Trade under War Conditions

Insecurity Decreases Ukrainian Revenues AND Market Shares

Part I	Handicaps for Ukrainian production
Part II	Restricting grain imports from Ukraine
Part III	Is Ukraine going to lose MENA markets?

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no 101000751

Part I
Handicaps for Ukrainian production

Transshipment costs have doubled

Demurrage + Closing Routes = Extra costs reducing Production

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Queues getting longer and more expensive

Freight Ships waiting for passage through the Bosporus

Cf. Neue Zürcher Zeitung 8 May 2023
Quoted Source: TOLGA ILDUN / ZUMA / IMAGO

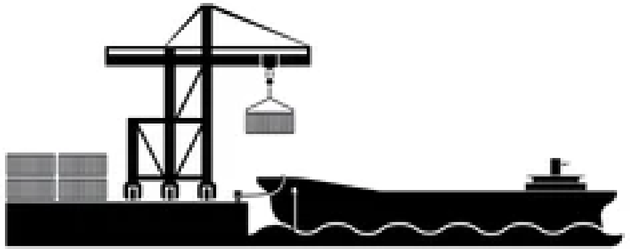
Sources: Barva Invest, traders' data

Extra-costs

Transshipment

(the process of transferring goods from one transportation vessel to another during transit)

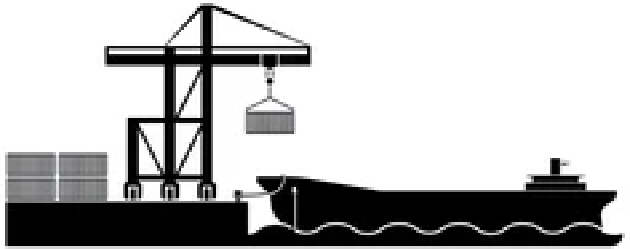
Transshipment cost pre-war

CPT  FOB

$7-$12

Prior to the start of war in Ukraine, the cost of transshipment ranged from $12 at the beginning of the season (when there is a large supply of grain) to $7 toward the end of the season.

Transshipment cost during war

CPT  FOB

$22-$25+

In May 2023, at Olimpex (terminal in Odessa port), the cost of transshipment is at least $22 (the rate includes every operation between CPT and FOB, except for fumigation, surveyor).
Acceptance rate:

- 200 wagons/day total
- 200 trucks/day, but based on the actual queue

At other terminals, rates are even higher and start from $25+

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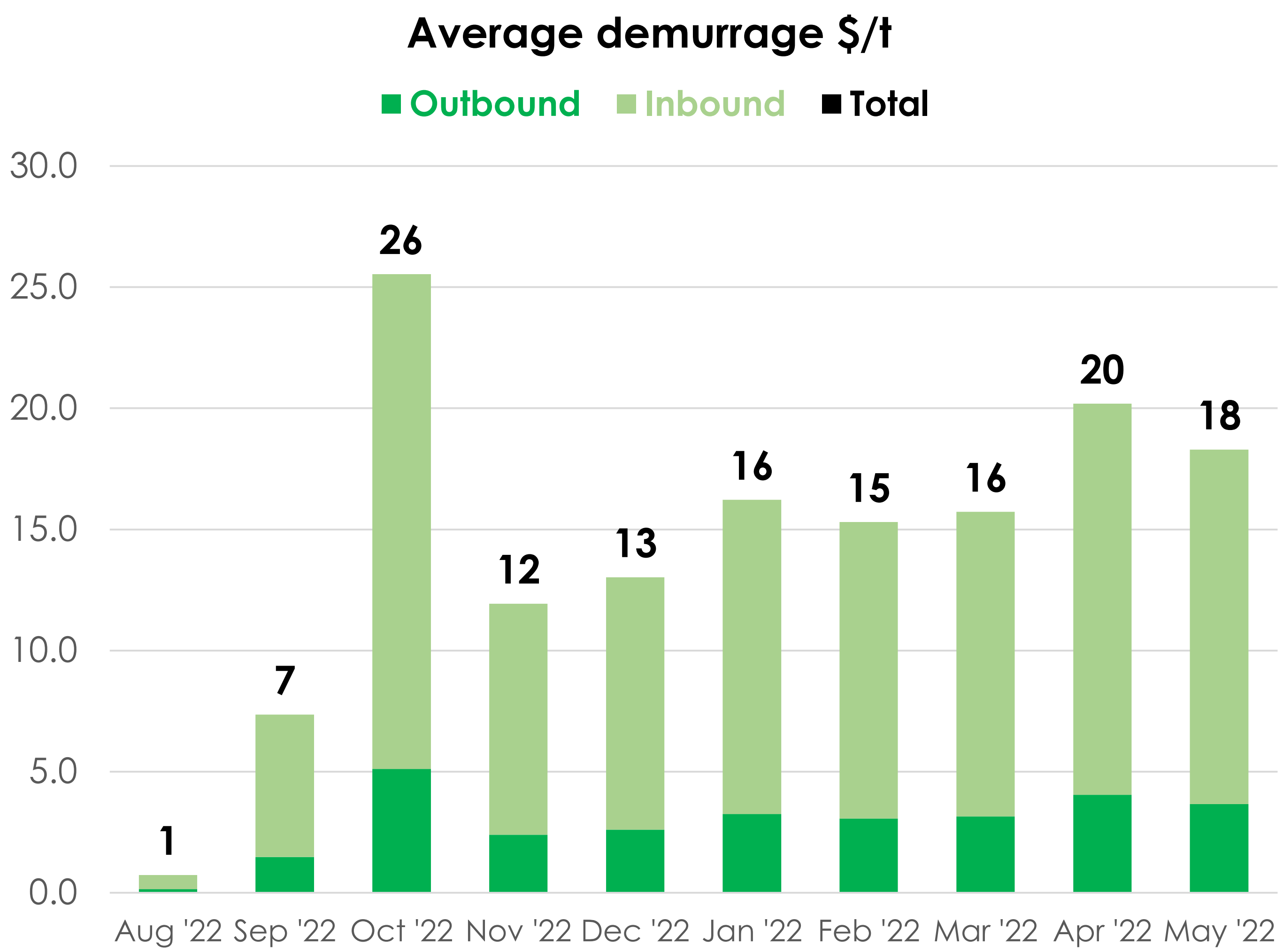
Sources: JCC, Barva Invest, traders' data

Extra-costs — Demurrage

(charges imposed for the delay in returning a cargo shipment beyond the agreed-upon time frame)



Russian inspectors continue to sabotage the progress of Grain Initiative. Sabotage takes place on the back of a low number of inspections of ships both entering (inbound) and leaving (outbound) the Black Sea. **On average, market participants reserve up to 60 days of detention — 8-12 days for outbound and 40-50 for inbound.**

On average, demurrage for one day is $0.40 per tonne (more for coasters, less for Panamax). For Panamax **one day demurrage is $20,000-24,000**.

Traders are forced to pay up to $20/t for demurrage, and Ukrainian farmers are selling their grain $20/t cheaper than they would have been without Russia's sabotage of the Grain Initiative.

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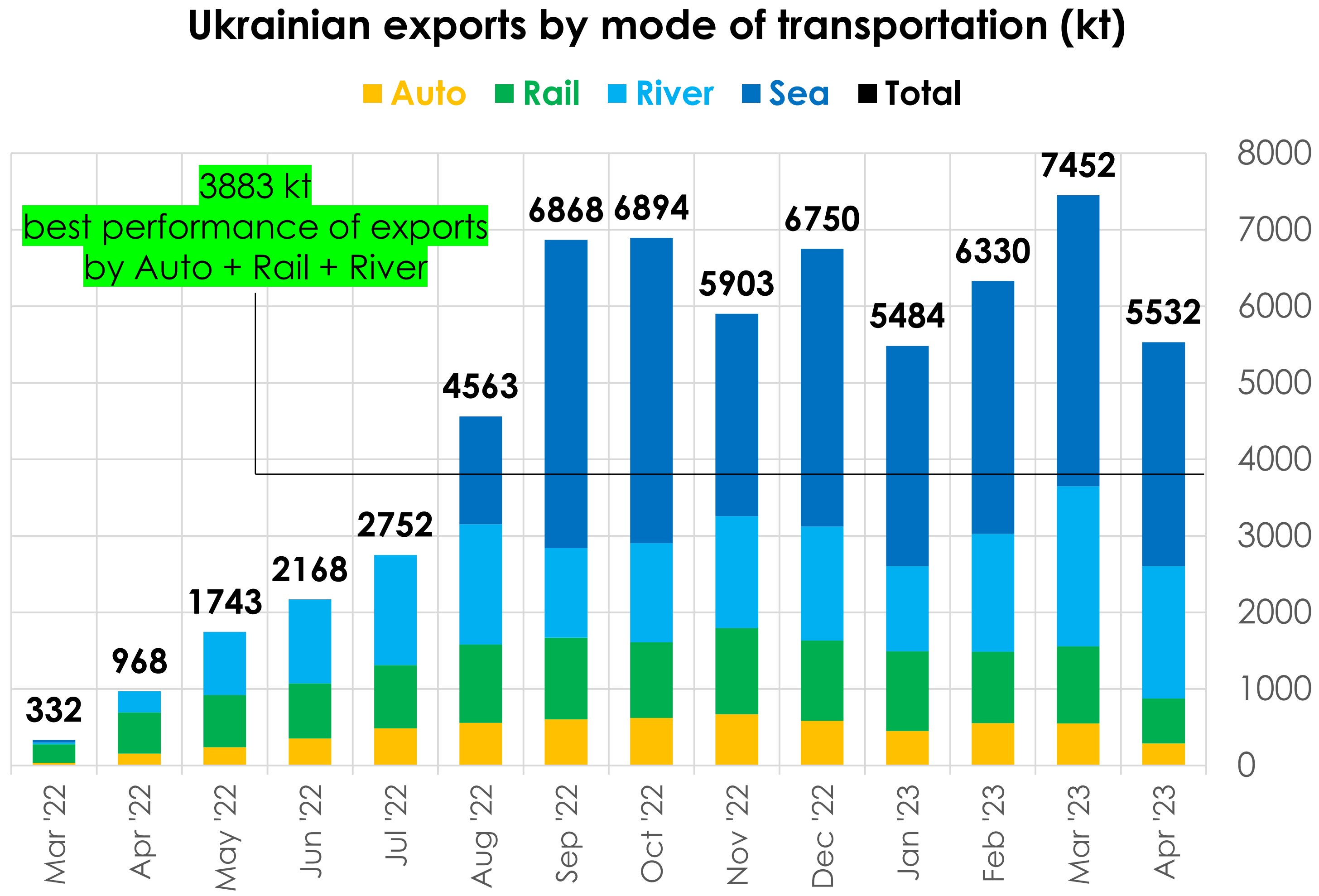
Sources: Barva Invest, Ukrainian Customs reports

