

## POTENTIAL MARKET CAPACITY AS THE BASIS FOR THE DEVELOPMENT OF ORGANIC PRODUCTION IN THE RUSSIAN FEDERATION

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### **Abstract**

*The promotion of a healthy lifestyle and objective necessity stimulate a significant growth in demand for organic products around the world. Despite the relevance, demand, and a large number of theoretical and applied research, the opportunities and resource potential of the Russian Federation in this area of agribusiness have not yet been fully identified. As part of our research, was formed interdisciplinary fundamental platform for developing the theory of organic food market. As a result, we determined the elements of scientific methodology (theories, principles, factors, methods) of its functioning, which allowed justifying the potential capacity of the consumer market of organic food in Russia. The calculation was made taking into account dietary intake of food that meet the present-day requirements of healthy nutrition, heterogeneity of consumer preferences, price gap for the staple conventional and organic products in retail and price variance for the latter. Our research is addressed to the world business community operating in the organic food market and industry research institutions.*

**Key words:** organic products, organic market, food market, market capacity

### **INTRODUCTION**

The food market at the present stage shows an obvious focus on the growth of the organic segment around the world. A large number of publications in recent years are devoted to various aspects of the functioning of organic food market in describing the results of sociological studies at various scales (from focus-group surveys to national ones, including online shopping), aimed at identifying typical characteristics of a group of potential consumers, motivation when making a purchase decision and the level of the expected price (Magnusson, Arvola, Hursti etc., 2003 [15], Hjelmar, 2011 [10], Xie, Wang, Yang etc., 2015 [26], McCarthy, Liu & Chen, 2016 [16], Aschemann-Witzel & Zielke, 2017 [3], Singh & Verma, 2017 [22], Zhang, Fu, Huang etc., 2018 [27], Bryla, 2018 [5]). Issues of quality and safety, complexity of certification procedures and costs, labeling recognizability, trust to the brand and their influence on willingness to pay (WTP) remain relevant (Krystallis & Chryssohoidis, 2005

[12], Janssen & Hamm, 2012 [11], Leksina, Popova & Sapogova, 2014 [14], Bryla, 2016 [4], McFadden & Huffman, 2017 [17], Serdobintsev, Leksina, Chernyaev, etc., 2020 [21]).

The main barrier, that holds back the growth of organic products consumption, is its high price and lack of availability (Aertsens, Mondelaers, Verbeke etc., 2011 [1], Buder, Feldmann & Hamm, 2014 [6], Aschemann-Witzel & Zielke, 2017 [3]).

Despite a large number of fundamental and applied research and publications, until the present the opportunities and resource potential of the Russian Federation in this area of agribusiness have not been identified, and it is possible to state the demand for an objective assessment of development prospects of organic market. The accelerators for this process are the global changes in the institutional sphere from January 1, 2020 due to the entry into force of Federal law № 280-FZ "On organic Products and Amendments to Certain Legislative Acts of the Russian Federation"[8] and the Interstate standard

GOST 33980-2016 "Organic production. Production regulations, processing, labeling and sales" [23]. These are the first legal documents in the history of the country's development drafted for regulation and legalization of organic business.

In this regard, our research is unique, since it is an attempt to identify prospects for the formation of the organic market in Russia through its transformation from a segment of the food market to an independent market based on an assessment of its potential capacity. The calculation was made taking into account dietary intakes of food that meet

the present-day requirements of healthy nutrition, heterogeneity of consumer preferences, price gap for the staple conventional and organic products in retail and price variance for the latter.

## MATERIALS AND METHODS

We have solved the problem of scientific justification of the possibility and expediency of forming the Russian organic products market by developing it from the segment of the food market.

