KSE | Center for Food and Land Use Research at Kyiv School of Economics

2024-2030 projections of Ukraine's agri-food markets: own projections and review, war impacts, food security, 18 commodities and processing potential

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Content

1. Impacts of war on agricultural sector: what we know of

2. The Agricultural Outlook Ukraine 2023-2030 for the major export commodities by KSE Agrocenter: assumptions and projection results

3. Review of projections by the other institutions

4. Food security in Ukraine

5. What about the processing potential?

1. Damages, Losses and Needs, April 2023

$8.7 billion – 26% of the total physical assets damaged

$31.5 billion – indirect losses, including lower production of crops and livestock, as well as logistics disruptions and higher production costs

$29.7 billion – reconstruction and recovery

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Damages to livestock, bees, fisheries & aquaculture: $277.6 million

Damages to perennial crops: $489.8 million

Stolen and lost outputs and inputs: $2.0 billion

Agricultural machinery and storage facilities damages: $6.0 billion

https://kse.ua/ua/oglyad-zbitkiv-ta-vtrat-v-apk/

1. Damages, Losses and Needs, April 2023

Crop losses due to lower production:

$14.3 billion

Livestock losses due to lower production:

$1.7 billion

Other losses:

$15.6 billion

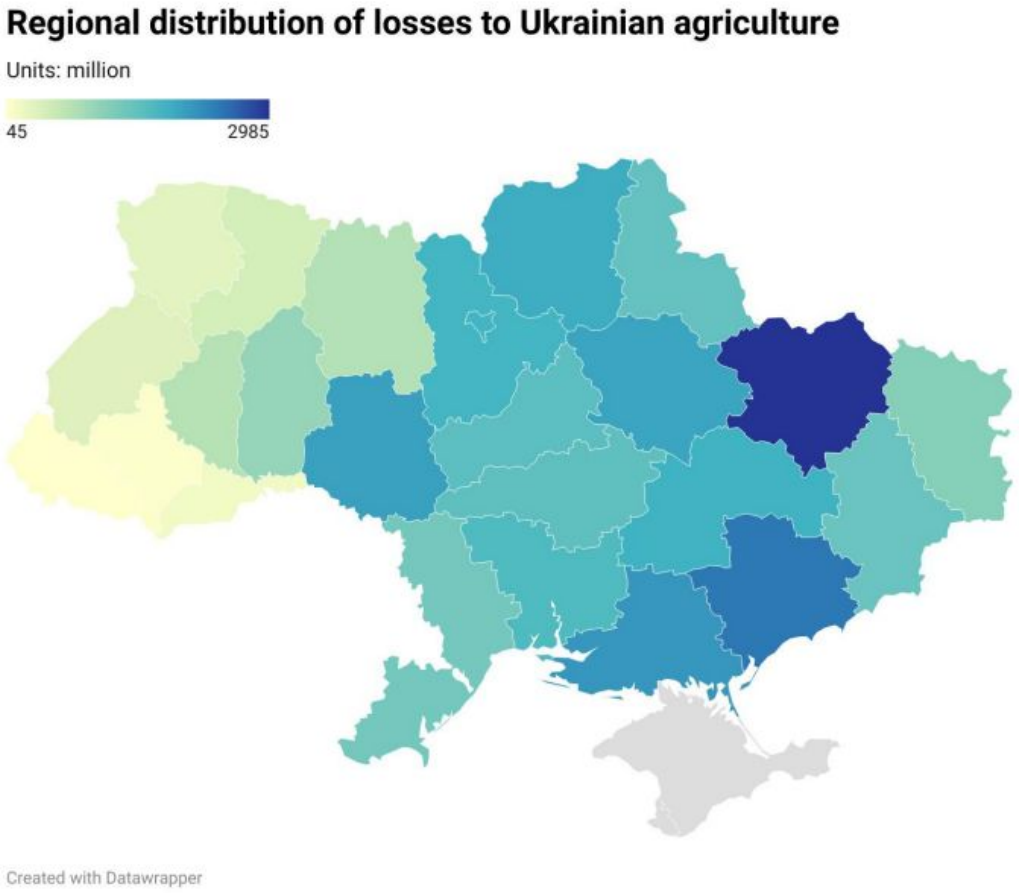

Figure 4. Regional distribution of losses to Ukrainian agriculture

Source: own estimates based on the results of the IPSOS survey

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1. Damages, Losses and Needs, April 2023

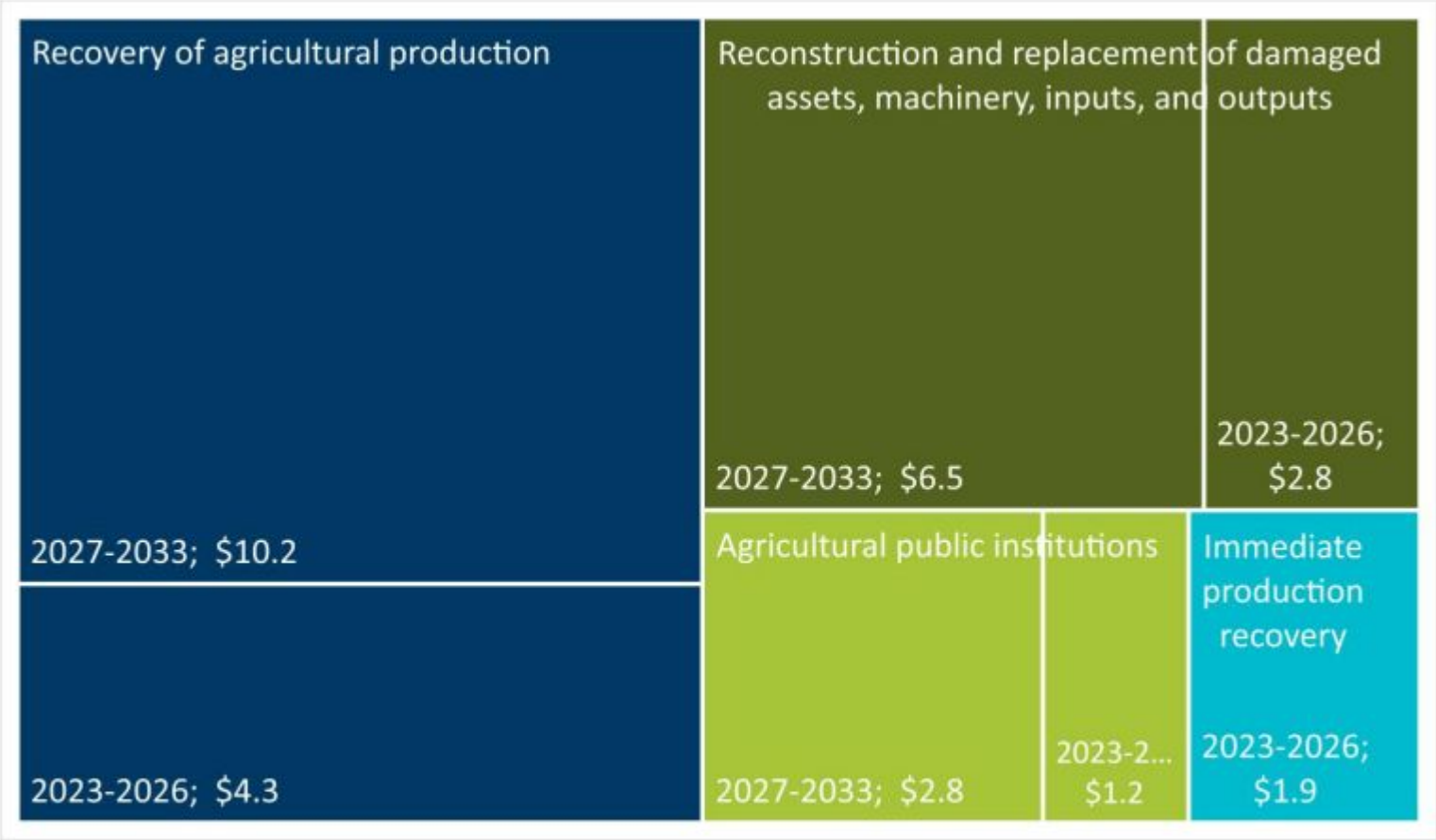


Figure 4. Structure of agricultural revival needs (in billion USD)

Source: own estimates relying on the Post-Disaster Needs Assessment Guidelines developed by the GFDRR, World Bank Group, European Union, and United Nations. See Table 1 for details.

https://kse.ua/ua/oglyad-zbitkiv-ta-vtrat-v-apk/

1. EO contaminated agricultural land

Due to the Russia's full-scale invasion of Ukraine, around 174,000 km², or approximately 30% of Ukraine's territory, is potentially contaminated by explosive ordnance (EO)

1. Nearly 19% of micro-farmers'[1] land is contaminated with explosive ordnance (EO) in the front-line regions[2]. After liberation of the temporarily occupied territories the portion and area of land would increase.

2. The weighted price of full farmland demining is estimated at US$1,781 per hectare, a significant financial burden for small farmers. Complete demining payback period exceeds 30 years.

3. The total demining cost for micro-farmers is estimated at over US$250 million. The process may take decades without joint efforts.

4. Annual forgone revenue for a micro-farmer due to land contamination is around US$930 per hectare.

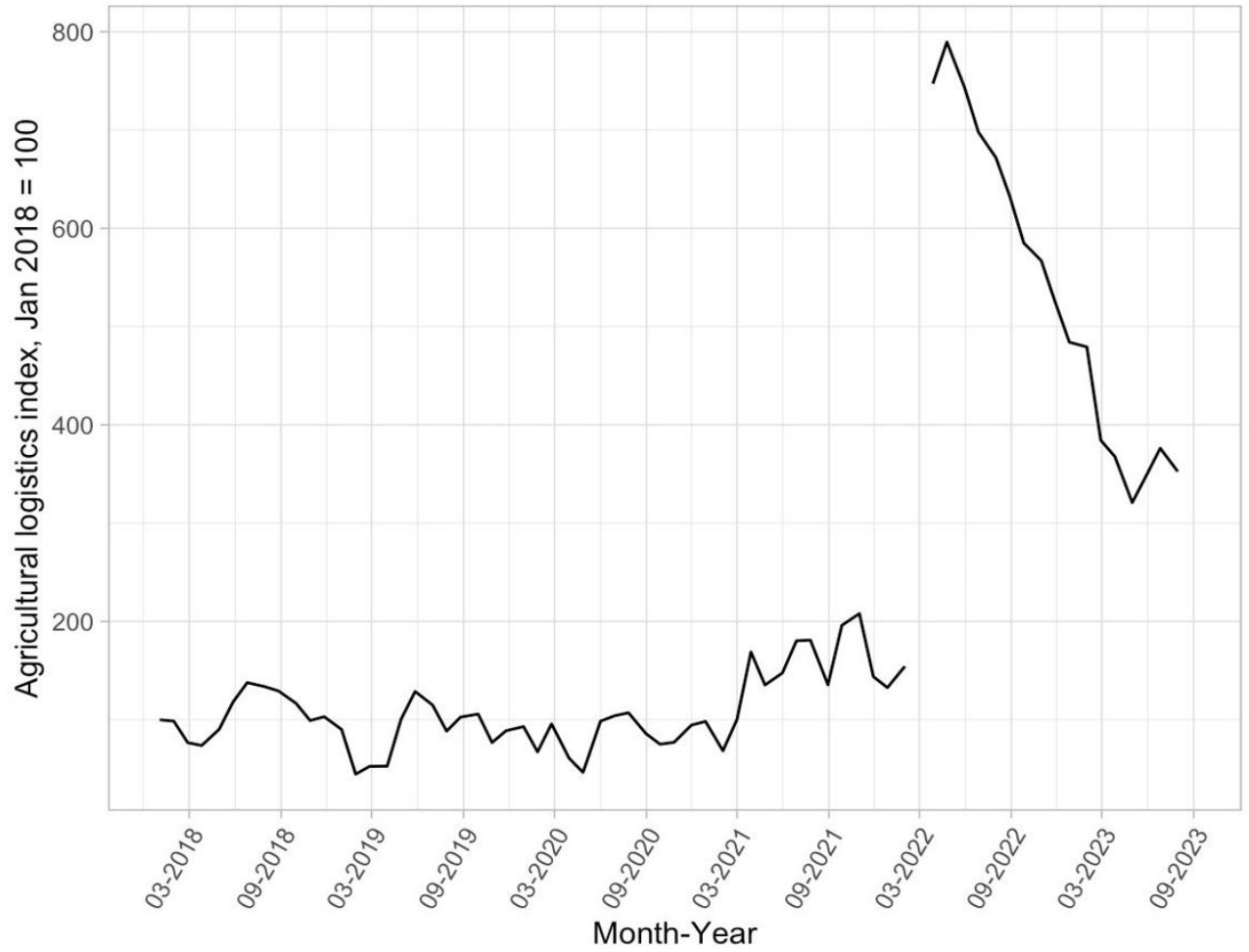
5. Non-technical survey of EO contamination ensures safety of up to 90% of land affected to be safe, costing only $6 per hectare. Expansion of demining operational capacity among the non-commercial sector is needed.

