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Agricultural policy and import substitution opportunities in the Russian Far East

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Abstract. The article considers the priorities of the agrarian policy of Russia in the historical period of the late XX - early XXI centuries, shows negative trends in food security in the context of sanctions. The indicators of food independence for the main types of agricultural products are calculated. It is concluded that the program for import substitution of livestock products in the Far East of Russia is being solved inefficiently; the region's self-sufficiency in meat and dairy projection is low, critically dependent on external supplies. The principles of state policy on the development of the agricultural sector in Russia in the regions of the Far East are formulated.

1. Introduction

Currently, the import substitution policy is the most discussed issue both in the legislative bodies, in business and public organizations of the country. In the publications of Russian authors, it is widely believed that the difficult moments for the Russian economy related to the introduction of anti-Russian sanctions by certain Western countries and the devaluation of the national currency are a kind of window of opportunity for the development of the agricultural economy and the deepening of import substitution.

The most important task of the import substitution policy is to produce the amount of food necessary for personal consumption and to satisfy the industrial demand for locally produced agricultural products instead of imported ones.

Modern high-tech enterprises are one of the main factors in the competitiveness of agricultural products, including ensuring the employment of the rural population, the demand for environmentally friendly products and innovations.

2. Materials and methods

This study was carried out using the methodology of a systematic approach and the complexity of studying the problem. Statistical data on the state of agriculture of the Russian Far East (2015-2018) were used, reflecting the potential solutions to the problem of import substitution of food.



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3. Results

Radical reform of the agricultural sector began with the liquidation of collective farms. Since 1991, a course has been taken to create family farms [1]. Collective production remained at the reform stage under other names (joint-stock companies, agricultural cooperatives and others). Contrary to the intentions of the reformers by the leading sectors of Russian agricultural production in the 1990s, they became not family farms and agricultural enterprises, but personal subsidiary farms of rural residents. They achieved this without virtually any means of mechanization; partly due to the underdevelopment of the small-sized equipment market, adapted for use in household plots, and also, to a greater extent, due to the lack of funds for their purchase.

Doubling the volume of production and marketability of this category of farms occurred solely due to an increase in labor costs of owners of personal subsidiary farms and members of their families [2]. The share of farms in the production of the industry remained stably low and at the beginning of 1997 did not exceed 2%. Today they produce just over 7% of the total agricultural output.

Since January 1992, prices for agricultural products have been completely exempted, and subsidies and allowances to them have not been paid. The calculation was based on the formation of a price ratio under the influence of supply and demand. Reforms of the early 90s of the last century destroyed the credit system, which provided agriculture with the necessary working capital. In 1991-1992 Central Bank of Russia allocated loans for agriculture on favorable terms: peasant farms paid 25%, other agricultural producers 50% of the discount rate. Since 1993, privileges were canceled, and lending was carried out at a high discount rate of the Central Bank, the level of which in 1994 reached 213%. At the same time, centralized loans for agriculture were canceled. In 1995, the price of fuels and lubricants received under a commodity loan was higher than retail prices by 40-45%, in 1996 - by 25-30%. In the 1990s four times higher fuel prices than agricultural prices. The tendency for fuel prices to rise higher than agricultural prices is still in effect. This has caused many bankruptcies; working on land became economically unprofitable and many farmers chose to leave the agricultural sector. As a result, out of 263 thousand registered farms in Russia, in the middle of the first decade of the 21st century exactly half acted. According to a sample survey of 15% of the farms that existed in Russia in the 1990s, 34.2% were profitable in 1998, 41.3% in 1999, and 65.8 and 58, respectively, unprofitable. 7% Many people went to the city in search of a better share. And those who stayed almost stopped holding cows. According to the Federal State Statistics Service, in 2006 only 5% of rural residents had livestock.

Tractor and agricultural mechanical engineering survived the deep crisis, most of the enterprises of which were privatized and many of them actually stopped producing agricultural equipment. In 2001, compared with 1985, the production of tractors decreased 17.2 times, combine harvesters - 12.4 times, forage harvesters - 9.9 times, flax harvesters - 27 times, milking machines - 84, 6 times. The use of capacities of agricultural engineering factories in 2001 compared to 1985 decreased by 20-50 times. In the 90s of the last century, the supply of agricultural enterprises with technical equipment significantly decreased. The supply of agricultural producers with the main types of equipment in 2001 was: tractors - 53%, plows - 37%, cultivators - 60%, seeders - 63%, combine harvesters - 54%, forage harvesters - 67%, which is 2 - 5% lower, than in 2000. The load on equipment in 2001 exceeded the normative more than twice. In fact, agricultural enterprises exploited the equipment for wear and tear, "finishing" the potential that had been created earlier. Equipment production by agricultural machinery in this period per 100 ha of sown area in Russia compared with Western European countries is 12-15 times lower [3].

