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**RECOMMENDED RATES OF CONSUMPTION AS A DRIVER OF
AGRICULTURAL DEVELOPMENT IN RUSSIA**

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Abstract

In the last years, the growth rate of domestic agriculture shows modest results, in this situation, a change in the structure of food consumption could give a new impetus to the development of the industry through the impact on demand. In the framework of this research, it is proposed to consider the situation in which the actual consumption of foodstuffs by the inhabitants of our country will be brought to the norms of consumption recommended by the Ministry of Health of the Russian Federation. Researching of the structure of food consumption in Russia, and development of necessary recommendations. As an object the structure of consumption of food in Russia is investigated. This article is devoted to the researching of the structure of production and consumption of food in countries such as Russia, China, India, as well as comparing the agriculture of these countries. The research of data on the analysis of food production and the structure of their consumption will help the redistribution in the consumption structure from the consumption of bread products to the consumption of meat and dairy products, thereby balancing the diet relative to the physiological needs of the organism. The implementation of the proposed recommendations will help to bring food consumption to the standards recommended by the Ministry of health of the Russian Federation, to determine the vector of development of the agricultural sector in the direction of food production with higher added value.

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Keywords: Agricultural policy, agricultural support, import substitution in agriculture, Russia's food security, government spending, recommended consumption rates.



1. Introduction

The famous Greek physician and philosopher Hippocrates is credited with a well-known phrase in literal translation that means: "You are what you eat" (Hippocrates 460 BCE - 370 BCE). The ability of the state to meet its needs for quality food determines the country's food security, and its independence in the international arena.

The state support – an indispensable condition of existence and growth of modern agro-industrial production and food market what experience of the leading world powers testifies to (Shihsaidov, 2008).

Meat and meat products play an important role in the human diet, with the growth of the global economy there is a change in food preferences. According to the World Food and Agriculture Organization of the United Nations (FAO), from 2005 to 2018, per capita meat production increased from 26 kg to 34 kg or by 23% (OECD/FAO, 2018).

The Russian meat sector has experienced an investment boom due to high profits and growing demand sustained by market protection and state support programmes. Poultry production on its own has attracted about 44 percent of all meat sector investments, while pork and beef production have attracted 33 percent and 15 percent respectively (Davleyev & Prikhodko, 2014).

One of the tasks to be solved in the near future is to bring the level of consumption of foodstuffs by the inhabitants of our country to the level of consumption determined by the Ministry of Health of the Russian Federation. Recommended rational consumption norms are designed to strengthen the health of children and adults, prevent noncommunicable diseases and conditions caused by a lack of micronutrients.

2. Problem Statement

Agriculture in modern conditions can exist only with effective support from the state (The Organisation for Economic Co-operation and Development, 2017). In the current state program for the development of agriculture and regulation of markets for agricultural products, raw materials and food, target indicators have been identified, and their growth is set at 2% per year. Two percent of the growth in the agricultural sector for the US and the EU can be considered a good achievement, but in Russia, given that the country imports a significant portion of food, this is too pessimistic scenario.

To determine the average level of growth of the agrarian sector, developing economies with comparable crop areas were taken. Based on data from the World Bank, a graph was drawn up, shown in Figure 1. The graph reflects the index of food production and demonstrates the growth rates of agriculture in China, India and Russia. China's agriculture grew by 34.3% between 2004 and 2014, with an average annual growth of 3.12%. The agrarian industry in India, with an average annual growth in the 4.35% over the same period, increased by 47.8%. In this top three, the Russian Federation ranks third with a total result for 11 years of 24.9% or 2.26% growth per year.

According to the International Independent Institute of Agrarian Policy, the sown areas of India are 160 million hectares. According to Rosstat, Russia's sown areas are about 220 million hectares. Data from the institute indicate that at smaller, compared to Russia, the amount of arable land agriculture of the

Republic of India for the production of milk gives an average annual growth rate at 5.7%, eggs 7% meat production in 12 years increased by 218% on average 18% per year (MNIAP, 2017).

