



GRAIN EXPORTS FROM RUSSIA

■ ANALYSIS

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Leibniz Institute of Agricultural Development in Transition Economies (IAMO),
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Russia's Rise To Become the World's Largest Wheat Exporter: 7
Implications for the Global Grain Trade
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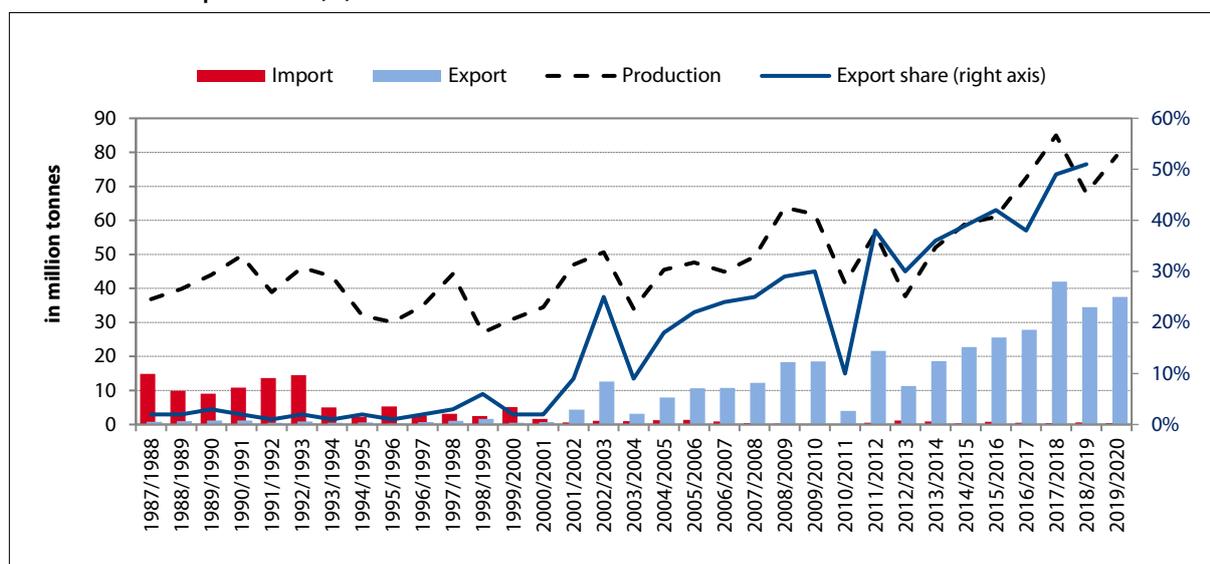
Abstract

As the world's largest exporter of wheat, Russia is already making a considerable contribution to global food security. In addition, Russia has a large untapped potential to further increase its grain production. However, in order to mobilize its wheat production potential, export capacity should be increased in Russia. Under current market conditions—with a weakly integrated wheat market and high trade costs—the additional wheat production potential in the regions, in particular, Ural and West Siberia can hardly be realized. Therefore, the mobilization of grain export potential in grain producing regions requires an improvement in the functioning of the Russian grain market. Not only investments in transportation and trade infrastructure are necessary, but also the development of commodity futures markets for the reduction of price risk and the expansion of market information systems for the improvement of market transparency.

Rising Grain Power

Russia's meteoric rise from grain importer to the world's largest exporter of wheat took place within the last 15 years and occurred much faster than generally expected. For the current season (2019/2020), it is estimated that Russia will export approximately 37.5 million tonnes of wheat to the world markets (Fig. 1). However, it can be expected that Russia's wheat production will further increase in the future, as Russia has huge unused agricultural production potential: In this context, the increase in production through the improvement of cultivation technologies, such as the increased use of fertilizers, is crucial. Furthermore, Russia has large unused arable land, which was cultivated during Soviet times but was abandoned during the Russian transformation process of the early 1990s following the dissolution of the Soviet Union. The mobilization of this production potential could significantly contribute to future global food security, insofar as it also succeeds in increasing the export potential. However, this outcome requires an adequate market infrastructure, which can enable a cost-effective supply of grain to the Black Sea ports from a distance of up to 5,000 kilometers away and strengthen the price linkages between the Russian wheat markets and world wheat markets.

Figure 1: Wheat Production, Wheat Imports and Exports of Russia between 1987 and 2019 (in million tonnes) and the Export Share (%)



Source: Own illustration; Data: USDA-PSD (2019).

Notes: Until 1991 wheat production of the Russian Socialist Federal Soviet Republic. The values for 2019/2020 represent predictions.

This article describes the characteristics of the Russian grain market and reports the findings of research conducted at IAMO to assess Russia's unutilized grain potential and the functioning of the Russian grain market. Finally, the article discusses the challenges of mobilizing Russia's wheat production potential.

