



KSE | Center for Food
and Land Use Research

AgroDigest Ukraine

January 2025

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1. Introduction

Agriculture is one of the main sectors of Ukraine's economy, accounting for about 11% of GDP and 40% of exports as of 2021. Favorable climate and rich black soils make Ukraine one of the global exporters of agricultural products, which has been increasing its presence on world markets in recent decades. Before the full-scale war, the country was the leader in exporting sunflower oil, and ranked third and fifth in corn and wheat exports, respectively.

The full-scale war had a strong impact on agriculture, putting Ukrainian farmers on the verge of bankruptcy. The disruption of seaborne exports of agri-food products threatened global food security, as more than 400 million people worldwide depend on Ukrainian grain. In addition to the decline in agricultural production, the full-scale war changed the structure of the industry, which will have a long-term impact on Ukraine's economy and global food security.

In this regard, the main goal of **AgroDigest Ukraine** is the analysis of the development of Ukrainian agriculture both in the pre-war and during the full-scale war periods. First, the report provides an overview of Ukraine's role in world markets. In particular, a number of

Russian narratives about Ukraine's low contribution to global food security are verified and debunked using open data sources. The rest of the report describes structural changes in major agri-food sectors, emphasizing the role of short-term war-related shocks as well as long-term trends rooted in the pre-war period. This analysis is accompanied by forecasts of the further development of Ukrainian agriculture, carried out by the Center for Food and Land Use Research at Kyiv School of Economics (KSE Agrocenter).

Another part of the digest is devoted to the development of local farmland market. Despite the war-related losses, the land market demonstrated growth during the wartime with the opening of land sales market for legal entities in 2024. The analysis of land reform is followed by the overview of current state support policies in agri-food sector. Such support is shaped in respect to the post-war recovery needs. In addition, several reforms for the sector are defined by the Ukraine Facility Plan. The primary goal of these reforms is to align the sectoral legislation and standards with the EU acquis, which will contribute to the entire process of the European integration of Ukraine.

2. Ukraine's contribution to global food security

Highlights:

- In 2021, Ukraine was a leading supplier of sunflower oil, accounting for about half of world exports, the third largest corn exporter, and the fifth largest wheat exporter. In 2022 and 2023, despite the full-scale war, this ranking remained the same for sunflower oil and corn, and for wheat Ukraine was the sixth largest exporter.
- Around 80% of Ukraine's agri-food exports are grains, oilseeds, and unrefined vegetable oils, and 20% are processed food products. The full-scale war decreased the share of grains in agri-food exports.
- The main destinations for agri-food exports are Asian countries and MENA region. After the start of the full-scale war, these exports re-oriented to more close destinations. However, the launch of grain corridors in the Black Sea allows Ukraine to recover own presence on distant markets in Asia.
- The war-related disruption of agricultural exports from Ukraine caused spikes of global grain prices threatening food security in the low-income countries.
- Since the middle of 2022, global agricultural prices demonstrated steady decline amidst favorable climate in grain production regions and slowdown of global economy; this allowed Russian propaganda to create narratives about the insignificance of Ukrainian agricultural exports for the global food security.
- Around 20% of Ukraine's grain exports go to lower-middle-income and low-income countries.
- Although Russian origin partially replaces Ukrainian grain on the traditional markets, it is not related to the low-income countries in the sub-Saharan region.
- Ukrainian grain exports to neighboring EU countries have limited impact on the profitability of EU farmers, as European grain prices are fully in line with global trends.

Ukraine remains a key supplier of agricultural products, ensuring global food security. In 2021 (the last year before the full-scale war), the country

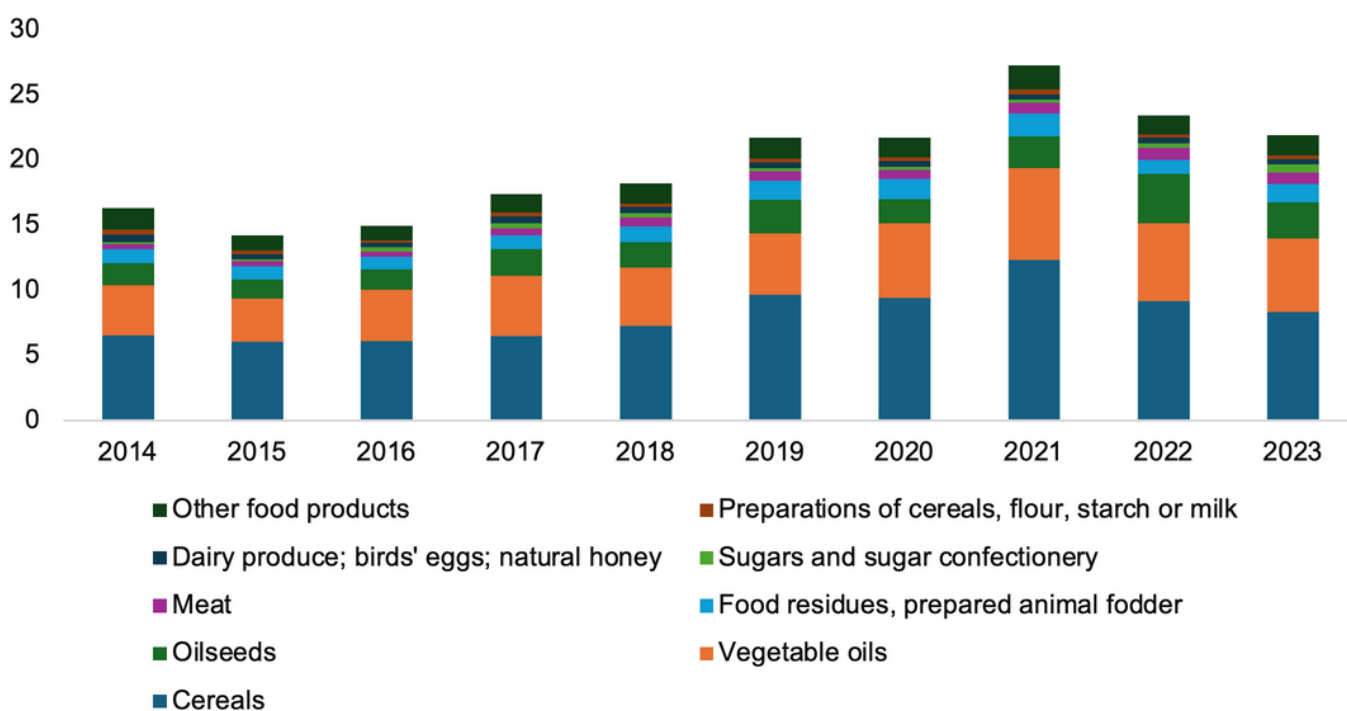
was a **leading supplier of sunflower oil**, accounting for about half of world exports, the third largest corn exporter, and the fifth largest wheat exporter. In

2022 and 2023, despite the full-scale war, this ranking remained the same for sunflower oil and corn, and for wheat Ukraine was the sixth largest exporter.¹ According to the estimates of KSE Agrocenter, more than **400 million people** worldwide depend on Ukrainian grain in 2022.²

Ukraine's agri-food exports is represented mostly by raw commodities

such as grains and oilseeds, as well as unrefined vegetable oils (Figure 1). The share of processed food products in total exports of agri-food products over the past decade has not exceeded 20%. The full-scale invasion changed the structure of agri-food exports; the share of bulky grains declined amidst the restriction of sea exports, while the share of oilseeds and processed food products increased.

Figure 1. Agri-food exports from Ukraine, bln. USD



Source: ITC Trade map

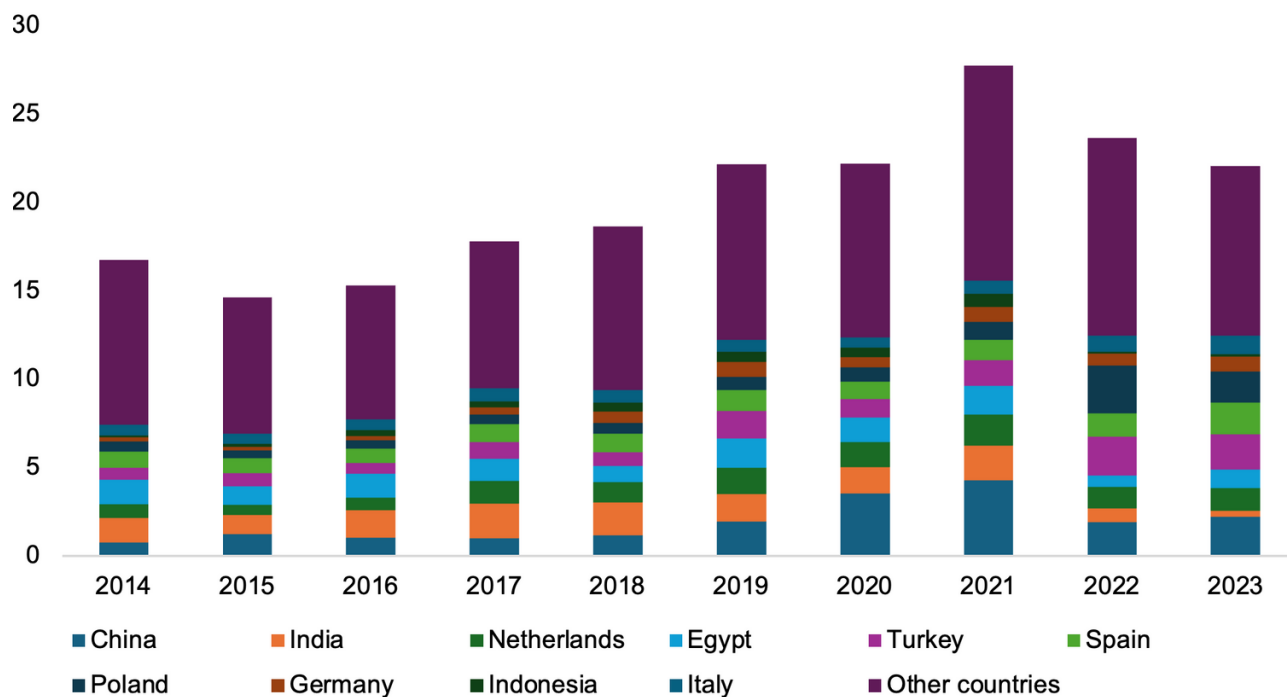
Exports of agricultural raw commodities are very diversified geographically; the 10 largest importing countries account for just about half of export volumes (Figure 2). The main importers are China, India, Turkey, and Egypt, which are dependent on the supply of Ukrainian grain. At the same time, exports of

processed food products are more geographically specialized; the main importers are India, China, and the EU countries (Figure 3). For both categories, the full-scale war partially redirected export flows from Asian markets to more close destinations (the EU countries, MENA region).

¹ <https://apps.fas.usda.gov/psdonline/app/index.html#/app/home>

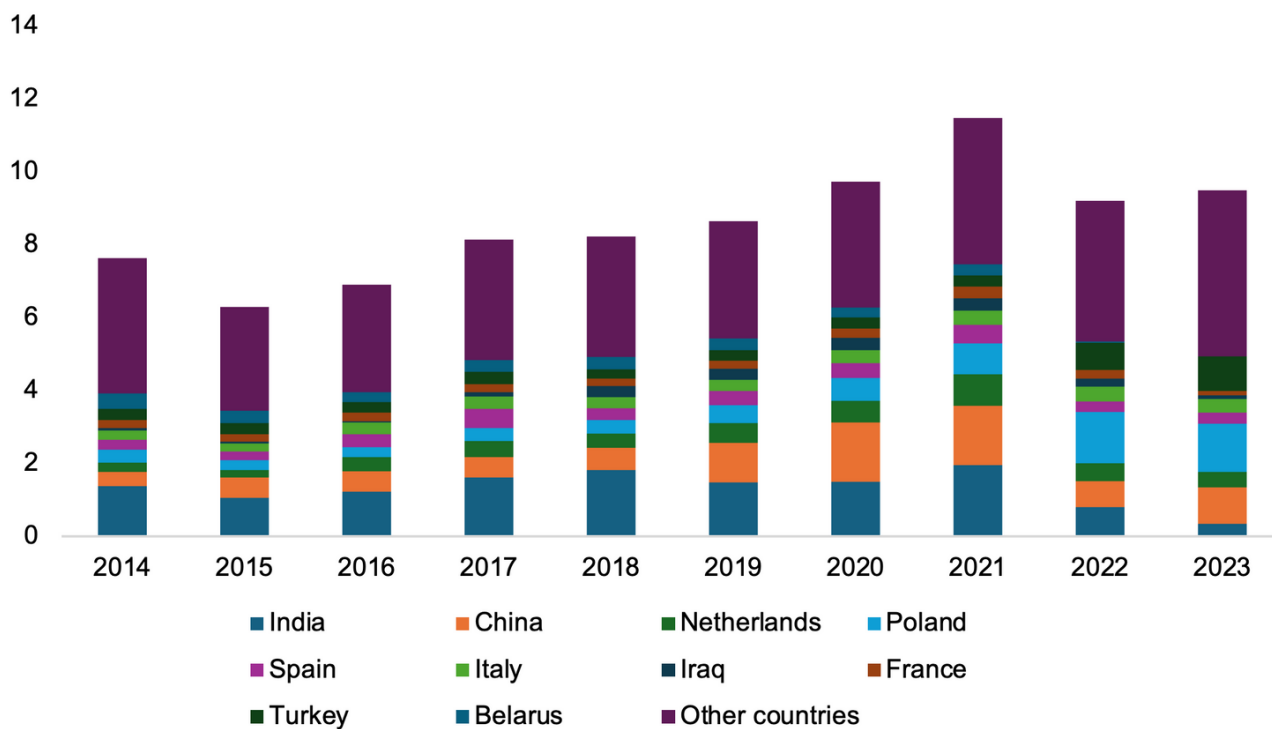
² <https://kse.ua/ua/about-the-school/news/russian-invasion-in-ukraine-could-threaten-global-food-security-and-starve-hundreds-of-millions-globally/>

Figure 2. The main importers of raw agricultural commodities from Ukraine, bln. USD



Source: ITC Trade map

Figure 3. The main importers of processed food products from Ukraine, bln. USD



Source: ITC Trade map

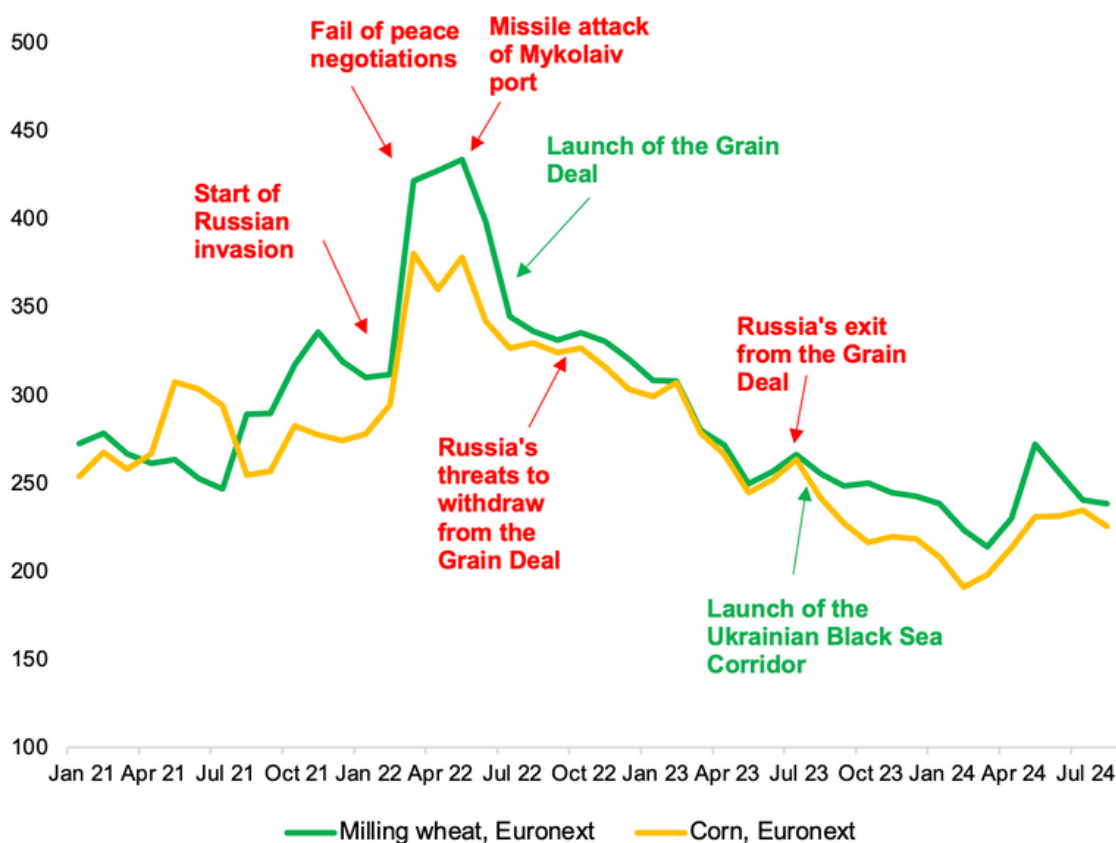
The full-scale Russian invasion to Ukraine led to the blockade of sea ports and therefore to the disruption of agricultural trade flows and threats to food security in low-income countries. At the same time, Russian propaganda used a number of **narratives** to discredit Ukraine's role in providing global food security. In this respect, KSE Agrocenter aims to debunk these narratives through the fact-checking based on open data use.

