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The main directions of state regulation of vegetable subcomplex in the Russian Federation in the period 2016–2018

ОСНОВНЫЕ НАПРАВЛЕНИЯ ГОСУДАРСТВЕННОГО РЕГУЛИРОВАНИЯ ОВОЩНОГО ПОДКОМПЛЕКСА В РОССИЙСКОЙ ФЕДЕРАЦИИ В ПЕРИОД 2016–2018 ГОДОВ

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Abstract

The vegetable growing sector plays a crucial role for the national economy, acting as a supplier of the most valuable food products for the country's population. Therefore, the purpose of this article was to analyze the current system of state regulation of the vegetable growing industry in the Russian Federation both at the federal and regional levels (for example, Perm Region) for the period 2016–2018. This goal requires the decision of following tasks: 1) analysis of the state budget policy of the vegetable growing industry at the federal and regional levels (for example, Perm Region); 2) analysis of vegetable subcomplex in the Russian Federation and Perm Region; 3) the study of the aggregate balance (consolidated market) of vegetable products at the federal and regional levels; 4) assessment of the effectiveness of the applied instruments of state regulation; 5) development of methods for improving the state of the vegetable growing industry and improving the system of its state regulation. The scientific research hypothesis is based on the assumption that the methods of state regulation of the vegetable growing industry influence the economic indicators of its development. The study analyzed the retrospective dynamics of vegetable production in the Russian Federation and Perm Region for the period 2016–2018. The structure of gross harvests of vegetables for all categories of producers is considered.

Аннотация

Отрасль овощеводства играет важнейшую роль для народнохозяйственного комплекса, выступая в качестве поставщика наиболее ценной продовольственной продукции для населения страны. Поэтому целью данной статьи явился анализ действующей системы государственного регулирования отрасли овощеводства в Российской Федерации как на федеральном, так и региональном уровне (на примере Пермского края) за период 2016–2018 годов. Достижение поставленной цели требует решения следующих задач: 1) проведение анализа государственной бюджетной политики отрасли овощеводства на федеральном и региональном уровне (на примере Пермского края); 2) анализ состояния овощепродуктового подкомплекса в Российской Федерации и Пермском крае; 3) изучение агрегированного баланса (консолидированного рынка) овощной продукции на федеральном и региональном уровне; 4) оценка результативности применяемых инструментов госрегулирования; 5) разработка методики улучшения состояния отрасли овощеводства и совершенствования системы ее госрегулирования. Гипотеза научного исследования строится на предположении о влиянии методов государственного регулирования отрасли овощеводства на экономические показатели ее развития. В ходе исследования

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проанализирована ретроспективная динамика производства овощей в Российской Федерации и Пермском крае за период 2016–2018. Рассмотрена структура валовых сборов овощей по всем категориям производителей.

Ключевые слова: отрасль овощеводства, овощепродуктовый подкомплекс, экспорт производства овощей, субсидирование овощепродуктового кластера, региональная целевая программа поддержки производителей овощепродуктов в Пермском крае.

Introduction

Economic science and management practices have always faced and today there is a permanently relevant problem – ensuring the economic security of the country, including its most important component – food security. In the context of the sanctions restrictions of Western countries regarding the economic potential of the Russian Federation and the response in the form of a food embargo, the urgency of the issues of ensuring the country's food security has become especially acute. At the moment, the country is practically saturated with the domestic market by domestic food commodity groups prescribed by Food Safety Doctrine of the Russian Federation (Decree of the President of the Russian Federation of 01.21.2020 No. 20 “On approval of the Doctrine of Food Security of the Russian Federation”, 2020). We are talking about such types of agricultural products as grain, meat, milk, potatoes, etc., significant types of export potential have even been formed for many types of agricultural products (National Report on the Implementation of the State Program for the Development of Agriculture and Regulation of Agricultural Products, Raw Materials and Food Markets in the Russian Federation, 2019). However, in relation to providing the population with fresh and physically and economically accessible vegetable products, the situation hasn't been improved.

