

# Agricultural production, trade and logistics in the context of Russia's military invasion of Ukraine

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**UNIVERSITY**

## OUTLINE :

1. LOSSES FROM THE WAR
2. PROGRESS OF FIELD WORK IN UKRAINE
3. DIFFICULTIES WITH THE STORAGE AND SALE OF NEW HARVEST
4. UKRAINIAN AGRICULTURAL EXPORT DYNAMICS AND LOGISTICS
5. EU AGRICULTURAL EXPORT-IMPORT 2022/23MY TRENDS



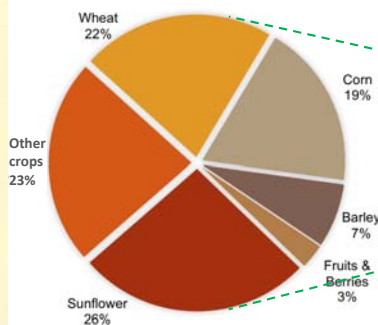
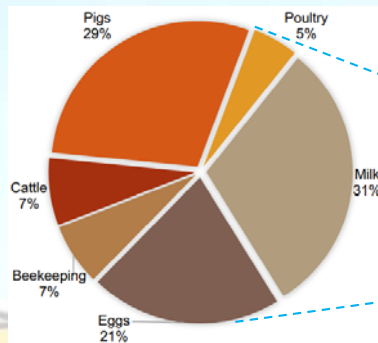


**50% of energy system is destroyed**  
**22% (7 mln hectares) of arable land is occupied**

### LOSSES FROM THE WAR IN UKRAINIAN AGRICULTURE (Indirect assessment of damage)

**\$ 34.25 billion**

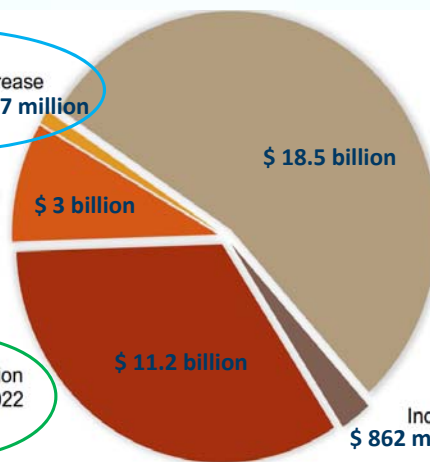
#### DAMAGES STRUCTURE BY CATEGORY



Livestock production decrease  
 1% \$ 348.7 million

Winter crops production decrease in 2023  
 9%

Crops production decrease in 2022  
 34%



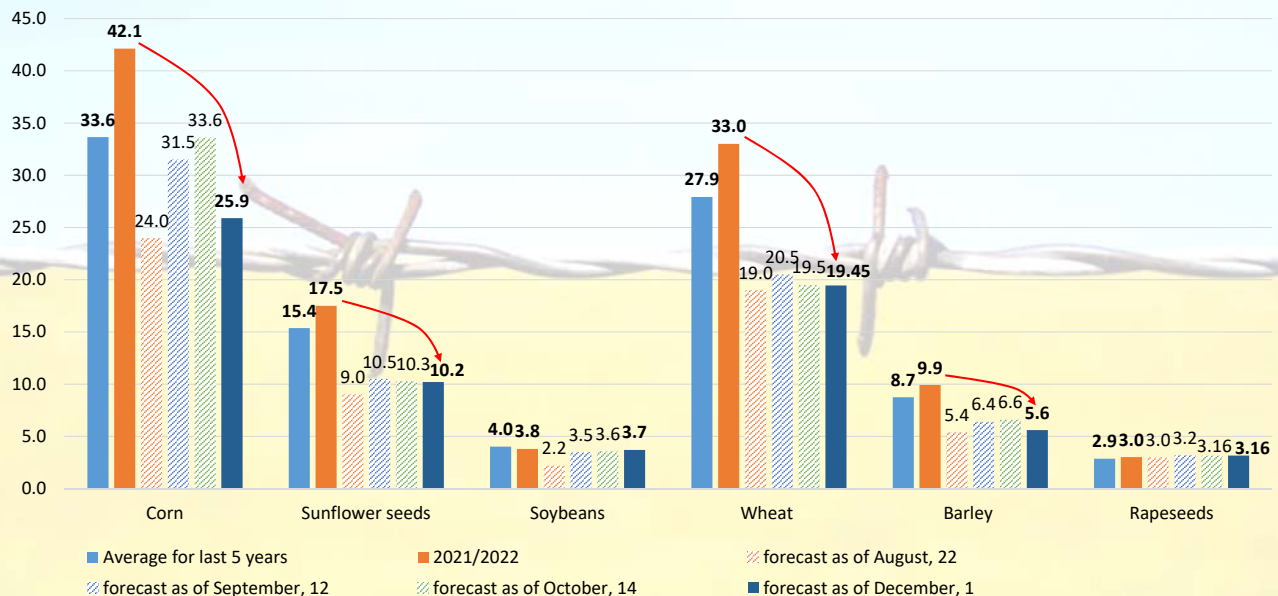
**PROGRESS OF FIELD WORK IN UKRAINE**  
Harvesting of grain, legumes and oil crops as of December 1, 2022

Crops	Harvested 2021, thousand hectares	Forecast 2022, thousand hectares	Harvested 2022, thousand hectares	% of harvested area to forecast 2022	% of harvested area 2022 to harvested area 2021	Harvested 2022, thousand metric tonnes	Average 2022 yields, metric tonnes per hectare	Average 2021 yields, metric tonnes per hectare	Change in yields 2022 to 2021, %
<b>Grain and legumes total, including:</b>	<b>15,299.2</b>	<b>10,809.4</b>	<b>9,097.8</b>	<b>76.0 %</b>	<b>66.6 %</b>	<b>41,009.0</b>	<b>4.51</b>	<b>5.50</b>	<b>-18.0 %</b>
•wheat	7,073.0	4,715.3	4,711.4	99.9 %	64.6 %	19,422.8	4.12	4.64	-11.2 %
•barley	2,467.7	1,595.9	1,594.8	99.9 %	64.7 %	5,599.6	3.51	3.92	-10.5 %
•peas	240.4	111.5	111.5	100.0 %	46.4 %	260.8	2.34	2.43	-3.7 %
•buckwheat	84.2	117.4	115.0	98.0 %	136.6 %	156.7	1.36	1.30	4.6 %
•millet	77.9	44.7	42.9	96.0 %	55.1 %	99.5	2.32	2.52	-7.9 %
•corn	5,356.0	4,224.6	2,522.2	59.7 %	47.1 %	15,469.6	6.13	8.01	-23.5 %
Soybeans	1,279.5	1,543.1	1,509.8	97.8 %	118.0 %	3,649.8	2.42	2.68	-9.7 %
Rapeseed	1,013.9	1,093.8	1,092.9	99.9 %	107.8 %	3,163.3	2.89	2.95	-2.0 %
Sunflower	6,482.4	4,695.6	4,574.2	97.4 %	70.6 %	9,922.2	2.17	2.52	-13.9 %