Narrative 1. Ukraine's role in global food security is exaggerated

Fact check:

The assertion that Ukrainian grain is insignificant for global food security is far from the truth. The critical role of Ukraine in global food security was underscored when futures grain prices rose by more than **100 USD/t (around 30%)** after the start of Russia's full-scale invasion. As indicated on Figure 4, political instability and hampering Ukrainian grain exports induced volatility and growth of global grain prices.

Figure 4. The response of global grain prices to the war-related events in Ukraine, USD/t



Source: Authors' analysis based on Euronext stock exchange prices

Note: Negative market news are marked by red, positive market news are marked by green.

Another argument of Kremlin was that **global grain prices demonstrated the downward trend since mid-2022** even during the periods of interruption of Ukrainian sea exports. There two main explanations of this dynamics and both of them are not related to Ukraine. First, the slowdown of global economy in 2023 limited the world demand on agricultural commodities.³ Second, the importance of Ukrainian grain reduced amidst **the growth of global grain production**, which reached the record high in 2023.⁴ This growth, however, was just partially predetermined by the expansion of planting areas throughout the world. Indeed, the main reason of large harvest was the **reduction of climate risks** in the major grain-producing counties (mostly in South America).⁵ Therefore, favorable weather events in two

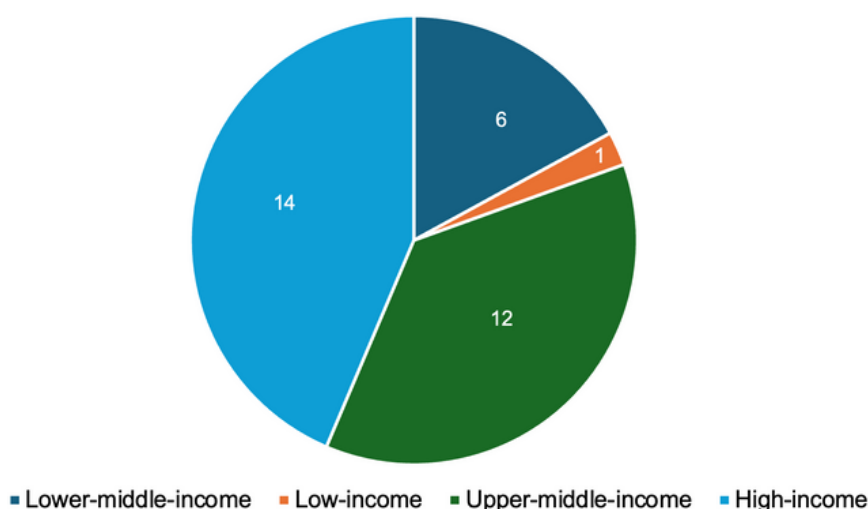
particular seasons (2022/23 and 2023/24) supported the narratives about the low contribution of Ukrainian grain to the global food security.

Narrative 2. Ukraine does not supply grain to low-income countries

Fact check:

Contrary to the belief that Ukraine has not supplied grain to low-income countries during the Grain Deal, the data shows that Ukraine has indeed catered to these nations, albeit to a lesser extent than high-income or upper-middle-income countries. This discrepancy can be attributed to the higher demand from wealthier nations. However, Ukraine has not neglected lower-income countries. Within the Grain Deal, Ukraine exported around **6 million tons** of grain to lower-middle income countries and **1 million tons** to low-income countries (Figure 5).

Figure 5. Destinations of Ukrainian agricultural commodities transported under the Grain Initiative (August 2022 – June 2023), mln. tons



Source: UN Black Sea Initiative Data

³ <https://www.un.org/en/desa/5-things-you-need-know-about-global-economy-2023>

⁴ <https://www.world-grain.com/articles/18540-igc-sees-record-total-grains-output-in-2023-24>

⁵ <https://www.dtnpf.com/agriculture/web/ag/blogs/south-america-calling/blog-post/2023/09/01/el-nino-likely-bring-good-weather-2>

Furthermore, Ukraine has committed to humanitarian efforts, delivering more than **0.7 million. tons** of wheat to low-income African countries under the **«Grain from Ukraine» initiative**, part of the UN World Food Programme.

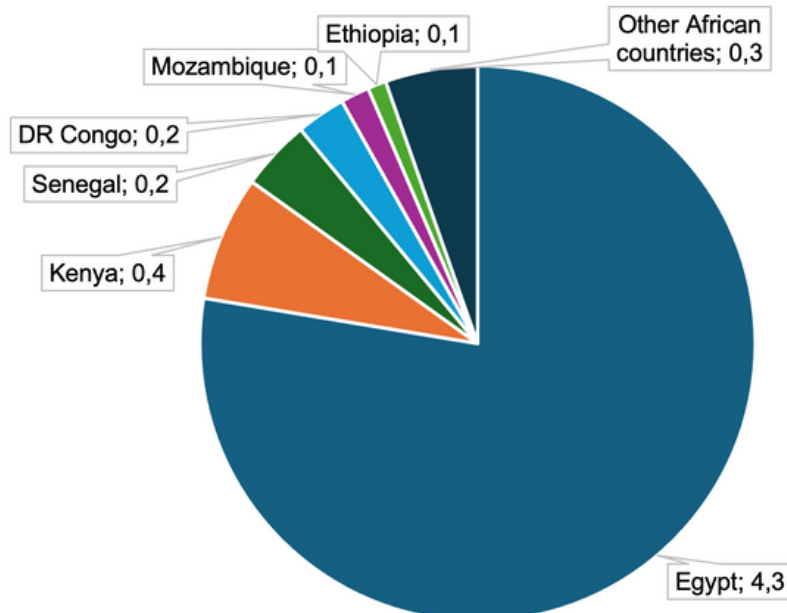
Narrative 3. Ukrainian grain export to the low-income countries can be easily replaced by the Russian origin

Fact check:

The analysis of KSE Agrocenter based on ITC Trade Map and Logistics OS confirms the **partial substitution** of

Ukrainian wheat by Russian grain in 2022 on the traditional markets (Turkey, Egypt, Indonesia).⁶ However, this trend was not related to low-income African countries (in the sub-Saharan region). According to ITC Trade Map, in 2022, Russia exported **5.5 million. tons of wheat** to African countries, with Egypt being the largest importer, accounting for 78% of these volumes (Figure 6), while the share of low-income states in the sub-Saharan region was just about 20%. Overall, the share of these countries in total Russian wheat exports did not exceed **5%** for the observed period.⁷

Figure 6. Russian wheat exports to Africa by country in 2022, mln. tons



Source: ITC Trade Map

⁶ https://kse.ua/wp-content/uploads/2022/08/CHi-mozhna-legko-zaminiti-ukrai--nsku-pshenitsyu_-Analiz-torgovelnih-potokiv.pdf

⁷ <https://kse.ua/wp-content/uploads/2023/10/Debunking-Russian-Narratives-Around-the-Black-Sea-Grain-Initiative.pdf>

Narrative 4. The growth of Ukrainian grain export to the neighboring EU countries brings losses to the local farmers

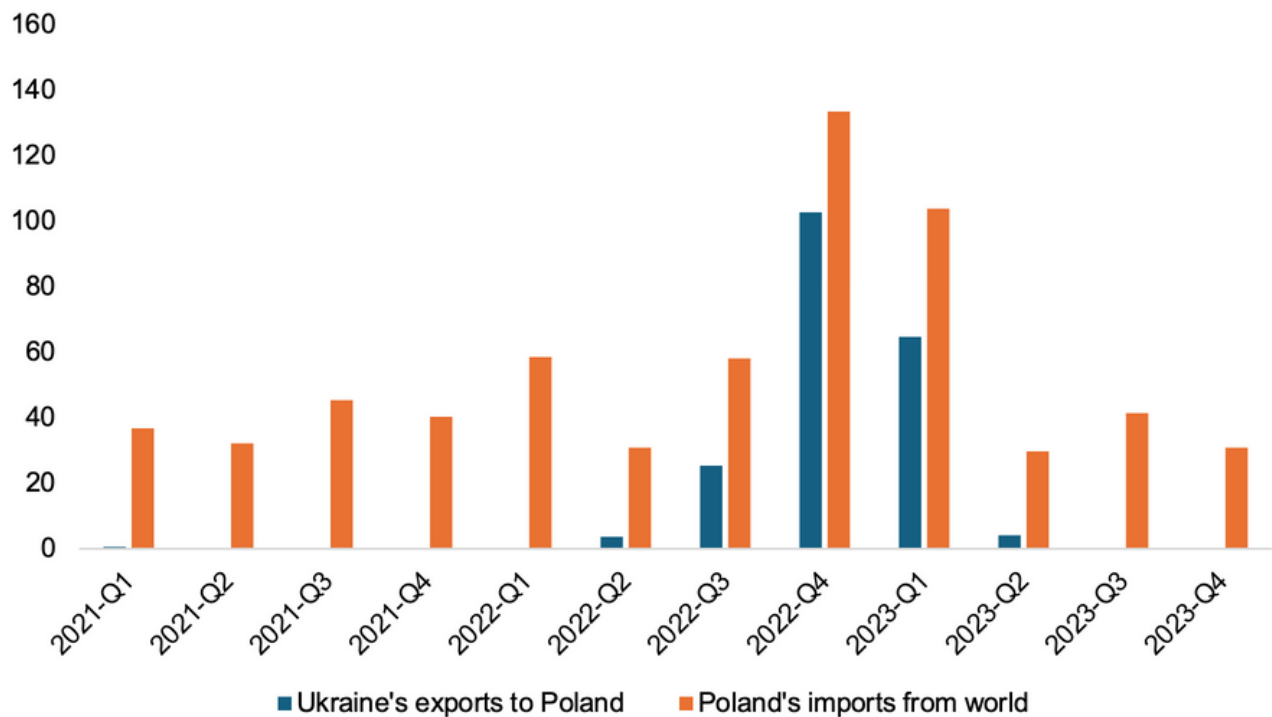
Fact check:

There are numerous evidences that strikes of the EU farmers against imports of Ukrainian grain were actively supported by Russian propaganda to undermine the political and trade relations between Ukraine and the EU.⁸ The idea that Ukrainian grain creates dumping on the European market was

also actively used by the local farmers' lobby to strike against the strict environmental regulations imposed in the framework of the EU Common Agricultural Policy.⁹

There are two main counterarguments why the supply of Ukrainian grain did not cause dampening in the neighboring EU countries. First, these countries **continued importing** grain from other sources (see example for Poland on Figure 7), while essential part of Ukrainian grain was transited to other countries.¹⁰

Figure 7. Poland wheat imports, mln. USD



Source: ITC Trade Map

⁸ <https://www.politico.eu/article/europe-farmer-protest-russia-war-propaganda/>
⁹ <https://www.euronews.com/2024/03/16/eu-to-revise-agricultural-policy-in-response-to-farmers-protests>
¹⁰ <https://www.euronews.com/2023/04/19/ukraine-grain-to-transit-poland-in-sealed-containers-in-new-deal-to-prevent-glut>

Second, the absence of dumping from Ukrainian grain is confirmed by the reports from the local research institutions¹¹ as well as European Commission.¹² Indeed, grain prices in Poland and Hungary **follow the global price dynamics**; the gap between Polish and global prices is close to the pre-war level indicating the absence of price pressure from the Ukrainian grain.

¹¹ https://www.ifp.org.pl/wp-content/uploads/2024/03/IFP_raport_Ziarno_niezgody-analiza_protestow_rolicznych.pdf

¹² <https://circabc.europa.eu/sd/a/92653d37-7fff-40c1-8d5e-b6bb3625c04a/EU%20cereals%20market.pdf>

3. Overview of main agricultural sectors in Ukraine

Highlights:

- Reopening of sea ports allowed Ukraine to increase export to the pre-war levels.
- Ukraine is losing own global competitiveness amidst the decline of world prices and high logistic costs.
- Grains and oilseeds harvest is expected to decrease to 65-69 million. tons in 2024 from around 80 million. tons in 2023 due to financial and military risks.
- In 2023, the livestock sector benefited from low feed prices and trade liberalization with the EU, and began to recover from 2022 losses. However, cattle, pig and poultry numbers remain 16%, 11% and 12% below 2021 levels.
- Fruits and vegetables production faced substantial war-related losses, especially in southern regions, but these losses were partially compensated by the recovery of production in other regions.