6. Specific programs for farmers to finance technical survey and clearance activities would accelerate the process.

Share of EO contaminated land to go through demining stages, on average

https://kse.ua/wp-content/uploads/2023/09/Mining-brief_Final-1.pdf

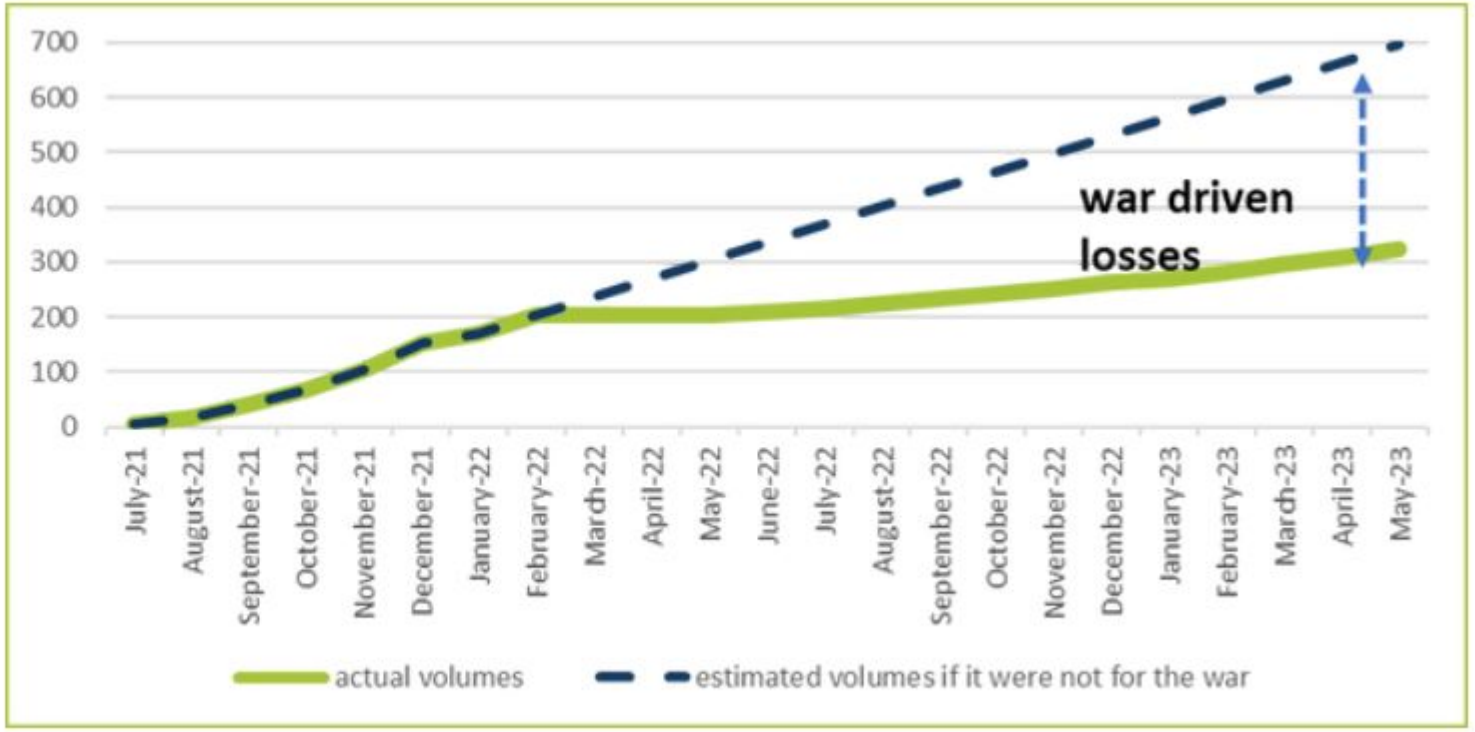
1. Logistics costs: agricultural logistics index



https://kse.ua/wp-content/uploads/2023/09/Mining-brief_Final-1.pdf

1. Agricultural land market

Actual and estimated monthly sales transactions, in 000 ha

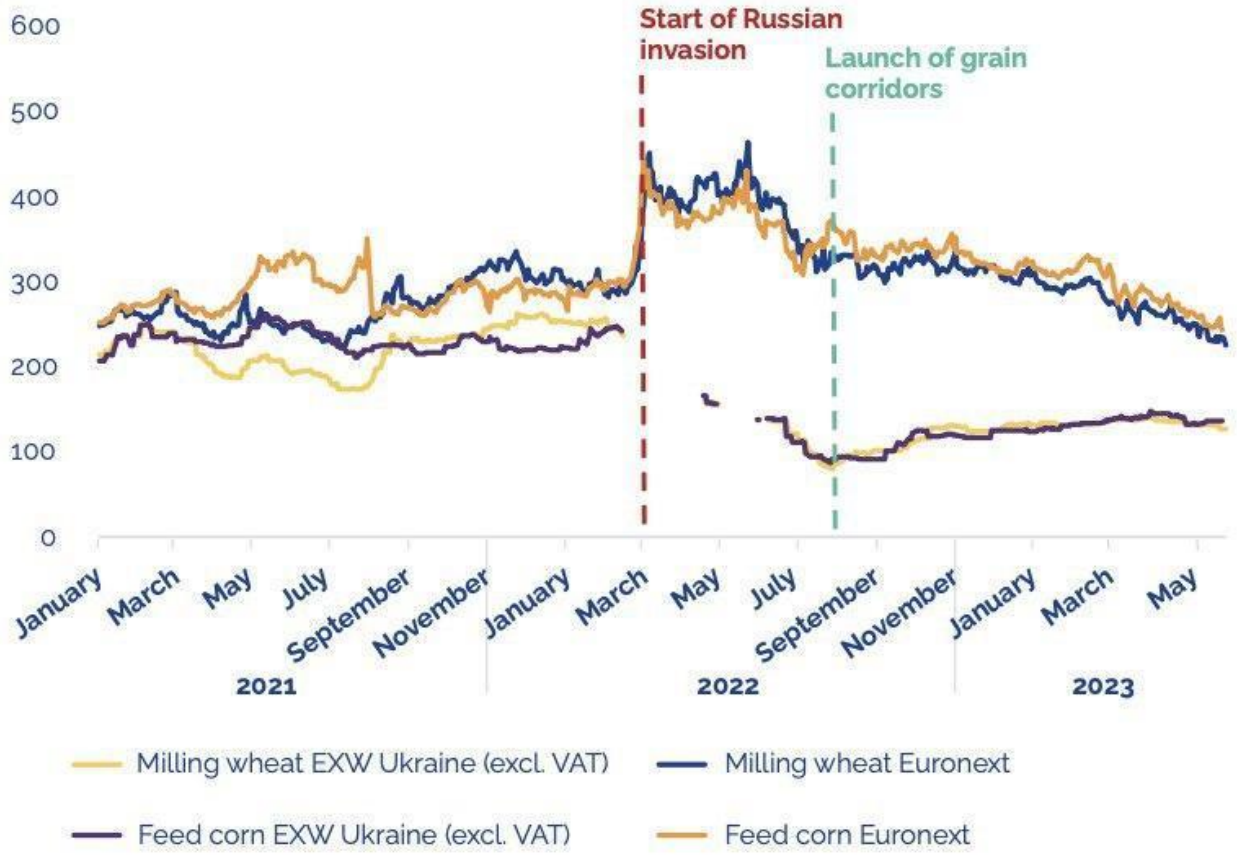


* KSE Agrocenter estimations using the data of StateGeoCadastre

https://kse.ua/wp-content/uploads/2023/08/Land-Market-Review-Ukraine_Q2-2023.pdf

1. Crop prices

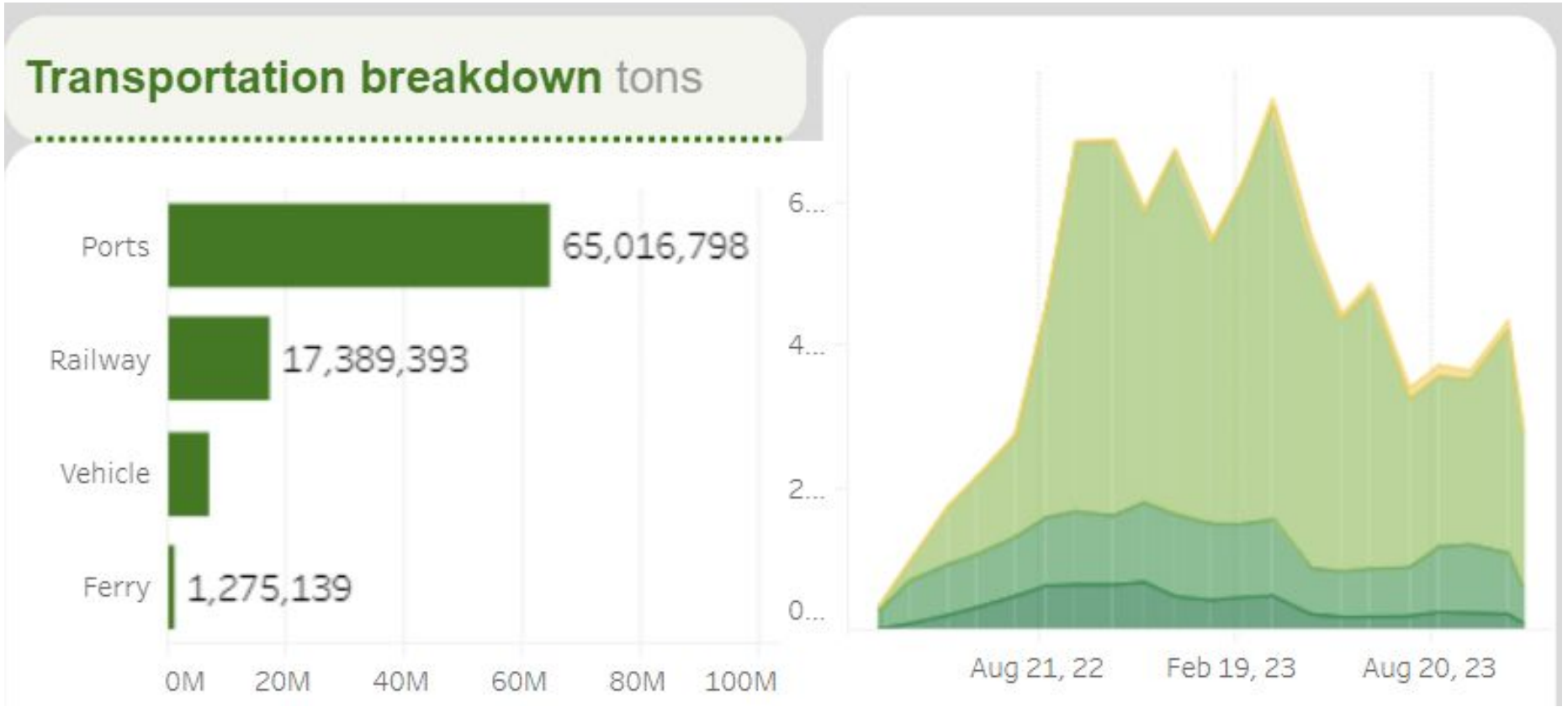
Figure 1. Wheat and corn domestic (EXW Ukraine) and world market (Euronext) prices, $/t