Characteristics of the Russian Grain Market

The Russian wheat production area primarily covers six major regions (Fig. 2). The North Caucasus, with its particularly favorable climate and fertile black soil, is the largest wheat producing region accounting for about 40% of total wheat production in Russia. Due to its direct access to the ports of the Black Sea—and thus the world market—the North Caucasus almost exclusively supplies wheat to the world market. Exports from the North Caucasus accounts for about 75% of total Russian grain exports to world markets. West Siberia and the neighboring Ural region are also large production regions, which, in contrast to the North Caucasus, are peripherally located (4,000 to 5,000 kilometers away from the Black Sea, 2,000 to 3,000 kilometers away from Moscow) and, therefore, almost exclusively focus on the domestic grain trade. Other production regions include the Central region, which supplements its production with imported grain from other regions (since Moscow is the largest consumption center and livestock production is also concentrated in Central region), as well as the Black Earth and Volga regions.

The grain is transported in Russia primarily by truck at distances of less than 1000 kilometers and by train at greater distances—in contrast to the USA, where grain is transported relatively cheaply by barge along the Mississippi River to international ports. It is well known that in some of Russia's regions, the grain transport infrastructure is outdated and sufficient wagons are not available. Although the state transport subsidies are relatively low, the transport risk and, thus, transport costs are relatively high due to the aforementioned shortages. In addition, trade costs are high due to the difficulty of enforcing contracts and unforeseen policy interventions by the state on the grain markets. For example, the Russian government imposed a wheat export ban for the entire 2010 marketing year until July 2011, which prevented Russian grain producers and exporters, experiencing the severe income losses, to benefit from high world market prices.

Furthermore, the Russian wheat market, in contrast to the US grain market, is characterized by a rudimentarily developed commodity futures markets, which plays a decisive role in discovering the market prices and hedging the price risk. In addition, market transparency is relatively low in Russia compared to the USA since the information on price developments in the Russian grain market is only available to market participants.

Figure 2: The Major Grain Production Regions of Russia



1 North Caucasus; 1a Republic of Crimea and Sevastopol (Ukrainian territory annexed by the Russian Federation in 2014 and allocated to the North Caucasus economic region, annexation not recognized by the majority of UN member states); 2 Central; 3 Black Earth; 4 Volga; 5 Ural; 6 West Siberia; ● Russian deep sea ports. Source: Own illustration. Map created by the Research Center Eastern Europe in QGIS, with geodata from <https://gadm.org/data.html>, <https://nominatim.openstreetmap.org/> and https://worldmap.harvard.edu/data/geonode:crimea_9sr

Additional Wheat Production Potential and Climate Change

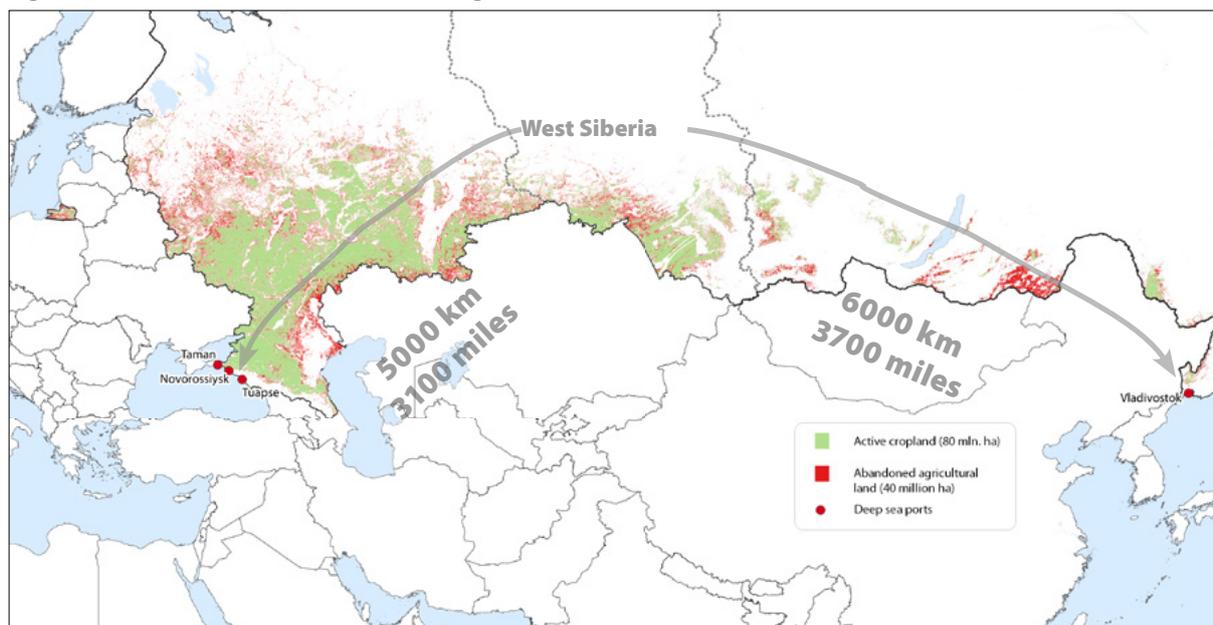
Despite the considerable increase in wheat production and exports in recent years, Russia still has one of the largest untapped potentials in the world for additional wheat production. We have explored how much additional wheat can be produced in Russia, taking into account potential wheat yield increases and the recultivation of currently abandoned arable land.

