

Production and foreign trade of grain in the Black Sea region (updates)

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KANSAS STATE
UNIVERSITY

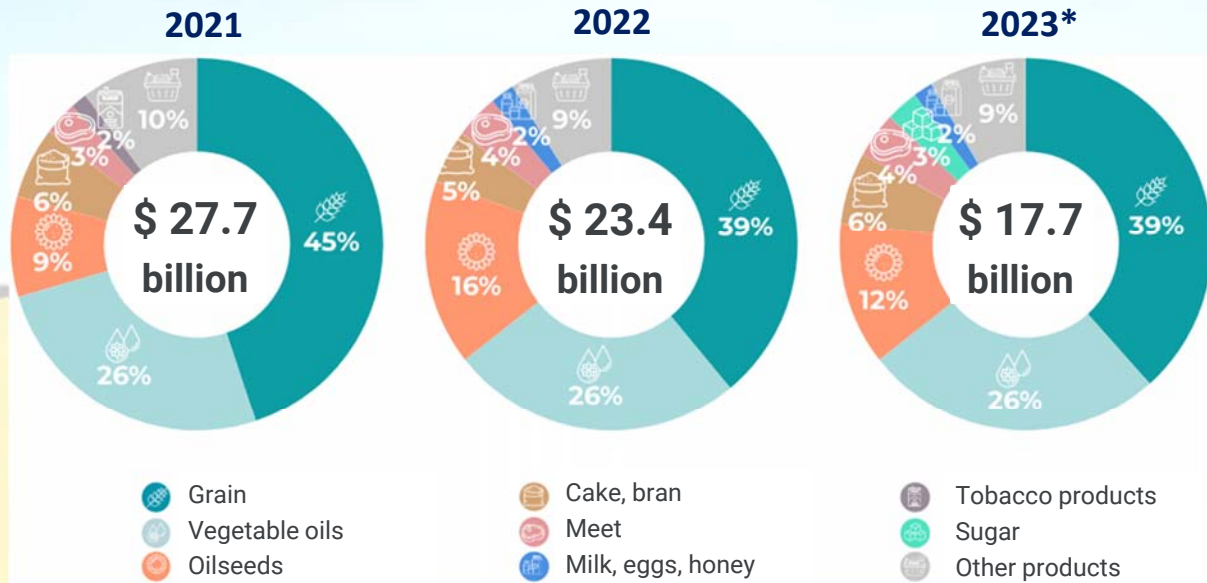
Agricultural Economics

OUTLINE:

- Current situation of ag commodities export from Ukraine
- Grain and oilseeds trade with EU
- Forecast of grain production and export from Ukraine
- Grain production and export from Russia



THE STRUCTURE OF UKRAINIAN AGRICULTURAL EXPORT



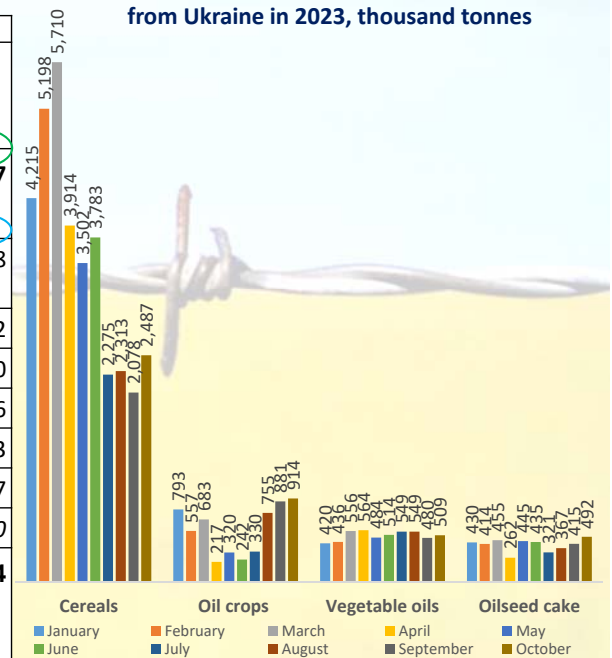
Source: State Customs Service of Ukraine and UCAB

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

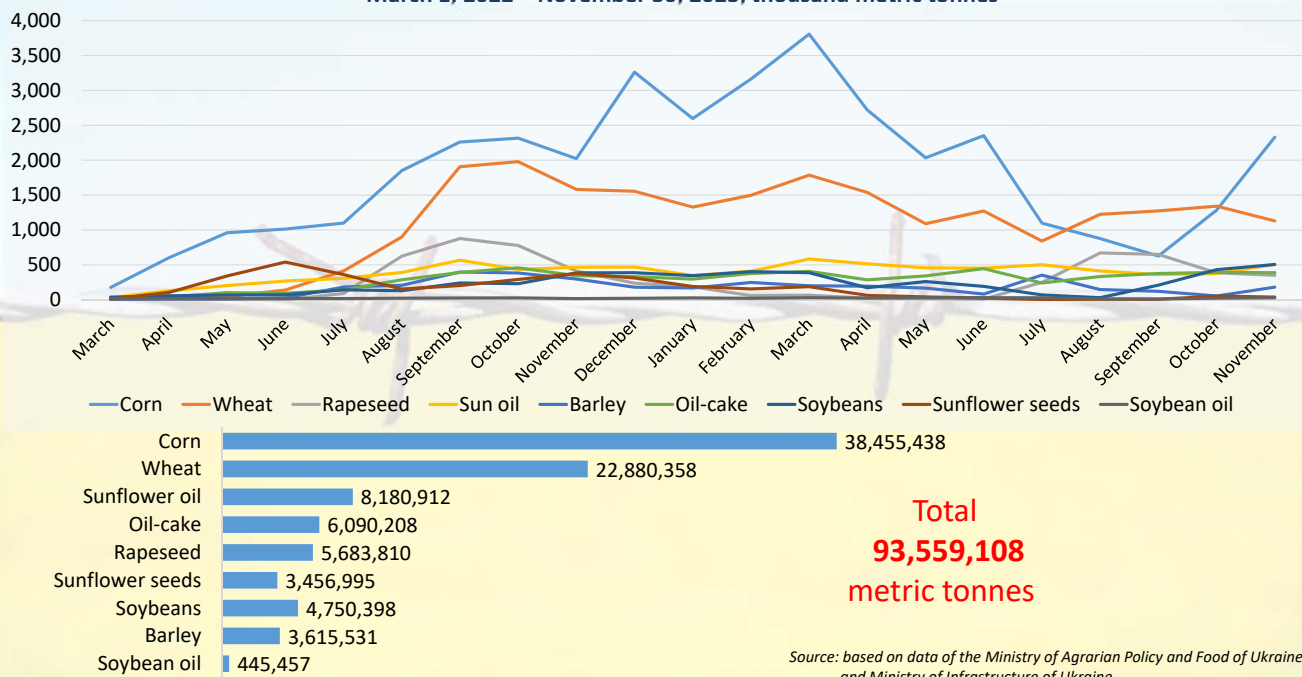
	2020/21 MY Total	2021/22 MY Total	2022/23 MY Total	2022/23 MY Total as of Nov. 30, 2022	2022/23 MY incl. Nov. 2022	2023/24 MY Total as of Nov. 30, 2023	2023/24 MY incl. Nov. 2023
Grain and legumes, total	43,939	48,508	49,079	17,557	4,354	13,097	3,857
• wheat	16,413	18,741	16,900	6,730	1,732	5,909	1,278
• barley	4,210	5,752	2,713	1,453	347	874	192
• rye	15.8	161.9	18.0	11.9	6.0	0.9	0.0
• corn	22,596	23,535	29,299	9,301	2,250	6,180	2,376
Wheat flour	123.7	69.4	148.1	51.8	16.3	47.7	6.3
Other flour	1.1	1.5	6.2	3.1	0.3	2.2	0.7
Total flour	124.8	70.9	154.3	54.9	16.6	49.9	7.0
Total export (grain+flour)	44,105	48,579	49,233	17,612	4,371	13,147	3,864

Source: based on data of State Customs Service of Ukraine

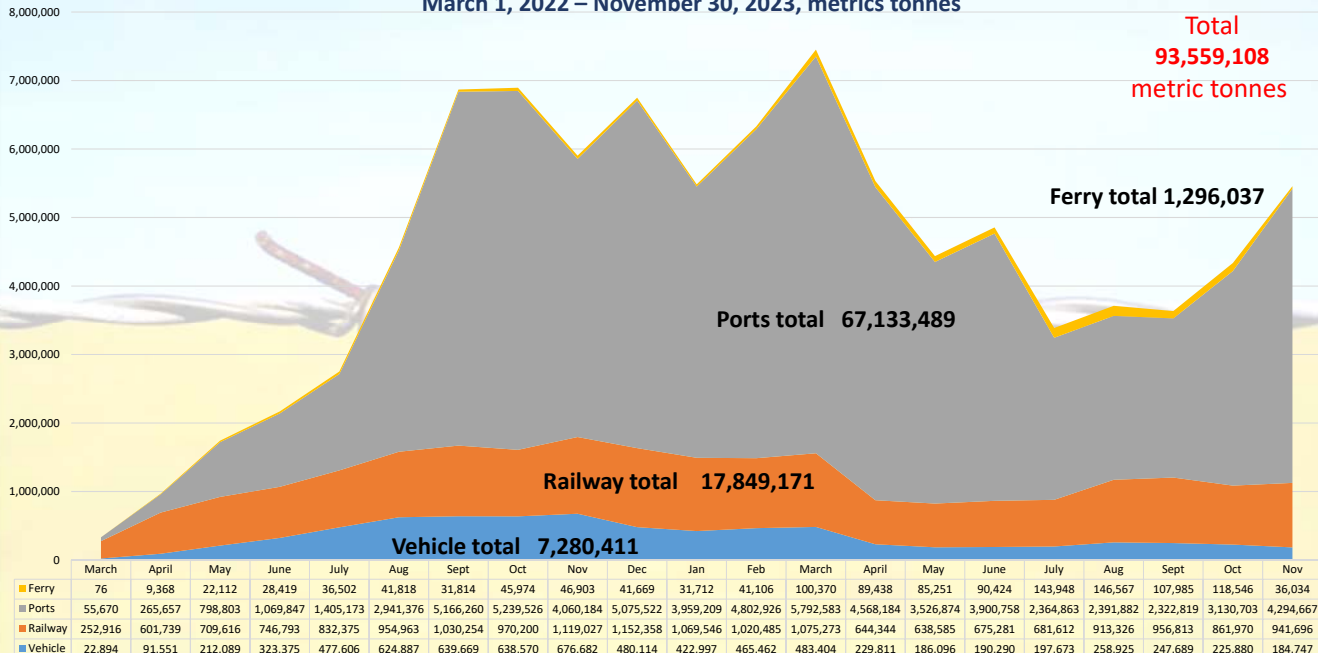
Dynamics of main agricultural products export from Ukraine in 2023, thousand tonnes