Note: prices are export prices FOB US Gulf ports

Source: World Bank

1. Total agricultural exports



https://public.tableau.com/app/profile/fsuw/viz/ENGExportofAgriproducts/Dashboard1

2. The Outlook

AGMEMOD – partial equilibrium dynamic econometric model. Ukraine-country model

Assumptions	Values
GDP projections 2022-2030	
IMF, April 2022	2022-2023: - 35% compared to 2021
SSSU projections	2024: rebound by 12.5%
Growth rate projected by USDA in 2021	2025-2030: +3.1% annually
GDP deflator	-
As of July 2022, according to the National Bank of Ukraine	2022: 30
According to the USDA 2021 projections	2023–2030: +5% annual growth
UAH/USD currency exchange rate	-
As of July 2022, according to the National Bank of Ukraine	2022–2023: 36.6
According to the USDA 2021 projections	2024–2030: +0.2% annual growth
Population	
Assuming 4 mil people left Ukraine considering 2021 USDA projections until 2030	-
	2022-2023: -4 mil from the projected number
Return of all the war refugees, according to 2021 USDA projections until 2030	2024-2030: according to the former projections

2. The Outlook

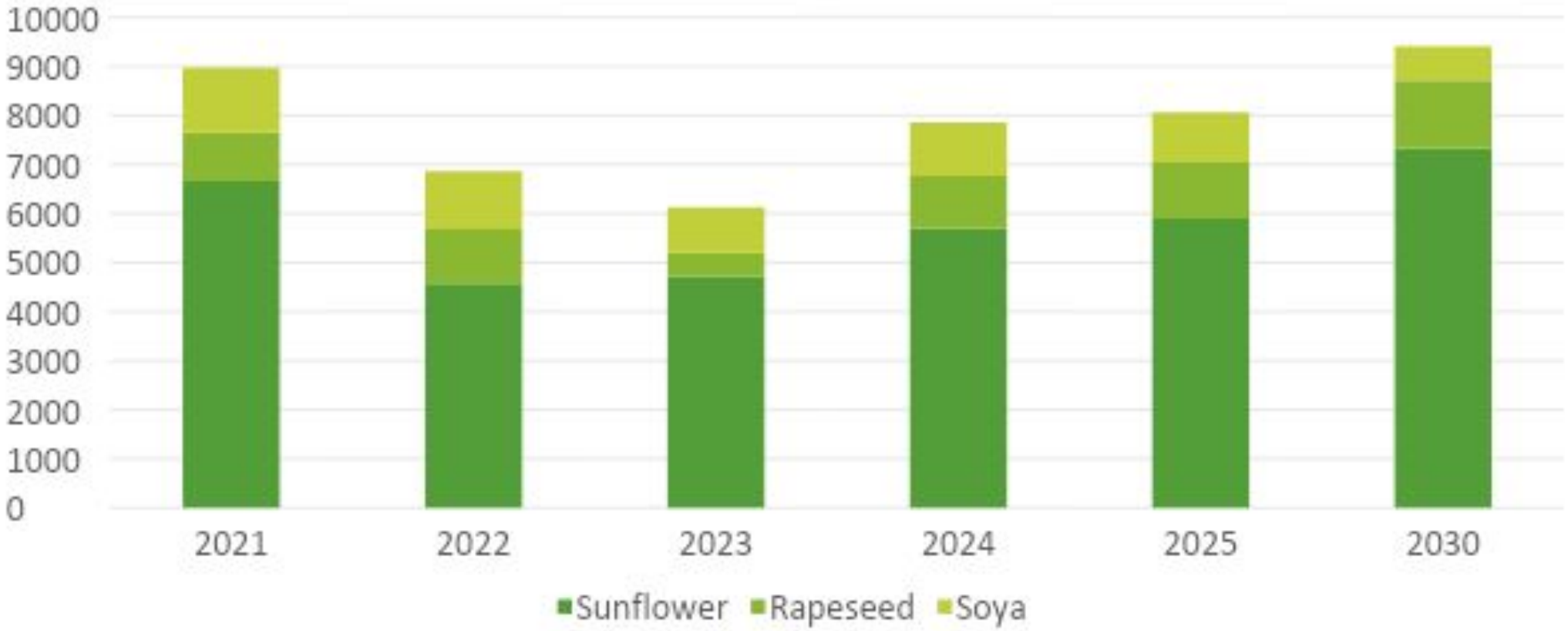
Assumptions	Values
Level of export	2023-2026 as of today 2027-2030 – all ports are available except of the Azov sea ports
Duration of war	2022-2023
Reduction of grains area due to occupation and active fighting in 2022-2023	-13% from the 2021 grains area harvested
Reduction of oilseeds area due to occupation and active fighting in 2022-2023	-20% from the 2021 oilseeds area harvested
Production costs	
Availability of financial resources for variable costs	the producers get the profit just to cover their expenses in 2023-2024, return to normal in 2025
Increase in fuel expenses compared to 2021	following annual average crude oil price change in 2022-2023 and projection for 2024 based on World Energy Outlook. For further years adjusted to inflation.
Increase in fertilizer expenses compared to 2021	80% increase in 2022 and 30% increase in 2023, further changes is annual inflation adjustment
Decrease in labor availability, and the resulting change in labor costs, due to mobilization, migration and war-related death*	in 2023-2024 30% less, starting from 2025 - gradual return to 2021 level*
Additional area of uncultivated arable land as an effect of increased production costs	-5%
World market prices in 2022–2030	OECD-FAO Outlook 2022
Crops storage assumption	Storage available