An unfavorable situation has developed in the social sphere. If in 1990 the average wage in the country was equal to the average wage in agriculture, then in the middle of the first decade of the XXI century, it amounted to about 35% of the average Russian level in agriculture. At the same time, the state of social infrastructure of Russian villages has deteriorated sharply. The commissioning of housing, secondary schools, kindergartens and cultural facilities decreased by certain indicators compared with 1986 - 1990 ten times.

The market transformation of the agrarian economy has led to a number of negative effects. Firstly, the debt of agricultural enterprises has increased, and the cost of agricultural production has increased.

Secondly, the outflow of the rural population to cities increased, mainly due to the young, most professionally trained personnel.

Thirdly, Russia was unable to compete in the domestic market. It became difficult for Russian enterprises to withstand price competition with foreign producers in a wide range of food products.

Thirdly, the destabilization in the engineering sector has led domestic companies to focus on buying ready-made innovative solutions (machinery, seeds, technologies, equipment, and even specialists) abroad; at the same time, opportunities for innovative business, research and development in the agricultural sector have been significantly reduced.

The absence of a long-term state agrarian policy and the orientation toward market mechanisms for regulating economic processes led to a reduction in agricultural production. Thus, the share of agriculture in Russia's GDP in 1991 was 14%, and in 2012 - only 8%; the share of imports in the Russian market for cattle meat in 1991 was 14%, and in 2012 - 78%.

The introduction of economic sanctions against Russian companies in 2014, including a restriction in access to cheap financial resources, new technologies and equipment, in principle, should significantly limit the possibilities for agricultural development.

In the new situation, it is important to determine the priorities and principles of agricultural policy and the possibility of actively discussing import substitution in agriculture.

The formation of global capital markets, technologies, labor and natural resources has positive and negative manifestations. The positive ones include improving the quality of life of all mankind and reducing the cost of producing goods and services, the availability of cheap finance. All this allows us to develop new technologies, to use breeding achievements in crop production and animal husbandry to create new industries. The spread of new food production technologies, in turn, makes it possible to reduce material and energy consumption, labor costs for the production of goods and increase labor productivity.

Barriers to increased production intensification and economic efficiency are becoming restrictions on political and economic sovereignty. Trade barriers for Russian goods in partner countries push agricultural producers out of the market. The limited innovative potential of Russian agricultural engineering, the shortage of labor resources hinder the possibility of import substitution in a short time.

A certain potential of import substitution exists for some types of agricultural products.

In the framework of this study, the authors calculated the level of self-sufficiency of the state with the main types of agricultural products.

The level of self-sufficiency for product groups is calculated by the formula:

$$\text{Self-sufficiency} = \text{Production} / \text{Domestic Consumption} \quad (1)$$

In formula (1), the domestic consumption is understood as the sum of consumption of agricultural products in the agricultural enterprises, and personal consumption of agricultural products (including volumes of imported products, including imports), as well as its losses.

An analysis of the results showed that at the all-Russian level, a tendency has been formed to increase the level of self-sufficiency in the main types of agricultural products (i.e., we can talk about positive shifts in import substitution). However, in the Far East, there is a decrease in the level of self-sufficiency in basic types of food, up to a critical level (table 1).

Table 1. The level of self-sufficiency in the main types of agricultural products in Russia and the Far East (in percent).

Years	Meat		Milk		Eggs		Potatoes		Vegetables		Fruit and berries	
	Russia	Far East	Russia	Far East	Russia	Far East	Russia	Far East	Russia	Far East	Russia	Far East
2012	76.1	22.3	80.2	43.2	98.0	73.0	97.5	100.0	88.7	73.1	30.5	12.5

2013	78.5	22.9	77.5	41.6	98.0	60.5	99.4	91.6	88.2	72.1	33.0	9.6
2014	82.8	25.8	78.6	41.3	97.6	62.6	101.1	101.2	90.2	73.7	33.6	9.6
2015	88.8	23.5	80.4	41.7	98.2	65.8	105.1	85.3	93.7	63.5	33.7	11.5
2016	90.7	26.1	81.2	43.4	98.6	65.9	97.3	82.2	94.6	68.3	37.8	10.9
2017	93.5	36.2	82.3	56.1	98.9	63.3	91.1	84.2	87.6	58.9	33.1	15.8
2018	95.7	34.8	83.9	55.3	98.8	62.0	98.1	90.9	90.0	53.6	34.4	8.9
Deviation												
2018 from 2012 (\pm)	19.6	12.5	3.7	12.1	0.8	-12.1	-2.2	-16.2	-1.5	-17.4	8.3	-0.2

For Russia as a whole, by 2018, the food safety target indicators for the analyzed product groups have for the most part been achieved (except for milk - 83.9%).

