



# Grain market: results of 2021/22MY and expectation for 2022/23MY in the context of Russia's military invasion of Ukraine (updates)

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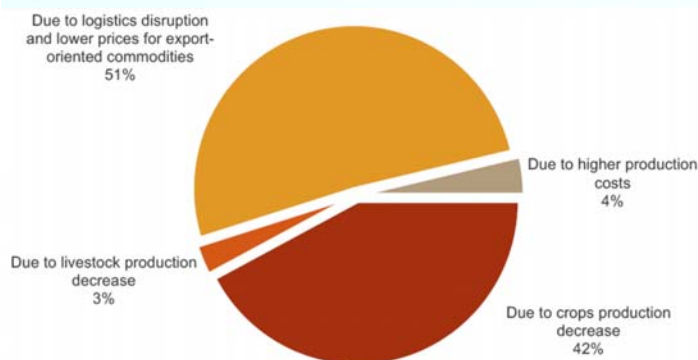
**KANSAS STATE UNIVERSITY** Agricultural Economics

## Agricultural Economics



**LOSSES FROM THE WAR IN UKRAINIAN AGRICULTURE**  
as of 22nd of June, 2022  
(Indirect assessment of damage)

**LOSSES STRUCTURE BY CATEGORY**



The indirect losses in agriculture due to production decrease, logistics disruption and lower prices for export-oriented commodities are estimated at \$23.3 billion.

Source: Kyiv School of Economics

**LOSSES VALUE BY CATEGORY**

**Losses due to crops production decrease \$9.6 BILLION**

| Item        | Pre-war 2021 volume, million tonnes | After-war 2022 forecasted volume, million tonnes | Value of losses, million \$ |
|-------------|-------------------------------------|--|-----------------------------|
| Wheat       | 32.15                               | 21.54  | 2,027                       |
| Corn        | 42.11                               | 34.70  | 1,296                       |
| Barley      | 9.44                                | 6.59   | 564                         |
| Sunflower   | 16.39                               | 11.16  | 2,427                       |
| Other crops | 73.18                               | 58.11  | 3,537                       |

**Losses due to logistics disruption and lower prices for export-oriented commodities \$11.9 BILLION**

| Item      | Difference in farmgate prices, \$/Kg | Value of losses, million \$ |
|-----------|--------------------------------------|-----------------------------|
| Wheat     | \$0.09                               | 2,958                       |
| Corn      | \$0.10                               | 4,127                       |
| Barley    | \$0.07                               | 670                         |
| Sunflower | \$0.26                               | 4,180                       |

**Losses due to higher production costs \$859 MILLION**

| Item       | Amount needed for 2022 | Value of losses, million \$ |
|------------|------------------------|-----------------------------|
| Fertilizer | 3.22 million tonnes    | 379                         |
| Fuel       | 1,228 million liters   | 480                         |

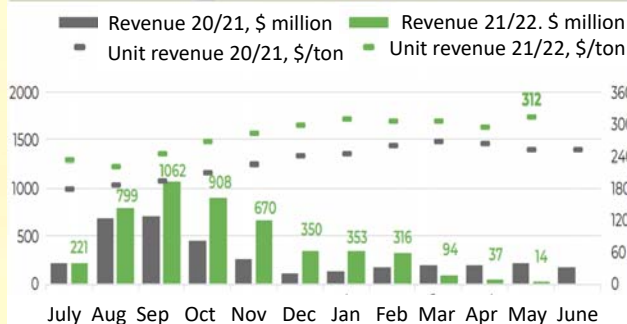
**EXPORT OF CEREALS, LEGUMES (with products of their processing) and flour as of July 15, 2022, thousand tonnes**  
(data of State Customs Service of Ukraine)