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

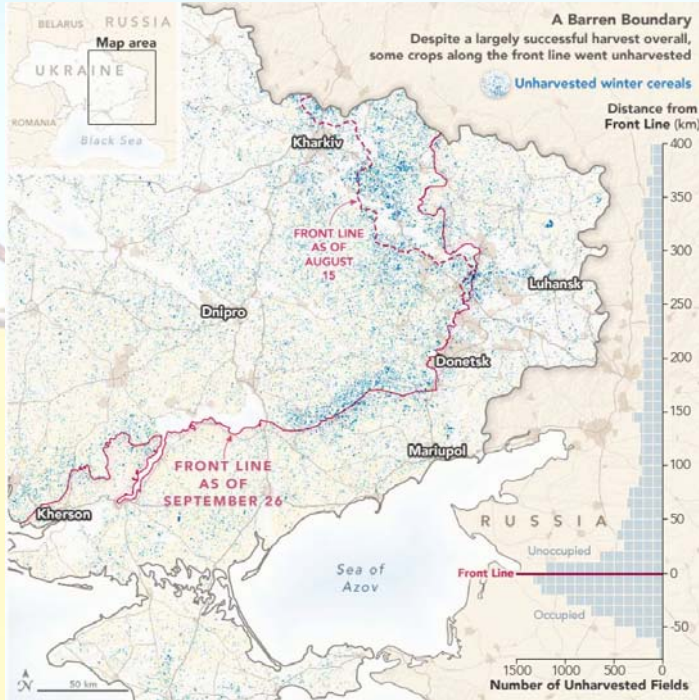
**ESTIMATED HARVEST IN UKRAINE**  
as of December 1, 2022, million metric tonnes



Source: based on the data of the Ukrainian Agribusiness Club and USDA

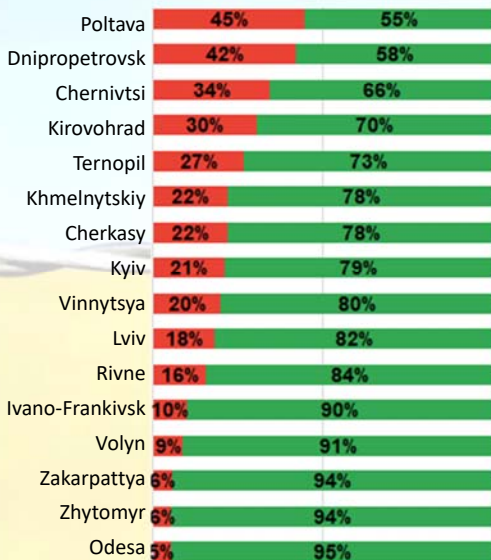


### NASA HARVEST: Wheat Harvest in Ukraine



### AVAILABILITY OF GRAIN STORAGE FACILITIES

Shortage – 22%    Enough – 78%

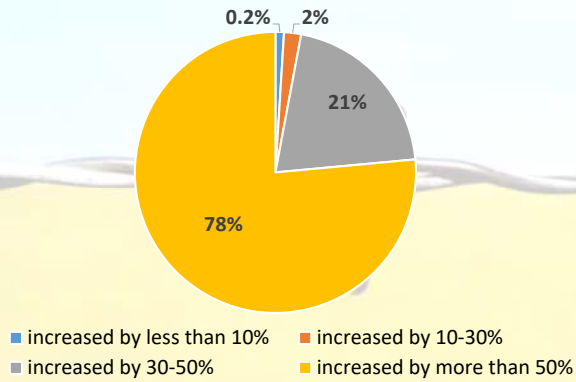


### Regional distribution of damages to Ukrainian agriculture

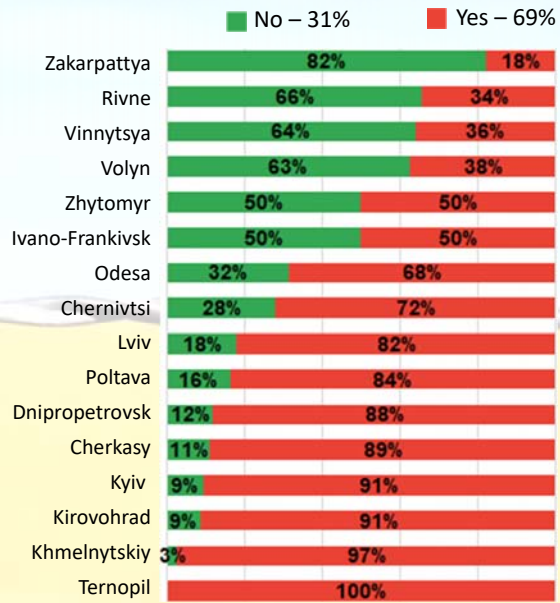


Source: based on "APK-Inform" survey

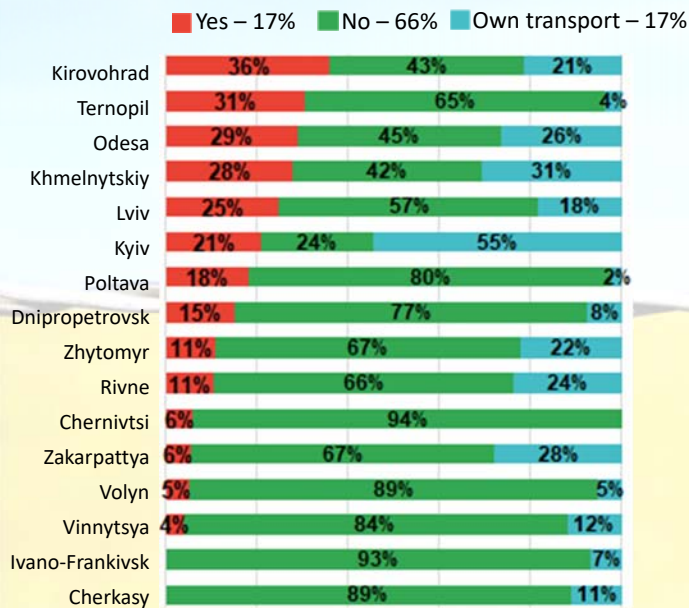
### AN INCREASE IN THE PRODUCTION COST OF THE 2022-HARVEST COMPARED TO 2021-HARVEST



