The grain market of Russia

A M Agapkin and I A Makhotina

Plekhanov Russian University of Economics, 36, Stremyanny lane, Moscow, 117997, Russia

E-mail: irina_mahotina@mail.ru

Abstract. Russia is one of the world leaders in the production and export of grain. Wheat occupies the largest share among grain crops in Russia. Over the past twenty years, in Russia has been a steady increase in grain production, while reducing its dependence on natural and climatic conditions. The article provides an overview of the grain market in Russia, using data from the Federal State Statistics Service (Rosstat). The dynamics of changes in sown areas and gross harvest of both grain and leguminous crops in general and wheat in particular are analyzed. The structure of the gross grain harvest in the Federal Districts of the Russian Federation is given. The rating of Russian regions in terms of gross wheat harvest is presented. The Russian export of grain is characterized. The classification of grain as a strategic export product of Russia is justified. The structure of the export of grain crops of the Russian Federation is presented. The dynamics of changes in the volume of imports of grain and leguminous crops in value terms, as well as the issue of tariff regulation of grain exports in Russia are considered.

In recent years, the grain market in Russia has been developing rapidly. Russia is one of the world leaders in the production and export of grain. Wheat occupies the largest share among cultivated grain crops in Russia. According to Rosstat, in 2020, the Russian Federation harvested 85.9 million tons of wheat [1].

Over the past twenty years, in Russia has been a steady increase in grain production, while reducing its dependence on natural and climatic conditions.

The current FAO forecast for global cereal production in 2020-2021 is currently 2761 million tonnes, up 1.9% from last year. Global wheat production is expected to increase by 7.5 million tons.

In relation to Russia, FAO predicts a decrease in the gross wheat harvest in 2021 compared to last year's record level, due to the dry weather conditions established at the beginning of the growing season. Heavy snowfalls in January partially reduced these concerns, however, volume of production in the country in 2021 may be 7 million tons lower [2].

Table 1 shows the FAO forecast of production and consumption of cereals in the world in the 2020-2021 season.

|                      | World market, million tons |
|----------------------|----------------------------|
|                      | Cereal | Wheat | Coarse grain crops | Rice   |
| Production           | 2761.3 | 774.0 | 1474.1             | 513.2  |
| Supply               | 3580.0 | 1050.9| 1833.7             | 695.4  |

Table 1. Forecast of production and consumption of cereals in the world in the 2020-2021 season.
According to the International Grain Council (IGC), the grain harvest in Russia in the 2021-2022 agricultural year (July 2021-June 2022) will be 119.2 million tons. Wheat harvest in Russia is projected at 76.9 million tons. IGC estimates grain exports from the Russian Federation in the new agricultural year at 43 million tons, including 34.1 million tons of wheat.

According to Rosstat, in 2020 Russia harvested 133.5 million tons of grain [3].

The size of the sown areas of grain and leguminous crops in Russia in 2010-2020, in million hectares, is presented in table 2 [4].

| Year | Sown area, million hectares |
|------|-----------------------------|
| 2010 | 43.20                        |
| 2011 | 43.58                        |
| 2012 | 44.46                        |
| 2013 | 45.85                        |
| 2014 | 46.16                        |
| 2015 | 46.61                        |
| 2016 | 47.10                        |
| 2017 | 47.71                        |
| 2018 | 46.34                        |
| 2019 | 46.66                        |
| 2020 | 47.90                        |

Over 10 years, the area under crops has grown by 4.70 million hectares. The largest sown area among all grain and leguminous crops is wheat. In 2020 the area of its crops was 29.44 million hectares.

If we talk about the ratio of sown areas by type of wheat, in recent years, the share of sown areas allotted for winter wheat has been growing, and the share of spring wheat crops has been decreasing. Winter wheat in 2020 accounted for 57.44% of all wheat sowing, spring wheat – 42.56%. Over the past 7 years (compared to 2013), the sown area of wheat in Russia increased by 17.4% (by 4.37 million hectares), over 28 years (in relation to 1992) – by 21.2% (by 5.16 million hectares) (figure 1) [4].