|                                     | 2020/2021 MY Total | 2021/2022 MY |                          | 2022/2023 MY |                          |
|-------------------------------------|--------------------|--------------|--------------------------|--------------|--------------------------|
|                                     |                    | Total        | including: for July 2021 | Total        | including: for July 2022 |
| <b>Cereals and legumes, total</b>   | <b>43939</b>       | <b>48508</b> | <b>926</b>               | <b>598</b>   | <b>598</b>               |
| • wheat                             | 16413              | 18741        | 248                      | 119          | 119                      |
| • barley                            | 4210               | 5752         | 180                      | 40           | 40                       |
| • rye                               | 15.8               | 161.5        | 3.5                      | 0            | 0                        |
| • maize                             | 22596              | 23535        | 488                      | 435          | 435                      |
| Wheat flour                         | 123.7              | 69.4         | 5.8                      | 1.4          | 1.4                      |
| Other flour                         | 1.1                | 1.5          | 0.1                      | 0.3          | 0.3                      |
| <b>Total flour</b>                  | <b>124.8</b>       | <b>70.9</b>  | <b>5.9</b>               | <b>1,7</b>   | <b>1,7</b>               |
| <b>Total export (grain + flour)</b> | <b>44105</b>       | <b>48579</b> | <b>933</b>               | <b>600</b>   | <b>600</b>               |

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

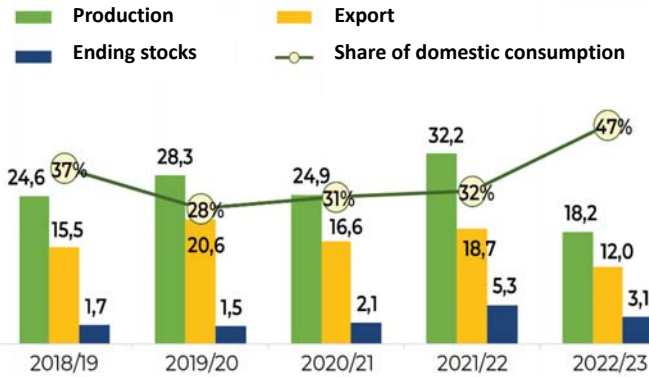


**Dynamics of revenue from wheat exports from Ukraine**



## UKRAINIAN WHEAT PRODUCTION AND EXPORT

Dynamics of production and export of Ukrainian wheat, million tonnes



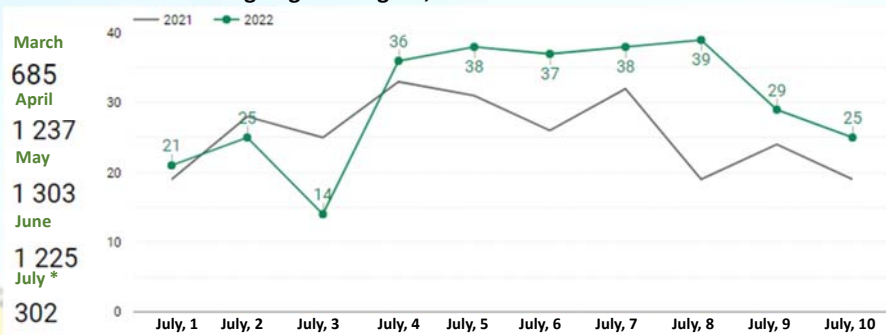
Geography of Ukrainian wheat export, thousand tonnes



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

## GRAIN LOGISTICS BY UKRAINIAN RAILWAY, AS OF JULY 11, 2022

Loading of grain cargoes, thousand tonnes



As of **July 13**, the average daily number of wagons with grain cargoes heading through the western border crossings increased to **407** units.

At the **end of June**, it was possible to transfer **379** wagons per day.

Rail transportation for export, thousand tonnes

|        | 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 * | 271,1 |                           | 33,7 |                           | 37,1             |                           |

### Logistic improvement plans:

- construction of new and modernization of existing tracks (both 1435 and 1520 mm) in the direction of the border with the EU and Danube seaports;
- modernization of rolling stock for freight transportation;
- modernization of equipment for changing the track width

