

Current Trends and Prospects for a New Season in the Black Sea Agricultural Markets

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OUTLINE:

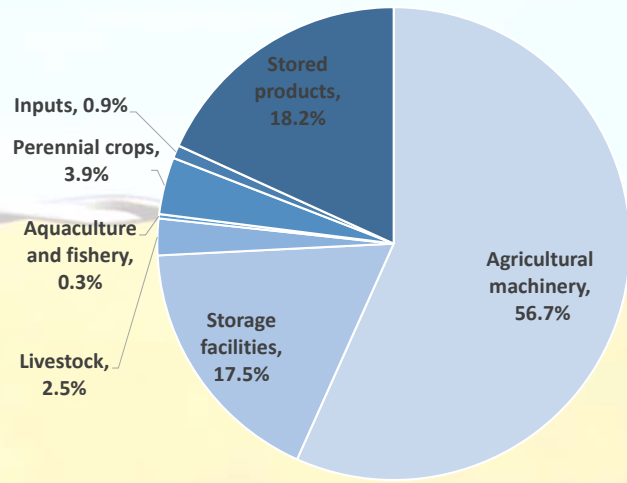
- Impact of the war on Ukrainian agriculture
- Current state of grain export from Ukraine
- Forecast of grain and oilseeds production and export from Ukraine
- Soybean market in Ukraine
- Grain production and export from Russia



DIRECT DAMAGES FROM THE WAR TO UKRAINIAN AGRICULTURE (capital losses, excluding land)

Category	Unit of measurement	Damages, units	Value, \$ billion
Agricultural machinery and equipment	thousand pcs	181.0	5,831.9
Storage facilities	volume, million tonnes	14.7	1,802.9
Livestock	heads, thousands	sheep and goats – 131 cattle – 238 pigs – 544 poultry – 13,000 bee colonies – over 400	253.9
Fisheries and aquaculture	aquaculture facilities, units	229	34.7
Perennial crops	hectares	16,364	397.6
Destroyed and stolen inputs	thousand tonnes	fertilizers – 123.8 PPP – 0.6	95.3
	thousand liters	fuel – 11,582	
Destroyed and stolen products	thousand metric tonnes	grain – 2,811	1,872.1
		oil seeds – 1,227	
Total damages	x	x	10,288.4

The structure of damages by category

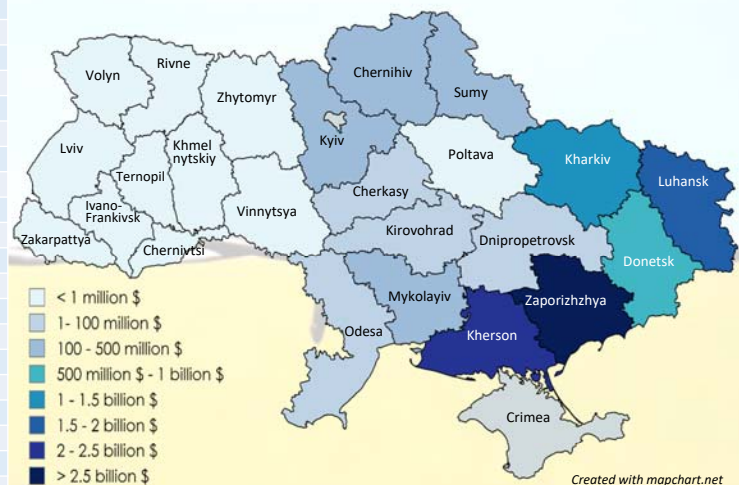


Source: based on data of the Kyiv School of Economics and the World Bank, February 20.

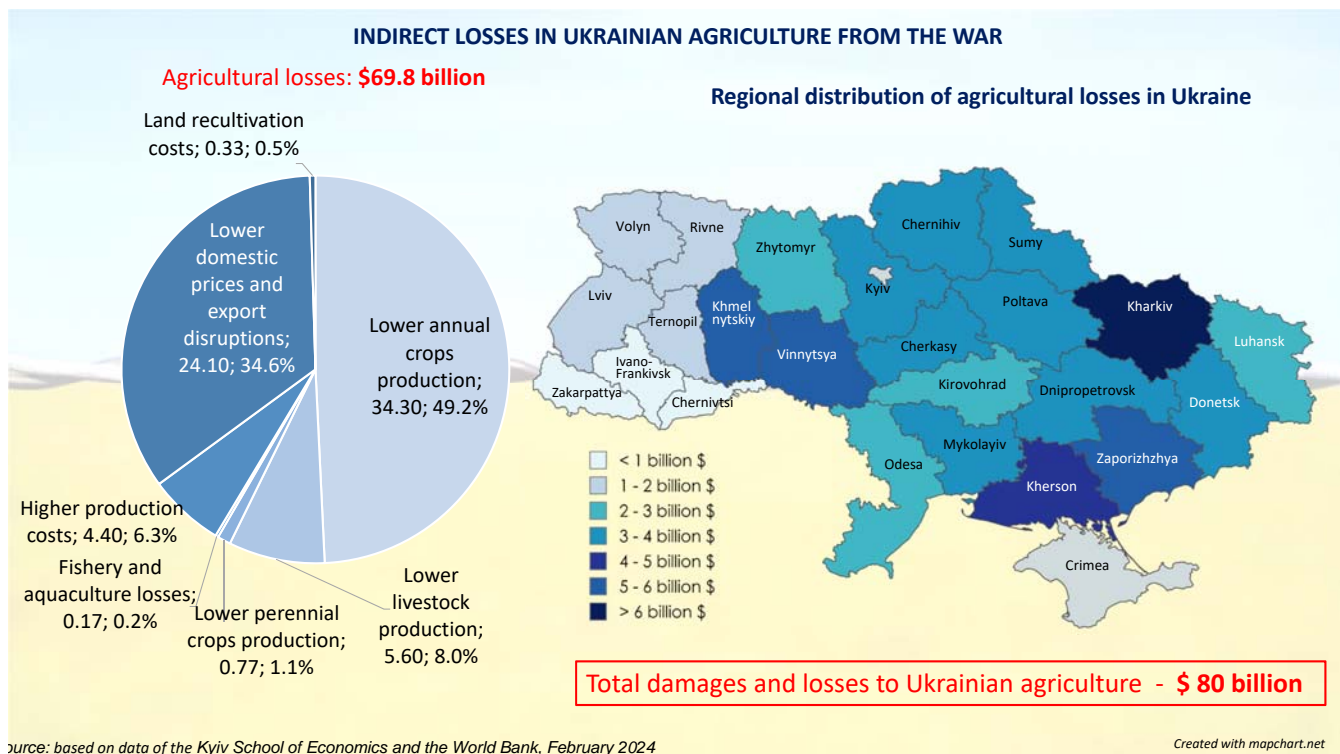
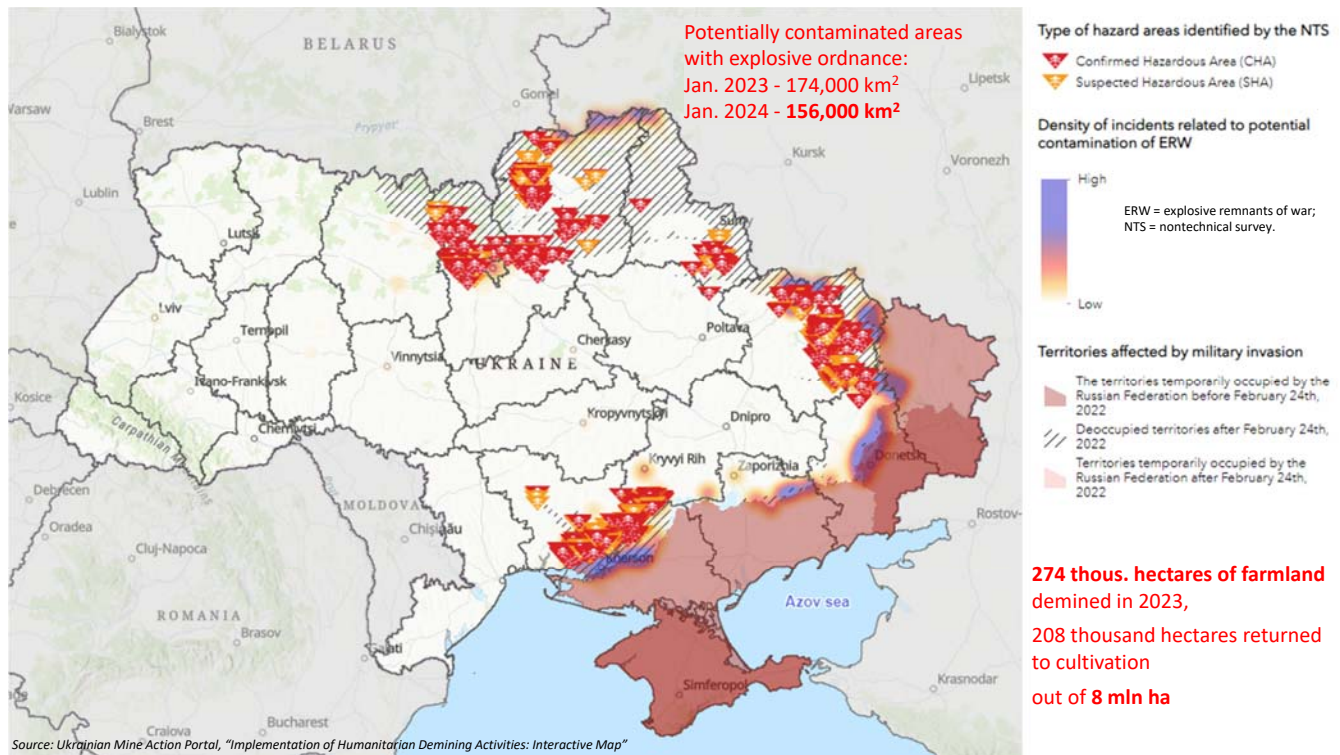
REGIONAL BREAKDOWN OF DAMAGES AND LOSSES TO UKRAINIAN AGRICULTURE, billion \$

	Direct damages	Indirect losses	Total	% from total
Vinnitsya	-	4,768	4,768	5.96%
Volyn	-	1,013	1,013	1.26%
Dnipropetrovsk	1	3,720	3,721	4.65%
Donetsk	912	3,700	4,612	5.76%
Zhytomyr	0.1	2,003	2,003	2.50%
Zakarpattia	-	316	316	0.39%
Zaporizhzhya	2,959	4,656	7,585	9.47%
Ivano-Frankivsk	-	667	667	0.83%
Kyiv	456	3,206	3,662	4.57%
Kirovohrad	1	2,900	2,901	3.62%
Luhansk	1,747	2,799	4,546	5.68%
Lviv	-	1,072	1,072	1.34%
Mikolayiv	476	3,385	3,861	4.82%
Odesa	1	2,534	2,535	3.17%
Poltava	0.8	3,818	3,819	4.77%
Rivne	-	1,008	1,008	1.26%
Sumy	119	3,402	3,521	4.40%
Ternopil	-	1,782	1,782	2.23%
Kharkiv	1,360	6,000	7,359	9.19%
Kherson	2,050	5,660	7,710	9.63%
Khmelnytskyi	-	4,063	4,063	5.07%
Cherkasy	1	3,131	3,132	3.91%
Chernivtsi	0.1	377	377	0.47%
Chernihiv	236	3,785	4,019	5.02%
Ukraine	10,288	69,763	80,052	