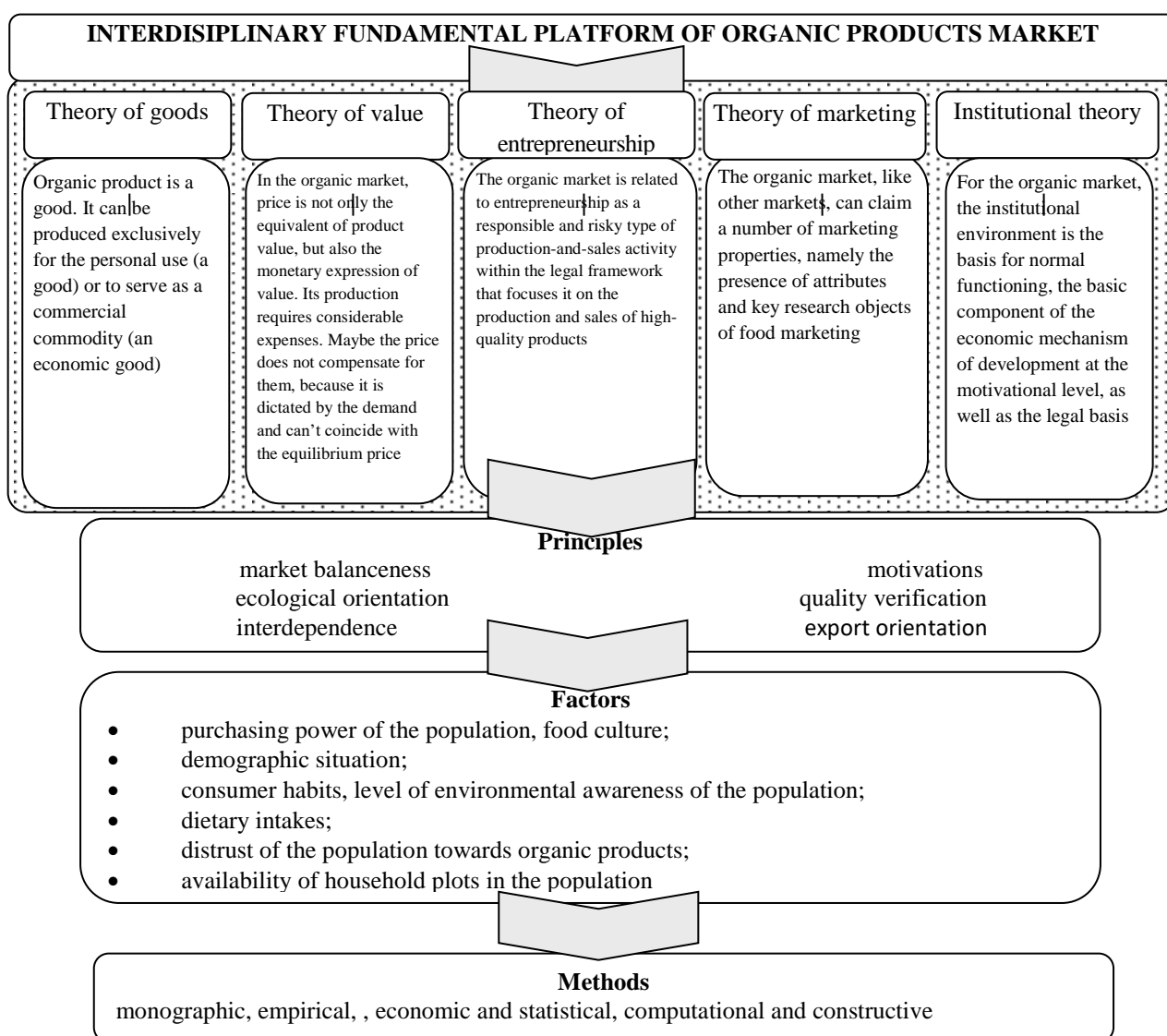


Fig. 1. Theoretical-and-methodological basis of development of food market for organic products  
 Source: own elaboration.

For this purpose, we have investigated current methodological approaches, organizational-and-economic mechanisms (Leksina, 2019)

[13], a system of theories of values and planned behavior (Aertsens, Verbeke, Mondelaers, etc., 2009) [2], as well as the

priority hierarchy of theories in logical relationship with the development of the theory of organic market (Rushitskaya, 2019) [20], and finalized to the interdisciplinary platform (Fig. 1).