Extra-costs — Scenario of closing Sea-route

(Russia agreed to extend the agreement for 60 days, but said it could be the last time, and continues to sabotage)



Since August 2022, Ukraine's exports have remained close to their ceiling levels. Therefore, if access to maritime exports is closed, the potential for transportation by other modes of transport is severely limited. Also, during the spring of 2023, the potential for exports to and through the EU decreased due to the protests of neighboring countries.

Ukraine has managed to develop land and river export modes, but in terms of logistics costs, deep water ports remain a key focus, especially when it comes to farmers in the northern and eastern oblasts.

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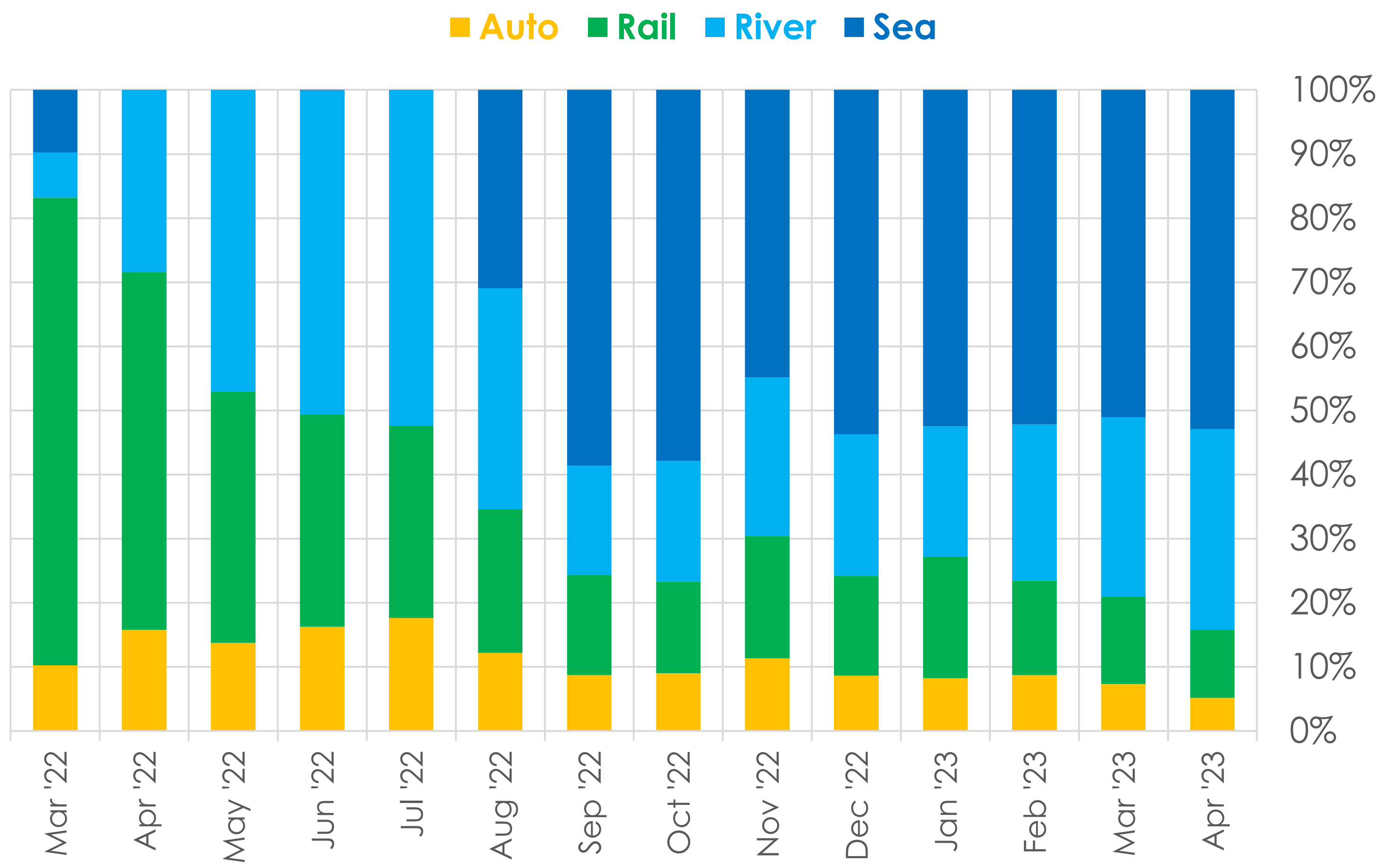
Sources: Barva Invest, Ukrainian Customs reports

Extra-costs — Scenario of closing Sea-route

(Russia agreed to extend the agreement for 60 days, but said it could be the last time, and continues to sabotage)

Ukrainian exports by mode of transportation (%)



From September 2022 to April 2023, an average of 53% of agricultural products from Ukraine were exported through deep-sea ports. This gives a clear understanding of importance of the Grain Initiative for the majority of Ukrainian farmers, especially in the northern and eastern oblasts, which are far from alternative export routes and also more expensive. **I.e., additional costs for logistics to the Danube against deep-sea ports $10-15/t.**

In case of closing Sea-route, loadout on the western border and the river ports will increase by at least 40%. Rail-network is designed to carry commodities from far regions to sea-ports, not to the wester border, which also will lead to logistic clumps.

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Sources: Barva Invest (Estimates)

Cost of production 2022/23

Cost of production

	Autumn planting campaign	Spring planting campaign		
Costs ($/ha)	**Wheat**	**Corn**	**Sunflower**	**Soybean**
Salary	20	15	14	16
Seed	99	98	55	62
Fertilizers	333	201	105	0
Plant protection products	119	67	68	143
Fuel	85	92	97	73
Amortization	166	256	282	246
Drying	19	208	10	15
Rent of land	145	145	145	145
Other	170	170	170	170
TOTAL	**1156**	**1252**	**946**	**870**

Comparing to pre-invasion period, costs of delivery to destinations increased by 50-80$/mt on account of transshipment, on account of increased tariffs for delivery to ports or overland destinations

Reduction of land rental costs, primarily due to the devaluation of the hryvnia.
Fuel costs increased sharply - in the spring of 2022, in addition to high prices, there were also problems with the shortage of fuel itself (Russia was actively destroying oil depots with missiles). Although the situation has improved, the issue persists and **costs for certain crops have increased by 10-40%.**

Reduction in fertilizer application rates — many producers are trying to reduce direct costs of cultivation and hope for favorable weather. The exception is wheat, the yield of which is highly dependent on fertilizers.
The largest part of the costs falls on the delivery (logistics), especially for farmers in the northern and eastern regions of Ukraine.