And this is despite the fact that the vegetable subcomplex plays a decisive role in the domestic economy. Firstly, fresh vegetable products are of paramount importance in any modern system of rational and healthy nutrition of the population. G. I. Tarakanov and V. D. Mukhin note that the need for regular consumption of various vegetables is determined by their valuable composition and powerful positive effect on human health and appearance (Tarakanov, Mukhin, 2013). Secondly, the vegetable and vegetable subcomplex has been and remains a

significant agricultural component of the country's economy. A. Razin, O. Razin, M. Shatilov give statistics according to which the vegetable subcomplex provides up to 0.4% of Russia's gross domestic product, 9-10% of the gross value of agricultural products and up to 18-20% the cost of all crop production produced in the Russian Federation (A. Razin, O. Razin, M. Shatilov, 2018). It is necessary to take into account the most powerful multiplier effect from the functioning and development of the vegetable cluster, which applies to all sectors of the economy involved in the value chain of vegetable products. In view of the above, the development of the vegetable cluster is a strategically important task. The problem of the development of the vegetable cluster should be solved by setting target benchmarks approved at the federal level of regulation (State Program for the Development of Agriculture and Regulation of Agricultural Products, Raw Materials and Food Markets, 2019).

At the regional level, for example, in the Perm Territory, vegetable growing is an extremely important branch of the agro-industrial complex. O. I. Katlishin emphasizes that with the dominance of the dairy and livestock industries in agricultural production, growing vegetables is equated to growing potatoes (“second bread”), and is also a branch of regional specialization (Katlishin, 2017). Unfortunately, within the framework of the agro-industrial complex of the region, it is impossible and inexpedient to fully satisfy the regional needs of the population for fresh vegetables, which is due to the natural and climatic resource potential of the western Urals. M. M. Galeev expresses the opinion that the consumer market is not sufficiently developed in the regional assortment of vegetables (the so-called “borsch set”: beets, carrots and cabbage) (Galeev, 2008). Thus, the regional target program for the development of the agro-

industrial complex provides control standards that determine the progressive vector of the development of the subsector and activities that contribute to their achievement (Decree of the Government of the Perm Territory of October 5, 2014 N 1320 On approval of the state program "Development of agriculture and rural territories in Perm Region", 2019).

Based on the foregoing, the authors of this article consider it necessary to analyze the state of the industry in order to further improve the system of its state regulation. The study revealed a slight tendency to increase production volumes, mainly due to the efforts of peasant farms and agricultural enterprises. At the same time, the level of marketability of produced vegetables is still extremely low, and the lion's share of vegetable production is provided by personal subsidiary plots of citizens. As a positive point, the implementation of the planned reporting standards for the vegetable subcomplex laid down in the federal and regional development program was noted. As a result of the analysis, weaknesses in the development of vegetable growing were identified, conclusions were drawn up, and measures were proposed to improve state regulation of the vegetable growing industry.

Theoretical framework

In the framework of theoretical research, the authors used the generally accepted concept of the vegetable market and somewhat clarified the concept of a vegetable subcomplex in relation to the goals of their research. The vegetable market, following M. M. Galeev, is considered as part of the consumer market, and consists of such main components as demand, supply and price (Galeev, 2008). For the purposes of this article, it is the party that forms the proposal on the vegetable market that matters most, therefore, by the vegetable subcomplex we understand the interconnected system consisting of a set of suppliers of fixed and circulating assets for the production of vegetables, directly vegetable producers of various legal forms, food processing industry enterprises wholesale and retail trade network providing a permanent cycle of production, procurement, processing, packaging, transport storage, bookmarking, storage and sale, combining all types of activities for the cultivation and marketing of vegetables (Katlishin, 2017; Yarushina, 2019). Moreover, in the understanding of the authors, the central role in determining the vegetable subcomplex is given to the direct producers of vegetables, while the remaining links in the logistic vegetable chain field-counter are inherently providing or

infrastructural. This is one of the reasons why the authors are of the opinion that government support for the vegetable growing industry is necessary, because its development will provide a powerful multiplier effect on the development of the entire economy of the country. Based on the scientific opinions of A. T. Stadnik, S. A. Shelkovnikov, Y. V. Rudoy, D. M. Matveev, M. S. Petukhova, in the Russian Federation as a whole, one can note an increase in vegetable production with almost the same values of import and export (Stadnik, Shelkovnikov, Rudoy, Matveev, Petukhova, 2015).