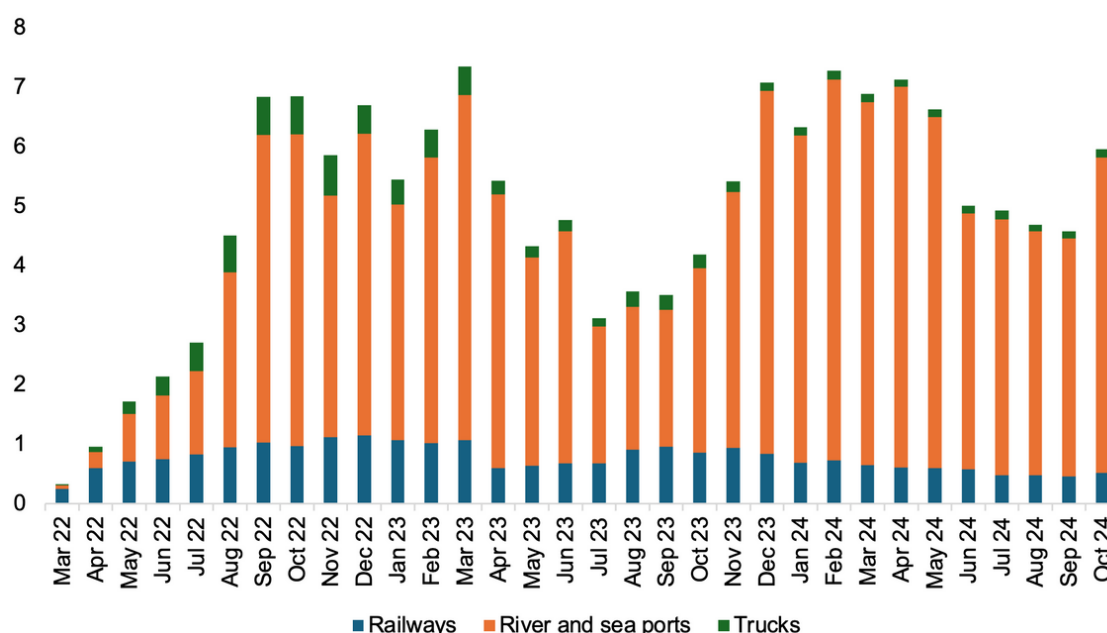
3.1. Grains and oilseeds

Opening of Black Sea ports in the second half of 2023 allowed to increase export of agricultural commodities to more than **7 million. tons** in February 2024 (Figure 8), which is high level even comparing with the pre-war period. Starting from April 2024, export volumes decreased due to seasonal factors and the

reduction of stocks of the old harvest. Almost 90% of this volume were exported through sea and river ports (73% and 17%, respectively). The activity on Danube River ports Izmail and Reni gradually decreased since freight rates from these ports to the key destinations were higher compared to Black Sea ports.¹³

¹³ <https://latifundist.com/novosti/63811-stavki-frahtu-v-ukrayinskih-portah-stabilni--atria-brokers>

Figure 8. Grains and oilseeds export by the type of transportation, mln. tons

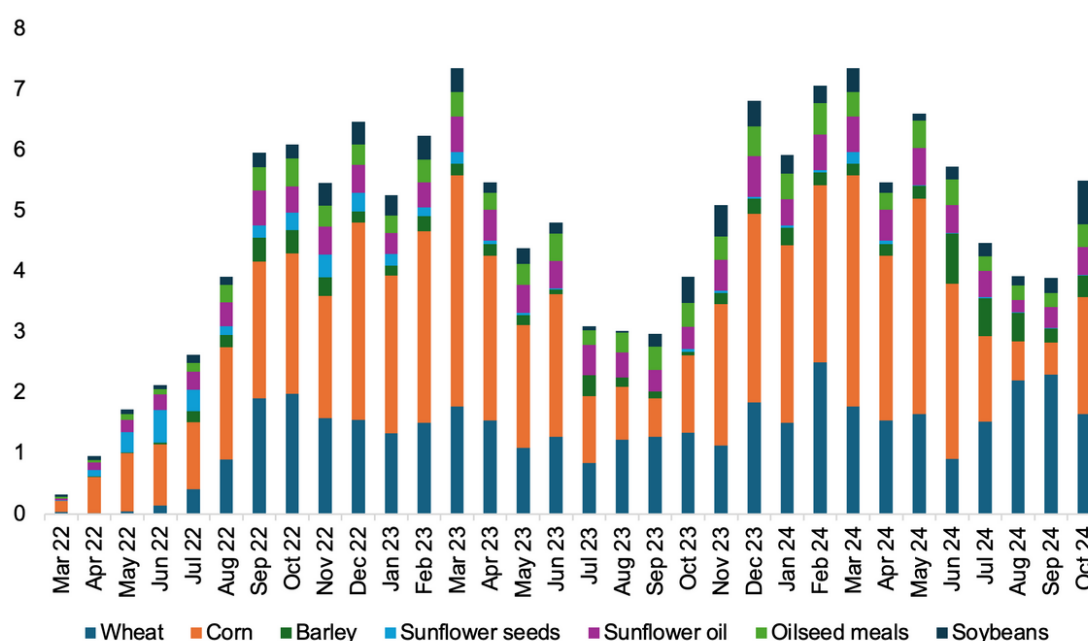


Source: Ministry of Agrarian Policy and Food of Ukraine

Corn and wheat trade flows were affected the most by the reopening of seaports since logistics costs take large share of their price (by contrast to oilseeds). As for geographical structure

of exports, sea routes allowed Ukraine to increase exports both in relatively near destinations (Egypt, Turkey, Romania, Spain, Italy) and distant ones (China, India, Indonesia).¹⁴

Figure 9. Exports of agricultural commodities from Ukraine, mln. tons



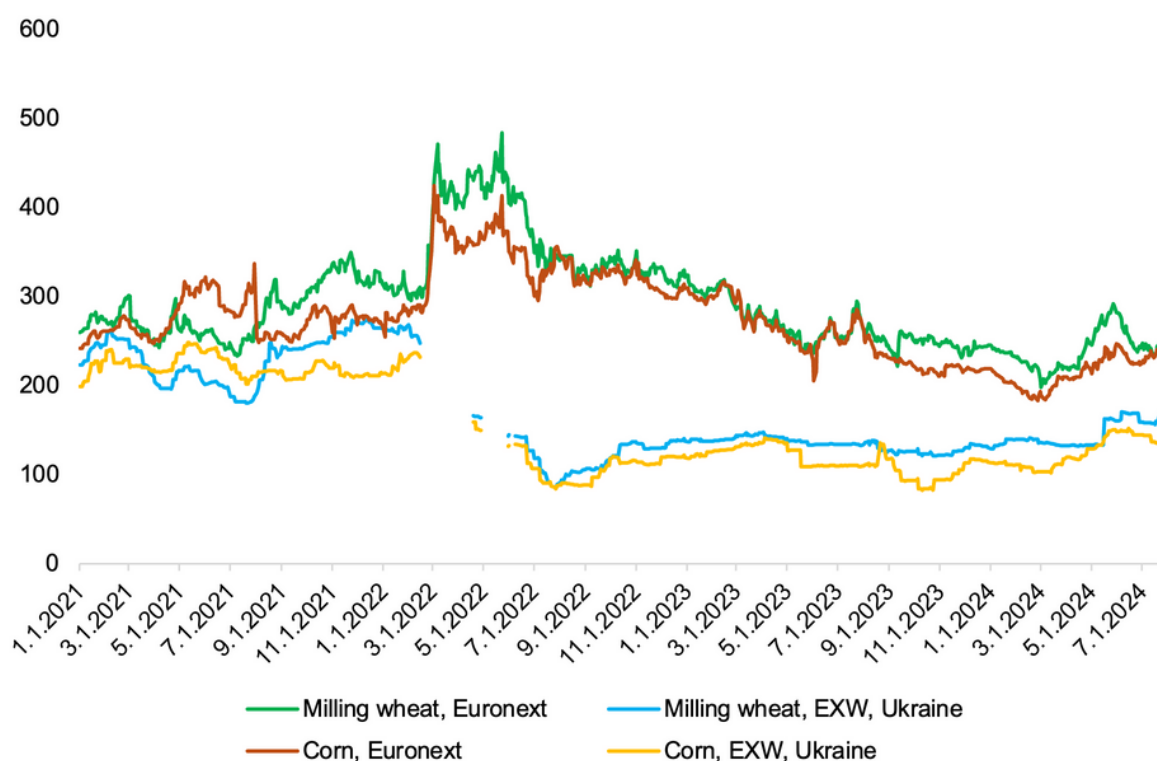
Source: Ministry of Agrarian Policy and Food of Ukraine

¹⁴ <https://www.trademap.org/>

The renewal of sea export stimulated Ukrainian and global grain prices to converge. Global prices were pressured by large outputs in major producing countries (Brazil, Russia, USA),¹⁵ increased trade flows from Ukraine, and

recessional processes in the global economy.¹⁶ Meanwhile, domestic prices in Ukraine improved amidst the reduced freight costs. Nevertheless, logistic costs remain above the pre-war level since they include the war-related risk premium.

Figure 10. Grain prices on Ukrainian and global market, USD/t



Source: Euronext, UkrAgroConsult

Notes: 1) Euronext price is indicated for the nearby futures contract; 2) Price in Ukraine excludes VAT.

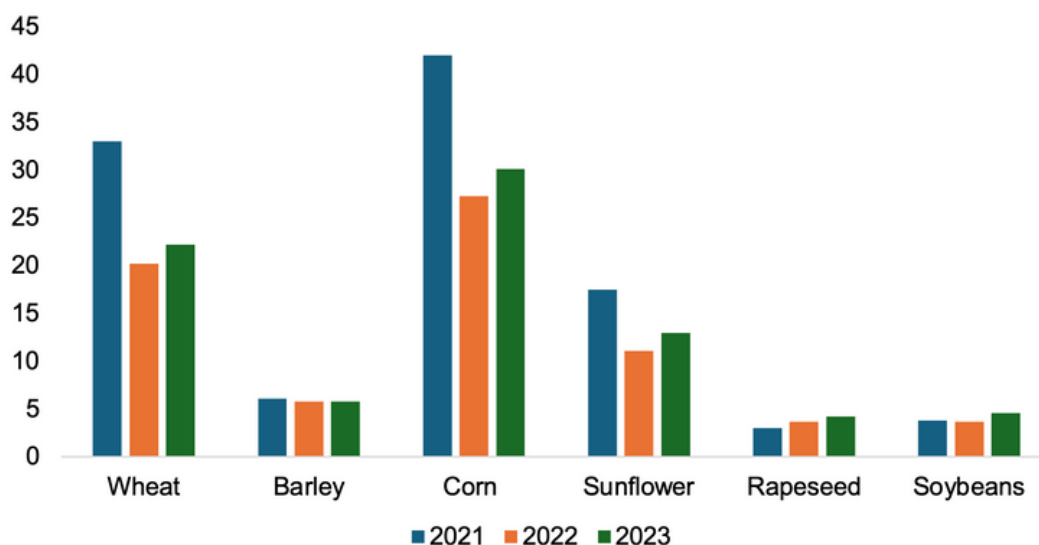
As for domestic grains and oilseeds production, Ukraine harvested around **82.6 million tons** in 2023 compared to **72 million tons** in 2022. This was despite the similar levels of harvested area (19.3 million

ha in 2023 versus 19.6 million. ha in 2022). The increase of harvest in 2023 was ensured by favorable climate conditions which led to improved yields.

¹⁵ https://www.igc.int/en/gmr_summary.aspx

¹⁶ <https://www.dw.com/en/global-recession-could-be-stoked-by-falling-commodity-prices/a-65863457>

Figure 11. Production of main grains and oilseeds, mln. tons



Source: Ministry of Agrarian Policy and Food of Ukraine

Meanwhile, the harvest in 2024 is expected to be **76.1 mln. ha**. This figure is based on the marginal contraction of planting areas. Also, yields are expected to return closer to the average levels from the record highs observed in 2023.¹⁷ As of areas structure, Ministry of Agricultural Policy and Food of Ukraine expects the similar trend as in 2023 with increased share of oilseeds and sugar beet at the cost of decreased corn areas.¹⁸ Such structure is aligned to the 2023 profitability levels; wheat, corn and barley were unprofitable for growing, sunflower approached breakeven point, while rapeseed and soybean generated profits. Ministry of Agricultural Policy and

Food of Ukraine forecasts that in 2024 all crops will improve own profitability; however, wheat, corn and barley will still remain in the loss zone.¹⁹

The development of crop production in Ukraine is largely based on the related infrastructure, in particular grain storage and logistics. In 2021, the capacity of grain silos in Ukraine was about **57 mln. tons**. Considering the average grain turnover ratio of about 2, these facilities could store the entire output of grain and oilseeds harvested in the country. As of 2023, the capacity of grain silos has decreased to **49 mln. tons** due to the war-related losses.²⁰

¹⁷ <https://uga.ua/news/uza-prognozuyte-v-2024-rotsi-menshij-vrozhaj-76-1-mln-t-zernovih-ta-olijnih/>

¹⁸ <https://minagro.gov.ua/news/u-minahropolityky-sprohnozuvaly-obshchy-posivnykh-ploshch-pid-iari-kultury?v=65cb68e5c8fcc>

¹⁹ <https://minagro.gov.ua/storage/app/sites/1/uploaded-files/viini-na-pributkovist-silskogospodarskogo-virobnitstvavipusk-3.pdf/>

²⁰ <https://elevatorist.com/blog/read/853-elevatorni-vtrati-cherez-vyynu-na-cherven-2023-roku>

Grain logistics in Ukraine is generally less efficient and more expensive compared to the other large grain producing countries.²¹ While the capacity of port terminals in the pre-war period was sufficient for the shipment of potential volumes of exports (they were estimated at **90 mln. tons**²²), the main bottleneck was railroad. First of all, the capacity of access railways near the sea ports was limited, which caused long queues of grain tracks, especially after harvesting. The second challenge was the deficit of grain tracks and locomotives, which are provided mostly by the state operator **Ukrainian Railways («Ukrzaliznytsia»)**.²³ Such monopolization motivated private companies to expand own number of tracks over the last years of the pre-war period. In the wartime, the deficit of tracks eased because of the dropdown of domestic grain production.

The other sector that largely affect crop production is processing industry, in particular, **sunflower crushing and milling sectors**. The sunflower oil industry demonstrated the rapid growth since late 1990-s when the export tax on sunflower seeds was introduced.²⁴ During this period, the domestic production of sunflower oil increased approximately 8 times and exceeded **7 mln. tons**. This

made Ukraine the largest world exporter of sunflower oil with the share of about 50% of global exports.²⁵ In both pre-war and wartime periods, sunflower oil production in Ukraine was challenged by strong competition among crushers for raw materials. Indeed, the total crushing capacities exceed the domestic sunflower production. According to the information from Ukraine Oil and Fat Industry association «Ukroliyprom», crushing capacities are estimated at about **18 mln. tons** in 2024, while local sunflower crop is forecasted at 14 mln. tons.²⁶ The other challenge for sunflower crushing industry is high capital investments needed for building crushing plants, which creates barriers to entry in this market.²⁷

By contrast to sunflower oil sector, wheat flour production stagnated over the last years. While Ukraine could potentially produce **6.5 mln. tons** of wheat flour annually, the actual production level was just around **2 mln. tons** in the pre-war period; the major part of milling capacities were unused. At the beginning of the full-scale war, the oversupply of wheat inside the country stimulated millers to increase domestic flour production to about 2.7 mln. tons; however, since the launch of Grain Deal,

²¹ https://kse.ua/wp-content/uploads/2022/09/Chapter_2_Agrocenter.pdf <https://elevatorist.com/blog/read/747-portovyye-terminalyi-nujnyi-li-ukraine-novyie-perevalochnyie-moschnosti-dlya-zerna>

²² <https://agravery.com/uk/posts/show/z-ruk-v-ruki-ci-dopomoze-kabmin-ukrzhaliznici-svidse-perevoziti-zerno>

²³ <https://zakon.rada.gov.ua/laws/show/1033-14>

²⁴ <https://apps.fas.usda.gov/psdonline/app/index.html#/app/home>

²⁵ <https://www.apk-inform.com/uk/news/1537402>

²⁶ [https://elevatorist.com/blog/read/903-rozvitok-pererobnoyi-galuzi-v-ukrayini--chomu-ideya-ne-zavjdi-pratsyuye?](https://elevatorist.com/blog/read/903-rozvitok-pererobnoyi-galuzi-v-ukrayini--chomu-ideya-ne-zavjdi-pratsyuye?fbclid=IwZXh0bgNhZW0CMTEAAR0LZnzGqWOR9TsDs82UKhGgwIDTo7UdmexEZlqOynW8bhUDztH9fLtQUUs_aem_2HF4d4SVVCS8tocdIE2N3w)

²⁷ https://elevatorist.com/blog/read/903-rozvitok-pererobnoyi-galuzi-v-ukrayini--chomu-ideya-ne-zavjdi-pratsyuye?fbclid=IwZXh0bgNhZW0CMTEAAR0LZnzGqWOR9TsDs82UKhGgwIDTo7UdmexEZlqOynW8bhUDztH9fLtQUUs_aem_2HF4d4SVVCS8tocdIE2N3w

the flour production volumes started to decline gradually. The main challenges for Ukrainian milling industry are low

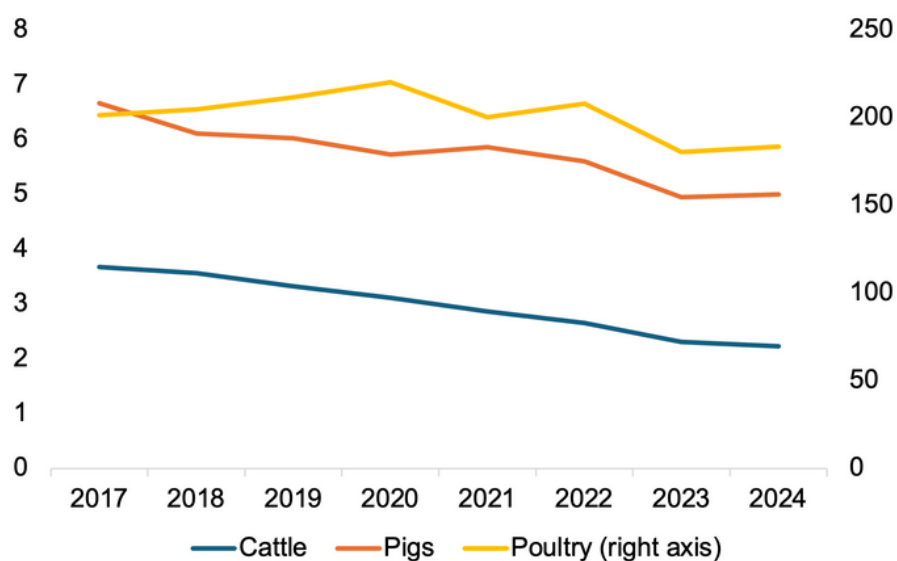
competitiveness on global market, lack of high-quality wheat,²⁸ outdated equipment, deficit of financial resources.²⁹

3.2. Livestock products

Prior to the full-scale war, cattle and pig production showed negative dynamics, while poultry production increased. The full-scale war negatively affected the sector through the direct damages and

worsened economic environment. During 2023, poultry and pigs' numbers recovered by 2% and 1% respectively, while cattle population reduced by 3% (Figure 12).

