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Russian Grain Port Capacity and Transportation Update

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Approved By:

Levin Flake

Prepared By:

FAS/Moscow Staff

Report Highlights:

Russia's current port capacity for grain exports is estimated at 28 million metric tons (MMT) annually, 7 MMT more than a revised estimate of 21 MMT in 2011. Although this is the estimated capacity, according to industry analysts and grain terminal managers, in ideal conditions (optimal weather conditions, effective management of the movement of grain through ports, steady supplies of grain throughout the year, etc.) and including the direct loading of grain from railway wagons onto ships, Russia could theoretically ship up to 34-35 MMT through its ports. Russia's grain exports in 2012/13 were less than 16.5 million metric tons (MMT) compared to a record of 27.2 MMT in MY 2011/12. Industry analysts forecast Russia's grain exports in 2013/2014 from 20 MMT to 25 MMT. FAS/Moscow currently forecasts Russia's grain exports at 24 MMT for marketing year 2013/14.

Russia's Port Capacity

Russia does not publish aggregated statistical data on the capacity of its grain export terminals, and information below includes FAS/Moscow estimates based on a summary of media information, experts' estimates and field visits. FAS/Moscow previous report on port capacity (November 2011) is here: [Overview of Russian Grain Port Capacity and Transportation](#).

Russia's current port capacity for grain exports is estimated at 28 million metric tons (MMT), 7 MMT more than a revised estimate of 21 MMT in 2011. Although this is the estimated capacity, according to industry analysts and grain terminals' managers, in ideal conditions (optimal weather, conditions, effective management of the movement of grain through ports, steady supplies of grain throughout the year, etc.) and including the direct loading of grain from railway wagons onto ships, Russia could theoretically ship up to 34-35 MMT through its ports annually. In addition, some Russian grain trading companies export thru ports in other countries, such as Ukraine and Baltic States, to export. This 7-MMT increase in capacity is due to construction of a new grain terminal (KSK) in Novorossiysk, and increased capacity of grain terminals in Taman and in Kaliningrad. According to industry analysts and port managers, management and scheduling of delivery of grain to ports and handling of grain in ports has improved, although strong seasonal peaks of grain shipments remain a concern. Volumes of total Russian grain exports decreased from a record 27.2 MMT in MY 2011/2012 to 16.5 MMT in MY 2012/2013. Industry analysts forecast Russia's total grain exports in 2013/2014 within 20-25 MMT. FAS/Moscow currently forecasts Russia's grain exports in MY 2013/2014 at 24 MMT.

This update of Russia's grain port capacity includes deep water ports on the Black Sea, shallow water ports of the Volga-Don basin and Azov Sea, and fairly insignificant port capacity on the Caspian Sea and in the Russian Far East. Russian traders also may export grain through deep water ports of Ukraine, and through some Baltic ports, including terminals of the company "Sodruzhestvo" in Kaliningrad and some ports of Baltic countries (Ventspils, etc.).

In the 2011/12 marketing year, when Russian grain exports reached a record, there were many reports of problems in shipping and major bottlenecks at Russian ports. However, the major constraint to exports during these huge months of shipments was primarily the speed and capacity of the intake of grain (due to rail logistics, documentation problems, etc.) rather than the actual speed of loading grain onto ships. Industry analysts report that some of logistical problems have been resolved in the last two years by improved management of grain delivery to ports, although problems remain. In Russia, weather continues to be unpredictable and at times weather can delay ship loading at these ports. For example, in the deep water ports of the Black Sea southern winds may delay loading as a result of strong waves, as happens often in Taman port. In the shallow water ports of Rostov, wind can reduce the river draft and thus delay the movement of exports for a number of days.

Deep Water Ports of the Black Sea

The deep water ports of the Black Sea include the Novorossiysk port with three terminals and an estimated capacity of 11.5 MMT a year¹, the 4-year-old grain terminal in the Tuapse port with

¹ Note: All estimates of port capacities are of average capacity, and in optimal supply chain and weather conditions amounts in excess of these estimates are possible.

estimated capacity of 2.5 MMT a year, and the new port of Taman, with estimated grain exports capacity of 2.5 MMT (and the potential to increase grain dispatch if the necessary infrastructure and railway connections are developed).