2. The Outlook: Areas of cereals

Acreage of cereals crops in 2021-2030, thsd ha

Source *SSSU for 2021-2022, own estimation for 2023-2030*

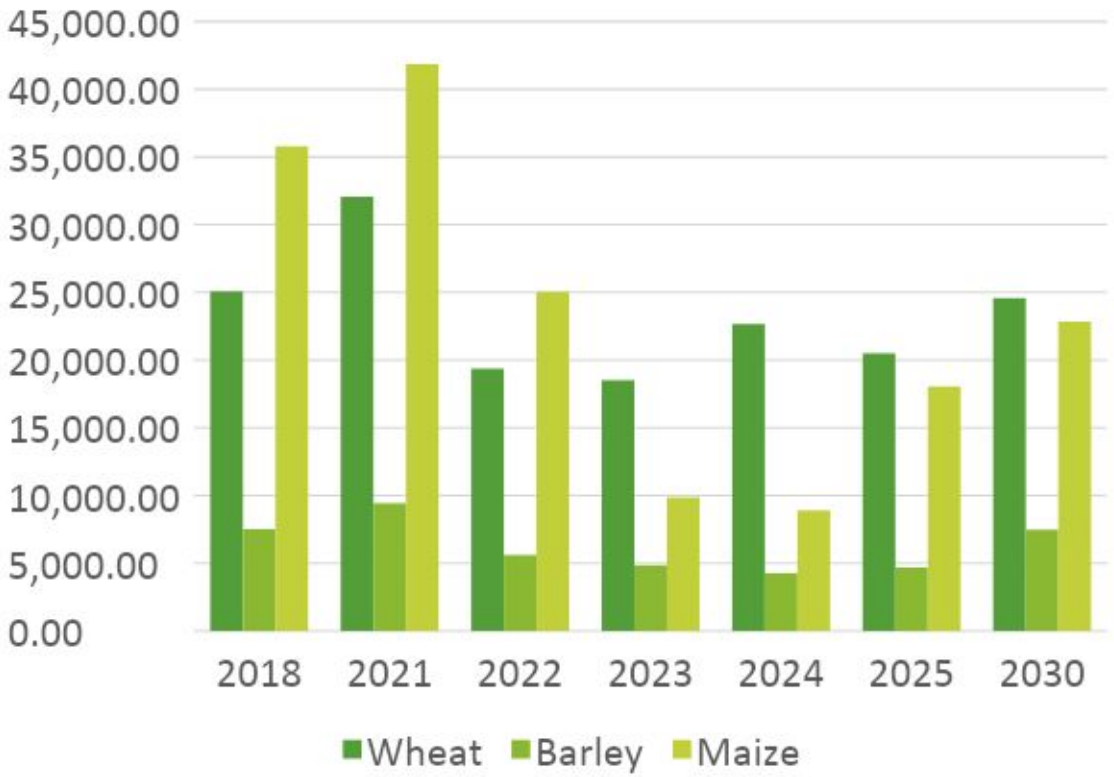
2. The Outlook: Areas of oilseeds

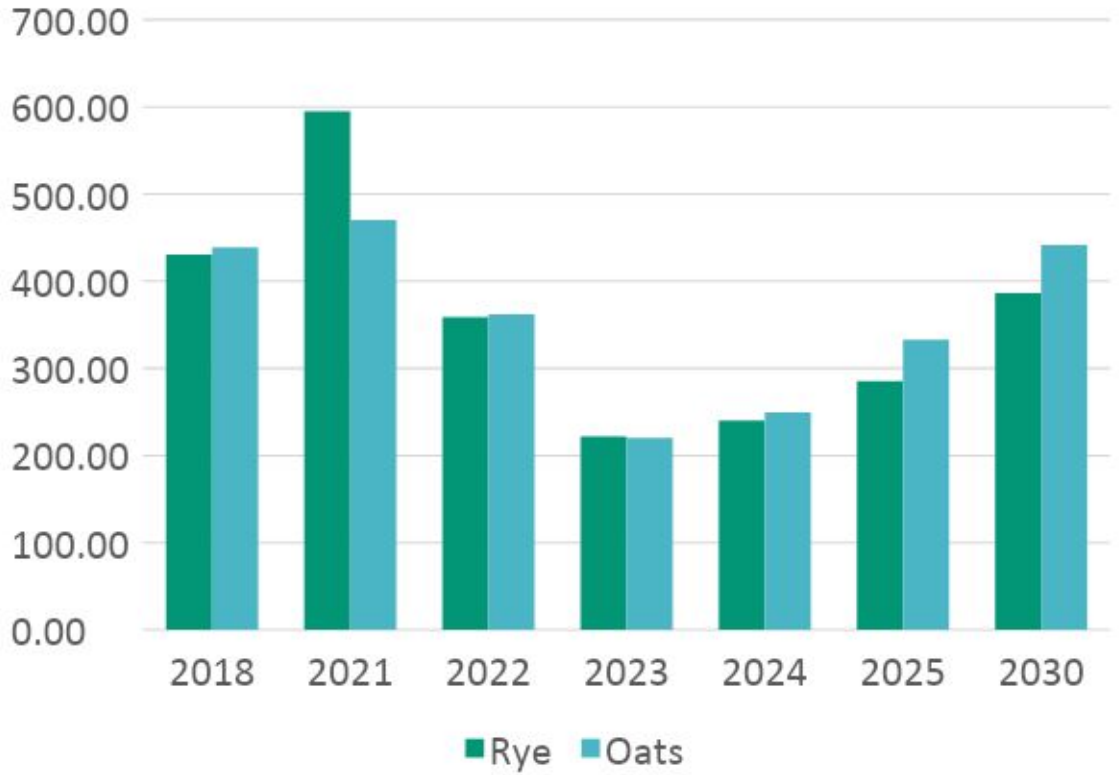


Acreage of oilseeds crops in 2021-2030, thsd ha

Source *SSSU for 2021-2022, own estimation for 2023-2030*

2. The Outlook: Production of cereals

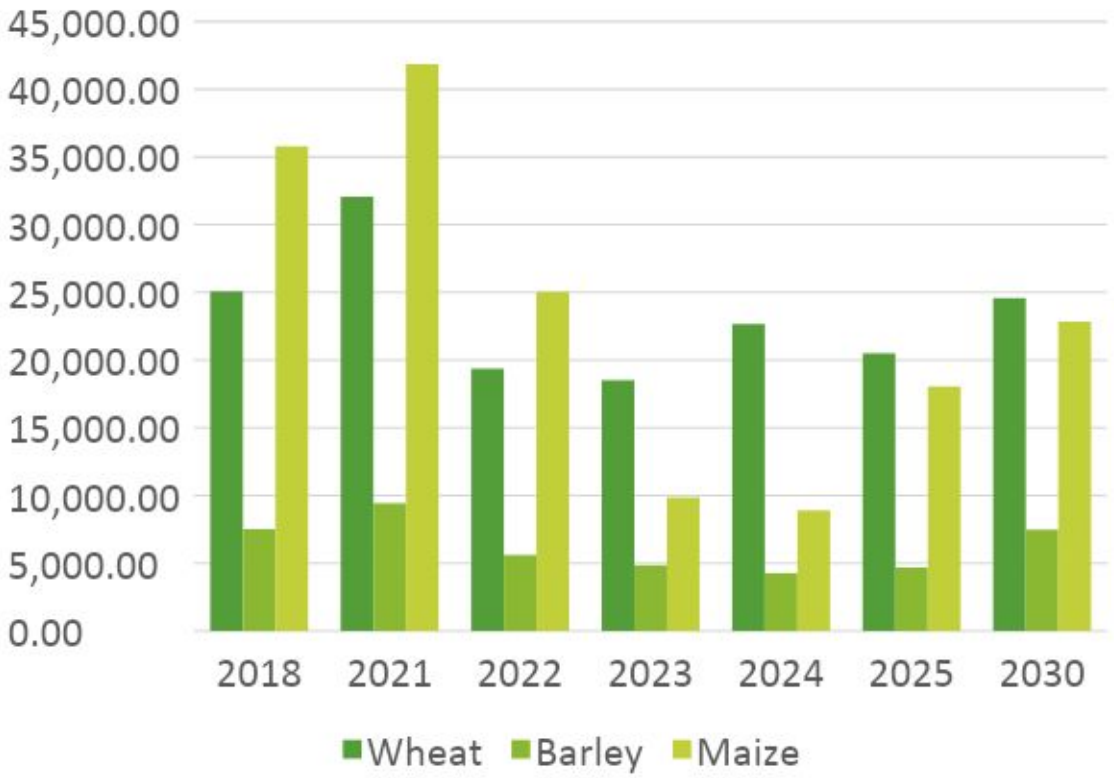




Production of cereals crops in 2021-2030, thsd ha

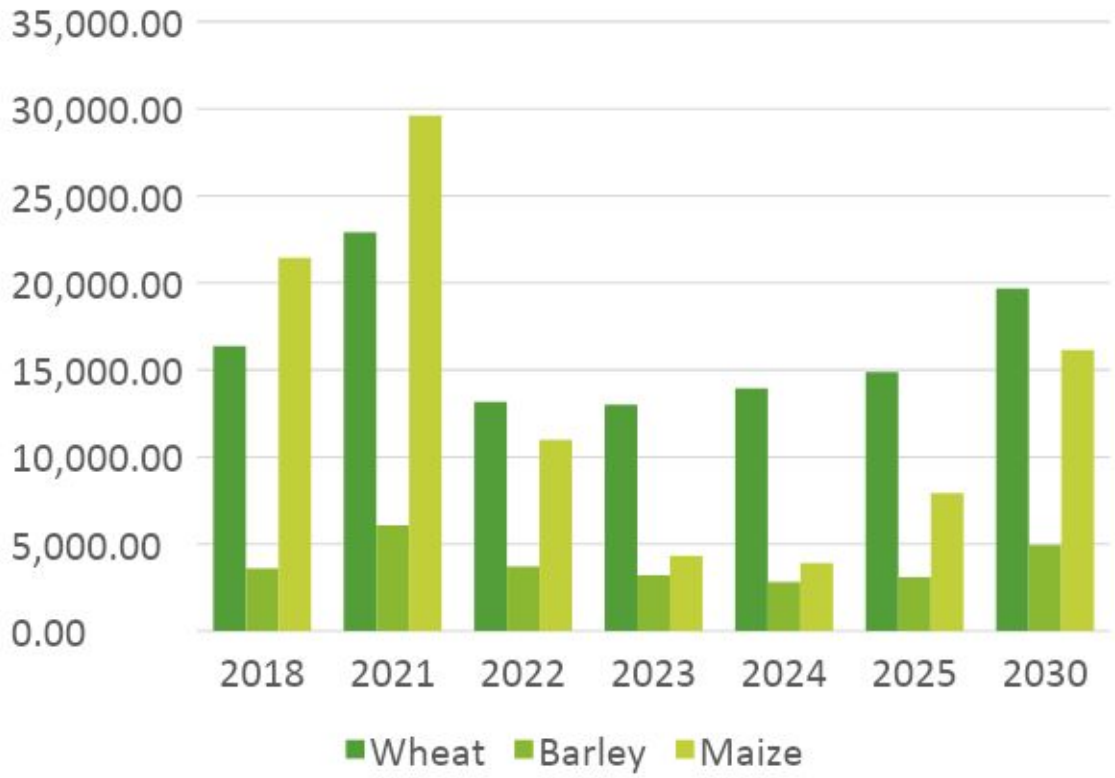
Source *SSSU for 2021-2022, own estimation for 2023-2030*

2. The Outlook: Production and export of cereals



Production, thsd ha

Source *SSSU for 2021-2022, own estimation for 2023-2030*



Export, thsd ha

Source *SSSU for 2021-2022, own estimation for 2023-2030*

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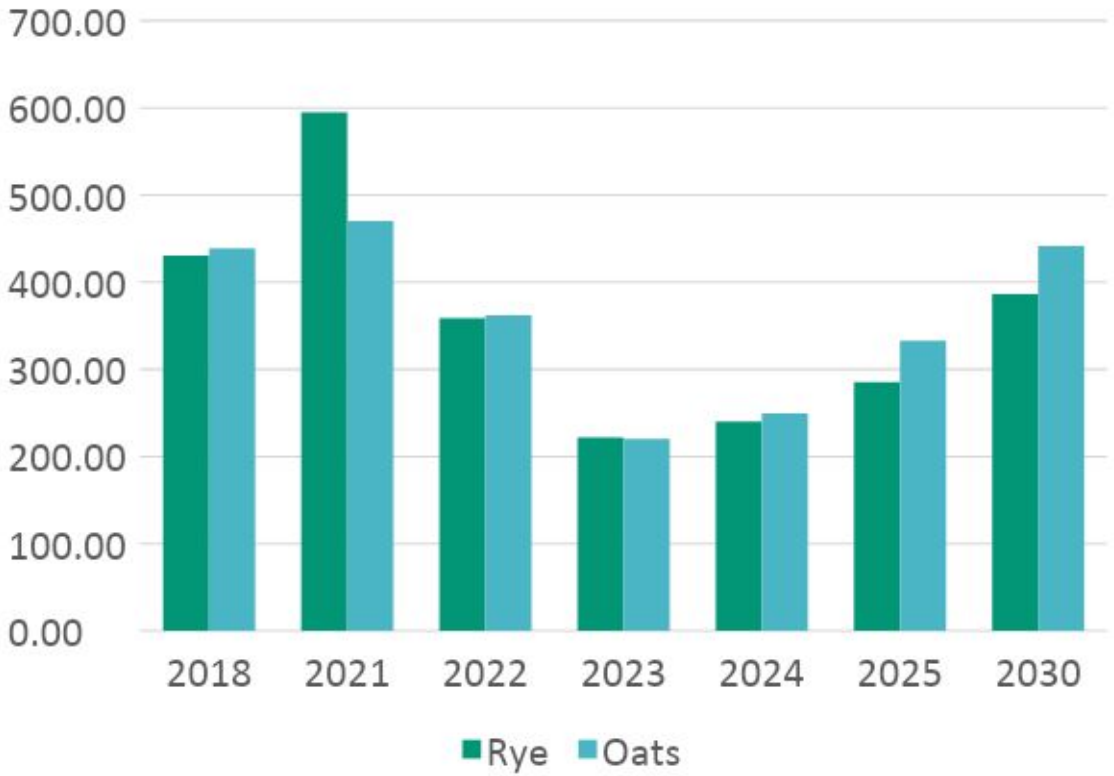
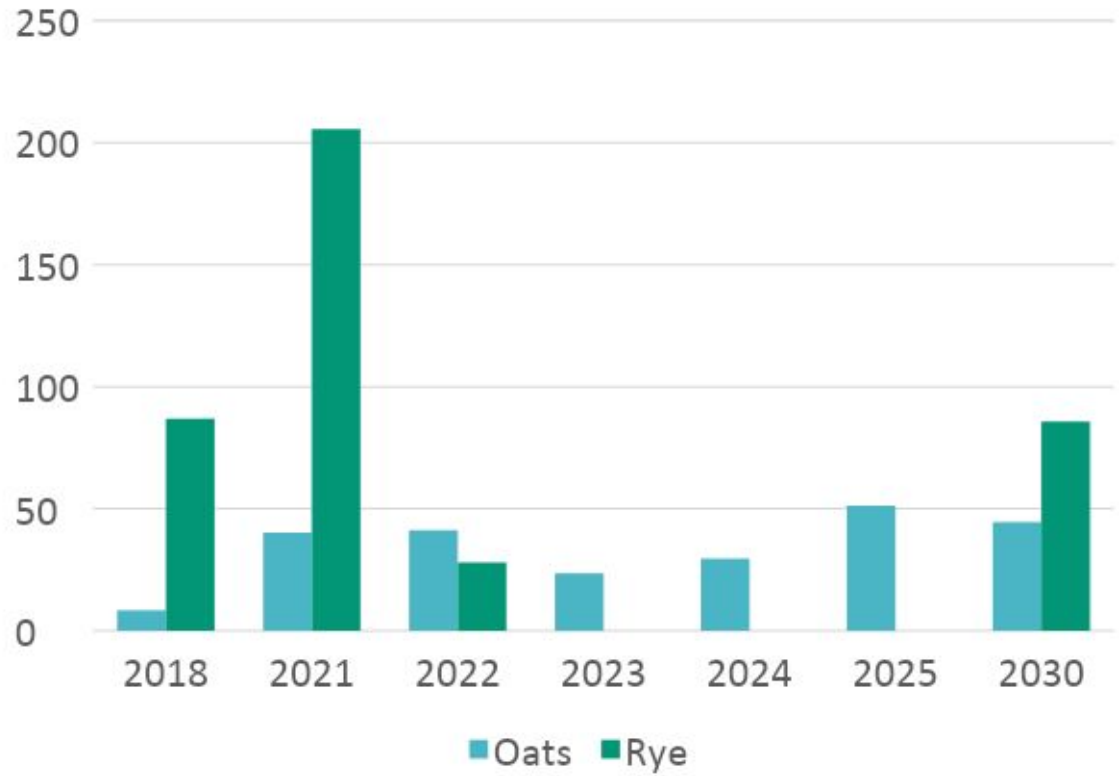