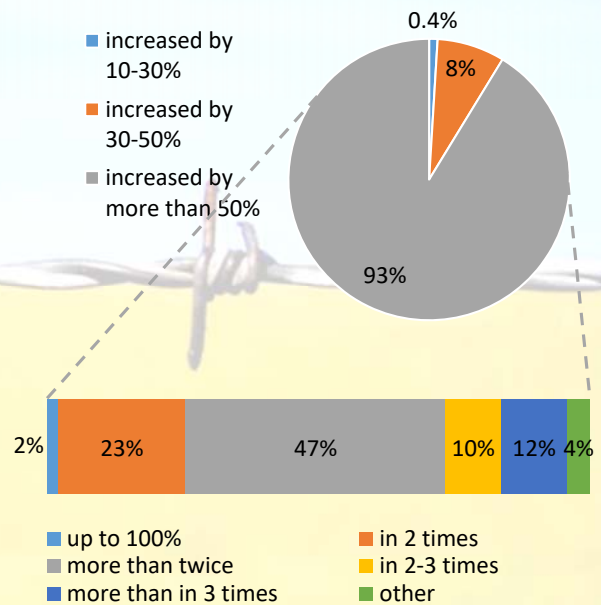
### DIFFICULTIES WITH THE SALE OF THE HARVESTED CROP



### DIFFICULTIES IN FINDING TRANSPORT FOR SHIPPING GRAIN



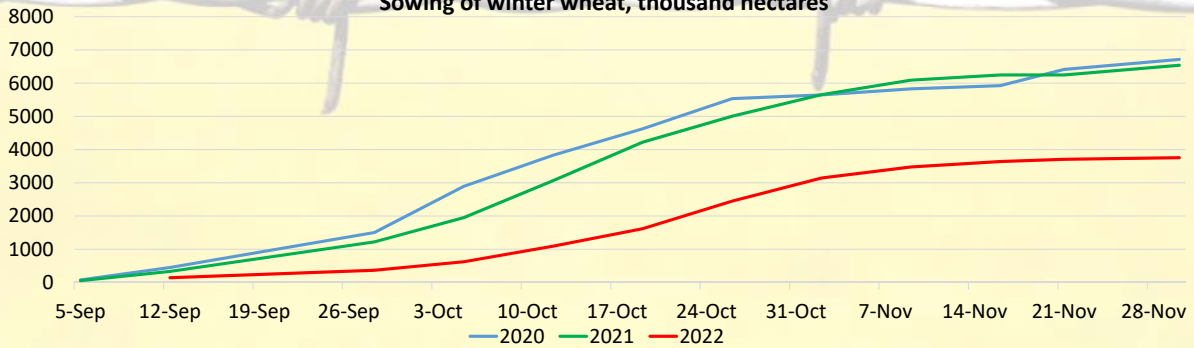
### INCREASE IN THE COST OF DELIVERY COMPARED TO THE PRE-WAR PERIOD



**PROGRESS OF FIELD WORK IN UKRAINE**  
Sowing of winter crops, thousand hectares

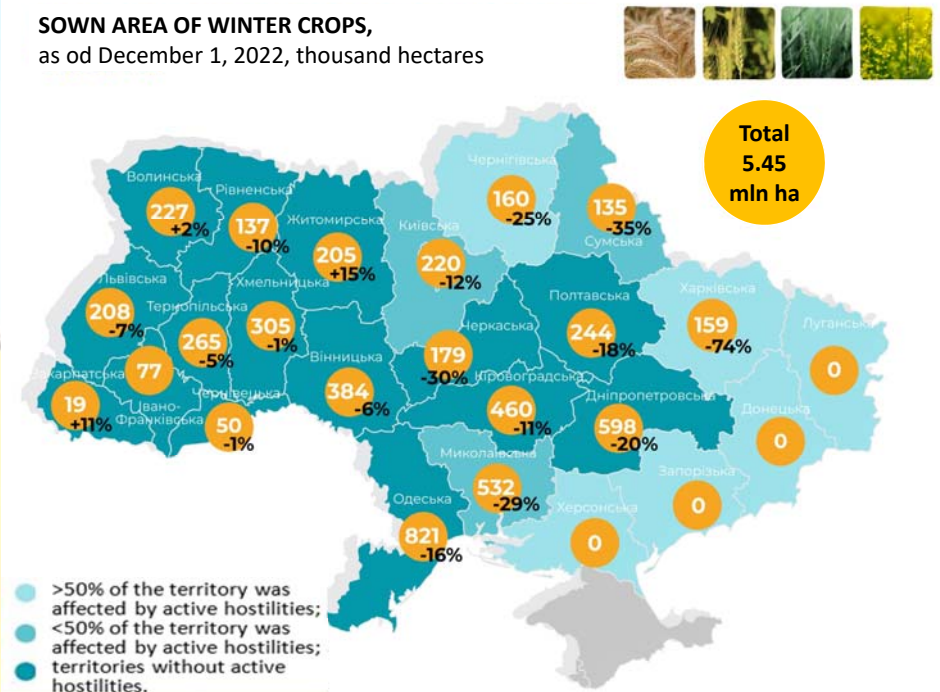
Crops	Planted in 2020	Planted in 2021	Forecast for 2022	Forecast 2022 to planted in 2021	Planted as of December 1, 2022	% of planted to forecast 2022
<b>Winter crops total, including:</b>	8,973.5	9,029.4	5,716.5	<b>- 36.69 %</b>	5,449.4	<b>95.33 %</b>
• winter wheat	6,714.4	6,538.4	3,989.4	<b>- 38.99 %</b>	3,758.8	<b>94.22%</b>
• winter barley	1,080.4	969.0	675.7	<b>- 30.27 %</b>	612.5	<b>90.65 %</b>
• winter rapeseeds	1,011.9	1,413.5	963.9	<b>- 31.81 %</b>	998.9	<b>103.63 %</b>
• winter rye	166.8	108.5	85.6	<b>- 21.11 %</b>	79.2	<b>92.52 %</b>

**Sowing of winter wheat, thousand hectares**



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

**SOWN AREA OF WINTER CROPS,**  
as of December 1, 2022, thousand hectares



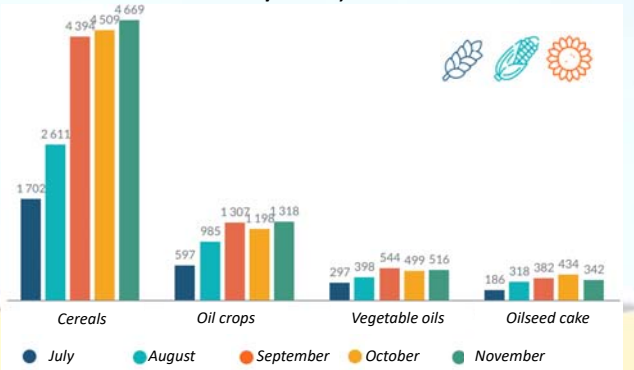
Source: UCAB based on the data of the State Statistic Service of Ukraine and Ministry of Agrarian Policy and Food of Ukraine