Novorossiysk port: The total capacity of Novorossiysk port to export grain increased in the last two years due to construction of a new grain terminal (KSK). The officially reported grain export capacity of Novorossiysk port includes 4.5 MMT's capacity of Novorossiysk Bread Combine (NKHP), 3.5 MMT's capacity of Novorossiysk Grain Terminal (NGT), and 3.5 MMT's capacity of the new grain terminal KSK, making the total of 11.5 MMT. However, NGT and the KSK reportedly have new equipment that may boost the flow of grain given the proper delivery organization of grain to the terminal, good weather, timely arrival of ships and other external factors. Given all these favorable factors, the NGT and the KSK may increase capacity from 3.5 MMT to 5 MMT, and even 6 MMT per year. The maximum volume of yearly exports through Novorossiysk port was in 2011/2012 (before KSK terminal was put into operation) and reached 9.1 MMT.

The structure of grain terminals in Novorossiysk port is the following:

- **“Novorossiysk Bread Combine” (NKHP)**, is the “old” terminal at the Novorossiysk Sea Commercial Port. NKHP belonged to the state owned United Grain Company (UGC) which upgraded and modernized this terminal during the grain embargo of 2010/2011, and increased its capacity from 3.5 MMT to 4.5 MMT a year by 2012. In 2012/2013, it continued modernization of storage capacity, railway transportation and ship-loading equipment. In 2012, the state-owned United Grain Company was partially sold to the private company “Group of Companies - Summa”, which already owned part of the “new” grain terminal in the Novorossiysk Sea Commercial Port and plans to expand grain handling capacity in Novorossiysk. For more information see FAS/Moscow GAIN report [Privatization of the United Grain Company 6-8-2012.pdf](#).
- **“Novorossiysk Grain Terminal” (NGT)** at the Novorossiysk Sea Commercial Port, or “new” terminal. This terminal also belongs (at least in part), to the Summa Group. The terminal has 14 steel bins with total storage capacity of 120,000 MT, and modern equipment for loading, weighing, etc. The terminal can unload three trucks simultaneously with the total throughput of 600 MT/hour, and unload train cars from three rail tracks (2 railcars each) with the total capacity of 2,400 MT/hour. As for loading grain to ships, the capacity of the grain transporter from silos to ship is 1,600 MT/hour, and the capacity of two shiploaders is 800 MT/day each. The officially reported export capacity of this terminal is 3.6 MMT a year, although in CY 2009 and CY 2012 export volumes significantly surpassed this estimated capacity. The peak export monthly load is 0.5 MMT a month, including 292 trucks per day and 184 railcars per day². The terminal may load ships directly from grain railcars. For proper scheduling grain delivery by trucks, the terminal invested in construction of waiting sites for trucks at the entrance to Novorossiysk and in a computerized system of monitoring grain delivery to the port. The logistical constraint for this terminal is that the piers belong to the Novorossiysk Sea Commercial Port. Thus, the terminal is dependent on others in the port for access, and typically grain is not a priority product in the port. For example, in 2012 grain turnover in Novorossiysk Sea Commercial Port comprised less than 3 percent of volume of port

² Also see: <http://www.nmtp.info/ngt/>

turnover (in physical terms). Grain is competing with expensive commodities such as petroleum, metal, and other products.

- **KCK grain terminal** (www.oao-ksk.com) is a new, privately-owned terminal (belonging to the Group of Companies “Delo”: www.delo-group.ru) for general (mixed) cargoes and for grain. The terminal was put into operation at the end of 2011, and increased grain handling capacity by mid-2013 from 2.0 MMT to 3.5 MMT a year. The terminal has modern silos for receiving up to 120,000 MT of grain (10,000 MT each). The equipment allows receiving grain from trucks and from railcars. The branch of the Novorossiysk railroad to the terminal was built in 2013 and allows receiving 1.5 MMT of grain a year from railcars. The terminal has two deep water berths (11.9 and 9.2 meters), 2 conveyer belts for loading grain from bins to ships with the maximum productivity 1,600 MT/hour, and 2 ship-loaders, with capacity of 800 MT/hour each. However, the location of the terminal makes it more susceptible to the southern wind than the Novorossiysk Sea Commercial Port’s terminals, and loading ships is limited by the wind factor.