EXPORT SHIPMENTS FROM UKRAINE DURING THE WAR TIME BY TYPES OF AGRICULTURAL COMMODITIES, March 1, 2022 – November 30, 2023, thousand metric tonnes



AGRICULTURAL COMMODITY EXPORT SHIPMENTS FROM UKRAINE IN TRANSPORTATION BREAKDOWN, March 1, 2022 – November 30, 2023, metrics tonnes



Source: Ministry of Agrarian Policy and Food of Ukraine and Ministry of Infrastructure of Ukraine

POLISH CARRIERS REQUESTS

- to return of permits for cargo transportation within the EU for Ukrainian transport companies;
- to strengthen transport requirements within the framework of ECMT (certificates of the European Conference of Ministers of Transport);
- to prohibit registration in Poland of companies with capital from outside the EU;
- to create separate queues for vehicles from the EU in the "E-queues";
- to obtain access to the Ukrainian system "The Way"



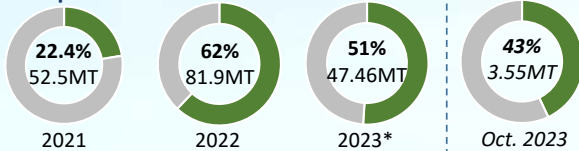
POLISH FARMERS REQUESTS

- to introduce subsidies for corn purchase;
- not to increase the agricultural tax

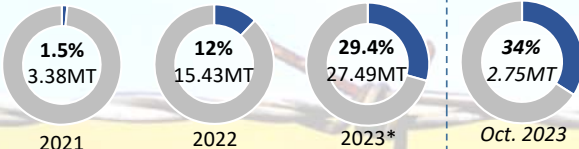


EXPORT LOGISTICS

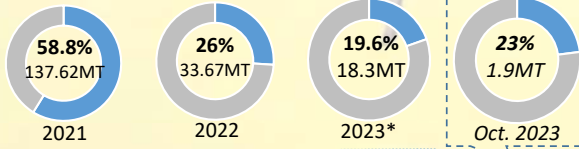
Europe



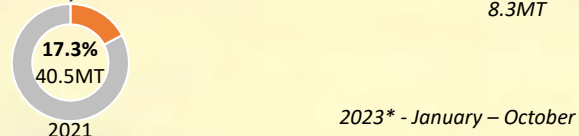
Danube



Sea routes



Russia, Belarus



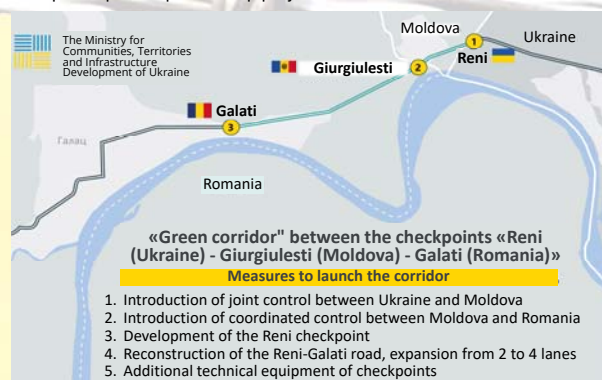
2023* - January – October

Measures taken to develop alternative logistics routes:

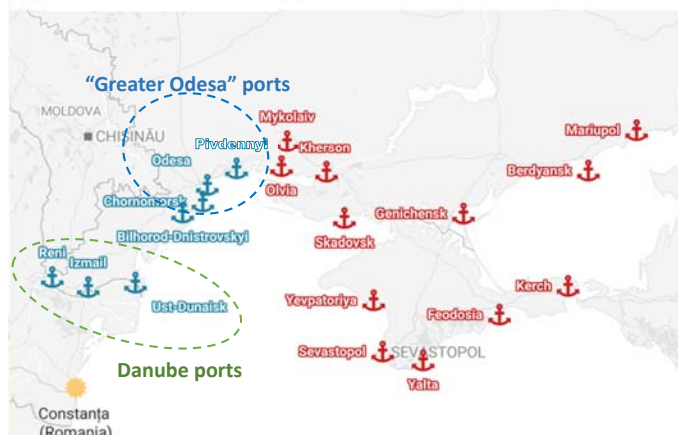
- Increased capacity of the ports on the Danube river and the Bystrice canal
- New checkpoints are open for international traffic
- Access roads and railways have been repaired and reconstructed
- Legislation has been improved to increase the capacity of the international checkpoints
- The E-queue pilot project has been introduced
- Reconstruction and repair of international checkpoints was carried out

Further areas of work:

- Further development of the Danube river ports and the Danube basin
- Development of auto and railway infrastructure in the direction to ports and borders with EU countries
- Expanding the capacity of international checkpoints
- Launch of public-private partnership projects



 **Blocked ports**  **Available ports**



DANUBE RIVER PORTS

Record results of work:

- 3.3. million tonnes of cargos per month;
- over 110 thousand tonnes of cargos per day;
- over 9 thousand railway cars per month;
- over 4.1 thousand trucks per day;
- at the same time, 22 sea vessels and 40 barges were accommodated in the port of Reni;
- the largest bulk carrier in the history of Ukraine with a record deadweight of 28.7 thousand tonnes was handled in the port of Reni

Improvements:

- Administration of Sea Ports of Ukraine together with investors realize 15 investment projects in the ports of Reni and Izmail;
- During 2022-2023, 3.33 million cubic meters of operational dredging was carried out;
- During 2022-2023, the number of pilots on the Danube River increased from 14 to 78 people;
- 20 new cargo transshipment points were opened.

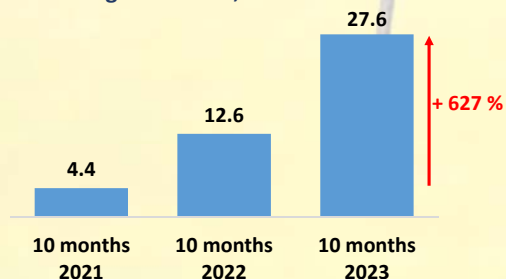
Source: Administration of Sea Ports of Ukraine

DANUBE RIVER PORTS

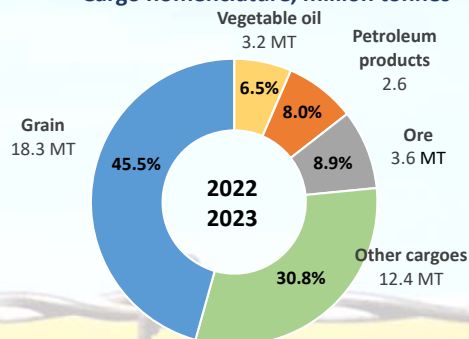
Number of vessels processed



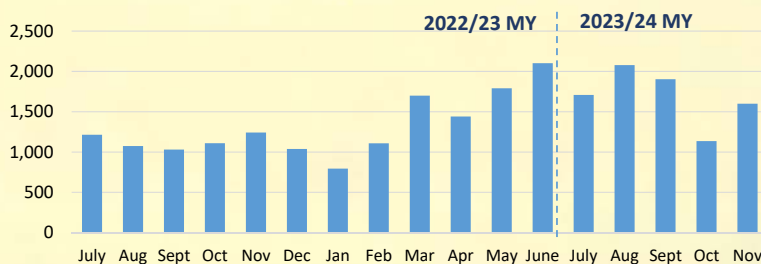
Total freight turnover, million tonnes



Cargo nomenclature, million tonnes

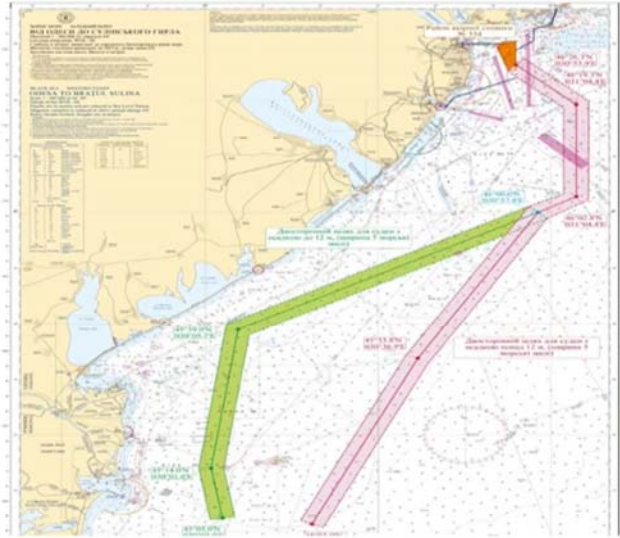


Export of grains and oilseeds through Danube river ports (wheat, corn, barley, sunflower seeds, rapeseeds, soybeans), thousand tonnes



Source: Administration of Sea Ports of Ukraine

UKRAINIAN HUMANITARIAN CORRIDOR

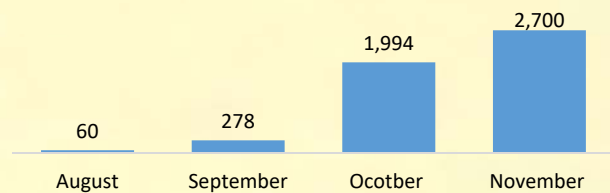


- Two-way passage for vessels with a draft of up to 12 meters (width 3 nautical miles)
- Two-way passage for vessels with a draft of more than 12 meters (width 3 nautical miles)

During the period from August 10, 2023 to November 24, 2023 **153 vessels** with more than **5.6 million tonnes** of grain and other agricultural products passed through **Ukrainian humanitarian corridor** (along the western coast of the Black Sea, including Bulgarian and Romanian waters towards Turkey)