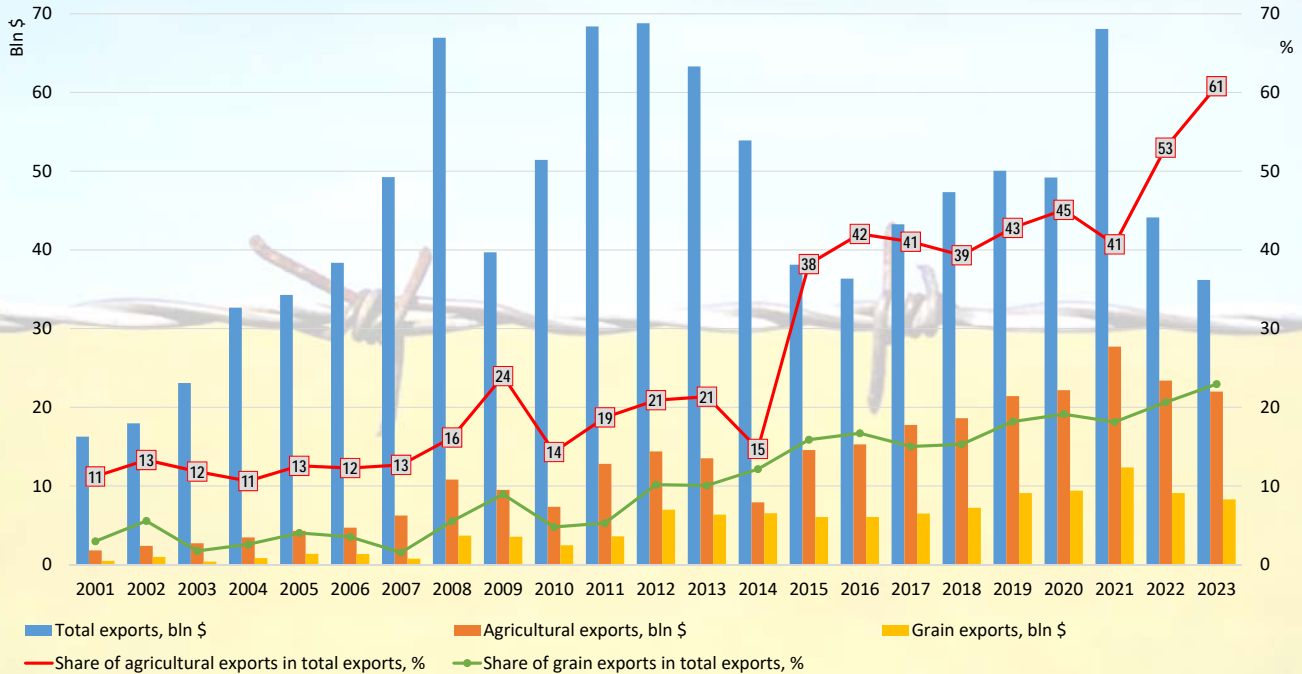
Regional distribution of direct damages to Ukrainian agriculture



Source: based on data of the Kyiv School of Economics and the World Bank, February 202



THE IMPORTANCE OF AGRICULTURAL AND GRAIN EXPORTS IN THE ECONOMY OF UKRAINE



Source: based on data of the State Statistic Service of Ukraine

EXPORT OF GRAIN AND LEGUMES FROM UKRAINE with products of their processing (MY – Marketing year July-June),

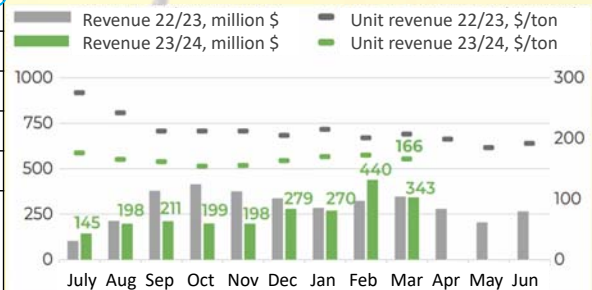
	2020/21 MY		2021/22 MY		2022/23 MY		2023/24 MY	
	MY Total	MY Total	Total	Total as of Apr. 24, 2023	incl. April 2023	Total, as for Apr. 24, 2024	incl. April 2024	
Grain and legumes, total	43,939	48,508	49,079	40,742	2,766	39,914	4,863	
• wheat	16,413	18,741	16,900	13,941	943	15,252	1,410	
• barley	4,210	5,752	2,713	2,428	152	2170	199	
• rye	15.8	161.9	18.0	17.8	0	1.2	0.2	
• corn	22,596	23,535	29,299	24,049	1,667	22,016	3,246	
Wheat flour	123.7	69.4	148.1	120.5	9.2	79.9	4.8	
Other flour	1.1	1.5	6.2	4.9	0.4	4.7	0.5	
Total flour	124.8	70.9	154.3	125.4	9.6	84.6	5.3	
Total export (grain+flour)	44,105	48,579	49,233	40,867	2,776	39,999	4,868	

Source: based on data of State Customs Service of Ukraine and APK-inform

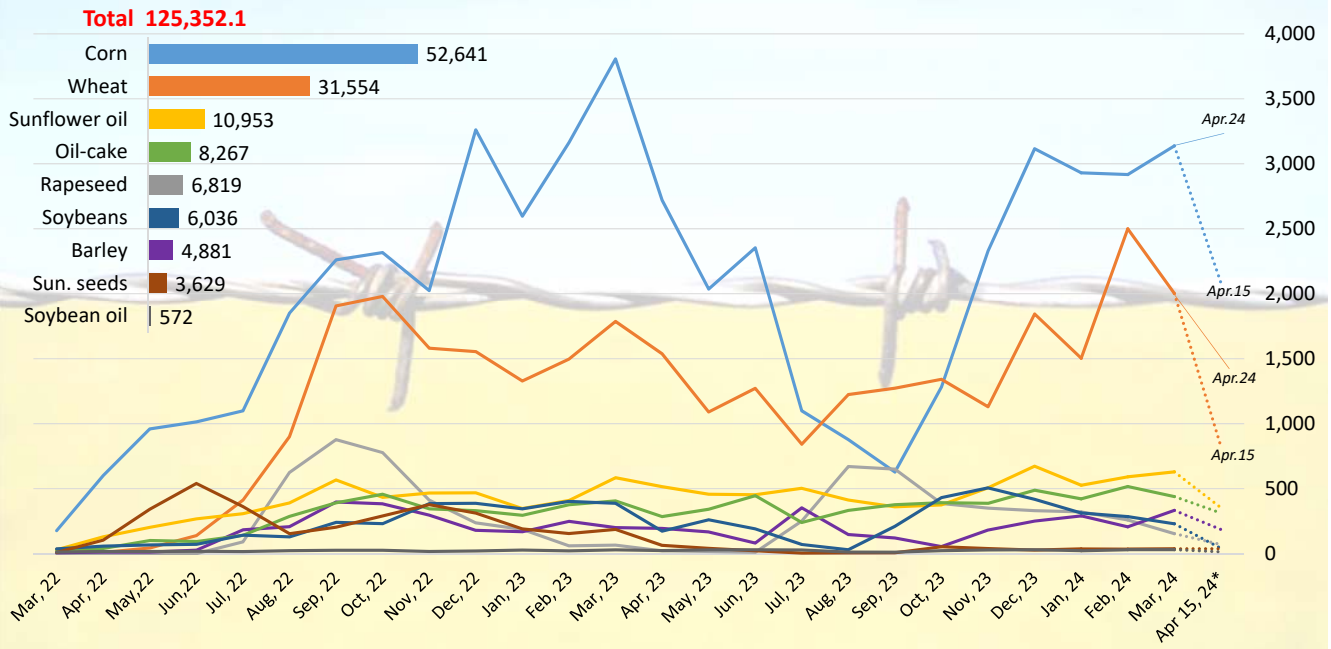
Dynamics of grain export from Ukraine, thousand tonnes



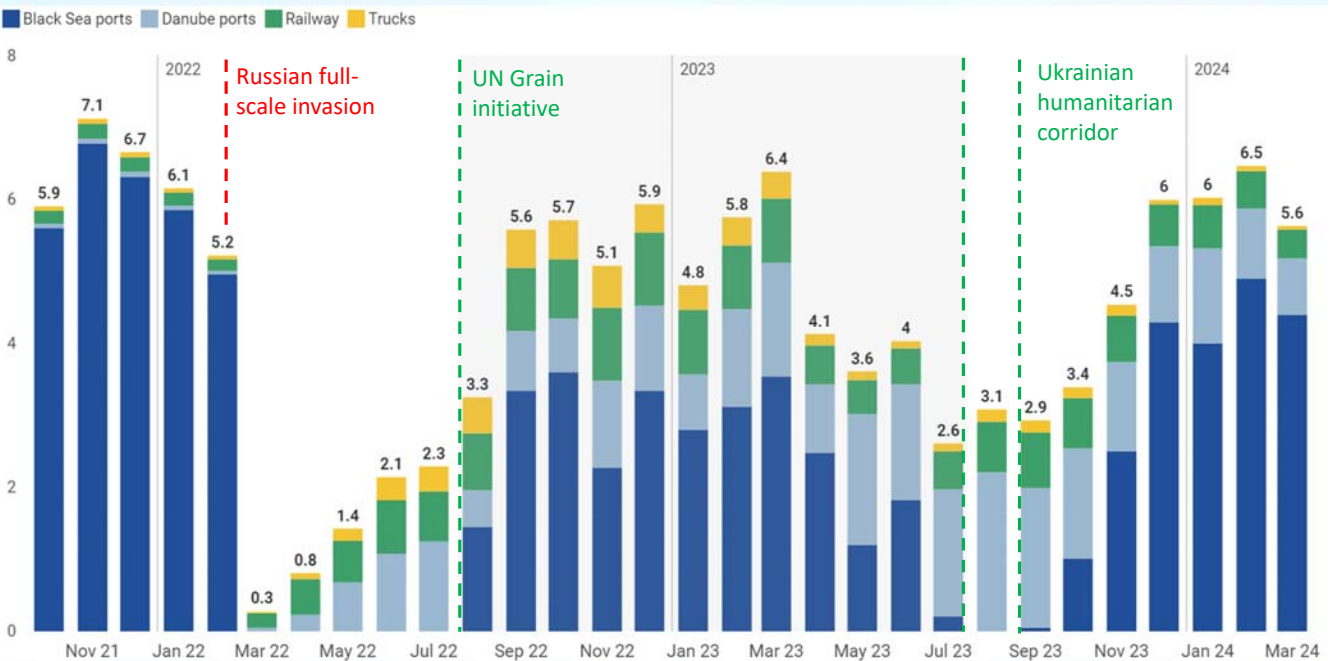
Dynamics of revenue from wheat export from Ukraine



EXPORT SHIPMENTS FROM UKRAINE DURING THE WAR TIME BY TYPES OF AGRICULTURAL COMMODITIES, March 1, 2022 – April 15, 2024, thousand metric tonnes



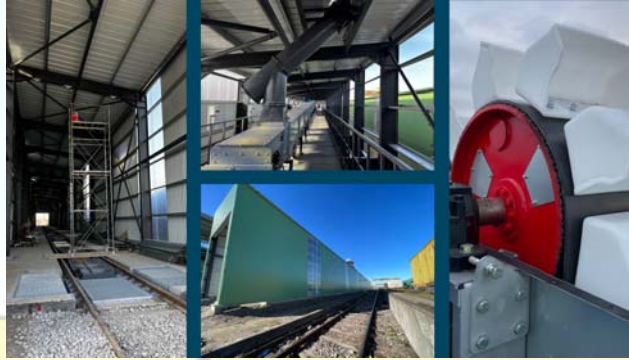
GRAIN AND OILSEEDS EXPORT SHIPMENTS FROM UKRAINE IN TRANSPORTATION BREAKDOWN, thousand metric tonnes



“DRY PORTS”

✓ the completion and start of tests for the **largest transshipment terminal** for agricultural products in Europe in **Dornești (Romania)**, on the border with Ukraine:

- maximum designed capacity of **3 million tons per year** (24/7/365),
- a wagon loading station (128 m long) and an unloading station (120 m long) allow simultaneous loading/unloading of 8 wagons and transport **500 tons per hour**
- transport of **240,000 tons** of grain and agricultural products **per month**

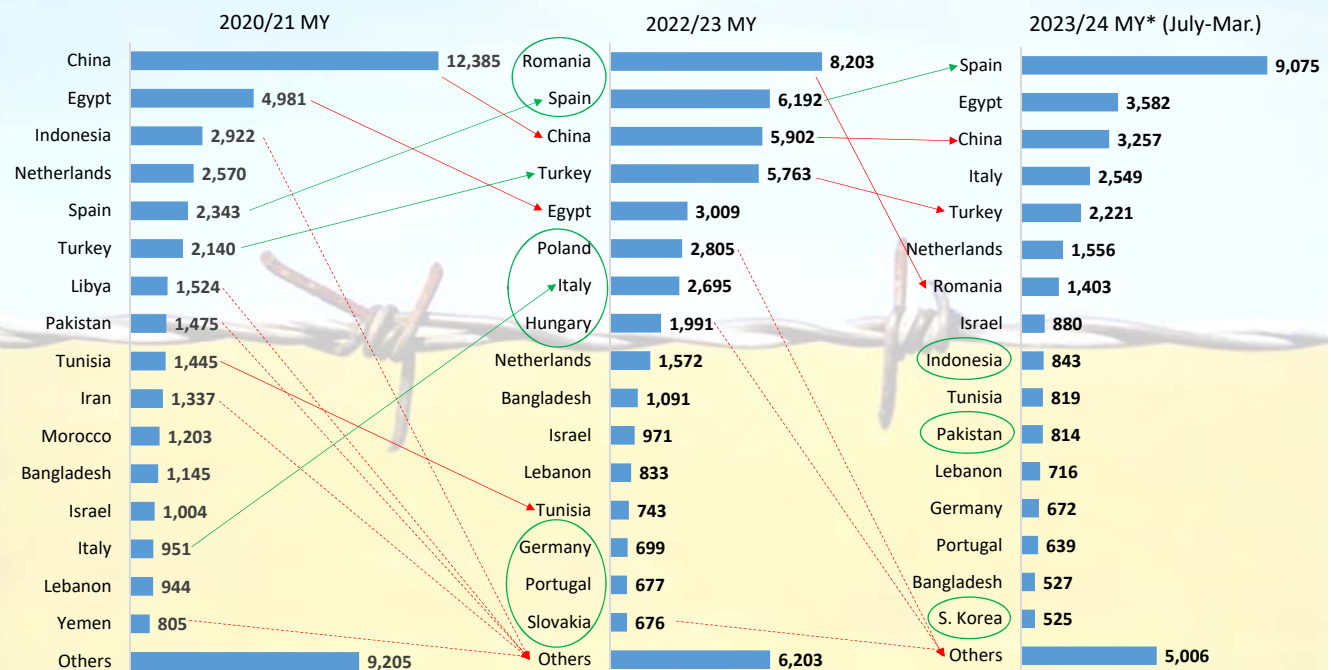


✓ **Chornotysiv Terminal (TERCH)**, Zakarpattia region (Ukraine), on the border with Romania and Hungary:

- 7 tracks: 3 wide (1520 UA), 3 narrow European (1435 EU) and 1 double,
- total grain storage capacity of the terminal today is 27,000 tons, the overall design capacity is about 80,000 tons,
- oil storage capacity – 4,000 m³,
- open container yard with a capacity of 500 TEU,
- simultaneous loading/unloading of two crops at a rate of **200 tons per hour**,
- transit capacity – **5,000 tons of per day**

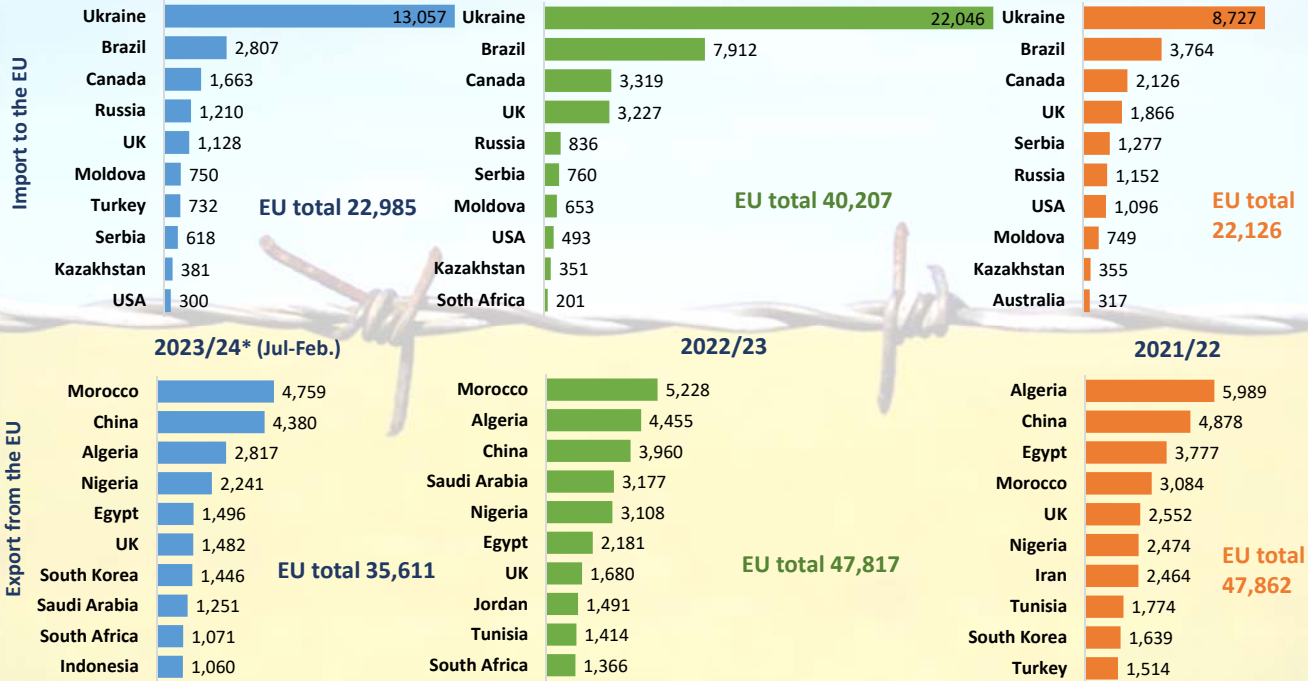


GEOGRAPHY OF GRAIN EXPORT FROM UKRAINE (July 1 – June 31), thousand metric tonnes



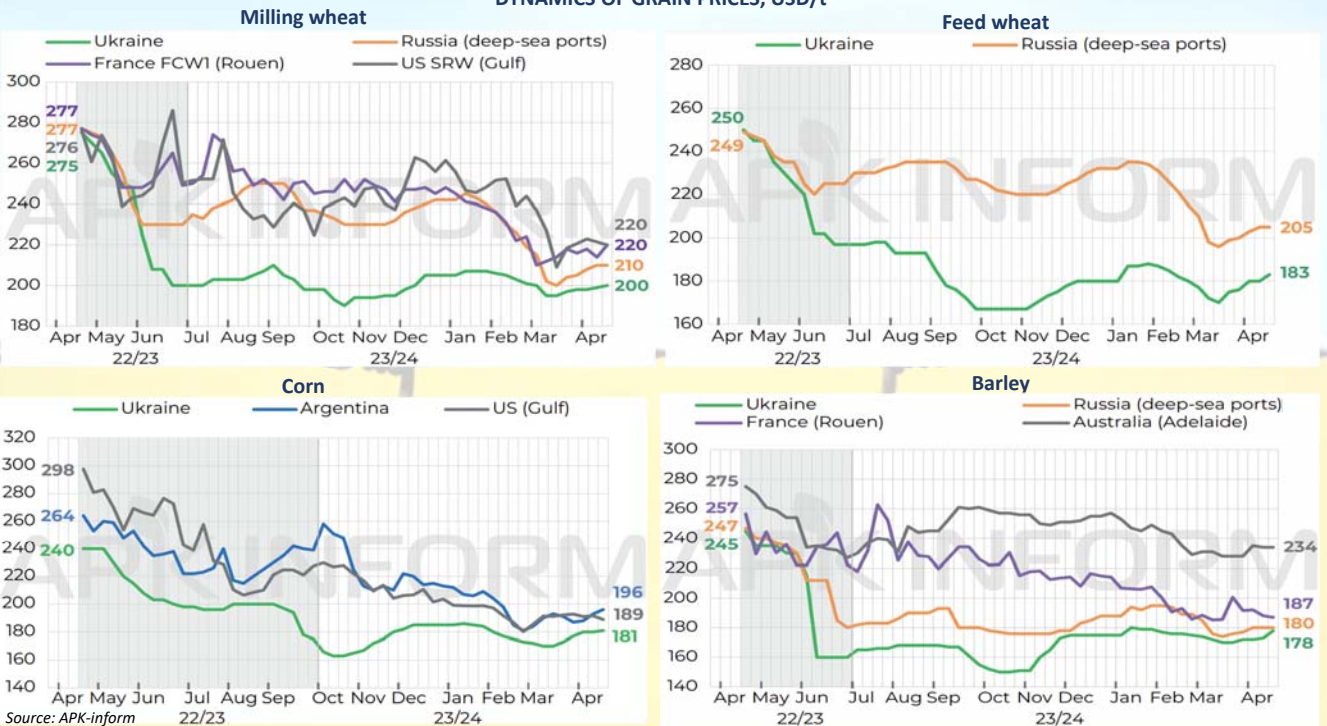
Source: based on data of the State Customs Service of Ukraine

TOP-10 PARTNERS OF FOREIGN TRADE OF GRAIN IN THE EU (MY July 1 – June 31), thousand metric tonnes



Source: Cereals exports and imports (Eurostat/COMEXT)

DYNAMICS OF GRAIN PRICES, USD/t



Source: APK-inform

HARVESTING OF GRAIN, LEGUMES AND OIL CROPS IN UKRAINE,

as of March 7, 2024

Crops	Harvested, thousand hectares			Harvested 2023, thousand metric tonnes	Average yields, metric tonnes per hectare			Change in yields per hectare,%	
	2021	2022	2023		2021	2022	2023	2023 to 2021	2023 to 2022
Grain and legumes total, including:	15,299.2	10,969.7	10,330.0	58,482.2	5.50	4.88	5.66	+2.9 %	+16.0 %
• wheat	7,073.0	4,979.4	4,694.5	22,477.6	4.64	4.05	4.79	+3.2 %	+18.3 %
• barley	2,467.7	1,666.5	1,504.5	5,909.1	3.92	3.47	3.93	+0.3 %	+13.3 %
• corn	5,356.0	4,045.0	3,757.2	29,308.3	8.01	6.68	7.80	-2.6 %	+16.8 %
• peas	240.4	118.1	154.4	399.5	2.43	2.28	2.59	+6.6 %	+13.6 %
• buckwheat	84.2	115.9	140.0	207.5	1.30	1.37	1.48	+13.8 %	+8.0 %
• millet	77.9	44.7	79.5	180.2	2.52	2.28	2.27	-9.9 %	-0.4 %
Soybeans	1,279.5	1,537.0	1,805.6	4,778.7	2.68	2.43	2.65	-1.1 %	+9.1 %
Rapeseed	1,013.9	1,134.8	1,396.0	4,005.4	2.95	2.86	2.87	-2.7 %	+0.3 %
Sunflower	6,482.4	4,825.5	5,020.8	11,979.7	2.52	2.18	2.39	-5.2 %	+9.6 %

Note: includes data from territories under Ukrainian control as of the reporting date