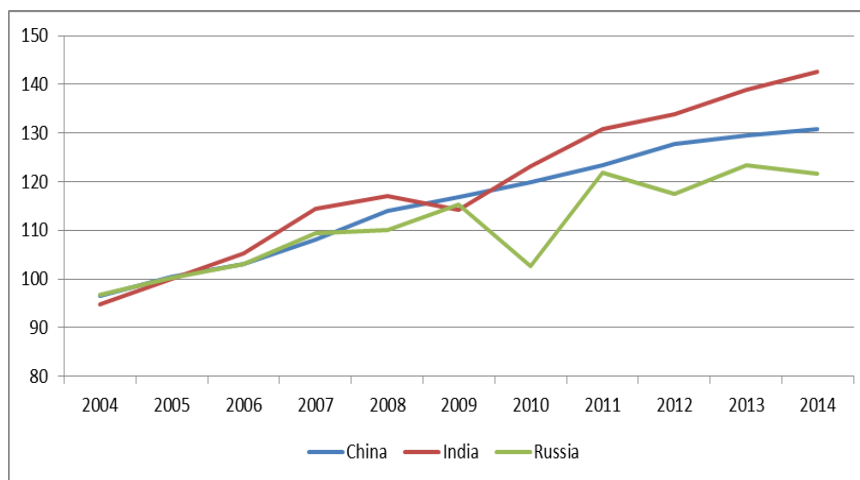


Figure 01. The index of food production (2004-2006 = 100)
(Source: World Bank: data on food production (The World Bank, 2018))

According to the official website of the European Commission and Eurostat, in 2015 the total area of agricultural land in the European Union was 178.5 million hectares (Eurostat, 2017). According to the Ministry of Agriculture of the Russian Federation in 2013, the total area of agricultural land in Russia was 220.2 million hectares (Federal State Statistics Service, 2018). With comparable sizes of areas used by agriculture, the level of support for agriculture in the EU and Russia is significantly different.

When developing the state program of development of agricultural industry and regulation of the markets of agricultural production, raw materials and food for 2013 - 2020, growth rates of agrarian branch in developing states were not considered, insufficiently ambitious target indicators were established owing to what, not the most effective instruments of achievement of target indicators were put. Perhaps the goal-settings led to an erroneous choice of strategy for the development of the agrarian sector on a national scale. The result of an error in strategic planning in the development of the state program was the adoption of such a system of measures, the implementation of which would not be able to fully ensure not only the stable achievement of targets, but also the steady growth of the industry as a whole.

3. Research Questions

Order No. 614 of the Ministry of Health of the Russian Federation of August 19, 2016 defines rational norms for the consumption of food products that meet the basic requirements of healthy nutrition. One of the tasks to be solved in the near future is to bring the level of consumption of food products by the inhabitants of our country to the level of consumption established by the Ministry of Health of the Russian Federation. Recommended rational consumption norms are designed to strengthen the health of children and adults, prevent noncommunicable diseases and conditions caused by a lack of micronutrients (Legal information system garant.ru, 2018).

4. Purpose of the Study

For the past several years, Russia's agriculture has shown steady growth rates, bringing the economy of the country incomes comparable to the revenues from arms exports. Over the past three years, the government's support and devaluation of the national currency has become the main driver of the growth in the agricultural sector. In the current year, the measures taken by the state to support agriculture have ceased to give a steady growth of the industry as a whole. The current situation with a decrease in growth rates indicates that the industry needs new drivers for development. In the framework of this research it is proposed to consider the norms of food consumption recommended by the Ministry of Health of the Russian Federation as a driver for the development of the Russian agrarian sector.

5. Research Methods

According to the Federal State Statistics Service, as of March 20, 2017, there are 146.8 million permanent residents in the Russian Federation (Russian Federation Federal State Statistics Service, 2018a). Determine the total amount of food needed to ensure rational consumption rates, you can use the formula:

$$V=N*Y,$$

V – The total quantity of products necessary to ensure rational consumption norms;

N – Recommended rational consumption per person per year;

Y – Number of people permanently residing in the territory of the Russian Federation.

Based on the data of the Federal State Statistics Service and the recommended rational consumption standards determined by the Ministry of Health of the Russian Federation, Table 01 was compiled, which calculates the quantity of products necessary to meet rational consumption norms. Data from Table 1 can be used to plan agricultural production in the Russian Federation.

Table 01. The total number of products required to ensure rational consumption norms in the Russian Federation (Source: Federal State Statistics Service)

Product name	Recommended rational consumption rates in kg per person per year	The quantity of products the required to meet the norms of rational consumption per year, thousand tons.
Grains of cereals and legumes	96	14400
Potatoes	90	13500
Vegetables	140	21000
Fruits, berries and nuts	100	15000
Grape	6	900
Melons food crops	140	21000
Cattle and poultry (live weight):	73	10950
Cattle	20	3000
Pigs	18	2700
Sheep And Goats	3	450
Bird	31	4650
Other	1	150
Milk Of All Kinds (In Terms Of Milk Of Established Fat Content)	325	48750
Eggs for food, million pieces	260	39000

Food balances are important indicators of basic food security. The balance sheet reflects the movement of products from the moment of production to the moment of its final use, allows to carry out the current analysis, to estimate needs for import, to define funds of consumption of food.