It contains fundamental theories (of goods, value, entrepreneurship, marketing and institutional), principles (market balanceness, social orientation, interdependence, motivation, quality verification and export orientation), factors (purchasing power of the population, demographic situation, dietary intakes, etc.) and methods (monographic and comparative analysis, empirical, computational-and-constructive, economic-and-statistical, modeling).

In accordance with a new paradigm of the current economic system, development of the theory of organic food market (hereinafter – organic market) is recommended to be considered at an interdisciplinary level, which will allow connecting it with other theories. It should be noted that this relationship is manifested and strengthened against the background of ongoing institutional changes. Since the institutional subsystem as the macroeconomic basis of the market development mechanism builds a system of corresponding requirements for the production technologies, storage and sales of products by improving the legislative framework, therefore it is acceptable to assume that the institutional theory forms the necessary prerequisites for the diffusion of other known theoretical propositions into the theory of the market under study in the framework of a disciplinary approach.

At the same time, an important place is given to other theories logically related to the food market. In relation to the theory of goods, organic agricultural food products are considered as an object characterized by an immanent ability to meet human needs for sound-quality food products and a bifurcational orientation: in the market, they act as a commodity called an economic good, and being produced exclusively for personal use becomes just a good. Thus, the economic aspect of this concept connects this theory with the food market, through which quality food products are sold.

Examining the value of organic products in the neoclassical interpretation, it can be identified with the equilibrium price, making an adjustment for the "non-conformity to utility" of the considered good to its value. The latter is traditionally expressed in monetary terms, while the value illustrates the significance of the good for the consumer. At the same time, the price of organic products on the market acts not only as an equivalent of its value, but also as a monetary form of value. Often, products produced in accordance with organic standards are characterized by a higher cost than conventional ones. At the same time, low purchasing power of the population, food culture and consumer habits determine the demand and the level of market prices which do not coincide with the equilibrium ones. As a result, they do not always compensate for the cost of production of organic products. Thus, from the point of view of producer, the value is represented in the form of stable and high demand, and in the opinion of the consumer – in the form of a possibility of achieving satisfaction from the purchase of organic products.

In accordance with the theory of entrepreneurship, the functioning of the food market of organic products involves the implementation of business activities, the institutional basis of which is the regulatory framework. Strict adherence to the latter is manifested in the production and sales of high-quality products, which, in turn, determines the need for the presence of entrepreneurial abilities.

From the point of view of the theory of marketing, we consider it possible to apply the provisions of food marketing in relation to the processes of production, promotion and sales of organic food products, taking into account the presence of attributes and key research objects. Thus, this theory approaches to the theory of the agricultural market, which includes three main markets: land, food and labor ones.

Considering the organic market in the framework of the institutional theory, it should be noted that the institutional environment is the basis of its normal functioning, a substantial element of the

economic mechanism of its development in the motivational aspect, arising from the influence of the institutes of insurance, taxation, credit, state support, etc. on market actors. It is also important to note that this is also the legal basis that formalizes the relations of market actors regarding the level of quality of organic products. The Russian organic market shows high rates of development: the area of land certified for

organic production increased from 34 to 657 thousand hectares (for the period 2007-2017), the number of agricultural producers - from 12 to 89, processors - from 4 to 69, retail sales of organic products in domestic markets increased 4 times (amounted to EUR 120 million), 28 organizations-exporters are operating, and the volume of exports increased from EUR 0.2 million to EUR 4 million (Table 1).