Source: based on data of the State Statistic Service of Ukraine

SOWN AREA OF SPRING CROPS IN UKRAINE, thousand hectares,

as of April 19, 2024

Crops	2021	2022	2023	2024			2024 forecast	
				forecast	as April 19	% planted to forecast	to 2023	to 2021
Total (selected crops)	15,633.2	12,327.0	12,907.0	13,136.3	3,789.3	28.8%	+1.8%	-16.0%
Spring cereals and legumes	7,586.0	6,196.9	5,672.2	5,601.3	2,053.4	36.7%	-1.2%	-26.2%
including:								
• spring wheat	192.1	191.1	280.0	246.1	204.7	83.2%	-12.1%	+28.1%
• spring barley	1,337.0	951.4	821.9	818.0	741.5	90.6%	-0.5%	-38.8%
• oats	177.9	159.3	150.1	162.7	136.6	84.0%	+8.4%	-8.5%
• peas	242.1	131.0	139.3	159.9	157.0	98.2%	+14.8%	-34.0%
• corn	5,474.8	4,639.4	4,043.5	3,912.1	748.7	19.1%	-3.2%	-28.5%
• buckwheat	84.0	75.3	120.7	124.8	0.5	0.4%	+3.4%	+48.6%
• millet	78.1	49.5	51.1	85.3	2.0	2.3%	+66.9%	+9.2%
Spring rapeseed	33.2	34.1	n/a	n/a	n/a	n/a	n/a	n/a
Soybeans	1,279.6	1,212.6	1,779.8	1,990.2	116.3	5.8%	+11.8%	+55.5%
Sunflower	6,509.7	4,702.7	5,307.5	5,288.3	1,395.9	26.4%	-0.4%	-18.8%
Sugar beet	224.7	180.6	213.1	256.5	223.7	87.2%	+20.4%	+14.2%

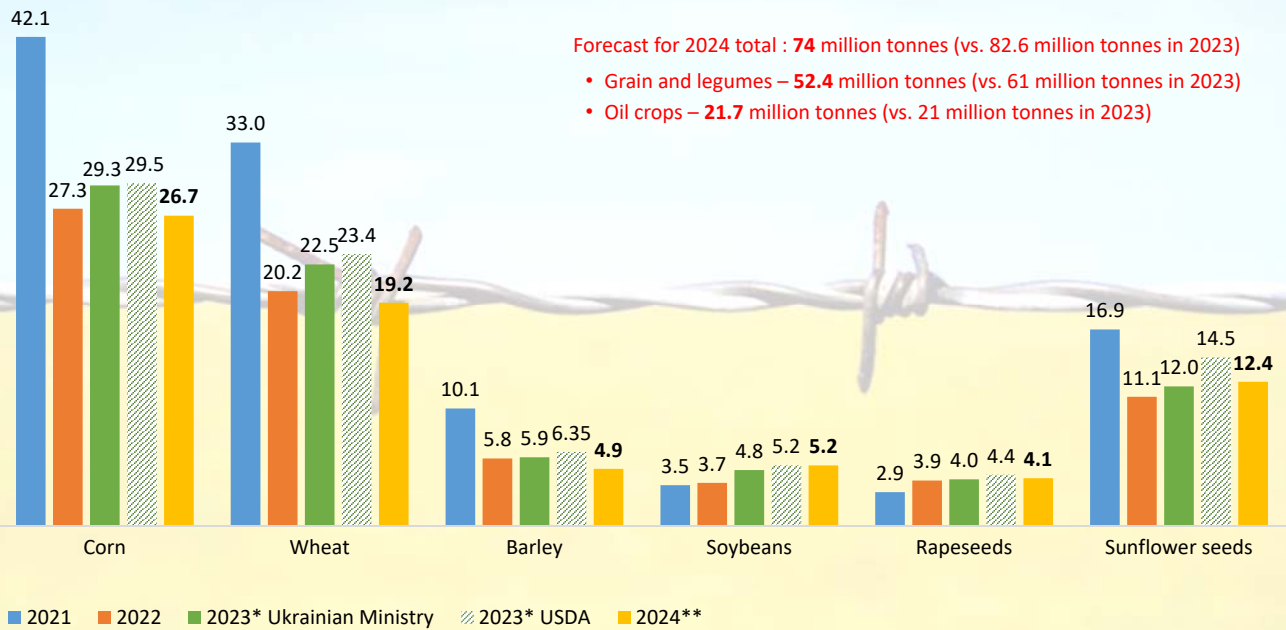
Note: includes data from territories under Ukrainian control as of the reporting date

Source: based on the data of the State Statistic Service of Ukraine and Ministry of Agrarian Policy and Food of Ukraine

HARVEST OF GRAIN, LEGUMES AND OIL CROPS IN UKRAINE, million tonnes

Forecast for 2024 total : **74** million tonnes (vs. 82.6 million tonnes in 2023)

- Grain and legumes – **52.4** million tonnes (vs. 61 million tonnes in 2023)
- Oil crops – **21.7** million tonnes (vs. 21 million tonnes in 2023)



Source: based on data of Ministry of Agrarian Policy and Food of Ukraine, Ukrainian Grain Association and USDA, as of April 11, 2024

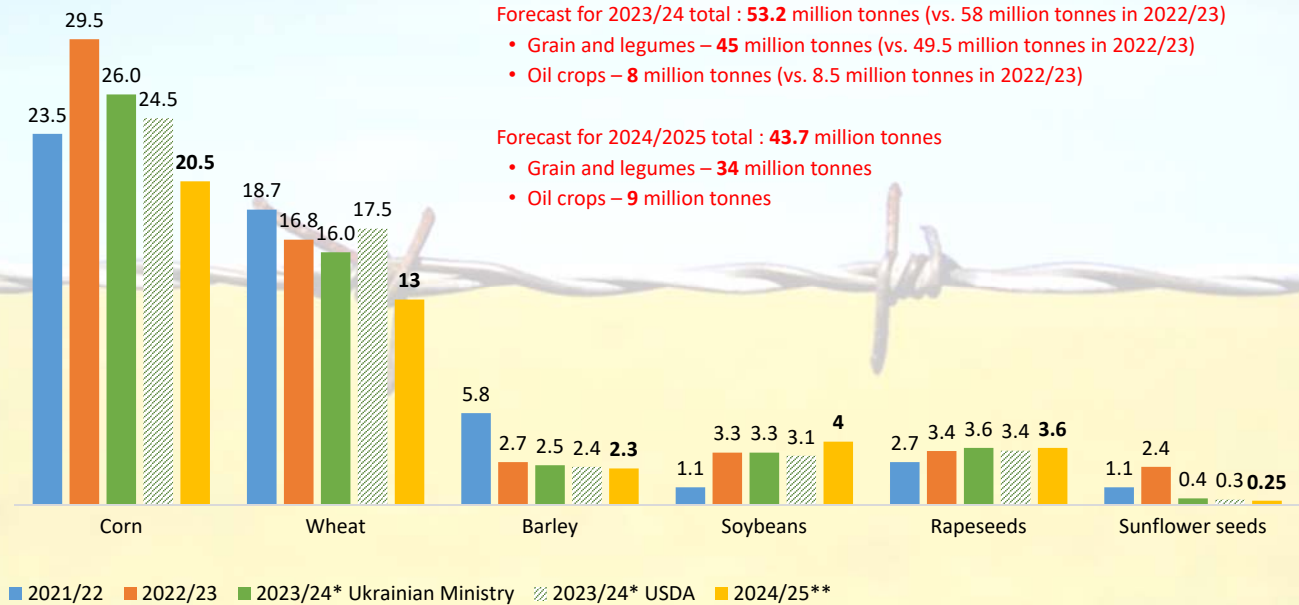
EXPORT OF GRAIN, LEGUMES AND OIL CROPS FROM UKRAINE, million tonnes

Forecast for 2023/24 total : **53.2** million tonnes (vs. 58 million tonnes in 2022/23)

- Grain and legumes – **45** million tonnes (vs. 49.5 million tonnes in 2022/23)
- Oil crops – **8** million tonnes (vs. 8.5 million tonnes in 2022/23)

Forecast for 2024/2025 total : **43.7** million tonnes

- Grain and legumes – **34** million tonnes
- Oil crops – **9** million tonnes



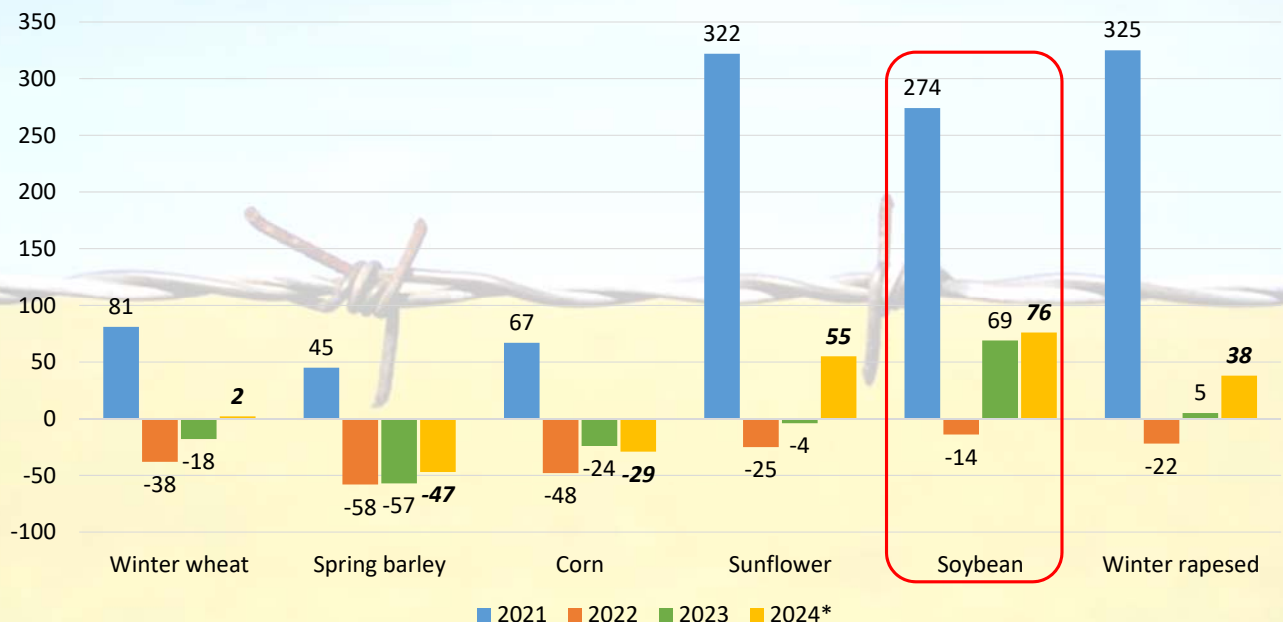
Source: based on data of Ministry of Agrarian Policy and Food of Ukraine, Ukrainian Grain Association and USDA, as of April 11, 2024

BALANCE OF SUPPLY AND DEMAND OF GRAIN IN UKRAINE (*forecast as of April 3, 2024)