In the course of the study, the authors analyzed the retrospective dynamics of vegetable production in the Russian Federation and Perm Region, as well as factors such as volumes and measures of state support influencing this indicator. The structure of gross production of vegetables for all categories of domestic producers was also considered, its dynamics arising from changes in both the area and yield of vegetables by type of producer. It is emphasized that, despite the current growth trend in the production and consumption of vegetables, as well as the fulfillment of the reporting standards for the vegetable subcomplex planned in the federal and regional state program, the consumption of vegetables per capita is only about 80% of the recommended by the Russian Academy of Medical Sciences level. V. Erokhin, A. Ivolga, W. Heijman note the fact that with the growth of the global vegetable market and the transformation of vegetable consumption standards outside the Russian Federation, the actual consumption of vegetables in individual countries per capita is several times higher than the average Russian level (Erokhin, Ivolga, Heijman, 2014). The authors of the scientific article conclude that the functioning of the Russian economy and its vegetable and food subcomplex under the conditions of sanctions leads to the need to solve the country's food security problem for vegetable products by domestic vegetable producers with the necessary adequate state support.

Materials and methods

The purpose of the research is to analyze the system of state support for the vegetable growing industry in the Russian Federation (at the federal and regional levels). When choosing the hypothesis of scientific research, the author dwelled on the assumption of the influence of state regulation methods of the vegetable growing industry on the economic indicators of its development. We are inclined to share the

scientific opinion of O. I. Katlishin, according to which the development of vegetable growing industry is impossible without a sufficient amount of government subsidies (Katlishin, 2017).

The goal is carried out by solving the following tasks:

- 1) analysis of state budget support for the development of the vegetable growing industry at the federal and regional levels;
- 2) systematization of economic indicators of the vegetable subcomplex in the Russian Federation and Perm Region;
- 3) detailing the aggregate balance (consolidated market) of vegetable products at the federal and regional levels;
- 4) assessment of the effectiveness of the applied instruments of state regulation;
- 5) the development of innovative state program for improving vegetable growing industry and state regulation system.

The object of the study is the vegetable-growing cluster and the system of its state support. The subject of the study was the methods and tools of state regulation of the vegetable growing industry and the market balance of vegetable products.

The empirical and informational basis for the article was data from federal and regional statistical agencies, documents from Ministry of Agriculture of the Russian Federation and Perm Region, the regulatory framework for state regulation of agro-industrial complex, and Internet resources on the research topic.

In preparing the article, general scientific research methods were involved: abstract-logical, dialectic, comparison method, induction method, monographic method; special research methods: balance method, economic and statistical method, retrospective analysis of the growth dynamics of economic indicators.

Results

In recent years, the aggregated Russian market has seen a trend of growth and a general increase in the resources of vegetable products. In 2018, the gross production of vegetables in Russia amounted to 15655 thousand tons, which is equivalent to an increase of almost 4% over three years. A natural consequence of these trends has been an increase in vegetable resources by 2% or 144 thousand tons. In other words, the supply of goods in the vegetable market is growing due to the growth in the production of domestic vegetable products. The resource balance of the vegetable cluster in the Russian Federation is based on the analysis of agricultural activities and food resources in the period 2016–2018 (Agriculture and food resource balances, 2019). It is demonstrated in Table 1.

Table 1. Resource balance of vegetable products in Russia, thousand tons, %

Indicators	2016 г.	2017 г.	2018 г.	2018 г./2016 г.	
				+/-	%
Stocks of vegetables at the beginning of the year	7187,3	7098,6	7331,4	144,1	102,0
Gross harvest of vegetables	15064,4	15426,7	15655,2	590,8	103,9
Import of vegetable products	2636,3	2310,0	2633,6	-2,7	99,9
Total vegetable produce resources	24888,0	24835,3	25620,2	732,2	102,9
Total consumption	17240,7	17615,8	18017,8	777,1	104,5
Losses during storage, etc.	510,4	511,5	540,0	29,6	105,8
Export of vegetables	269,1	248,0	254,0	-15,1	94,4
End of year stocks	7098,6	8237,4	7348,4	249,8	103,5

Accordingly, with the growth of vegetable stocks and resources in Russia, the physical and economic opportunities for their consumption increase. During the period under review, domestic consumption of vegetable products showed an increase of more than 777 thousand

tons, or almost 5%, which indicates an improvement in the country's food security level for vegetable products (Agriculture and Food Resource Balances, 2019). Unfortunately, the vegetable growing industry is not assigned to the priority list of industries with export potential.