Table 1. Dynamics of the key indicators of the organic products market in the Russian Federation

Market element	Years				2017 to 2007, times	2017 to 2016, %
	2007	2015	2016	2017		
Number of producers of organic products (raw materials)	12	82	66	89	7.4	134.8
Number of processors of organic raw materials	4	37	35	69	17.3	197.1
Number of exporters	...*	11	11	28	x	254.5
Number of importers	12	...*	...*	...*	x	x
Area of land certified for organic production, thousand hectares	33.8	385.1	315.2	656.9	19.4	208.4
Share of land certified under organic production in the total volume of agricultural land, %	0.02	0.18	0.14	0.30	+0.28 pp	+0.16 pp
Consumption of organic products per capita, EUR/person/year	...*	0.80	0.80	0.80	x	100.0
Retail sales of organic products in domestic markets, EUR million	30.0	120.0	120.0	120.0	4.0	100.0
The volume of export, EUR million	0.2	4.0	4.0	4.0	20.0	100.0

Source: own calculation according to FiBL [9]. Note: \* Lack of data.

The current state of the Russian agricultural food market can be characterized by the following dynamics: the largest segments of the organic food market are "Milk and Dairy products", "Vegetables and Fruits", while "Meat, Poultry", "Bakery products" and "Beverages" are growing rapidly (Lyubovedskaya, 2019) [25]. The Central, Southern, and Volga Federal districts (Krasnodar krai (territory), Yaroslavl and Moscow regions, as well as the Republic of Tatarstan) are the leaders in organic production in the Russian Federation. For example, the Republic of Tatarstan has adopted the program "Development of Agricultural Production and Creation of an Innovative Cluster "Ecopitanie", for the first time in the country, territories were ranked

according to the degree of readiness for transition to organic production. As of today, the list of Russian certified organic producers who voluntarily provided information about their activities to the National Organic Union includes 82 organizations, most of which have a certificate for the production of crop products. Only 9 of them declared the production of organic livestock products: 7 – dairy, 5 – meat (including from the first nine), 2 – baby food. Most of them are concentrated in the Kaluga and Yaroslavl regions [18]. The Volga Federal district is represented in this list by 9 organizations, but its potential for production and domestic consumption is much greater. We have studied one of its typical agricultural regions – the Saratov region (part of the Volga

Federal district and the Volga economic district, the total area – 101.2 thousand sq. km, population – 2.4 million people, 10th place among Russian regions in terms of agricultural production, agricultural land – 8.4 million hectares). Most of agricultural producers of the region specialize in the production of grain and sunflower.

Statistical information on the volume of production and domestic consumption of organic products is not provided in official sources, but this does not mean that the products are not available in the region. Local producers were not able to obtain the necessary documents in the unavailability of quality proof procedures. And those that are certified according to foreign standards, faced with a cancellation of all previously received certificates for the products intended for the Russian market after the entry into force of Federal law № 280-FZ "On Organic Products and Amendments to Certain Legislative Acts of the Russian Federation" of 01.01.2020 [8].

The certificates can be collected again only in the organization that is accredited to carry out organic certification according to the Interstate standard GOST 33980-2016 "Organic products. Rules of production, processing, labeling and sales" [23] in the Federal Accreditation Service (Rosaccreditation), for the moment it is OOO "Organic expert" (certificate number RA.RU.10HB01).

To diversify the development of rural areas, the contribution of organic crop production is important, in particular, through the use of crop-and-grass rotation farming, and development of organic production in protected natural areas. The region is a border area, so an effective sales channel is the exports of crop products (Nesmyslenov, 2019) [19]. 6 suppliers of organic grains, legumes and oilseeds were revealed as exporters in the region (Table 2). The farms producing certified organic livestock products have not been identified.