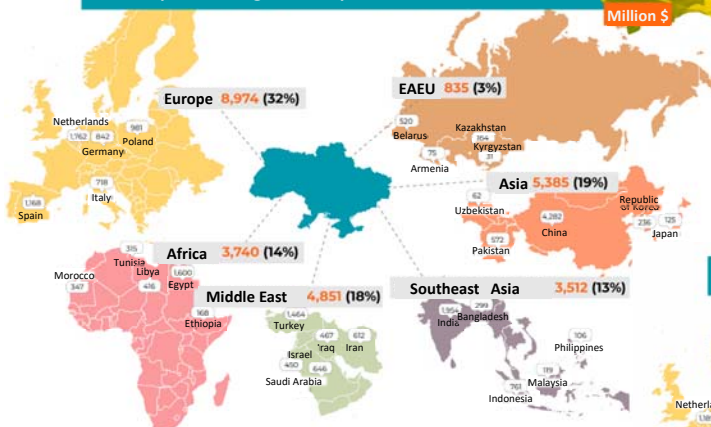
Loaded	
Grain	Other products
3.9 million tonnes	1.7 million tonnes
Declared for arrival	
46 vessels	21 vessels
1.7 million tonnes	0.6 million tonnes

Transshipment of grain cargoes through the humanitarian corridor, thousand tonnes



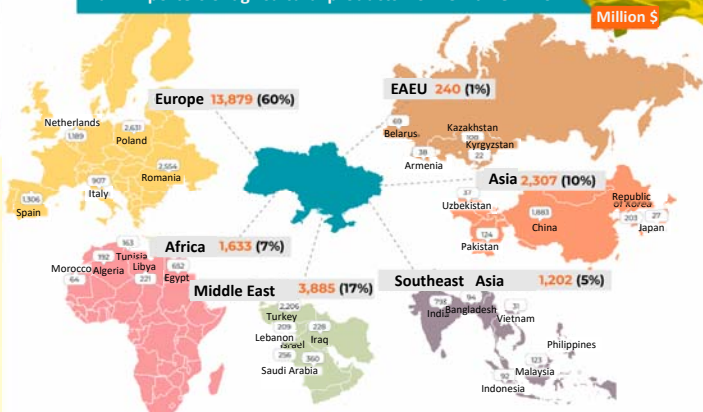
Source: Administration of Sea Ports of Ukraine

Main importers of agricultural products from Ukraine in 2021



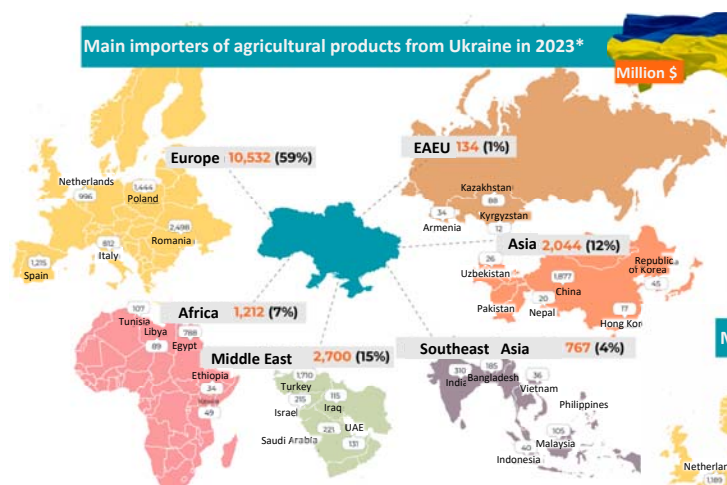
AGRICULTURAL EXPORT FROM UKRAINE 2022 vs. 2021

Main importers of agricultural products from Ukraine in 2022



Source: State Customs Service of Ukraine and UCAB

Main importers of agricultural products from Ukraine in 2023*

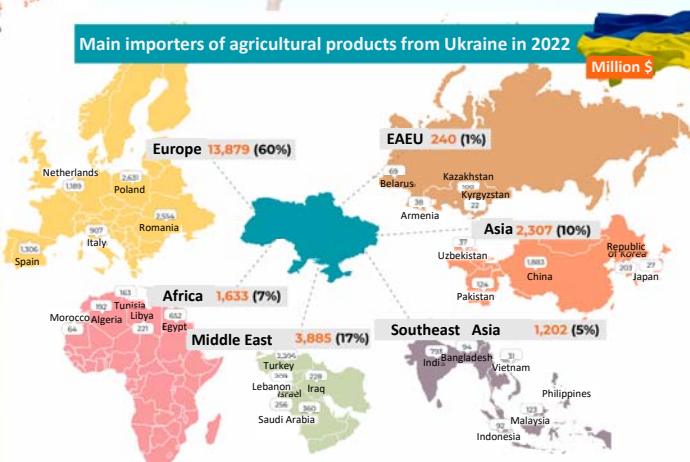


*2023 January - October

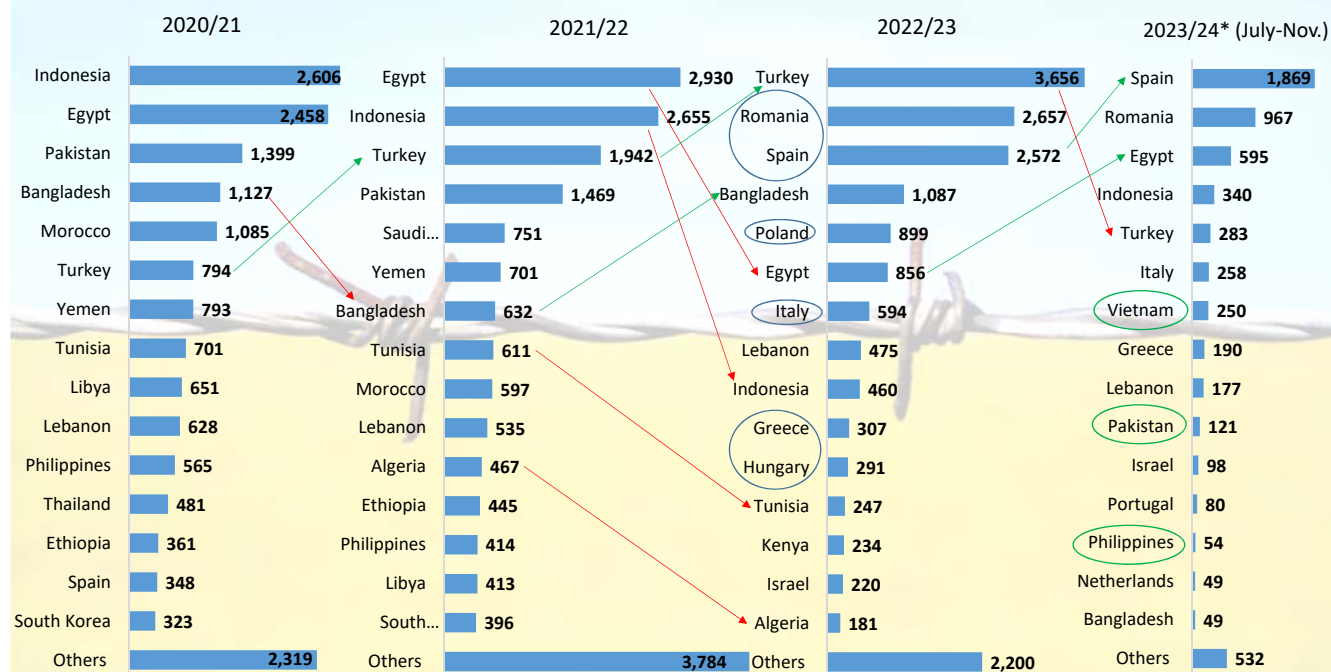
Source: State Customs Service of Ukraine and UCAB