	2021/22	2022/23	2023/24*	2024/25**	Deviation , %	
	thousand tonnes	thousand tonnes	thousand tonnes	thousand tonnes	2023/24* to 2022/23	2024/25** to 2023/24*
Initial stocks	4,817	13,325	3,954	4,087	-70.2 %	+3.4%
Sown area, thousand hectares	15,995	12,171	11,058	10,109	-9.1 %	-8.6%
Harvested area, thousand hectares	15,948	11,773	10,792	9,891	-8.3 %	-8.3%
Yield, tonnes / hectare	5.39	4.58	5.35	5.05	+16.9 %	-5.6%
Gross harvest	86,010	53,864	57,756	49,957	+7.2 %	-13.5%
Import	125	152	113	144	-26.2 %	+27.9%
Total supply	90,952	67,341	61,822	54,190	-8.2 %	-12.3%
Domestic consumption:	25,396	16,147	16,817	16,009	+4.1 %	-4.8%
food	4,611	4,230	4,155	3,955	-1.8 %	-4.8%
fodder	13,325	7,935	8,830	8,410	+11.3 %	-4.8%
seeds	1,666	1,470	1,380	1,417	-6.1 %	+2.7%
losses	4,812	1,696	1,557	1,357	-8.2 %	-12.8%
other (alcohol, malt, starch, etc.)	982	816	895	870	+9.7 %	-2.8%
Export	52,231	47,240	40,918	33,990	-13.4 %	-16.9%
Total distribution (demand)	77,627	63,387	57,733	49,999	-8.9 %	-13.4%
Ending stocks	13,325	3,954	4,087	4,190	+3.4 %	+2.5%
Ratio of ending stocks to distribution	17 %	6 %	7 %	8 %		

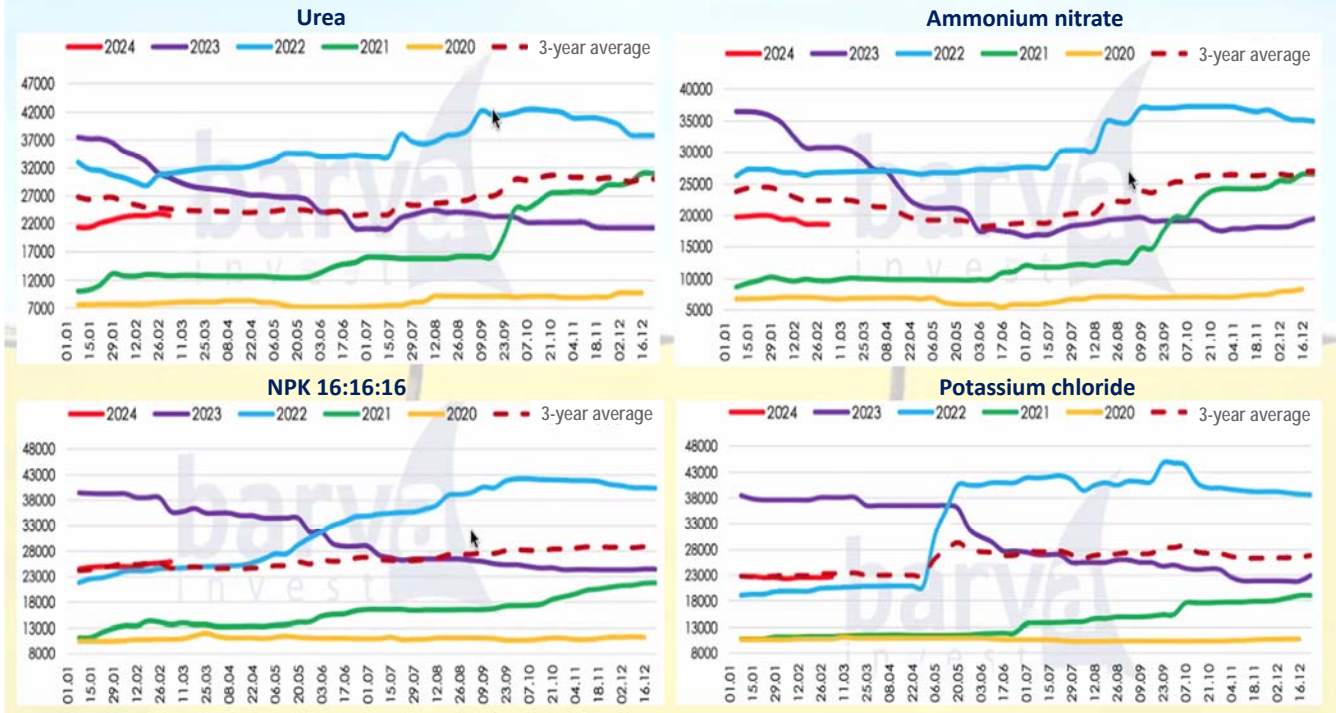
Source: based on "APK-Inform", the State Statistic Service of Ukraine and the State Customs Service of Ukraine

AVERAGE PROFITABILITY OF GRAIN AND OILSEED PRODUCTION IN UKRAINE, US\$ per metric ton

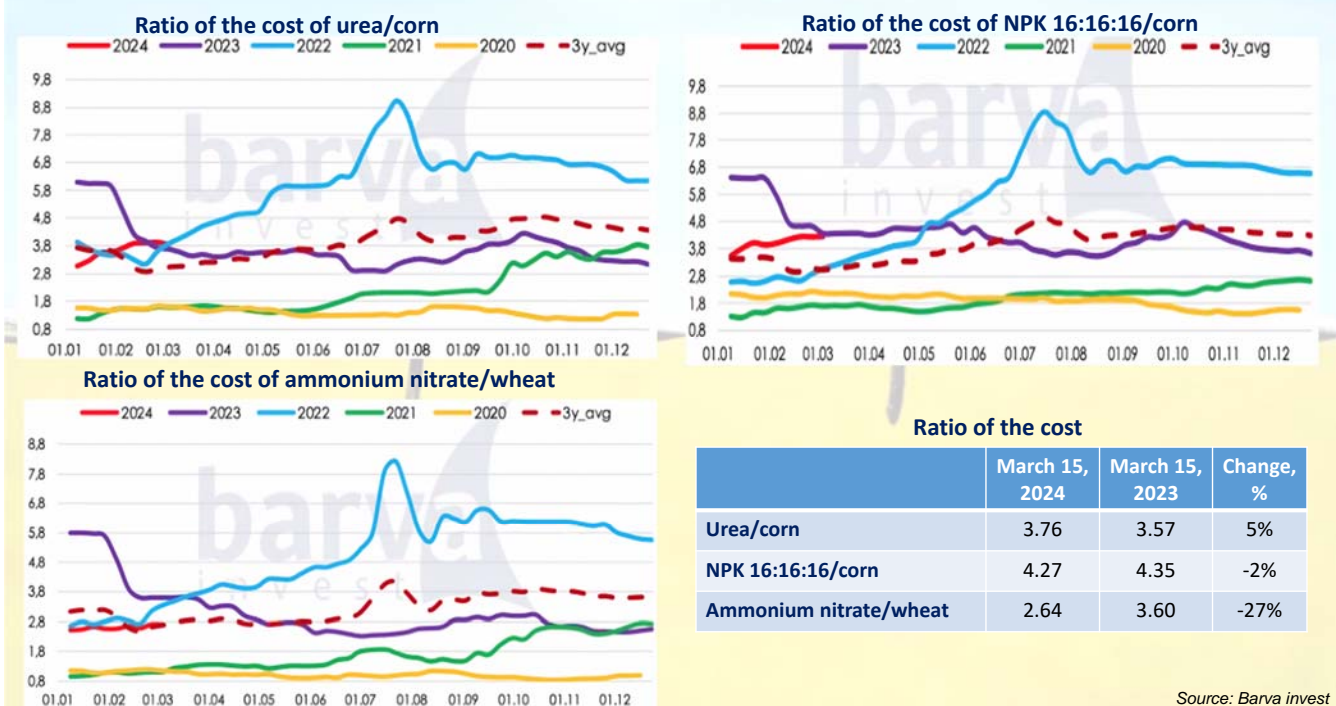


Source: Estimate based on UCAB data for central regions of Ukraine

DYNAMICS OF PRICES FOR FERTILIZER IN UKRAINE, UAH/ton (1\$≈ 40UAH)



RATIO OF HOW MUCH AGRICULTURAL PRODUCTS NEED TO BE SOLD TO BUY 1 TON OF FERTILIZERS



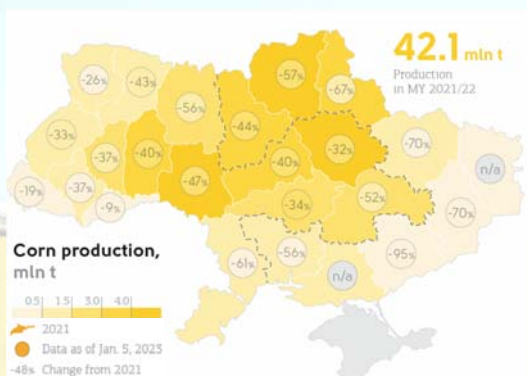
Source: Barva invest

PROVISION OF AGRICULTURAL ENTERPRISES WITH PLANT PROTECTION PRODUCTS FOR THE FIRST HALF OF 2024, as of April 18, 2024

Region	The need for PPP for the first half of 2024		PPP received in farms		Including herbicides	
	Total	Including herbicides	Total	in % to the need	Total	in % to the need
Vinnitsya	2,664.4	1,608.8	2,589.0	97.2	1,569.8	97.6
Volyn	606.3	296.3	491.6	81.0	256.5	86.6
Dnipropetrovsk	1,524.9	1,043.1	1,524.9	100.0	1,043.1	100.0
Donetsk	161.3	104.1	26.4	16.3	10.5	10.0
Zhytomyr	1,294.5	885.0	1,009.9	78.0	720.8	81.0
Zakarpattia	294.0	147.4	242.8	82.6	123.5	83.8
Zaporizhzhya	216.4	120.0	210.9	97.5	120.0	100.0
Ivano-Frankivsk	6,24.5	320.0	421.4	67.0	232.3	72.0
Kyiv	1,491.2	924.8	1,114.8	75.0	800.2	86.0
Kirovohrad	1,392.3	988.7	1,212.5	87.0	876.0	88.6
Luhansk	0	0	0	0	0	0
Lviv	1,392.6	817.3	704.4	50.5	410.0	50.2
Mikolayiv	722.5	404.5	656.0	90.8	389.8	96.4
Odesa	1,147.5	419.0	1,192.9	103.0	437.2	104.0
Poltava	2,388.9	1,939.5	2,357.2	98.7	1,909.4	98.4
Rivne	667.8	466.7	486.5	72.8	357.6	76.6
Sumy	1,932.7	1,547.3	1,492.0	77.2	1,210.6	78.2
Ternopil	1,350.7	710.0	1,157.1	85.7	610.0	85.9
Kharkiv	1,024.8	813.0	931.9	90.9	739.99	91.0
Kherson	502.6	192.0	288.7	57.0	115.8	60.0
Khmelnyskiy	2,206.4	1,343.3	1,762.7	79.8	1,076.2	80.1
Cherkasy	1,855.1	1,404.7	1,540.9	83.2	1,150.3	82.0
Chernivtsi	483.4	164.5	346.9	71.8	106.6	64.8
Chernihiv	1,333.6	1,095.7	1,010.3	75.8	834.1	76.1
Total	27,278.3	17,755.6	22,771.6	83.4	15,100.2	85.0

