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The Russia-Ukraine War's Impact on Food & Agri

What Oceania's Food & Agri Chain Has To Plan For

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Food & Agribusiness
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Summary

Costs increase across the farming sector in 2022 due to high fertilizer and energy prices.

Grain: The global grain supply has been heavily disrupted due to the limited exports out of Ukraine, as ports are closed and rail and road logistics can handle only a fraction of the typical export volume. Ukrainian grain crops and exports will see severe reductions in the upcoming 2022/23 season, keeping global supplies very tight and prices elevated. Russia has continued to export grain since starting the war and is expected to continue to export most of its grain to the world market, as importers need those volumes to ensure food security. Global grain prices, and with them global food prices, are expected to stay elevated throughout 2022 and likely beyond. Australian grain prices have not increased as much as those of export competitors in the US or the EU.

Fertilizer: This is another key product exported from the Black Sea region, and elevated input prices will cut into farmer margins. Regions reliant on imports, like Oceania, have to plan for continued elevated prices and, potentially, even some supply shortages in 2022.

Energy: Increases in crude oil and diesel prices resulting from the war add to costs in farming and the supply chain. With Europe likely to reduce Russian energy imports further with a ban on Russian oil imports by late 2022, and with Russia preparing legislation to disrupt commodity exports to countries that impose sanctions or supply Ukraine with weapons, we expect energy prices to stay volatile and high. While oil prices above USD 100/bbl already feel expensive, a further >50% price upside is possible as a consequence of those sanctions. Oceania's food & agri chain will therefore feel a knock-on effect from global price volatility.

Logistics: A system already stressed by Covid faces additional pressures from the war. Shipping costs also feel, and will continue to feel, the rise in energy prices. Container freight rates are significantly elevated, largely due to Covid-related disruptions, and it will likely take two or more years to unwind congestion around the world and for freight rates to move closer to historical levels. With respect to goods imported into Oceania, these costs will be passed on to consumers.

Meat and dairy: Animal protein sectors are indirectly impacted through higher input costs from feed, fertilizers, and energy. Neither Russia nor Ukraine is a major importer or exporter of pork, beef, poultry, or dairy, so global trade flows of animal protein have not been disrupted anywhere close to the magnitude of grain trade disruptions. However, elevated costs will also be felt in Oceania's livestock industry.

Fresh produce and tree nuts: These sectors will largely feel indirect impacts from higher fertilizer and energy costs. Ukraine and neighboring Moldova are among the top ten global walnut exporters, and the war may somewhat impact this trade flow. Still, secondary effects on other tree nut exporters, like Australian almond producers, are likely rather small. Russia is among the world's top ten fruit importers – with imports including bananas, citrus, stone fruits, and lemons – which could drive trade rerouting, the effects of which, as in the case of citrus, might also be felt by Australia.

Sugar: The war has had limited immediate impact for sugar, as the Black Sea is a minor sugar-trading region. Furthermore, oil price rallies were not fully transmitted to Brazil's gasoline prices, where they could impact millers' decisions regarding the allocation of cane to the production of sugar or ethanol.

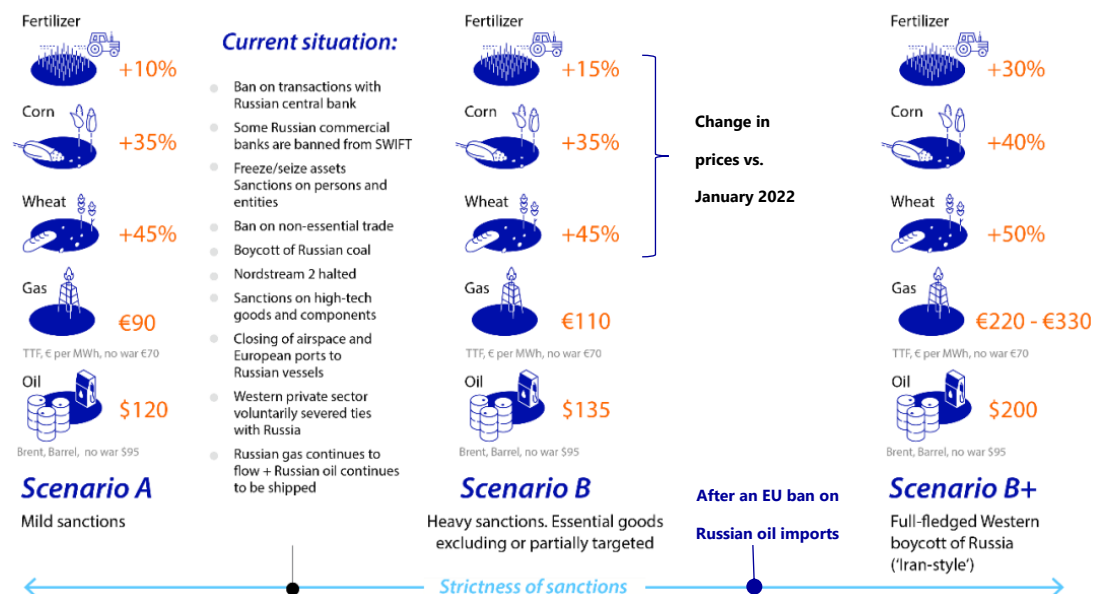
The risks of a quick change: A quick end to the war, as much as we may wish for it, seems rather unlikely. Still, a resolution of the conflict would likely add price pressure in many markets, from energy to fertilizers and grains. Ukraine's crop production and exports in 2022/23 have already suffered damage, but volumes, especially export volumes, would likely be better in the event of a quick resolution. Still, moving grain through partly damaged road and rail infrastructure to ports that are surrounded by mines would be difficult. A recovery of Ukraine close to its full production and export potential is likely only possible in future seasons. But as we have seen, prices react sharply and abruptly in the absence of Ukraine, and prices will probably do the same on its return. Unwinding sanctions on Russia and Belarus might take longer, and the pressure on oil, gas, and fertilizer prices may not abate as quickly and strongly as farmers wish.