**EXPORT OF CEREALS and LEGUMES  
with products of their processing as of December 1, 2022,  
thousand tonnes**

	2020/2021 MY Total	2021/2022 MY		2022/2023 MY	
		Total	including: for November 2021	Total	including: for November 2022
<b>Cereals and legumes, total</b>	<b>43939</b>	<b>48508</b>	<b>5817</b>	<b>18082</b>	<b>4669</b>
• wheat	16413	18741	2170	6867	1638
• barley	4210	5752	425	1480	252
• rye	15.8	161.5	21.9	12.0	5.0
• corn	22596	23535	3178	9662	2077
Wheat flour	123.7	69.4	8.2	53.2	14.0
Other flour	1.1	1.5	0.2	3.1	0.3
<b>Total flour</b>	<b>124.8</b>	<b>70.9</b>	<b>8.4</b>	<b>56.3</b>	<b>14.3</b>
<b>Total export (grain + flour)</b>	<b>44105</b>	<b>48579</b>	<b>5825.4</b>	<b>18138.3</b>	<b>4005.3</b>

Source: based on data of State Customs Service of Ukraine

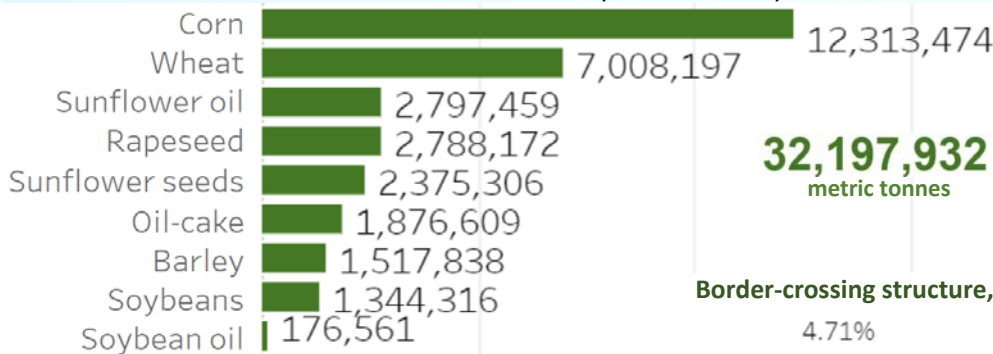
**Dynamics of main agricultural products export from Ukraine in 2022/23 MY, thousand tonnes**



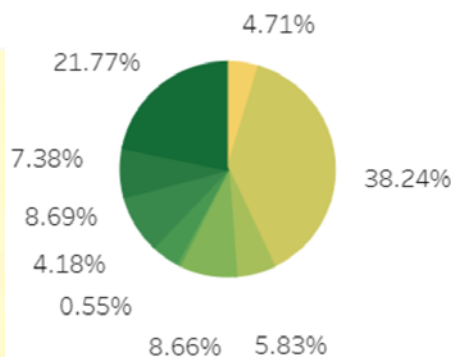
**Dynamics of grain exports from Ukraine, thousand tonnes**



**BORDER-CROSSING FROM UKRAINE BY TYPES OF PRODUCTS,  
March, 1 – December 1, 2022**



**Border-crossing structure, %**



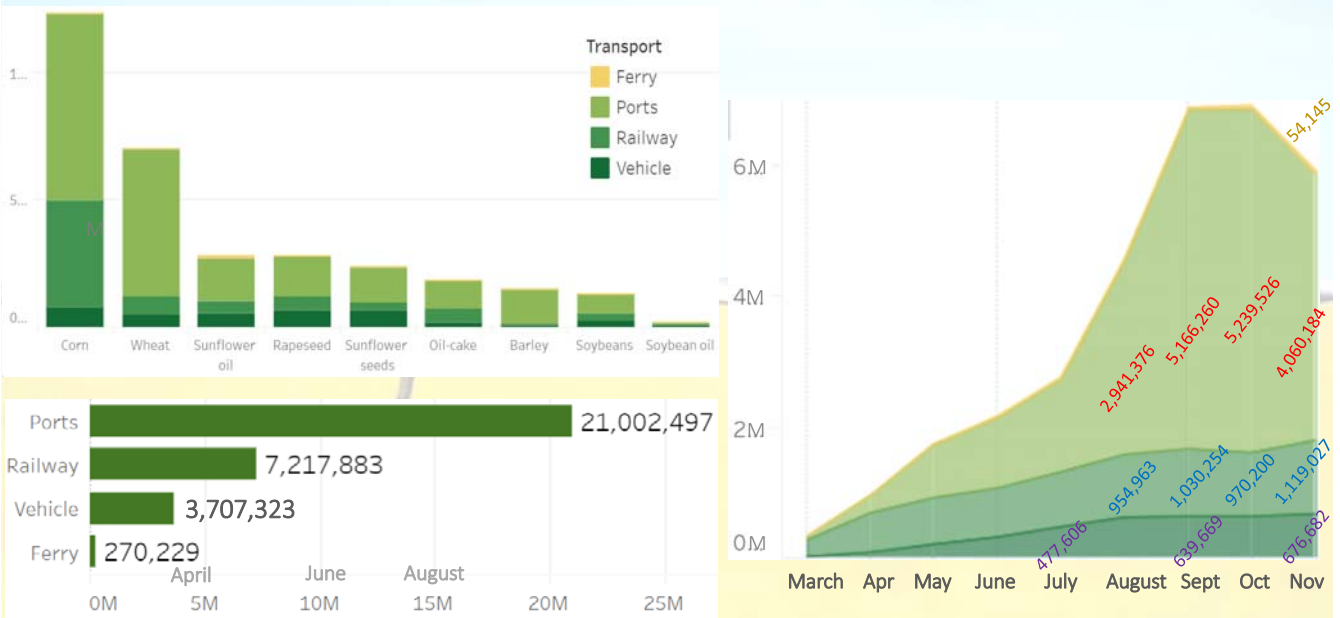
**Product**

- Barley
- Corn
- Oil-cake
- Rapeseed
- Soybean oil
- Soybeans
- Sunflower oil
- Sunflowerseeds
- Wheat

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

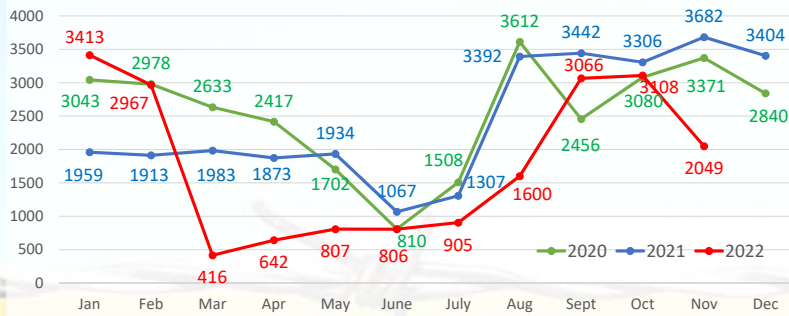


**BORDER-CROSSING FROM UKRAINE IN TRANSPORTATION BREAKDOWN, March, 1 – December 1, 2022, metrics tonnes**



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

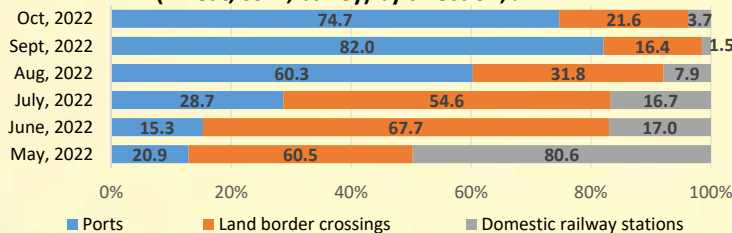
**DYNAMICS OF GRAIN TRANSPORTATION FOR EXPORT BY UKRAINIAN RAILWAY, 2020-2022, thousand tonnes**