The current level of wheat yield averages 2.4 tonnes per hectare (2010–2018) in Russia, which is substantially below the average yield in France of 5.85 and the global average of 3.3 tonnes per hectare. Several studies show that the optimal use of fertilizers and pesticides in Russia could double the current wheat yields. However, taking into account the costs, it is expected that this high input use will be less profitable in practice. This is evident, for example, in West Siberia, where the yield gap—difference between currently achieved and the maximum attainable wheat yield—is particularly large. Here, about two-thirds of commercial farms in West Siberia are not applying mineral fertilizers at all so far.

Against this background, an increase of the average wheat yield from currently around 50% to 80% of the maximum attainable yield is a more realistic scenario than a complete yield gap closure. With an increase to 80% of the maximum attainable yield, wheat production would increase from the current 79 to 127 million tons. Assuming a realization of 60% of the maximum attainable yield, the annual wheat production would still rise to 91 million tons. Furthermore, irrigation would significantly increase wheat production and reduce climate-related seasonal fluctuations in the production. However, a substantial expansion of the irrigation infrastructure is unrealistic due to the high associated costs.

Irrespective of the potentially attainable yield increases, wheat production in Russia could also be increased through the recultivation of the currently abandoned arable land. From 1990 to the present, Russia's cropland shrank from just fewer than 120 to around 80 million hectares (Fig. 3). With almost 40 million hectares, Russia arguably harbors the world's largest amount of unused arable land. However, only a relatively small part of this land is suitable for wheat production, because a large portion of the uncultivated land is located in northwestern Russia, where the climate is (still) cold and, hence, inappropriate for wheat cultivation. In addition, the costs of land recultivation are significantly high in these areas covered by forest and shrubs. Our calculations have shown that, taking into account the sustainability and the cost of the recultivation, only about five of the 40 million hectares of abandoned arable land can be converted into cropland. Besides high economic costs, recultivation of these areas would also have a strong negative impact on the climate due to the release of significant amounts of carbon stored in the soil and plants. Regional infrastructure and labor supply are also insufficient in the peripheral regions of Russia to ensure long-term agricultural produc-

Figure 3: Arable Land and Uncultivated Agricultural Land in Russia



Source: Own representation; Data: Lesiv et al. 2018

Background map created by the Research Center Eastern Europe in QGIS, with geodata from <https://gadm.org/data.html> and <https://nominatim.openstreetmap.org/>

tion. As most of the approximately five million hectares of fallow land that can be converted to farmland are located in the southern, low-yield regions, recultivation could increase wheat production by just up to nine million tonnes.

Therefore, our research has indicated that Russia has great potential for increasing wheat production. In particular, we estimated that wheat cultivation could increase sustainably by up to 57 million tonnes, of which about 48 million tonnes would be achieved through the measures of land intensification such as improved fertilizer application, but only about nine million tonnes through the recultivation of abandoned agricultural land.

Climate change is expected to improve the growing conditions for wheat in northern Russia and thus to increase additional wheat production potential in this region. In the north, wheat yields are expected to increase and uncultivated abandoned land will become increasingly suitable for wheat production. On the other hand, the important wheat-growing areas in southern Russia are negatively affected by climate change. In particular, as some studies show, the potential wheat yields are expected to decrease. According to our initial estimations, the overall increase in production via improved cultivation conditions in the north more than offset the deterioration in growing conditions in the south. However, further research is required to develop effective adaptation strategies to climate change for future wheat production in Russia.

The Functioning of the Russian Wheat Market

To assess how well the Russian grain market is functioning, IAMO carried out a time-series econometric analysis of the price relationships on the wheat markets of Russia in comparison to the corn markets of the USA. According to the economic theory of spatial pricing, in a well-functioning market, price changes between the regional markets are quickly and comprehensively transmitted, leading to very similar price patterns and small price differences across the markets. For example, if a region experiences large price increases as a result of a severe crop failure, this will trigger trade flows increasing the crop supply and, respectively, lowering prices in that region.

It is hardly surprising that, in the Russian market, price changes are transmitted only to a small extent and relatively slowly between the distant production regions, and also only half as completely and half as fast as price changes in the US grain market. We also found that the North Caucasus, the largest wheat exporting region with its ports on the Black Sea in Russia, is relatively weakly integrated into the grain markets in Russia's other production regions. This implies that price developments in the North Caucasus, which are strongly influenced by international wheat prices, are transmitted further to grain production regions of Russia only to a limited extent. This contrasts sharply with the USA, where international prices are passed on to the remote production regions through the highly developed, efficient grain markets of the export regions.