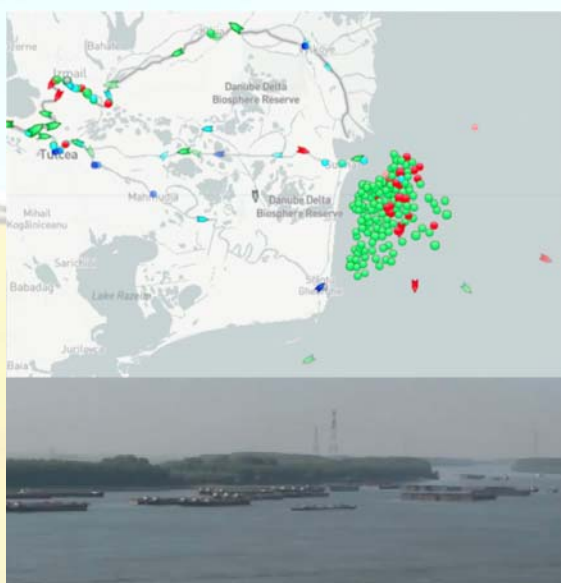
Realization - 2022-2025

TOTAL COST ~ \$1.5 BLN

Source: Ukrainian Railway and Ministry of Infrastructure of Ukraine



## DYNAMIC OF FRIGHT TRANSPORTATION IN THE CONDITIONS OF WAR, THOUSAND TONNES PER MONTH



- 16 merchant ships have already passed through the mouth of Bystre.
- More than 90 vessels are waiting for the raid of the Sulina Canal
- A total of 135 vessels are on the roadway of the Romanian Sulina Canal.

### 4 COMPONENTS TO INCREASE THE CAPACITY OF THE DANUBE PORTS

**Investment needed: 200 million US dollars**

- Transshipment**
- › modernization of the ports of Izmail, Reni, Ust'-Dunaysk
  - The goal is to increase the capacity of Danube ports by **1.7 times — to 25 mln tons/year**
  - › construction of new terminals (including multimodal ones) and hubs
  - › attraction of private investments for the construction of terminals

- Water ways**
- › dredging of Ukrainian ports on the Danube
  - › further implementation of the project of deep-sea navigation «Danube — Black Sea»

- Fleet**
- › construction of an inland navigation fleet
  - › repair and modernization of the existing fleet
  - › attracting a used fleet for the fastest possible effect

- Access**
- › construction and modernization of access railway tracks
  - › direct railway connection
  - › creation of conditions for unhindered road communication

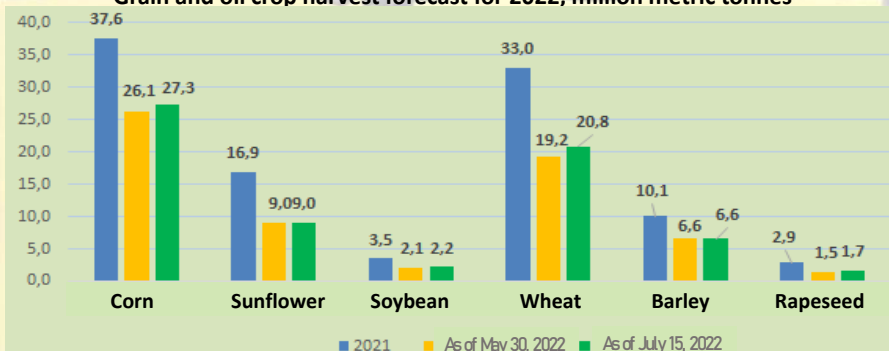
Source: Ministry of Infrastructure of Ukraine

## PROGRESS OF FIELD WORK IN UKRAINE AS OF JULY 15, 2022

### Harvesting of grain, legumes and oil crops

| Crops   | Forecast, thousand hectares | Harvested, thousand hectares | Harvested, thousand metric tonnes | Average 2022 yields, metric tonnes per hectare / bushels per acre | Average 2021 yields, metric tonnes per hectare / bushels per acre |
|---|-----------------------------|------------------------------|-----------------------------------|---|---|
| <b>Grain and legumes total in Ukraine, including:</b> | <b>6 790.9</b>              | <b>1 220.0</b>               | <b>3 596.1</b>                    | <b>2.95</b>   | <b>5.50</b>   |
| • wheat   | 4 894.2                     | 588.3                        | 1 695.2                           | 2.88 / 42.82  | 4.64 / 69.00  |
| • barley  | 1 773.4                     | 589.6                        | 1 823.7                           | 3.09 / 57.43  | 3.92 / 72.86  |
| • peas  | 123.3                       | 42.1                         | 77.2                              | 1.84 / 27.36  | 2.43 / 36.13  |
| Rapeseed  | 1 196.5                     | 133.7                        | 259.2                             | 1.94 / 34.62  | 2.95 / 52.64  |