Production, thsd ha

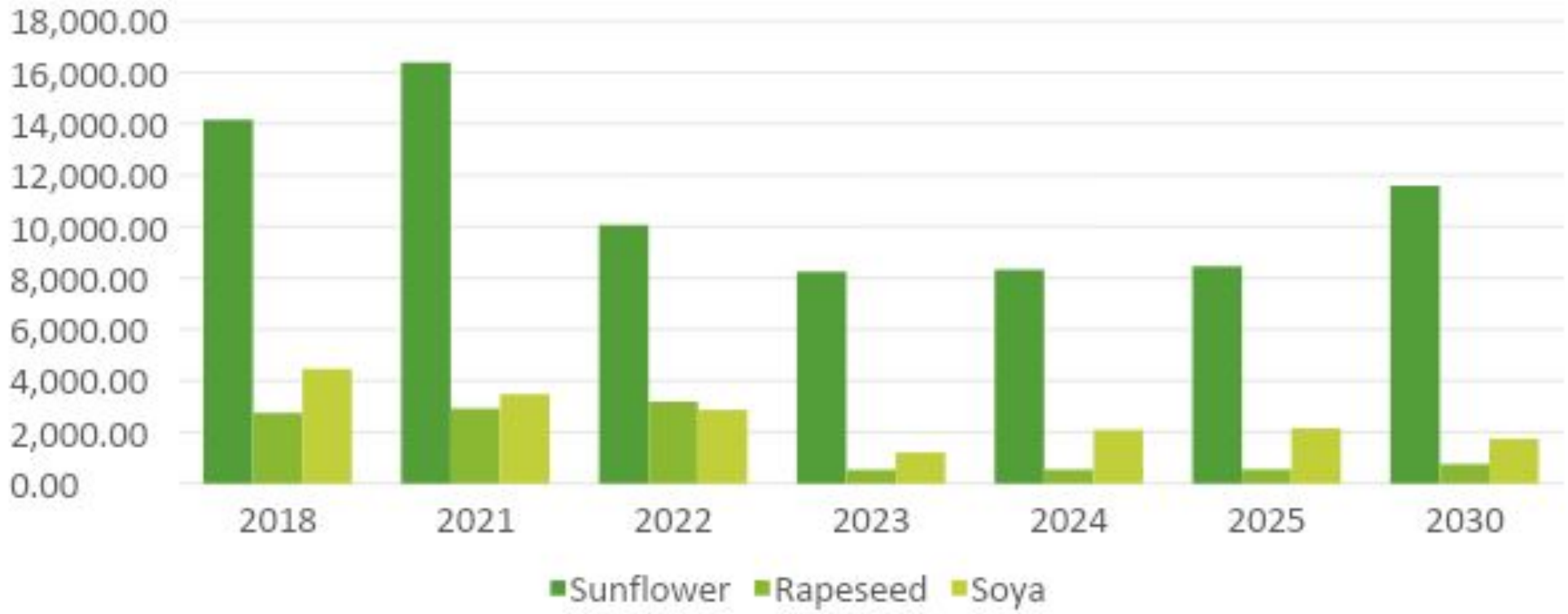
Source *SSSU for 2021-2022, own estimation for 2023-2030*



Export, thsd ha

Source *SSSU for 2021-2022, own estimation for 2023-2030*

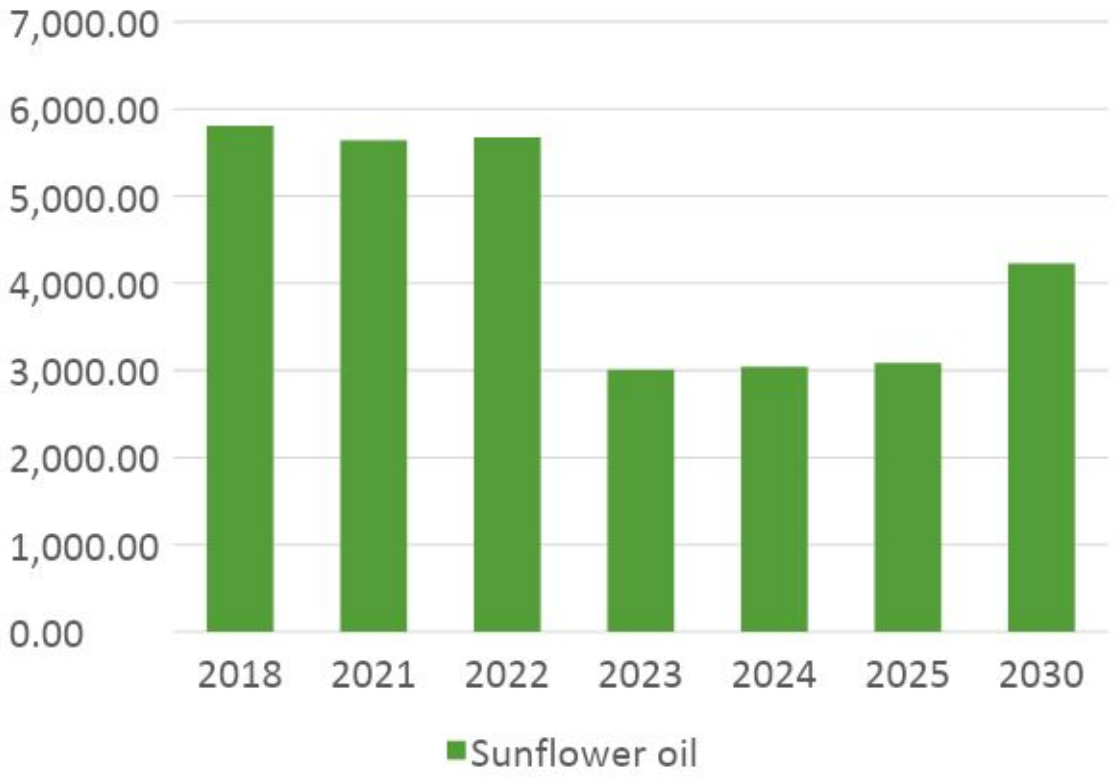
2. The Outlook: Production of oilseeds



Production of oilseed crops in 2021-2030, thsd ha

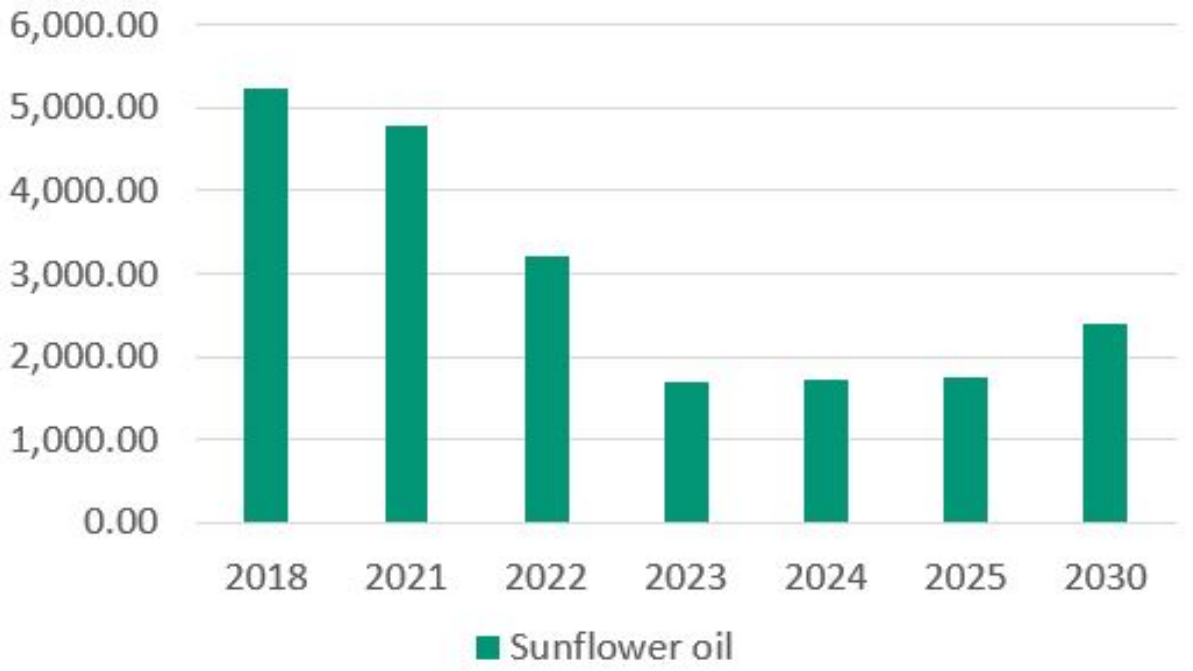
Source *SSSU for 2021-2022, own estimation for 2023-2030*