Our results indicate that the price developments in the production regions of the Urals and Western Siberia, in particular, are barely linked to the price developments in the export market of the North Caucasus and world markets. Furthermore, the costs of wheat transportation to the ports on the Black Sea are particularly high for those regions.

In the context of the existing trade conflict between the USA and China, Russia and China have intensified their efforts to strengthen inter-country trade relations. This trade expansion includes joint investments to develop the railway line from West Siberia to Pacific ports (for example, Vladivostok). However, well-functioning wheat market and adequate transport infrastructure are even more critical for grain deliveries to Pacific ports, as the distance between the production region and the port equals not 5,000 kilometers but more than 6,000 kilometers. However, the port in Vladivostok (compared to ports in the EU) offers advantageous access to the world market. From Vladivostok, grain can be delivered competitively over short distances to Asia, especially China, South Korea and North Korea.

Mobilization of Russia's Wheat Production Potential

The Russian grain sector has demonstrated a dynamic path of development during the last two decades. It is expected that Russia's grain exports will increase further. Thus, its importance for global food security will continue to rise. Russia, the world's largest country by area, has huge additional wheat production potential, which according to our calculations corresponds to 57 million tons of wheat. The increase in wheat production can be achieved primarily by intensification of cultivation, i.e. by increasing the use of fertilizers and pesticides (48 million tonnes of wheat). The increase in production due to the recultivation of unused land would be relatively low (nine million tonnes) since recultivation would entail high costs and strong negative climatic effects.

However, the question arises as to what extent the Russian grain market fulfills the conditions for mobilizing the additional production potential in the various wheat production regions and for increasing the export supply at the Black Sea ports. Scientific research has shown that the additional production potential is particularly large in the Urals and West Siberia, accounting approximately for 25% to 35% of the total untapped grain production potential. How-

ever, under the current market conditions of a weakly integrated wheat market and high trade costs, the additional wheat production potential in the Urals and West Siberia cannot be transformed into additional export potential. Therefore, according to our estimates, the additional wheat export potential with 37 million tonnes is just two-thirds of the unused total production potential of up to 57 million tonnes.

Mobilizing the grain production potential of Russia requires increasing the efficiency of the grain market, not only by investing heavily in transport infrastructure but also by further developing commodity futures markets to reduce price risk and by improving market information systems to increase market transparency.

Alternatively, the Russian agricultural sector may undergo regional restructuring in marginally located regions: Wheat produced in West Siberia could be used as a feed in the emerging livestock industry in Russia. Instead of transporting large quantities of wheat smaller volumes of meat could be exported from West Siberia to the world market. However, this would require refrigerated transportation increasing demand for more sophisticated transport infrastructure.

About the Authors:

Miranda Svanidze is post-doctoral researcher at the Department of Agricultural Markets at IAMO. She holds a PhD from Martin-Luther University Halle and a MSc in Economics from the International School of Economics of Tiflis State University (ISET), Georgia. Her research interest lies in the spatial efficiency of grain markets in post-soviet countries in the Black Sea region and the import-dependent countries in Central Asia and the South Caucasus, and their importance for global food security.

Linde Götz is deputy head of the Department of Agricultural Markets at IAMO and lecturer at the Institute of Agricultural and Food Science at Martin-Luther University Halle. Her research focuses on competition and the efficiency of agricultural markets and in the food supply chain. One of her research interests lies in the development of the agricultural and food sector in Russia. She obtained her PhD from the University of Göttingen.

Florian Schierhorn is a post-doctoral researcher in the Department Structural Change at IAMO and currently mainly working on environmental impacts of food systems and trade-environment interactions as well as on impacts of climate change on crop yields. In 2014, he was selected for participation in the Lindau Nobel Laureate Meeting on Economic Sciences. He is an expert in the assessment of the grain production potential of Russia and in the Black Sea region in general.

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Russia's Rise To Become the World's Largest Wheat Exporter: Implications for the Global Grain Trade

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Abstract

Since the turn of the millennium, Russia has ascended to become the world's largest wheat exporter. While Russian wheat was at first primarily exported to North Africa and the Middle East, it is today also increasingly in demand in sub-Saharan Africa and South and Southeast Asia. Only extensive investments in modern port and storage infrastructure enabled the rise of exports and the increasingly even distribution of shipments throughout the year. Russia's wheat exports are characterised by a number of special features, namely a strongly fluctuating export supply due to crop failures, government interventions into the grain trade, market opaqueness due to underdeveloped commodity futures markets, and the strong influence of the rouble exchange rate on wheat price formation, with corresponding implications for price volatility. It remains to be seen to what extent the current trend towards corporate concentration in the export sector will lead to the exercise of market power and price distortions in the future.

A Key Wheat Exporter

Today, Russia accounts for about 20 percent of global wheat exports. As major importing countries such as Egypt, Nigeria and Indonesia are increasingly sourcing grain from the Black Sea region, other wheat exporters such as the USA or the EU are already facing severe competition on their traditional export markets. Nevertheless, the Russian government announced in July 2019 that it would invest the equivalent of 60 billion euros in its domestic grain sector by 2035 in order to further expand production and exports (Reuters 1, 2019). Most likely grain exports from Russia will continue to increase in volume and thus the country's global importance will strengthen in the coming years.