### Grain and oil crop harvest forecast for 2022, million metric tonnes



**350,000 hectares of crops have already burned down in the war zone**



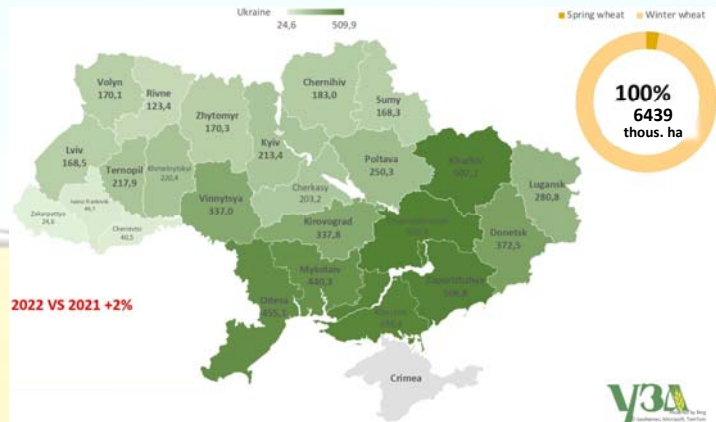
Source: based on the data of the State Statistic Service of Ukraine and Ukrainian Grain Association

## PROGRESS OF FIELD WORK IN UKRAINE AS OF JULY 15, 2022

### Harvesting of wheat by regions

| Region                | Forecast, thousand hectares | Harvested, thousand hectares | Harvested, thousand metric tonnes | Average yields, metric tonnes per hectare |
|-----------------------|-----------------------------|------------------------------|-----------------------------------|---|
| <b>Ukraine, total</b> | <b>4 894.2</b>              | <b>588.3</b>                 | <b>1 695.2</b>                    | <b>2.88</b>                               |
| Vinnitsya             | 309.7                       | 6.5                          | 26.3                              | 4.05                                      |
| Volyn                 | 165.4                       | 0.5                          | 2.3                               | 4.60                                      |
| Dnipropetrovsk        | 523.9                       | 148.0                        | 439.0                             | 2.97                                      |
| Donetsk               | 215.2                       | 42.9                         | 121.3                             | 2.83                                      |
| Zhytomyr              | 141.9                       | 0.3                          | 0.9                               | 3.00                                      |
| Zakarpattia           | 17.3                        | 0.7                          | 2.8                               | 4.00                                      |
| Zaporizhzhya          | 93.7                        | 3.7                          | 11.0                              | 2.94                                      |
| Ivano-Frankivsk       | 51.6                        | 0.2                          | 1.6                               | 7.41                                      |
| Kyiv                  | 203.3                       | 2.0                          | 6.0                               | 3.00                                      |
| Kirovohrad            | 382.5                       | 18.8                         | 76.3                              | 4.06                                      |
| <b>Luhansk</b>        |                             |                              |                                   |   |
| Lviv                  | 172.3                       |                              |                                   |   |
| Mikolayiv             | 364.0                       | 116.2                        | 342.0                             | 2.94                                      |
| Odesa                 | 556.0                       | 200.2                        | 475.8                             | 2.38                                      |
| Poltava               | 261.5                       | 32.2                         | 131.7                             | 4.09                                      |
| Rivne                 | 109.3                       |                              |                                   |   |
| Sumy                  | 175.7                       |                              |                                   |   |
| Ternopil              | 213.8                       |                              |                                   |   |
| Kharkiv               | 271.9                       | 10.7                         | 37.0                              | 3.47                                      |
| <b>Kherson</b>        | <b>41.7</b>                 |                              |                                   |   |
| Khmelnyskiy           | 218.1                       | 1.6                          | 6.7                               | 4.19                                      |
| Cherkasy              | 200.4                       | 2.3                          | 8.9                               | 3.87                                      |
| Chernivtsi            | 35.4                        | 1.4                          | 5.6                               | 4.00                                      |
| Chernihiv             | 169.6                       |                              |                                   |   |