Table 2. List of exporters of certified organic products of the Saratov region

Exporter	Type of product	Certificate of quality	Exports destination
OOO «Idolga Agro» (Tatishchevsky district)	cereals, legumes, oilseeds	Organic standard (Ukraine), EU Organic equivalent to EU Regulation (EC) № 834/2007 and № 889/2008	Europe
OOO «RosAgroSaratov» (Saratov district)	cereals, legumes	A CERT	Europe
Sergey Vilademirovich (Balakovskiy district)	barley, chickpeas, oats, rapeseed, sunflower, wheat, lolium (ryegrass)	ECOCERT EU Organic equivalent to EU Regulation (EC) №834/2007 and №889/2008, NOP	Europe, USA
IE «Vyazov Victor» (Ekaterinovskiy district)	flax, sunflower, poppy, mustard, millet	Ceres (Germany)	Germany
OAD «Selkhoztekhnika» (Perelyubskiy district)	red and green lentil, flaxseed, rapeseed, peas, wheat, corn, sunflower	IMO (Switzerland), EU Organic equivalent to EU Regulation, № 834/2007 and № 889/2008, USDA NOP	Europe, USA
Sokolov Alexander Vladimirovich (Perelyubskiy district)	corn, flax, soy, sunflower, winter wheat	ECOCERT EU Organic equivalent to EU Regulation (EC) № 834/2007 and № 889/2008, NOP	Europe, USA

Source: own elaboration according to National Organic Union [18].

## RESULTS AND DISCUSSIONS

According to the results of the author's study of the retail market of the city of Saratov, it can be noted that products of ecological farms are in guaranteed demand among the solvent part of the population with incomes above the average

(Chernyaev, Serdobintsev & Aleshina, 2019) [7]. A number of health food stores are already operating, including chain stores: "Shpinat", "Olivkovaya roshcha", "Svoje khozyajstvo", "Ovsyanka", "Pyaty urozhai", and "VkusVill". Products in such stores are usually significantly more expensive than their analogues, and this

pricing policy significantly narrows the circle of potential consumers. The increase in demand is observed during periods of religious fasts, when customers try to diversify their menu. In Europe, the difference in the price of organic products and analogues produced using conventional technologies ranges from 15% to 50%; in Russia this indicator often reaches a value of more than 300%. There is a problem of pricing, which, together with the modest incomes of the population, causes low effective demand. In addition, according to store employees, the concept of "organic products" is not yet familiar to consumers. They do not differentiate between the terms "organic",

"natural" or "eco-friendly". In addition, today the issue of greenwashing and falsification is acute. There are practically no organic products in the market the quality of which is confirmed by the relevant certificates.

The developed methodology for calculating the potential capacity of the organic market is based on determining the cost of a food basket formed in accordance with the dietary intakes in energy and nutrients (based on the Order of the Ministry of Health of the Russian Federation № 614 of August 19, 2016 "On Approval of Recommendations for Rational Consumption of Food Products that Meet Current Requirements of Healthy Nutrition" (Table 3).

Table 3. Comparison of the cost of a monthly food basket of staple conventional and organic products (according to the recommended dietary intake in energy and food nutrients) in the Russian Federation

Product category		Cost of a monthly standard basket in the consumer market (according to the Federal State Statistics Service of the Russian Federation [24] as of 13.01.2020), EUR	Cost of monthly standard basket in the online stores of organic products, EUR	
			min.	max
Meat	beef	8.50	21.41	27.32
	pork	5.73	14.22	15.78
	lamb	1.34	4.98	5.85
Poultry	meat	5.37	21.83	25.54
	eggs	15.17	44.86	110.73
Fresh-frozen fish	Alaska pollock	4.54	6.81	11.35
Dairy products	milk	7.56	18.90	38.70
	butter	1.52	3.71	9.24
	sour cream	0.79	2.32	8.66
Bread products		4.96	43.20	66.56
Sunflower unrefined oil		1.30	12.21	37.35
Cereals	buckwheat	0.17	0.86	1.72
	millet	0.16	0.83	2.70
Vegetables	potatoes	2.40	15.30	27.38
	carrot	0.57	1.49	10.37
	white cabbage	1.03	2.40	6.56
	onion	0.30	0.79	3.03
Fruits	apples	6.30	10.93	16.35
Sugar	beet	0.98		
	cane		21.02	42.04
Sault	table	0.05		
	marine live and pink Himalayan crystallized		2.71	11.92
Total		68.75	250.76	479.14

Source: own calculation.

