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Trends And Main Factors Of Development Of The Russian Vegetable Market.

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ABSTRACT

This article presents an analysis of the Russian vegetable market taking into account its characteristics and the impact of the regime of foreign trade restrictions. Changes in import deliveries in the field of volumes, structure and geography are considered. The reduction in the volume of consumed vegetables was revealed against the background of a decrease in the incomes of the population and an increase in the prices of vegetable products.

Keywords: vegetable market, production, consumption, import.

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INTRODUCTION

The branch of vegetable growing is of great importance in the life of any country. It is designed to provide the population with vegetables all year round, which are considered by modern science of nutrition as vital products rich in vitamins, minerals, organic acids, fiber, dietary fiber.

A large number of studies have been devoted to the study of the vegetable market, where there are general characteristics of the vegetable market in different countries: the mismatch between production and consumption periods, high dependence on imported products, high price volatility, the importance of environmental aspects in vegetable production, etc. However, in addition to these specific features, the state of the modern Russian vegetable market is characterized by a number of peculiarities and contradictory trends.

The most serious changes in this previously quite stable market occurred in August 2014, when Russia introduced retaliatory measures on the sanctions of some countries. These measures included a restriction on the importation of certain types of food to Russia from the countries of the European Union, as well as from the USA, Australia, Canada and Norway. Under the ban were deliveries, including vegetables. Thus, it became possible to use the situation in foreign trade for the occupation of a vacant market niche with vegetables of own production. However, a sharp increase in gross revenues for a short period is impossible, since a significant increase in production requires significant investment in the development of infrastructure, warehouse and production logistics. Therefore, in 2016, the gross harvest of vegetables in the Russian Federation amounted to 16.3 million tons, which corresponds to 105.5% of the average in 2012-2016 (15.4 million tons).

A distinctive feature of Russian vegetable growing is that a significant part of production is concentrated in the small-scale sector. The subsidiary farms of the population produced 10.8 million tons in 2016, which accounts for 66% of the total volume of vegetable production in Russia (an average of 68% in 2012-2016). This means that in the vegetable-growing industry there is a low level of marketability, since a significant part of the product is consumed by the producers themselves. The prevailing production in the households of the population creates certain problems in the assessment and analysis of the market, since the value of the gross collection level in the households of the population is determined with a low degree of accuracy.

Another distinguishing feature of Russian vegetable growing is that in Russia about 90% of the products are produced in the open ground. This is partly explained by the vast land resources, the lower capital intensity and the cost of production of open vegetable production, despite the much lower yields of the cultivated products. At the same time, in the Russian natural and climatic conditions, vegetables are produced in the open ground, which we attribute to the group of "traditional" (beets, carrots, cabbage, onions) historically enjoying the highest established demand in Russia. These types of vegetables have become widespread in our country and account for 58.3% of the gross collection of all open ground vegetables in Russia. The proportion of other vegetables, such as eggplant, Bulgarian pepper, radish, turnip, radish, etc. It is small and only 11.5%. The dynamics of production of the main types of vegetables is presented in Table 1.

Table 1: Production of open ground vegetables by types in all categories of farms, thousand tons*

	2012	2013	2014	2015	2016	2016 by 2012,%
Open ground vegetables, including:	13545	13506	14155	14702	14723	108,7
cabbage of all kinds	3315	3335	3499	3611	3626	109,4
cucumbers	1086	1068	1111	1130	1143	105,2
tomatoes	2208	2162	2300	2282	2366	107,2
beetroot	1008	1002	1070	1084	1098	108,9
carrots dining	1565	1605	1662	1781	1847	118,0

bulb onions	2081	1985	1994	2102	2023	97,2
garlic	239	233	256	255	262	109,6
zucchini	506	468	519	626	556	109,9
other vegetables	1465	1580	1644	1729	1700	116,0

**Here and further the data source is the Federal State Statistics Service (https://www.fedstat.ru/, http://cbsd.gks.ru/)*