**RAIL TRANSPORTATION FOR EXPORT under the war conditions, as of December 1, 2022, thousand tonnes**

Month	Grain		Oil		Meal, cake, husk	
	2022	+/- to the previous month	2022	+/- to the previous month	2022	+/- to the previous month
March	415.9		20.1		50.0	
April	642.5	↑54.5%	69.8	↑247%	53.2	↑6.3%
May	807.3	↑25.7%	72.4	↑3.7%	69.9	↑31.4%
June	806.3	↓0.1%	98.9	↑36.7%	73.2	↑4.7%
July	905.2	↑12.3%	88.1	↓-11.0%	93.9	↑28.4%
August	1,600.8	↑76.9%	108.0	↑22.6%	148.1	↑57.7%
Sept.	3,065.7	↑91.5%	127.8	↑18.4%	168.0	↑13.5%
October	3,107.7	↑1.4%	133.7	↑4.6%	195.2	↑16.2%
Novem.	2,049.0	↓-34.1%	126.9	↓-5.1%	144.4	↓-26.0%

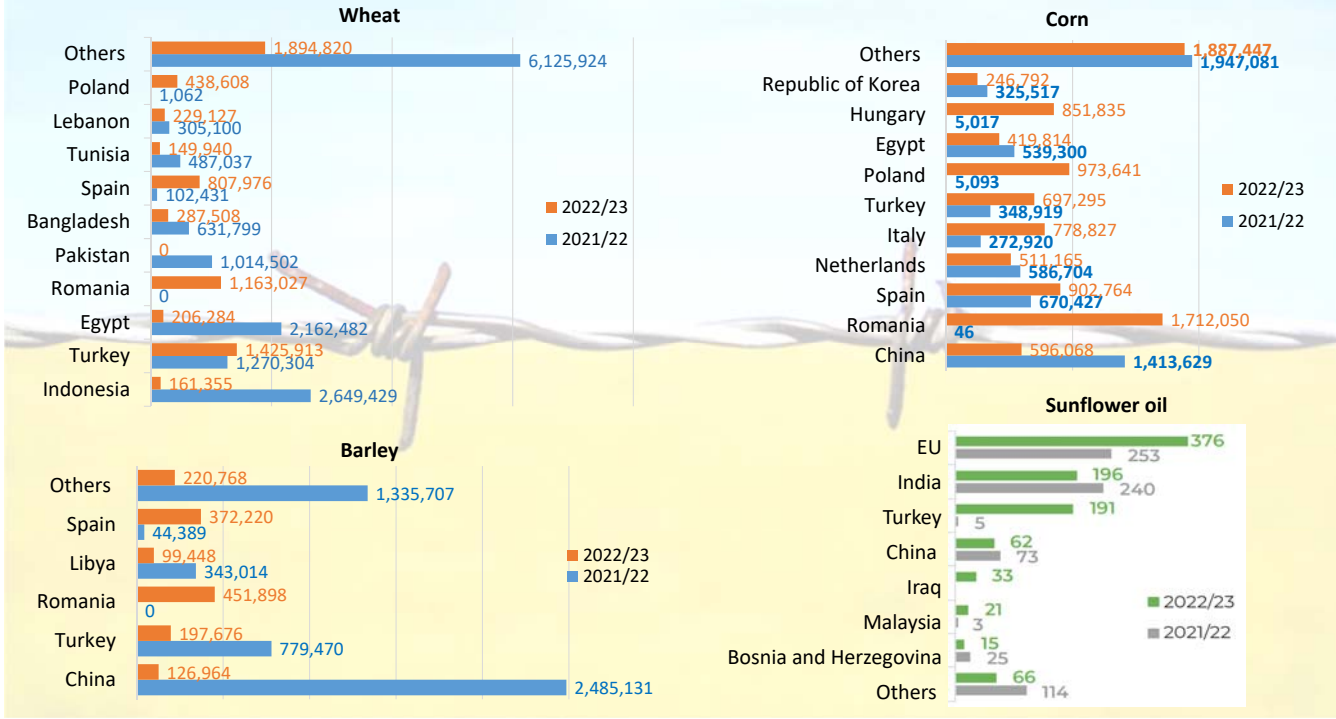
**The structure of railway transportation of grain cargoes (wheat, corn, barley) by direction, %**



Source: based on the data of the Ukrainian Railway

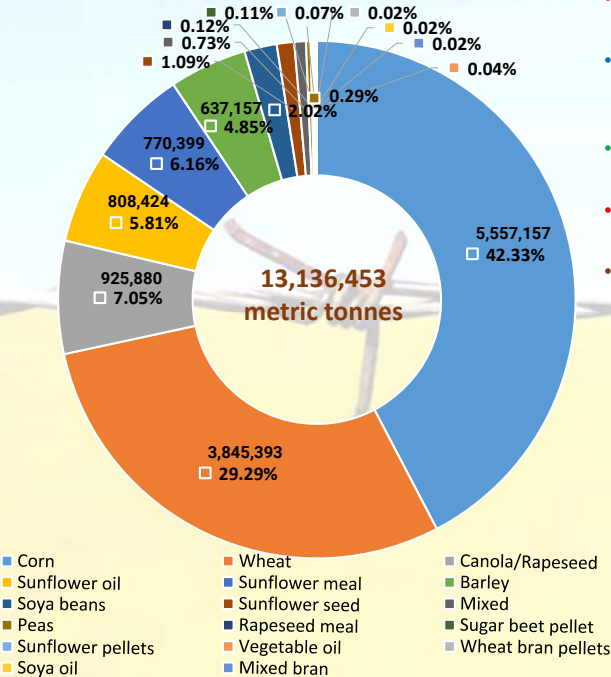


**GEOGRAPHY OF EXPORTS FROM UKRAINE, July – November, metric tonnes**



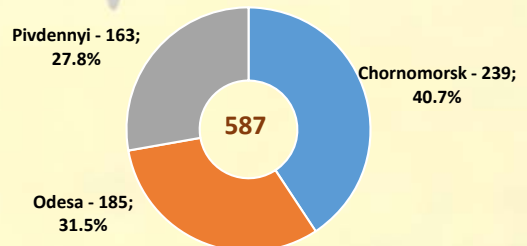
**EXECUTION OF THE AGREEMENT "Initiative for the safe transportation of grain and food products from Ukrainian ports"**