Figure 12. Livestock population in Ukraine as of January 1, mln. heads



Source: State Statistics Service of Ukraine

The main reason of livestock sector recovery was high profitability based on low feed prices caused by export disruptions (Figure 13). Abundant grain stocks allowed many farmers to expand own pig and poultry herds. Another

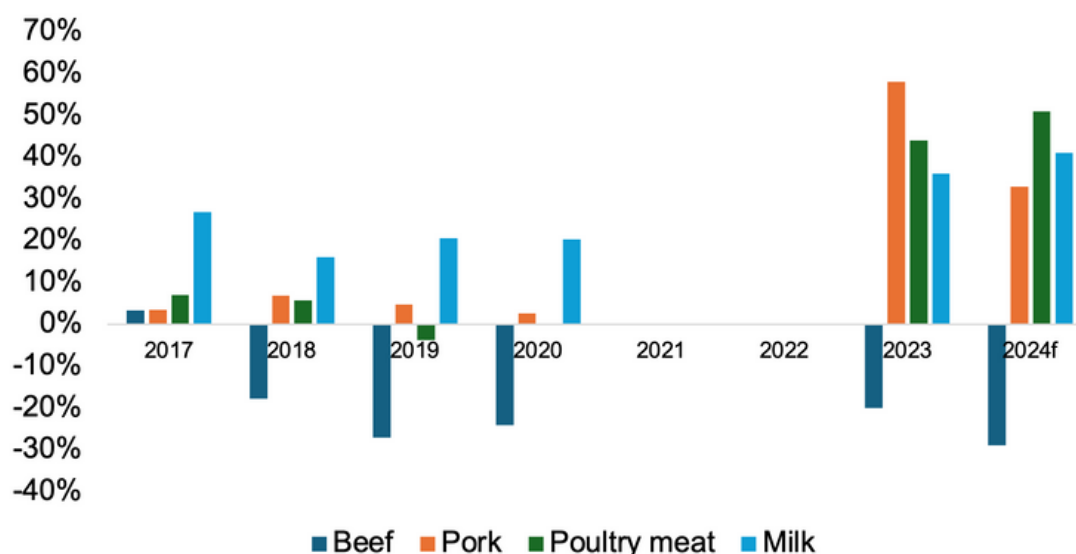
reason was import substitution of meat and milk products on the domestic market based on hryvnia depreciation and high prices in EU countries which are primary exporters to Ukraine.³⁰

²⁸ <https://elevatorist.com/blog/read/741-muki-mukomolov-ili-pochemu-ukraina-teryaet-ryinki-sbyita-svoey-muki>

²⁹ <https://docs.wfp.org/api/documents/WFP-0000158232/download/>

³⁰ https://www.ucab.ua/ua/pres_sluzhba/blog/maksim_gopka/ukrainskiy_i_svitoviy_rinok_svinini_tendentsii_ta_prognozi

Figure 13. Profitability of livestock production, %



Source: State Statistics Service of Ukraine, Ministry of Agrarian Policy and Food of Ukraine, UCAB

Note: The data in 2021 and 2022 is not available.

The trend of primary livestock production is fully reflected in **meat processing industry**, which shows the gradual decline over the last decade.³¹ The share of poultry used for further production of processed meat products (mostly sausages and similar products) increases; however, the export orientation of poultry sector motivates meat processing plant to compete strongly on the local market.³²

Another downstream sector related to Ukraine's livestock production is **milk industry**. Over the period of independence, the output of main milk products (butter, cheese, skim milk powder, condensed milk) decreased in several times due to the **decline of dairy**

herd in the country and **loss of main export markets**. Besides, the major part of cow milk is produced in households and is not suitable for processing in terms of quality. The full-scale war reduced the total output of main milk products; the skim milk powder and condensed milk production was the most resilient to this shock. The other negative factors were the increased falsification of dairy products, market shadowing (up to 20% of the market), expensive logistics, and sporadic trade restrictions in neighboring EU countries.³³ According to the Association of Milk Producers of Ukraine, the recovery of milk processing industry is closely related to the development of large-scale industrial milk production and opening the new export markets.³⁴

³¹ https://www.ukrstat.gov.ua/operativ/operativ2006/pr/prm_ric/prm_ric_u/vov2005_u.html

³² <https://kse.ua/wp-content/uploads/2023/06/Food-Processing.-Whats-next.pdf>

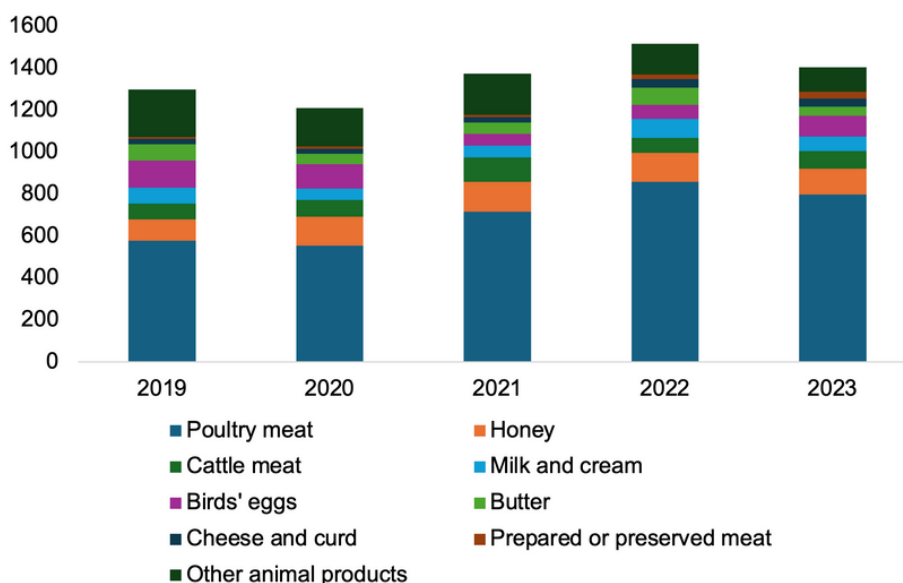
³³ <https://latifundist.com/blog/read/3054-tsini-yak-v-yevropi-yakim-buv-2023-rik-dlya-virobnikiv-ta-pererobnikiv-moloka>

³⁴ <https://uadairy.com/vadym-chagarovskiy-try-etapy-rozvytku-molochnoyi-galuzi/>

As for trade of livestock products, high margin as well as the EU temporary trade-liberalization measures set at June 2022³⁵ provided short-term incentives

for the export of Ukrainian livestock products in 2022 and 2023. The main growth was observed for poultry meat and butter (Figure 14).

Figure 14. Export of animal products, mln. USD

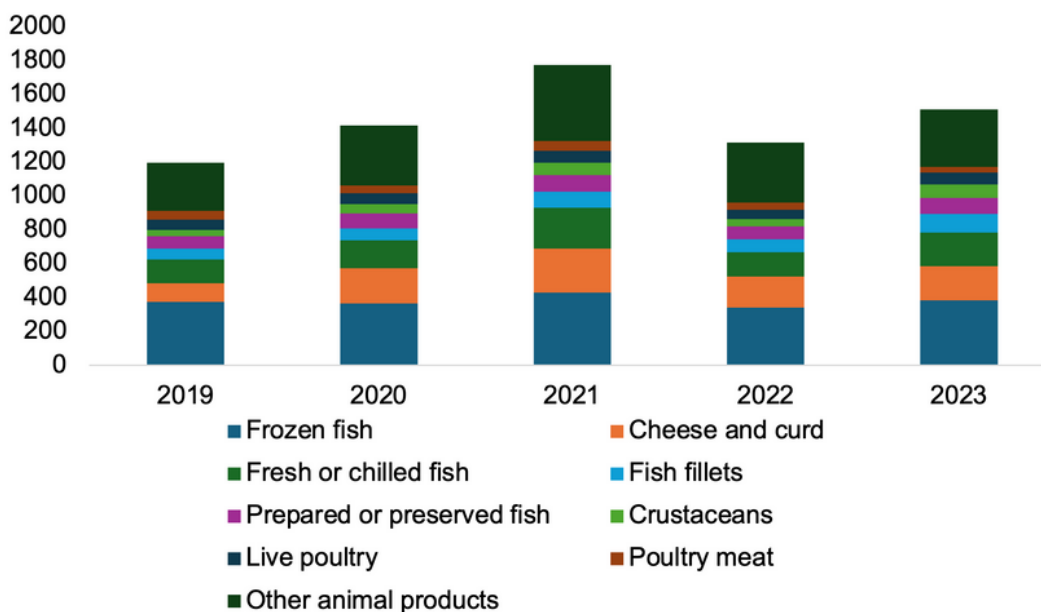


Source: ITC Trade Map

At the same time, **imports of both meat and milk products reduced** amidst slack

demand. Note that imports of animal products are more diversified than exports.

Figure 15. Import of animal products, mln. USD



Source: ITC Trade Map

³⁵ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32022R0870>

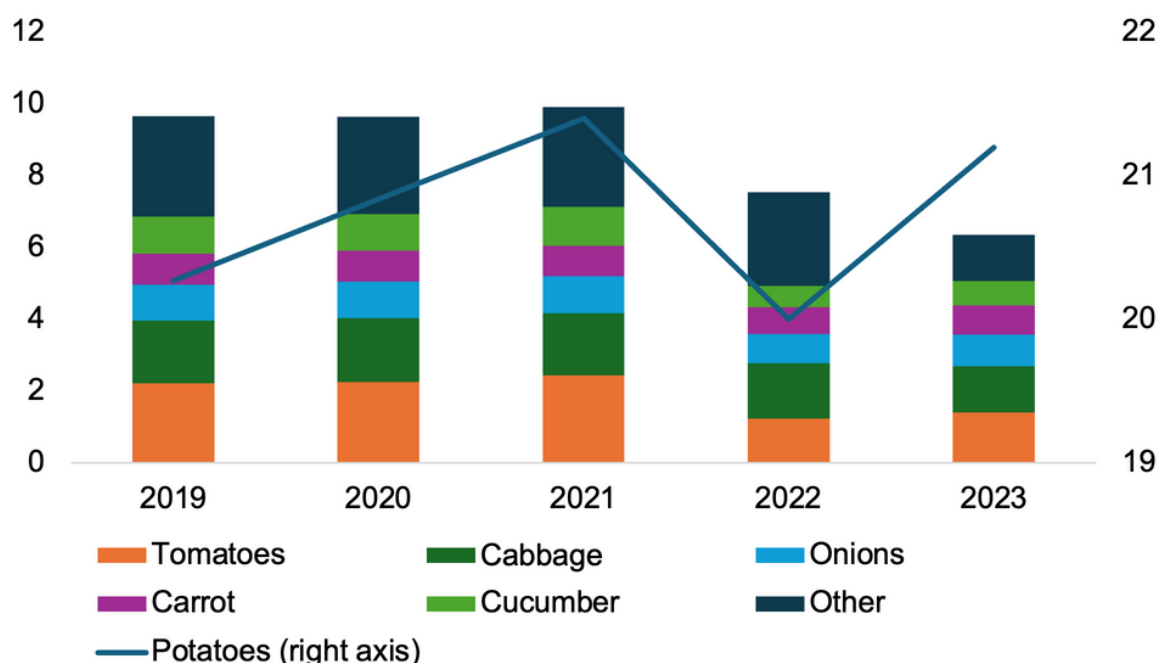
3.3. Vegetables, fruits, berries, nuts

Ukraine's vegetables production was strongly affected by the full-scale war, contracting from by 20% in 2022. In particular, around **40%** of industrial vegetables production were lost in the southern regions (Kherson, Zaporizhzhia, Mykolaiv, Odessa).³⁶ In the product structure, the main reduction was for

tomatoes, cucumbers, and peppers.

Destruction of the Kakhovka Dam in June 2023 resulted in the loss of around **5-10%** of national output of vegetables.³⁷ Nevertheless, this loss was partially compensated by the recovery of production in other regions; this was especially true for potatoes, carrot, and onions.