Consequently, the vegetable cluster doesn't receive export government support.

Nevertheless, the level of self-sufficiency of the country with vegetable products is approaching 90%, except for regional indicators (including Perm Region). At the regional level, the self-sufficiency of vegetables doesn't exceed 75-80%, and the consumption of vegetables per capita is less than 110 kg / year.

Given the above, we note that in the system of state regulation of the agricultural sector, a sub-sector of vegetable cluster is not distinguished. A fuzzy policy to support the production of fruits and vegetables is expressed in insufficient attention to the sub-sector of crop production (formalized in connection with the entry into the WTO). The immaturity of the state program for adaptation of the fruit and vegetable cluster is offset by stimulation of investments in the agricultural sector (direct state co-financing of modern agricultural machinery; popularization of preferential credit and leasing programs), support for investment in the restoration of land reclamation, etc. About 249 billion rubles are

allocated annually for budgetary support of the agricultural sector from the federal budget (about 4 billion dollars). About 90–100 billion rubles goes to the development of crop production. Calculating the amount of budget allocations aimed at developing the vegetable growing industry is quite difficult. However, we note that the amount of budget subsidies is very significant. In particular, every year money is allocated from the state budget for the construction of 350 vegetable stores (with a volume of more than 1 million tons) and modern energy-saving greenhouses, for the purchase of high-performance agricultural machinery designed for processing vegetable crops. State support measures for agricultural producers were outlined in Government decree of Perm Region, October 5, 2014 (Government decree of Perm Region, October 5, 2014. N 1320. On approval of the state program "Development of agriculture and rural territories in Perm Region", 2019) and in State program for the development of agriculture and regulation of agricultural markets, raw materials and food (State program for the development of agriculture and regulation of agricultural markets, raw materials and food, 2019) (Figure 1).