The Impact of War and Sanctions on Global F&A

Disruptions to the trade of Russia and Ukraine, two major agricultural powerhouses, have resulted in significant price increases in outputs like grains and inputs like fertilizers and energy. In our price-impact analysis, we currently sit between two scenarios outlined in previous RaboResearch reports: Scenario A, in which the war is short-lived and disruptions to the export of goods from the region is temporary; and Scenario B, wherein the conflict is longer lasting, Russia is heavily sanctioned by the West, but necessity goods, such as gas and oil, are exempted from European sanctions. With the EU's latest move to ban Russian oil imports, the impact on key commodities is very likely to move well beyond Scenario B, but not yet extend to a third scenario, B+, in which the West cuts all economic ties with Russia and imposes an 'Iran-style' full-fledged economic boycott of Russia, including a full ban of Russian oil and gas imports.

For the food & agribusiness sector, the implications of this move are more negative than positive, as the prices of farming outputs like grains are expected to move upward substantially less than those of inputs like fertilizer and energy.

Figure 1: Price changes vs. January 2022 for fertilizers and grains, and absolute prices of energy. An EU ban of Russian oil imports as currently prepared would move us between Scenario B and B+



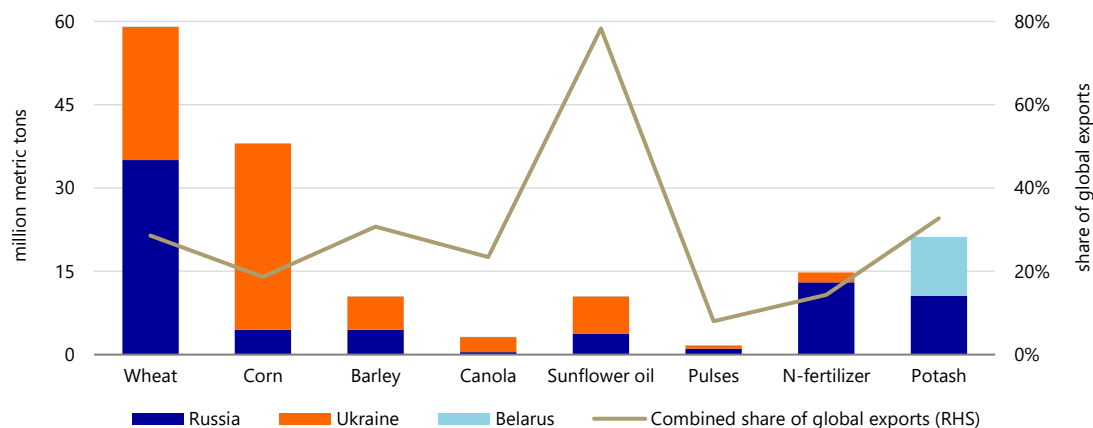
Source: Rabobank 2022

Grains and Oilseeds Face Heavy Trade Disruptions

There Won't Be a Full Loss of Volumes From the Black Sea

Over the past two decades, Russia and Ukraine have risen in the ranks of major food & agribusiness powerhouses, accounting for a combined share of 20% to 30% of global exports for several key commodities.

Figure 2: Russian, Belarussian, and Ukrainian exports of key agricultural products (chart shows 2021/22 expected volumes and shares before war and sanctions)



Source: USDA, IFA, UN ComTrade, Rabobank 2022

While sanctions on Russia and Belarus make trade with those countries more difficult, volumes are still flowing, and payments are made for those shipments. Therefore, it is assumed that exports will continue in the coming months, though likely not as smoothly as usual, but enough that the world's importing nations can benefit from crucially needed supplies. However, Russia may decide to temporarily block some export volumes, which in turn would disrupt global supplies and add to price volatility.

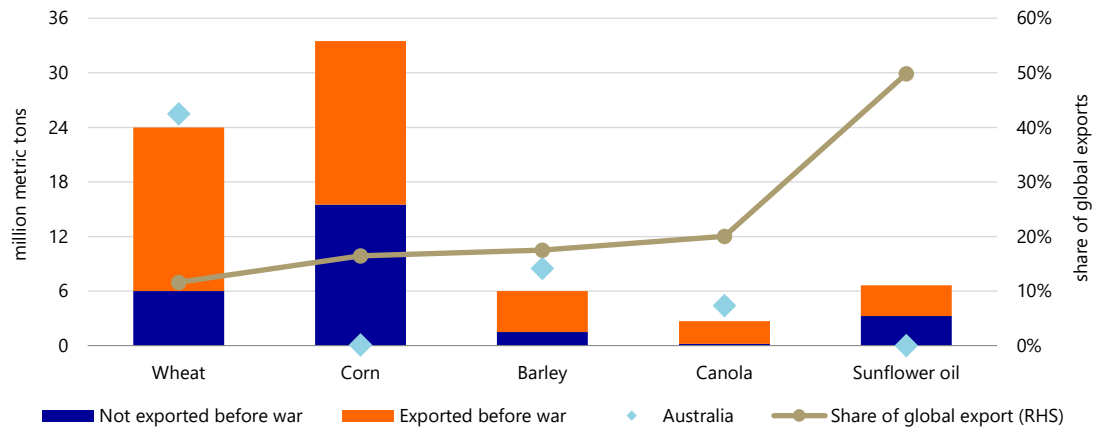
Ukraine's 2022/23 Production and Exports To Be Heavily Reduced

Ukraine would have shipped about as much wheat, barley, and canola to the world market in the 2021/22 season as Australia is shipping in the current record season. In addition, Ukraine's corn export volumes would have been about the size of Australia's entire grain & oilseed export volume.