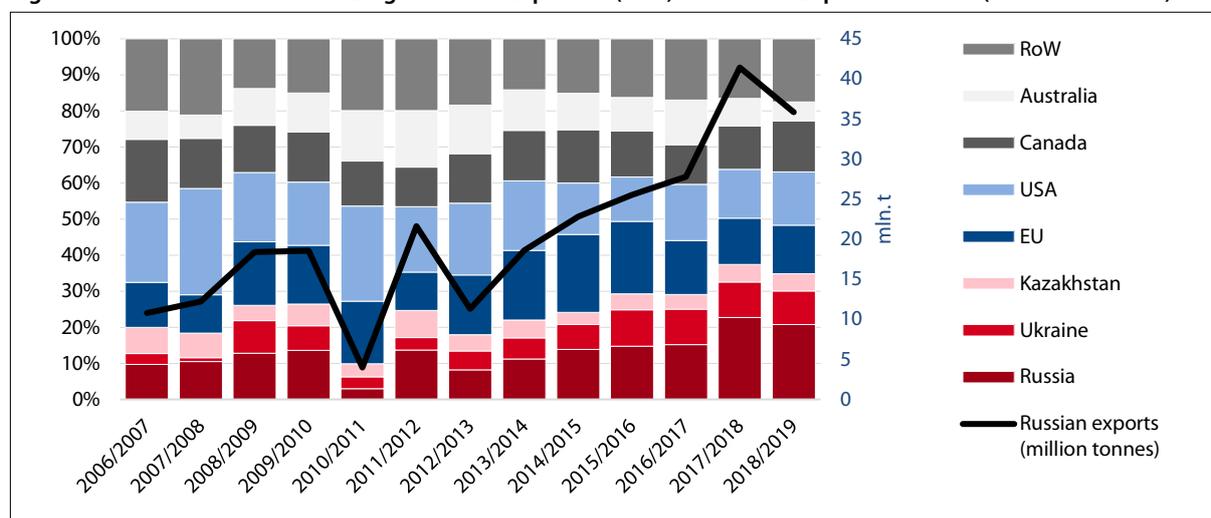
This article examines the functioning of the Russian wheat export market that is still little understood not only in science but also in business and politics. First, we trace the fundamental shifts that have occurred on the world wheat markets in recent decades as a result of the dynamic rise of the Black Sea region. The article then focuses on the causes and driving forces behind the expansion of Russian wheat exports and describes key characteristics of the Russian grain export market. Finally, we discuss how Russia's export strength is likely to affect international wheat markets and global food security.

The Recent Restructuring of Global Wheat Markets

At the turn of the millennium, Russia was still a net importer of wheat. Less than twenty years later, in the 2017/18 season, Russian exports amounted to a record of over 41 million tonnes, which corresponds to around 23 percent of world wheat exports and clearly exceeded the exports of all other countries (see Figure 1 overleaf). Within the Black Sea region, also Ukraine has been able to increase its share of the global wheat market to around 10 percent over the last two decades. Together with Kazakhstan, the three "Black Sea exporters" today contribute a good third of total global wheat exports. This development is primarily at the expense of US wheat exports, which decreased to about 15 percent of global exports. In recent years, Australia also lost market share to Russia in South and Southeast Asia.

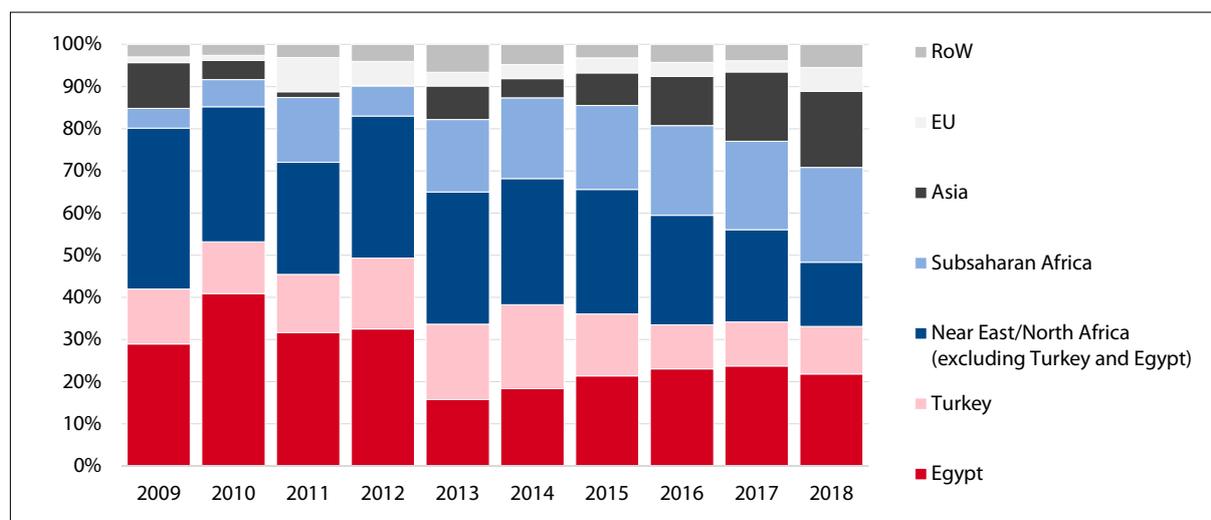
The main destination markets for Russian wheat are in the region "Middle East/North Africa" (Figure 2 overleaf), while Egypt and Turkey—the two largest markets for Russian wheat—alone account for around a third of total exports. Other important sales markets in the region are Yemen, Azerbaijan and Iran. Since 2013, demand from Africa and sub-Saharan Africa has increased considerably. Currently, around 20 percent of Russian exports go to this region, for which Nigeria, Sudan and Kenya are the largest importers. More recently, strong growth has also been observed with respect to exports to South and Southeast Asia—especially Bangladesh, Vietnam and Indonesia. This trend can be explained partly by persistent drought-induced export weakness in Australia and partly by the changing dietary habits of the population in the region. Another demonstration of Russia's strong competitiveness is that Russian wheat is now even exported to Mexico—despite considerable transport cost disadvantages versus the USA.