Balance sheets are drawn up according to the methodology approved by the Federal state statistics service. Information base in the preparation of balances are the data forms of Federal statistical observation, annual specialized forms of accounting reports of agricultural organizations, sample surveys of households, one-time accounting and censuses, customs statistics.

The balance scheme in general form is expressed by the following formula (1):

$$Sa + P + I = PC + PNP + L + E + FPC + Se \quad (1)$$

Sa and Se - stocks in agriculture, the process industry, wholesale and retail trade on the beginning and the end of the accounting period;

P – Production for the period;

I – Import (for the subjects of the Russian Federation - import, including imports);

PC – Production consumption in farms of agricultural producers (for seeds, feed and other on-farm needs);

PNP – Processing for non-food purposes;

L – Losses;

E – Exports (for the subjects of the Russian Federation - export, including exports);

FPC – The fund of personal consumption.

Based on the balance of food resources, the indicator characterizing the country's food security is determined: the level of self-sufficiency in the main types of agricultural products.

The level of the country's self-sufficiency for certain types of agricultural products is defined as the ratio of production in the country to its domestic consumption (without taking into account the carry-over stocks). Internal consumption includes: production consumption, personal consumption (consumption fund), production losses, processing for non-food purposes (Russian Federation Federal State Statistics Service, 2018b).

Based on the data of the Ministry of Health of the Russian Federation and the Federal State Statistics Service, Table 02 has been compiled showing the availability of food in the amounts recommended by the Ministry of Health of the Russian Federation to the Russian Federation.

Table 02. Provision of residents of the Russian Federation with food products

Indicators	Potato	Milk	Meat	Vegetables	Fruit	Egg
Production, thousand tons	31107,8	30759,0	9899,4	18041,0	3862,7	43558,8
Imports, thousand tons	737,0	7544,3	1246,4	2320,9	6517,8	1237,5
Percentage of imports, %	2,4%	24,5%	12,6%	12,9%	168,7%	2,8%
Personal consumption, thousand tons	16601,0	34665,9	10850,8	16358,6	9020,8	40070,0
Recommended quantity, thousand tons	13500,0	48750,0	10950,0	21000,0	15000,0	39000,0
Deficiency of personal consumption from the recommended rate.	-3101	14084,1	99,2	4641,4	5979,2	-1070
The potential volume of production thousand tons	-2364	21628,4	1345,6	6962,3	12497	167,5
Per capita, thousand tons	113,0	236,0	74,0	112,0	62,0	273,0

Recommended: kg per year pieces per year	96,0	325,0	73,0	140,0	100,0	260,0
Percentage of supply of recommended consumption rates, %	123,0	71,1	99,1	77,9	60,1	102,7

Note: Source: Federal State Statistics Service

Such indicator as availability of recommended consumption rates of potato in 123% from the norms recommended by the Ministry of health of the Russian Federation indicates that such products as milk, vegetables and fruits in the diet of the inhabitants of our country are to some extent replaced by potatoes.

The data presented in Table 2 shows that domestic agriculture in such positions as the production of potatoes and eggs almost completely provided the demand for consumption volumes recommended by the Ministry of Health of the Russian Federation, the volume of imports of these types of food is no more than 3% of own consumption.

The large volume of imported fruit in 168.7% from its own production points not only to the climatic features of our country, but also to the fact that we have not been able to organize the cultivation of crops that can grow in our climate, even if in a protected ground. The development of its own greenhouse economy will not only replace the imported positions on fruits and vegetables, but also create additional jobs, attract investments in related industries, for example, in the production of greenhouse equipment.

The situation with the import of milk does not look so good: Russia imports 24.5% from its own production, that is, a quarter of all milk.

Imports of meat in the amount of 12.6% of its own production characterize the situation as similar to the situation that is developing in the milk market. The production of meat and milk is interconnected within the framework of one branch of agriculture - animal husbandry. Modern "patching holes" and unsystematic support of the industry is not able to fully meet the state's need for livestock products.

6. Findings

Within the existing economic model, an effective agricultural development strategy implies a full-cycle production. The government must support the creation of a full-fledged industry, which includes such elements as the reproduction of thoroughbred young domestic breeds, the full cycle of production of modern feed, the maintenance of animals and the processing of products using domestic equipment to ensure the full cycle of production.