As the war started in February 2022, Ukraine had already shipped at least half of the season's volumes, and for some commodities, as much as >75% of exports. Consequently, the world has not yet fully felt the heavy absence of Ukraine's supplies. However, this is about to change from July onward, when Ukraine harvests its next crop.

Ukraine usually exports almost all of its grains & oilseeds via its Black Sea ports, which currently are completely closed and unlikely to reopen anytime soon. Ukraine will attempt to continue to export by rail and road to EU demand centers, as well as to Black Sea ports in Romania and Bulgaria. However, exports will not be able to reach anywhere close to historical volumes. In April 2022, grain exports by road and rail reached 1.1m metric tons, only about 20% of the average monthly volumes needed to reach 'normal' annual levels. This change in export flows increases inland freight costs dramatically and cuts into farmers' profitability at a time when high input costs and uncertainty have already hurt the financials of farmers in Ukraine.

Figure 3: Ukraine's 2021/22 shipments happened largely before the war started



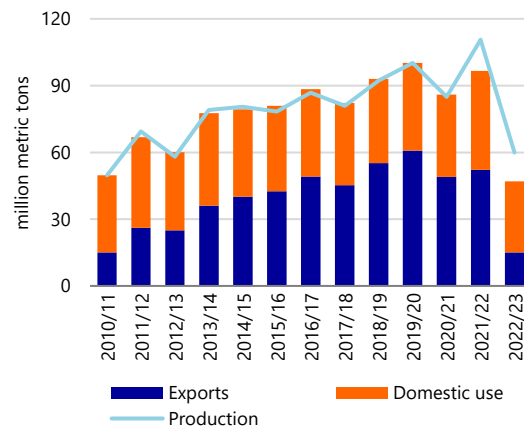
Source: USDA, Rabobank 2022

April and May are key months for Ukraine's farming sector, as winter crops like wheat, canola, and over half of Ukraine's barley exit their winter dormancy and need fertilizer and chemical applications. A reduction of these applications is expected. Moreover, farmers will not be able to harvest some of the grain due to the war, which puts the output of those crops at risk.

Likewise, spring crops like corn, sunflower, soybeans, and some barley are planted in April and May. Shortages of seed, labor, and machinery parts, along with the challenges of minefields, undetonated ammunition, and uncertainty about the future potential to store, market, and export crops, put the production of spring crops at even greater risk than winter crops.

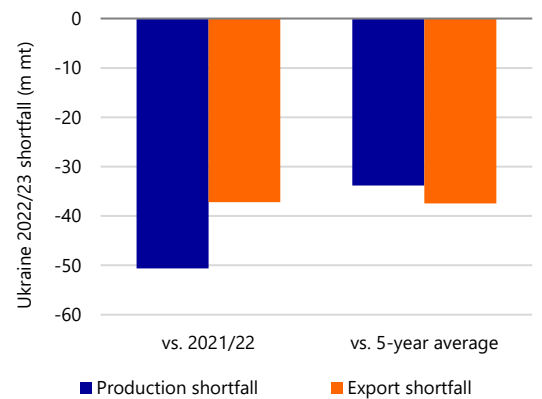
Predicting 2022/23 Ukrainian production and exports is currently impossible. The figures below show a scenario with about 40% higher monthly export volumes than Ukraine managed in April 2022, which might already be a stretch. Ukraine will likely produce more grain than it can export and consume, and all this despite assuming grain yield losses due to reduced fertilizer and chemical applications, reduced spring planting areas, and increased abandonment of fields due to war activity, unavailability of machinery parts or labor, and lack of proper storage capacity.

Figure 4: Scenario of heavy cuts to 2022/23 Ukraine grain & oilseed exports and production



Source: USDA, Rabobank 2022

Figure 5: Ukrainian export scenario for 2022/23 could deprive the world of 30m-40m mt of G&O

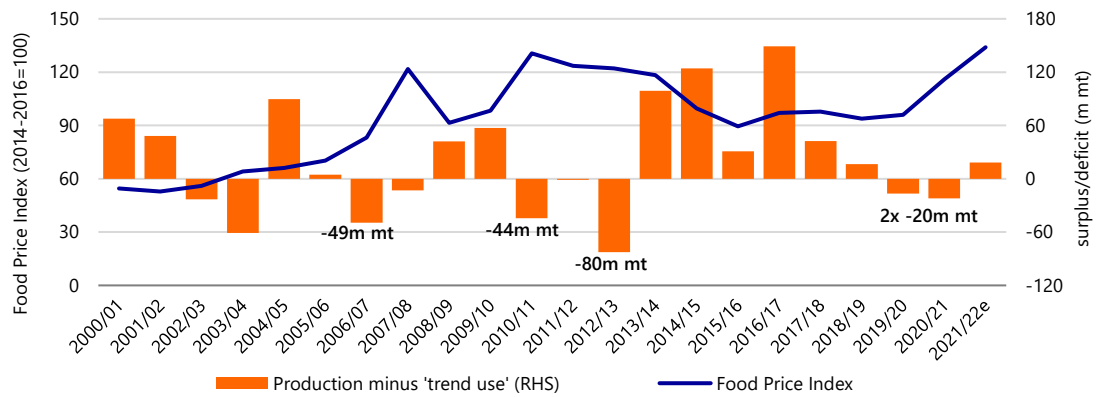


Source: USDA, Rabobank 2022

Given the global market's current tight supply, our scenario of a 30m to 40m metric ton shortfall in grain & oilseed exports from Ukraine represents a severe threat to food security and affordability for importers around the world. The anticipation of such shortages has already driven prices around the world higher, especially in import nations.

