



## Food security of Russia's population: with or without imports

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### Abstract

Food security of the population belongs to the global issues that are in the focus of international organizations, primarily, the FAO UN. Food security in Russia is provided by the Government of the Russian Federation, the regional authorities, FAO UN, Security Council of the Russian Federation, Federation Council Committee for Food Policy and Fishery Complex, Ministry of Agriculture, Public Corporation "United Grain Company", Russian Grain Union. Russia gets a full access to global information resources in agriculture, forestry, water resources and fisheries, storage and processing of agricultural, forestry and fishery products, the environment in rural areas, as well as the international basis for these.

**Keywords:** food security; doctrine; market; import; export; consumption; modeling; self-sufficient domestic market.

### 1. National doctrine

On February 1, 2010 the Russian President signed a Decree "On approval of the Food Security Doctrine of the Russian Federation". Doctrine creates space capabilities, which build their strategy for all market participants: producers of raw materials, processors, exporters, importers.

The key provisions of the Doctrine are the following: the share of domestic production by main types of food, food quality and its availability to population. Thus the State has a strong commitment to ensure the physical and economic access to food for the population. To improve economic access to food, the State undertakes to fight poverty, to support the poor, to organize the nutrition for pregnant, school-children, as well as to develop interregional integration. Special ways are envisaged to provide food for inaccessible areas.

### 2. Physical accessibility of food

Physical accessibility of food depends on its domestic production and on the development of the infrastructure of the food market. Agricultural production increases since 2000. However, the overall situation in the country remains tense. This is evidenced by statistics of consumption of basic food products, according to which the consumption of many products in Russia is less than rational norms. Only the consumption of potatoes, bread products and sugar meets and exceeds the rational nutritional standards. The cost of food in the final consumption expenditure amounted to 35%. This is 2–3 times higher than in developed countries, where this indicator is equal to 6–12%. The share of imported products is reduced, but it remains very high, which is not generally accepted standards. The formation of reserves and stocks is one of the field of food security. The grain intervention fund was created which helps to stabilize the situation on the Russian grain market.

The scope and scale of agriculture in Russia varies significantly depending on regional and environmental conditions. Based on natural conditions, Russia can be divided into five zones (Nefeodova, 2013). The first zone occupies over 40% of the area of Russia. This is the area with the most difficult natural conditions. It includes the Northern part of Siberia, Far East, European North. In this area there is almost no large-scale crop production; population density does not exceed 1 person per square kilometer. This area is suitable for developing hunting, fishing, mining and processing of forest products.

The second area is taiga band from Karelia, Komi and the Arkhangelsk region to the Amur region and Khabarovsk territory. Here the population uses non-produced resources, low population density. This zone accounts for about 20% of Russia's territory. Thus, two-thirds of the country do not have the conditions for

Table 1: Agricultural production by categories in the Russian Federation, in current prices, percents

	1990	1995	2000	2010	2012
Total	100,0	100,0	100,0	100,0	100,0
Agricultural organizations	73,7	50,2	45,2	44,5	47,9
Households	26,3	47,9	51,6	48,3	43,2
Farms	-	1,9	3,2	7,2	8,9

Source: Statistical Abstract. Russia. 2013. Moscow: Rosstat. 2013. P. 383.

Table 2: Production of grain and potatoes by farm type in 2012 in the Russian Federation, percents

	Grain	Potatoes
Total	100,0	100,0
Agricultural organizations	76,8	13,1
Household plots	1,0	78,9
Farms	22,2	8,0

Source: Statistical Abstract. Russia. 2013. Moscow: Rosstat. 2013. P. 383.

the development of agriculture, especially for crop production.

The third area is the non-black earth. The agriculture has been always in this zone, but with low productivity: both of crops and livestock. Agriculture in this zone may develop with the aid of subsidies. If there are no subsidies, agriculture is declining. Moreover, the situation depends on the distance from the regional centers: the farther from the center, the worse the situation.

The fourth zone starts with the Kursk, Belgorod regions, part of the Volga region, southern Ural and Siberia. It is based on the plains of the North Caucasus, Krasnodar and Stavropol Krai. This entire area is Chernozem zone (black soil band) and is a foundation of Russian agriculture. It preserved the collective farms, agri-holdings, many farms. Throughout the period of Perestroika and later the area had a positive migration balance, i.e., the population arrived.

The fifth area consists of the Northern Caucasus republics (Dagestan, Ingushetia, Chechen Republic, Kabardino-Balkaria), Southern Siberia, the Volga region. In this region, we observe a population growth, high numbers of young people are willing to live and work in the villages.

Thus, a brief overview shows that the further to South, than the role of agriculture in the economy becomes more important, this kind of activity employs more population. Mixed agriculture forms developed in the fourth zone. The structure of agricultural production of the Russian Federation is formed by the fourth zone (Table 1).

The data in Table 1 reflect the formation of mixed agriculture: the declining share of agricultural organizations and increasing share of peasant's farms and household plots. Obviously, the share of each category varies depending on the type of agricultural production. For example, agriculture organization (holdings) dominate in the production of grain, whereas household plots lead in potato production (Table 2).