**Figure 1.** Sown area of wheat in the Russian Federation (1992, 2013-2020), million hectares.

The leading region in terms of the sown area of wheat is the Rostov Region (the share is 9.8% of the total area of wheat). The sown area of wheat in 2020 amounted to 2.90 million hectares (in 2019 it was 2.82 million hectares, that is increased by 3%); Altai Territory (the size of the area in 2020 – 2.00 million hectares, the share in the total area - 6.8%); Stavropol Territory (1.70 million hectares, 5.8%); Orenburg region (1.68 million hectares, 5.7%); Volgograd region (1.59 million hectares, 5.4%).
Also Krasnodar Territory, Omsk, Saratov, Novosibirsk and Chelyabinsk regions were included in the TOP-10 regions in terms of wheat sown areas in 2020 [4].

The structure of the gross grain harvest by district is shown in figure 2 [5].

![Diagram of grain harvest by district](image)

**Figure 2.** The structure of the gross harvest of the main grain crops by Federal Districts of the Russian Federation in 2020, in thousand centners.

The dominant position among grain crops in all Federal Districts (FD) of Russia is occupied by wheat, its production volumes range from 671.4 (North-Western FD) to 24308.6 thousand tons (Southern FD). The second place is occupied by barley from 115.4 to 7067.9 thousand tons, the third is corn for grain from 6.5 to 6128.7 thousand tons (figure 2).

If we talk about the prevalence of districts in the production of certain grain crops, then we can note the Siberian Federal District as the leader in Russia in the production of buckwheat and oats, the Volga Federal District - in the production of millet and oats, the Southern Federal District - in the production of rice.

Based on the gross grain harvest (figure 3 and figure 4) [5] and the volume of its use (table 3), in recent years, Russia can meet its needs without import supplies.
Figure 3. Dynamics of the gross harvest of grain crops (thousand tons), including wheat, in the Russian Federation (2013-2020).

The dynamics of the gross grain harvest in Russia has a positive trend, a record (for the entire post-Soviet period) was achieved in 2017, after which, in 2018, the harvest decreased slightly, but in 2020 (despite weather and economic events) it again approached a record value in 130 million tons. Even against the backdrop of the COVID-19 pandemic, grain production, including wheat, is increasing. This indicates the high importance of the grain market (including wheat) for the Russian economy.

In 2020, the gross harvest of wheat amounted to 85.90 million tons (including winter wheat - 63.23 million tons, spring wheat - 22.67 million tons) (figure 3 and figure 4) [5]. Over the year, the volume of harvested wheat increased by 11.54% (by 11.45 million tons). For 7 years, the indicators increased by 64.75% (by 33.76 million tons). Compared to 1990 (49.6 million tons) the volume of harvested wheat increased by 73.2% or 36.3 million tons [5]. Gross grain harvest increased in 2020 both in relation to the previous year and in relation to the average annual rate of the previous 7 years.

Figure 4. Gross harvest of wheat in the Russian Federation in million tons (2013-2020).

Despite the changes in the climate, the political situation and even the sanitary and epidemiological situation in the world that have taken place in recent decades, the gross harvest of wheat in Russia continues to increase.
Table 3. Use of grain in Russia (in million tons) 2013-2020 [6].

| Use of grain                                      | 2013  | 2014  | 2015  | 2016  | 2017  | 2018  | 2019  | 2020  |
|--------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Manufacturing consumption                        | 20.0  | 20.9  | 20.9  | 22.3  | 24.4  | 23.2  | 23.3  | 24.6  |
| Processed into flour, cereals, compound feed and other purposes | 44.5  | 46.4  | 48.1  | 51.8  | 53.4  | 52.5  | 53.3  | 53.8  |
| Losses                                           | 1.2   | 1.0   | 1.1   | 1.2   | 1.5   | 1.2   | 1.2   | 1.1   |
| Personal consumption                             | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   |
| Inventories at end of year                       | 52.2  | 60.2  | 64.8  | 77.2  | 90.7  | 72.6  | 76.9  | 82.4  |