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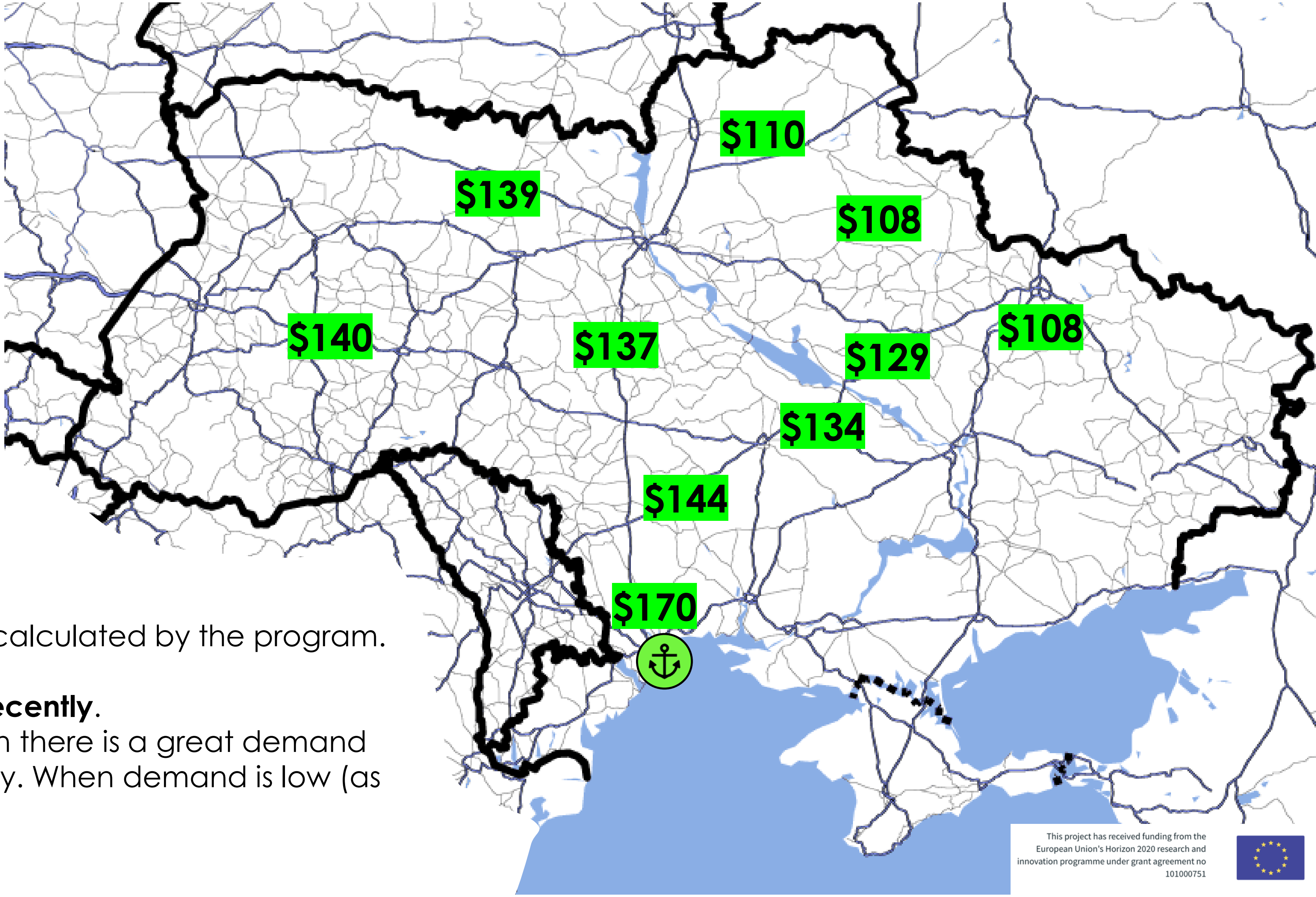
Sources: Barva Invest, Tradomatic.io

Domestic prices (EXW) of corn, $/t

Market rates for truck transportation:
- Western Ukraine - center of Italy €110-120/t
- Western Ukraine - eastern Germany €80-90/t
- Center Ukraine - center. Lithuania €65-70/t
- Center Ukraine - center Estonia €80-90/t

Market rates for rail transportation without VAT:
- Kyiv region - CHOP $23-25/t
- Kyiv Region – Vadul $22-24/t
- Kyiv Region - South $20-22/t
- Chernihiv Region - Vadul $20-23/t
- Kharkiv region - Vadul $28-30/t
- CHOP - northern Germany €59/t
- CHOP - eastern Italy €58/t



Railway logistics consists of 2 components.
1. Railway fare from station 1 to station 2. It is calculated by the program.
2. Wagon rental.

The railway tariff has practically not changed recently.
Volatility of logistics is mainly railcar rental. When there is a great demand (active exports), rent for a wagon is $90-125/day. When demand is low (as now) then rent is <$10/day.

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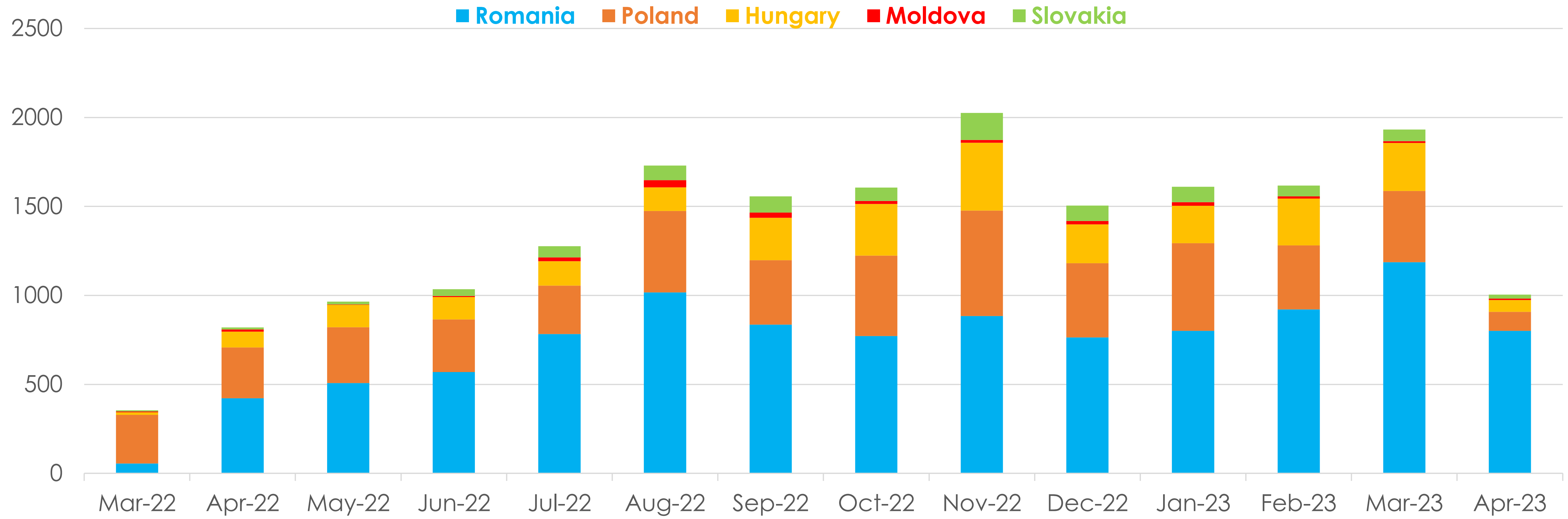
Sources: Ukrainian Customs reports

Monthly export to bordering countries, kt



Since February 24, 2022, Ukrainian farmers, lacking export from sea routes, have been forced to rebuild logistics chains for the export of agricultural products.

From April 2022 to November 2022, the pace of exports towards EU countries has grown significantly. However, along with the resumption of the work of deep-water ports, given cheaper internal logistics, farmers partly redirected their crop — especially from the East and North-East parts of Ukraine.

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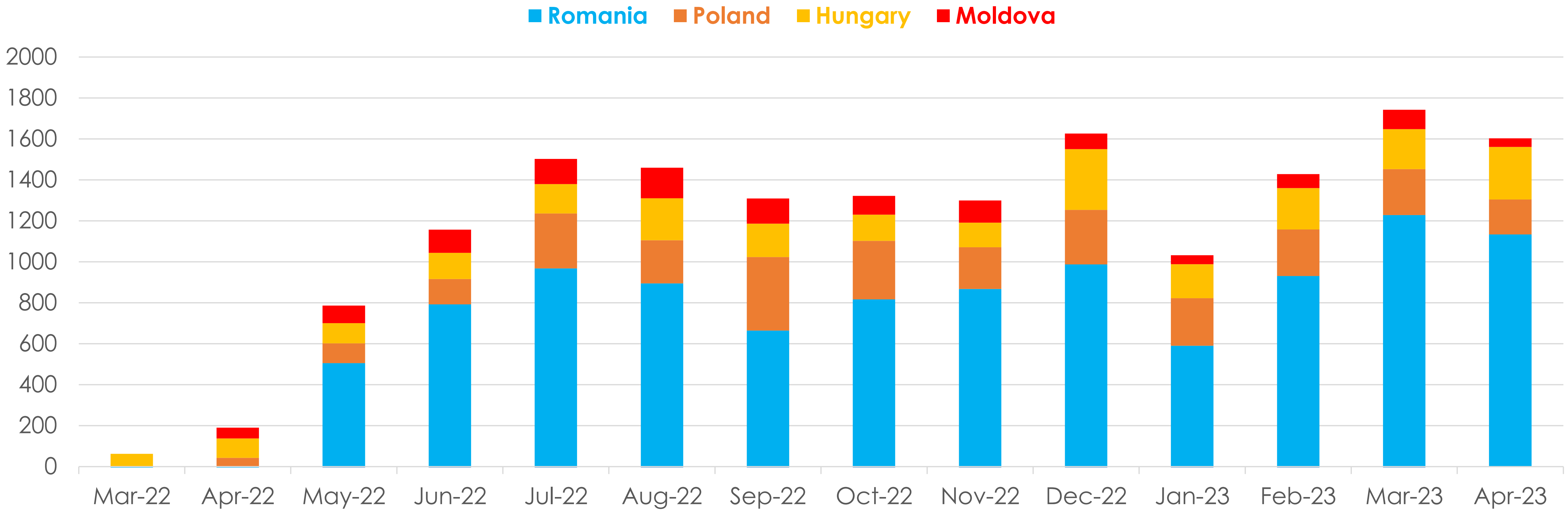
Sources: Ukrainian Customs reports

Monthly transit across bordering countries, kt



Most of the transit takes place through Romania thanks to port Constanza. Transit volumes remain high, but for most farmers this significantly increases logistics costs due to logistics limits on border-crossings. If the Black Sea Route is closed, most farmers in the northern and eastern regions of Ukraine will not be able to maintain a positive level of profitability.