### Sown areas under wheat for 2021/2022 MY, thousand hectares



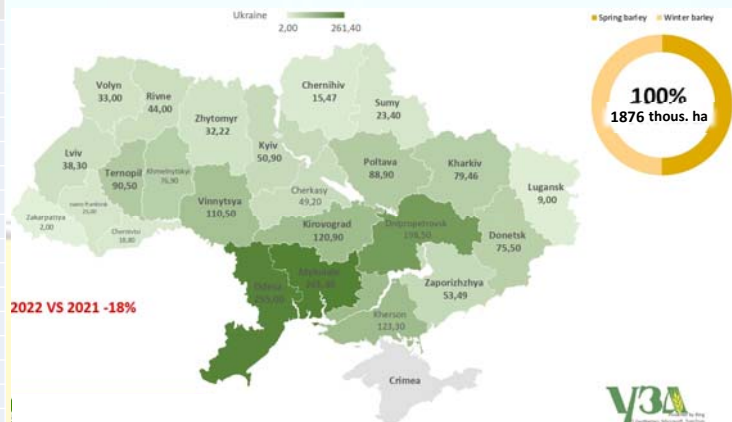
Source: based on the data of the Ministry of Agrarian Policy and Food of Ukraine and Ukrainian Grain Association

## PROGRESS OF FIELD WORK IN UKRAINE AS OF JULY 15, 2022

### Harvesting of barley by regions

| Region                | Forecast, thousand hectares | Harvested, thousand hectares | Harvested, thousand metric tonnes | Average yields, metric tonnes per hectare |
|-----------------------|-----------------------------|------------------------------|-----------------------------------|---|
| <b>Ukraine, total</b> | <b>1 773.4</b>              | <b>589.6</b>                 | <b>1 823.7</b>                    | <b>3.09</b>                               |
| Vinnitsya             | 104.8                       | 22.5                         | 87.2                              | 3.88                                      |
| Volyn                 | 33.7                        | 6.0                          | 36.0                              | 6.00                                      |
| Dnipropetrovsk        | 204.2                       | 94.7                         | 253.2                             | 2.67                                      |
| Donetsk               | 66.4                        | 25.7                         | 61.8                              | 2.41                                      |
| Zhytomyr              | 32.6                        | 1.5                          | 4.7                               | 3.13                                      |
| Zakarpattia           | 1.4                         | 0.9                          | 3.3                               | 3.67                                      |
| Zaporizhzhya          | 93.5                        | 1.8                          | 5.1                               | 2.86                                      |
| Ivano-Frankivsk       | 25.4                        | 3.5                          | 20.3                              | 5.83                                      |
| Kyiv                  | 50.3                        | 2.7                          | 8.2                               | 3.01                                      |
| Kirovohrad            | 123.6                       | 54.9                         | 223.8                             | 4.08                                      |
| <b>Luhansk</b>        |                             |                              |                                   |   |
| Lviv                  | 38.4                        | 9.6                          | 63.7                              | 6.64                                      |
| Mikolayiv             | 195.4                       | 123.2                        | 324.2                             | 2.63                                      |
| Odesa                 | 293.7                       | 192.9                        | 490.1                             | 2.54                                      |
| Poltava               | 89.6                        | 6.4                          | 28.9                              | 4.52                                      |
| Rivne                 | 46.1                        | 5.4                          | 25.3                              | 4.69                                      |
| Sumy                  | 29.7                        | 0.8                          | 3.3                               | 4.41                                      |
| Ternopil              | 85.4                        | 14.6                         | 81.2                              | 5.56                                      |
| Kharkiv               | 63.9                        | 4.5                          | 15.4                              | 3.42                                      |
| <b>Kherson</b>        | <b>28.1</b>                 |                              |                                   |   |
| Khmelnyskiy           | 81.1                        | 2.4                          | 11.0                              | 4.58                                      |
| Cherkasy              | 48.1                        | 10.6                         | 54.2                              | 5.11                                      |
| Chernivtsi            | 18.0                        | 5.1                          | 22.7                              | 4.45                                      |
| Chernihiv             | 20.0                        |                              |                                   |   |

### Sown areas under barley for 2021/2022 MY, thousand hectares



Source: based on the data of the Ministry of Agrarian Policy and Food of Ukraine and Ukrainian Grain Association