RESULTS AND DISCUSSION

In the conditions of foreign trade restrictions (food embargo), there has been a significant increase in interest in horticulture of closed ground. This reflects a tangible growth in production indicators in agricultural organizations as the main producer of greenhouse vegetables. For the period 2012-2016. gross margin increased by 41%, with the most significant growth recorded in 2016 - by 13%. High growth rates of greenhouse production are due to the construction of new modern greenhouses, the reconstruction and modernization of obsolete ones, which became more affordable due to financing in the framework of state development programs. However, when measures of state support for vegetable growing of enclosed soil were introduced, the profitability of the industry was 15%. This allowed us to reach the payback of projects at the level of 7.5-8 years. Subsequently, due to the growth in operating expenses, profitability fell to 8%, and, accordingly, the payback period began to approach 12 years. Therefore, a slowdown in the rate of growth in the construction of greenhouses is possible.

Growing volumes of domestic production of vegetable crops caused some shifts in the consumption of fresh vegetables by the population, however, there is still a shortage of their consumption in Russia. In 2016, consumption was 16.4 million tons, or 112 kg per person per year, excluding industrial consumption. The recommended rate of consumption of vegetables and melons in Russia is 140 kg per person per year, so the total demand for vegetables in the country's vegetable crops is about 20 million tonnes. Industrial consumption is only 11% of domestic consumption, which indicates a low level of development of processing of vegetable products.

To date, the Russian population is provided with vegetables only by 80%, due to insufficient volumes of vegetable production in the country, introduction of foreign trade restrictions, low level of infrastructure development in the industry. Shifts in the balance of production and consumption of vegetables are presented in Table 2.

Table 2: Balance of production and use of vegetables and food melons, thousand tons

Indicators	2010	2011	2012	2013	2014	2015	2016
Resources							
Inventories at the beginning of the year	7009	6402	7516	7375	7387	7833	8169
Production	13278	16271	16079	16109	16700	17777	18041
Import	3158	3155	2806	2817	2548	2636	2321
Total resources	23445	25828	26401	26301	26635	28246	28531
Using							
Production consumption	1662	1876	1975	1996	1850	2136	2128
Losses	412	469	561	547	564	581	591
Personal consumption	14426	15106	15600	15713	16071	16259	16358
Internal consumption	16500	17451	18136	18256	18485	18976	19077

Export	543	860	890	658	640	1101	1217
Total used	17043	18311	19026	18914	19125	20077	20294
End of year reserves	6402	7515	7375	7387	7510	8169	8237
Level of self-sufficiency,%	81	93	89	88	90	94	95
Import consumption,%	19	18	15	15	14	14	12
Import dependency,%	24	19	17	17	15	15	13
Level of satisfaction of the physiological needs of the population,%	66	69	71	71	73	79	80

Thus, the import of products is a forced measure in the domestic market for fresh vegetables. The import of vegetable and tobacco crops in 2016 amounted to more than 2.3 million tons, based on this, the consumption of vegetable-grocery own production was 95 kg per person.

Import consumption, which reached 24% in 2010, decreased to 12% in 2016, but if we estimate only the market of marketable products (production excluding vegetables grown in the households for personal consumption and small retail sales), the share of imported vegetables in the structure Consumption will increase from 14% to 40%. Import of vegetables has declined significantly since 2010 (from 24% to 13%), but the segment of fresh vegetables has entered the leaders of agricultural products with the maximum level of dependence on imports and a significant volume of imports, namely: the share of imports of open ground vegetables is 30% Import of vegetables of protected soil - 45%. In 2015, the level of self-sufficiency in vegetable-and-cabbage crops was 95%.

According to the Federal Service of Statistics, domestic vegetable production dominates in the structure of Russian consumption, grown in the open ground. But in the off-season period, the consumption of imported products reaches 90% of the total consumption of vegetables. The total consumption of vegetables of protected soil was 2.6 million tons, or 16.4 kg per person per year, however, according to the authors, this figure can be overstated by production in the households and needs to be adjusted. Thus, the import of hothouse vegetables accounts for about 46%, and we are talking about fresh vegetables, which Russian consumers consume in the autumn-winter period until the new harvest.