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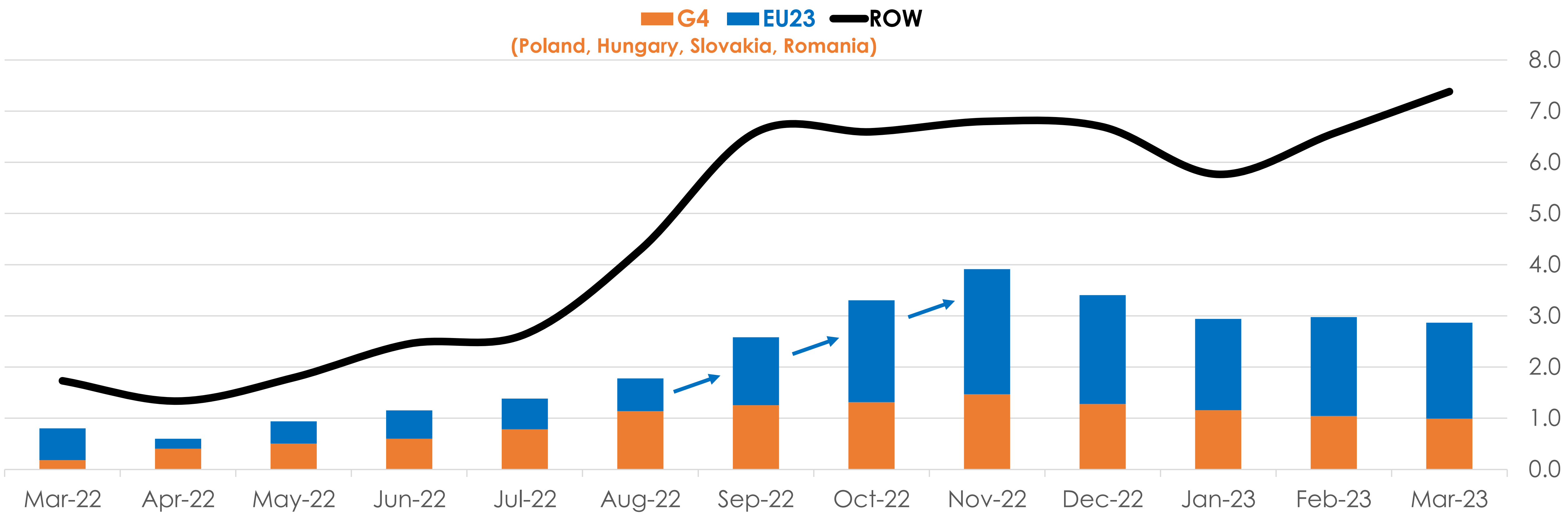
Sources: EU Commission

Monthly export by destinations, mln t



From April to August 2022 (before the start of the Grain Initiative), almost 60% of Ukrainian exports to EU-27 was to the neighboring countries (G4). Since the start of the Grain Initiative, this figure has dropped to 40-35% due to the ability of Ukraine to export to main European buyers — Spain, Portugal, Italy, Netherlands etc.

Exports to the G4 start to decline from December 2022.

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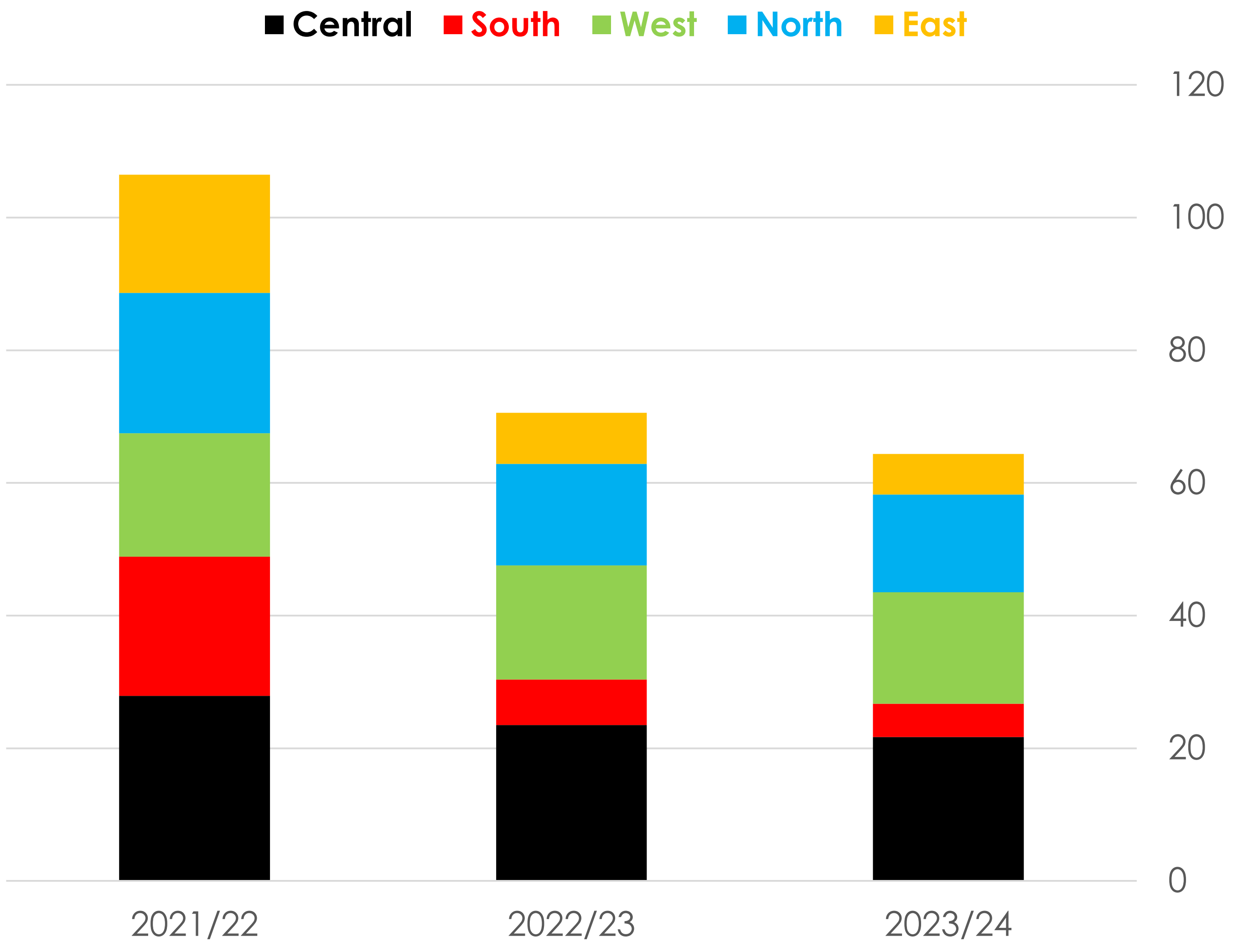
Sources: Barva Invest, Ukraine Agriculture Ministry statistics

Ukrainian total grains and oilseeds production by regions (mln t)



In 2022/23 MY, the total production of grains and oilseeds in Ukraine decreased from 106.5 to 70.6 mln t, which was consequences of a Russian full-scale invasion.
For 2023/24 MY, the prospects are pessimistic. Majority of Ukrainian experts forecasts a decrease of the planted area of grains and a partial increase in the area of oilseeds. Due to lack of funding, farmers may lower inputs and thus there is a risk of lower yields.

The largest decline in production may fall on the eastern part of Ukraine (where the profitability of production for most crops is negative). As well as on the southern part of Ukraine, where there is a significant reduction in the area under winter wheat. Also in central Ukraine, a decrease of grain crop is expected due to the choice of sunflower against corn. In the northern part of Ukraine, the decline is not expected to be as strong, but logistical costs in the event of the closure of deep-water ports will lead to unprofitable production in this part of the country.

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Part II
Restricting grain imports from Ukraine

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Why is the EU restricting grain imports from Ukraine?

The European Commission has announced **restrictions on the imports of Ukrainian wheat, maize, rapeseed and sunflower seed** in Poland, Hungary, Romania, Slovakia and Bulgaria until June 5.

The move led to Poland, Hungary, Slovakia and Bulgaria **lifting unilateral import bans they had imposed citing the need to protect their farmers**.

(Romania had not banned imports.)

Views of fields of wheat on farmland near the village of Timar, Hungary April 19, 2023. Reuters/Bernadett Szabo

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Position of local East-EU businesses

- ✓ According to Rzeczpospolita, the Polish prosecutor's office is already investigating **cases of damage inflicted on the largest Polish mills**, where Ukrainian grain of the lowest quality was supplied instead of Polish grain, using falsified documents. Preliminary estimates suggest that they made 1.5 million zlotys from such substitution.
- ✓ In the search for additional arguments to protect their own market, **the question of the quality of Ukrainian goods has also been raised**. Supposedly, Ukrainian grain is grown with "chemicals" that have long been banned in the EU. Well, there may be such cases. And the frequent mention in the headlines of Western media of "Ukrainian grain with banned pesticides" certainly does not help foreign trade. In some neighboring countries that have banned the import of Ukrainian grain, rumors have started to circulate that grain of low quality, including grain contaminated **with mycotoxins or even radiation**, has been imported from Ukraine.
- ✓ **The European grain association COCERAL has debunked rumors about the alleged supply of low-quality grain from Ukraine to the EU**. This was announced by the press service of the Ukrainian Grain Association.

Polish freight companies have been blocking one of the Polish-Ukrainian border crossings as part of a protest against what they see as an unfair market advantage for Ukrainian companies. They are demanding the reinstatement of the **mutual entry permit program**, which was suspended after the outbreak of war in Ukraine.