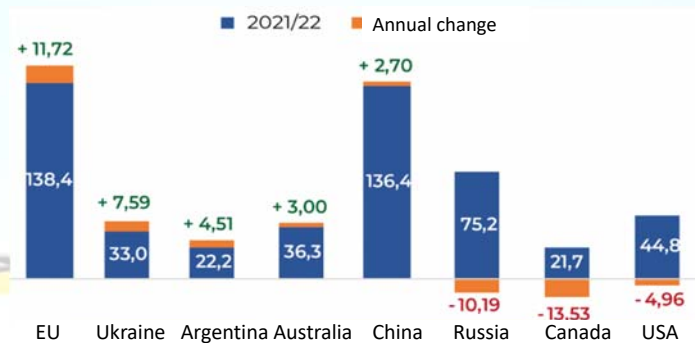
### BALANCE OF SUPPLY AND DEMAND OF GRAIN AND LEGUMES IN UKRAINE (\*forecast as of July 15, 2022)

|  | 2020/21         | 2021/22         | 2022/23*        | Deviation , %     |                   |
|--|-----------------|-----------------|-----------------|-------------------|-------------------|
|  | thousand tonnes | thousand tonnes | thousand tonnes | 2021/22 - 2020/21 | 2022/23 - 2021/22 |
| Initial stocks                         | 4 866           | 5 861           | 17 357          | +20.4%            | in +3 times       |
| Sown area, thousand hectares           | 15 392          | 15 995          | 14 006          | +3.9%             | -12.4%            |
| Harvested area, thousand hectares      | 15 283          | 15 948          | 11 431          | +4.4%             | -28.3%            |
| Yield, tonnes / hectare                | 4.25            | 5.39            | 4.58            | +26.8%            | -15.0%            |
| Gross harvest                          | 64 933          | 86 010          | 52 397          | +32.5%            | -39.1%            |
| Import                                 | 208             | 119             | 173             | -43.1%            | +45.9%            |
| <b>Total supply</b>                    | <b>70 008</b>   | <b>91 990</b>   | <b>69 927</b>   | <b>+31.4%</b>     | <b>-24.0%</b>     |
| Domestic consumption:                  | 18 784          | 26 452          | 22 068          | +40.8%            | -16.6%            |
| food                                   | 3 490           | 3 529           | 3 494           | +1.1%             | -1.0%             |
| fodder                                 | 10 520          | 14 375          | 12 680          | +36.6%            | -11.8%            |
| seeds                                  | 2 224           | 1 928           | 2 084           | -13.3%            | +8.1%             |
| losses                                 | 1 525           | 5 742           | 3 026           | in +3.8 times     | -47.3%            |
| other (alcohol, malt, starch, etc.)    | 1 021           | 870             | 775             | -14.8%            | -10.9%            |
| Export                                 | 45 363          | 48 181          | 36 709          | +6.3%             | -23.8%            |
| <b>Total distribution (demand)</b>     | <b>64 147</b>   | <b>74 945</b>   | <b>58 777</b>   | <b>+16.3%</b>     | <b>-21.2%</b>     |
| Ending stocks                          | 5 861           | 17 357          | 11 150          | in +3 times       | -35.8%            |
| Ratio of ending stocks to distribution | 9%              | 23%             | 19%             |                   |                   |

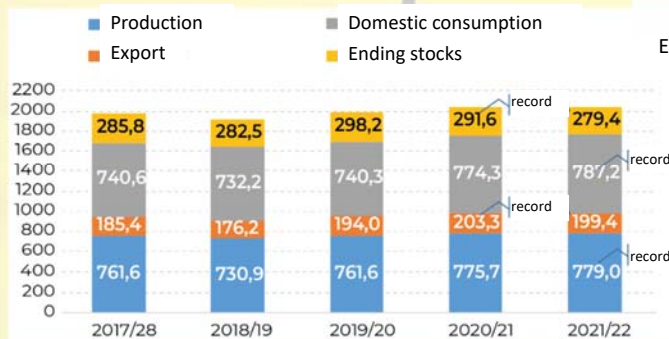
Source: based on "APK-Inform", the State Statistic Service of Ukraine and the State Customs Service of Ukraine

### RESULTS OF 2021/22 MY ON THE WORLD WHEAT MARKET

#### Dynamics of wheat production in major producing countries, million tonnes



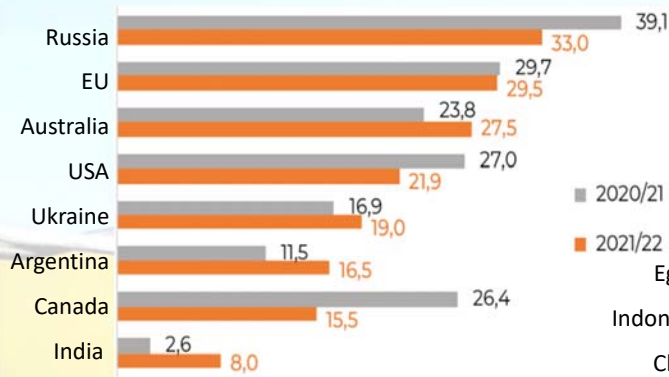
#### Dynamics of the world balance of supply and demand for wheat, million tonnes