In years when global grain production has fallen 40m to 50m metric tons below trend consumption in one season, the historical trend has been that the global food price index rises to very high levels. The most recent crisis in Ukraine has pushed the FAO's Food Price Index to a record high, as heavy supply losses in the world market have to be expected.

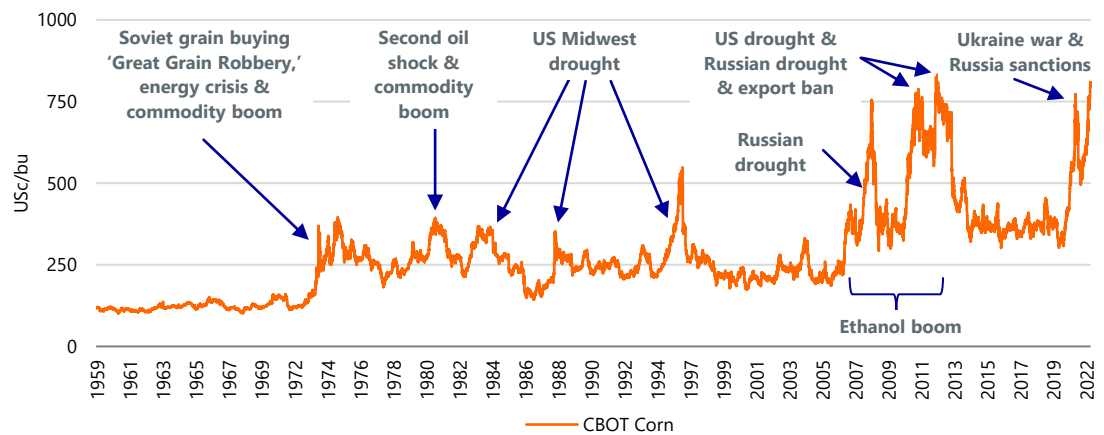
Figure 6: A global grain shortfall of 40m to 50m mt in a year usually drives up food prices



Source: USDA, Food and Agriculture Organization of the United Nations, Rabobank 2022

The Black Sea crisis shows that the importance of the region, which has gained market share in global supply in the past two decades, means that it also has more impact on global grain price developments. But it isn't the only price driver currently at work. Weather problems like dryness in Brazil and the hard red winter wheat belt in the US, as well as cold and wet conditions in parts of the US Midwest and Canada, are additional price drivers for grains and have recently pushed CBOT Corn to decade highs and further supported wheat prices.

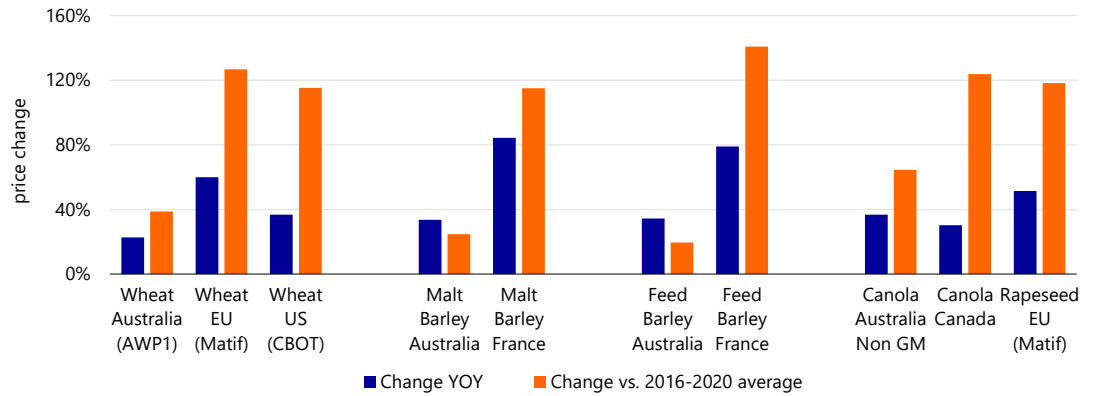
Figure 7: In recent decades, CBOT Corn futures have experienced more impacts from Black Sea disruptions



Source: Bloomberg, Rabobank 2022

Grain farmers are benefiting from these increased prices, but not equally. Because the recent record crop is stretching export logistics to their limits, Australia is unable to ship more this season, and the country is seeing stocks rise. Still, for the upcoming season(s), Australian grain and canola farmers are benefiting from stronger prices, though not as much as many other parts of the world. And, while high prices are favorable for grain producers, they also mean high costs for processors and consumers, whether the end product is food or animal feed.