More than **5,000 lorries** cannot cross our largest border crossing.

Rafał Mekler, regional leader of the far-right Confederation party and the owner of a trucking company protesting in Dorohusk, noted that Kyiv's decision to suspend the permits shows that "the Ukrainian side interprets as it wishes what it has agreed to".

Łukasz Białasz, a self-employed lorry driver who has been carrying freight to Ukraine for 13 years, told that Polish transport firms **have been receiving fines in Ukraine for lack of permits, amounting to €800**.

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Local East-EU businesses suffer from such prohibition

The protests by Polish farmers against Ukrainian grain cost Ukraine $143 million in damages.

It is worth noting that traditional export routes, including those for Ukrainian agricultural products, did not previously pass through Poland. However, currently, 60-70% of agricultural cargoes transiting through Poland to ports such as Gdansk, Gdynia, Szczecin, and Swinoujscie are destined for recipients in EU member states.

"The imposition of import restrictions was not preceded by consultations, and this also affects Polish entrepreneurs who import goods that are subsequently exported to other markets"

noted Jacek Piechota, President of the Polish-Ukrainian Chamber of Commerce.

- ✓ **Many Polish entrepreneurs express concern about the ban on soybean imports from Ukraine** due to significant shortages of this raw material in the Polish market, which had been compensated for through imports from Ukraine and further processing in the Polish market.
- ✓ According to estimates, the country's **need for imported** oilseed stands at around **500 kt.**

Therefore, the lack of access to raw materials for many plants producing feed and soy-based products **will result in the interruption of the production cycle.**

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Part III
Is Ukraine going to lose MENA markets?

Is Ukraine going to lose MENA markets?

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Sources: Open sources, UN press-releases

Grain Initiative Results and new deadlines

120 days ≠ 60+60 days

March 18, 2023

- The UN announced the extension of the Grain Agreement. According to the Agreement, the **extension was supposed to take place every 120 days — until July 18.**
- However, in March, **Russia announced that this time the Grain Agreement would be extended for only 60 days (Deadline May 18).**
- **Ukraine challenged this reduction** of the Agreement, but neither the **UN nor Turkey has officially clarified the actual date** of the agreement. As a result, **market participants focused their trading on the Russian deadline**.

May 17, 2023

- **Russia agreed to extend the Grain Initiative for another 60 days** (until July 18, 2023, the original date in case of a 120-day extension).

In the previous report, it was emphasized why it is important that the Grain Corridor is extended for a pre-determined long period - Russia sabotages inspections and constantly threatens to disrupt the extension of the agreement. As a result, **it is too much risk for importers to sign contracts for the supply of Ukrainian grain 30-40 days before the date of the revision of the agreements.** The vessels don't have time to stand in the weeks-long queue to enter and exit the Black Sea.

Giving the continuous Russian sabotage of Grain inspections:
Extending the Agreement twice for 60 days will allow imports of Ukrainian grain for 60 days of 120-day period.
Extending the Agreement once for 120 days will allow imports of Ukrainian grain for 90 days of 120-day period.

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Sources: eeas.europa.eu,
bank.gov.ua - April inflation report

Grain Initiative Results and new deadlines

Problems and risks remain with the Grain Initiative — Russia agreed to extend the agreement for 2 months, but **said it could be the last time**. Therefore, in mid-July (during the wheat, barley and rapeseed harvest) there is a risk that **importers will not have free access to the Ukrainian new crop.**

According to the National Bank of Ukraine, these scenarios will worsen the prospects for agricultural exports from Ukraine and reduce foreign exchange earnings:

- by **$270 million per month** - if the ban on food exports to neighboring countries is extended;
- by **$290 million per month** - if the grain corridor is not renewed;
- by **$800 million per month** - in case of simultaneous effect of both restrictions (taking into account partial reorientation to alternative supply routes).

The National Bank also predicts that a possible export restrictions will temporarily reduce food inflation in Ukraine by increasing supply on the domestic market. "However, this will complicate the activities of farmers and may force them to reduce crops, which will negatively affect economic activity in the future and increase pressure on the exchange rate," the report says.

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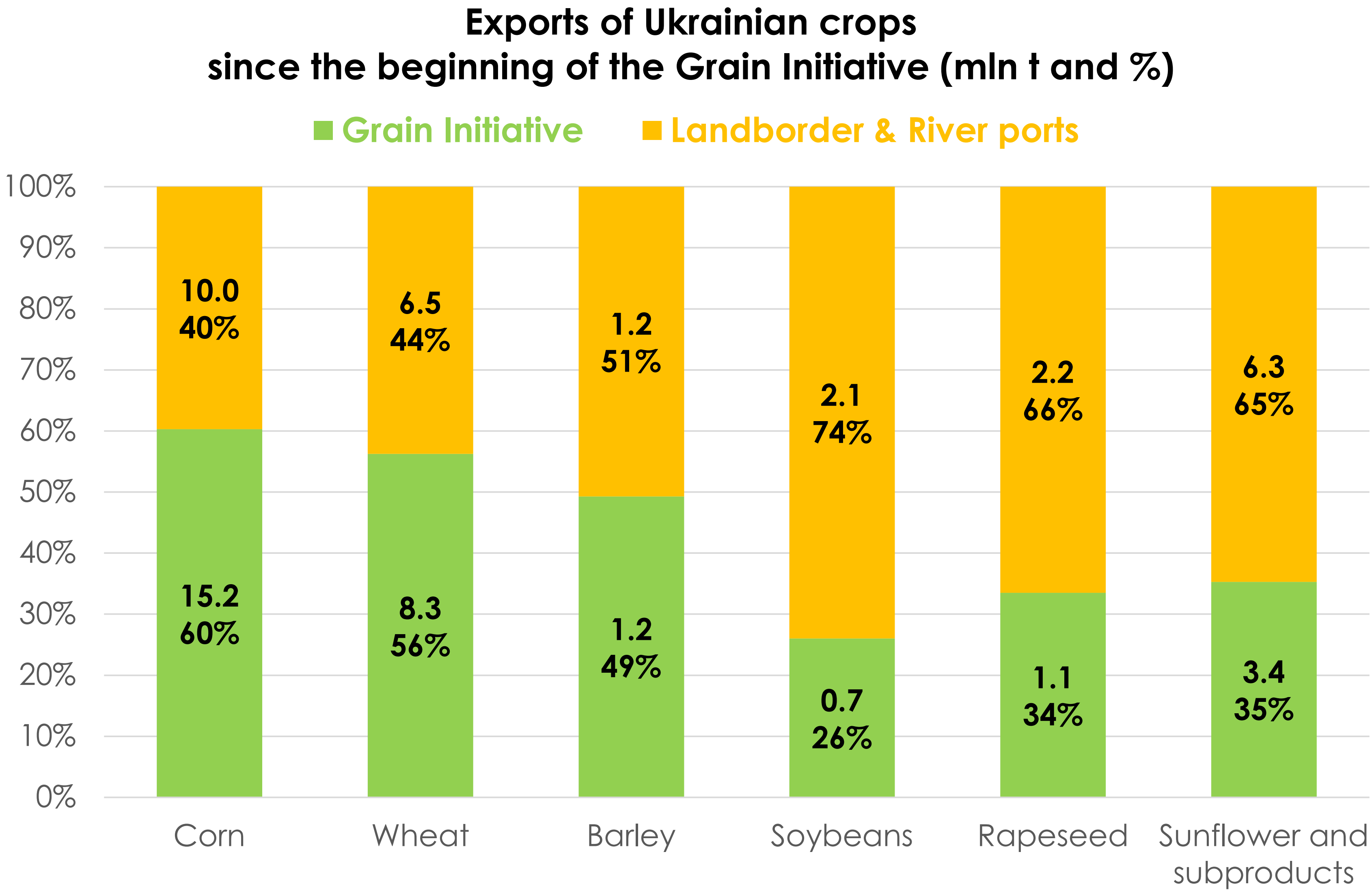
Sources: un.org/en/black-sea-grain-initiative, Ukrainian Customs reports



Thanks to the Grain Initiative, Ukraine has had direct communication with importing countries for 10 months. **Since August 2022**, Ukraine has exported 58.3 mln t of major crops. **30.0 mln t or 51% were exported through deep-water ports**.

Continuation of the Grain Initiative is critically important as the new wheat, barley and rapeseed harvest will begin in June. **Total harvest of these 3 crops could reach up to 25 mln t**, also Ukraine has unsold stocks of grain and oilseeds from the previous season.