Figure 1: Market Share of the Largest Wheat Exporters (in %) and Wheat Exports of Russia (in million tonnes)



Sources: Own illustration; data: USDA (2019). The values for 2019/20 are forecasted.
Note: RoW means "rest of world".

Figure 2: Share of Destination Countries/Regions in Russia's Total Wheat Exports (in percent)



Sources: Own illustration; data: United Nations (2019).
Note: RoW means "rest of world".

Determinants and Drivers of Russia's Export Expansion

The production and export of wheat in Russia is favoured by several advantageous geographical factors: Firstly, Russia's agricultural area is extremely large, with over 200 million hectares—Germany, by comparison, has 17 million hectares. Secondly, there are highly fertile black earth soils located in the southern, central and Volga regions. Thirdly, the climatic conditions for wheat cultivation are generally favourable, and fourthly, the Russian Black Sea ports, from which most of the grain is exported, are located in geographical proximity to the high-demand destination markets in the Mediterranean region and to the Suez Canal (that is the gateway to markets in Asia). This results in price advantages versus competing exporters due to lower freight costs—a factor that should not be underestimated in the agricultural commodities trade.

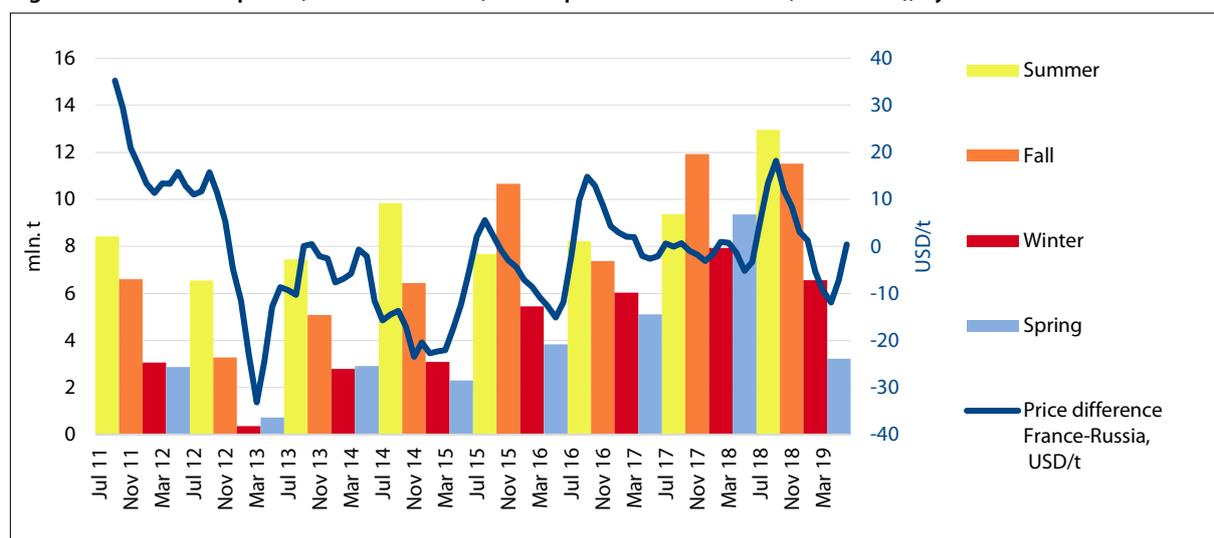
In recent years, Russian wheat exports additionally benefited from the macroeconomic situation within the country. Since 2014, the Russian currency has lost much of its value due to political tensions resulting from the Crimea crisis as well as falling crude oil prices (the energy sector is by far Russia's most important export sector). At the begin-

ning of 2014, one euro was exchanged for 45 roubles, while in January 2016 the value plummeted to 80 roubles. On the world grain markets, this strong devaluation resulted in considerable competitive advantages for Russian grain exports over the EU and US trade.