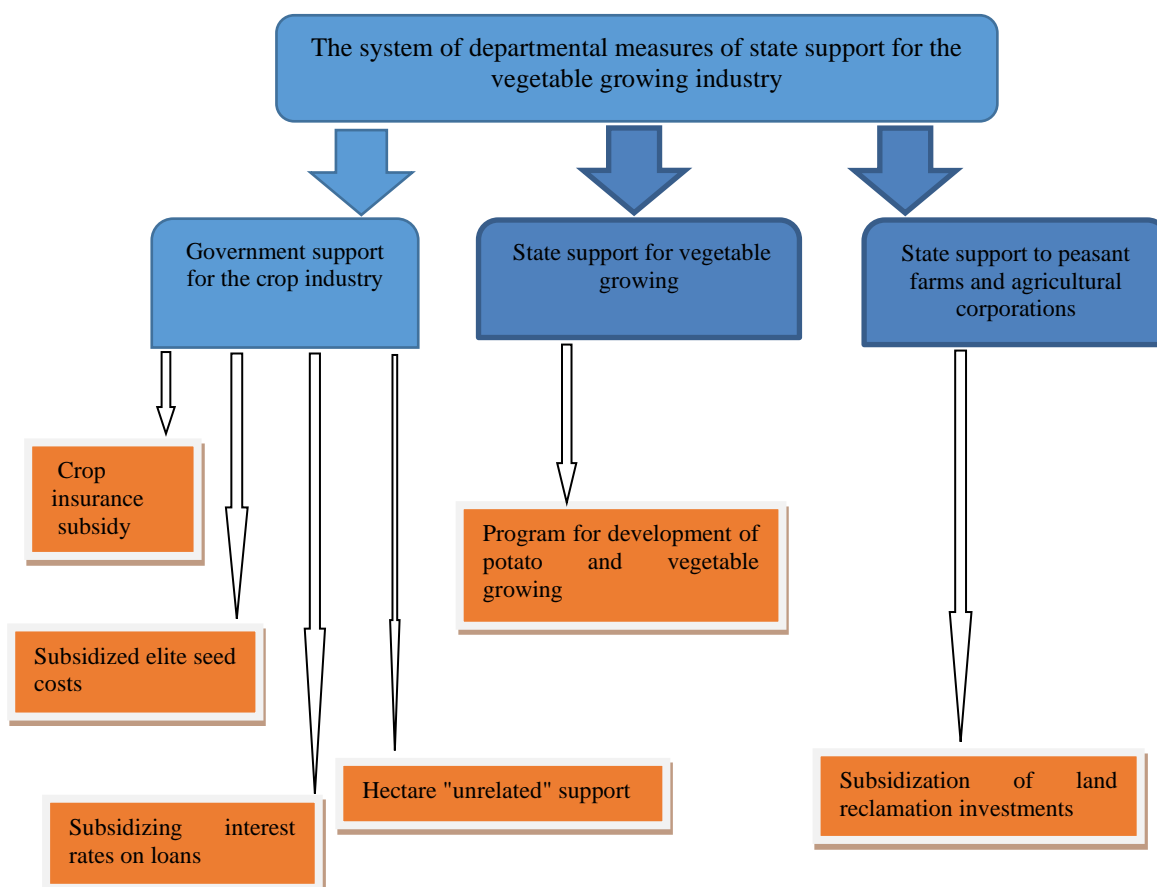


Figure 1. State support policy of vegetable industry in Russian Federation

The most effective tools for vegetable growing industry is the regional program, under which up to 30% of the farmers costs for the construction of warehouse facilities for processing and storage of fruits and vegetables, as well as the purchase of machinery and equipment for vegetable growing is refunded (Ministry of Agriculture and Food of the Perm Territory, December 6, 2013, № SED-25-01.1-02-233. On the approval of the economically significant program “Development of the industry of potato growing and open field vegetables in 2014-2015 and for the period until 2020”, 2020). The subprogramme has received support from the two largest producers of potatoes and vegetables in the region - OOO Truzhenik and OOO Karievo. Also, annually, several investment projects are

implemented in the region to create or restore land reclamation facilities in agricultural enterprises. These government measures ensure the growth of vegetable production in Perm Region.

The above measures are designed to develop a vegetable subcomplex at the regional level and to ensure the implementation of the following regulatory indicators. Table 2 presents the annual report (2018) of the agricultural production support program in Perm Region (The annual report on the implementation of the state program “State support for the agricultural sector of Perm Region” for 2018, 2019).

Table 2. Quantitative indicators of vegetable industry development in Perm Region

Target indicators		Years		
		2016	2017	2018
Gross harvest of vegetables (except personal households), thousand tons	forecast	17,0	22,0	24,6
	fact	20,5	25,0	25,8
	overfulfillment	3,5	3,0	1,2
Sales of vegetables by organizations and peasant farms, thousand tons	forecast	7,6	7,7	7,7
	fact	7,6	7,7	8,0
	overfulfillment	0,0	0,0	0,3

The regional agricultural production support program provides the implementation of two planned indicators: gross harvest of vegetables; sales of vegetables by organizations and peasant farms. If we evaluate the ratio between these indicators, the marketability level of vegetables grown in the region will not exceed 30-37%.

The federal state program for agro-industrial complex development also provides a planned indicator. For example, in 2018, the gross harvest of vegetables in the country was to amount to 4483 thousand tons. Actual collection exceeded

this value by 11.6% and amounted to 5004.9 thousand tons.

In general, an analysis of the productivity of the vegetable subcomplex on the territory of the Russian Federation demonstrated a protectionist state policy, which resulted in an increase in the growth of agricultural organizations specializing in the vegetable subsector. Quantitative indicators of vegetable production for the period 2016–2018 are recorded in Table 3 (Official statistics. Agriculture, hunting, forestry, 2019).

Table 3. Gross production of vegetables in the Russian Federation for 2016–2018, thousand tons, %

Indicator	2016	2017	2018	2018 г/2016 г	
				+/-	%
Farms of all categories	13 111	13600	13685	574	104,4
Agricultural organizations	2 893	3232	3581	688	123,8
Households	7 791	7 782	7 545	-246	96,8
Peasant (farm) enterprise	2427	2586	2559	132	105,4

We can observe that the highest growth rate of vegetable productivity is noticeable in the time period 2016–2018. According to estimates by A. A. Yarushina, the production of vegetables and peasant farms are intensively increasing (growth at the level of 5.4%), while in 2018 production decline was allowed for this category of producers (Yarushina, 2019). The state agribusiness development program stimulates an

increase in the supply of vegetable products to the consumer market, sold by large agricultural holdings and medium-sized enterprises. Personal subsidiary plots are not supported by state regulation measures. The volume of production of vegetable products by agricultural enterprises of various types is displayed in Figure 2 (Official statistics. Agriculture, hunting, forestry, 2019).