Source: Ministry of Agrarian Policy and Food of Ukraine

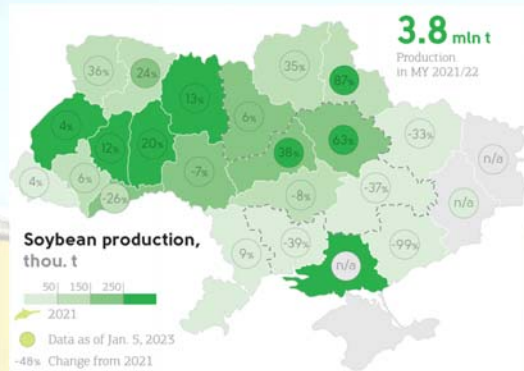
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Costs, \$/hectare	2021	2022	2023	2024*
Seed	123	143	124	124
Fertilizers	250	327	173	147
PPP	84	98	81	60
Fuel and lubricants	60	102	70	67
Wages (production staff)	22	18	21	20
Taxes on wages	11	9	11	10
Repair of fixed assets	47	55	50	60
Depreciation of fixed assets	72	72	72	72
Administrative expenses	72	65	70	66
Land rent	148	111	119	125
Unified tax of group 4 (agriculture)	10	6	6	6
Contractor services	75	87	76	68
Total costs, \$/hectare	972	1,094	873	824
Yield (gross), ton/hectare	9.8	9.7	9.5	9.2
Elevator services, \$/metric ton	43	51	41	42
Yield (net), t/hectare	8.6	8.5	8.3	8.0
Total costs, \$/metric ton	157	180	146	145
Price at an elevator (center of Ukraine), \$/metric ton without VAT	224	132	123	116
Profit/loss, \$/t	67	-48	-24	-29
Option 1. To the ports of Odessa				
Logistics to the port, \$/metric ton	26	48	32	28
Price at the port (CPT), \$/metric ton	256	187	164	144
Profit/loss, \$/metric ton	73	-41	-14	-29
Option 2. To the port of Constanta (Romania)				
Logistics to the port, \$/metric ton		141	84	79
Price at the port (CPT), \$/metric ton		278	221	181
Profit/loss, \$/metric ton		-43	-9	-43
Option 3. To the ports of Gdansk/Gdynia (Poland)				
Logistics to the port, \$/metric ton		140	81	81
Price at the port (CPT), \$/metric ton		276	216	180
Profit/loss, \$/metric ton		-44	-11	-46

Source: Estimate based on UCAB data for central regions of Ukraine

SOYBEAN

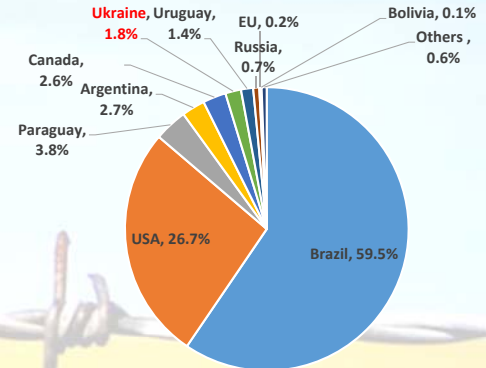
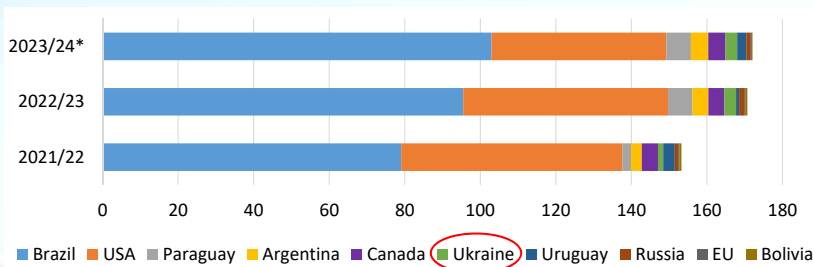


Costs, \$/hectare	2021	2022	2023	2024*
Seed	69	58	49	36
Fertilizers	128	144	82	75
PPP	86	102	86	77
Fuel and lubricants	60	102	70	67
Wages (production staff)	30	24	29	27
Taxes on wages	15	13	15	14
Repair of fixed assets	47	55	50	60
Depreciation of fixed assets	72	72	72	72
Administrative expenses	72	65	70	66
Land rent	148	111	119	125
Unified tax of group 4 (agriculture)	10	6	6	6
Contractor services	24	27	24	22
Total costs, \$/hectare	760	778	671	645
Yield (gross), ton/hectare	2.6	2.5	2.4	2.5
Elevator services, \$/metric ton	17	19	17	17
Yield (net), t/hectare	2.4	2.4	2.3	2.4
Total costs, \$/metric ton	325	350	313	291
Price at an elevator (center of Ukraine), \$/metric ton without VAT	602	336	381	367
Profit/loss, \$/t	274	-14	69	76
Option 1. To the ports of Odessa				
Logistics to the port, \$/metric ton	26	48	32	28
Price at the port (CPT), \$/metric ton	635	420	415	405
Profit/loss, \$/metric ton	281	22	71	85
Option 2. To the port of Constanta (Romania)				
Logistics to the port, \$/metric ton		138	84	79
Price at the port (CPT), \$/metric ton		520	482	413
Profit/loss, \$/metric ton		32	85	42
Option 3. To the ports of Gdansk/Gdynia (Poland)				
Logistics to the port, \$/metric ton		140	81	81
Price at the port (CPT), \$/metric ton		530	478	411
Profit/loss, \$/metric ton		40	84	39

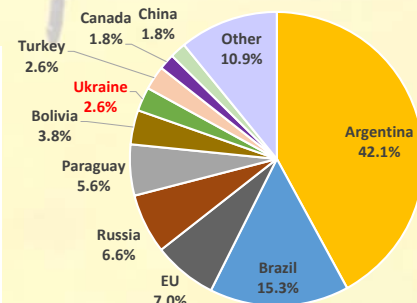
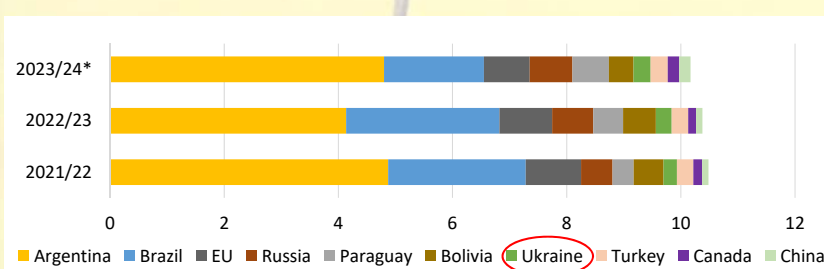
Source: Estimate based on UCAB data for central regions of Ukraine

TOP-10 EXPORTERS OF SOYBEAN AND BY-PRODUCTS, million tonnes

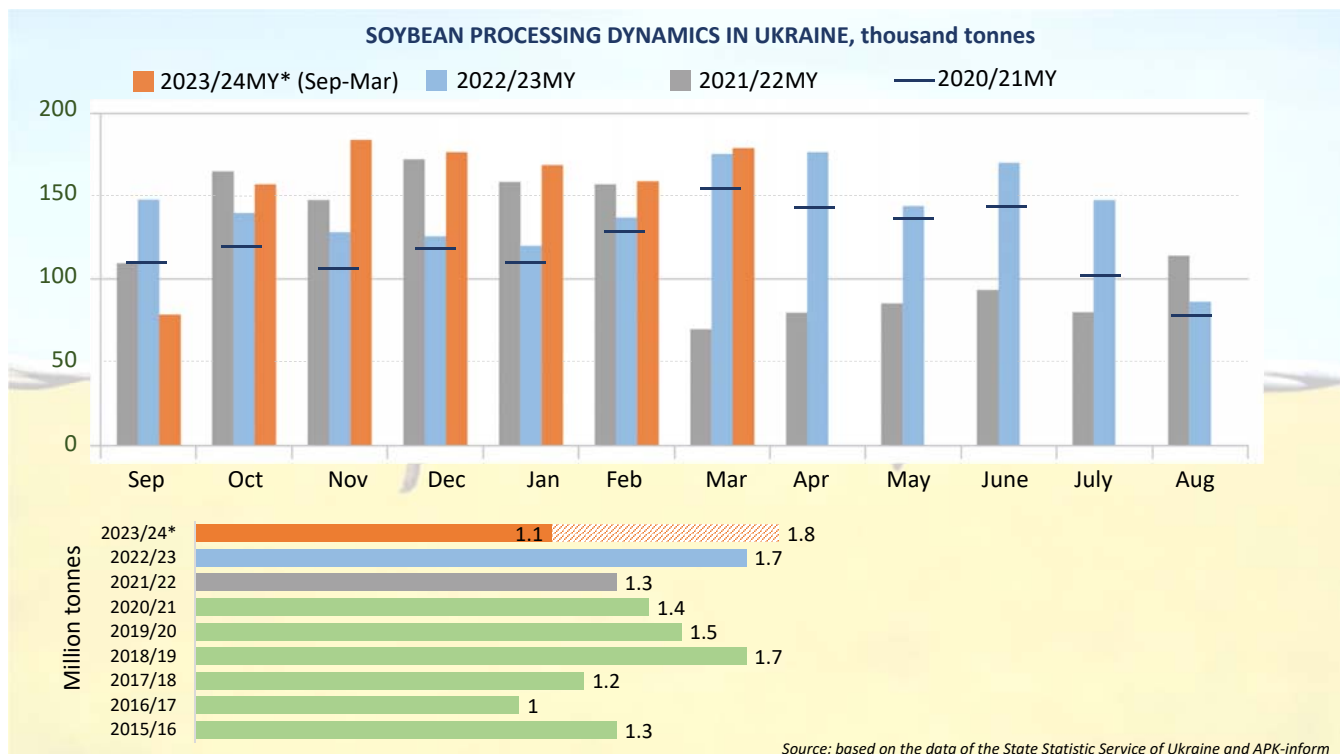
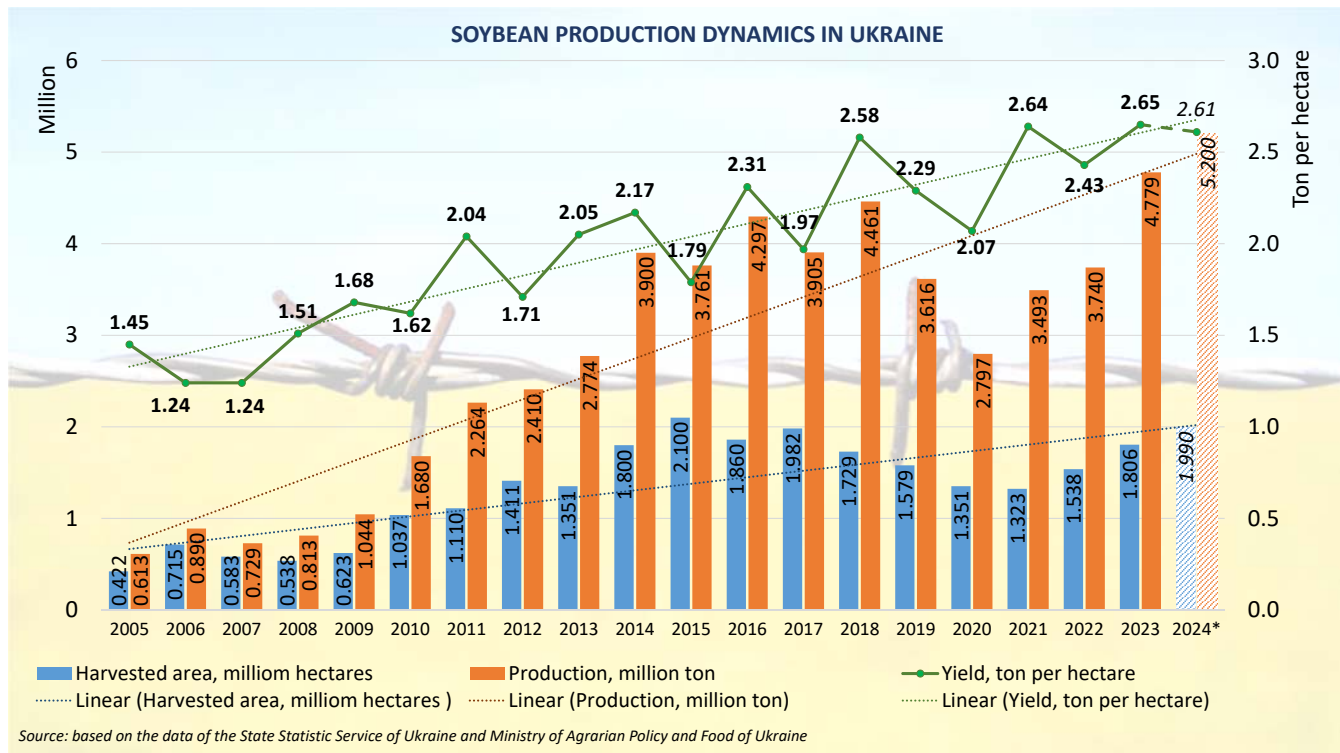
Soybeans