Another trend of the last several years in the market under consideration is a decrease in the quality of consumption, including in connection with the fall in real incomes of the population (Figure 1).

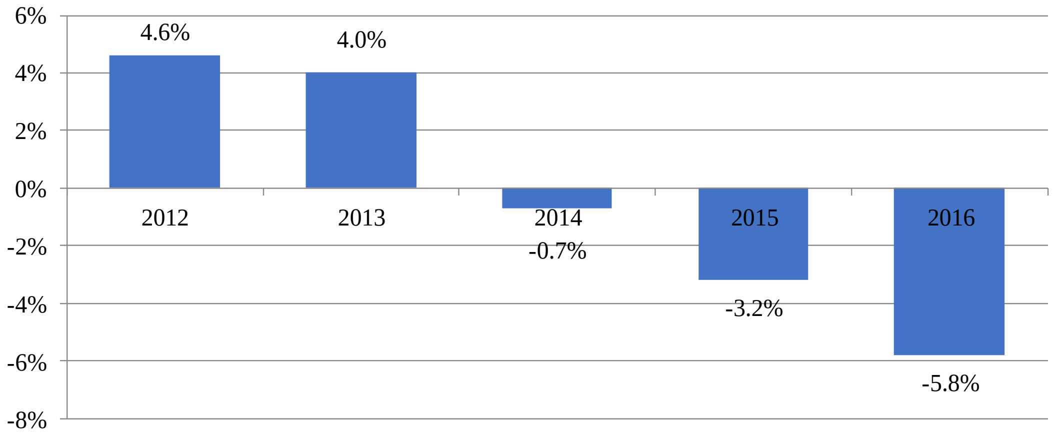

Figure 1: Real disposable income of the population in % to the previous year

This occurs in the form of switching to the products of the lower price segment. There is a significant increase in consumption of inexpensive vegetables from the "traditional" group: the most increased consumption of cabbage (an increase of 10% in physical terms), and beets (8.9%). The situation in the economy does not allow us to count on a rapid recovery in demand in food markets, which may be accompanied by a further shift in the structure of demand in favor of a cheaper segment, an increase in non-manufactured production for personal consumption.

The increase in domestic production of vegetables led to a certain decrease in prices in the domestic market. However, this applies mainly to vegetables of the "traditional" group (onion, cabbage, carrots - open ground vegetables with a long shelf life). This decline was observed in 2016, marked by record production of vegetables in Russia, while in 2015 there was a sharp jump in prices. For example, at prices for carrots and onions, the average growth in 2015 in relation to 2014 was 35.5% and 35.6% at producer prices, 50.7% and 18.1% at consumer prices. The reduction in prices in 2016 by 2015 amounted to 23.3% and 30.2% at producer prices, 20.9% and 20.3% at consumer prices of carrots and onions respectively. In addition, on carrots and onions in 2016 there is a smoothing of seasonal price fluctuations, after a sharp increase in the seasonal difference in 2015. Thus, the growth of vegetable consumption of the "traditional" group is caused by a decrease in prices for these types of products in the conditions of a fall in real incomes of the population.

The prices for cucumbers and tomatoes remained at low levels only during the harvest season. In conditions of inadequate production of cucumbers and tomatoes in greenhouses, as well as in connection with the fall in the volume of their imports, prices are kept at high enough levels, but the limited purchasing power of the population hinders the increased price growth. According to cucumbers and tomatoes, annual price increases are observed. It is noteworthy that in some months of 2016 producer prices were higher than consumer prices in 2014 and 2015. With respect to seasonal price fluctuations for cucumbers and tomatoes, the trend is reversed with respect to vegetables of the "traditional" group: price fluctuations are consistently increasing.