2. The Outlook: Production and export of sunflower oil



Production in 2021-2030, thsd t

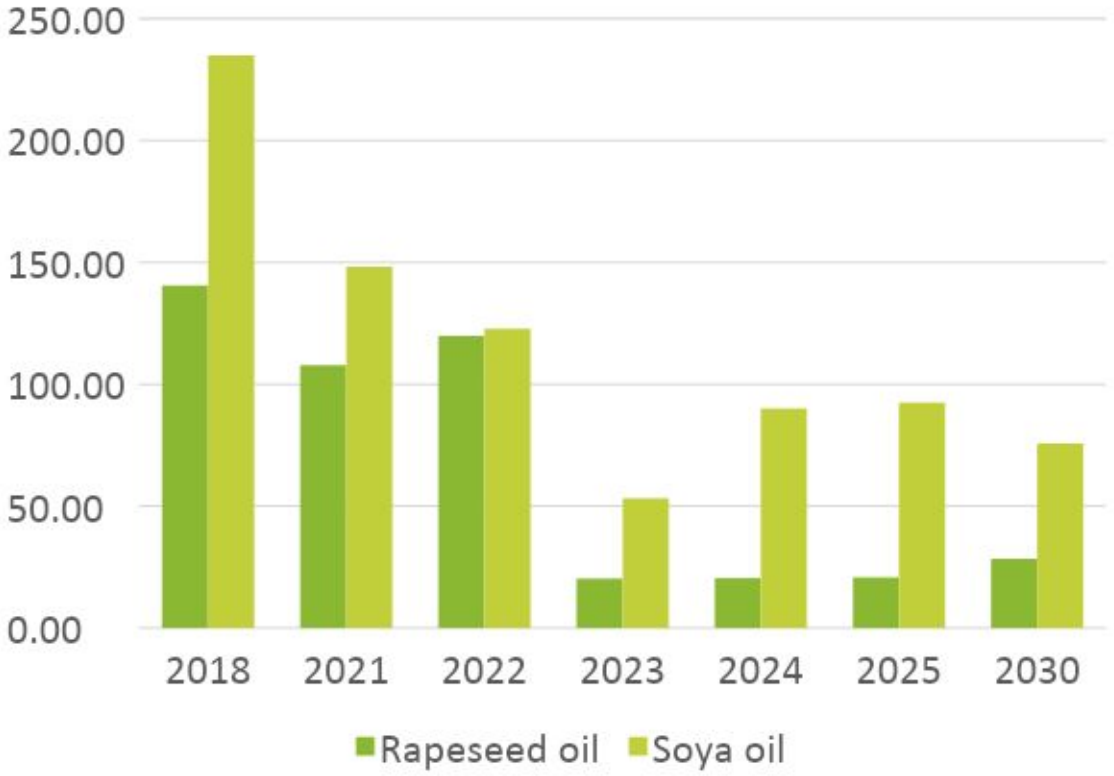
Source *SSSU for 2021-2022, own estimation for 2023-2030*



Export in 2021-2030, thsd t

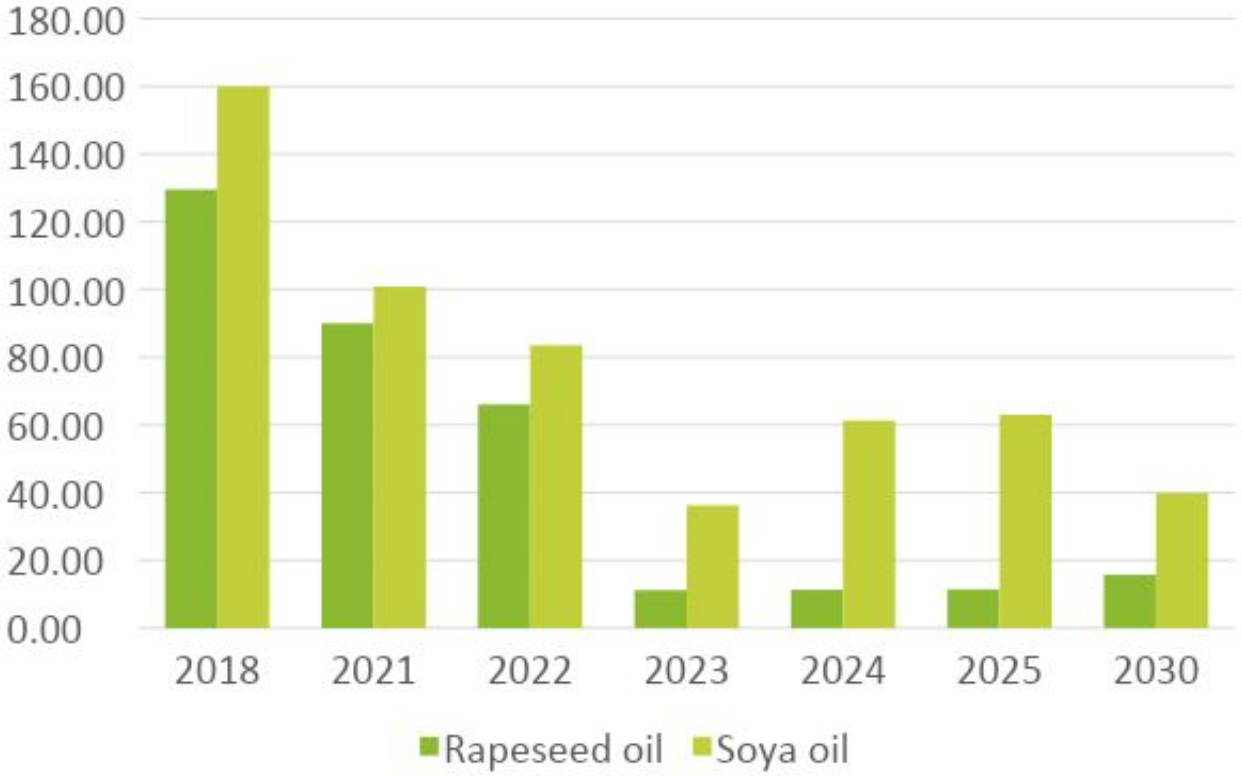
Source *SSSU for 2021-2022, own estimation for 2023-2030*

2. The Outlook: Production and export of other oils



Production of oils in 2021-2030, thsd t

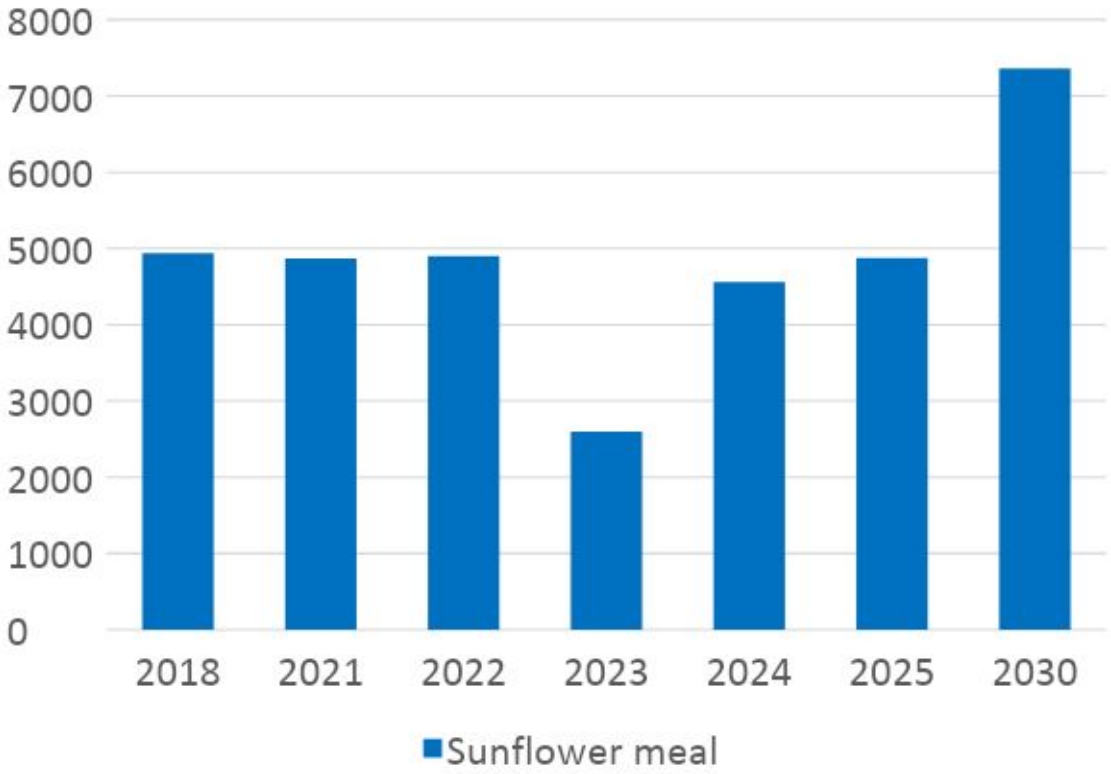
Source *SSSU for 2021-2022, own estimation for 2023-2030*