The analysis uses the current prices for traditional for the Russian population conventional food products and revealed price ranges for available organic products presented in online stores ("Ryabinki.ru", "Organic-market.ru", "Ecotopia.ru", "Biostoria.ru", "Delikateska.ru" "BIOMDV", etc.). Due to the lack of information about organic beet sugar and table salt, prices for their possible analogues were used in the calculations. The comparison showed an average excess of prices for organic products over retail prices of conventional products by categories: meat - 3.2 times, fresh-frozen fish - 2 times, dairy products - 5 times, bread products -11 times, cereals - 9.1 times, vegetables - 7.5 times. For the purpose of motivated identification of potential consumer audience, the cost of a monthly food basket of staple conventional and organic products was

calculated. The calculation clearly showed that food basket of organic products is more expensive: at the minimum price level – 3.6 times (by EUR 182.01), and at the maximum level –7 times (by EUR 228.38).

Comparison of the obtained values of the price difference and the average per capita income of the Russian population allowed determining the number of residents whose consumer preferences may be directed towards the organic segment of the agricultural food market. We believe that this is 3.4% of the total population (about 5 million people), whose income exceeds EUR 1,460 per month per family member. According to preliminary estimates, the capacity of the potential retail market for organic food products may average EUR 21.9 billion (Table 4, Fig. 2).

Table 4. Preliminary calculation of the potential retail market capacity of organic food products in the Russian Federation

Product category		Capacity of potential market			
		in kind, thousand tons (million items)	in terms of value (million EUR)		
			min	max	average
Meat	beef	364	1,284.56	1,639.27	1,461.92
	pork	327.6	853.20	946.80	900
	lamb	54.6	298.95	351.15	325.05
Poultry	meat	564.2	1,309.61	1,532.52	1,421.06
	eggs	4732	2,691.41	6,644.02	4,667.72
Fresh-frozen fish	Alaska pollock	400.4	408.46	680.76	544.61
Dairy products	milk	1,965.6	1,134.00	2,322.00	1,728.00
	butter	36.4	222.46	554.37	388.42
	sour cream	54.6	139.20	519.75	329.48
Bread products		1,747.2	2,592.00	3,993.60	3,292.80
Sunflower unrefined oil		218.4	732.60	2,241.00	1,486.80
Cereals	buckwheat	72.8	51.48	103.36	77.42
	millet	36.4	49.67	162.18	105.93
Vegetables	potatoes	1,638	918.00	1,642.50	1,280.25
	carrot	309.4	89.46	621.96	355.71
	white cabbage	728	143.86	393.61	268.73
	onion	182	47.31	181.77	114.54
Fruits	apples	1,019.2	655.67	980.70	818.18
Sugar	cane	436.8	1,261.20	2,522.40	1,891.80
Sault	marine live and pink Himalayan crystallized	72.8	162.56	714.98	438.77
Total			15,045.66	28,748.69	21,897.18

Source: own calculation.

The reasons for our research were adopted law and the state standard regulating the

requirements for the organic sector in Russia.

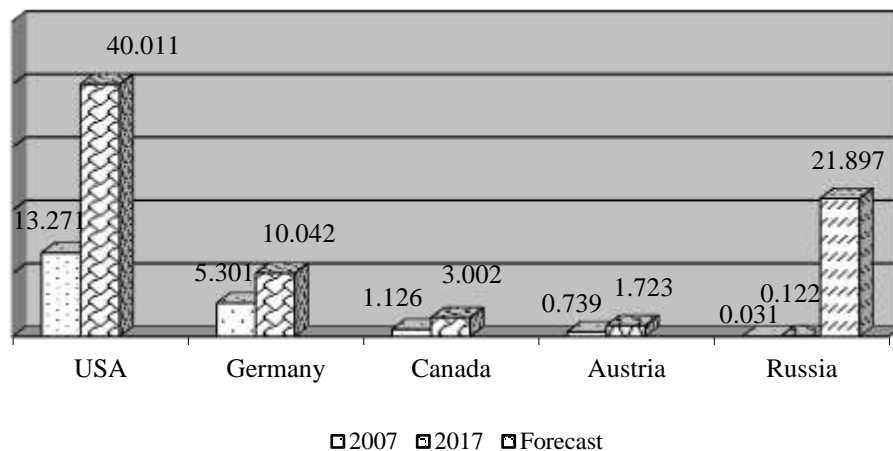


Fig. 2. Dynamics of growth in retail sales of organic products in domestic markets, in EUR million  
 Source: own calculation according to FiBL [9].