Tonnage structure by commodities, %



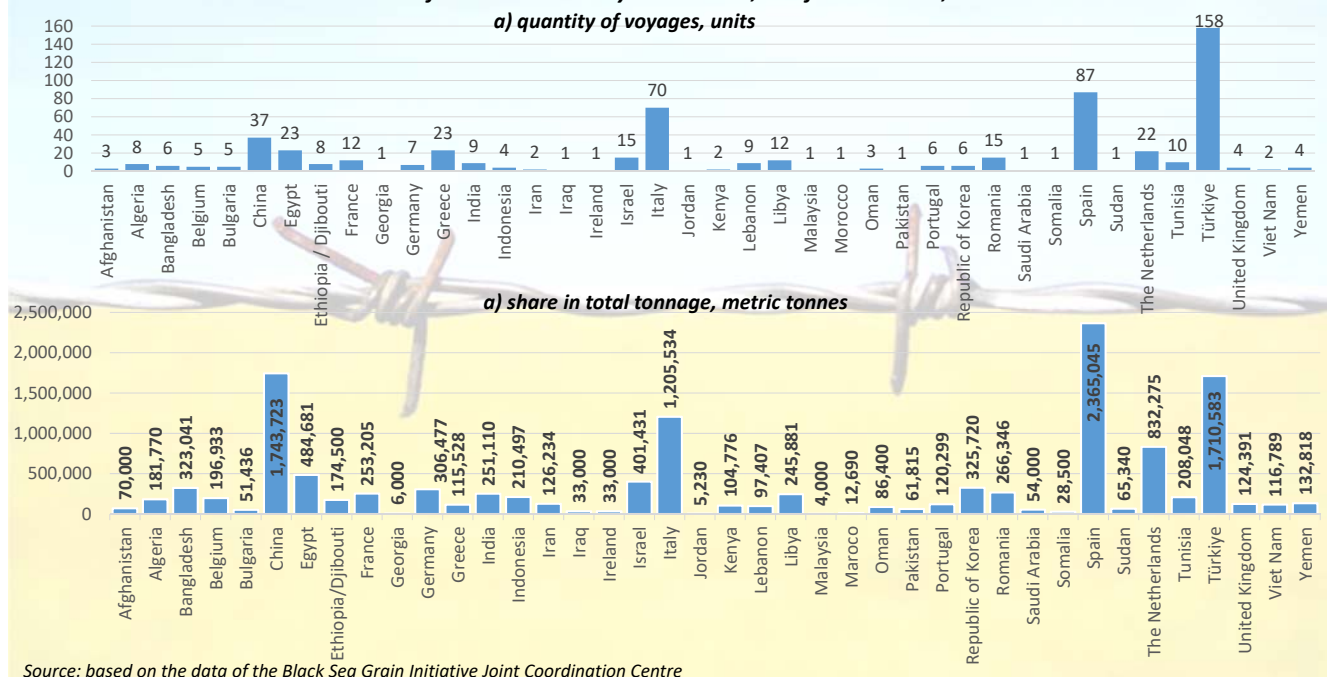
- On July 22, 2022, the agreements were signed in Istanbul between Ukraine, Turkey, the United Nations and Russia;
- On July 27, the Joint Coordination Centre (JCC) for "grain corridors" organization from Ukrainian ports was officially opened in Istanbul, Turkey;
- On August 1, the first ship (RAZONI) carrying 26 thousand tonnes of Ukrainian corn left the Odesa port since February 24;
- An extension of the Black Sea Grain Initiative under the same provisions for another 120 days starting on 19 November, 2022;
- As of December 6, 587 voyages (528 vessels) have 13,136,453 metric tonnes of grains and other foodstuffs from Ukrainian ports.

Number of grain cargoes left Ukrainian Black Sea ports under "grain agreement"



Source: based on the data of the Black Sea Grain Initiative Joint Coordination Centre

**EXECUTION OF THE AGREEMENT "Initiative for the safe transportation of grain and food products from Ukrainian ports"**  
**Structure of delivered loads by destination, as of December 6, 2022**



Source: based on the data of the Black Sea Grain Initiative Joint Coordination Centre

**BALANCE OF SUPPLY AND DEMAND OF GRAIN AND LEGUMES IN UKRAINE (\*forecast as of November 12, 2022)**

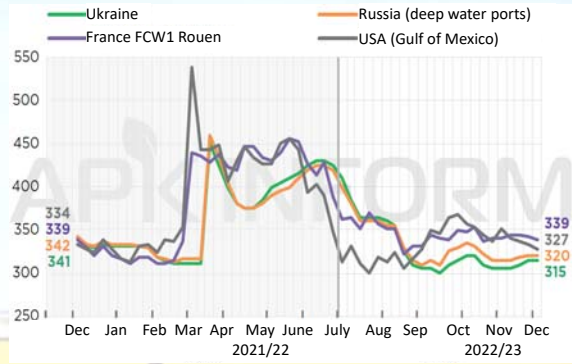
	2020/21	2021/22	2022/23*		Deviation, %		
	thousand tonnes	thousand tonnes	thousand tonnes		2021/22 - 2020/21	2022/23 - 2021/22	
			optimistic	pessimistic		optimistic	pessimistic
<b>Initial stocks</b>	4,216	4,811	12,456	12,456	+14.1%	in +2,6 times	in +2,6 times
<b>Sown area, thousand hectares</b>	15,392	15,995	13,997	13,997	+3.9%	-12.5%	-12.5%
<b>Harvested area, thousand hectares</b>	15,283	15,948	11,438	11,343	+4.4%	-28.3%	-28.9%
<b>Yield, tonnes / hectare</b>	4.25	5.39	4.58	4.56	+26.8%	-15.0%	-15.3%
<b>Gross harvest</b>	64,933	86,010	53,663	51,778	+32.5%	-37.6%	-39.8%
<b>Import</b>	208	123	122	105	-40.8%	-1.1%	-14.9%
<b>Total supply</b>	<b>69,358</b>	<b>90,945</b>	<b>66,241</b>	<b>64,339</b>	<b>+31.1%</b>	<b>-27.2%</b>	<b>-29.3%</b>
<b>Domestic consumption:</b>	19,184	26,282	19,809	19,584	+37.0%	-24.6%	-25.5%
<b>food</b>	4,775	4,463	4,074	3,802	-6.5%	-8.7%	-14.8%
<b>fodder</b>	9,720	13,325	10,155	10,155	+37.1%	-23.8%	-23.8%
<b>seeds</b>	2,224	1,928	2,109	1,576	-13.3%	+9.4%	-18.3%
<b>losses</b>	1,515	5,692	2,596	3,095	in +3,8 times	-54.4%	-45.6%
<b>other (alcohol, malt, starch, etc.)</b>	946	866	865	945	-8.5%	-0.1%	+9.1%
<b>Export</b>	45,363	52,207	40,312	24,292	+15.1%	-22.8%	-53.5%
<b>Total distribution (demand)</b>	<b>64,547</b>	<b>78,489</b>	<b>60,121</b>	<b>43,876</b>	<b>+21.6%</b>	<b>-23.4%</b>	<b>-44.1%</b>
<b>Ending stocks</b>	4,811	12,456	6,120	20,463	in +2,6 time	-50.9%	+64.3%
<b>Ratio of ending stocks to distribution</b>	7%	16%	10%	47%			