Thus, the influence of foreign trade factors on the situation of the Russian vegetable market has been and remains very significant. 5 years ago, vegetable products were among the leaders of food with the highest share of imports in the total volume of domestic consumption. Moreover, the bulk of imported vegetables accounted for the vegetables of the closed ground during off-season (up to 70% of greenhouse vegetables on the shelves of stores in the period of winter-early spring were of imported origin).

The situation changed after the imposition of a food embargo and the announcement of a course on import substitution. The total volume of imports of major types of vegetables to Russia in 2016 amounted to 1156 thousand tons, which is 51.4% or 594 thousand tons less than in 2015 and 111% or 1,289 thousand tons less than in 2014 year. So, following the results of 2016, there is a significant reduction in the volume of imports to Russia of almost all types of vegetables, except for zucchini, the import of which increased slightly - by 3.5% by 2015. Over the past 3 years, the import of eggplants decreased by 200%, cabbage - by 199%, onions by 186%, on cucumbers by 131%, by beets by 123%, by tomatoes by 118%, by radish by 110%, by carrots by 68%, by peppers by 54%, by vegetable crops by 23%, the import of garlic remained at the level of 2014. Import of vegetable products in Russia has a pronounced seasonality character with a peak of supplies in late spring: the deficit of modern vegetable stores in the territory of the Russian Federation makes it impossible to preserve the crop until the indicated period, and the lack of winter greenhouses does not allow to fully provide the population with vegetables of protected soil in the off-season.

Peaks of imports imported vegetables fall in March - June, in a three-year retrospective, the largest volume of imports of vegetables was produced in May 2014, the reduction in 2016 was 2.3 times. It should be noted that in this period more than 60% of imported vegetables are in tomatoes and onions.

Despite the reduction in imports of vegetables, imports have been and continue to be an important source of fresh vegetables for Russian consumers. The consumer basket of Russians includes a tangible share of imports: in Russia only 80 kinds of vegetables are grown from more than 600 known ones, which is explained by climatic conditions and consumption features. Thus, imported vegetables in Russia will always be, not only because of the backlog in technology and the lack of a material base. The main reason lies in the natural and climatic conditions: in winter there is not enough light in our country to grow quality vegetables in the required quantity.

A distinctive feature of the diet of Russians is seasonality and a limited range of consumption of vegetable crops, which determines the structure of imports of vegetables. In the structure of imports of vegetable products invariably the largest share is occupied by tomatoes, onion, carrots, cabbage and cucumbers. The assortment structure of import of vegetable products to the territory of Russia is quite stable at the attraction of 2014-2016.

In the import structure, the largest shares are occupied by tomatoes (36%) and onion (12%), cabbage of all kinds (8%), eggplants, cucumbers (9%). In view of the insufficient domestic production of greenhouse vegetables, there is an acute problem of providing the Russian population with products of protected soil during the off-season period, namely tomatoes, cucumbers, radish and green crops that have a short shelf life.

Foreign trade restrictions have made significant changes in the geography of countries exporting vegetables to Russia. If before the introduction of the food embargo about 35% of imported vegetables were imported from the territory of the countries of the European Union, then after the establishment of restrictive measures, a reorientation of supplies occurred. It should be noted that Turkey remained the key supplier of vegetables to Russia for a long time, in 2015 it provided 79% of the total volume of imports to Russia of tomatoes, 91% of courgettes, 31% of aubergines, and 25% of cucumbers.

The situation changed due to the ban on imports of fruits and vegetables from Turkey and Ukraine, which was introduced on January 1, 2016. Under the embargo, more than 60% of exports of products to Russia, in particular, tomatoes and cucumbers, onions, cauliflower and broccoli, peppers, eggplants, etc., fell. After the ban on import of Turkish products, imports decreased, which enabled domestic producers to increase their own production (primarily tomatoes).