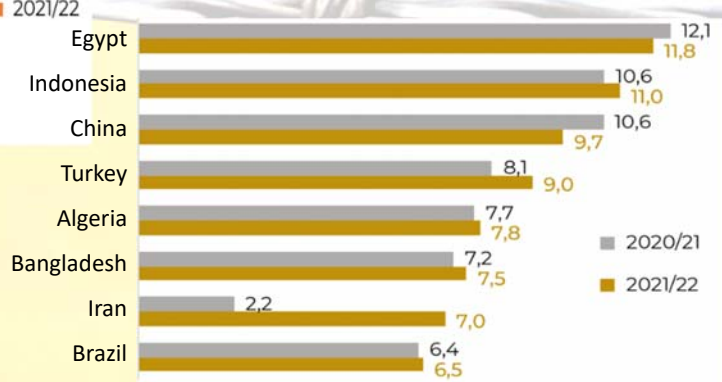
Source: based on the data of the USDA

## RESULTS OF 2021/22 MY ON THE WORLD WHEAT MARKET

### Shipments from the key wheat exporting countries 2020/2021 MY vs 2021/2022 MY, million tonnes

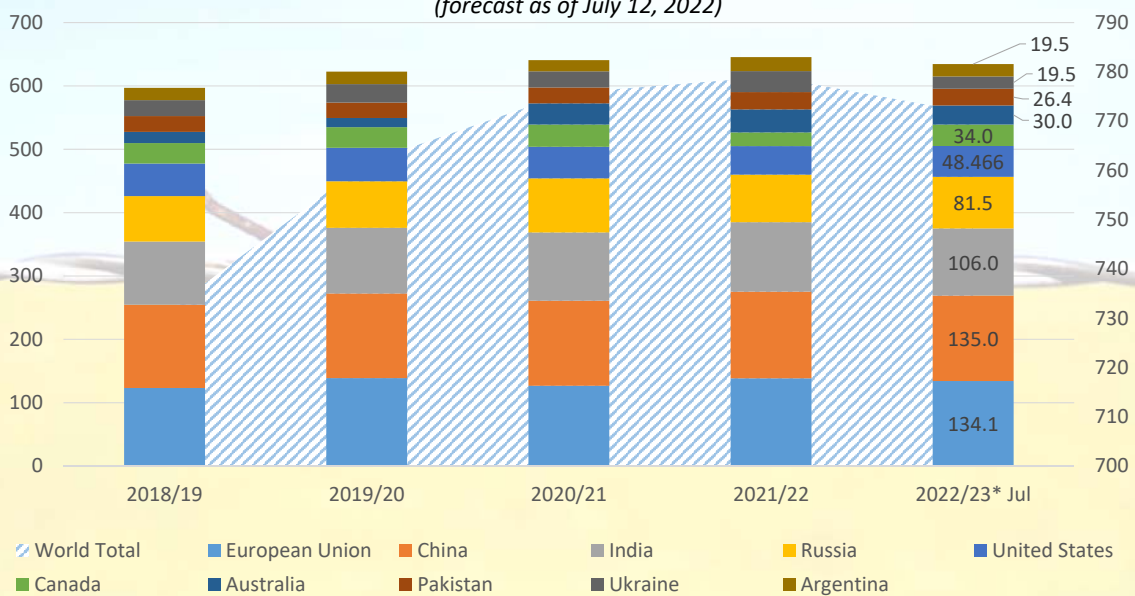


### Wheat purchases by the key importers, 2020/2021 MY vs 2021/2022 MY million tonnes



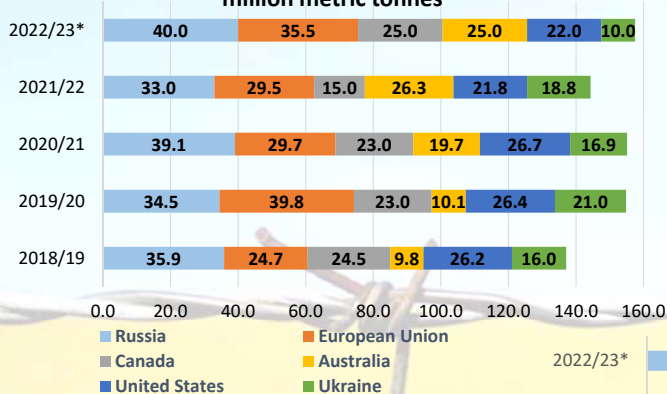
Source: based on the data of the USDA

## DYNAMICS OF WORLD WHEAT PRODUCTION, million metric tonnes (forecast as of July 12, 2022)



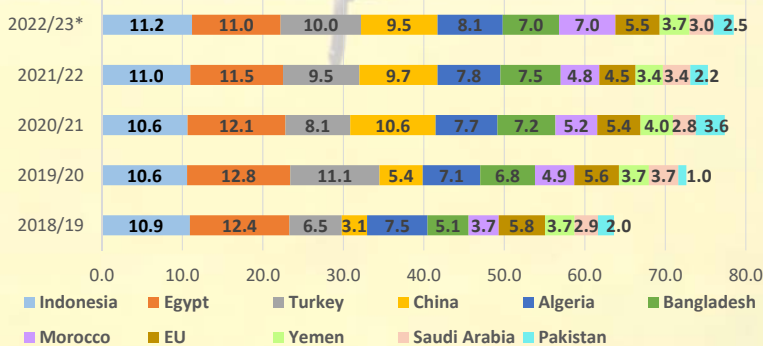