AGRICULTURAL EXPORT FROM UKRAINE 2023* vs. 2022

Main importers of agricultural products from Ukraine in 2022

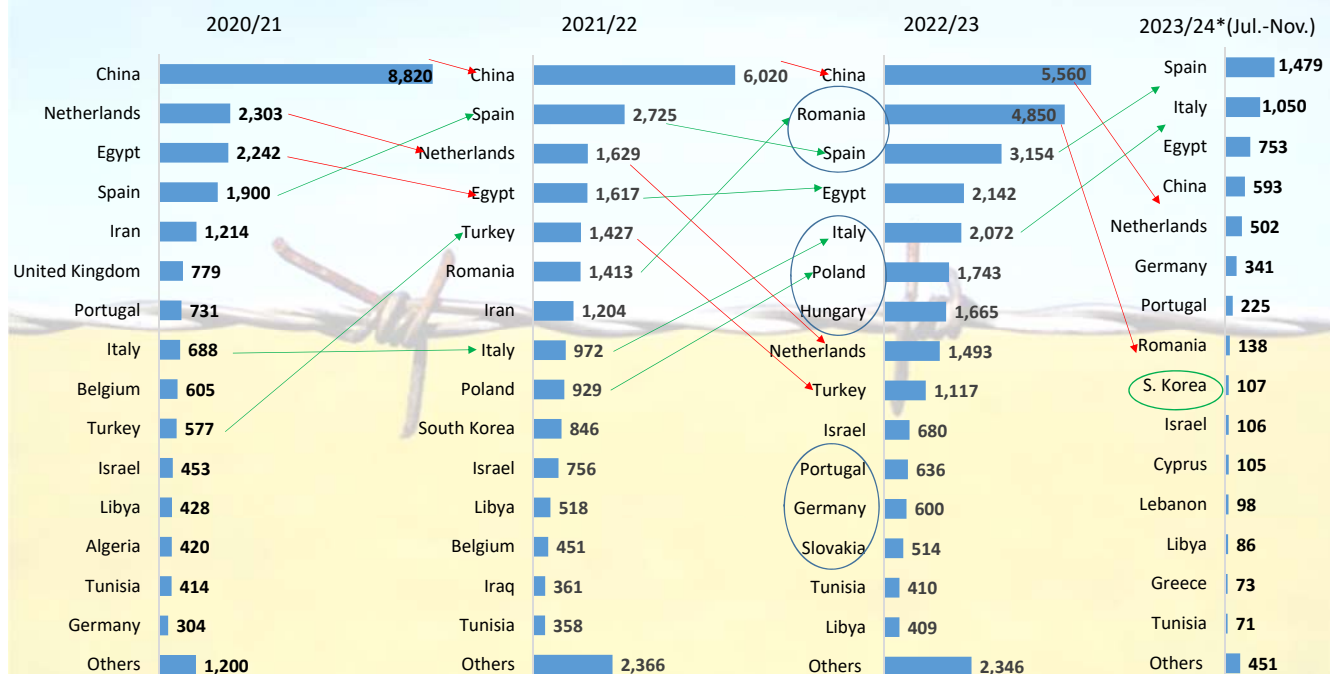


GEOGRAPHY OF WHEAT EXPORT FROM UKRAINE (July 1 – June 31), thousand tonnes



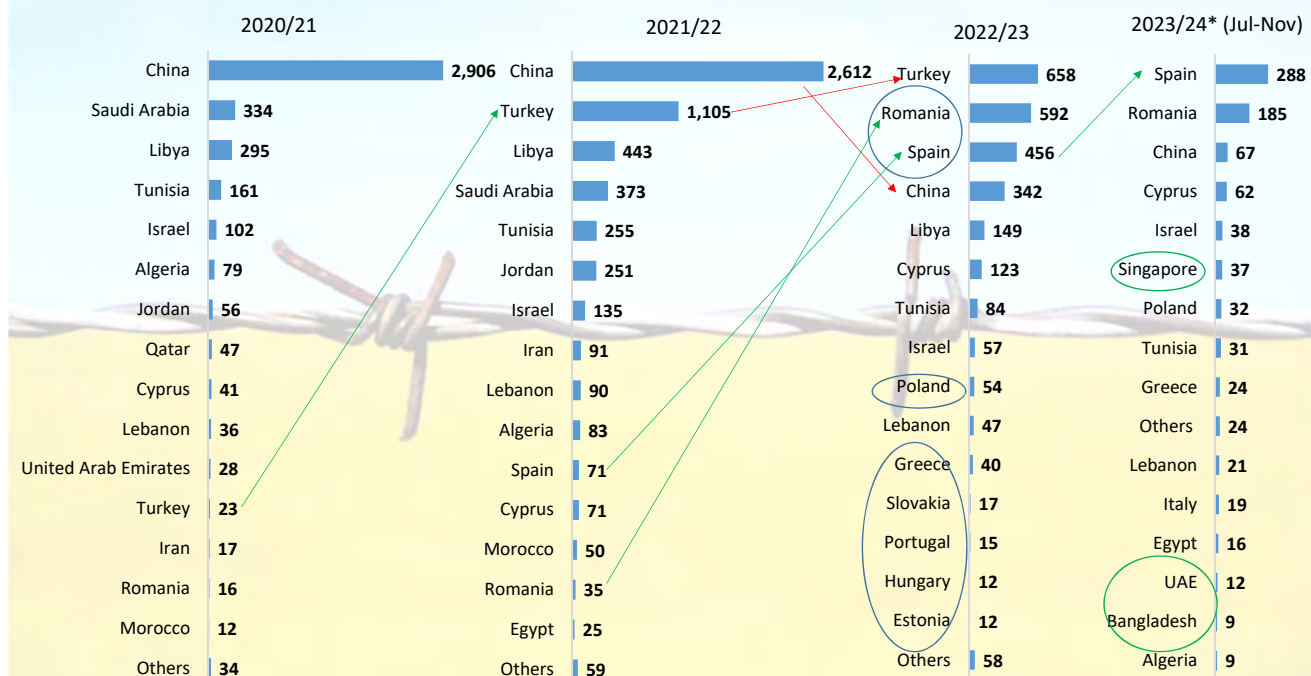
Source: based on data of State Customs Service of Ukraine

GEOGRAPHY OF CORN EXPORT FROM UKRAINE (July 1 - June 31), thousand tonnes



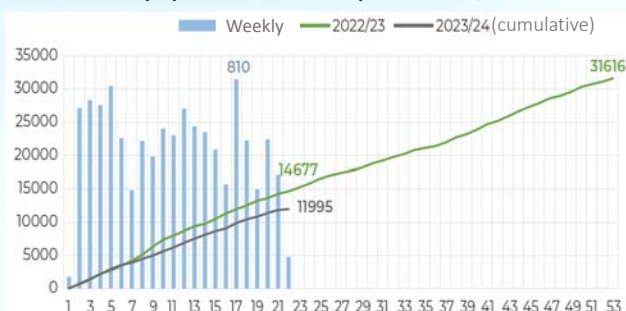
Source: based on data of State Customs Service of Ukraine

GEOGRAPHY OF BARLEY EXPORT FROM UKRAINE, July 1 - June 31, thousand tonnes

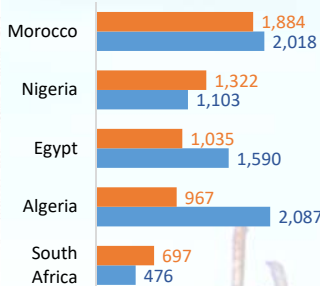


Source: based on data of State Customs Service of Ukraine

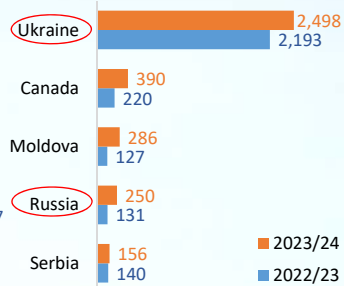
Weekly dynamics of wheat export from EU, thousand tonnes



Top-5 exporters of wheat from EU, thousand tonnes



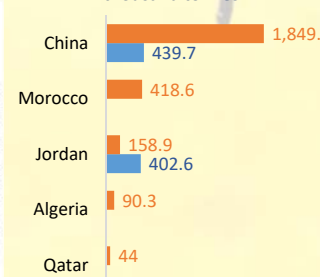
Top-5 importers of wheat to EU, thousand tonnes



Weekly dynamics of barley export from EU, thousand tonnes



Top-5 exporters of barley from EU, thousand tonnes

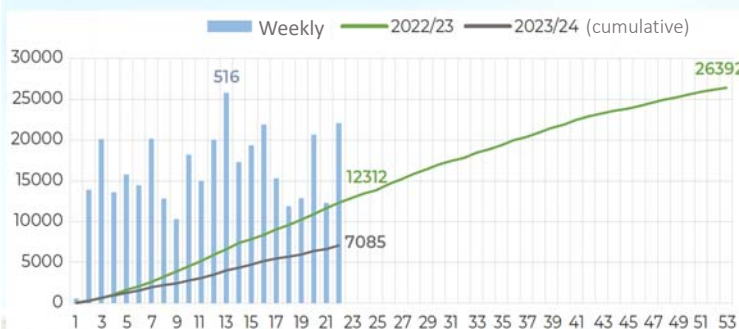


Top-5 importers of barley to EU, thousand tonnes

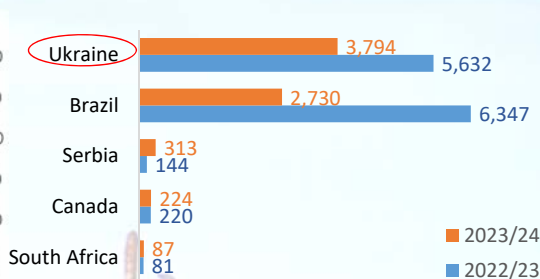


Source: based on data of European Commission, as of December 4, 2023

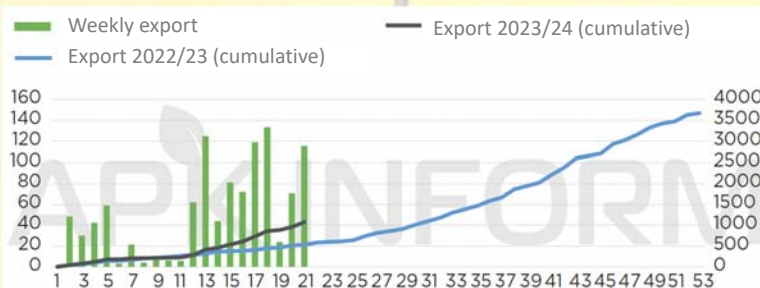
Weekly dynamics of corn import to EU, thousand tonnes



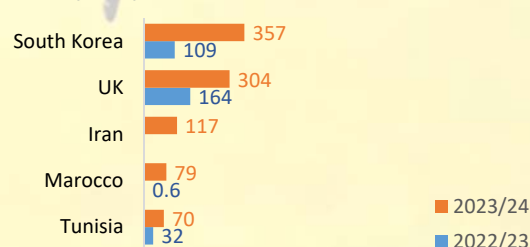
Top-5 importers of corn to EU, thousand tonnes



Weekly dynamics of corn export from EU, thousand tonnes

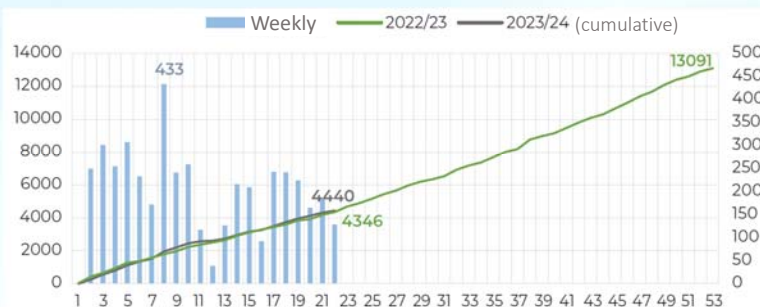


Top-5 exporters of corn from EU, thousand tonnes

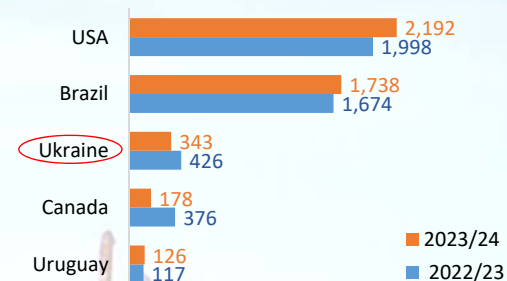


Source: based on data of European Commission, as of December 4, 2023

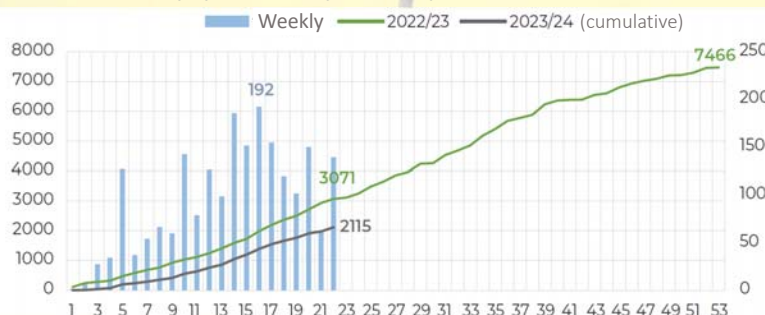
Weekly dynamics of soybeans import to EU, thousand tonnes