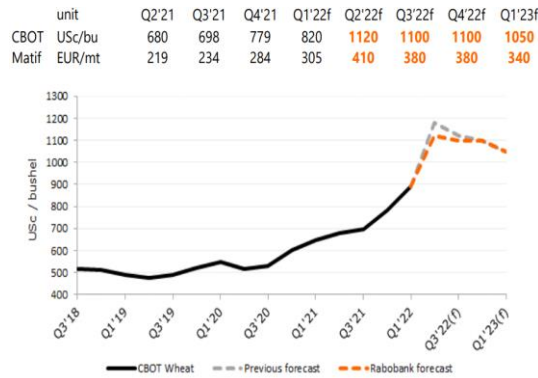
Figure 8: Australian grain & oilseed prices are up year on year, but well below global increases



Source: Bloomberg, Rabobank 2022

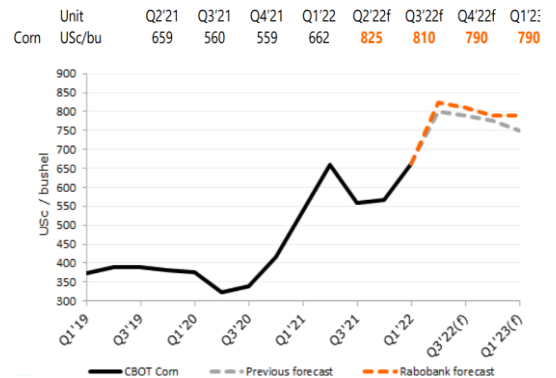
Rabobank forecasts elevated global grain & oilseed prices to persist throughout the year – and for years to come – if the war does not end soon. Even an end to the war, depending on how it shapes the future of Ukraine and its exports, will likely have at least some supply and price impacts that last well beyond the current season and the next.

Figure 9: Rabobank CBOT Wheat forecast



Source: Bloomberg, Rabobank 2022

Figure 10: Rabobank CBOT Corn forecast

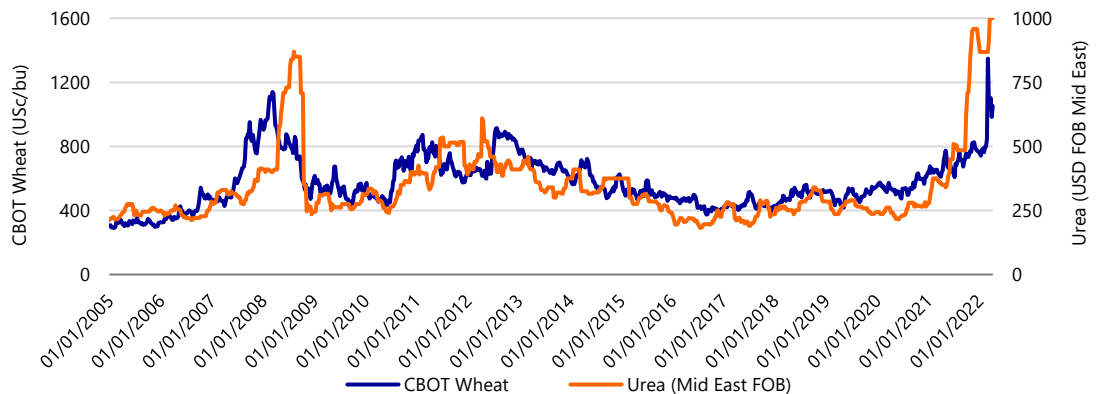


Source: Bloomberg, Rabobank 2022

Record Fertilizer Prices Impact Farmer Margins

High grain prices also correlate significantly with high fertilizer prices, and the current high-price period is no exception. Farmers and the food supply chain will have to plan for elevated input costs, not only for fertilizers but also for energy.

Figure 11: Global fertilizer prices usually rise with grain prices



Source: Bloomberg, Rabobank 2022

In early April 2022, fertilizer prices reached all-time highs, not only because of elevated grain prices but also because Russia and Belarus are key exporters of various fertilizers.

Figure 12: The Black Sea region's share in global fertilizer production and exports

Nexus production and exports*		Ammonia	Urea	Ammonium Sulfate	Ammonium Nitrate	Calcium Ammonium Nitrate	Phosphate Rock	Phosphoric Acid	Mono-ammonium Phosphate	Di-ammonium Phosphate	Muriate of Potash
Belarus	Production	0.59%	0.68%	0.71%	1.19%	0.00%	0.00%	0.43%	0.04%	0.00%	17.48%
	Exports	0.13%	0.42%	0.06%	0.00%	0.00%	0.00%	0.00%	0.06%	0.00%	20.51%
Russia	Production	10.53%	5.33%	6.27%	25.44%	3.74%	8.43%	7.93%	9.67%	4.24%	19.01%
	Exports	22.71%	13.91%	2.54%	45.81%	4.14%	9.18%	0.00%	14.52%	8.24%	20.66%
Ukraine	Production	1.51%	1.74%	0.19%	3.32%	1.33%	0.00%	0.00%	0.01%	0.00%	0.00%
	Exports	0.91%	2.94%	0.05%	0.84%	1.80%	0.00%	0.00%	0.00%	0.00%	0.00%

Countries/regions with greatest need for supply chain adjustment if trade is impacted**		
Nitrogen	Phosphates	Potash
Ukraine Belgium Finland Europe Middle East & Africa	Brazil Estonia Latin America Europe Former Soviet Union Middle East & Africa	Brazil US Europe Latin America Former Soviet Union North America Southeast Asia

*Note: Production and export data 2020
 **Note: Trade data 2021 indicative
 Source: UN Comtrade, IFA, Rabobank 2022

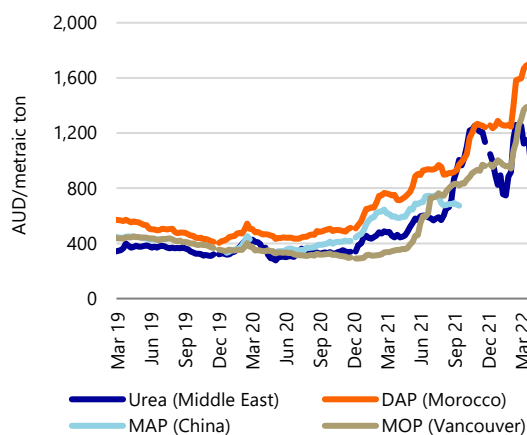
Even countries that do not typically import much fertilizer from the Black Sea region, like Australia, will still face a tough fertilizer market in the coming months. Given Australia's import dependence, its fertilizer chain is more vulnerable than usual. Australia may face some temporary shortages, as key import competitors like Brazil and India will also try to secure their needs in the global market.