According to Rosstat, the TOP-10 regions for wheat harvesting in 2020 was headed by the Rostov region (figure 5). The gross harvest of wheat in the region in 2020 amounted to 10.55 million tons. The region's share in the total wheat harvest in Russia was 12.3%, which is slightly less than in 2019 (13%) and 2018 (12.7%). If we give an estimate in real terms, the gross harvest of wheat in the Rostov region increased in 2020 in relation to 2019 by 0.57 million tons, and in relation to 2018 by 1.21 million tons. The second place in the gross harvest of wheat was occupied by the Krasnodar Territory. The harvest in the region amounted to 7.8 million tons (9.1% of the total). In 2020, wheat production here fell significantly by 1.47 million tons. The Volgograd Region closed the top three (4.41 million tons or 5.13% of the total harvest), overtaking the Stavropol Territory in 2020 (4.34 million tons or 5.09% of the total harvest). Over the past few years, the gross yield of wheat in the Stavropol Territory significantly decreased from 7.68 million tons in 2016 to 6.41 million tons in 2019 and 4.34 million in 2020. The TOP-10 regions in terms of gross wheat harvest in 2020 also included the Voronezh region, Saratov, Kursk, Tambov, Lipetsk regions and the Republic of Tatarstan [5,7].

![Figure 5. The share of Russian regions in the gross wheat harvest in 2020, %](image)

The stable demand for grain in the world market is a strong incentive for the development of grain exports. Based on the forecasts for global grain consumption in the 2020-2021 season provided by FAO, the volume of consumption will be 2766 million tons, which is 2.0% (54 million tons) higher than the level of the 2019-2020 season. In the 2020-2021 season global rice consumption is expected to increase
by 2.0 % compared to the previous year, reaching a record level of 514 million tons. Australia and the EU are expected to increase the consumption of barley for feed purposes, as well as an increase in consumption of corn for food purposes in Africa, which will lead to an increase in global consumption of feed grain in the 2020-2021 season to 1497 million tons, which is 2.8% higher compared to the 2019-2020 season. Wheat consumption in the 2020-2021 season will grow by 0.5% compared to the level of last year and will amount to 754.5 million tons.[2]

Currently, the Russian Federation is on the 19th place in the ranking of the world's main food exporters. In comparison with 2010 exports increased 3 times, and in comparison with 2000 almost 19 times[8]. In 2020, Russian agricultural exports exceeded imports for the first time in the post-Soviet period. Russia also became a net exporter of food in value terms for the first time. Imports of food products and agricultural raw materials in 2020 amounted to about 29.7 billion dollars, which is 1 billion dollars less than exports[9,10].

Based on the export structure of the agro-industrial complex (AIC) of Russia (figure 6), we can say that at the moment grain belongs to the strategic export products of the Russian Federation[8,11].

**Figure 6.** The structure of Russian agricultural exports in 2020, %.

The share of grain in the structure of Russian agricultural exports is more than 30%.

Figure 7 shows the volume of exports of grain and leguminous crops from the Russian Federation in the period from 2010 to 2020 (in billion dollars)[12,13].

**Figure 7.** Exports of grains and legumes crops in billion dollars from the Russian Federation (2010-2020).
The dynamics of grain exports over the analyzed period has a positive trend. Grain exports in 2020 increased by 24% compared to the previous period and amounted to 48.7 million tons, which was the second result in the history, second only to the indicator of 2018 (54.8 million tons). In value terms, exports also showed the second-ever result – 10.5 billion dollars (including legumes 0.35 billion dollars) against 10.8 billion dollars (including legumes 0.3 billion dollars) in 2018. Globally, Russia in 2020 is the fourth largest grain exporter [13].

The largest share in the structure of grain exports of the Russian Federation is wheat, barley and corn. Increasing grain exports contributes to the rise of global food prices in recent years.

Wheat exports in 2020 amounted to 38.3 million tons (8.3 billion dollars), second only to 2018 (44 million tons). Russia holds a leading position in the supply of wheat to the world market with a market share of about 20% [14]. Exports of barley in 2020 increased by 52% and amounted to 6.1 million tons. This is a new historical maximum. In value terms, exports amounted to 1086 million dollars. For the second time in recent history, Russia has taken the second place in the world market in terms of barley exports (the previous one was in 2015), second only to France.

For the fourth year in a row, Russia is the largest exporter of buckwheat - 59 thousand tons (29 million dollars) in 2020.