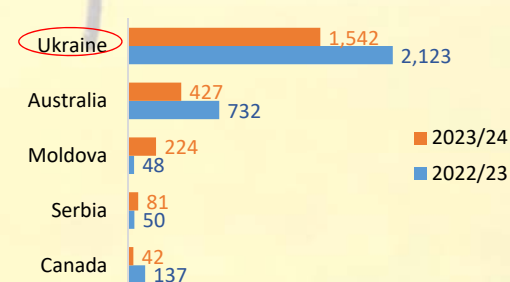
Top-5 importers of soybeans to EU, thousand tonnes



Weekly dynamics of rapeseeds import to EU, thousand tonnes



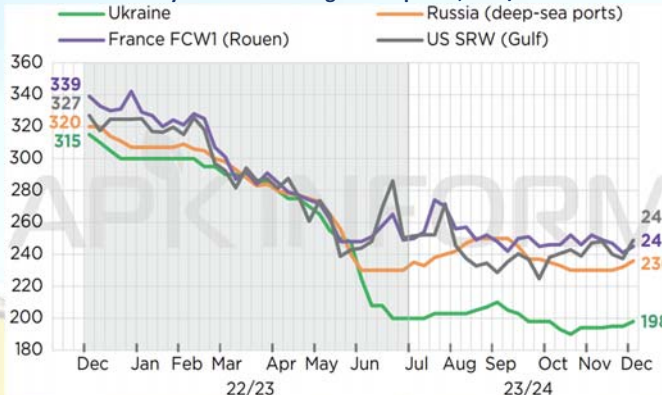
Top-5 importers of rapeseeds to EU, thousand tonnes



Source: based on data of European Commission, as of December 4, 2023

IMPACT OF THE WAR ON GRAIN PRICES

Dynamics of milling wheat prices, USD/t



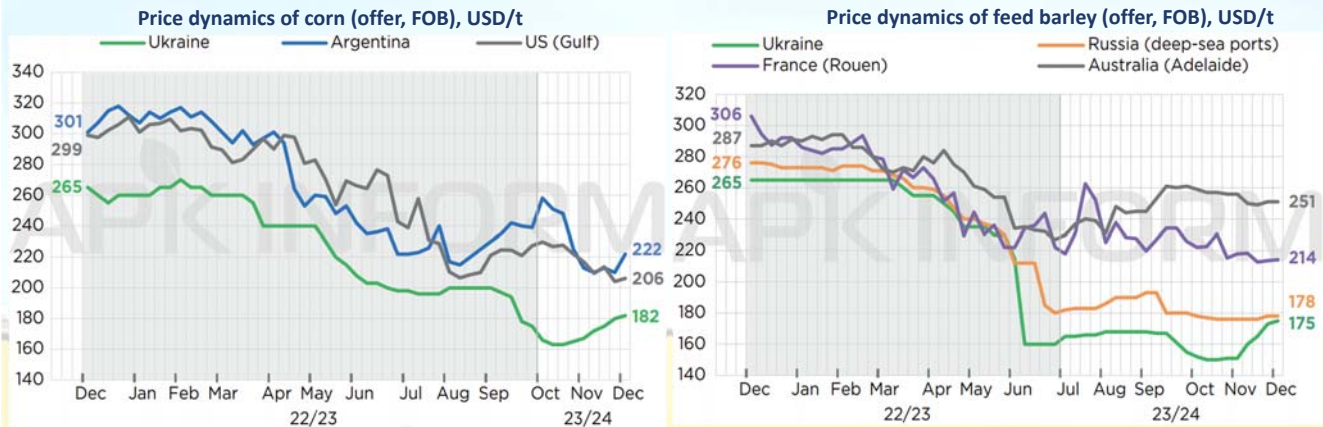
Price dynamics of feed wheat (offer, FOB), USD/t



	Stock / month	Country of origin	Terms of delivery	Dec 1	Nov 24	Nov 17	Nov 10	Nov 3	Last weekly change	
									USD/t	%
The futures market										
Wheat	CBOT, Dec.	USA	EXW	212.0	201.6	202.3	211.4	210.3	+ 10.4	+ 5.2 %
Milling wheat	Euronext, Dec.	France	CPT Rouen	2437	238.9	246.1	248.4	247.9	+ 4.8	+ 2.0 %
Wheat	LIFFE, Jan.	EU	EXW	232.5	235.5	240.5	236.4	228.2	- 3.0	- 1.3 %
Wheat	BCA, Dec.	Argentina	EXW	219.0	228.0	245.9	235.0	241.2	- 9.0	- 3.9 %
Cash market										
Wheat SRW	Dec.	USA	CPT Gulf of Mex.	248.8	237.3	240.1	248.1	247.1	+ 11.5	+ 4.8 %
Wheat hard	Dec.	Argentina	FOB	244.0	243.0	248.0	248.0	294.0	+ 1.0	+ 0.4 %
Wheat FCW1	Dec.	France	FOB	245.0	245.0	247.0	249.0	252.0	+ 4.0	+ 1.7 %

Source: APK-inform

IMPACT OF THE WAR ON GRAIN PRICES



	Stock / month	Country of origin	Terms of delivery	Dec 1	Nov 24	Nov 17	Nov 10	Nov 3	Last weekly change	
The futures market										
Corn yellow	CBOT, Dec.	United States	EXW	182.8	182.4	183.9	182.7	187.9	+ 0.4	+ 0.3 %
Corn	Euronext, March	France	FOB	218.6	223.3	223.3	220.3	214.7	- 4.7	- 2.1 %
Corn hard	BCA, Dec.	Argentina	EXW	188.5	193.3	207.0	196.1	201.5	- 4.8	- 2.5 %
Cash market										
Corn yellow	Dec.	USA	CPT Gulf of Mex.	206.1	204.2	213.7	209.4	217.0	+ 1.9	+ 0.9 %
Corn	Dec.	France	FOB	229.2	232.0	235.2	224.6	216.5	- 2.8	- 1.2 %
Corn	Dec.	Argentina	FOB	222.0	210.0	213.0	210.0	213.0	+ 12.0	+ 5.7 %
Fodder barley	Dec.	France	FOB	214.2	213.6	212.7	218.4	217.9	+ 0.6	+ 0.3 %

Source: APK-inform

GLOBAL FOOD SECURITY INDEX 2022

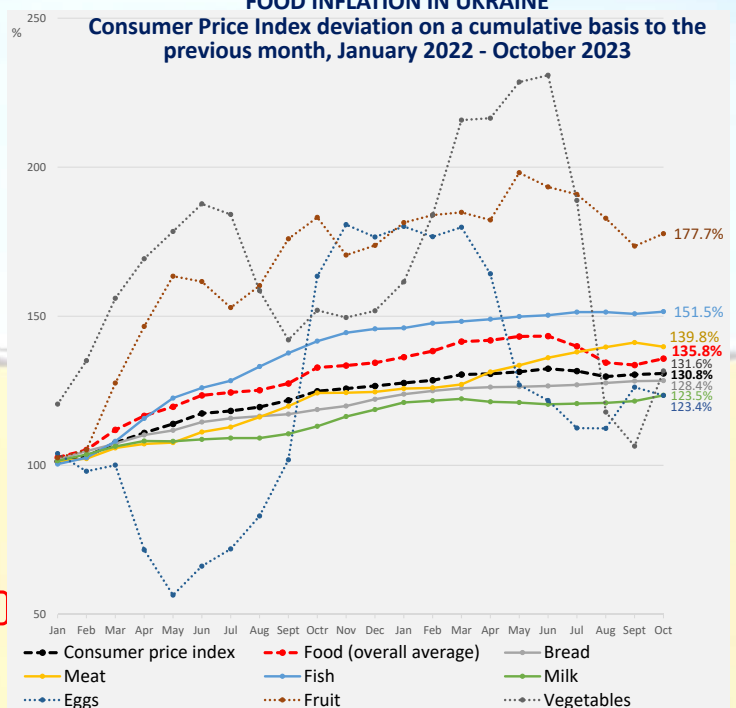
Rank (113 countries)		Overall score ▲▼	Affordability ▲▼	Availability ▲▼	Quality and Safety ▲▼	Sustainability and Adaptation ▲▼
59 th	South Africa	61.7	63.4	60.1	66.1	56.9
60 th	Honduras	61.5	59.8	61.9	64.9	60.0
61 st	Serbia	61.4	81.5	49.3	72.6	37.0
62 nd	Tunisia	60.3	74.5	54.1	58.8	49.7
63 rd	Indonesia	60.2	81.4	50.9	56.2	46.3
=64 th	Thailand	60.1	83.7	52.9	45.3	51.6
=64 th	Colombia	60.1	64.6	54.6	63.3	56.9
66 th	Azerbaijan	59.8	78.1	56.2	54.5	44.6
67 th	Philippines	59.3	71.5	55.2	65.3	41.8
=68 th	Algeria	58.9	66.8	57.3	54.7	54.2
=68 th	India	58.9	59.3	62.3	62.1	51.2
70 th	Paraguay	58.6	74.3	47.0	76.3	32.8
71 st	Ukraine	57.9	66.6	48.1	71.3	43.5
72 nd	Myanmar	57.6	62.1	53.5	64.4	49.0

Ukraine declined from rank 58 in 2021 to 71 in 2022

Source: Economist Impact

FOOD INFLATION IN UKRAINE

Consumer Price Index deviation on a cumulative basis to the previous month, January 2022 - October 2023