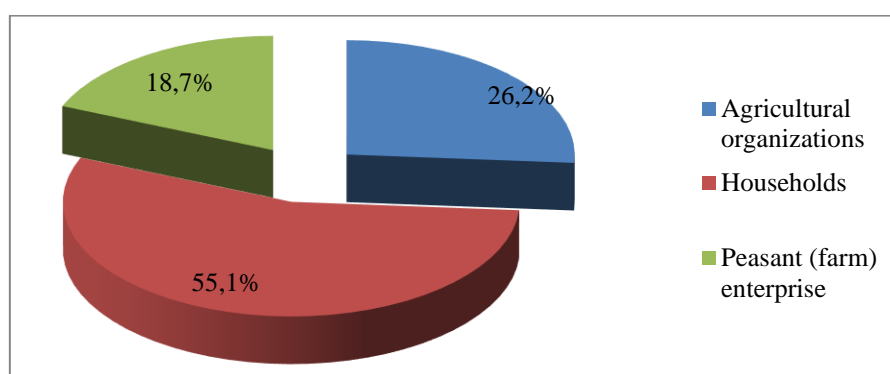


Figure 2. Gross harvest of vegetables in the Russian Federation by households of all categories, 2018

In Perm Region state regulatory measures contribute to the emergence of positive trends in the vegetable growing industry. An effective state regional program for subsidizing agricultural enterprises allows achieving high production indicators. The dynamics of gross vegetable production of all categories is

calculated on the basis of annual report analysis (2018) on the implementation of the state support agricultural program of Perm Region and is shown in Table 4 (The annual report on the implementation of the state program “State support for the agricultural sector of Perm Region” for 2018, 2019).

Table 4. Gross production dynamics of vegetables in Perm Region for 2016–2018, thousand tons

Gross vegetable production	2016	2017	2018	2016/2018	
				+/-	%
Total	136,1	138,1	147,0	10,9	108,0
Agricultural organizations	10,8	11,7	11,7	0,9	108,3
Households	114,1	111,6	119,9	5,8	105,1
Peasant (farm) enterprise	11,3	14,8	15,4	4,1	136,3

In contrast to Russian trend, in Perm Region there is a high growth in vegetable production in small businesses – peasant (farm) enterprise. The growth in vegetable production during 2016–2018 was 36%. Over the same period, the gross growth in the collection of vegetables in agricultural enterprises amounted to 8.3% (Official statistics. Agriculture, hunting, forestry, 2019). Today, farmers produce almost a third more vegetables than agricultural organizations.

Due to existing trends, the structure of harvest vegetables by category of farms is changing. However, the annual report (2018) of the implementation of the support program for Perm agricultural producer testifies a fairly large number of vegetable products grown on personal subsidiary plots (The annual report on the implementation of the state program “State support for the agricultural sector of Perm Region” for 2018, 2019) (Figure 3).