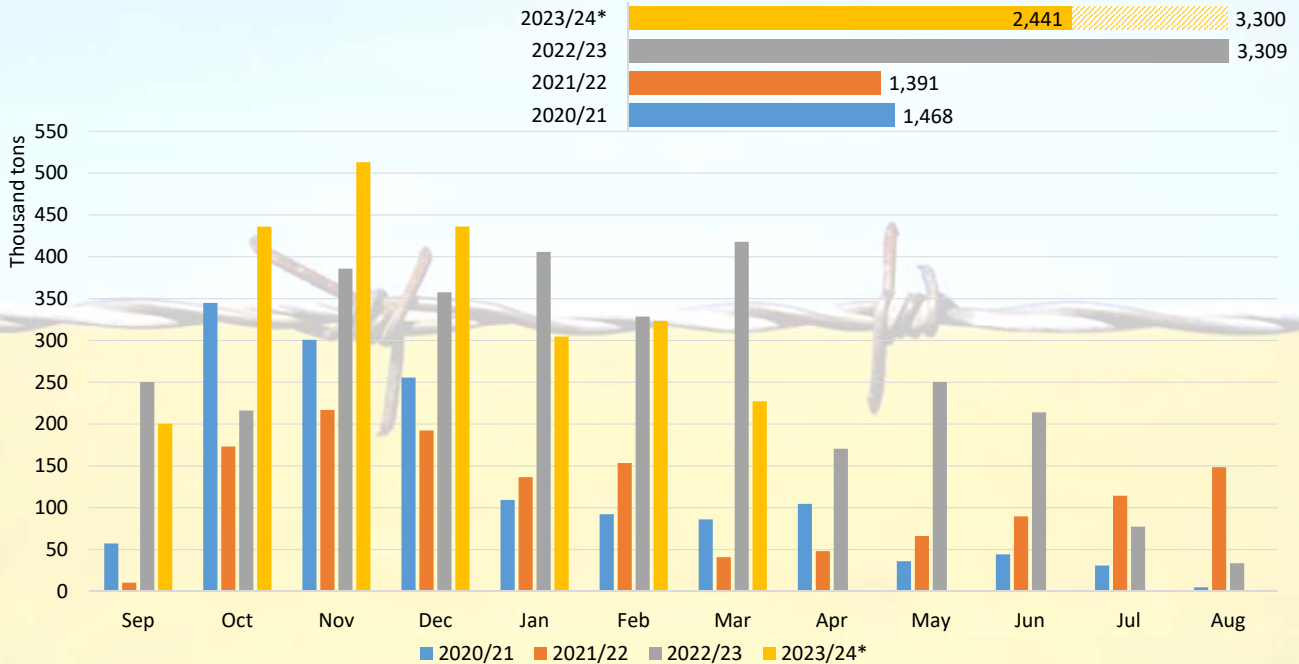
Soybean oil



Source: USDA, as of April 11, 20

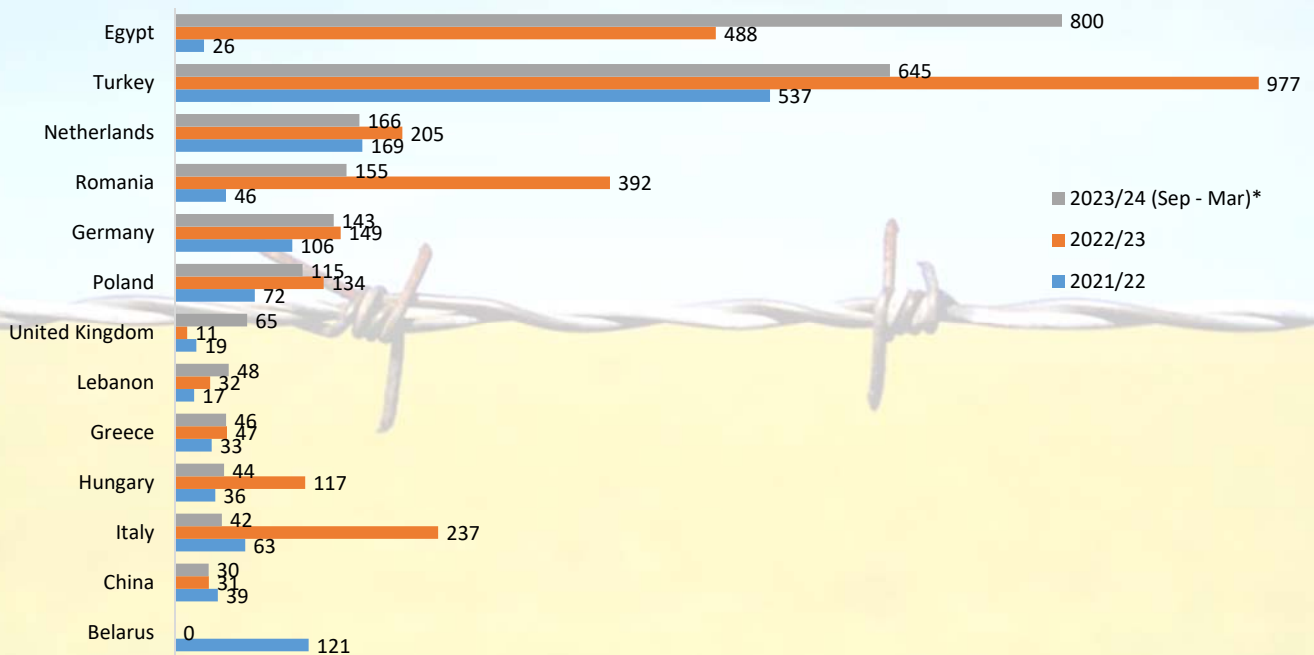


SOYBEAN EXPORTS DYNAMICS FROM UKRAINE (MY Sep-Aug), thousand tonnes



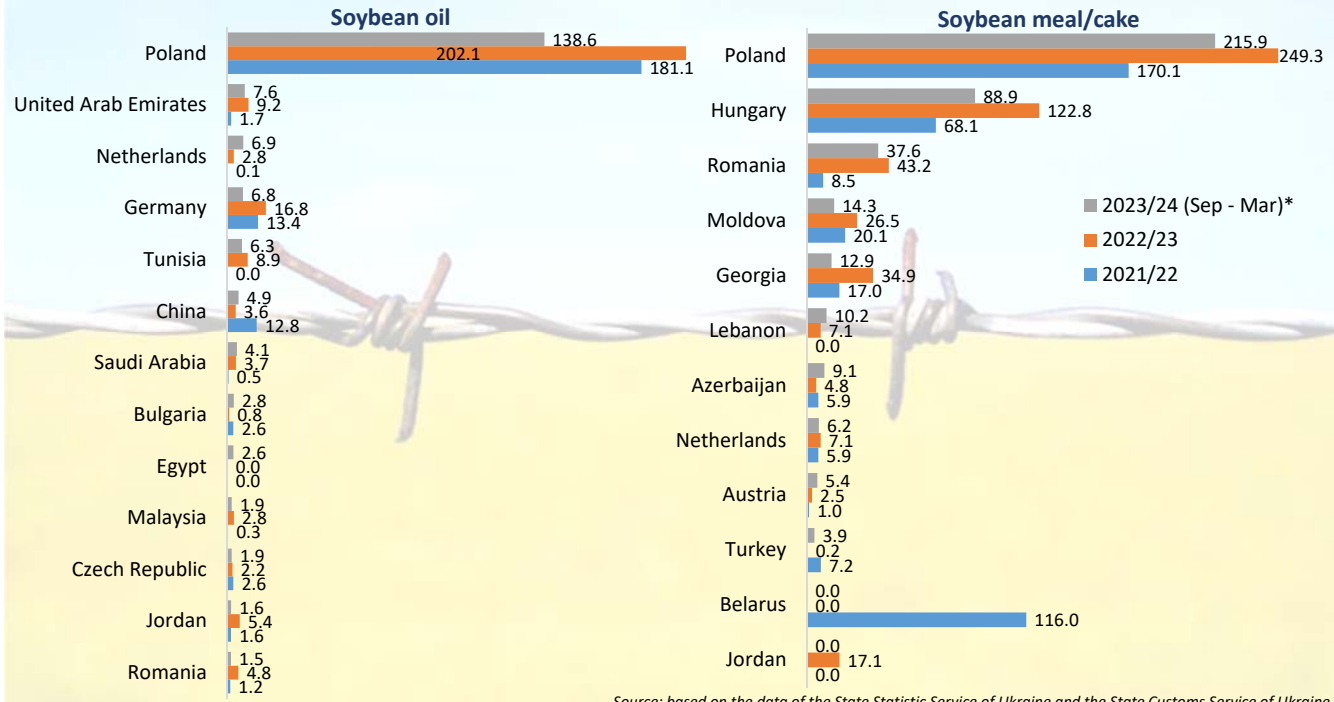
Source: based on the data of the State Statistic Service of Ukraine and Ministry of Agrarian Policy and Food of Ukraine

EXPORT GEOGRAPHY OF SOYBEANS FROM UKRAINE (MY Sep-Aug), thousand tonnes



Source: based on the data of the State Statistic Service of Ukraine and the State Customs Service of Ukraine

EXPORT GEOGRAPHY OF SOYBEAN BY-PRODUCTS FROM UKRAINE (MY Sep-Aug), thousand tonnes