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

HARVESTING OF GRAIN, LEGUMES AND OIL CROPS IN RUSSIA

Commodity	2021			2022			2023 * (as of November 30, 2023)			
	Harvested, million hectares	Yield, tonnes per hectare	Produced, million tonnes	Harvested, million hectares	Yield, tonnes per hectare	Produced, million tonnes	Planted, million hectares	Harvested, million hectares (% to planted)	Yield, tonnes per hectare	Produced, million tonnes
Grains and legumes, total	45.42	2.79	126.95	46.59	3.44	157.68	48.04	46.15 (96.1%)	3.14	144.85
including:										
• Wheat	27.83	2.84	79.05	29.25	3.62	105.91	29.77	29.03 (97.5%)	3.26	94.49
• Corn	2.89	5.58	16.12	2.45	6.09	14.71	2.64	1.90 (72.0 %)	7.03	13.35
• Barley	7.87	2.41	18.95	7.92	3.10	24.57	7.99	7.82 (97.9 %)	2.81	21.98
• Buckwheat	0.93	1.11	1.03	1.09	1.21	1.32	1.29	1.21 (93.8 %)	1.21	1.46
• Rice	0.19	6.35	1.19	0.17	5.60	0.97	0.18	0.18 (99.9 %)	6.24	1.15
Rapeseeds	1.64	1.82	2.99	2.25	2.10	4.71	2.11	2.03 (96.2 %)	2.14	4.35
Soybeans	2.97	1.66	4.94	3.31	1.90	6.30	3.63	3.41 (93.9 %)	1.97	6.73
Sunflower seeds	9.60	1.65	15.79	8.87	17.7	15.74	9.82	8.63 (87.9 %)	1.81	15.59

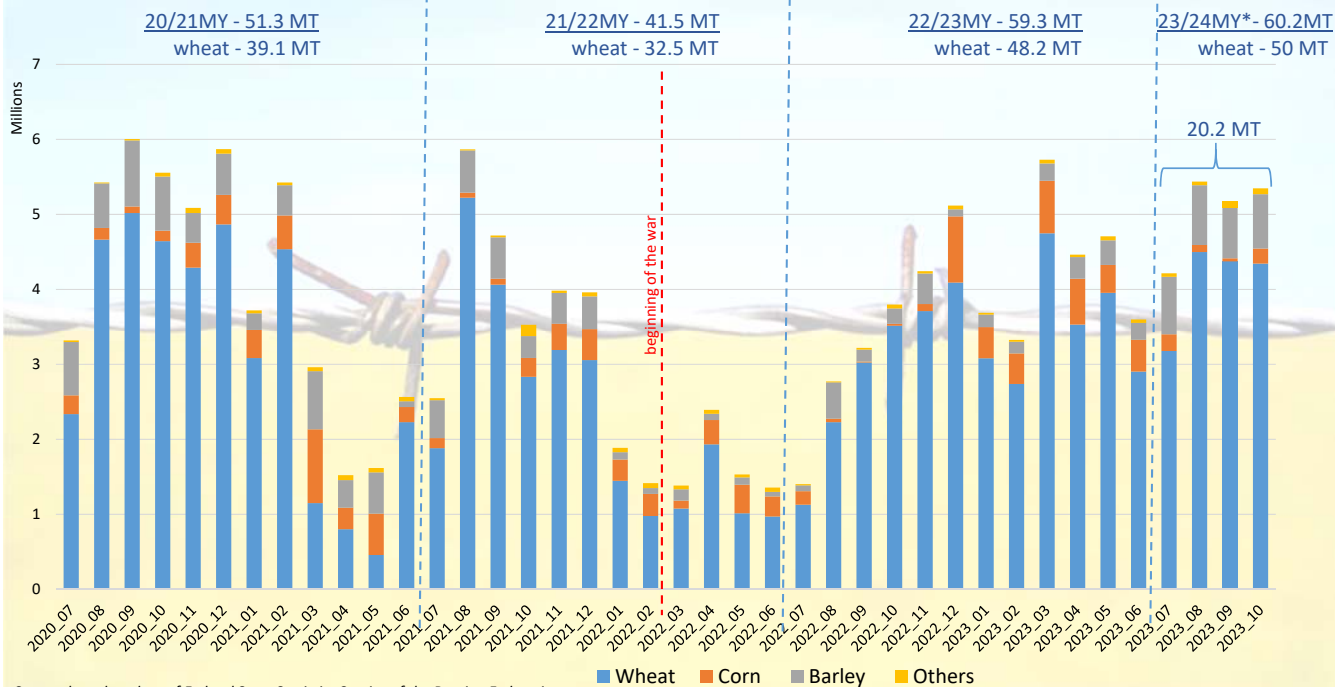
Source: based on data of Federal State Statistic Service of the Russian Federation (in bunker weight)

Estimates of winter wheat production in Ukraine made by NASA Harvest

	2022/23 MY			2023/24 MY		
	Territories under Ukrainian control	Temporary occupied territories	Ukraine total	Territories under Ukrainian control	Temporary occupied territories	Ukraine total
Area, million hectares	5.40	1.80	7.20	4.72	1.64	6.36
Production, million tonnes	20.80	5.80	26.60	22.79	6.26	29.05
Yield, tonnes per hectare	3.85	3.22	3.69	4.83	3.81	4.57

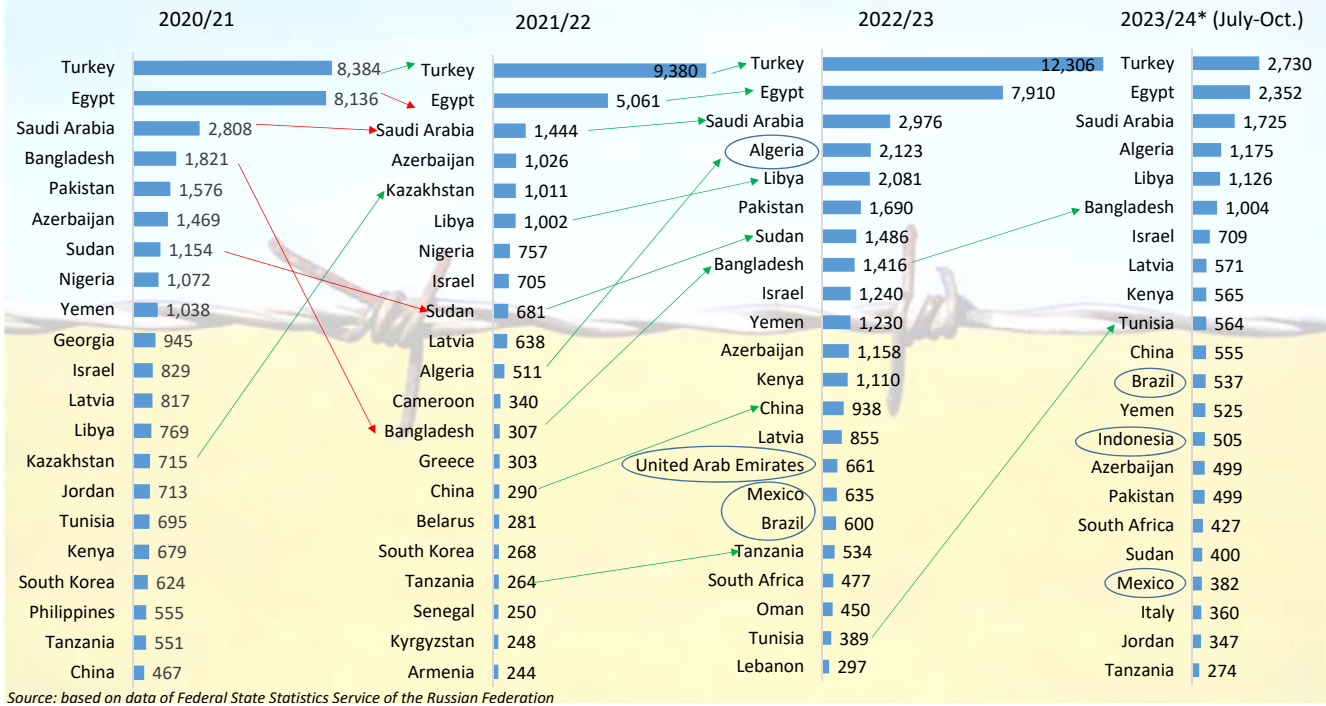
Source: based on data of NASA Harvest

EXPORT OF GRAINS FROM RUSSIA BY COMMODITIES, million metric tonnes



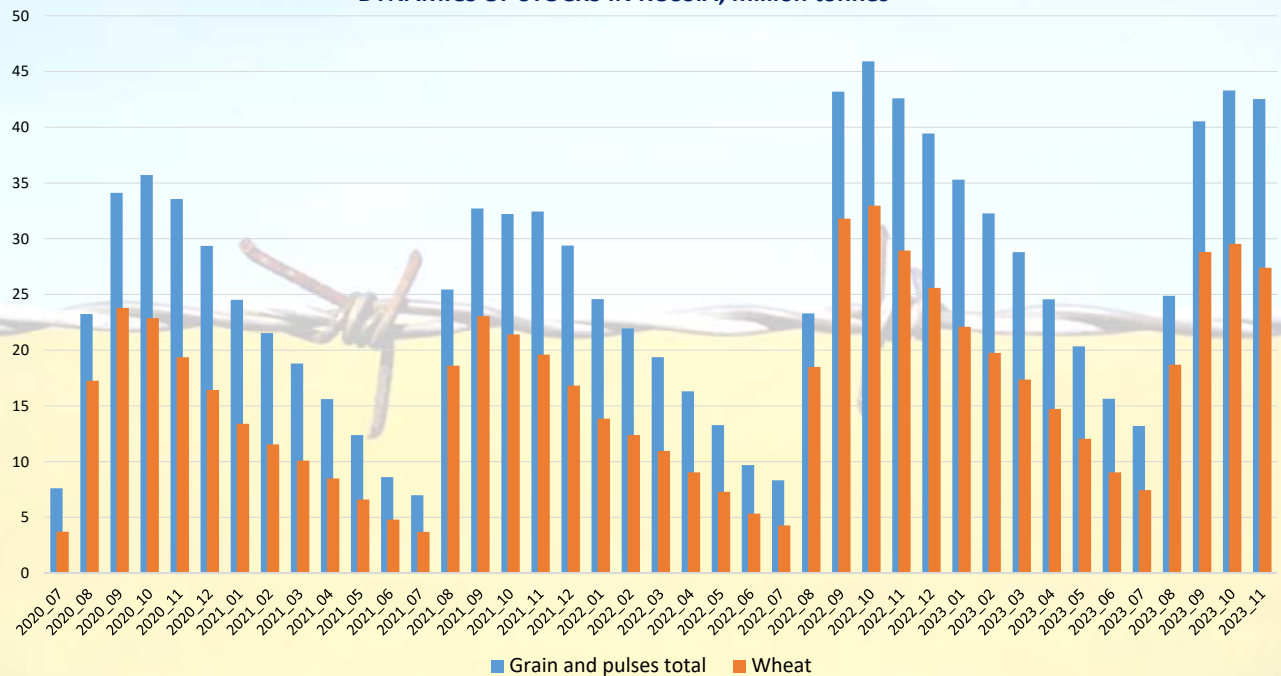
Source: based on data of Federal State Statistics Service of the Russian Federation