In the Far East of Russia, own potato production amounted to 90.9% by 2018.

The share of self-sufficiency in the Far Eastern region with meat and milk is low. So, on average for 2012-2018, this indicator for meat was 27.4% and for milk 46.1%.

Thus, it can be stated that in the Far East of Russia the problem of import substitution is poorly resolved.

Creating favorable socio-economic conditions in the Russian Far East, "moving Russia to the East", expanding cooperation with the Asia-Pacific countries, and entering Asian markets can become an impetus for the development of the agricultural sector of the macroregion of the Far East and Russia as a whole.

In the long-term strategy for the development of the agricultural economy, emphasis is placed on solving the problems of import substitution.

The Russian Far East is a key, historically developed soybean growing area in Russia. Here 57% of sown area is concentrated. Products manufactured in this region are mainly exported to the neighboring countries of the Asia-Pacific region.

The interest in soybean production by producers is explained on the one hand by an increase in domestic demand. In the Far East, projects are underway to build large livestock complexes in the field of meat and dairy cattle breeding, pig breeding. A steady upward trend in meat production indicated the demand for feed and formed a supply in the soybean market.

On the other hand, increased demand from consumers in East Asia. The main market for agricultural products has become China. It accounts for about half of the global supply of pork, which is undoubtedly the main driver of price increases, primarily for soy [4].

Major projects in the field of agriculture and agricultural processing are in almost every Far Eastern region. There is a trend towards business consolidation, which, obviously, will determine in the near future the vector of agricultural development in the region.

In the medium term, a positive impact on the development of the industry will be exerted by projects for the development of the agro-industrial complex [5,6], aimed at increasing investment activity and increasing the competitiveness of products, reviving demand from processing industries, reducing structural deformations [7], intensifying the innovative activities of agricultural enterprises [8], which, in turn, will contribute to the successful implementation of the import substitution policy in the agricultural sector.

4. Conclusion

Agricultural policy should be based on the following principles. Agricultural policy must be implemented in the logic of the development of the entire region with reference to large infrastructure, industrial and social projects.

The growth potential of agricultural production in the Russian Far East is largely due to the formation and development of priority development areas.

Agricultural policy should be consistent with export, tax, customs policy. It is important that auxiliary instruments of state intervention are involved, in particular with regard to subsidies, import licensing and special economic zones, as well as environmental sanitary measures; enhanced information and

advisory services to investors on the norms, laws and rules of doing business in the region, issues of product certification, taxation.

References

- [1] Saraikin V A 2012 Small business and its role in agriculture in Russia *Scientific works of VIAP named after A.A. Nikonov* **36** 204
- [2] Potenko T A, Zhupley I V and Grafov R A 2017 On the role of households in the agro-economics of the Primorsky Territory: a look at the problem of import substitution *Economics and business* **1(78)** 1205-9
- [3] Volodin M V 2007 *Agrarian Russia: History, Problems, Prospects* (Penza: University of Penza) p 399
- [4] Potenko T A and Emelyanov A N 2018 Export potential of agriculture of the Far East of Russia *Far Eastern Agrarian Bulletin* **1(45)** 125-32
- [5] Zhupley I, Potenko T, Gubarkov S, Tretyak N and Grafov R 2018 Structural Shifts and Reform of the Agrarian Sector of the Russian Economy under the Conditions of the Import Substitution Policy *Space and Culture* **4** 25-35
- [6] Schmidt Yu I 2015 Methodology for assessing the effectiveness of structure and structural changes in the agricultural sector of the economy *Economics and Entrepreneurship* **3(56)** 483-6
- [7] Parshukov D V, Shaporova Z E and Hodos D V 2019 Study of structural shifts in food consumption in the Russian Federation for the period 2013-2017 *IOP Conf. Ser.: Earth Environ. Sci.* **315** 022079
- [8] Shaporova Z E and Tsvetysykh A V 2019 Model of the agricultural engineering enterprise innovation program development *IOP Conf. Ser.: Mater. Sci. Eng.* **537** 042063