Figure 16. Production of vegetables, mln. tons



Source: State Statistics Service of Ukraine

Fruits and berries production was less affected by the full-scale war since traditionally it was concentrated in

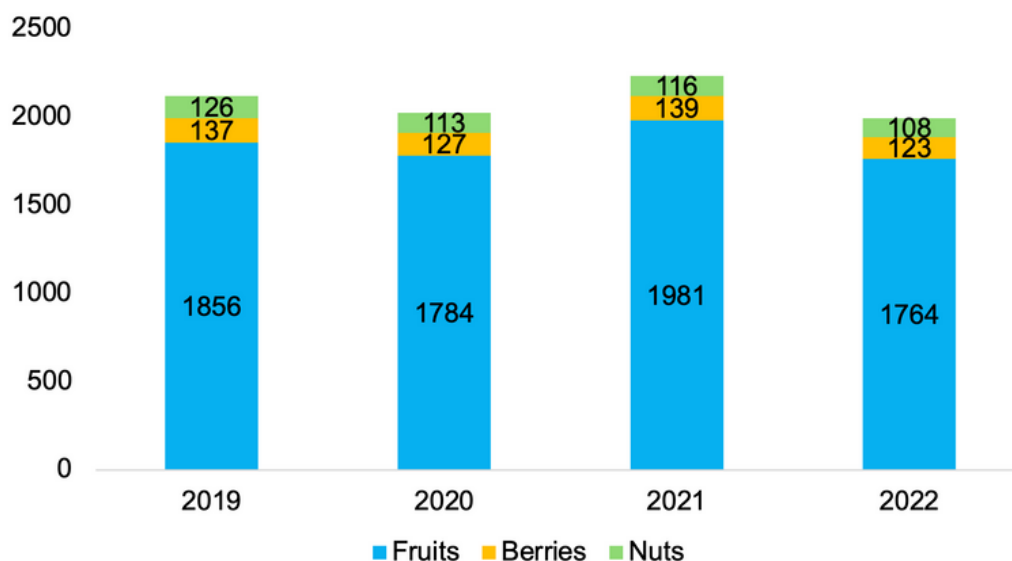
central regions of the country. The exception was melons, grapes, and cherries which traditionally are grown in the south.³⁸

³⁶ <https://ua-retail.com/2024/02/yak-pereformatuvalosya-ovochivnictvo-ta-xto-goduvatime-ukra%D1%97nciv/>

³⁷ <https://interfax.com.ua/news/economic/916990.html>

³⁸ <https://ua-retail.com/2024/02/yak-pereformatuvalosya-ovochivnictvo-ta-xto-goduvatime-ukra%D1%97nciv/>

Figure 17. Production of fruits, berries, nuts, thsd. tons



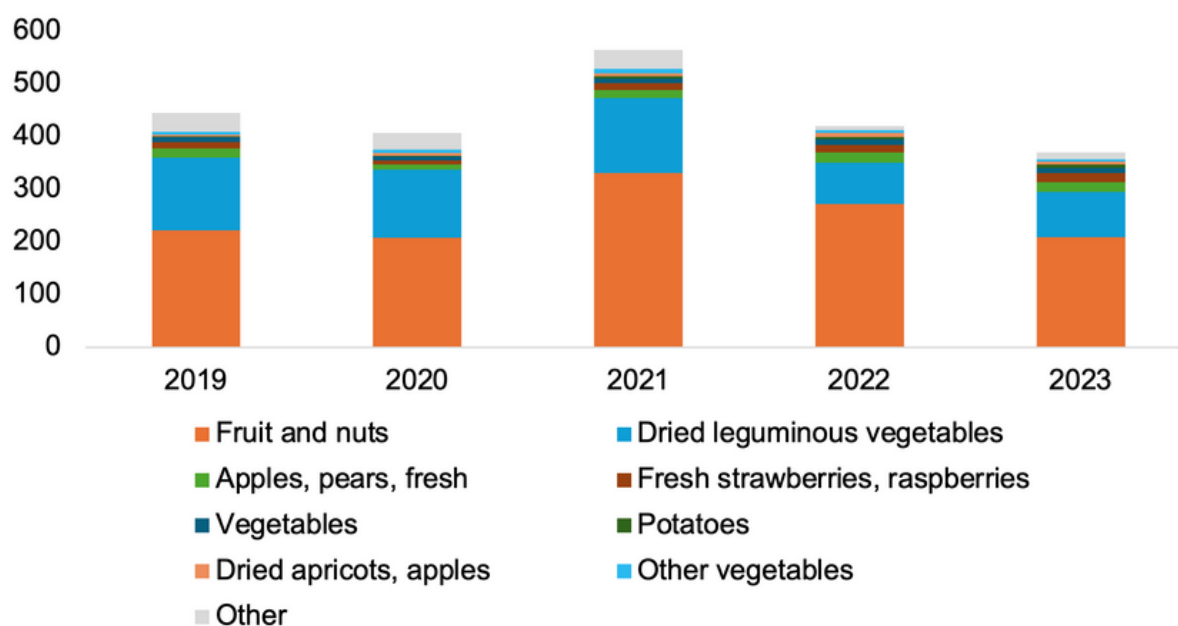
Source: State Statistics Service of Ukraine

Note: The data in 2023 is not available.

The decline of export volumes was moderate given the strong competitiveness of Ukrainian fruits and vegetables on the EU market. Fruits and

dried vegetables took around 80% of these exports. Meanwhile, exports of apples remained low due to inappropriate quality and logistic issues.³⁹

Figure 18. Exports of fruits and vegetables, mln. USD

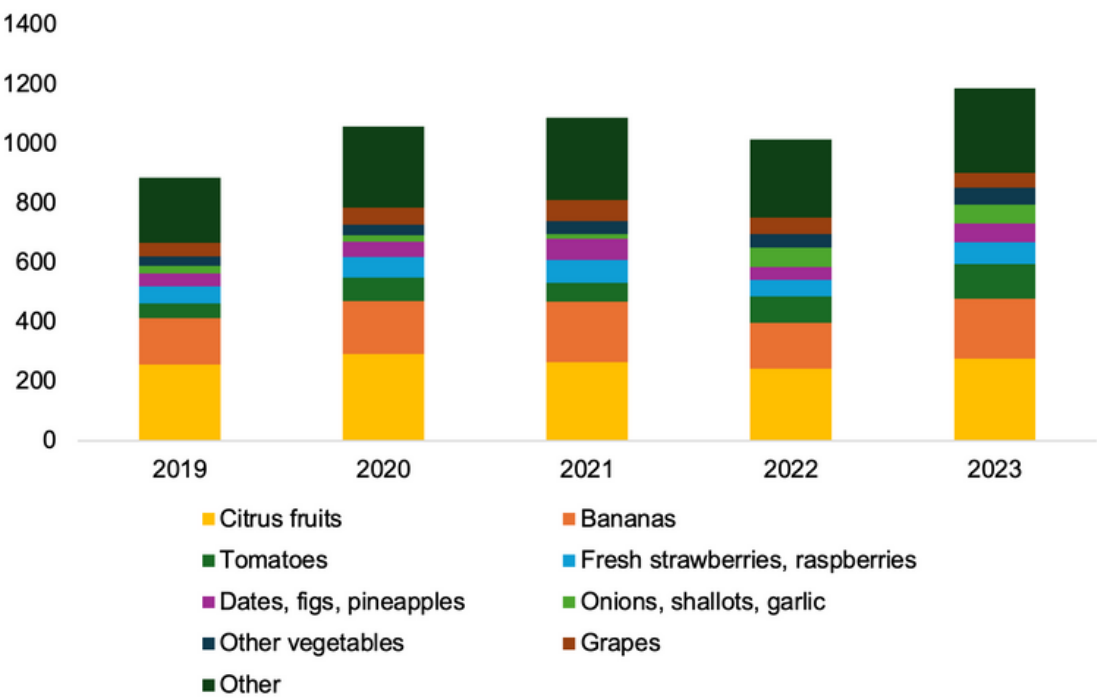


Source: ITC Trade Map

³⁹ <https://propozitsiya.com/ua/doroga-logistika-ta-nizka-yakist-fermeri-ne-hochut-eksportuvati-yabluka>

Meanwhile, imports in this segment remained firm throughout the wartime; the main import categories were tropical fruits (citruses and bananas). Imports of tomatoes also increased to substitute production losses in the southern part of the country.

Figure 19. Imports of fruits and vegetables, mln. USD



Source: ITC Trade Map

4. Projections of agricultural markets

Highlights:

- By 2033, production of grains and oilseeds in Ukraine is projected to increase by 42% and 67%, respectively.
- The share of oilseeds in overall area structure is expected to increase due to high profitability of sunflower, rapeseed, and soya beans.
- In the livestock sector, the production of poultry meat and eggs will increase, while the cattle production will continue to stagnate.
- Over the next years, Ukrainian agriculture will be attractive for investments given the projected strong recovery as well current underfinancing of the sector.

KSE Agrocenter presents the projections for the Ukrainian agricultural sector, covering production of cereals (wheat, corn, barley, oat, rye), oilseeds and their products (sunflower, rapeseed, soya beans), and livestock (poultry meat and eggs, beef, and milk).

Projections are made with the **AGMEMOD model**, which is an econometric, dynamic, partial-equilibrium, multi-country, multi-market model. It covers all EU Members States, Ukraine, a set of selected non-EU countries and a stylized version of the rest of the world (RoW). The model provides annual projections (currently) until the year 2033 for markets of the main agricultural commodities at national and aggregated EU levels.

The most important assumption in the presented scenario projections is the end of the full-scale war by December 2024, i.e., the projections are aimed to show how fast agricultural sector can recover from the war-induced shock. Additionally, it is assumed that during 2023-2025, agricultural land, which was occupied, damaged, or polluted with explosive hazard, is gradually returned to the production. More detailed calculations and methodology behind this assumption were described in a recent publication of KSE Agrocenter.⁴⁰ Another important assumption implemented in the model is production costs being constant in real terms at the 2023 level. World market prices for 2024-2023⁴¹ are taken from the FAO-OECD Outlook 2023, and the key

⁴⁰ KSE Agrocenter. *Dynamics of the land fund: how the land resources of Ukraine changed after February 24, 2022*. February 2024. https://kse.ua/wp-content/uploads/2024/03/Agroviglyad_2_angl.pdf

⁴¹ OECD/FAO (2023), *OECD-FAO Agricultural Outlook 2023-2032*, OECD Publishing, Paris, <https://doi.org/10.1787/08801ab7-en>

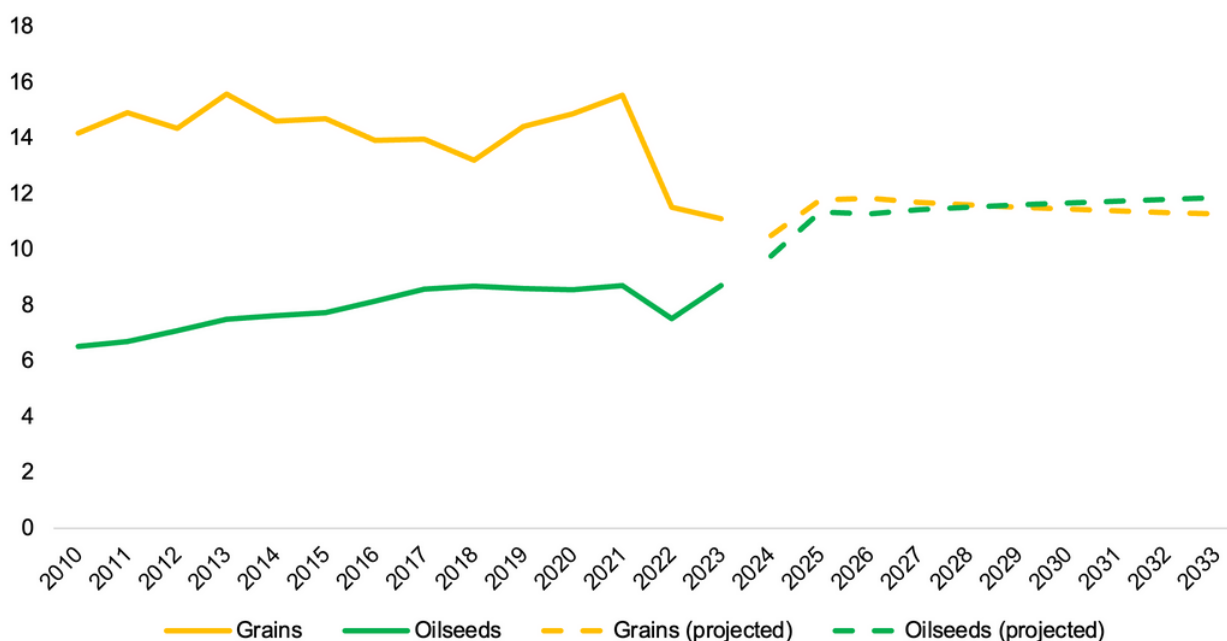
macroeconomic assumptions (inflation rate, population, real GDP, and UAH/USD exchange rate) are based on the projections of Ministry of Economy of Ukraine, with own extrapolation of their trends for 2027-2033.

Harvested areas – gradual shift toward oilseeds

By 2033 **total cereals area harvested is projected to slowly decrease** after a rapid drop in 2022, and a little recovery in 2024-2026 down to a value of 11.3 million hectares in 2023. **Total oilseeds area, however, is expected to grow.** The latter may reach 11.9 million hectares,

which is roughly 59% more compared to the respective last observed value in 2023. The increase will mainly be driven by de-occupation of land and a gradual shift towards oilseeds production from the cereal crops. Although sunflower will partially be substituted by rapeseed and soya beans, it will continue to be produced on the largest share of the total oilseeds area: approx. 7.4 million hectares in 2033 (Figure 20). Higher profitability of oilseeds, as compared to cereals, combined with growth of demand for feed from the poultry sector, will significantly contribute to these trends.

Figure 20. Projected harvested areas of grains and oilseeds in 2010-2033, mln. ha



Source: KSE Agrocenter. (2024). *Agricultural Outlook Ukraine 2024-2033. Report-summary.*

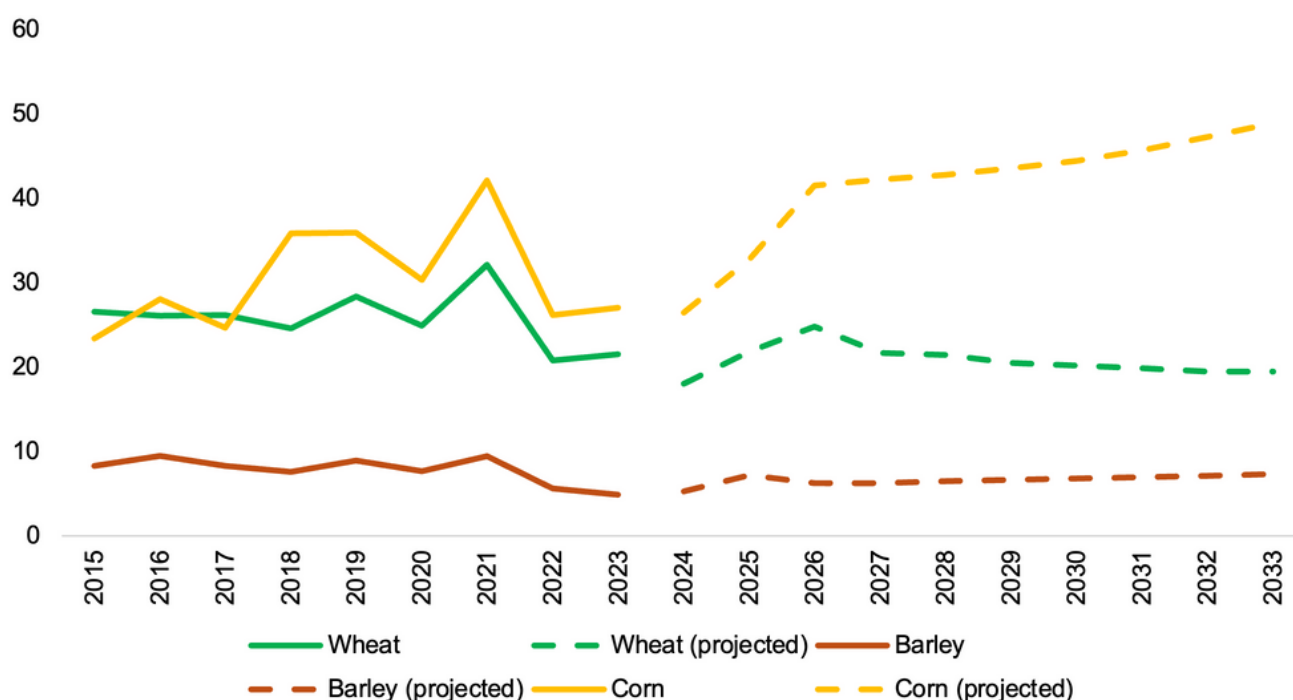
Cereals – gradual shift towards corn and weak recovery

By 2033, **total cereals production in Ukraine is projected to increase by 42%** (to 76.4 million tons) compared to the 2023 level (Figure 21). This increase is attributed mainly to the growth of corn production (from 27 million tons in 2023 to 48.9 million tons in 2034) which especially results from a significant expansion of the area harvested and growing yield, as a result of technology improvement, e.g., availability of better seeds, application of advanced practices and increased affordability of fertilizers, as economy recovers from the war-

induced shocks. Compared to the change in area harvested of wheat (-27%), the change in production of wheat will be less severe, decreasing from 21.5 in 2016-2019 to 19.4 million tons in 2030 (-10%) due the growth in yield.