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



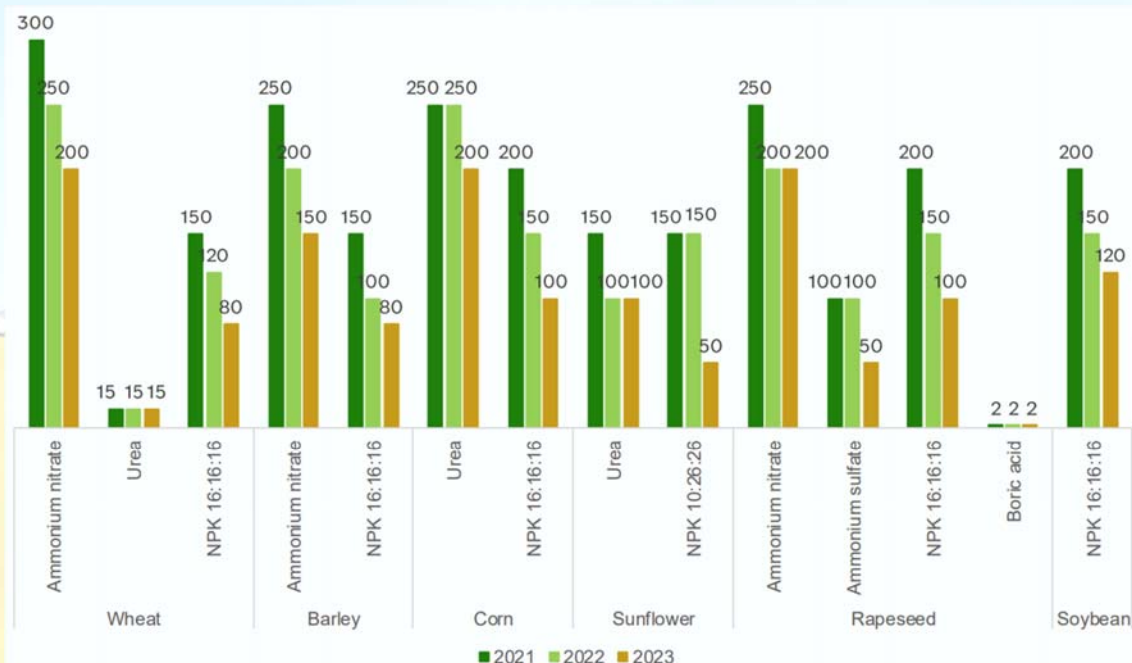
Source: based on data of Federal State Statistics Service of the Russian Federation

DYNAMICS OF STOCKS IN RUSSIA, million tonnes



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

FERTILIZER APPLICATION IN UKRAINE, kg per hectare



Source: Ministry of Agrarian Policy and Food of Ukraine

HARVESTING OF GRAIN, LEGUMES AND OIL CROPS IN UKRAINE, as of November 30, 2023

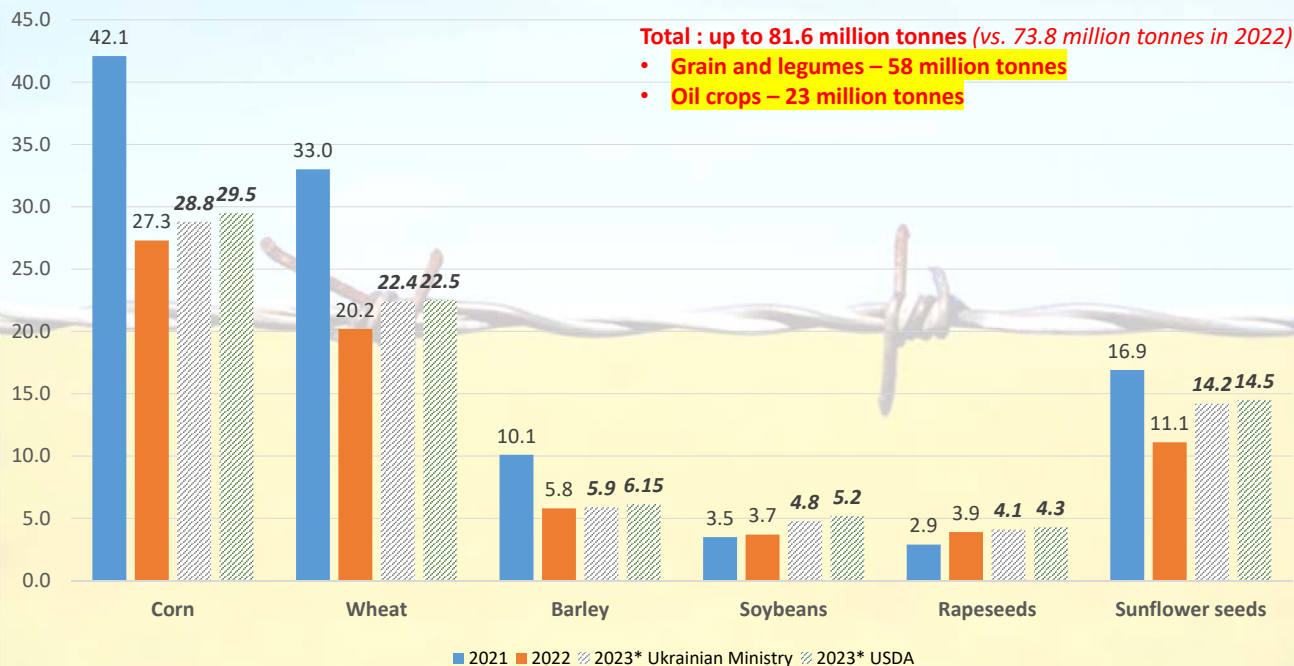
Crops	Harvested, thousand hectares		2023*		Harvested to forecast 2023*, %	Harvested 2023*, thousand metric tonnes	Average yields, metric tonnes per hectare			Change in yields per hectare, %	
	2021	2022	Forecast, thousand hectares	Harvested, thousand hectares			2021	2022	2023*	2023* to 2021	2023* to 2022
Grain and legumes total, including:	15,299.2	10,969.7	10,569.4	10,013.6	94.7 %	55,252.3	5.50	4.88	5.52	+0.4 %	+11.9 %
•wheat	7,073.0	4,979.4	4,646.4	4,694.5	101.0 %	22,477.6	4.64	4.05	4.79	+3.2 %	+18.3 %
•barley	2,467.7	1,666.5	1,492.9	1,504.5	100.8 %	5,909.1	3.92	3.47	3.93	+0.3 %	+13.3 %
•corn	5,356.0	4,045.0	4,055.2	3,441.1	84.9 %	26,078.7	8.01	6.68	7.58	-5.4 %	+13.5 %
•peas	240.4	118.1	150.0	154.4	102.9 %	399.5	2.43	2.28	2.59	+6.6 %	+13.6 %
•buckwheat	84.2	115.9	141.5	139.7	98.7 %	207.4	1.30	1.37	1.48	+13.8 %	+8.0 %
•millet	77.9	44.7	83.4	79.5	95.3 %	180.0	2.52	2.28	2.26	-10.3 %	-0.9 %
Soybeans	1,279.5	1,537.0	1,811.0	1,804.2	99.6 %	4,777.6	2.68	2.43	2.65	-1.1 %	+9.1 %
Rapeseed	1,013.9	1,134.8	1,425.6	1,396.0	97.9 %	4,005.4	2.95	2.86	2.87	-2.7 %	+0.3 %
Sunflower	6,482.4	4,825.5	5,059.7	5,012.3	99.1 %	11,935.5	2.52	2.18	2.38	-5.6 %	+9.2 %

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

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

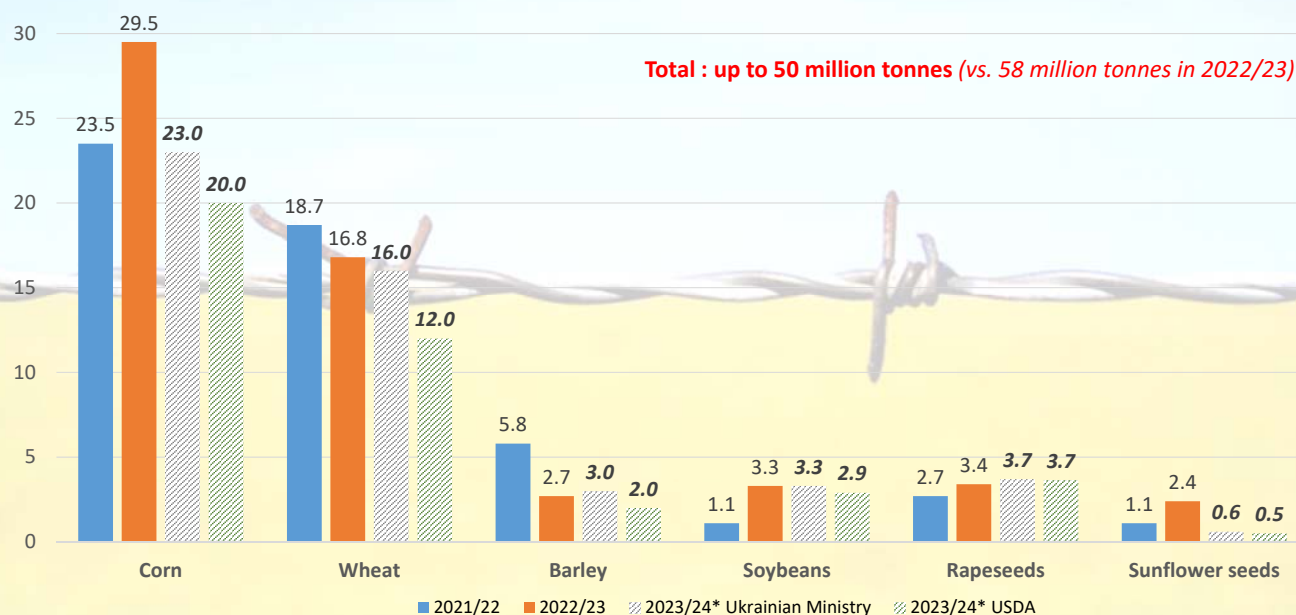


FORECAST OF HARVEST OF GRAIN, LEGUMES AND OIL CROPS IN UKRAINE IN 2023, million metric tonnes