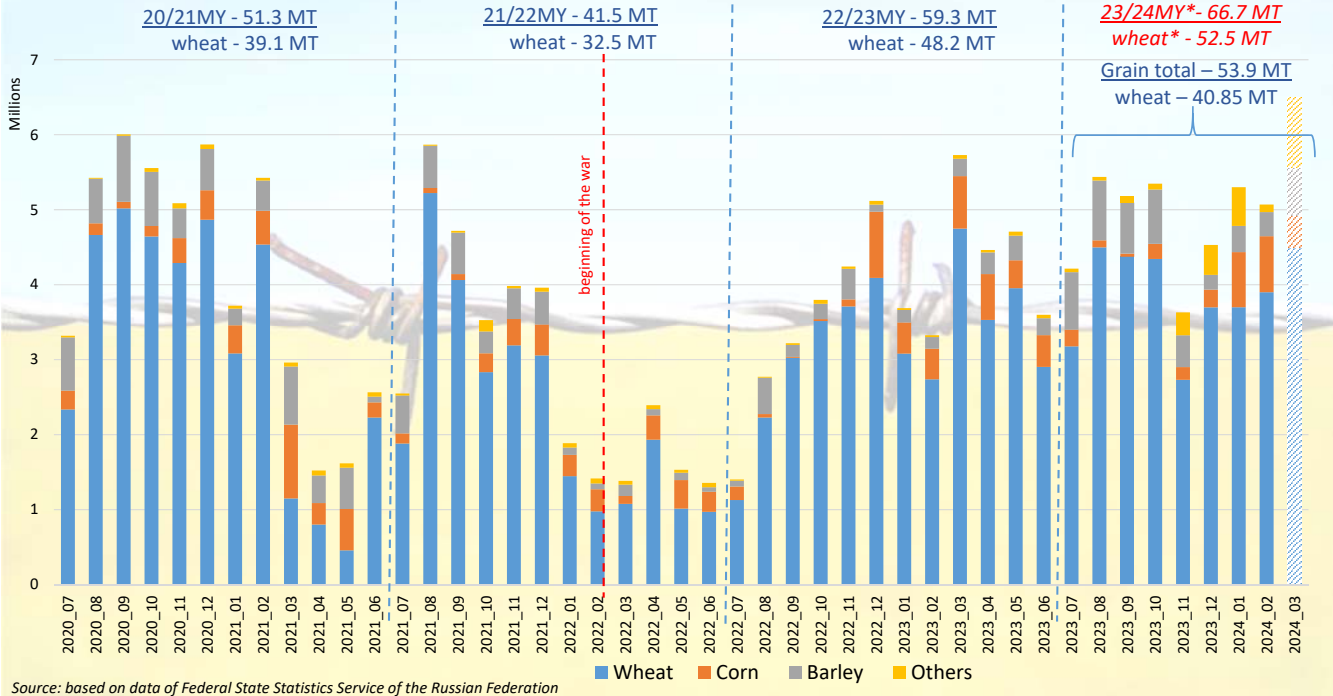


HARVESTING OF GRAIN, LEGUMES AND OIL CROPS IN RUSSIA

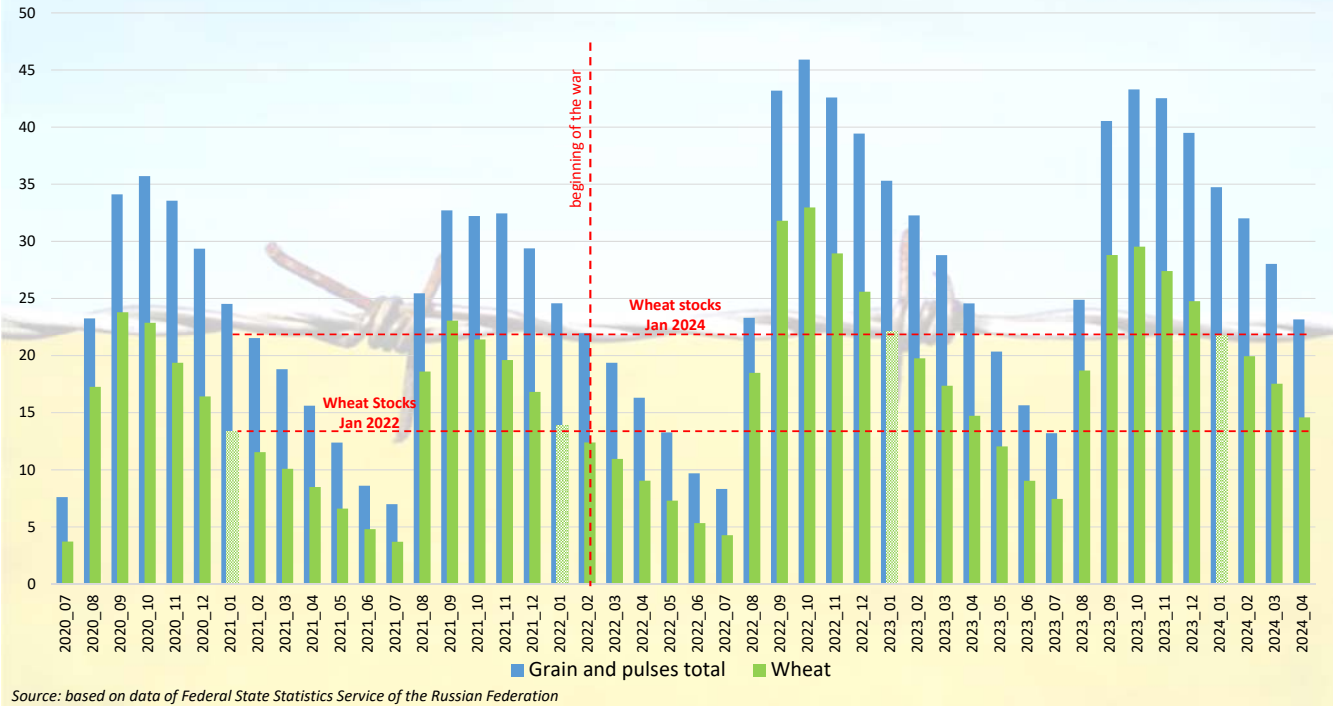
Commodity	2021			2022			Planted, million hectares	2023			2024 <i>Production forecast, mln tonnes</i>
	Harvested, million hectares	Yield, tonnes per hectare	Produced, million tonnes	Harvested, million hectares	Yield, tonnes per hectare	Produced, million tonnes		Harvested, million hectares	Yield, tonnes per hectare	Produced, million tonnes	
Grains and legumes, total	45.42	2.79	126.95	46.59	3.44	157.68	47.88	46.69	3.10	144.92	132.8
including:											
• Wheat	27.83	2.84	79.05	29.25	3.62	105.91	29.75	29.18	3.18	92.83	90.4
• Corn	2.89	5.58	16.12	2.45	6.09	14.71	2.67	2.40	6.93	16.62	15.6
• Barley	7.87	2.41	18.95	7.92	3.10	24.57	7.94	7.83	2.70	21.15	19.7
• Buckwheat	0.93	1.11	1.03	1.09	1.21	1.32	1.29	1.23	1.20	1.48	1.3
• Rice	0.19	6.35	1.19	0.17	5.60	0.97	0.19	0.18	5.79	1.07	1.1
Rapeseeds	1.64	1.82	2.99	2.25	2.10	4.71	2.11	2.07	2.03	4.20	4.7
Soybeans	2.97	1.66	4.94	3.31	1.90	6.30	3.67	3.55	1.92	6.82	6.8
Sunflower seeds	9.60	1.65	15.79	8.87	17.7	15.74	9.87	8.96	1.85	16.70	17.7

Source: based on data of Federal State Statistic Service of the Russian Federation

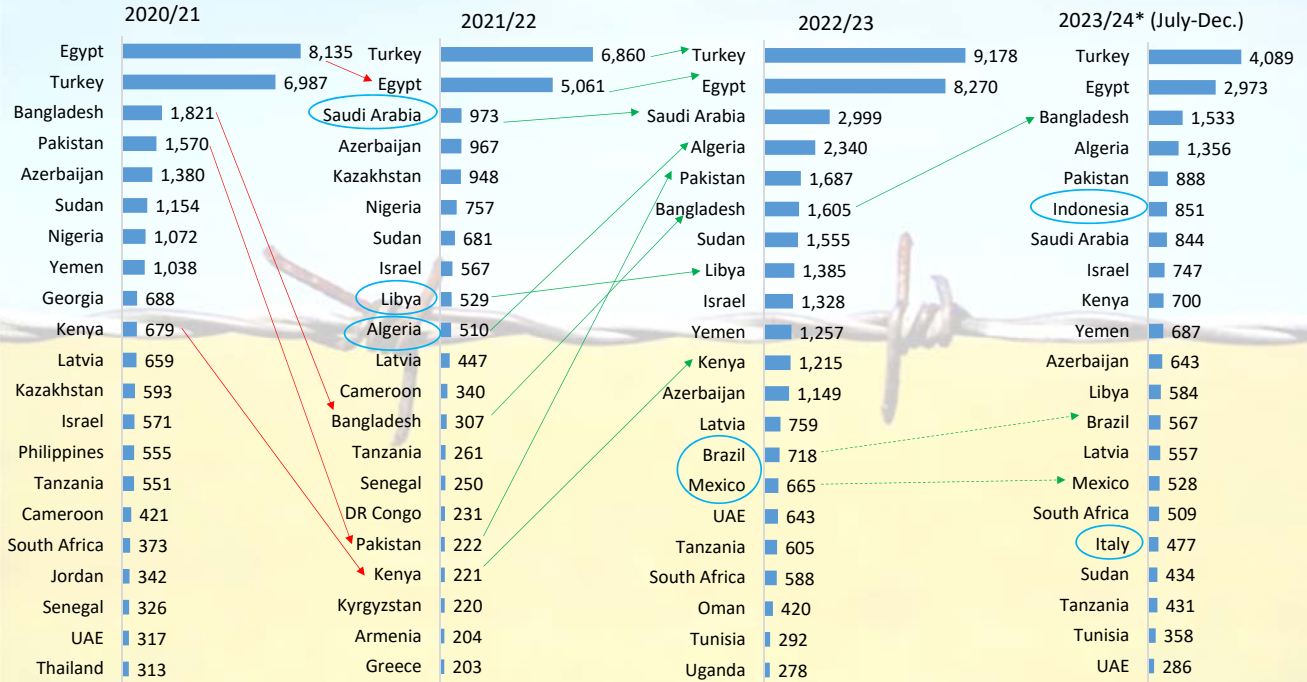
EXPORT OF GRAINS FROM RUSSIA BY COMMODITIES, million metric tonnes



DYNAMICS OF GRAIN STOCKS IN RUSSIA, million tonnes



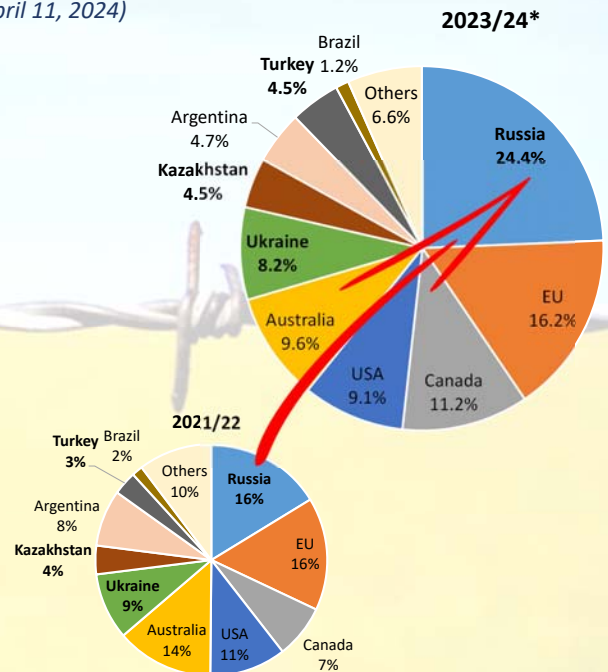
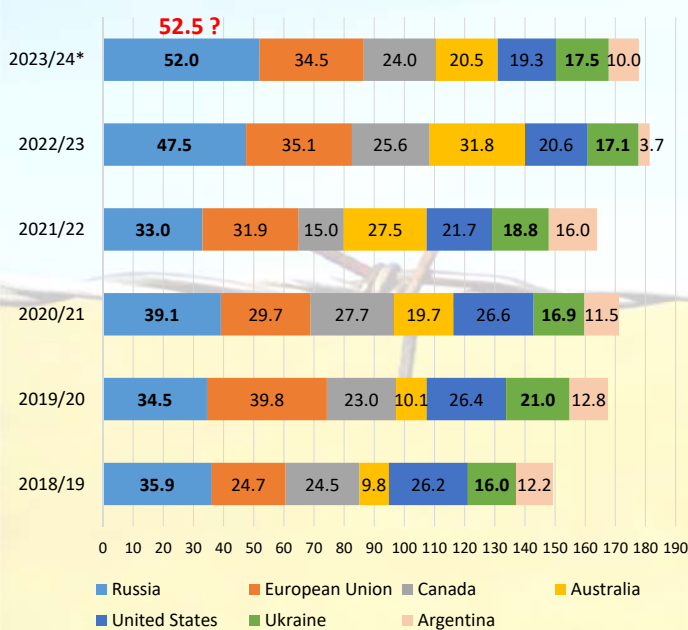
GEOGRAPHY OF WHEAT EXPORT FROM RUSSIA, July 1 - June 31, thousand tonnes




Source: based on data of Federal State Statistics Service of the Russian Federation

WORLD WHEAT EXPORT FROM KEY EXPORTING COUNTRIES, million metric tonnes

(forecast as of April 11, 2024)



Source: based on data of the USDA-WASDE



Thank you!

Questions?