Despite the growth of total cereals production, it will not return to the pre-war (2021) level, reaching only approx. 90% of 2021 production. The only cereal crop, which will exceed the 2021 level is corn, with 16% increase in production, as compared to the 2021 level. Main reason for it is expansion of sown area and yield improvements.

Figure 21. Projected production amounts of the main cereal crops in 2010-2033, mln. tons



Source: KSE Agrocenter. (2024). *Agricultural Outlook Ukraine 2024-2033. Report-summary.*

Oilseeds – sown areas expansion and explosive growth of rapeseed production

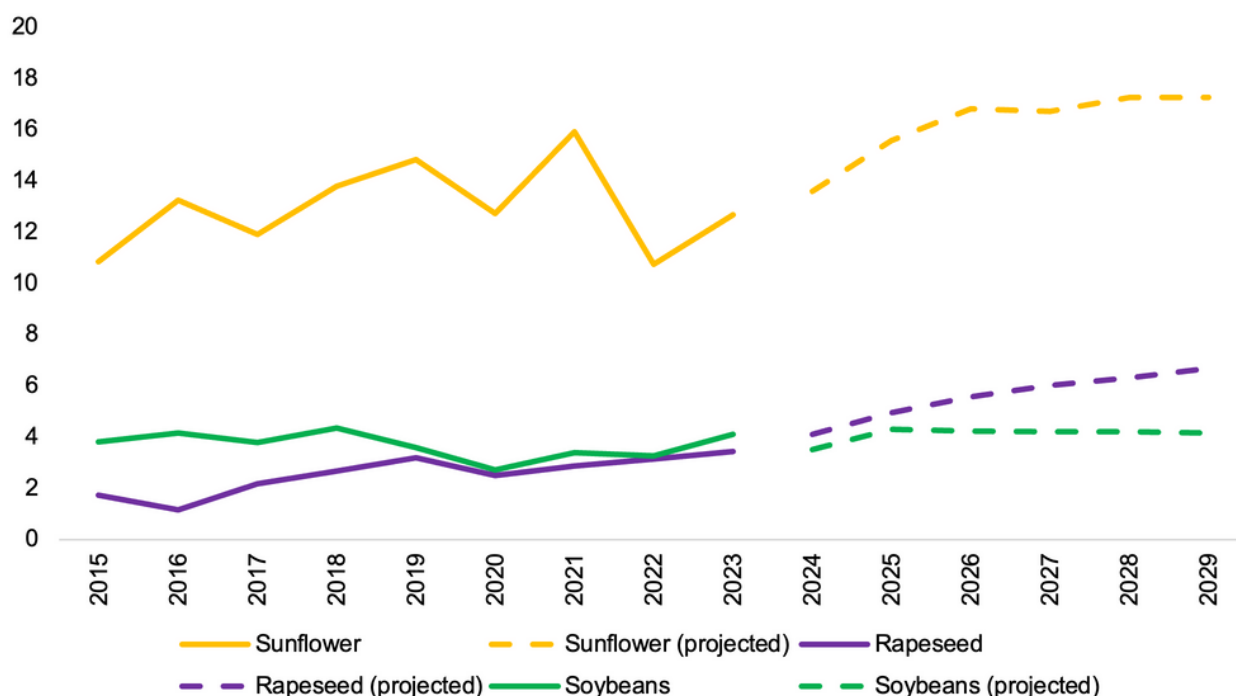
Oilseeds production in Ukraine is projected to increase from 20.2 in 2023 to 33.2 million tons in 2032. Production of all three major oilseed crops is projected to grow: sunflower seeds up to 19.4, soya beans up to 5.9 and rapeseed seeds up to 7.9 million tons (i.e., by +53%, +129% and +43%, respectively, as compared to 2023 level). The growth of production of all three crops could be attributed to increased areas, as farmers gradually shift from cereals towards oilseeds. Additionally, increasing yields contribute to this growth, allowing it to exceed the increase in areas.

Total oilseeds production is expected to reach the pre-war level by 2025-2026 and to grow above it further until 2033. Primary reason for this quick recovery is

the shift of sown areas from cereals to oilseeds due to higher profitability.

Sunflower seeds are expected to continue being mostly processed within the country, with its oil being exported instead of seeds themselves. The volumes of sunflower seeds export will return to the pre-war trend and remain quite low throughout 2025-2033, at the level of approx. 50 thousand tons, not exceeding 0.4% of the total production. Imports of sunflower seeds to Ukraine will remain rather low as well, i.e., 27 thousand tons in 2033. Conversely, export quantities of rapeseed seeds and soya beans are projected to grow (Figure 22). Following the increase in production, export of rapeseed seeds is expected to grow to 7.2 million tons and of soya beans to approx. 4 million tons (i.e., an increase by 117.3% and 38.5%, respectively, as compared to the values of 2023).

Figure 22. Projected production amounts of the main oilseed crops in 2010-2033, mln. tons



Source: KSE Agrocenter. (2024). *Agricultural Outlook Ukraine 2024-2033. Report-summary.*

Production and exports of sunflower, rapeseed, and soya bean oils and meals are projected to continue growing until 2033, following the production trends of the respective crops. The exports will follow the production increase. By 2033, exports of sunflower, rapeseed seeds will increase by, respectively, 47.6% (to 7.9 million tons) and 382.5% (to 275 thousand tons) as compared to 2023 level. Amount of soybean oil export will remain relatively unchanged (-0.4%, 276 thousand tons), with all of the production increase staying on the domestic market. Exports of meals will increase as well, with export quantities of sunflower seed

and rapeseed meals projected to increase to, respectively, 6.3 million tons (+145.8%, as compared to 2023 value) and 315 thousand tons (+494.3%, as compared to 2023 value). Despite export quantity of soya beans meal will be limited by the growing domestic demand, due to the development of the poultry sector (see the livestock section), soya beans meal exports still demonstrate a growth from 331 thousand tons in 2023 to 450 thousand tons in 2033. Quantities imported of the meals of sunflower seeds, rapeseed seeds and soya beans are expected to remain less than 1% of the quantities exported.

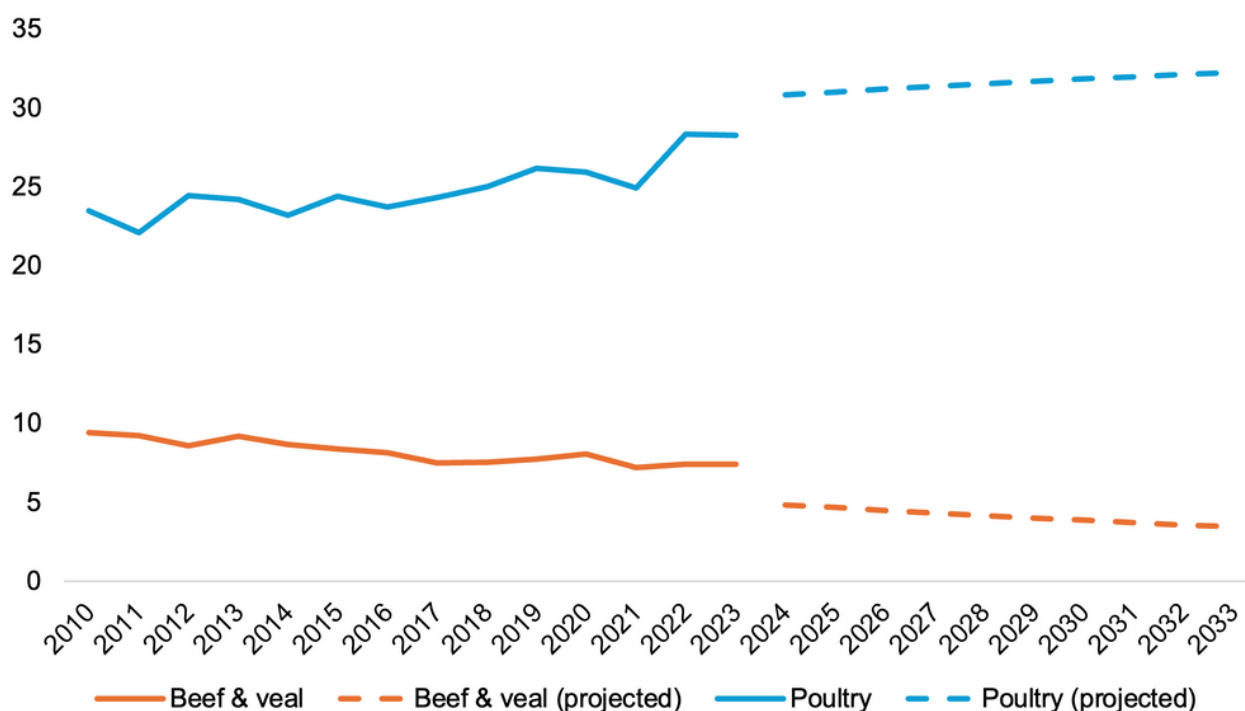
Livestock – poultry meat replaces beef, cattle sector continues to shrink

The projections show that production of cow milk and beef will continue to decline, whereas production of poultry meat and eggs are further growing. The former mainly reflects structural changes, and the latter benefits from economies of scale.

It is projected that production of poultry will grow up to 1.7 million tons, i.e., an increase by **28%**, as compared to the value of 2023. The main factor contributing to this increase are positive

gross margins and change in consumption patterns. Poultry meat producers in Ukraine are usually large enterprises which as well produce poultry feed. This allows them to benefit from economies of scale and lower production costs. As the same time, per capita consumption of poultry meat is expected to continue growing and is projected to reach 32.3 kg per year by 2033 (an increase of 15.9%, as compared to the value of 2023), thus replacing beef as the main source of protein in the diet. Figure 23 shows the opposite trends in beef and poultry meat per-capita consumption in 2010-2033.

Figure 23. Beef & veal and poultry meat per-capita consumption in 2010-2033, kg/person/year



Source: KSE Agrocenter. (2024). Agricultural Outlook Ukraine 2024-2033. Report-summary.

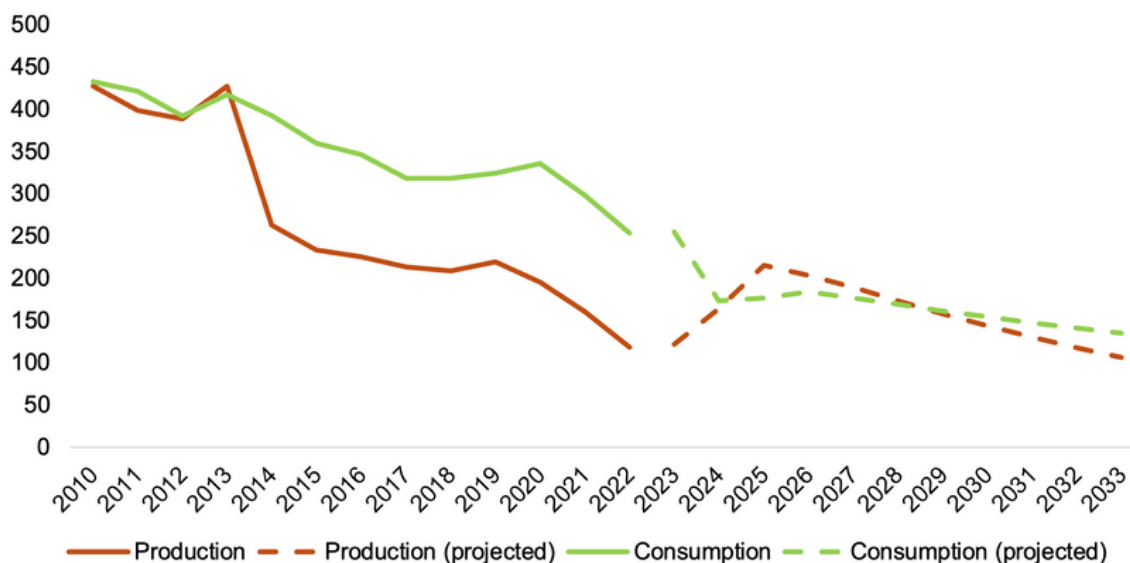
Total poultry consumption will, however, stagnate after 2026, at the level of approx. 1.3 million tons, because of the expected negative population trend. The development of large-scale enterprises in the poultry (i.e., chicken) sector has as well driven the growth of chicken eggs production. The projections indicate growth of eggs production up to 855 thousand tons by 2033, which is an increase by 31%, as compared to the value of 2023. However, neither chicken eggs production, nor domestic consumption will not recover to the pre-war level by 2033, primarily due to negative population trend and destruction of the large egg producing facilities in the south of Ukraine during the Russian invasion.

Currently, cow milk and beef production in Ukraine are strongly connected. Therefore, the developments of both

industries can be explained by the same underlying reasons decreasing profitability and domestic demand. The projections show that the total cattle herd (including dairy cows) and number of cattle slaughtered will continue declining, by 49% and 36%, respectively, by 2033 compared to the 2023 level. As cattle slaughter weight will remain relatively unchanged at the level of approx. 170 kg per head, total quantity of beef production is expected to gradually decrease after a slight growth of 2024-2026 (coming from the increased slaughter) from 122 thousand tons in 2013 to 106 thousand tons in 2033.

Since the quantity of beef consumed domestically is expected to exceed the quantity produced, Ukraine will remain a net importer of beef by 2033. However, as the per capita consumption will decrease in 2024-2033, net volume of trade will shrink substantially as well.

Figure 24. Projected quantities of beef & veal production and domestic consumption in 2010-2033



Source: KSE Agrocenter. (2024). *Agricultural Outlook Ukraine 2024-2033. Report-summary.*

Although milk yield per cow and year is expected to grow from 5.7 to 6.4 tons by 2033, milk production is projected to decline from 7.4 million tons in 2023 to 5.9 million tons in 2033. Primary reason for it is the fact that the yield increase will not compensate for the further decline in the number of dairy cows by 31% in 2033, as compared to the 2023 level. The positive development in milk yields reflects the trend of an increasing number of specialized enterprises, as they apply relatively more efficient production technologies and more productive breeds of dairy cows than households.

Generally, the recovery of agri-food sector projected by Agricultural Outlook Ukraine is based on increased productivity, which means a strong investment potential of the sector. In

recent years, Ukrainian agriculture remains very underfunded; its share in direct foreign investment in Ukraine does not reach 2%, while the share of the agri-food industry in GDP exceeds 10%. Investments to the sector come mainly from domestic sources; they are aimed mostly at the most profitable sectors, such as the production of cash crops and poultry. On the contrary, the post-war recovery may lead to a more balanced distribution of investments, covering not only primary agriculture, but also related sectors such as production of agricultural inputs, food processing industry, agricultural logistics. The perspective directions of investments in the agri-food sector are described in **Ukraine Investment Guide**⁴² developed by the Ministry of Economy and the KSE Institute, which was presented at the Ukraine Recovery Conference 2024 in Berlin.