As the basis of the mechanism for the development of the organic food market, we have proposed an interdisciplinary fundamental platform that includes theories (of goods, value, entrepreneurship, marketing and institutional), principles (market balances, motivations, ecological orientation, quality verification, etc.), factors (purchasing power of the population, food culture; demographic situation; consumer habits, level of environmental awareness of the population; dietary intakes; distrust of the population towards organic products; availability of household plots in the population) and methods (monographic and comparative analysis, empirical, computational-and-constructive, economic-and-statistical, modeling).

Production of organic products in Russia should be oriented on the prospective consumer demand both at the national scale and in the popular export area. The potential capacity of the consumer market of organic food products was calculated taking into account the heterogeneity of consumer preferences, average prices for conventional products and price range for organic products on the basis of recommended dietary intake of food that meet present-day requirements of healthy nutrition. Segmentation of consumers by income level and costing of a monthly food basket for staple conventional (EUR

68.75) and organic food products (from EUR 250.76 to EUR 479.14) provides a basis for forecasting the potential market capacity of organic products in the amount of about EUR 22 billion.

The results of our research are addressed to participants of the world organic food market, government agencies and industry research institutions.

## CONCLUSIONS

Today, the organic market is one of the most dynamically developing in the world. The production of organic food is an important factor in improving the quality of life and improving the state of the ecosystem.

Our study is the first attempt to form an interdisciplinary fundamental platform for developing the theory of organic food market and justify the potential capacity of the consumer market of organic food in Russia. Among the opportunities for development of the Russian organic market the priorities are the following: a strategically advantageous position of the state (availability of all types of transport networks; possibility of a rapid access to markets of a large number of countries, including along the "Meridian" highway under construction, which will connect China, Kazakhstan, Russia, Belarus and European countries); involvement of unused agricultural



land into the land turnover; solving the problem of ensuring the sustainable development of rural areas. Significant threats should be recognized: penetration of products labeled "bio", "eco" into domestic market under the guise of organic products, and, as a result, the substitution of basic concepts of organic production; weak competitiveness of organic products compared to conventional ones due to the wide possibilities of reducing prices for the latter by transnational companies as a result of the use of genetic engineering biotechnologies; widespread deterioration of the overall environmental background.

Although the features of organic agriculture formation are sufficiently studied in the present-day scientific publications, there are still open questions related to the transfer of this positive experience in the field of processing of agricultural raw materials. Many problems lie in the creation of a favorable external environment for organic production, including increasing its investment attractiveness, as well as information-analytical support, simplification and acceleration of certification procedures, targeted state regulation of organic production; all this determines the areas of future research. New developments should be based on a combination of systemic and process approaches and that allows linking managed (producers, consumers, infrastructure) and managing (initiators, coordinators, national network of research institutes) systems, improved processes, methods and performance indicators of organic market development, grouped for producers of raw materials and products, processing organizations, infrastructure facilities, social and environmental spheres.

Despite a large number of publications in recent years devoted to the development of the organic food market in Russia, its total potential (production and consumer) has not yet been identified. Many problems lie in the creation of a favorable external environment for organic production, namely: the development of measures of state support for the organic sector, including those that do not involve direct financing, acceleration of the process of harmonization of Russian legislation

in this area and ensuring the equivalence of organic standards and technical rules with international ones in order to simplify access of Russian producers to foreign markets, development of export potential in the organic segment, solving the problem of mimicry of products like organic, and, as a result, promotion of organic food products in the domestic market; all this determines the areas of future research. In addition, there is still an open question related to optimizing the price premium for organic products, which provides an increase in their attractiveness in comparison with industrial analogues in food retail and consumer loyalty.

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