Part of the import was redistributed among other supplier countries, in particular, between Morocco, Iran, Egypt and China. Thus, the share of such countries as Israel, Belarus and Azerbaijan in the total volume of vegetable imports to Russia has increased, China and Egypt have taken the position of the largest suppliers. It was these countries that proved to be in a favorable position after the imposition of the embargo (Figure 2). However, Russian agencies introduced other non-tariff measures. So, in autumn 2016 fruit and vegetable products from Egypt were banned, in which the Rosselkhoznadzor found violations of the quality requirements.

Turkey provided low prices for supplies with their large volume, and Russian producers lost to Turkish suppliers in price. Prior to the ban on imports from Turkey in 2016, this country was the main supplier of tomatoes to Russia because of relatively low prices. So, in 2015, the average price of Turkish tomatoes was $ 0.96 / kg, while Morocco's products cost $ 1.42 / kg, from China - $ 1.2 / kg. According to the evaluation of the National Fruit and Vegetable Union, Turkey has lost $ 2 billion only from the ban on deliveries of tomatoes to Russia.

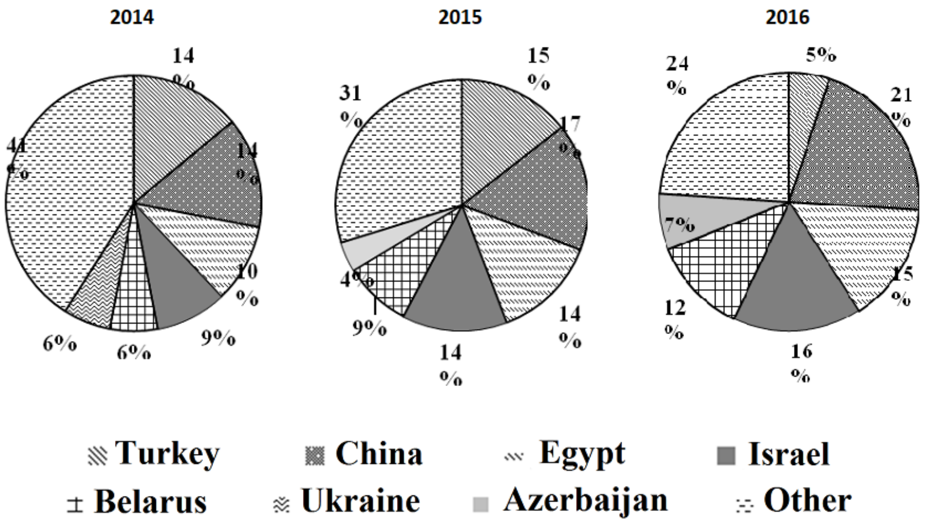

Figure 2: Structure of imports of vegetables in Russia by country

Source: FAO foreign trade statistics (http://comtrade.un.org/).

After import of vegetables from Turkey was banned, tomato production in Russia grew by 35%. In 2016 a record harvest of tomatoes was collected - over 290 thousand tons. The proportion of its production and imports has changed dramatically. If in 2012 own production of tomatoes was 17%, then in 2016 - about 40%. According to the data of the National Fruit and Vegetable Union, in 2016 Russia managed to replace cucumber imports by 80%, and tomatoes - by 40%, largely due to sanctions against Turkey: import of tomatoes after the introduction of the food embargo fell from 819 thousand tons in 2014 to the year before 406 thousand tons in 2016. Experts believe that if the current trend persists and support measures are strengthened within three to four years, Russia will be able to fully provide itself with tomatoes.

However, the threat to Russian vegetable producers is the fact that foreign products, in spite of logistical costs, are cheaper than domestic ones: for example, in December 2016, producer prices for tomatoes in Russia were 82.6 rubles per kilo, while imported tomatoes were 70.7 rubles / kg. The low cost of imported products is caused not only by the available technological advantages, but also by the fact that the imported goods are produced on subsidized farms, which makes it cheaper. It seems that domestic vegetable growers have to be in less favorable competitive conditions. In addition, the market is not protected from imported supplies by the customs mechanism: import duties do not exceed 15% for basic types of vegetables. For comparison, the import duty on poultry and pork is 80% and 75% respectively.