⁴² [https://cdn.prod.website-files.com/621f88db25fbf24758792dd8/66673120c02fe81b61d75096_Ukraine%20Investment%20Guide%202024%20\(2\)_compressed.pdf](https://cdn.prod.website-files.com/621f88db25fbf24758792dd8/66673120c02fe81b61d75096_Ukraine%20Investment%20Guide%202024%20(2)_compressed.pdf)

5. Effect of the full-scale war on Ukrainian agriculture

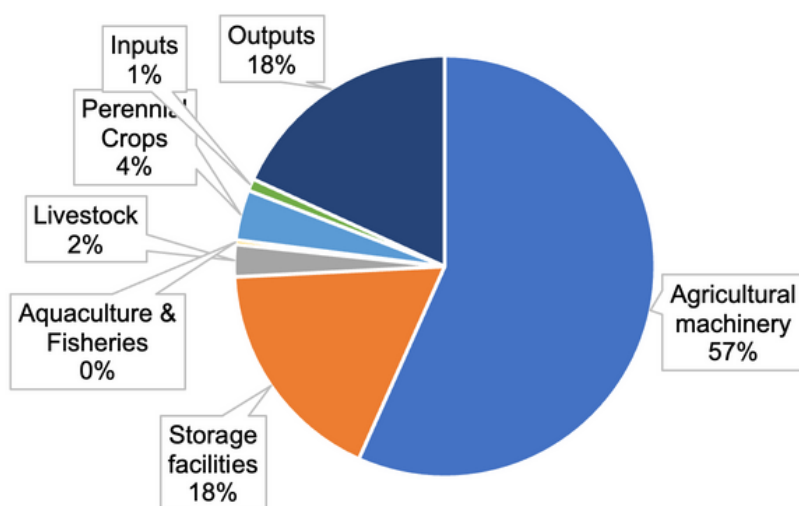
Highlights:

- The direct war-related damages to the agricultural sector 10.3 billion USD, with more than half attributed to destroyed machinery.
- Indirect losses are 69.8 billion USD, almost 50% of them are losses of crop production and 35% are low output prices.
- The reconstruction needs for the sector are 9.4 billion USD, while recovery needs are 46.7 billion USD for the next 10 years.

The impact of RF invasion of Ukraine on the agricultural sector is immense. **The damages** – the combined value of the destroyed assets totals at **10.3 billion USD**, marking 18% increase over the previous estimates made for the first year of the full-scale invasion.⁴³ The relatively moderate increase in damages

is attributed to a substantial share of the assets located in areas of active hostilities already being damaged in the previous version of the estimates. The top three regions that incurred the most substantial damages are Zaporizhya, Kherson, and Luhansk, collectively representing 65% of the total damages.

Figure 25. Breakdown of damages by category



Source: RDNA 3

⁴³ World Bank Group, *Third Rapid Damage and Needs Assessment (RDNA3)*, February 2022 – December 2023

The largest category of damages is the damaged and destroyed agricultural machinery, accounting for 5.8 billion USD or 56.7% of all damages (Figure 25). This figure is attributed in part to a significant quantity of assets in this category being damaged or destroyed, with an average of 18.6% of available machinery sustaining at least partial damage due to RF aggression, depending on the specific type of agricultural machinery and equipment. Another factor contributing to the prominence of this category in damages is that the assessment is based on the replacement value rather than the balance value of the damaged equipment. Consequently, the assumption is made that all damaged machinery and equipment would be replaced with new units, significantly boosting the damage value for this category. In total, an estimated 181 thousand units of agricultural machinery and equipment were partially or fully damaged due to the invasion.

Inputs and outputs are the only category of damages that has remained unchanged compared to the previous version of the estimates. The reason is that in our previous estimates, we assumed all outputs stored in the occupied territories would have already been lost. The estimated 2.8 million tons of grain and 1.2 million tons of oilseeds located in the occupied territories are considered damaged or stolen, resulting in 1.87 billion USD in damages. Additionally, an estimated 124 thousand

tons of fertilizers, 587 tons of crop protection measures, and 11.6 million liters of fuel contribute another 95 million USD in damages to this category.

Storage facilities are a category that sustains damages even when relatively distant from the frontline. Despite only 37.5% of farmland in the Kharkiv region being under occupation at the peak of the invasion, a significant 61% of storage facilities in the region were fully or partially damaged, as indicated by the IPSOS survey. As discussed earlier, we are unable to account for storage facilities destroyed by missile strikes due to methodological limitations. Still, an estimated 3.3 million tons of storage capacity are partially damaged, while 11.3 million tons of storage capacity are fully destroyed due to the invasion, resulting in total damages of 1.8 billion USD. This translates to a 19.5% reduction in Ukraine's storage capacity, without considering storage facilities that remain structurally intact but are inaccessible due to occupation.

The losses, including foregone revenue of agricultural producers and increased production costs, have more than doubled compared to the previous review, amounting to **69.8 billion USD**. Unlike damages, which are localized in the areas affected by the ground battles – losses affect agribusinesses all over Ukraine. These losses encompass the decrease in crops and livestock production, losses due to lower domestic

prices for key agricultural commodities, increased production costs, and recultivation costs. This increase in losses is explained by the fact that, in the previous review, most loss categories were estimated for the 2022 calendar year alone, assuming a quick resumption of most sector operations. In this review, however, we include lower production in 2023 and 2024 as well. Additionally, we assume that the 2023 harvest will be fully affected by lower domestic prices, and increased production costs have impacted the 2023 production as well. The total losses due to lower crop production account for 35.1 billion USD, additional losses due to lower livestock production amount to 5.6 billion USD, losses caused by lower domestic prices are estimated at 24.1 billion USD, and losses due to higher production costs are estimated at 4.4 billion USD.

The most significant category of losses is caused by lower annual crops production, which forms the backbone of the Ukrainian agricultural sector. Lower production of annual crops constitutes 49.2% of all sector losses, amounting to 34.3 billion USD. In the current version of the estimates, we include three years of lower agricultural production 2022, 2023, and 2024. In 2022-2023 alone, we attribute a 48.6 million tons reduction in grain production and an 8.7 million tons

reduction in sunflower production to losses.

Losses in livestock production arise from both a decrease in production due to the reduction in herd size (2.6 billion USD in losses) and a decrease in productivity reported in survey results according to the FAO study (3 billion USD), resulting in a total of 5.6 billion USD in losses. These losses are estimated for the 2022 calendar year and projected for three years of reduced production covering 2022-2024. The primary and largest source of livestock losses stems from the decrease in milk production, resulting in 2.9 billion USD in losses over three years.

The second-largest category of losses results from a decrease in domestic prices, totaling 24.1 billion USD or nearly 35% of all losses. Export disruptions due to the naval blockade imposed by the RF significantly complicated logistics routes for Ukrainian agricultural exports, reducing demand for agricultural commodities in the domestic market and increasing logistics costs, leading to a sharp decline in domestic prices. As of the preparation of this report, the maritime corridor opened by Ukraine has increased Ukrainian export capacity, but the basis between domestic and world prices remains well above the pre-invasion level, indicating that the

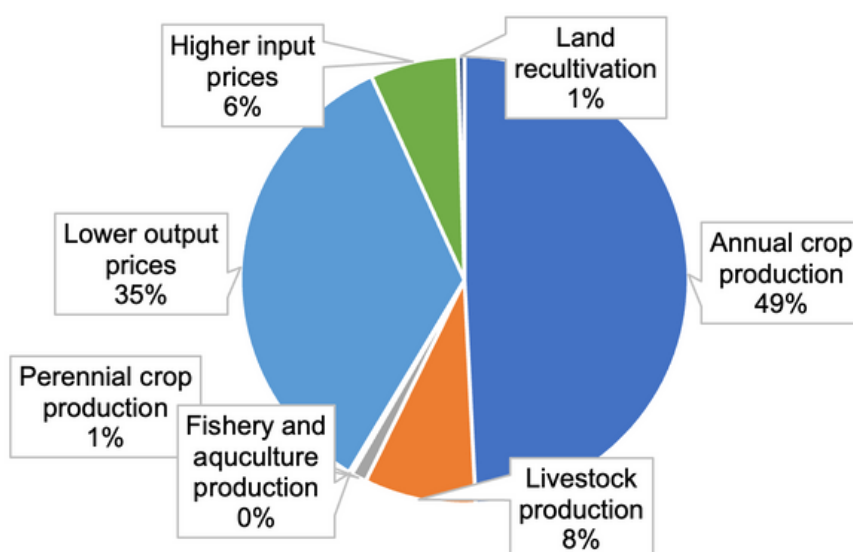
invasion's effect on domestic prices persists. In the current edition of the estimates, we assume that the 2023 harvest will still be affected by lower domestic prices, while the situation will improve in the 2024 calendar year, and the 2024 harvest will not be affected.

One consequence of the RF invasion of Ukraine for agricultural producers is the rise in input prices. We assessed the implications of this price increase for two key inputs: fuel and fertilizers. The 2022 losses due to higher production costs are estimated at 3.2 billion USD. As input prices plummeted in 2023 but remained elevated compared to pre-invasion levels, we also estimated losses due to higher input costs for 2023, resulting in an additional 1.2 billion in losses USD. This brings the total to 4.4 billion USD in losses due to higher production costs over the last two years.

While the demining of agricultural lands is not considered in this analysis, the recultivation of damaged lands is included. After the first year of the invasion, an estimated 836 thousand hectares of farmlands were damaged, resulting in a 184 million USD loss due to the need for recultivation. As of October 2023, this number increased to 1.5 million hectares of farmlands, equating to 3.6% of all farmlands in Ukraine being damaged. The estimated cost of recultivation thus increased to 329 million USD.

Total reconstruction and recovery needs over the next 10 years amount to **56.0 billion USD**, with **2024 priority needs being 435 million USD**, most of **which is already covered by donor funding**. The needs include support for reconstruction, specifically the replacement of damaged assets (9.4 billion USD), support for immediate

Figure 26. Breakdown of losses by category



Source: RDNA 3

production recovery (6.1 billion USD) aiming to restore production, support for longer-term production recovery (35.5 billion USD) aiming to deepen value chains and increase value-added in the sector, along with improved sustainability of production, and support for public institutions (5 billion USD), including initiatives aimed at accelerating EU accession.

Given the extent of damages and losses suffered by agricultural producers in Ukraine, the full restoration of the sector's potential requires substantial resources. We estimate two broad categories of needs – Reconstruction and Recovery Needs. Reconstruction Needs aim to replace the damaged assets, while Recovery Needs provide resources for the sector's recovery by addressing the challenges it faces, along with enhancing sustainability, value-added production, and facilitating the process of EU accession. The needs are estimated over a 10-year period, with special attention given to the priority needs for 2024. These priorities are derived from consultations with the Ministry of Agricultural Policy and Food of Ukraine, other ministries, and the statistics of donor support earmarked for Ukrainian agriculture for the 2024 calendar year. The overall Reconstruction and Recovery Needs are estimated at 56.1 billion USD.

The Reconstruction Needs delineate the resources required to replace the damaged assets crucial for the revival of agricultural production, and estimated at 9.4 billion USD. Due to the distribution of donor and state financing among projects (which lacks resources for the replacement of damaged assets), we have not allocated any Reconstruction Needs to immediate needs in 2024, distributing them over a medium and long-term perspective.

The distribution of Reconstruction Needs among asset categories follows the pattern of damages distribution among the categories. A 20% premium over damages, following the «build back better» principle, was assumed for all damage categories, except for machinery and equipment, where the premium was set at 10%. The lower premium for damaged machinery and equipment, compared to other damage categories, is due to estimating damages not at the balance value but at the replacement value with new assets.

Recovery Needs encompass three categories: support for immediate production recovery (6.1 billion USD), support for longer-term recovery (35.5 billion USD), and support for agricultural public institutions (5 billion USD), totaling 46.7 billion USD over the next 10 years. In 2024, the absolute priority is assigned

to supporting immediate production recovery, with 402 million out of the 435 million USD allocated to this category. Most of the support, constituting 55% of all Needs in the support for immediate production recovery category goes to the interest rate compensation program aimed at addressing liquidity constraints among agricultural producers. The total need for this program is estimated at 3.4 billion USD, with 320 million USD allocated in 2024, and the majority of the 2024 financing (250 million USD) is already provided by donors. Another program targeting liquidity constraints is the funding of a partial credit guarantee fund and providing partial guarantees for agricultural sector financing, with a total estimated need of 631 million USD, with 11 million USD being the immediate priority for 2024. The second-largest category in support for immediate production recovery is grants and inputs for small producers, with a total need over the next 10 years at 1.07 billion USD. The financing for 2024 (71 million USD) is already reserved by donors for this category. The Need for the recultivation of damaged farmlands is estimated at 1.05 billion USD over the next 10 years.

The second category of recovery needs is the support for longer-term recovery that aims to enhance productivity in agriculture, foster resilience to climate change, develop value chains, and increase value-added in the sector. It

includes investment grants programs, with a significant portion allocated to promoting climate-smart technologies for arable crops (15 billion USD) and livestock (9 billion USD).

The second-largest program in this category involves investment grants for integrated food-energy systems, including biogas production, with estimated Needs of 8 billion USD and no financing reserved for 2024.

Two other programs in this category encompass investment grants for horticulture (2.5 billion USD, with 27 million USD for 2024) and for fishery and aquaculture (1 billion USD).

And the last category of recovery needs is the support to agricultural public institutions. The invasion has heightened the workload for key agricultural public institutions. Challenges linked to European integration also necessitate additional resources and increased capacity at public institutions. These include the Ministry of Agricultural Policy and Food of Ukraine, the Food Safety Agency, support to laboratories, research and educational institutions, as well as initiatives aimed at supporting policy dialogue and fortifying Ukrainian public institutions. The overall Need for this category is 5.02 billion USD, with 20 million USD earmarked for 2024 and 18.25 million USD already reserved by donors.⁴⁴

⁴⁴ World Bank Group, *Third Rapid Damage and Needs Assessment (RDNA3)*, February 2022 – December 2023

6. Agricultural land market overview

Highlights:

- The turnover of farmland increased by almost 60% in 2023 compared to 2022.
- Since January 1, 2024 the farmland sales are open for legal entities.
- The nominal capitalization of the market increased by 2.46 billion USD in 2023 and by 5.5 billion USD since the land market opened.
- The potential volume of the land-secured bank financing would amount to 17.5 billion USD.
- In 2023, local budgets received UAH 36.9 billion from the land use, over 12% of their total tax revenues.

Prior to the full-scale war, Ukraine had 41.3 million hectares of agricultural land, which is around 69% of Ukraine's total land area. The area of arable lands was estimated at 32.7 million hectares, 15.6–17.4 million ha of which were highly fertile black soils. As of 2024, Ukraine controls an estimated 26.5 million hectares of arable lands.⁴⁵ It is important to note that temporarily occupied lands in the southern and eastern regions are located in steppe climatic zone; they show low productivity of crop growing due to persistent droughts. The World Bank projections show that over the last decades, southern regions will be much less favorable for crop production due to climate change. By contrast, the average crop yields in central and northern regions will increase.⁴⁶

Despite the abundance of highly

productive agricultural land in Ukraine, the farmland sales were banned in Ukraine for over two decades starting from 2001. The farmland sales market was opened only on July 1, 2021 for individuals and on January 1, 2024 for legal entities. The newly opened farmland market was severely impacted by the full-scale war. After the RF invasion the market was paused for a few months due to the lack of access to the registries for security reasons, was reopened in May, 2022, and started its recovery, with the monthly trading volume being a fraction of the pre-invasion level. In this review we present the summary of the land market in 2023.