Table 03. Consumption of food per capita per year; kilograms

Country	Meat	R	Milk	R	Oil	R	Eggs, mrr.	R	Potatoes	R	Vegetables	R	Fruits	R
1. Russia	73	4	239	4	3,8	3	269	2	112	1	111	2	61	4
2. Germany	88	2	436	2	5,9	1	233	4	78	2	93	3	87	3
3. Finland	76	3	476	1	3,9	2	196	5	67	3	88	5	97	2
4. USA	118	1	276	3	2,5	4	263	3	56	4	113	1	99	1
5. Japan	49	5	89	5	0,6	5	305	1	21	5	92	4	53	5

*Note: R - rank

Source: Federal State Statistics Service

Table 03 shows the volume of food consumption per capita per year, the data provided by the Federal state statistics service (Federal State Statistics Service, 2018). To compare the volume of food consumption by consumers from Russia and other countries, the rankings of indicators for each type of product was made. In milk, meat and fruit Russia took the penultimate fourth place.

According to the estimates of a member of the Committee for the development of agriculture of the chamber of Commerce and industry (CCI) of Russia Yuri Morozov, at the end of 2016, about 890 thousand tons of palm oil was imported into the country (Kulikov, 2017).

Edible oils consumption in our country is in third place in the ranking of five countries, but given that more than half of the oil volume is vegetable fats and, having resulted in real consumption of milk fat, instead of the third place Russia moves to the fourth place. Consumers try to compensate for the protein deficit by consuming eggs, and the lack of consumption of fruits by consumption of vegetables, in connection with which, these products and rank second in the ranking.

Since the time of Peter I, potatoes have been considered the second bread, and at present, Russia is in the first place from the countries represented in Table 3 for its consumption. Potato is a socially significant product of low price category, consumed by all layers of the population. The large volume of consumption is caused by the fact that low-income categories of citizens consume potatoes in amounts exceeding the individual consumption rates recommended by the Ministry of Health of the Russian Federation to compensate for the deficit in consumption of more expensive products: meat, milk, fruits, butter, vegetables and eggs.

Table 3 shows not so much the real food preferences of the population of Russia, as the financial capabilities of citizens in the purchase of food. The described situation hinders the development of the agricultural sector, redirects production to the production of cheaper, but less useful for the consumer food.

State support for the agricultural sector can be restructured through a purposeful controlled change in the structure of food consumption in Russia to the level of countries represented in Table 03. To do this, the state should stimulate the consumption of food, the consumption of which is currently in the third and fourth places. This type of state support refers to the "green" basket and does not contradict the current WTO rules.

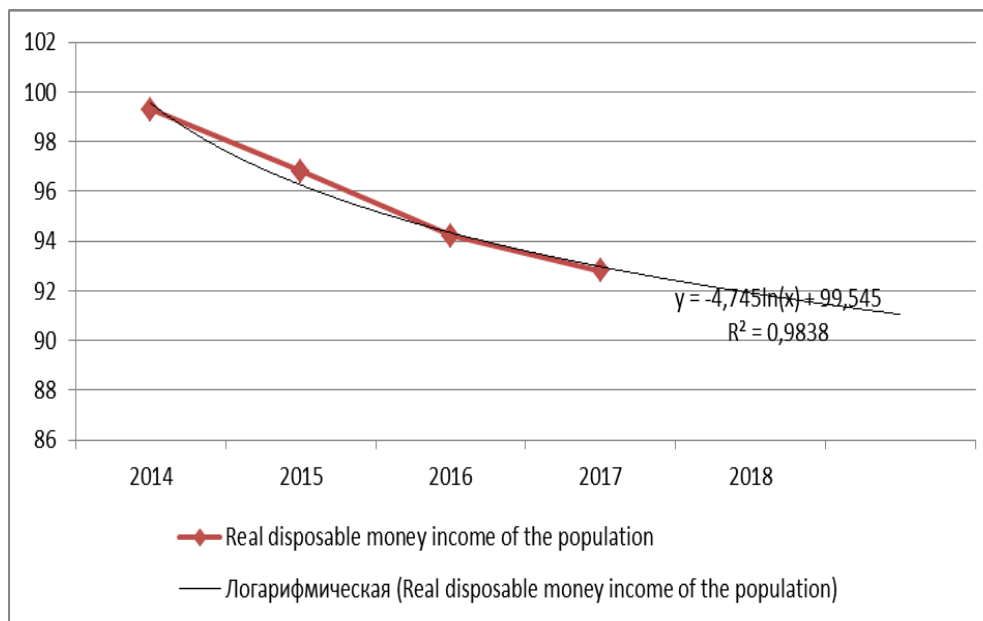


Figure 02. Real disposable money income of the population.