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

### WORLD GRAIN PRICES, USD/t

	Stock/month	Country of origin	Terms of delivery	Dec 2	Nov 25	Nov 18	Nov 11	week. change, USD/t %	
<b>The futures market</b>									
Wheat	CBOT, Dec.	USA	EXW	270.9	284.9	295.1	298.9	-14.0	-4.9%
Wheat	CBOT, Oct.	Black Sea	FOB	314.8	316.5	317.0	317.0	-1.7	-0.6%
Milling wheat	Euronext, Dec.	France	CPT Rouen	335.5	340.4	337.6	329.7	-4.9	-1.4%
Wheat	LIFFE, Nov.	EU	EXW	292.5	307.8	301.1	299.7	-15.3	-5.0%
Wheat	BCA, Nov.	Argentina	EXW	338.0	348.0	357.0	350.0	-10.0	-2.9%
Corn yellow	CBOT, Dec.	United States	EXW	250.0	263.0	262.8	259.1	-13.0	-4.9%
Corn	Euronext, Nov.	France	FOB	308.3	316.7	317.9	322.4	-8.4	-2.6%
Corn hard	BCA, Oct.	Argentina	EXW	253.0	250.0	244.0	247.0	3.0	1.2%
<b>Cash market</b>									
Wheat SRW	Oct.	USA	CPT Mex.	327.4	333.8	337.4	341.3	-6.4	-1.9%
Wheat hard	Oct.	Argentina	FOB	405.0	414.0	418.0	417.0	-9.0	-2.2%
WheatFCW1	Oct.	France	FOB	339.0	343.0	344.0	345.0	-4.0	-1.2%
Corn yellow	Oct.	USA	CPT Mex.	298.5	312.3	315.6	322.0	-3.0	-0.8%
Corn	Oct.	Argentina	FOB	-	-	333.0	346.0	-	-
Fodder barley	Oct.	France	FOB	301.0	298.0	297.0	301.0	3.0	1.0%

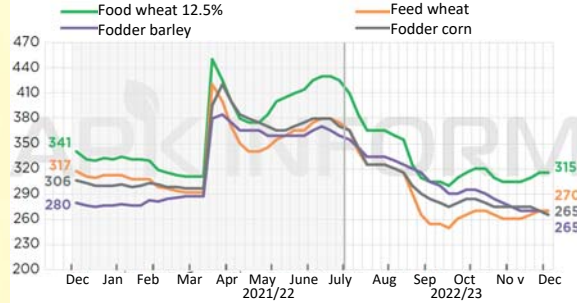
### Dynamics of food wheat prices, USD/t



### EXPORT PRICES FOR GRAIN IN UKRAINE (DEEP WATER PORTS) as of December 2, 2022. Offer, FOB, USD/t

	Min	+/- to previous month	Max	+/- to previous month	Average	+/- to previous month
Food wheat 12.5%	305		320		315	
Food wheat 11.5%	300		315		305	
Feed wheat	255	-5	275		270	
Fodder corn	255	-5	275	-5	265	-5
Fodder barley	255	-5	280		265	-5

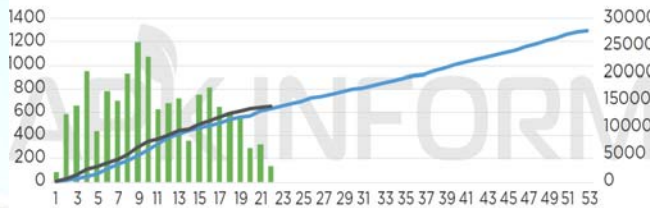
### Export prices for grain in Ukraine (deep water ports), Offer, FOB, USD/t



### WEEKLY DYNAMICS OF GRAIN EXPORTS FROM EUROPEAN UNION IN 2022/23 MY, thousand metric tonnes

#### Wheat

Export 2022/23 (weekly)      Export 2022/23 (accumulative)  
Export 2021/22 (accumulative)



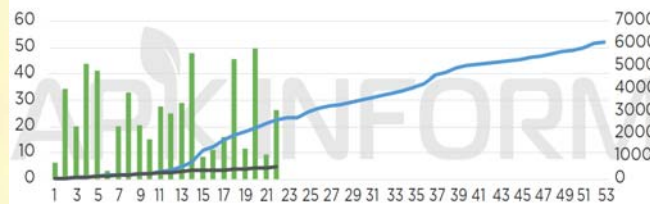
#### Barley

Export 2022/23 (weekly)      Export 2022/23 (accumulative)  
Export 2021/22 (accumulative)