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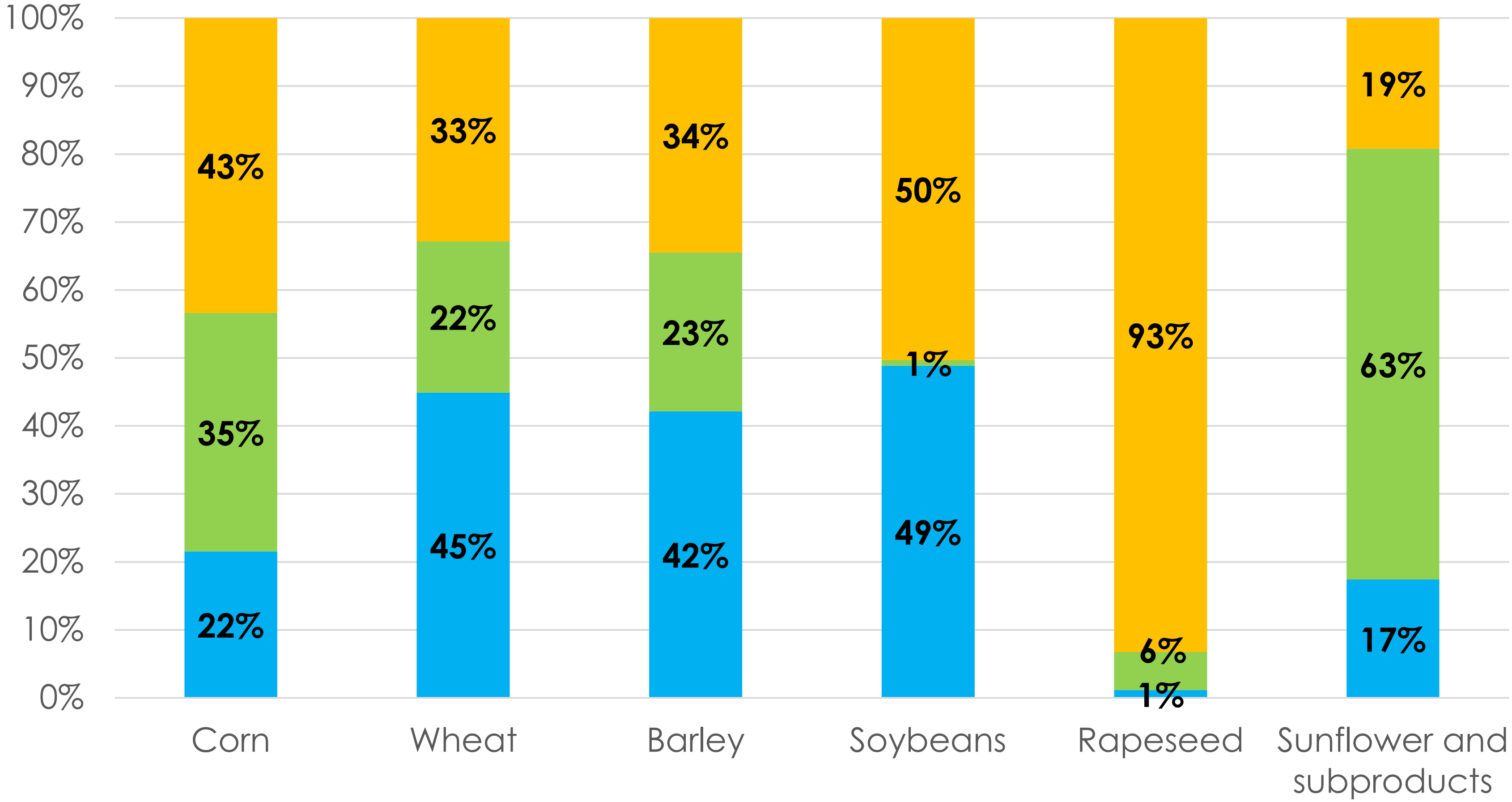
Sources: un.org/en/black-sea-grain-initiative

Share of of Ukrainian exports under the Grain Initiative (%)



Russia continues to use the rhetoric that Ukraine is exporting grain to Europe instead of Africa and the Middle East. However, just as this was not supported by statistics from the very beginning, so these statements have no basis in fact.

Of all the wheat exported from Ukraine under the Grain Agreement, 45% (or 3.7 mln t) was sent to MENA countries. This is 10% of the volume imported by MENA countries from all over the world during the year.

Corn and barley are not only food crops, but feed is needed to support the livestock sector of importing countries. For these crops, the MENA region accounts for 43% and 34% of the Grain Initiative's shipments, respectively.

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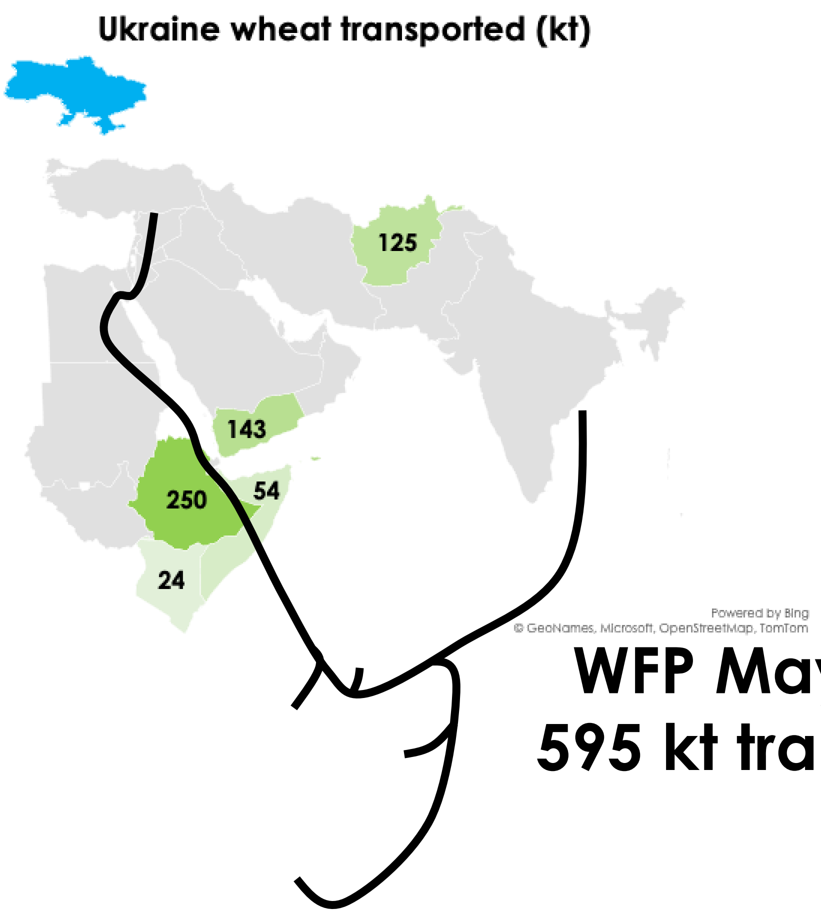
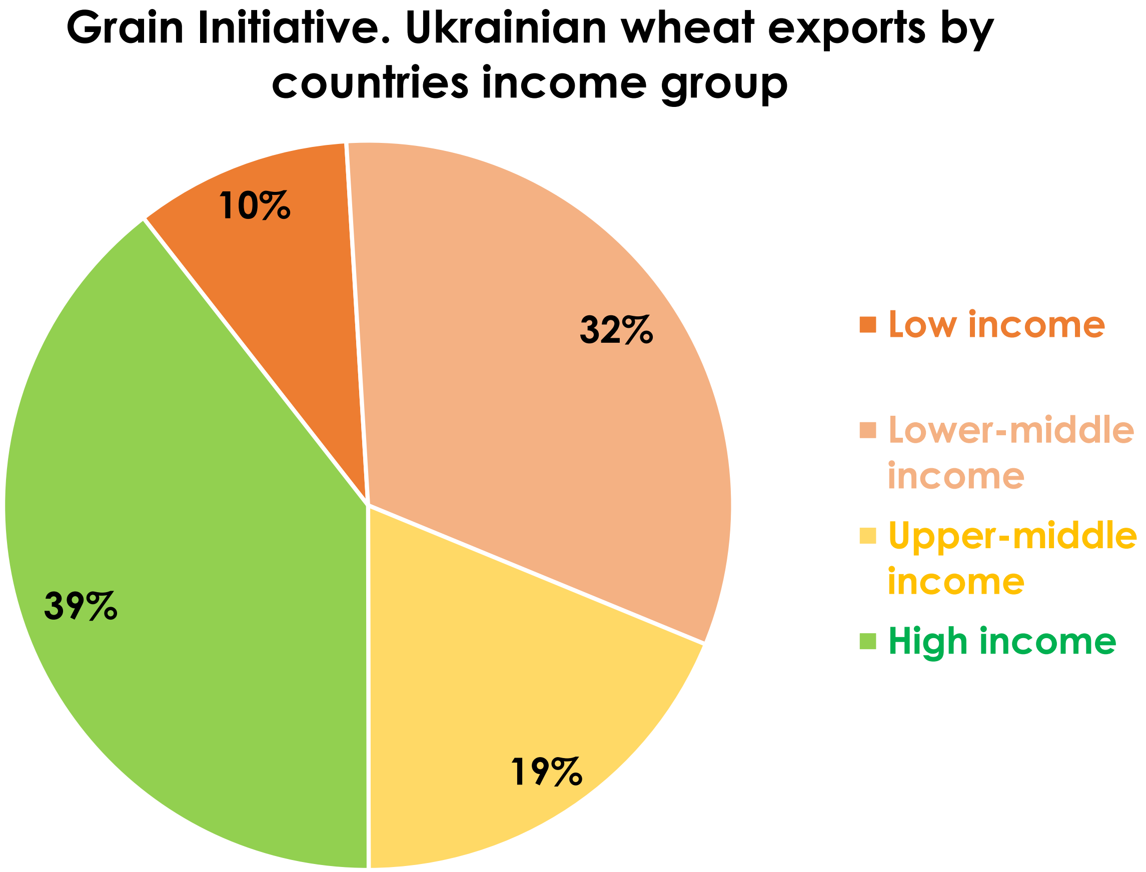
Sources: wfp.org, un.org/en/black-sea-grain-initiative



WFP May report
595 kt transported



The UN WFP remains an important component of Ukraine's exports to food-insecure developing countries with serious economic and social problems and cannot effectively compete with others for the Ukrainian supplies limited by Russia.