All three terminals at Novorossiysk port can load Panamax-sized vessels, and grain is delivered to all three terminals both by trucks and by railroad. At Novorossiysk and many shallow-water ports, grain from growing areas near the ports – within 250 kilometers - arrives primarily by trucks, while grain produced further away, including in Kazakhstan, arrives typically by rail. Also, grain from inland elevators is primarily transported by rail. Grain by rail may come to ports all around the year, while transportation of grain by trucks is typical for summer and fall seasons after harvest.

In terms of grain exports, in the summer, shallow water ports are typically busier and handle more of the exports as grain is supplied by truck from nearby growing areas, while later in the fall and winter exports shift to deep-water ports as more grain is moving by train and winter weather begins to impact the shallow water ports. According to Rusagrotrans, Russia’s major grain railway company, in July 2013, the Novorossiysk port dispatched only 510,000 MT of the total 2.4 MMT exported by Russia in July, and most of grain was delivered by trucks.

Tuapse port: Tuapse port has one grain terminal which was opened in December 2009. The port can load Panamax-sized vessels (up to 50,000 MT). Storage capacity at the terminal is around 100,000 MT, and the export capacity is 2.5 MT a year. However, this terminal can only be supplied by rail, as roads connecting Tuapse to key growing areas are too mountainous for shipments by truck. Until 2012, the high volume of railway traffic destined to Sochi (which is on the same railway line after Tuapse) for Olympic construction was reducing available rail capacity to supply the terminal with grain. However, in 2012 with reduced shipments of materials for the main constructions in Sochi, the terminal increased operation with grain transported by railway from more distant Russian provinces and from Kazakhstan. So for example, transit of Kazakhstan grain through Tuapse in the first quarter of 2012 increased to 563,000 MT (compared to 80,000 MT in the same period in 2011). The port’s dependency on railway grain shipments accounts for typically low grain exports from Tuapse in the first months of grain marketing years (July and August) when grain to ports is supplied primarily by trucks from farms and elevators located in the Southern Federal district of Russia. Thus, in July 2013 it was reported that no grain at all was shipped through Tuapse.

Taman port: The port in Taman began operations in September 2011 with capacity of approximately 1 MMT, but capacity has since increased by 2013 to 2.5 MMT. Dispatch of grain from Taman may increase even more if a commercial railway is built to the terminal. At present the terminal can unload two grain trucks simultaneously with capacity of 600 MT per hour. Total capacity of silos for storing grain is 84,000 MT, but owners of the terminal plan to increase it to over 200,000 MT. The terminal has an area for trucks to wait for unloading. However, the capacity of the port is limited by the absence of railroad access, and so can only be supplied by trucks (which often means from farms no furtherer than a few hundred kilometers away).

Because of shallow water near the shore, the length of the berth for grain is almost 2 kilometers from the shore to the open sea, where the depth of water is 12 meters. Panamax ships can be loaded up to 50,000 MT. A limiting factor for increased grain out-loading is that port does not have water-breakers in front of the grain terminal. Industry analysts speculate that Taman port could become the largest grain terminal in Russia but this would require large-scale Russian Government investment in construction of good railroads to the port, wave-cutting walls in the sea, and removing debris from the bottom of the harbor. In 2011, the government of Krasnodar kray, the Federal Government and the United Grain Company had plans to improve Taman port logistics, but as of mid-2013, there are no signs of federal investments in improving grain export capacity. At present, the Taman grain terminal is jointly held by Glencore International and Kernel Group, a Ukrainian agro-holding company³.