In connection with the crisis phenomena in the Russian economy, the cost of production of vegetables for agricultural producers has increased significantly (by more than a third) due to an increase in prices for seeds and machinery, fertilizers and plant protection products. According to the National Union of Vegetable Producers, the average growth in operating costs for open-air vegetable production in 2015 was 71%, while the average growth in producer prices was only 29%. Thus, the growth in production costs as a result of the fall of the ruble and inflation in 2015 exceeded the average increase in sales prices. This leads to a decrease in the already low level of profitability of production (9%) for domestic vegetable growers.

After the introduction of sanctions and embargo on the import of agricultural products in 2014, the vector of attention of state support turned to the vegetable-growing industry. In place of compensation for fertilizers, unrelated support came within the framework of the subprogram "Development of vegetable growing in open and closed soil and seed potato farming". However, the allocated funds do not reimburse in full the costs of mineral fertilizers, which have only risen by 50% in the past year, which causes a reduction in their volumes, and this, in turn, contributes to a reduction in yields.

In this regard, many experts are of the opinion that the dependence on the import of vegetables is not a matter of time, the availability of production capacities and government support, but the question of purchasing power and the ability of the producer to offer a product that satisfies it. If the mass consumer can not buy Russian products because of the high price, then the market will offer cheaper imports.

The change of importing suppliers contributes to the growth of prices for vegetable products caused by the transportation of off-season vegetables for long distances. In dynamics for 3 years the tendency of growth of statistical cost of import on key kinds of vegetables brought to Russia is traced, except for onions and carrots. The average growth rate for the types of vegetables in question in 2016 by 2014 was 46.5%, 2015 by 2014. - 33.2%. The largest increase was observed in cucumbers (54.9% over 3 years), tomatoes (51.8%) and eggplant (50.2%).

Decrease in the cost of imports for onions and carrots is explained by a decrease in imports of onions and carrots in 2016 by 2 times and by 21%, respectively, and by an increase in the domestic production of carrots by 3.7%.

It should be taken into consideration that part of the vegetable production in Russia is imported in the already processed form - frozen vegetables, canned and dried, the share of domestic products in the market of frozen and dried products is still small.

Most of the exporting countries that have fallen under sanctions faced the problem of overproduction and the inability to sell products, a sharp decline in domestic prices. This led to numerous attempts to transport vegetables from sub-national countries by forged documents or through "gray" transit and re-export schemes through the countries of the Customs Union. Smuggling with often questionable quality products

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distort competition in the Russian market. According to the data of the National Union of Vegetable Producers, the volume of contraband fruit and vegetable products, which is imported to Russia, bypassing the food embargo and restrictions of the Rosselkhoznadzor, is up to 1 billion rubles. in year. The embargo on the importation of products creates a "gray" corruption market, and the longer this ban works, the more perfect the mechanisms of this market become.

It should be noted that the export of vegetable crops from Russia is almost not carried out, and the main export destinations are the CIS countries, and the overwhelming majority of exported vegetables are vegetables of the "traditional" group.

CONCLUSION

Thus, we can state the following situation on the market of vegetable products: the volume of imports of vegetable products to Russia is significantly reduced, the geography of imports of imported products is dynamically changing, which leads to its rise in price due to the transportation of products over long distances. However, despite the increase in production of greenhouse vegetables, the dependence on import supplies of non-seasonal vegetables has not been overcome, the specific structure of vegetable imports is quite stable. The increased prices for imported vegetables make it possible to take a strong position for domestic vegetable growers in a competitive struggle with import producers, however, a significant increase in operating expenses does not allow growers to achieve high profitability indicators, which are necessary for expansion of production, since they are disproportionate to growth of internal Purchase prices for vegetable crops. Numerous violations of the food embargo regime weaken the effect of foreign trade restrictions. At the same time, the task of the agrarian sector today is not only to saturate the domestic market with food, but also to switch to the policy of export-oriented growth of domestic products.

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