The latest WFP report for May 5 shows that since the beginning of the Grain Initiative, 595 kt of wheat have been delivered. Due to Russia's constant disruption of inspections, in May, the only vessel recorded was the Deniz M, which was supposed to deliver 30 kt of wheat to Djibouti and Ethiopia.

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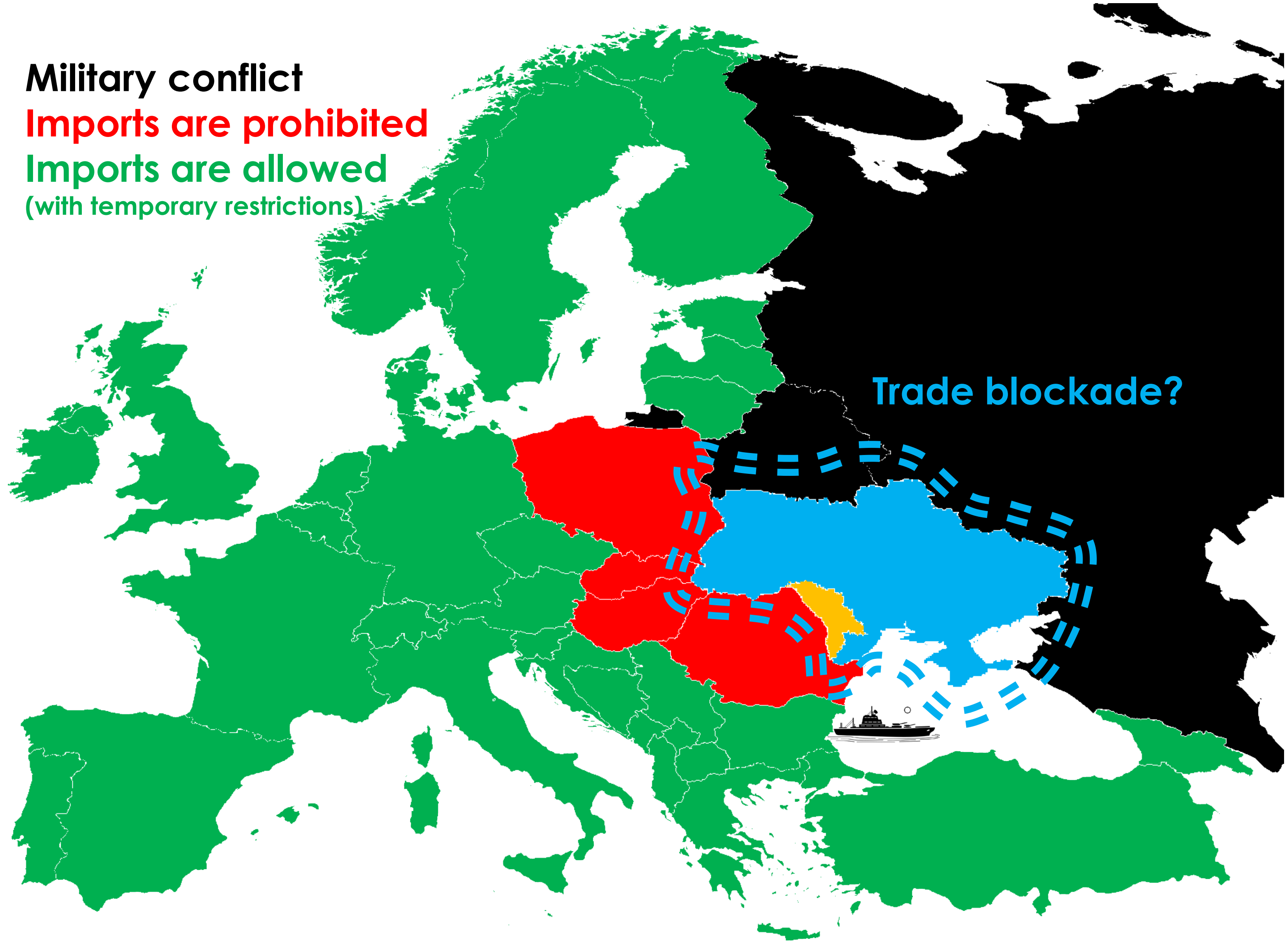
Sources: Open sources, Ukraine Ag Ministry reports



- **In April, railway transportation of grain in Ukraine reached the lowest point in the past five months.** The transfer of grain-loaded wagons across the border has decreased by 37%.

- Polish border guards are supposed to allow at least 20 trucks with transit goods to cross the border daily. However, currently the maximum number of trucks crossing the Polish border is around 15, and sometimes only 10 vehicles are allowed through in two days. **Trucks are queuing for weeks, and some even for months.**

- **At the end of May there still are cases where cargo cannot cross the border for more than 50 days.**

Situation with the transit of Ukrainian agricultural products through Poland and Hungary remains tense. **Low prices in the EU led to a strong drop in demand, which affected Ukrainian prices.**

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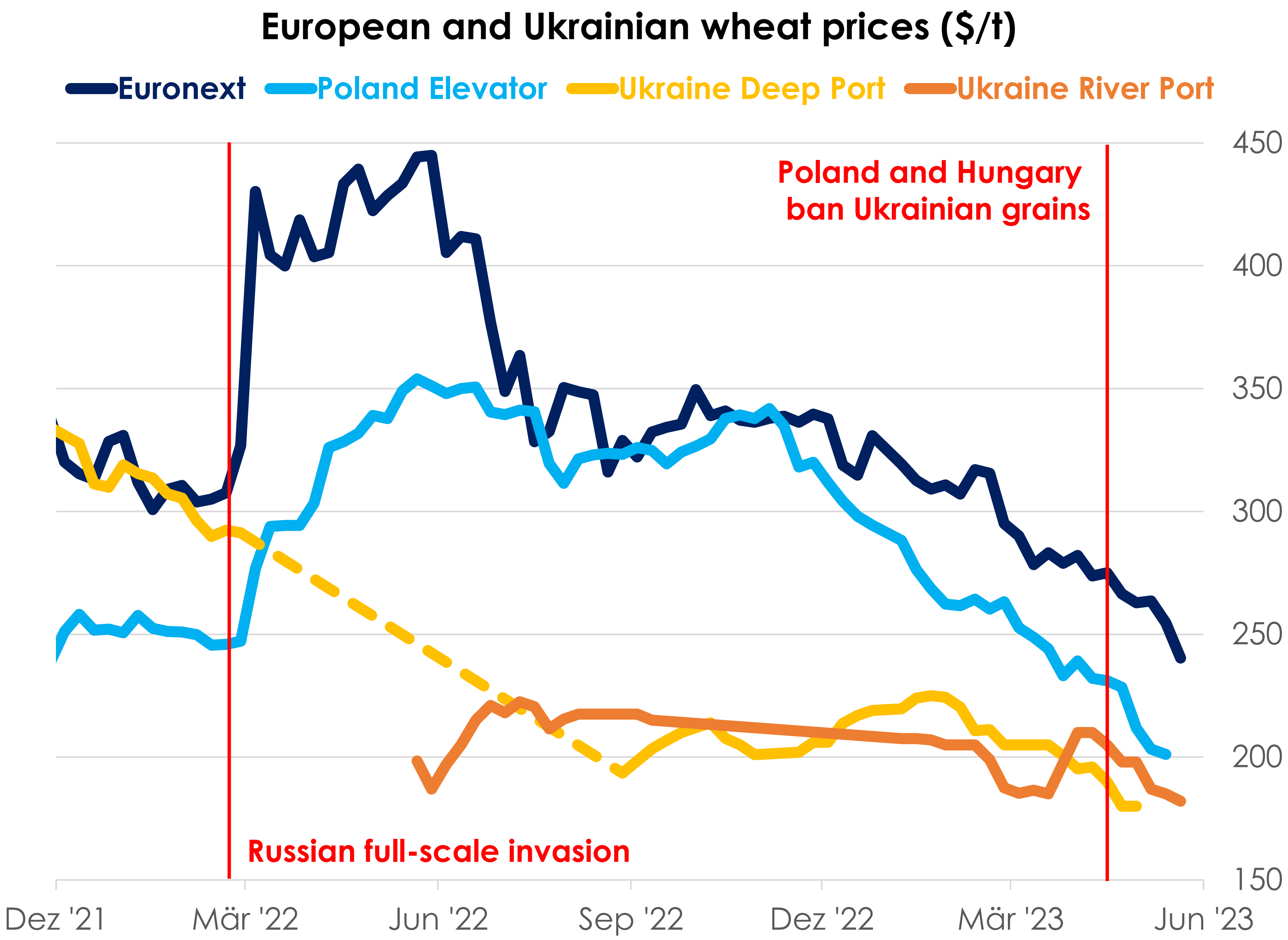
Sources: Barva Invest, Euronext, EU Commission



Mid-spring is the traditional period when trade activity in the Northern Hemisphere slows down. Importing countries from North Africa harvest their own crops in May-June, and exporting countries from Europe in June-August.

Buyers are waiting for a new harvest to appear in the future and are generally in no hurry to buy large volumes of old crops unless they are very cheap (like Russian).

The import restrictions by Ukraine's EU neighbors means that their domestic market will no longer be under pressure from additional supply. **But this has not resulted in additional demand for European grain.**

As there were no critical weather problems in the world as of mid-May, global prices continued to fall.

EU farmers managed to disrupt Ukraine's exports and weaken their position in negotiations with Russia, but they still did not demonstrate more active sales in a falling market.