Global fertilizer capacities are constrained, and the world will not be able to offset easily any export shortfalls from the region by using existing capacity in other parts of the world.

Urea producers around the world face high natural gas prices, increasing their production costs. In addition, most of the spare capacity for urea production is in China, which first needs to make a political decision to resume urea exports after having limited them during its energy crisis in 2021.

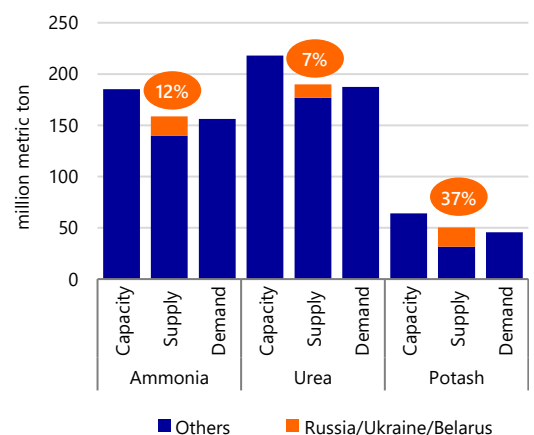
With respect to potash, global capacity is not sufficient to offset a severe reduction of Belarussian and Russian exports given the two countries together account for over 30% of the world's potash trade. Once again, Australian and Brazilian farmers will be in direct competition with one another.

Figure 13: AUD-adjusted fertilizer prices



Source: Bloomberg, Rabobank 2022

Figure 14: Global fertilizer capacity, supply, and demand

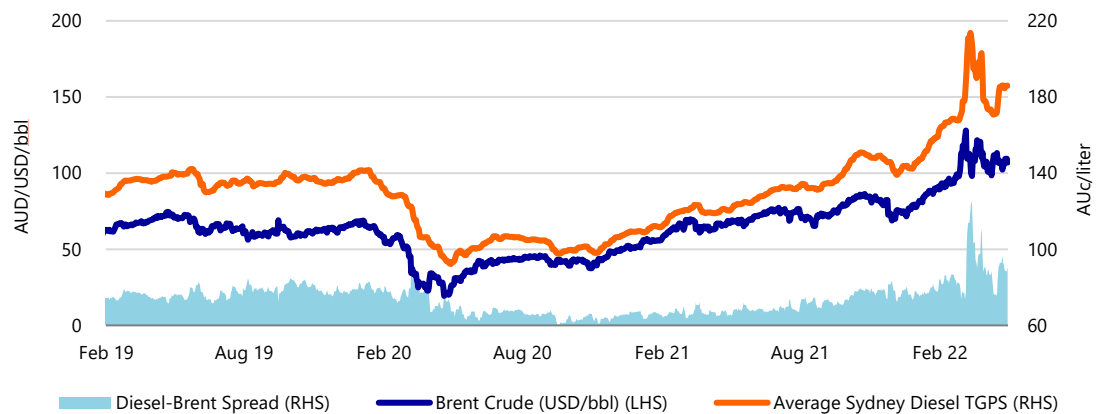


Source: IFA, Rabobank 2022

Planned EU Ban on Russian Oil Imports Risks Further Price Upside for Energy

Russia provides just shy of 10% of global crude oil exports. Since the war began, oil prices have settled well above USD 100/bbl, almost double the average price of the past two years. Global diesel prices have experienced even stronger increases, as Russia also usually exports heavy volumes of diesel and global refining capacity in key demand regions in Europe and the US is lacking. Consumers in countries that are net importers of crude oil, like Australia, feel the global price volatility.

Figure 15: Diesel prices had a stronger increase in Australia than crude oil prices

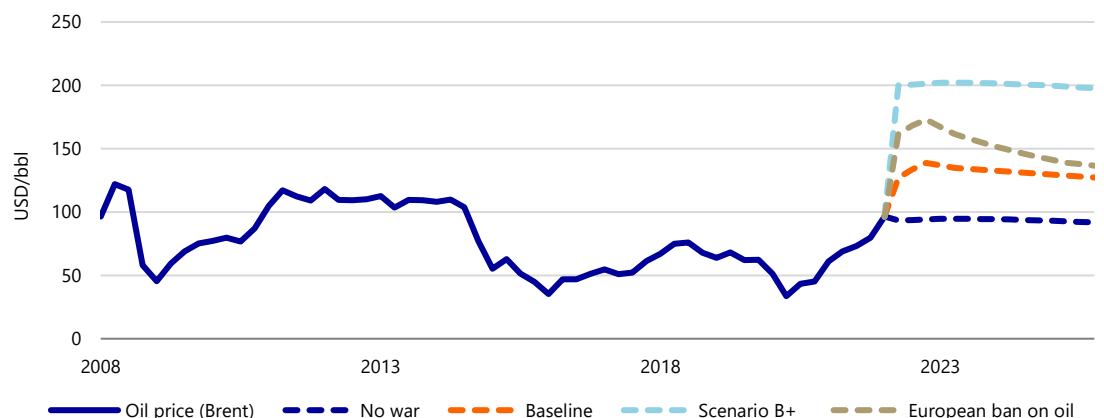


Source: Bloomberg, Rabobank 2022

Energy prices will be heavily impacted by the sanctions imposed on Russia. The EU and other countries are working on further sanctions against Russia, and their next package will likely further reduce Russian energy imports and cut out Russian oil imports into the EU by late 2022. At the same time, Russia is preparing legislation to disrupt commodity exports to countries that impose sanctions or supply Ukraine with weapons. Both sanction packages will likely keep energy prices volatile and high.

