degree of procuring the Russian population with food of domestic production still takes place with significant share of imports of means of production, seeds, breeding animals, etc., which indicates an unstable value of the level of food independence.

In addition, at the present stage there is no clear state policy in Russia regarding the agrarian specialization of the regions, there is significant difference in their social and economic development and investment attractiveness, as well as the forms of budget support for the agrarian sector and rural region development.

In our opinion, the fundamental function of governmental control of the economy at the federal and regional levels is to regulate the process of regional development, its

organizational, methodical and socio-economic support for achieving the goals set by the most rational ways. It is important to consider a number of factors affecting the formation of food self-sufficiency, which can be combined into three groups (Table II).

TABLE II. THE FACTORS AFFECTING THE FORMATION OF NATIONAL SELF-SUFFICIENCY WITH AGRICULTURAL RAW MATERIALS AND FOOD

Area of influence	Factors
Production	Rational allocation of the agricultural production taking into account zonal conditions. Use of the existing production potential and modernization of the productive capacities of AIC. Development of the intra-regional and inter-regional productions connections.
Consumption	Basic level (rational/medical norms) and prospective needs of the population for food (due to income change, price change, urbanization level and other demographic factors, etc.). Prospective needs of the population Existing and prospective needs of the population for AIC products and its agrarian sphere for the use in their personal subsidiary plots
Distribution	Concentration and zonal specialization levels of the agrarian production, food and processing industry, and logistic centers. Capacity and saturation degree of the national and regional agro-food markets. Objective need for sustainable inter-regional food supply linkages. Participation in the international division of labor, mutually beneficial exchange of food and technology.

The important means of governmental influence that affects the self-sufficiency of the region with raw materials and food is the implementation of the protectionist policy in relation to local manufacturers.

It is especially important to maximize the natural and economic potentials of the region based on the deepening of agricultural specialization, the concentration of raw materials production near processing enterprises, or the start-up of new processing facilities within production clusters [8].

The important conditions and principles of providing the country and its regions with agricultural raw materials and food include:

- increase of the population's incomes due to the growth in employment, wages and social benefits as conditions for the growth of solvency and economic affordability of food on this basis;
- support of food producers in order to ensure the profitability level necessary for their reproduction;
- elimination of the cross freights of raw materials and finished goods;
- stimulation of the development of food and processing industries in order to rational use of agricultural raw materials, better satisfaction of the demand of various groups of the population, including the need for children's and medical nutrition, and for cheap products for the poor part of the population;

- protection of the economic interests of food consumers by means of regulating the market prices for basic food types;
- food safety and quality control.

As the studies have demonstrated, at current market prices, the demand for dairy and meat products in comparison with domestic supply was not satisfied (Fig. 1), therefore, Russian producers have great potential to increase the production of these types of products, especially with government support [9–11].

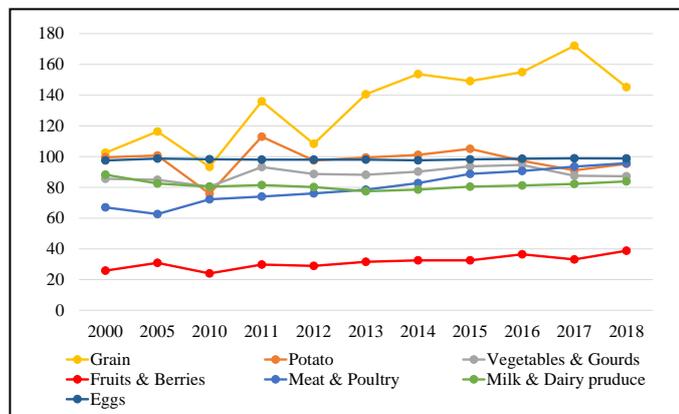


Fig. 1. The level of Russia's self-sufficiency with the key food types, %

Important conditions and principles of self-sufficiency of the country and its regions with agricultural raw materials and food are:

- increasing incomes and purchasing power of the population and, on this basis, the affordability of food;
- formation of a modern inter-regional logical system with state participation to eliminate oncoming transport of agricultural raw materials and food and reduction transaction costs;
- modernization and stimulation of the creation of new enterprises in the processing sector of the agro-industrial complex to more fully meet the needs of the industrial and end customers (including the needs for baby and medical nutrition, environmentally friendly products, as well as cheap products for the poor);
- state support and quotas for the production of the strategically important types of raw materials and food to ensure their profitability and competitiveness in the national market [14, 15];
- protection of the end consumers of food through the state regulation of prices for the basic food products [16];
- ensuring the food safety and quality control.

Self-sufficiency of Russia and its regions with food must be based on the scientific approach to justifying the self-sufficiency of a particular region, supported by appropriate calculations (taking into account the regional specifics, its place, its role in the all-Russian division of labor, the availability of satisfactory conditions, as well as its

development trends); zonal specialization, cooperation and integration, interregional and international division of labor, affecting the product competitiveness; partial nature of the self-sufficiency of regions.

III. CONCLUSION

Based on the implementation of the above principles and directions of governmental support for the development of agriculture and the food market, and based on the specific conditions of the regions, a differentiated system of sustainable food supply of the country should be formed. At the same time, the criteria for completeness of the agro-food supply of a country or its region are the degree of saturation of the market and the level of self-sufficiency, and the criterion for the sustainability of the agro-food self-sufficiency is price stability and growth in the consumption of main food types, including due to the domestic production.

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