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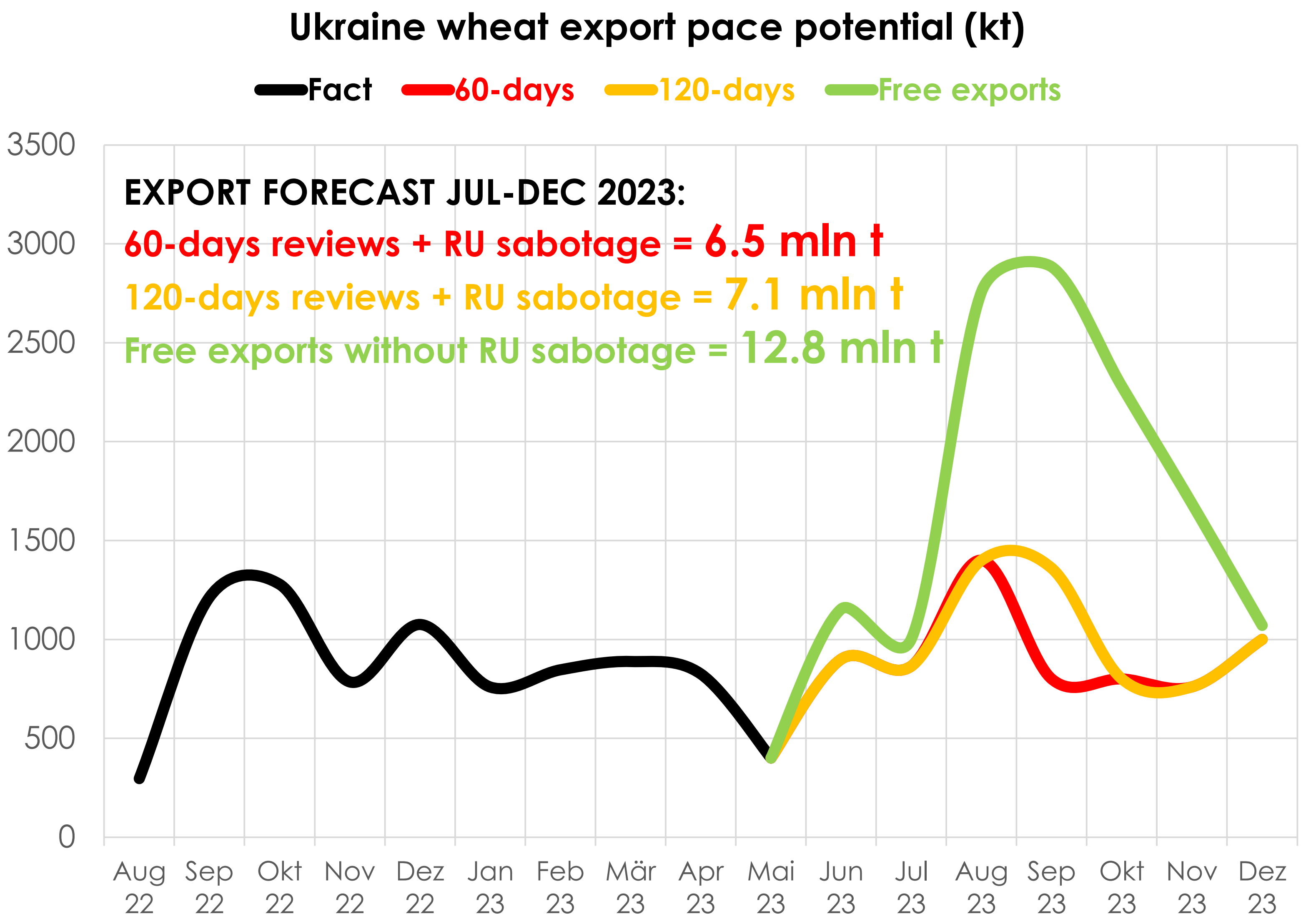
Sources: Barva Invest, Ukrainian Customs reports



The chart reflects modeling the pace, considering the usual seasonality of importers' demand, the impact of the Grain Agreement revision on import demand, Ukraine export potential, farmers' selling activity given logistics issues and cashflow.

Due to the revision of the Grain Agreement, import activity in the first half of July will be limited. In a normal year, in the absence of global price growth, imports are also weak.

Depending on the outcome of negotiations regarding the extension of the Agreement, the pace of exports may vary greatly. In a normal year, the peak of Ukrainian wheat exports falls on August-November - 60% of the export potential is exported in 4 months.

In the 23-24 season from August to November, Ukraine can export up to 10 mln t of wheat.

But in the current conditions, Inspections limit the throughput, as well as the planning horizon of importers. In addition, every 60 or 120 days, importers take a break for 30-40 days while waiting for the results of the extension of the Agreement.

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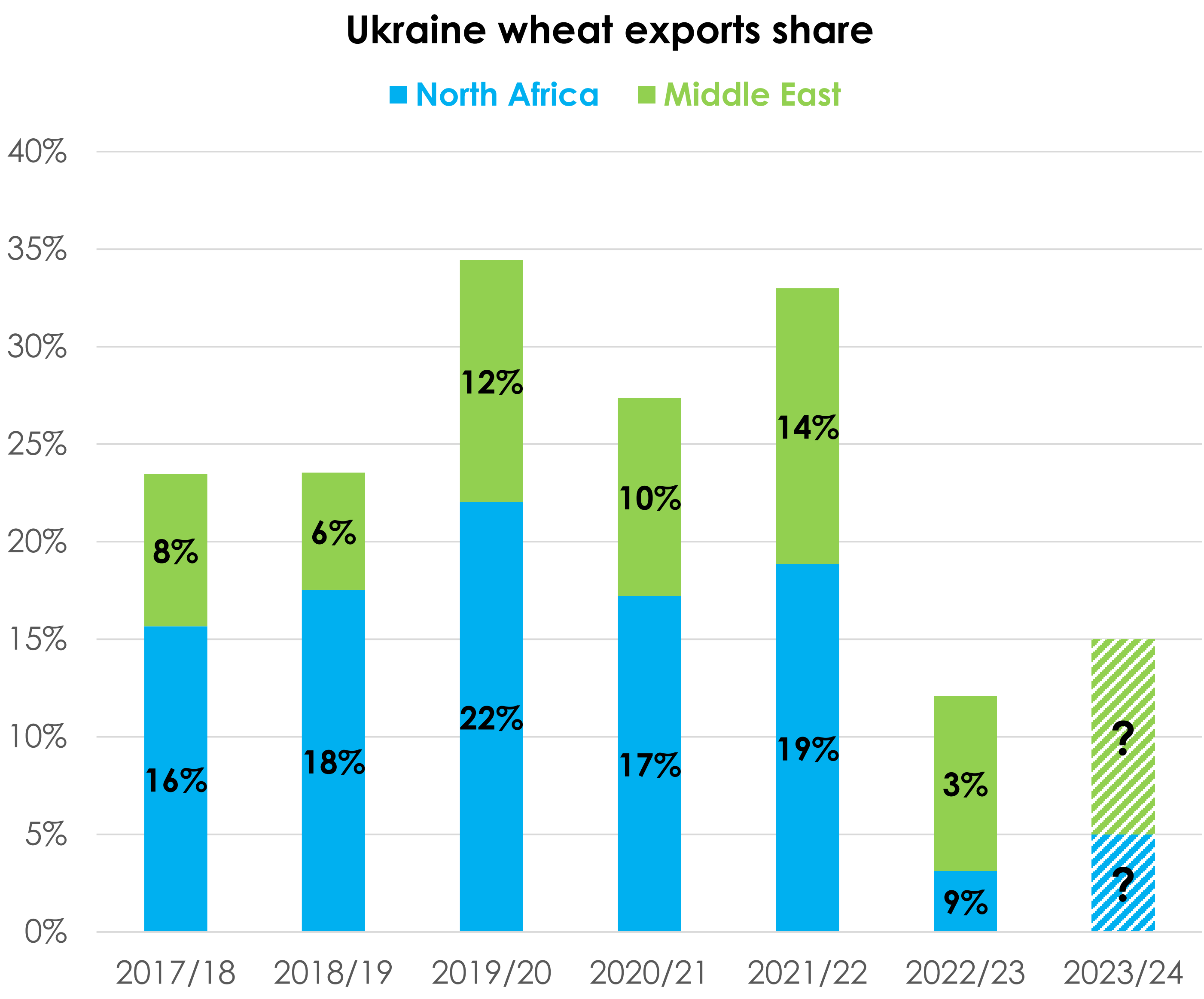
Sources: Ukraine Customs data, USDA WASDE report



Due to blocked ports due to a full-scale Russian invasion, Ukraine did not have direct access to MENA markets until the start of the Grain Initiative. In August 2022, the first ships left, but market participants (including shipowners) were still getting used to the new conditions and exports were limited. In addition, inside Ukraine there were huge stocks of grain and oilseeds of both the old and the new crop, which competed for sales.

The result was weak wheat export performance, which **instead of the usual 3-4 mln t per month during Aug-Nov, was exported at 0.3-1.3 mln t**. The key months of demand for Ukrainian grain were lost, and in the rest of the season (when importers are less active), Ukraine was never able to renew their positions.

The share in MENA fell from 24-34% to 12%. At the same time, a significant share fell on Turkey, which actively used the opportunity to buy cheap Ukrainian grain.
In the new season, which will begin in July, Ukraine has a chance to restore its position due to access to sea communication from the very start. But the **risks of disruption of the Agreement by Russia** remain, as well as **limitations due to the sabotage of Inspections**. In addition, Ukraine will receive a **low harvest** for the second time, which will **limit the export potential**.

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