Our newly developed impact scenario reflects a European ban on Russian oil and sees oil prices rise globally to more than USD 170/bbl, despite our assumption that Russia will be able to sell half of its oil volumes previously intended for Europe at a discount to countries that have not joined the sanctions, i.e. India and China. The short-term challenge in this scenario is meeting lower global supplies by reducing global oil demand by 2.5%, with large reductions to take place in Europe. A detailed overview of this scenario analysis can be found [here](#).

Figure 16: If the EU bans Russian oil imports, the price of oil may near USD 170/bbl in 2H 2022 before dropping to USD 150/bbl in 2023



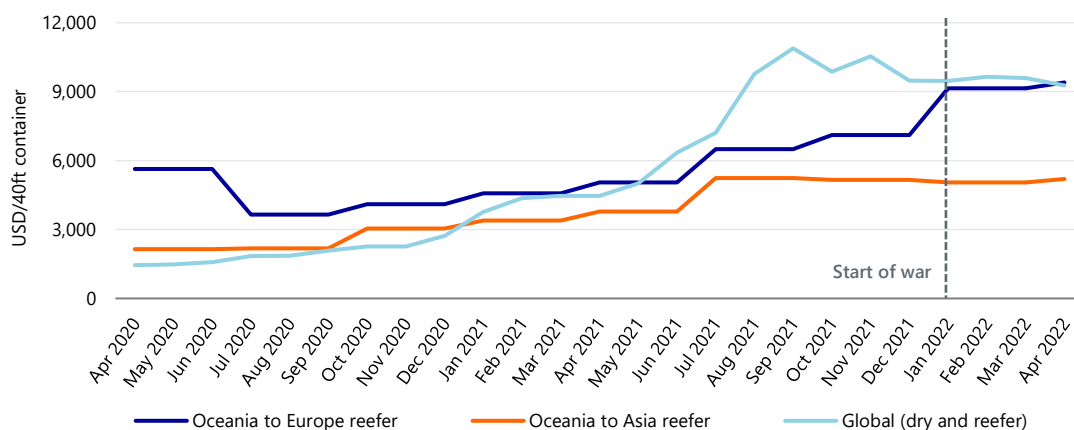
Source: ICE, Macrobond, Rabobank 2022

Logistics: Already Stressed and Facing More Pressure

Shipping costs feel, and will continue to feel, the rise in energy prices. Container freight rates are significantly elevated, not only because of the war but also due to continued Covid-related disruptions like lockdowns and labor shortages. So far, Russia's war in Ukraine has not added much fuel to the fire of container freight costs, as the region is a rather small shipper of containerized goods, but the anticipation of slowed global growth as a result of massive inflation is providing headwinds to the growth outlook for containerized trade. Globally, one in five containers is stuck in port congestion, with over a quarter in Chinese ports – a significant drain on available shipping capacity. And it will likely take two or more years for container freight shipping to unwind congestion around the world and for rates to move closer to historical levels.

Shipping goods in containers is, and will remain, massively more expensive, adding more cost to imported goods, from plant protection chemicals to machinery parts. At the same time, high freight rates make exporting goods more difficult and add to the cost of those products in importing countries. The global dry bulk freight index is still more than four times higher than historical levels. For example, transporting beef, fruit, and other agricultural goods from Oceania to Asia in refrigerated containers is 1.5 times more costly than it was two years ago, and we predict this will get worse in the coming quarters before it gets better.

Figure 17: Dry container and reefer freight rates have increased largely because of Covid disruptions



Source: Drewry, Freightos, Rabobank 2022

Impacts on the Livestock Sector Are Largely Indirect

The indirect impact of increased costs from feed and fertilizers is a bigger driver than direct impacts, as Russia and Ukraine are not heavy exporters or importers of most meat and dairy products.

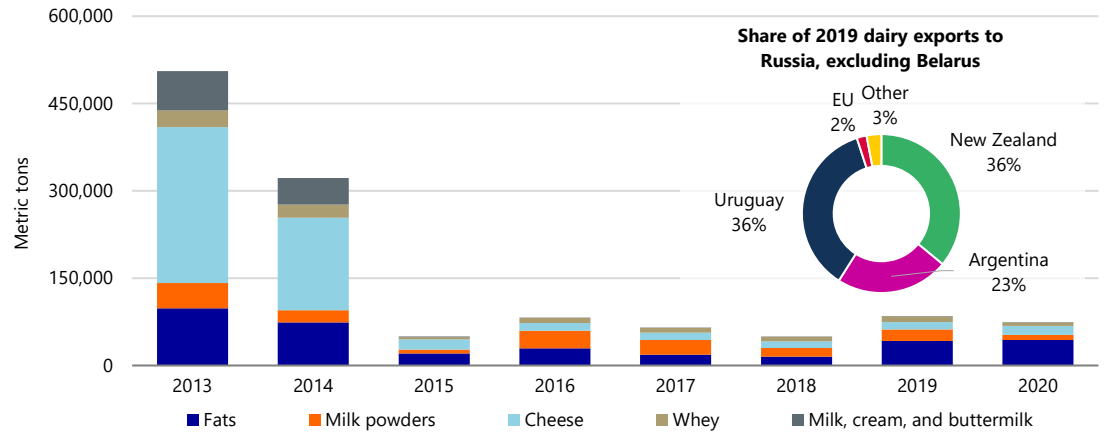
Poultry: Ukraine and Russia are top ten exporters, but the volumes are small. Ukraine is the world's sixth largest exporter of poultry, and Russia is the world's ninth largest. But at 460,000 metric tons and 325,000 metric tons, respectively, volumes comprise a small share of the global total of 13m metric tons exported.