The export of oats in 2020 amounted to 76 thousand tons, it was higher only in 2019 (115 thousand tons). In value terms, exports amounted to 14.5 million dollars [9,13,15].

Turkey became the main buyer of grain in 2020 - 9 million tons (1.9 billion dollars) [9].

Also importers of Russian grain are Saudi Arabia (3.2 million tons, 2.5 times higher than in 2019), Egypt, Iran, China, etc. Russian grain is exported to 138 countries [15].

Concerning the import, the situation on the grain market in Russia in 2020 was as follows: the volume of imports increased by 16.4% compared to 2019, and amounted to 327.6 million dollars. Import of barley increased by 39.5%, to 48.7 thousand tons, in value terms to 7.5 million dollars. The import of corn in physical terms increased by 54.7%, to 51.3 thousand tons, in value terms by 21.3%, to 131.7 million dollars [16].

The dynamics of changes in the volume of imports of grain and leguminous crops in value terms over the past three years is shown in figure 8 [17].

![Figure 8](image)

**Figure 8.** Import of cereals and leguminous crops in 2018-2020 (million dollars).

The largest share in the structure of imports of cereals and leguminous crops in the Russian Federation is occupied by rice and corn. In third place is wheat and meslin (a mixture of wheat and rye).
The countries that export grain to Russia vary significantly depending on the type of crop. The key supplier of wheat is Kazakhstan (more than 90%), corn – Hungary, France, Romania, rice – India and Thailand [17]. Thus, the export of grain crops of the Russian Federation significantly exceeds the import.

Despite the restrictive measures caused by the period of the pandemic, the initial forecasts of experts for wheat exports in 2021 were about 35 million tons. For 2021, the federal project «Export of agricultural products» set a target for supplies abroad of 26 billion dollars. But these forecasts and plans were significantly corrected by the situation with prices in the domestic market of Russia. By the end of 2020, prices for grain, wheat flour, pasta and bakery products began to rise. In order to stabilize prices, the Government of the Russian Federation has taken measures to curb grain exports with tariff quotas [18]. In the period from February 15 to June 30, 2021, 17.5 million tons of grain can be exported outside of Russia (wheat exported within the quota is subject to a duty of 50 euros per ton until June 30). From March 15, duties were introduced on the export of corn (25 euros per ton) and barley (10 euros per ton) [9].

From June 2, the floating duty mechanism will start working, the duty on wheat exports from the Russian Federation will be levied when the price on the exchange reaches 200 dollars per ton, in which case the duty will be 70% of the difference between 200 dollars and the contract price. Its validity period is not limited [19]. The same floating duty will be imposed on the export of barley and corn [20].

Despite rising global food prices [21], the restrictions imposed will help to reduce the growth of Russian grain exports in 2021.

A consumption of bread products per capita in the Russian Federation is quite stable. In 1992, it was 125 kg/person per year, in 2019 it decreased only to 116 kg/person [22]. The consumption of bread and bakery products in the difficult year of 2020 remained, according to Rosstat, at the level of 2019 [23]. The absence of pronounced changes in the volume of consumption of bread products per capita means a low elasticity of demand for this type of product in the Russian Federation [18]. Grain prices are changeable depending on the season: in February-April prices are maximum, in August-October they are minimum. However, in recent years, there has been a tendency to reduce seasonal price fluctuations due to the increase in food prices on the world market, and, as a result, the reluctance of suppliers to sell grain and its processed products at reduced prices on the domestic market. In this connection, the Government of the Russian Federation began to use various mechanisms for regulating prices for grain crops.

Summing up the analysis of the grain market in the Russian Federation, we can safely say that this industry, and especially the wheat market, plays a strategic role, the importance of which for the economy and budget of the Russian Federation is increasing. Since wheat has the largest share among grain crops in the Russian Federation, changes in the wheat market have a decisive impact on the entire grain industry of the Russian Federation. The sown area and the gross wheat harvest are growing. Wheat export indicators have a positive trend and positive forecasts. For the Russian economy, exports are of fundamental importance. Taking into account the fact that Russia occupies a leading position in the export of grain crops, it is important for the Government of the Russian Federation to correctly dispose of this competitive advantage, achieving optimal pricing for grains and its processed products in the domestic market of the country, but at the same time to use all the advantages of the positions of the country–exporter of foodstuffs for the world market. The situation in the world grain market and Russia’s position in this market should have a positive impact on the economic situation in the Russian Federation.