Source: based on data of Ministry of Agrarian Policy and Food of Ukraine, Ukrainian Grain Association and USDA, as of November 9, 2023

FORECAST OF EXPORT POTENTIAL OF GRAIN, LEGUMES AND OIL CROPS FROM UKRAINE IN 2023/24 MY, million tonnes



Source: based on data of Ministry of Agrarian Policy and Food of Ukraine, Ukrainian Grain Association and USDA, as of November 9, 2023

SOWN AREA OF WINTER CROPS IN UKRAINE, thousand hectares

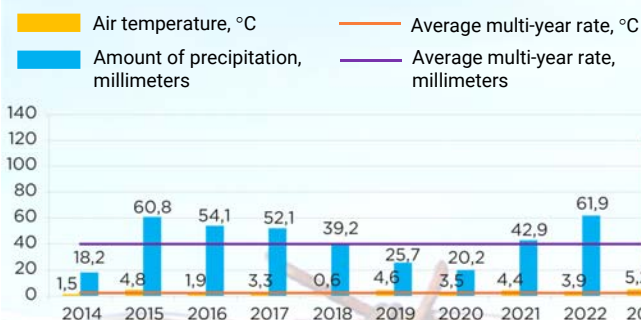
Crops	2020	2021	2022	2022 to 2021, %	Forecast 2023	Sown areas in 2023 for the 2024 harvest			
						Planted as of November 28, 2023		Forecast of 2023 to be planted in	
						thousand hectares	% to forecast	2022, %	2021, %
Winter crops total,	8,973.5	9,029.4	5,449.4	-39.6 %	6,339.9	5,962.1	94.0 %	+ 16.3 %	-29.8 %
including:									
•winter wheat	6,714.4	6,538.4	3,758.8	-42.5 %	4,355.3	4,161.9	95.6 %	+ 15.9 %	-33.4 %
•winter barley	1,080.4	969.0	612.5	-36.8 %	692.1	558.8	80.7 %	+ 13.0 %	-28.6 %
•winter rye	166.8	108.5	79.2	-27.0 %	80.9	77.2	95.4 %	+ 2.1 %	-25.4 %
•winter rapeseeds	1,011.9	1,413.5	998.9	-29.3 %	1,211.6	1,164.2	96.1 %	+ 21.3 %	-14.3 %

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

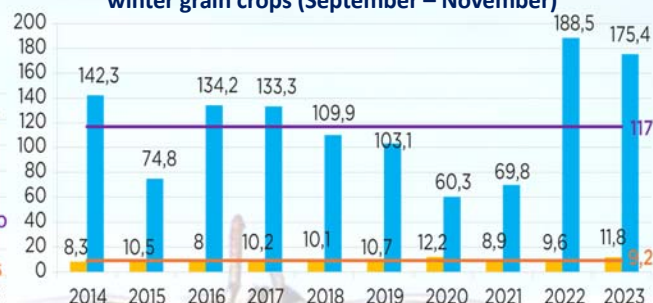
Source: based on data of the State Statistic Service of Ukraine and Ministry of Agrarian Policy and Food of Ukraine



Hydrometric indicators throughout November



Hydrometric indicators during the autumn vegetation of winter grain crops (September – November)



Reserves of productive moisture in the soil (millimeters) at the time of termination of autumn vegetation of winter wheat

- Actually in a layer of 0-20 cm (0 – 7⁷/₈ inches)
- Average multi-year indicators in the 0-20 cm layer
- Actually in a layer of 0-100 cm (0 – 39³/₈ inches)
- Average multi-year indicators in the 0-100 cm layer

$$1\text{cm} \div 2.54 = 0.39''$$

$$^{\circ}\text{F} = 32 + ^{\circ}\text{C} \times 1.8$$



Source: National Academy of Agrarian Science of Ukraine

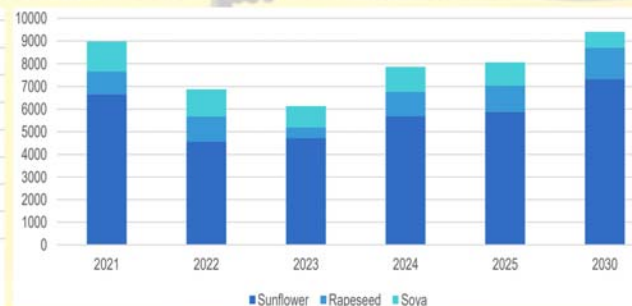
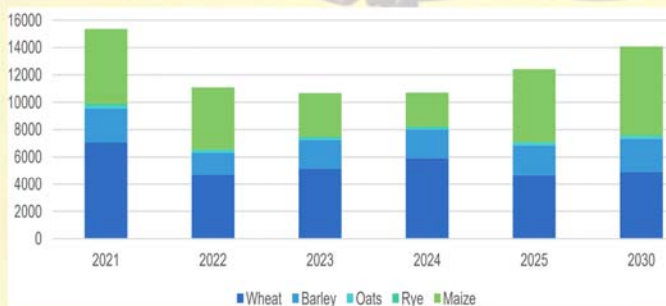
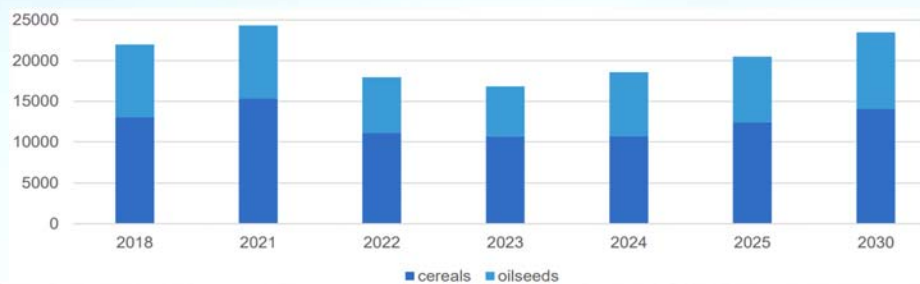
BALANCE OF SUPPLY AND DEMAND OF GRAIN AND LEGUMES IN UKRAINE (*forecast as of October 9, 2023)

	2021/22	2022/23	2023/24*	Deviation , %	
	thousand tonnes	thousand tonnes	thousand tonnes	2022/23 to 2021/22	2023/24* to 2022/23
Initial stocks	4,817	13,325	3,974	in +2,8 times	-70.2 %
Sown area, thousand hectares	15,995	12,171	11,104	-23.9 %	-8.8 %
Harvested area, thousand hectares	15,948	11,773	10,837	-26.2 %	-8.0 %
Yield, tonnes / hectare	5.39	4.58	4.93	-15.0 %	+7.6 %
Gross harvest	86,010	53,864	53,428	-37.4 %	-0.8 %
Import	125	152	131	+22.4 %	-14.4 %
Total supply	90,952	67,341	57,533	-26.0 %	-14.6 %
Domestic consumption:	25,396	16,127	17,171	-36.5 %	+6.5 %
food	4,611	4,230	4,020	-8.3 %	-5.0 %
fodder	13,325	7,935	9,325	-40.5 %	+17.5 %
seeds	1,666	1,470	1,579	-11.8 %	+7.4 %
losses	4,812	1,696	1,437	-64.8 %	-15.3 %
other (alcohol, malt, starch, etc.)	982	796	810	-19.0 %	+1.8 %
Export	52,231	47,240	34,700	9.6 %	-26.5 %
Total distribution (demand)	77,627	63,367	51,871	-18.4 %	-18.1 %
Ending stocks	13,325	3,974	5,662	-70.2 %	+42.5 %
Ratio of ending stocks to distribution	17 %	6 %	11 %		

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

2030 UKRAINE CEREALS AND OILSEEDS MARKETS PROJECTIONS: 2023 – END OF THE WAR ASSUMPTION

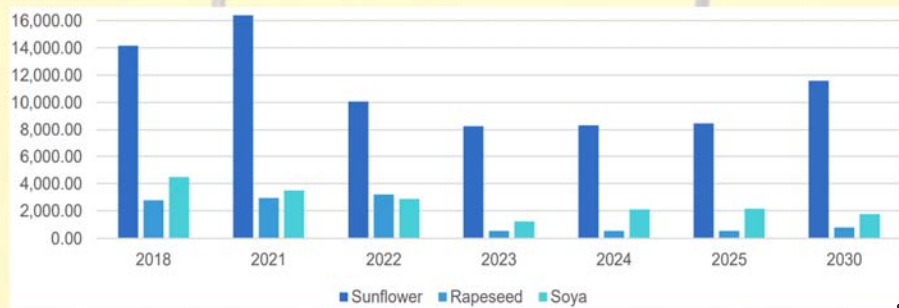
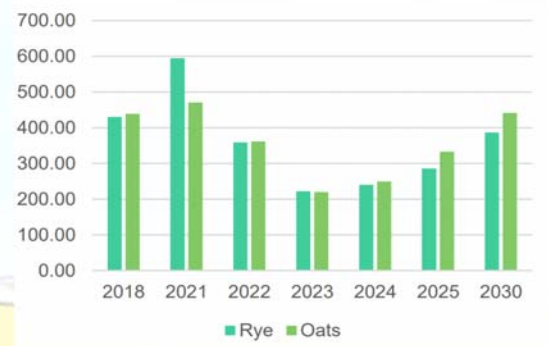
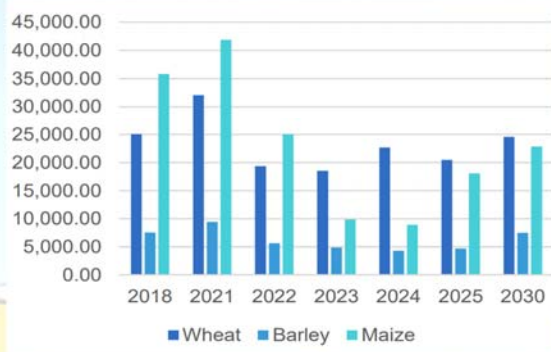
Acreage of cereals and oilseeds, thousand hectares



Source: Kyiv School of Economics

2030 UKRAINE CEREALS AND OILSEEDS MARKETS PROJECTIONS: 2023 – END OF THE WAR ASSUMPTION

Production of cereals and oilseeds, thousand tonnes



Source: Kyiv School of Economics

Thank you!

Questions?