Export of oils in 2021-2030, thsd t

Source *SSSU for 2021-2022, own estimation for 2023-2030*

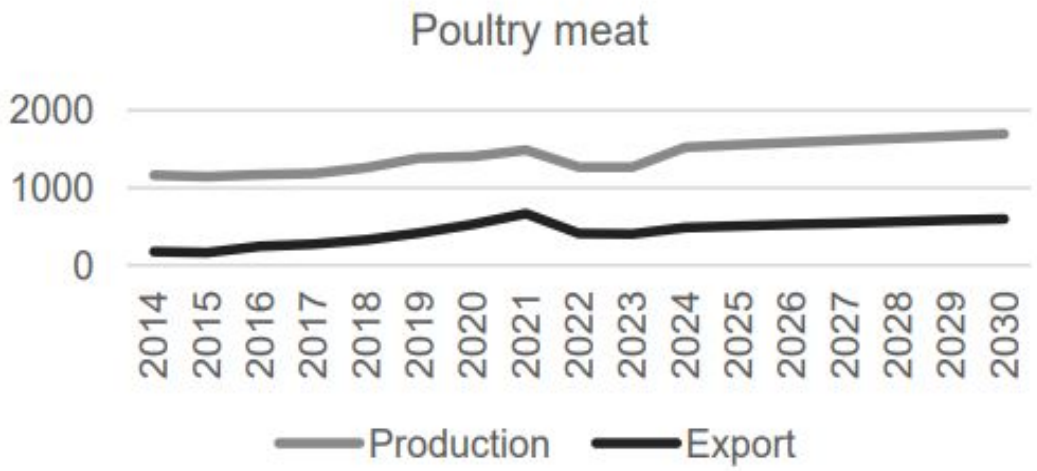
2. The Outlook: Production of meals

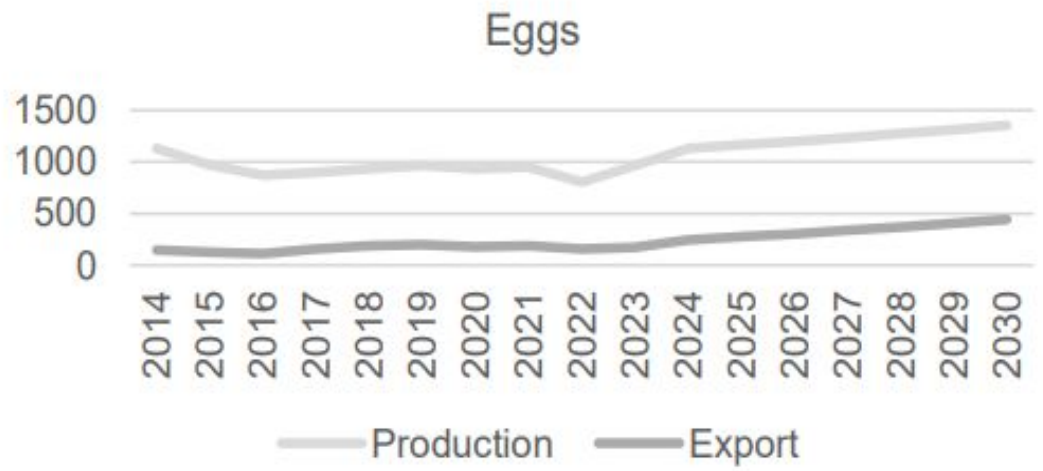


Production of oilseed meals in 2021-2030, thsd t

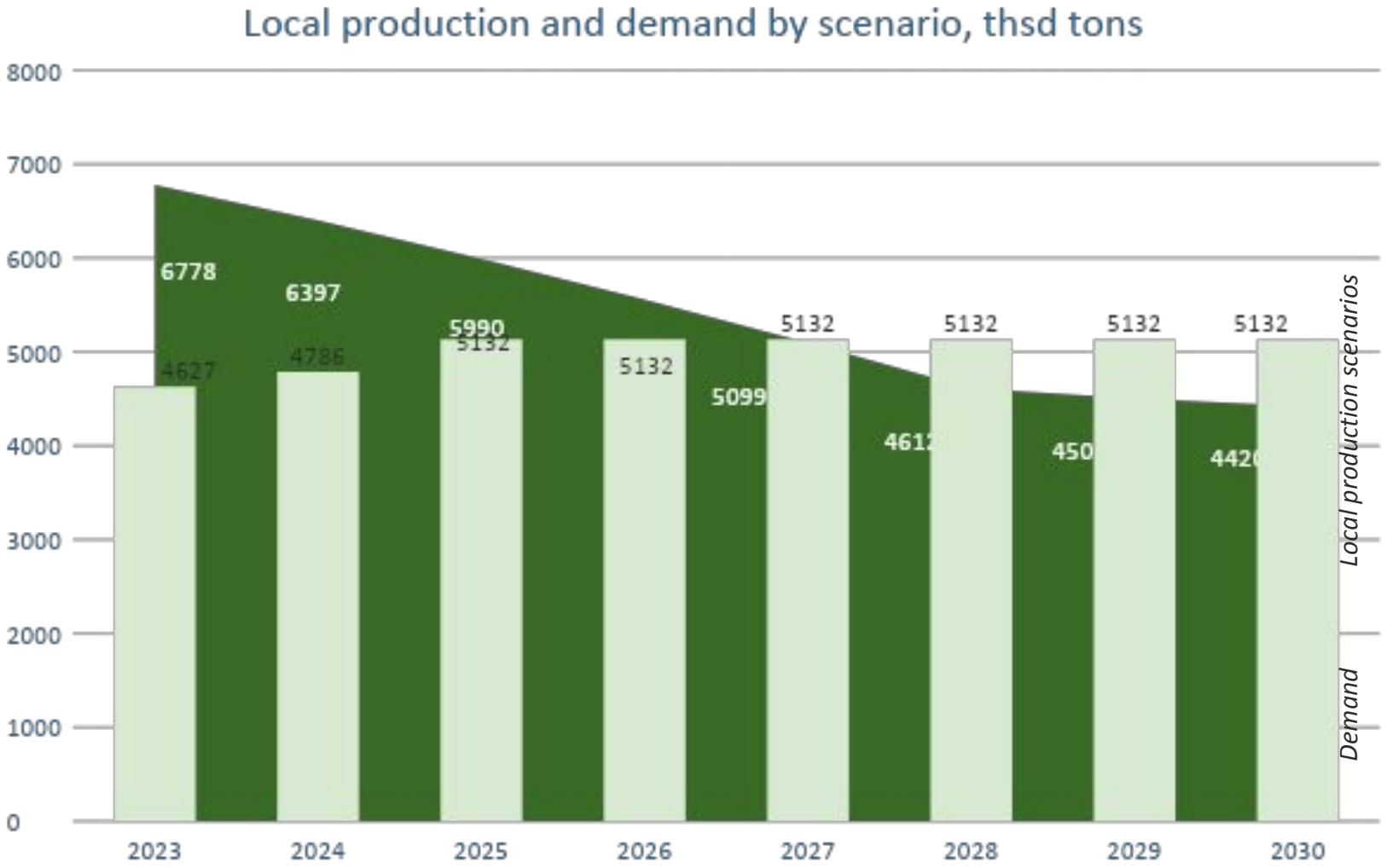
Source *SSSU for 2021-2022, own estimation for 2023-2030*

2. The Outlook: Poultry meat and Eggs



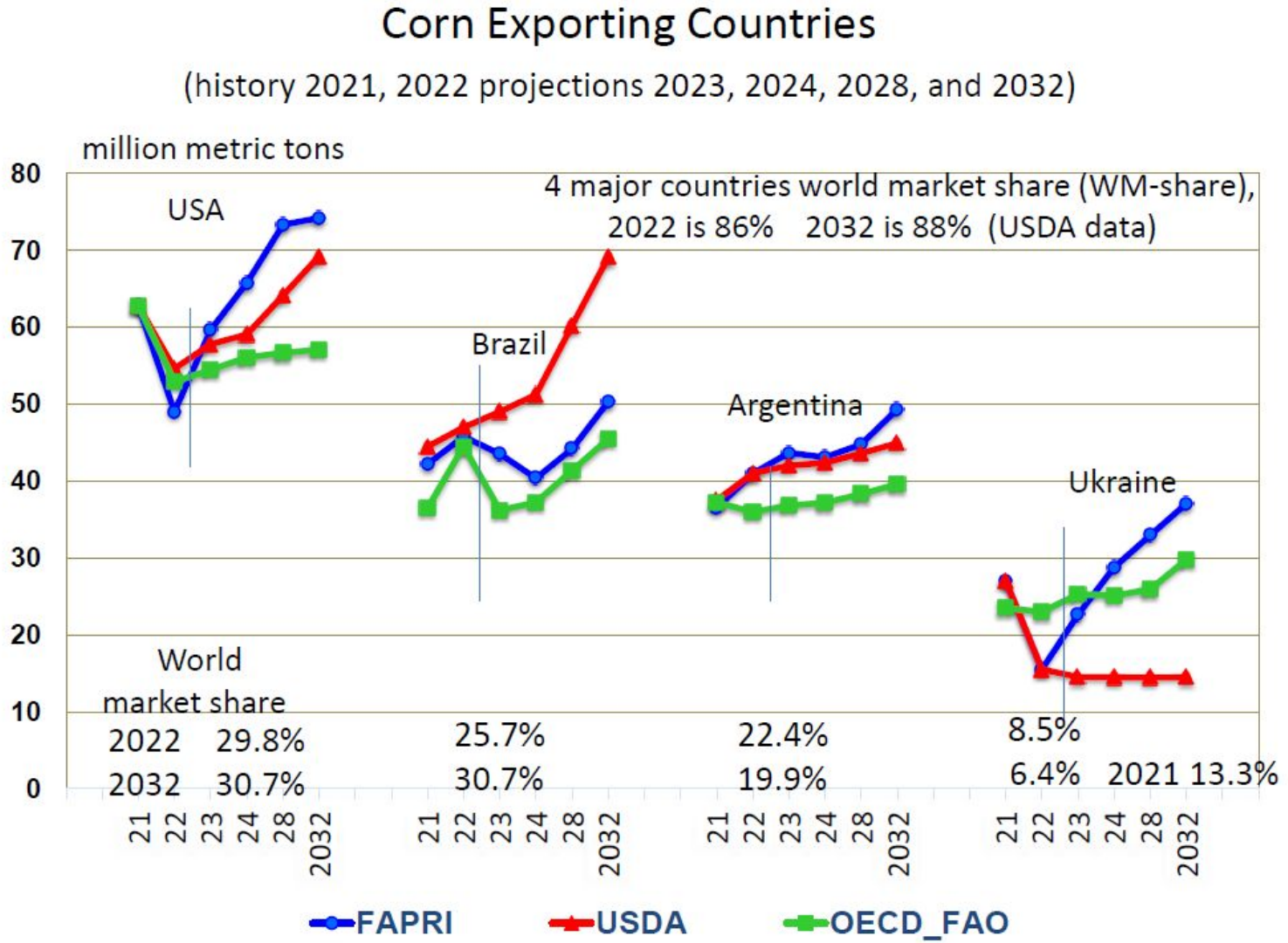


2. The Outlook: Milk



- Production of milk has been steadily declining even before the war (decline from 10.64 million tons produced in 2015 to 8.71 million tons in 2021). During the war, the decline trend continued and is likely to persist.

3. Projections by other institutions



Presentation by Patrick Westhoff for World Outlook Conference 2023

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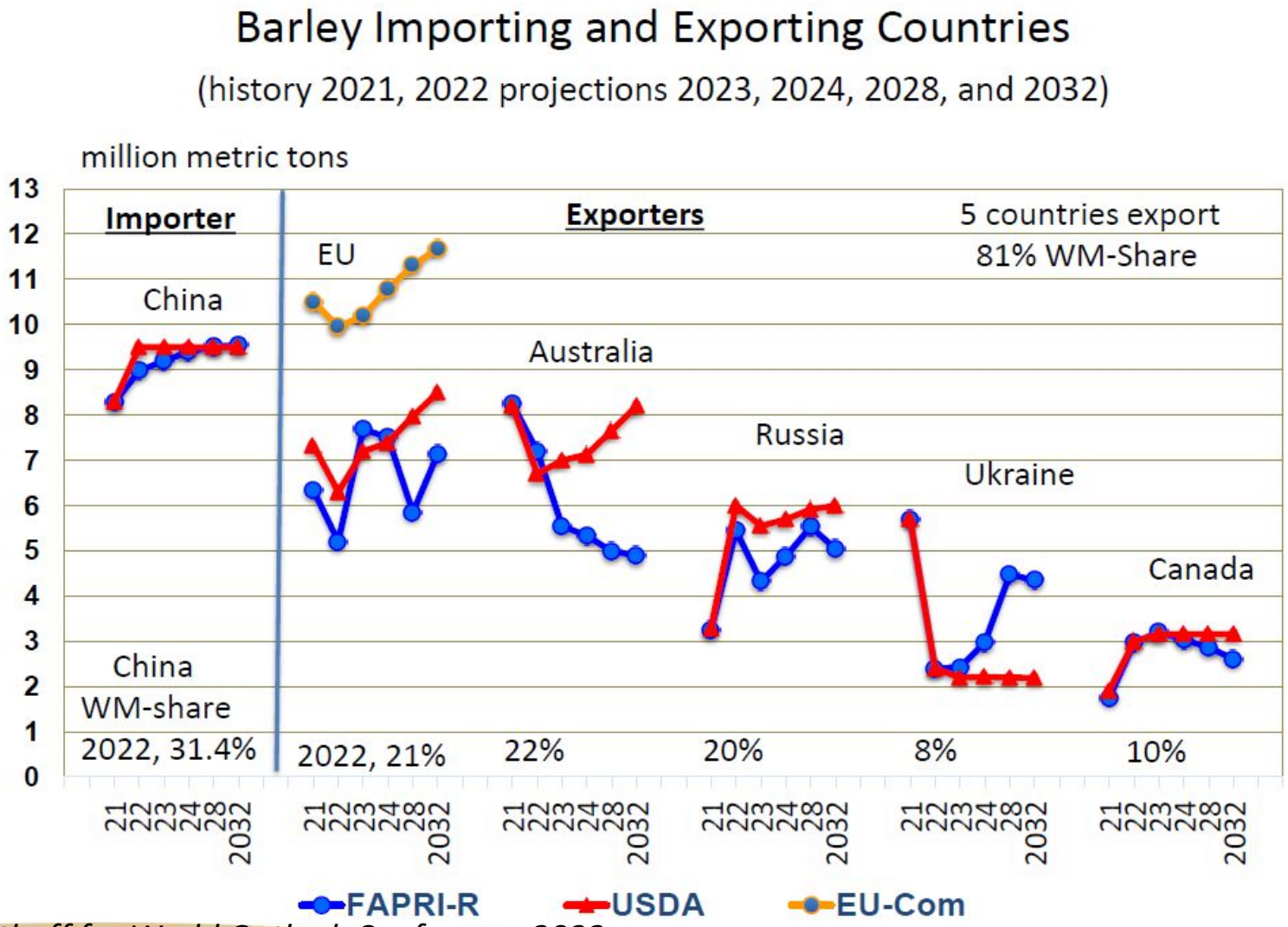