Pork: Ukraine imports about 55,000 metric tons of pork, a relatively small share of the 11m metric tons traded globally.

Beef: Russian beef imports are rather small, but they may impact trade somewhat. Russia has greatly reduced beef imports over the last decade, and now imports about 300,000 metric tons (of an 11.5m metric ton global total). The major suppliers are Paraguay, Argentina, and Brazil.

Dairy: The Black Sea has a small import need. Russia is a small player in global dairy trade, as it has reduced its dairy import needs over the past decade to less than 100,000 metric tons. However, the sector feels the impacts of the war, not only through increased input and energy costs and FX changes but also through significantly higher prices for vegetable oils used as substitutes for milk fat in dairy products.

Figure 18: Russia is a minor importer of dairy products*

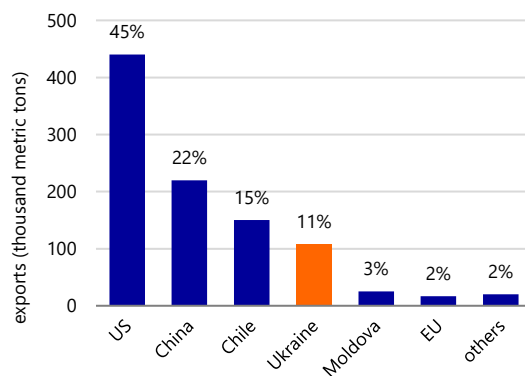


*Note: HS codes 0401 to 0406 only
Source: TDM, Rabobank 2022

Higher Costs Hit Fresh Produce and Tree Nuts

The Black Sea region is not a major exporter of fruits or nuts. Thus, fresh produce and tree nuts only feel the indirect impacts of higher fertilizer and energy costs, as well as exchange rate moves.

Figure 19: Global walnut exports and market share in 2020

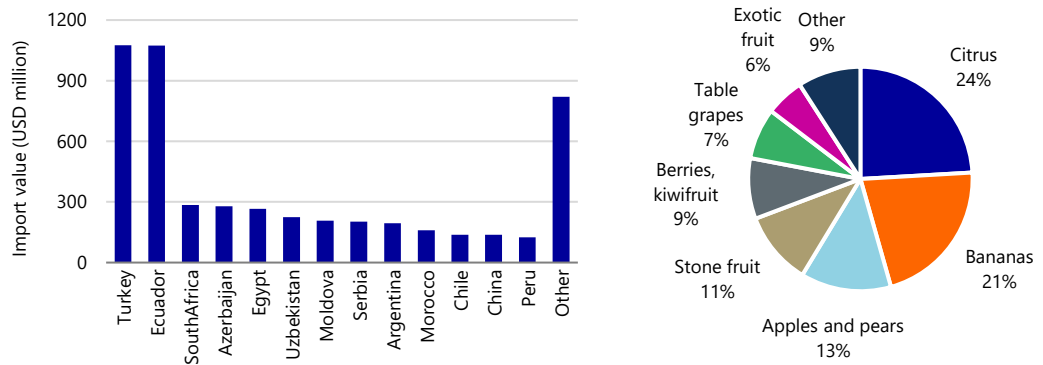


Source: UN Comtrade, Rabobank 2022

Ukraine is among the top ten global walnut exporters, accounting for 11% of global exports. Neighboring Moldova also exports some walnuts, holding a 3% share of global exports. Moldova could get dragged into the war given its location and the presence of Russian troops in Transnistria, an unrecognized breakaway state along the Ukraine border that is internationally recognized as part of Moldova. Although the war may somewhat impact Ukraine's nut trade flows, the knock-on effects on other regions and the production of other tree nuts, like almonds in Australia, are rather small.

In contrast, the fresh fruit trade may require rerouting, as Russia is among the world's top ten fruit importers. The main impacted fresh fruits include bananas from Ecuador, citrus fruits and stone fruits from Turkey and South Africa, and lemons from Argentina.

Figure 20: Russia's fruit imports by origin and type of fruit (by value, latest year available)



Source: UN Comtrade, Rabobank 2022

The Immediate Impact on Sugar Is Limited

The immediate impact of the conflict on the international sugar trade and prices has been negligible. Neither Ukraine nor Russia has a large role in international sugar trade. Even severe disruption to the Ukrainian harvest (which is almost inevitable) is unlikely to trigger additional trade flows that would impact the market. Also, the run-up in oil prices prompted by the war was not fully transmitted to Brazil's gasoline prices, where it could impact the sugar/ethanol arbitrage and millers' decisions regarding allocation of cane to sugar and ethanol in the new season.

If the war continues, international sugar prices in 2H 2022 will probably find further support from grain prices, with sugar beets in several countries competing for planted area for the 2023 harvest.

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