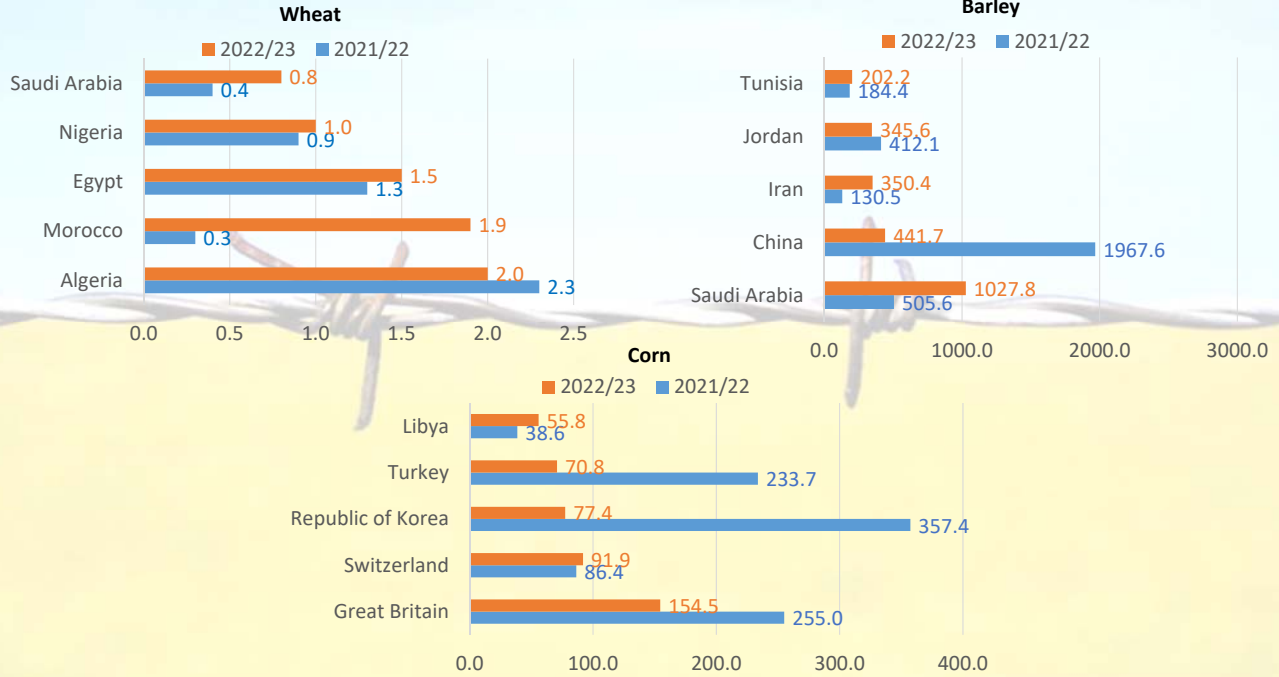
#### Corn

Export 2022/23 (weekly)      Export 2022/23 (accumulative)  
Export 2021/22 (accumulative)



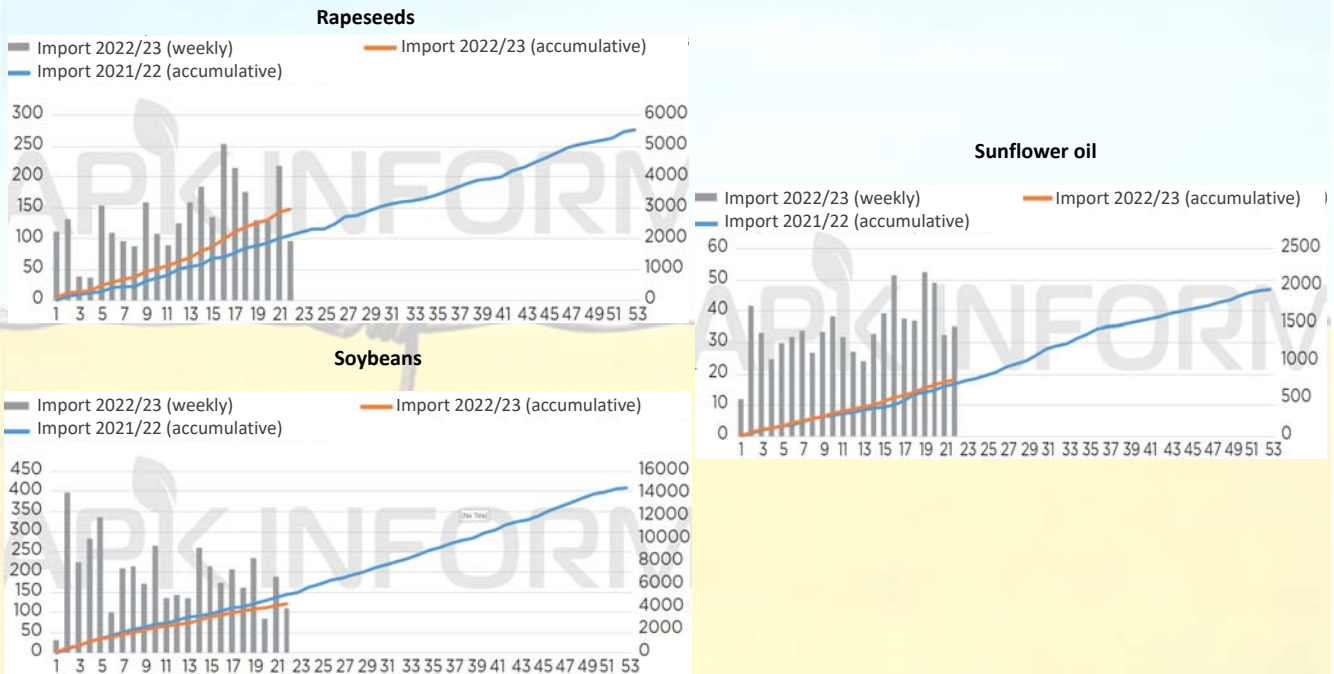
Source: based on European Commission statistics, November 2022

**TOP-5 GRAIN IMPORTERS FROM EUROPEAN UNION (July - November), thousand metric tonnes**



Source: based European Commission statistics , November 2022

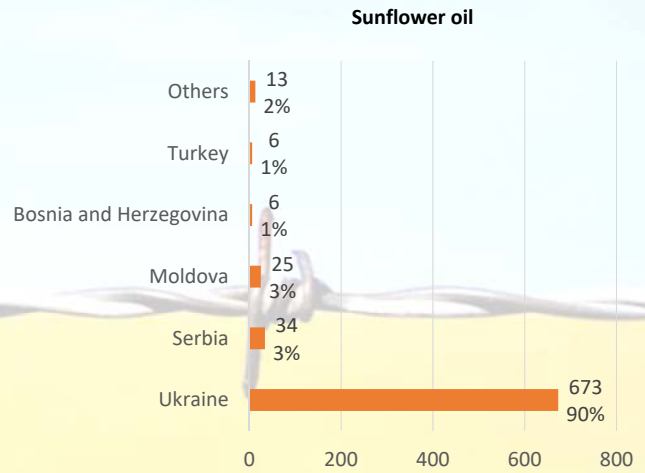
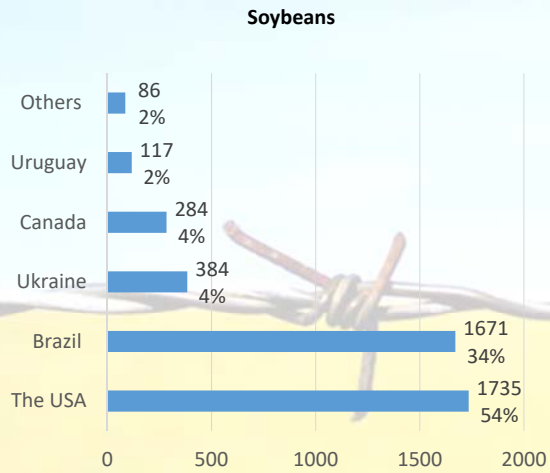
**WEEKLY DYNAMICS OF OIL COMMODITIES IMPORT TO EUROPEAN UNION IN 2022/23 MY, thousand metric tonnes**



Source: based on European Commission statistics , November 2022



**TOP-5 OIL COMMODITIES EXPORTERS TO EUROPEAN UNION (July – November, 2022/23 MY), thousand metric tonnes**



Source: based on European Commission statistics , November 2022

Thank you!

Questions?