References
[1] Wheat production in Russia will decrease by 7 million tons in 2021 – FAO Retrieved from: http://zerno.ru/node/14070
[2] World food situation/FAO cereal supply and demand brief/Crop prospects remain positive for 2021; strong feed demand tightens 2020/21 global stocks further Retrieved from: http://www.fao.org/worldfoodsituation/csdb/en
Grain harvest in the Russian Federation in 2021/2022 agricultural year will amount to 119.2 million tons - the forecast of the IGC
Retrieved from: https://zerno.ru/node/14301

Federal state statistics service // Sown area of agricultural crops (1990 – 2020)
Retrieved from: https://www.fedstat.ru/indicator/31328

Federal state statistics service // Gross harvest of agricultural crops (1990-2020)
Retrieved from: https://www.fedstat.ru/indicator/30950

Federal state statistics service // Resources and use of grain (without processed products) (1990-2020)
Retrieved from: https://rosstat.gov.ru/storage/mediabank/DZfE4ieV/bal_1.xls

Svanidze M and Götz L 2019 Spatial market efficiency of grain markets in Russia: Implications of high trade costs for export potential
Global Food Security 21 60-8

Agroexport 2030. Trends and prospects
Agrovestnik 06.08.2020
Retrieved from: https://agrovesti.net/lib/industries/agroeksport-2030-tendentsii-i-perspektivy.html

Food security spilled over to neighbors
RBC daily business newspaper 025 (3314)
Retrieved from: https://www.rbc.ru/newspaper/2021/03/09/604217269a79471196c1131b

Liefert W and Liefert O 2020 Russian agricultural trade and world markets
Russian Journal of Economics 6(1) 56-70

Federal center for export development of agricultural products of the Ministry of Agriculture of the Russian Federation
Russian export
Retrieved from: https://aemcx.ru/%D1%8D%D0%BA%D1%81%D0%BF%D0%BE%D1%80%D1%82-%D0%B0%D0%BF%D0%BA%D1%80%D0%BE%D1%81%D0%B8%D0%B9-%D1%81%D0%BA%D0%B8%D0%B9-%D1%8D%D0%BA%D1%81%D0%BF%D0%BE%D1%80%D1%82/

Grain exports from Russia. Total for 2019
Retrieved from: https://ab-centre.ru/news/eksport-zerna-iz-rossii-itogi-za-2019-god

Russian agricultural export records in 2020
Retrieved from: https://sdelanounas.ru/blogs/139719

Svanidze M and Götz L 2019 Determinants of spatial market efficiency of grain markets in Russia
Food Policy 89 101769

Grain exports from Russia in 2020 increased by 20%
Retrieved from: https://tass.ru/ekonomika/10373715

The Russian Federation in 2020 increased wheat exports by 20.9% to 38.6 million tons
Retrieved from: https://www.interfax.ru/business/749887

Customs statistics of foreign trade of the Russian Federation
Retrieved from: https://customsonline.ru/search_ts.html

Ksenofontov M, Polzikov D and Urus A 2019 Food security and grain market regulation in Russia
Studies on Russian Economic Development 30 606-13

Wheat exports from Russia in January increased by 25.8%
Retrieved from: https://zerno.ru/node/14050

Sukhorukova E Wheat exports will be limited by a new duty. How does this affect the price of bread
Retrieved from: https://www.rbc.ru/business/04/02/2021/601c2d669a794731d5cb127e

Laborde D, Martin W, Swinnen J and Vos R 2020 COVID-19 and risks to global food security
Science 369 (6503) 500-2

Federal state statistics service // Consumption of basic foodstuffs (per capita) (1990-2019)
Retrieved from: https://www.fedstat.ru/indicator/31346

Karabut T 2020 The dough got under the kneading. What did happen to the sales of bread rolls and bread in the pandemic
Russian newspaper 273 (8327)