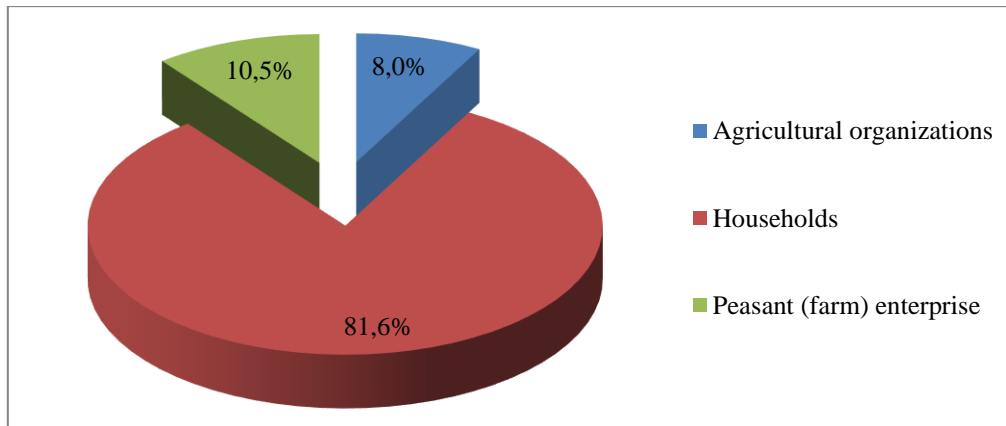


Figure 3. The structure of gross harvest vegetables by category of households

Private farms cannot adequately contribute to the development of the vegetable growing sub-sector in Kama region. The reduction in planting space and the insufficiently high dynamics of growth of vegetable crop yields in private household plots level the effectiveness of the state anti-sanction policy. Unlike private household plots, farms are expanding their planting area with a stably high yield. Finally, agricultural enterprises expand their planting area and achieve growth in vegetable productivity, approaching the indicators in peasant (farm) enterprise.

Discussion

The issue of state vegetable industry regulation is reflected in the scientific works of A. T. Stadnik, Y. V. Rudoy, D. M. Matveev, M. S. Petukhova (Stadnik, Rudoy, Matveev, Petukhova, 2015). From the point of view of A. T. Stadnik, Y. V. Rudoy, D. M. Matveev, M. S. Petukhova, the cost-effective functioning of agricultural enterprises is impossible without comprehensive state support measures (Stadnik, Rudoy, Matveev, Petukhova, 2015). V. Erokhin, A. Ivolga, W. Heijman also adhere to this scientific opinion. V. Erokhin, A. Ivolga, W. Heijman declare that the development of vegetable industry in Russia should be carried out in the framework of cooperation between WTO member countries. According to scientists, the economic course of supporting domestic agriculture on an international scale will contribute to the liberalization and systematization of trade and political relations both within the Russian Federation and in the countries that joined WTO (Erokhin, Ivolga, Heijman, 2014).

The current state of the vegetable market in the Russian Federation is assessed by S. Miller

(Miller, 2019). S. Miller notes that in 2019 in Russia there was an increase in prices for vegetable products (Miller, 2019). According to S. Miller, in a strategic perspective, the consumption and production of vegetables both in the Russian Federation and abroad will grow. This scientific idea is justified by economic indicators, namely the difference between the potential (according to the recommended standard) and the real demand for vegetable products per capita within the Russian Federation.

Conclusions

The vegetable growing sector in the Russian Federation and Perm Region is developing under conditions of state subsidies at both the federal and regional levels. Due to the functioning of state programs, quantitative indicators of vegetable production are growing. There is an increase in planting area, which contributes to increased productivity. The transformation of microstructure vegetable industry is carried out by supporting agricultural enterprises and farms. The result of an effective policy to popularize the vegetable-growing agricultural sector is an increase in per capita consumption of fresh vegetables.

Perm Region vegetable cluster is being modernized in the context of state support measures for agriculture. The agricultural vegetable industry demonstrates an increase in gross harvest due to expansion of sown areas in peasant farms and vegetable-growing enterprises. The structure of agricultural production is being transformed into categories of farms. Farmers exceed the production indicators of personal subsidiary plots and fully satisfy the general needs of vegetable products.

Nevertheless, the share of vegetables produced in personal subsidiary households (Perm Region) is incomparably higher than the national average.

Assessing the state of vegetable industry on a global scale, we note that while maintaining the sanctioned foreign economic regime and the internal system of state regulation, positive dynamics will continue. However, within 10–20 years, the norm of the required consumption of fresh vegetable products per capita will not be achieved. In the author's opinion, for the comprehensive development of the vegetable industry, a political decision is needed to popularize the vegetable cluster in the concept of modernization of the national economy of the Russian Federation. One of the possible ways to overcome the crisis of rural economy is the legal regulation of the vegetable production sector. The regulation of norms and production indicators of the vegetable growing industry at the legislative level will provide budget financing in a proportion adequate to the share of total agricultural production. Additional measures may include government projects aimed at fixing budgetary allocations of farms and agricultural holdings.

An important step in stabilizing the agricultural vegetable sector in the Russian Federation may be government policy aimed at reducing the consumption of imported products. The implementation of this program provides for an increase in exports of certain types of vegetables and products of their processing, as well as the promotion of vegetable products to foreign markets. The expansion project of vegetable products requires measures aimed at licensing vegetable agricultural enterprises at the federal level. In addition, the state should direct its efforts to the development of "green" vegetables and to create high-quality goods recognized abroad.

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