Taman could become a possible major competitor in grain exports to Novorossiysk port, but at present its major competitor seems to be the Ukrainian port Kerch, located just on the opposite bank of Kerch Channel, which serves both small ships (5,000-7,000 MT) from Don-Azov water area, and may serve bigger vessels, including vessels re-loaded with grain from smaller ships. Industry analysts underline that Ukrainian grain port services are often cheaper than Russian services, which can make Ukrainian ports more competitive.

Shallow Water Ports (Both River and Sea)

In the last two years, the capacity of shallow water ports have remained almost the same as two years ago, and the total grain export capacity of all the shallow water ports in the Volga-Don-Azov basin are estimated at 8 MMT, with a possible increase, if weather allows, to 10 MMT. Many companies, including major grain traders, have their own terminals and berths in the Volga-Don-Azov basin, and load 3,000-5,000 MT ships. Because of the large number of loading facilities and the proximity to the key growing areas, in the first 2-3 months of the grain marketing year (July – September) these ports usually ship more grain than deep water ports. Thus, in July 2013 over 70 percent of Russia's grain exports by ships went from the shallow water ports. In August, their share may be 60-65 percent of Russia's total monthly exports. Most of ports of the Volga-Don-Azov cluster stop functioning by the end of November, and navigation is re-opened in March. Some of these ports can function with the help of ice-breakers, although upriver this is not feasible. According to industry analysts, in MY 2013/14 the role of shallow water ports in dispatch of Russia's grain for exports may increase due to the following:

³ <http://www.gazeta.ru/business/2012/10/02/4796341.shtml>
and <http://korrespondent.net/business/companies/1402071-ukrainskij-agroholding-pokupaet-krupnejshij-zernovoj-terminal-v-rossii>

- The current shifting of more of Russia's grain exports from Egypt to Turkey, where grain is typically delivered by 3,000-5,000 MT's ships while grain to Egypt is usually delivered by Panamaxes, which can be loaded only in the deep water Black Sea ports;
- Grain trading companies are trying to decrease operational expenses and improve management of logistics, and therefore prefer building and using their own grain terminals, which is cheaper to do in the Volga-Don-Azov basin. Small vessels shipped from the Volga-Don-Azov basin can be re-loaded in the Black Sea to Panamaxes for shipping to distant customers.
- Novorossiysk port remains Russia's major deep water port in the Black Sea, but grain is not the priority cargo for this port. Grain competes for services with more expensive cargoes, such as petroleum, metal, (ferrous and non-ferrous), chemicals, cement, cargoes in containers, etc.

The major shallow water ports are Rostov-on-Don, Eysk, Azov, Temryuk, Kavkaz, and Taganrog. Besides, there are several Volga-Don river terminals.

- **Rostov-on-Don:** Grain export capacity of this port is estimated at 3 MMT a year. The port is a shallow draft facility loading 3,000-5,000 MT vessels, mostly to Mediterranean countries. Several big grain traders, including Aston and Cargill have their grain terminals in Rostov-on-Don. In the last two years, companies have invested primarily in improving grain handling logistics.
- **Eysk:** Port handling capacity is over 2 MMT a year. This port can load vessels that can carry up to 6,000 MT each.
- **Azov:** Azov Grain Terminal was built and put into operation in 2004. Its capacity is estimated at 1.0 MMT. The terminal is a completely automated complex that includes an elevator for 48,000 MT, a berth, and all modern equipment for unloading both trucks and railway cars and loading 5,000 MT vessels with 4 meters draft. The terminal is located at the mouth of Don River in the vicinity of the entrance to the Azov Sea. In 2012, the terminal was purchased by Outspan International, the Russian "daughter" company of Singapore's company OLAM. According to industry analysts, since purchasing the terminal, in MY 2012/13, Outspan International tripled its grain exports from Russia to 1.3 MMT, and is the second largest exporter of Russian grain exports⁴;
- **Kavkaz, Temryuk, Taganrog:** These are small ports in the Kerch channel and on the Azov Sea. They have small grain loading facilities that belong to grain trading companies, and directly load grain from trucks or railway cars (if railway lines reach the berth), to 3,000-5,000 MT vessels.
- **Small Volga-Don River Terminals:** A number of river terminals load grain to 3,000–5,000 MT vessels. The export capacity of these terminals is estimated at 0.6- 0.8 MMT a year. Usually weather conditions do not allow functioning of these terminals in December - March.