Source: Federal State Statistics Service (Russian Federation Federal State Statistics Service, 2018c)

A negative factor for the development of the domestic agrarian sector is the fall in real disposable money income of the population (Figure 2). According to the Federal State Statistics Service for the period from 2014 to 2017, this indicator decreased by 6.5%. A trend analysis with a high degree of probability determines that this trend will continue in 2018. The impoverishment of consumers leads not only to a decrease in solvent demand, but also to the replacement of more expensive products of various kinds with surrogates that negatively affect the health of the inhabitants of our country.

7. Conclusion

Analysis of the structure of production and consumption of food in our country shows that agriculture has at least three directions of growth:

- The first - import substitution for milk, meat and vegetables to the recommended standards;
- The second is to stimulate domestic demand in order to increase the consumption of food products in accordance with rational consumption norms determined by the Ministry of Health of the Russian Federation.
- Third, ensuring sustainable consumption of food at the level of consumption of advanced economies.

The main point of growth in domestic agriculture can be the satisfaction of domestic demand in regions that do not provide rational consumption norms. The existing economic model in Russia does not contribute to the development of the middle class, that is, the social group of people that has stable incomes, sufficient to meet a wide range of material and social needs.

Stimulating the society to consume food in accordance with the recommended rational consumption standards is possible only if three conditions are met:

- First - state stimulation of domestic demand for certain categories of food;
- The second is an increase in real disposable money income of the population.

- The third is targeting the food market by main types of food in the context of regions.

In modern conditions, the construction of an effective economic model of the state within the framework of the technological order operating in developed countries is possible only on the basis of advanced technologies and an innovative development scenario.

Developing the middle class of society, the state not only removes social tension, gets economically active population and bona fide taxpayers, but also expands the size of the market to potentially affordable.

Regardless of the cost of production and its supply on the market, without competent state stimulation of demand through the revival of the middle class, full-fledged development of agriculture is impossible.

References

- Davleyev, A., & Prikhodko, D. (2014). *Russian Federation Meat sector review*. Moscow: FAO.
- Eurostat. (2017). Utilised agricultural area by categories. Author. URL: <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&pcode=tag00025&language=en>.
- Kulikov, S. (2017). Cheese climbed on a palm tree. *Russian Newspaper*, 7225(59). Retrieved from URL: <https://rg.ru/2017/03/21/import-palMOVogo-masla-v-rossiiu-snova-vyros.html>.
- Legal information system garant.ru. (2018). *Order of the Ministry of Health of the Russian Federation of August 19, 2016 No. 614 "On approval of Recommendations on rational norms of food consumption that meet modern requirements for healthy nutrition."* Retrieved from: <http://www.garant.ru/products/ipo/prime/doc/71385784/>
- MNIAP. (2017). *Indian Agriculture*. Retrieved from URL: <http://mniap.rf/analytics/Selskoe-hozajstvo-Indii>.
- OECD/FAO (2018), *OECD-FAO Agricultural Outlook 2018-2027*, OECD Publishing, Paris/*Food and Agriculture*. Retrieved from URL: https://doi.org/10.1787/agr_outlook-2018-en
- Russian Federation Federal State Statistics Service. (2018a). *Demography*. Retrieved from URL: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/population/demography.
- Russian Federation Federal State Statistics Service. (2018b). *Food consumption*. Retrieved from URL: http://www.gks.ru/bgd/regl/b16_13/IssWWW.exe/Stg/d04/27-16.doc.
- Russian Federation Federal State Statistics Service. (2018c). *Real disposable money income of the population*. Retrieved from URL: http://www.gks.ru/free_doc/new_site/population/urov/urov_12kv.doc
- Shihsaidov, D. (2008). State support of the agricultural sector as a factor in improving the efficiency of the industry - experience, problems. *Non-commercial partnership "Editorial office of the magazine" Regional problems of economic transformation*, 4, 14-28.
- The Organisation for Economic Co-operation and Development. (2017). *Monitoring and evaluation 2017 year*. Retrieved from URL: <http://stats.oecd.org/viewhtml.aspx?QueryId=77872&vh=0000&vf=0&l&il=&lang=en#>.
- The World Bank. (2018). *Food production index*. Retrieved from URL: <https://data.worldbank.org/indicator/AG.PR.D.FOOD.XD?end=2014&locations=IN-CN-RU&start=2004&view=chart.>