However, only substantial investments in transport and export infrastructure have enabled Russia to actually export the four consecutive record harvests since 2014/15 to the international markets. The limited capacities of the Russian deep-sea ports on the Black Sea were previously regarded as the biggest obstacle to increasing grain exports. In 2011, the US Department of Agriculture (USDA) estimated Russia's grain export capacity at around 21 million tonnes. By commissioning a new export terminal at Novorossiysk—the main port for grain shipments—this capacity was increased to 28 million tonnes in 2013. Four years later, in 2017/18, Russia exported 53 million tons of grain (including 41 million tons of wheat). While this is presently regarded as the export maximum with port infrastructure running at full capacity, it is the declared goal of the Russian government to further increase the export capacity by 25 million tonnes to 78 million tonnes by 2022.

An additional decisive factor for the development of grain exports was the expansion and modernisation of storage facilities. The USDA estimated storage capacity at around 119 million tonnes in early 2017, while stating that significant losses in quality and quantity were occurring due to ageing and outdated warehouses. By 2019, storage capacity had increased to approximately 157 million tonnes. These additional, modern storage facilities enable a more even distribution of grain exports throughout the year. Figure 3 illustrates that between 2011/12 and 2014/15 most wheat was exported immediately after harvesting, i.e. in the summer months July to September, due to a lack of storage options. Exports declined in the autumn months and were very low in the winter and spring months. From 2015/16 onwards, however, grain exports start to spread over the months of January to June, as well. This development could affect exporters in the USA and the EU in particular, as in the past they had often benefited from a declining Russian export supply at this time of year. This development is also reflected in a narrowing difference between French and Russian free on board export prices (see Figure 3). Free On Board (FOB) is a contractual term that states that the seller delivers the agreed goods at the agreed price to the buyer on board a named ship in a named port.

Figure 3: Wheat Exports (in million tonnes) and Export Price Difference (in US\$/ton), by Season



Source: Own illustration; data: Rosstat (2019). Note: The export price difference refers to the monthly FOB export price in Rouen (France) and Novorossiysk (Russia).

Central Characteristics of the Russian Wheat Export Market

Several studies conducted at the Leibniz Institute of Agricultural Development in Transition Economies (IAMO) outline a number of central characteristics of the Russian wheat export market. Firstly, while the climatic conditions in the Black Sea region are generally advantageous for wheat production, reoccurring extreme weather events have also led to large crop failures in the past. For example, a severe drought in the summer of 2010 led to widespread wild fires in key production regions and a subsequent decline of the Russian wheat crop by one-third compared with the previous season. Similar harvest losses due to extreme weather conditions were also observed in 2003/04 and 2012/13.

In response to harvest shortfalls, the Russian government has in the past repeatedly applied export restrictions to curb grain exports. In August 2010, in view of the decimated wheat harvest, a complete ban on grain exports was imposed in order to counteract domestic food price inflation. The Russian government last intervened into the grain sector directly in February 2015 when it levied an export tax to slow down wheat exports that had accelerated in response to the devaluation of the rouble. However, the government continues to publicly discuss trade restrictions as a possible policy option. Research at IAMO has shown that wheat export restrictions have led to an increase in the volatility of Russian wheat prices, which also spills over to international grain markets.

Another central characteristic of the grain markets in the Black Sea region is the limited functionality of respective commodity futures markets. In general, futures markets facilitate price discovery, contribute to market transparency and enable producers and traders to hedge against price risks. In June 2012, the world's leading commodity exchange, the Chicago Board of Trade (CBoT), introduced its first Black Sea wheat futures contract. However, since this contract was based on the physical delivery of goods, it never attracted significant liquidity. Market participants attributed this to the high risk of unpredictable trade restrictions (which would make physical delivery impossible). In a second attempt, in December 2017 the CBoT listed new index-based futures contracts (so-called swaps) for Black Sea wheat which are completely financially settled. Thus, the wheat traded will never be physically delivered, but the contracts will be settled against a floating export price index. While these Black Sea swaps are constantly traded since their introduction, their liquidity—the decisive factor determining the success of a futures contract—still remains rather marginal compared to the leading global wheat futures contracts in Chicago or Paris.

Against the background of difficult price discovery and the opaque supply and demand situation on the Black Sea grain markets, another IAMO study focuses on the role of GASC tender prices. The GASC (General Authority for Supply Commodities) is the Egyptian state import organisation for food commodities. It is responsible for about half of Egypt's immense wheat imports and uses a competitive tender system to close contracts with suppliers. On a regular basis, exporters sourcing wheat from all major wheat exporting countries submit offers in GASC tenders to compete for delivery to Egypt. Due to the intense competition, the prices negotiated in the tenders adequately reflect competitive price levels on the world markets and the Black Sea market in particular. This gives GASC prices a high informational value in view of the often opaque supply and demand situation in the Black Sea region.