Source: based on the data of the USDA

### Dynamics of wheat shipments from key exporting countries, million metric tonnes



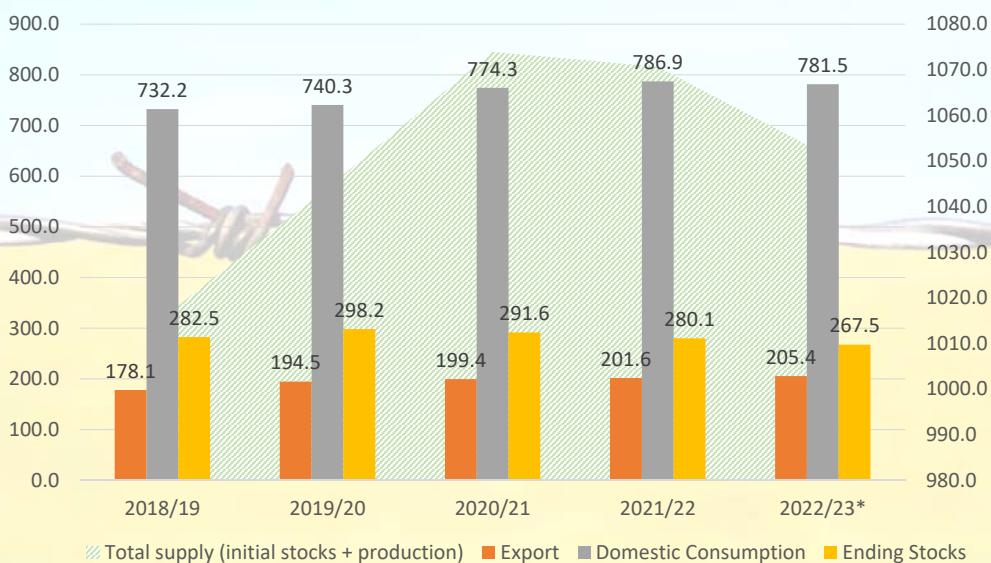
### WORLD EXPORT-IMPORT WHEAT DYNAMICS (forecast as of July 12, 2022)

### Dynamics of wheat purchases by the main importing countries, million metric tonnes



Source: based on the data of the USDA

### DYNAMICS OF WORLD WHEAT DEMAND AND SUPPLY, million metric tonnes (forecast as of July 12, 2022)



Source: based on the data of the USDA



# Thank you!

## Questions?

**KANSAS STATE**  
UNIVERSITY Agricultural Economics