Adverse natural conditions, low level of mechanization, poor organizational forms impede the development of agriculture in Russia. However, gradually in the fourth and the fifth area is the formation of new forms of agricultural organization, including not only agricultural production, but also its processing. From this point of view the holdings, as well as a number of large farms, organizing agricultural production on the area of 300-500 hectares or more are highlights.

The development of new organizational forms leads to increased agricultural productivity. This is evidenced,

for example, the growth of grain yields in Russia since 1940 until 2010. If in 1940 the yield was equal to 8 centner/ha, in 2006-2010 — 21 centner/ha. In the harvest years, Russia is a notable exporter on the world grain market. Livestock and crop production are recovering from the losses of the transition period. Its share in gross agricultural output in 1990 was 63%, currently — about 50%. The population of cattle in agricultural enterprises had drastically reduced, while the cattle in households was saved. In general, Russia has reserves of self-sufficiency in agricultural products. These reserves are primarily associated with the growth of productivity and improving the organization of production and all logistics related to production, delivery and processing of agricultural products.

### 3. The current situation

On August 7, 2014 Russia announced a ban on food imports from Western countries which, in an earlier move, had imposed sanctions on Russian business interests in connection with the crisis in Eastern Ukraine. The prohibition was effective immediately, and will stay in place for one year, blocking all imports of affected products from the European Union, United States, Canada, Australia and Norway. The list published by the meats, poultry, fish and other seafood, milk and milk products, vegetables, fruits and nuts. (FAO, 2014) The problem of being self-sufficient is very complicated, especially bovine meat. If the livestock in Russia before Perestroika was equal 37 million, then for today this number is 9.8 million. Reaching the previous level requires great effort and time. The same thing could be said about perennial fruit crops. The factor of land cultivation should be added to agricultural problems. All these problems are accompanied by the problem of labor in agricultural sector.

The cooperation in the food market between the countries of the Eurasian Union, the Russian Federation, the Republic of Belarus and Republic of Kazakhstan are important for the current situation. The stable connection in the supply of products has developed between Russia and Belarus (mostly deliveries from Belarus to Russia). The trade with Kazakhstan does not have noticeable effect on the formation of the food market in Russia.

### 4. Ecological aspects

Problems of imports and self-sufficient are connected to the ecological aspect of the region. Solving the import problem should be compared with the potential damage for environment and social economics system. It is necessary to justify projects of import substitution. Each project within the program of import substitution is necessary to carry out its analysis in the following aspects:

- market analysis in terms of “price-quality”;
- analysis of environmental consequences of import substitution;
- analysis of tax revenue associated with the reduction of imports;
- analysis of induced imports associated with import-substituting production on the basis of the Leontief’s matrix.

Sometimes the creation of import substitution industries is questionable from the point of view of environmental impacts. To evaluate the export effectiveness for selected items, received benefits should be compared with the resulting damage to the environment and to the socio-economic system as a whole.

Professor L. A. Soshnikova (Soshnikova, 2009) suggests to use Leontief input-output model for evaluation of the environmental aspect. Column vector of imports ( $\mathbf{M}$ ) stands out in the Leontief’s matrix of the full costs:

$$\mathbf{B} = (\mathbf{I} - (\mathbf{I} - \mathbf{M})\mathbf{A})^{-1}.$$

Import coefficient can be calculated by the following formula:

$$M_i^{imp} = \frac{Y_i^{imp}}{\sum_j x_{ij} + Y_i^{dom}},$$

where  $Y_i^{imp}$  is import for sector  $i$ ;  $\sum_j x_{ij}$  is intermediate consumption of production of sector  $i$ .

Import coefficient gives possibility to assess the degree of import dependence. The feasibility of the creation of import substitution industries may be justified in certain aspects, but the total substitution would be irrational and provide the high economic and environmental risks.

## 5. Conclusions

Banning food import from Western countries to Russia leads to restructuring of food market. Reviewer FAO UN concludes that exporters to Russia not affected by the ban might gain a greater share of the Russian market but they also face greater competition from the displaced exports of other countries in their domestic markets. Refusing from import is advisable only in certain cases, but in general it could give negative outcome, highly irrational and brings negative consequences for economy and population.

## References

FAO (2014). Russia's restrictions on imports of agricultural and food products: An initial assessment. [www.fao.org/3/a-i4055e.pdf](http://www.fao.org/3/a-i4055e.pdf)

Nefeodova, T. G. (2013). Transformation of Russian agriculture: mythology and reality. *World of Russia* 1: 29–60.

Soshnikova, L. A. (2009). Teoriya i metodologiya postroyeniya i analiza modificirovannogo mejotraslevogo balansa (ecologo-economicheskij aspekt). BGEU, Minsk. (Soshnikova, L. A. (2009). Theory and methodology of design and analysis of the modified input-output balance (environmental and economic aspects). Belorussian State University of Economics, Minsk.)