⁴ Source: Vedomosti, June 25, 2013

Other Russian Port Options

Russia's Baltic ports: Industry analysts estimate Russia's Baltic ports grain export capacity at 2.0-3.0 MMT, and the major capacity belongs to company "Sodruzhestvo" in Kaliningrad. The main business of the company is importing and crushing soybeans, but in the last 2 years the company has increased capacity to store and handle grain and soybeans, and also enlarged its ownership of grain railway cars. Thus, storage capacity of its grain terminal (storing grains and soybeans) increased to 328,000 MT, and the terminal can load up to 29,000 MT of grain a day. In 2012, Japanese company Mitsui&Co purchased part of "Sodruzhestvo".

Caspian Sea Ports

Exports from small grain terminals on the Caspian Sea are not significant and, according to grain analysts, capacity of these ports is less than 1 MMT.

Far Eastern ports: Russia had plans to build a grain terminal with capacity of up to 5 MMT a year in Vladivostok (the Far East) in order to export Siberian grain into the Asian markets. "Summa Group", after buying half of the United Grain Company (OZK), announced its plans to invest in construction of the grain terminal in the Far East. However, these plans have not been implemented so far. Some analysts estimate that the cost of transporting grain from Siberia to Vladivostok is higher than from Siberia to European ports. In 2012, grain production in Siberia was low. Thus, finding export locations for this grain was not a concern. In good years of Siberian crops, production exceeds local demand in feeds and in flour, and Siberian grain producers continue searching foreign markets for their grain.

Ports in Baltic Countries and in Ukraine

Ports in Baltic Sea countries and in Ukraine may be considered as an alternative to export Russian grain. Industry analysts estimate the actual grain exports through ports of Baltic countries in CY 2012 at 0.8 MMT, and at 0.3 MMT in the first 5 months of 2013. Kazakhstan transships a significant portion of exported grain through Russia to Baltic ports. Kazakhstan also purchased grain storing and handling facilities in one Baltic Sea port. The creation of the Customs Union facilitates Kazakhstan's grain exports through Russia, because at the border of the CU, grain from Kazakhstan is cleared on the same terms as grain from Russia. It is difficult to separate Russia's and Kazakhstan's grain shipped through ports of Baltic countries.

Grain Transportation Problems

Analysts consider that actual port capacity has not been a problem in the last two years, especially considering the lower grain production in the Southern European Russia and in Siberia in 2012. In years of high grain exports (the record was in 2011/2012), the real bottleneck has been getting grain to the ports. Industry analysts report that management of grain transportation by railways has improved in the last two years (although the improvement may be due to lower volumes of grain exports), but two major problems remain: high cost of transportation from Siberian regions, and competition with grain from Kazakhstan (for markets, for Russian grain cars, etc.). The cost of shipping grain from Siberia to European ports is the major constraint for increasing exports of Siberian grain. Siberian provinces produce in average approximately 18 MMT of grain, but domestic consumption of grain in these provinces varies from 11 MMT to 12 MMT. The annual Siberian grain surplus may amount to 6 MMT in certain

years. However due to the high cost of transportation it is very expensive to ship Siberian grain to export points. The distance from the major railway station Novosibirsk-Vostochnyi (Novosibirsk-Eastern) is:

- 5,900 km to Vladivostock port;
- 4,100 km to Novorossiysk port (Black Sea);
- 3,600 km to St. Petersburg (Baltic Sea port)
- 3,330 km to Zabaikalsk (the major border point with China).

Key Russian Ports for Grain Exports



Note: DW = Deep Water Port, SW = Shallow Water Port