Further, the transition from a fixed exchange rate system to free exchange rate formation in November 2014 increased the influence of the rouble exchange rate on Russian wheat prices. As the rouble fluctuates strongly due to high macroeconomic and political instability, the greater influence of the exchange rate has a negative impact on the stability of wheat prices. At the same time, a study on the interaction between the Russian wheat export prices and futures prices quoted at the CBoT exchange suggests that in recent years, the Russian export price has developed into a leading global wheat price that also influences medium-term trends at the CBoT exchange.

Econometric studies of market power in the Russian export sector have so far been unable to detect any substantial exercise of market power by grain exporters from Russia or the Black Sea region, even though a strong concentration of exporting companies can be observed. However, current developments suggest further concentration tendencies in the Russian grain export sector. According to a Thompson Reuters report, a Russian state bank plans to create a vertically integrated "United Grain Holding" through business acquisitions. If realized, this holding would control significant parts of the domestic transport, storage, and trade infrastructure (Reuters 2, 2019). Against this background, it is also important to clarify the role that large landowners and rapidly growing agro holdings that produce grain and sell it to internationally active exporters play in determining the Russian export price.

Implication for the International Wheat Trade

Benefiting from favourable geographical and macroeconomic conditions, Russia ascended to become the world's largest wheat exporter over the past two decades. While Russian wheat is primarily exported to North Africa and the Middle East, it increasingly finds demand also in sub-Saharan Africa and South and Southeast Asia. As it is the declared goal of the Russian government to further increase wheat production and exports, successful efforts are underway to open additional export markets. In August 2019, Saudi Arabia announced that it would from now on allow wheat from the Black Sea region—and Russia in particular—to be imported into the country (Reuters 3, 2019). Germany and the Baltic states, which had previously supplied Saudi Arabia with wheat, are thus likely to face new competition on their most important export market in the future. Similar adjustments to import requirements are also discussed in Algeria, the world's third-largest wheat importer and currently the EU's most important export market. So far, Algeria does not allow wheat imports from the Black Sea region due to quality concerns.

Russian grain production is characterised by strong fluctuations due to recurring extreme weather events. In the past, the Russian government repeatedly responded to crop failures by imposing trade restrictions, which cannot be ruled out in the future. However, such trade policies can have serious consequences for global food security. For example, the Russian export ban on grains in August 2010 led to food price inflation and shortages in several import-dependent countries in North Africa and the Middle East. In Egypt, high food prices are seen as a factor that helped in catalysing the Arab Spring in 2011. Yet, irrespective of actual export restrictions, rumours and speculation about possible government interventions can be sufficient to trigger price reactions, as was the case in late 2018 (Reuters, 2018).

With the growing importance of Russia for the worldwide supply of wheat, the Russian wheat export price has gained in importance for price formation on the international wheat markets. Since the abandoning of the fixed rouble exchange rate, Russian wheat prices are more strongly influenced by currency movements. As a result, Russia's macroeconomic, fiscal and political (in-)stability could also affect international grain markets. Commodity futures markets for Black Sea wheat, which could enhance price discovery and risk management, are so far only functioning to a limited extent—newly issued Black Sea grain futures contracts at the CBoT have so far attracted relatively little liquidity.

Moreover, the Russian export sector is facing increased corporate concentration through attempts by a Russian state bank to form a vertically integrated agro holding. It remains to be seen if this development leads to the exercise of market power and price distortions, which could impair food security in importing countries. In order to secure efficiently functioning global wheat markets, it is crucial that suppliers from various countries and continents, including the US and the EU with their highly developed commodity futures markets and stable macroeconomic and political conditions, compete on the global wheat market.

About the Authors:

Maximilian Heigermoser is researcher at the Department of Agricultural Markets at IAMO. He investigates processes of price formation in Black Sea grain markets, focusing on trade relations with major grain importers in the Middle East and North Africa region—Egypt in particular. His methodological focus is on time series econometric models to analyse price transmission and price volatility.

Linde Götz is deputy head of the Agricultural Markets Department at IAMO and lecturer at the Institute of Agricultural and Food Science at Martin-Luther University Halle. Her research focuses on competition and efficiency of agricultural markets and in the food supply chain. One of her research interests lies in the development of the agricultural and food sector in Russia. She obtained her PhD from the University of Göttingen.

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Editors: Stephen Aris, Matthias Neumann, Robert Orttung, Jeronim Perović, Heiko Pleines, Hans-Henning Schröder, Aglaya Snetkov

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Research Centre for East European Studies at the University of Bremen • Country Analytical Digests • Klagenfurter Str. 8 • 28359 Bremen • Germany

Phone: +49 421-218-69600 • Telefax: +49 421-218-69607 • e-mail: laender-analysen@uni-bremen.de • Internet: www.css.ethz.ch/en/publications/rad.html