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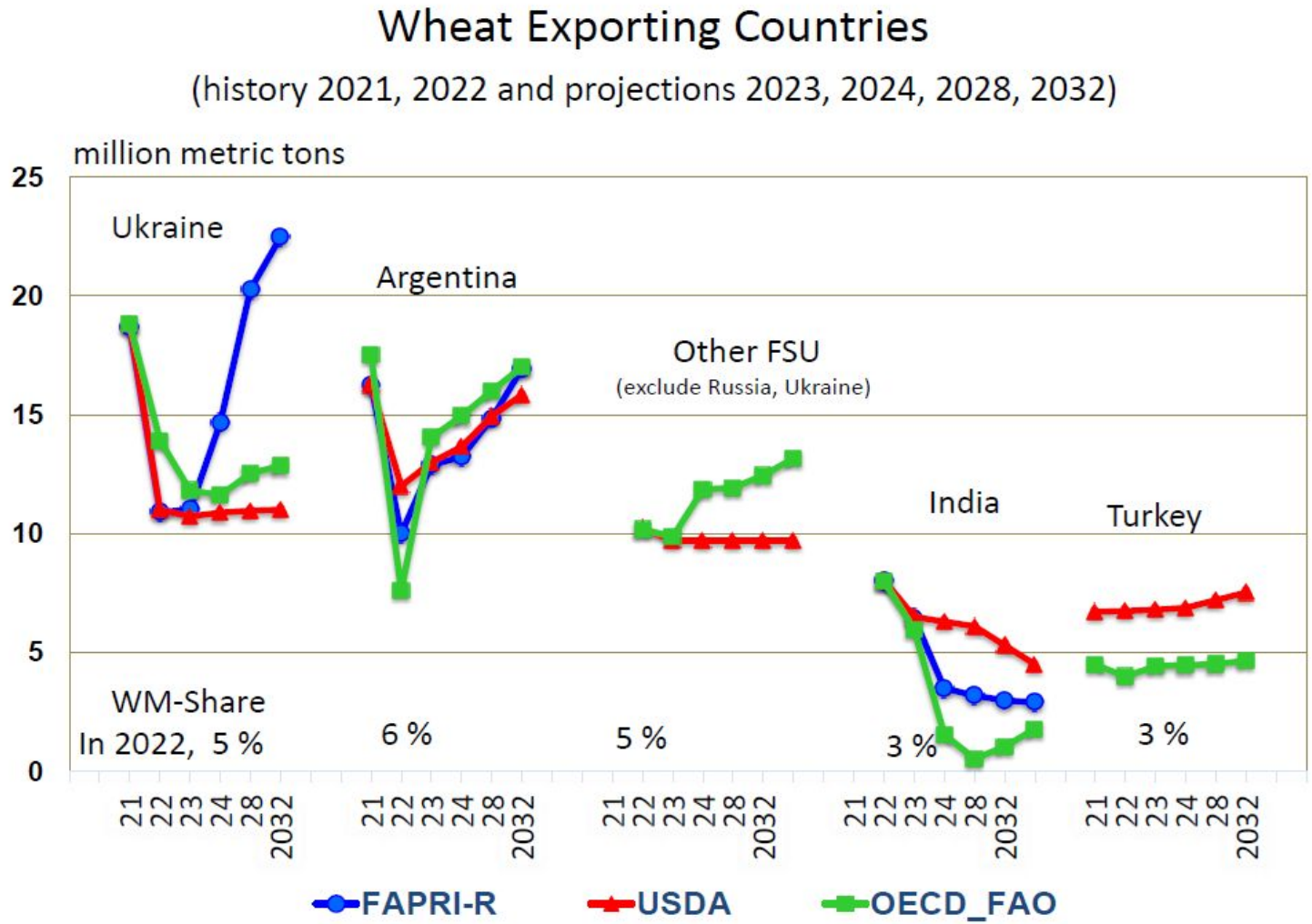


Presentation by Patrick Westhoff for World Outlook Conference 2023

4. Food security in Ukraine

Food Insecurity Markers – key highlights

Marker 1. Location in active Combat Actions. 23% of rural households nationwide are unable to eat healthy and nutritious food, rising to 29% along the front-line regions.

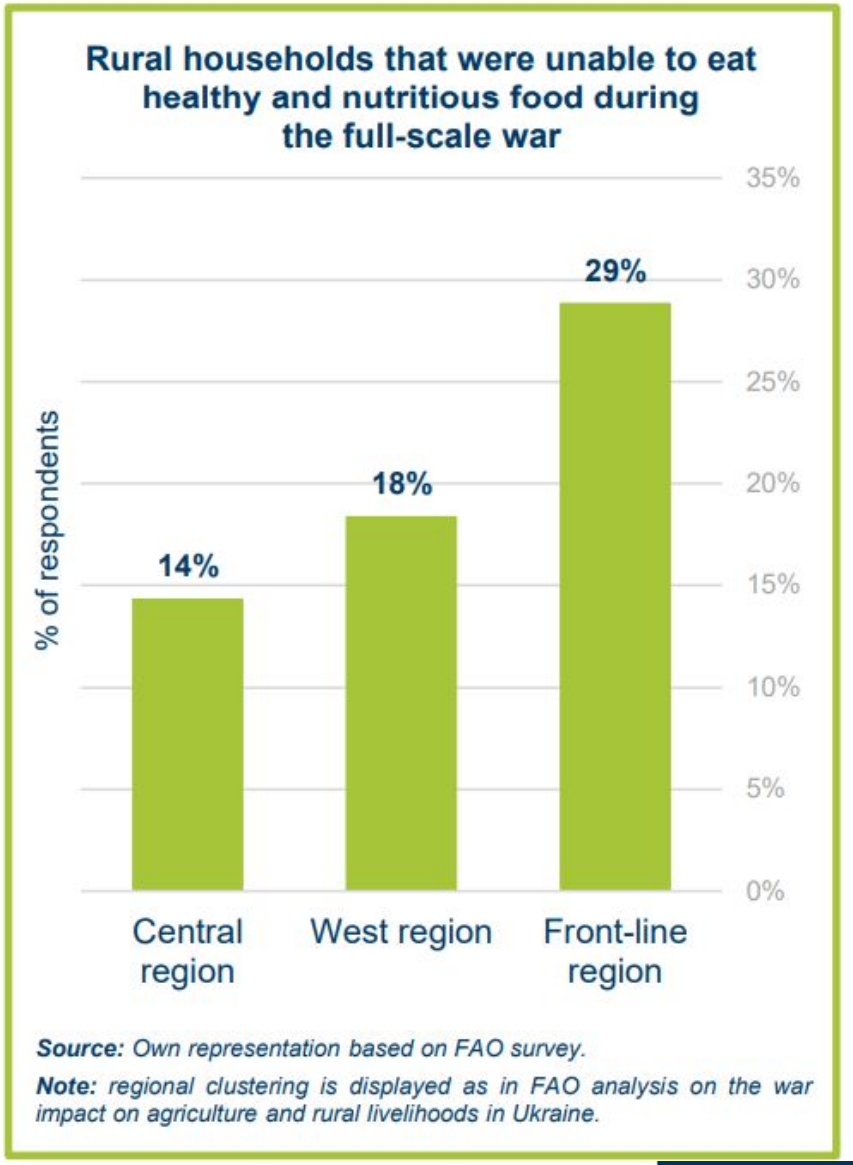
Marker 2. Female-led household. Female-headed households exhibit higher vulnerability to food insecurity: 28% of female-headed households experience problems with having a healthy and nutritious diet.

Marker 3. Socially vulnerable members. Households with socially vulnerable groups had nearly twice the odds of facing insufficient access to an adequate diet compared to households without such members.

Marker 4. Internal Displacement. Displaced households had more than double the odds of experiencing inadequate access to nutritious and healthy diets compared to residents and returnees.

Marker 5. Debt Burden. Households with pre-war debts report higher instances of food problems: 13% had to forge a meal, compared to less than 7% of households without outstanding debts. Access to finance reduces the odds of being exposed to food scarcity by nearly 30%.

Marker 6. Engagement in agriculture positively affects food security. Families engaged in agricultural production demonstrate lower susceptibility to food insecurity: just 5% among farming households had to skip meal compared to 14% of non-agricultural households.



Source: *Own representation based on FAO survey.*

Note: *regional clustering is displayed as in FAO analysis on the war impact on agriculture and rural livelihoods in Ukraine.*

5. Food processing potential?

Table 17. Shares of top-10 categories in Ukraine's processed food exports in 2012 and 2021, %

Product group	2012	2021
Sunflower-seed, safflower or cotton-seed oil and its fractions	50	60
Oilcake from the extraction of vegetable fats or oils	10	12
Soya-bean oil and its fractions	-	3
Oilcake from the extraction of soya-bean oil	-	2
Bread, pastry, cakes, biscuits and other bakers' wares	4	2
Sugar confectionery not containing cocoa	2	2
Chocolate and other food preparations containing cocoa	8	2
Rape, colza or mustard oil and fractions	-	2
Waters and other non-alcoholic beverages	-	1
Fruit juices	2	1
Cheese and curd	5	-
Ethyl alcohol, liqueurs and other spirituous beverages	2	-
Cane or beet sugar and chemically pure sucrose	1	-
Beer made from malt	1	-
Other food products	15	13
Total	**100**	**100**

Source: ITC Trade Map

Note: Top-10 product groups are ranged in descending order for 2021.

https://kse.ua/wp-content/uploads/2023/06/Food-Processing.-Whats-next.pdf

5. Food processing potential?

Key determinants of global competitiveness of food industry subsectors in Ukraine

- Food safety
- Food traceability
- Animal welfare
- European Green Deal
- Carbon Border Adjustment Mechanism
- Ukraine’s competitiveness
- NTM
- TM

https://kse.ua/wp-content/uploads/2023/06/Food-Processing.-Whats-next.pdf

5. Food processing potential?

The direct support measures are not the best option since there is no unambiguous evidence supporting the hypothesis of the positive effect of direct subsidies on the development of the food processing industry !

In the scenario where the policymakers decide to launch such a program anyway – it is important to follow these two principles:

1. The design of the policy should incorporate the policy evaluation component. The policymaker should collect all related information to have an opportunity to analyze the results of the policy.

2. The direct support programs should be proactive and encourage investments and other activities that would not occur without the policy.

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Thank you for your attention

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