The turnover of farmland increased by **58%** to 172.9 thousand hectares in 2023 compared to 109.5 thousand hectares in 2022. The highest number of land transactions was recorded in the 4th

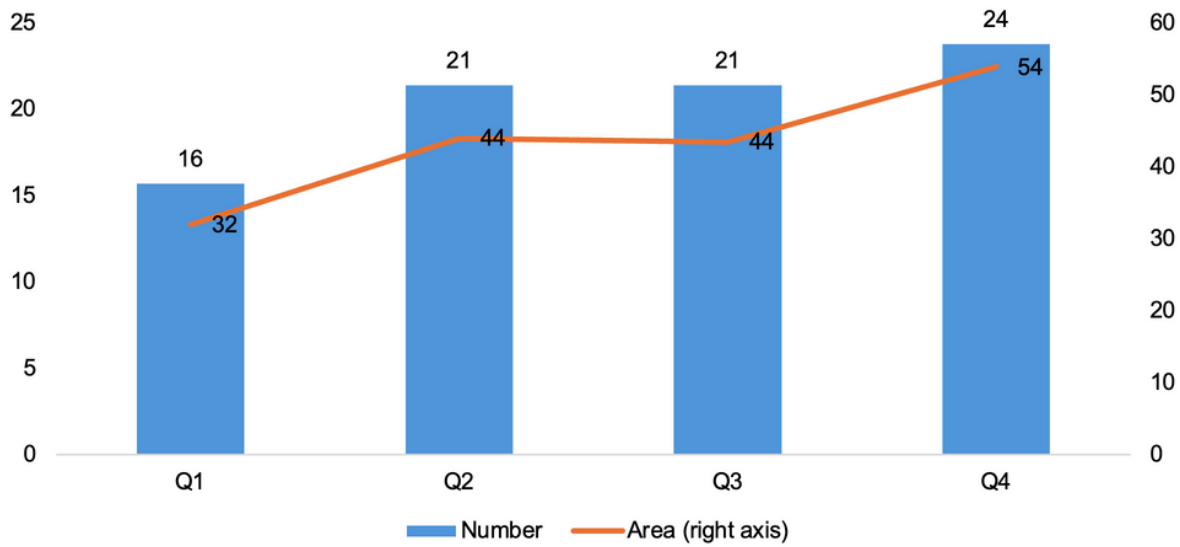
⁴⁵ [https://www.europarl.europa.eu/RegData/etudes/BRIE/2024/760432/EPRS_BRI\(2024\)760432_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2024/760432/EPRS_BRI(2024)760432_EN.pdf)
⁴⁶ <https://documents1.worldbank.org/curated/en/893671643276478711/pdf/Ukraine-Building-Climate-Resilience-in-Agriculture-and-Forestry.pdf>

quarter of 2023 – 23.8 thousand agreements for a total area of 53.9 thousand hectares (Figure 27).

Since the farmland market opening in

July 2021, **195,900 sales agreements** for a **total area of 432,200 hectares** have been concluded. So, as of January 1, 2024, 1.05% of all agricultural land in Ukraine was in circulation.

Figure 27. Number and total area of agricultural land sales in 2023, thsd. transactions (left axis), thsd. ha (right axis)

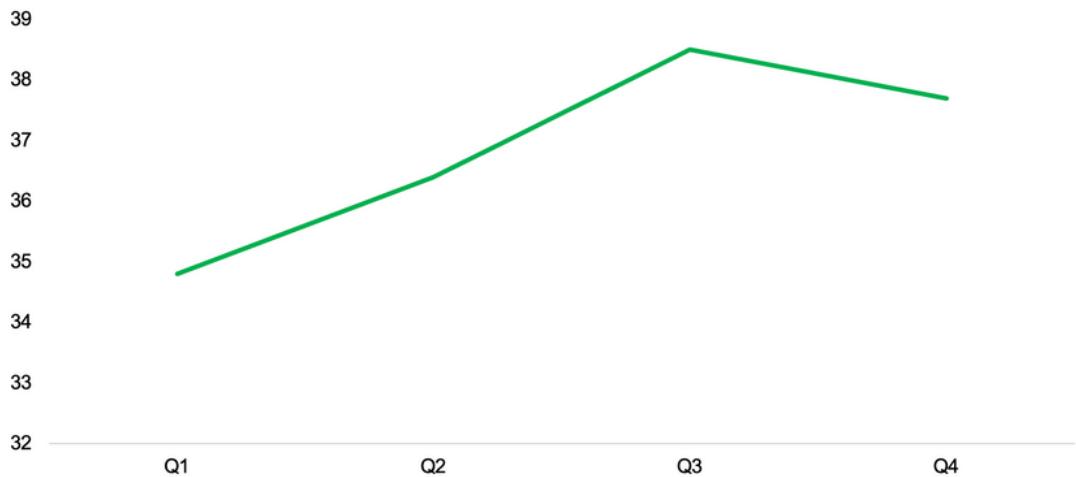


Source: StateGeoCadastre

The weighted average price for agricultural land increased during 2023 by **8.3%**, outpacing the annual inflation

rate. Therefore, the nominal capitalization of the market increased by **2.46 billion USD** in 2023 and by 5.5 billion USD since the land market opened.

Figure 28. Weighted average price of 1 ha of agricultural land in 2023, thsd. UAH



Source: StateGeoCadastre

Considering the current 0.35 liquidity ratio of farmlands as collateral, the increase in land value could generate USD 1.9 billion of additional loans. For comparison, at the end of 2023, the volume of bank debt in Ukraine's agricultural sector amounted to approximately **3.5 billion USD**. More active use of land as collateral would allow for a several-fold increase in financing for the farm sector and landowners.

Due to the land market opening for legal entities on January 1, 2024, land value will likely increase by approximately 40%. Therefore, the capitalization of the land market will grow to almost **50 billion USD**. The potential volume of the land-secured bank financing would amount to 17.5 billion USD. That would allow closing the gap in the funding of the Ukrainian agricultural sector, which currently amounts to about **21 billion USD**, and thus meet the needs for short-term financing and investments in reconstruction and development.

At most, the further development of the land market, increasing its transparency, will contribute to the growth of the land liquidity ratio to the indicators of developed countries - at the level of 0.6-0.8, which will automatically double the potential lending volume.

In 2023, Ukraine's land market partially recovered from the consequences of Russia's full-scale invasion, but its daily

volumes were still lower than before. In the second half of 2023, 529 hectares were sold daily, 37% less than before February 2022.

According to our calculations, 120,000 agreements for a total area of 355,500 hectares have never happened due to the Russian invasion. Thus, the war-induced land market losses in Ukraine amounted to USD 325 million or UAH 12.4 billion.

A few months before the invasion Ukraine also reformed the system of farmland rent auctions in Ukraine and now all farmland auctions are on the Prozorro.Sale platform. For a greater part of 2022 – the farmland rent auctions were halted as well.

The volume of sales of communal land lease rights at Prozorro. Sales increased more than four times throughout 2023 – from 402 auctions of 3.6 thousand hectares in the 1st quarter to 1,677 auctions of 14.5 thousand ha in the 4th quarter. Since November 2021, when electronic auctions on the Prozorro Sales platform started, 5,504 plots of communal agricultural land with a total area of 48.7 thousand hectares have been successfully leased, bringing communities an annual revenue income of UAH 428.5 million.

Agricultural land is a substantial source of **revenue for local communities' budgets**. In 2023, the dynamics of the

budget income of local communities (hromadas) from agricultural land significantly improved compared to 2022 (+22%) and 2021 (+5%). At the same time, the growth rate of hromadas' total tax revenues in 2023 was much higher (+29% compared to 2021). The full-scale war slowed the growth in land revenue, as land users in occupied territories and the territories with active hostilities were exempted from land tax and rent. In addition, in 2022, the normative monetary valuation (NMV), the basis for imposing land tax, was not indexed. For 2023, 5.1% NMV indexation has been applied. So, in 2024, more active growth of local budget revenues from the circulation and use of agricultural lands can be expected.

In 2023, thanks to the circulation and use of agricultural land, hromadas' budgets received **36.9 billion UAH**, over 12% of their total tax revenues. The lease of communal land generated the largest share. In 12 months of 2023, local communities received **19.8 billion UAH** in rent. However, most of these revenues came from leases concluded from 2013 to October 2021 using the offline auction procedure or through direct contracts in a non-competitive and non-transparent manner.

For comparison, during 2015-2021,

331,000 hectares of agricultural land were leased under the old procedure, almost seven times more than the amount of land transferred through land auctions at Prozorro.Sales after November 2021.

The amount of land leased during the last 20 years is unknown. However, even if we take the available data for 2015-2021 and assume that the share of land leased through online auctions is 13% (the upper limit), the increase in annual rental income of hromadas due to the complete transition to Prozorro.Sales can amount to about UAH 29 billion. Some communities are already following this path and have leased agricultural land at Prozorro.Sales for 5-15% of their annual tax revenues.

Another potential source of increasing community income from the circulation and use of agricultural land is expanding registration of farmlands in the State Land Cadaster (SLC), which currently accounts for 77%. Land plots not registered in the SLC fall outside the transparent market; therefore, such land cannot be officially sold, leased, or taxed. The potential for the growth of community budget revenues due to the registration of all agricultural land in SLC may surpass UAH 10 billion, or 60% of the current spending of local governments on education.⁴⁷

⁴⁷ https://kse.ua/wp-content/uploads/2024/02/RDNA3_eng.pdf

7. Changes in agri-food policy

Highlights:

- The state support for agriculture is focused mostly on capital investments and recovery needs of the sector.
- The livestock sector is much more supported than crop sector.
- The introduction of the State Agrarian Registry in 2022 significantly improved the management of state support.
- During 2022-2023, a series of grant programs were introduced, amounting to over 6 billion UAH.
- The main legislative changes include European integration initiatives, land reforms, modernization of reclamation systems, promotion of investment and recovery.

7.1. Current state support programs

One of the main drivers of agricultural growth is the policy aimed at state support for agriculture. During the last three decades, Ukraine's agricultural policy was chaotic and inconsistent. The main problem was the excessive intervention of the state in the market mechanism, which was reflected in the establishment of administrative prices, export restrictions, centralized purchases of products, discrimination of some groups of farmers at the expense of others, etc.⁴⁸ In addition, significant direct support of producers in the form of subsidies and tax benefits reduced incentives for farmers to increase their

own efficiency.⁴⁹ All this was aggravated by the underdevelopment of market institutions, weak funding of education and science in the agrarian sphere.

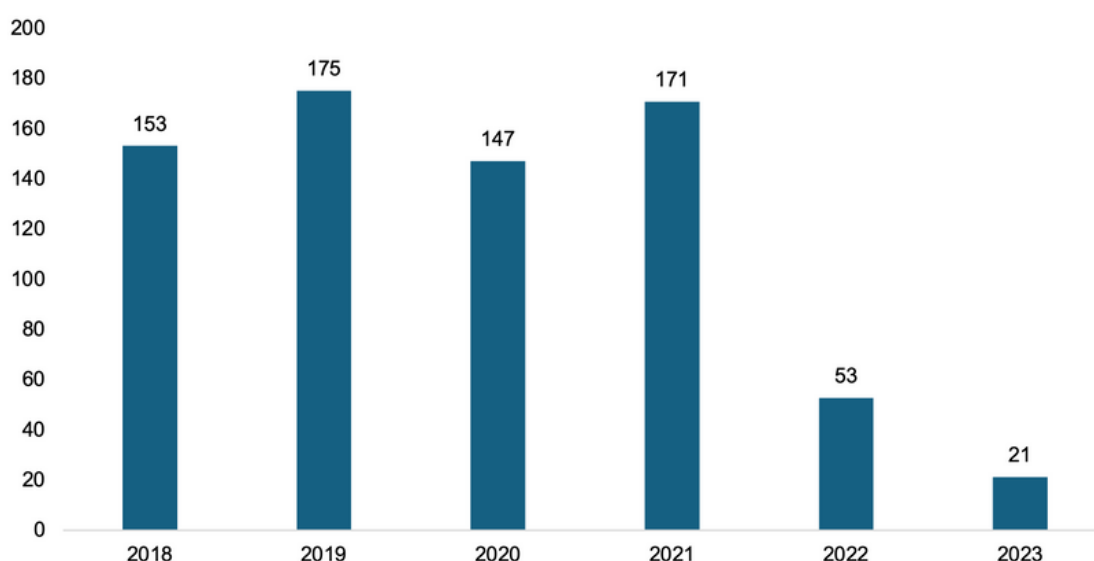
Since 2018, prior to the full-scale invasion, direct support for agricultural producers amounted to up to 180 mln. USD annually. Support programs encompassed small, medium, and large agricultural producers, providing direct monetary assistance alongside soft loans. In 2018, producers received 154 mln. USD in support, with 58% allocated to livestock producers (primarily cattle

⁴⁸ https://kse.ua/wp-content/uploads/2022/09/Chapter_2_Agrocenter.pdf
⁴⁹ https://kse.ua/ua/about-the-school/news/2016_02_16-podatkovyi-pilgi/

farms) and grain storage operators, and 22% dedicated to partial reimbursement of agricultural machinery purchases. In 2019, the budget structure remained largely unchanged, with 54% allocated to support grain storage operators and livestock producers, and 14% for

machinery reimbursement programs. The remaining budget supported various initiatives such as compensating loan interest rates (averaging 10% from 2018 to 2019), farm support, social security payments, advisory services, payments per hectare, and horticultural expenses.

Figure 29. State support of agriculture, excluding 5-7-9 program, mln. USD



Source: Ministry of Agricultural Policy and Food

Since 2020, there has been a shift in the structure of support programs towards **prioritizing capital investments in the sector**. Despite a slight decrease in the total budget to 147 million USD due to the COVID-19 pandemic, the largest shares were allocated to partial machinery compensation (37%), interest rate compensation for agriculture loans (26%), and support for livestock farms, split evenly between capital investments and livestock population support (26%).

In 2021, in response to a severe drought in southern regions during the previous

year, the government initiated climate change mitigation programs for the first time in Ukraine's history. These programs aimed to cover drought-caused losses, support irrigation systems, and establish harvest insurance programs. Additionally, niche crop and potato producers received 2% of the total budget in response to COVID-19 impacts and shock to access to some food categories, e.g., buckwheat. Although core program financing remained stable, there was a slight shift in focus compared to 2020, with 35% of the budget allocated to livestock

programs, 21% to loans support, and 21% to machinery compensation. A minor portion (3%) of the budget was dedicated to climate-related programs, with 2% addressing drought losses and 1% allocated to irrigation machinery and system maintenance. However, insurance programs were not funded in 2021 despite policy development efforts.

Since the onset of the full-scale aggression of the Russian Federation against Ukraine, the agricultural budget has been redirected to military and humanitarian needs. In mid-2022, in collaboration with the European Union, the Ministry of Agricultural Policy and Food of Ukraine initiated support programs for crop and livestock producers. Ten thousand livestock producers received 10 million USD, while 40 million USD was allocated to 21.5 thousand crop producers. Additionally, 1.6 million USD was allocated to support horticulture and greenhouse production. Notably, the 5-7-9 affordable loans program launched in 2020 provided substantial support to the sector, totaling around 2.2 billion USD in soft loans provided in 2022, with up to 11% of bank interest waived, at a total cost of 108 million USD.

In the following year, direct payments to agricultural producers ceased, resulting in a halving of direct agriculture support from 53 million USD in 2022 to 22 million USD in 2023. Half of the budget was allocated to horticulture and greenhouse

development, and the other half to the partial guarantee fund. In 2023, agricultural producers received **1.2 billion USD in soft loans under the 5-7-9 program**, supported by 109 million USD in public funds.

Since 2020, public policy in agricultural support has shifted towards market-oriented instruments, accompanied by stricter farm size limitations to ensure equitable access to support among small and medium-sized producers. These instruments include:

- Climate-oriented programs, including horticulture, irrigation support, and the development of insurance instruments to mitigate climate shocks.
- The launch of the irrigation reform in 2021, focused on water-user organizations, which has resulted in the establishment of over 32 organizations. However, the second stage of the irrigation reform, involving the establishment of a national operator of water canals, has yet to be implemented.
- The introduction of the State Agrarian Registry in 2022, which significantly improved the management of state support and ensured inclusive access to state programs for 31,000 farms.
- The launch of Partially Credits Guarantee Fund with 10 million USD

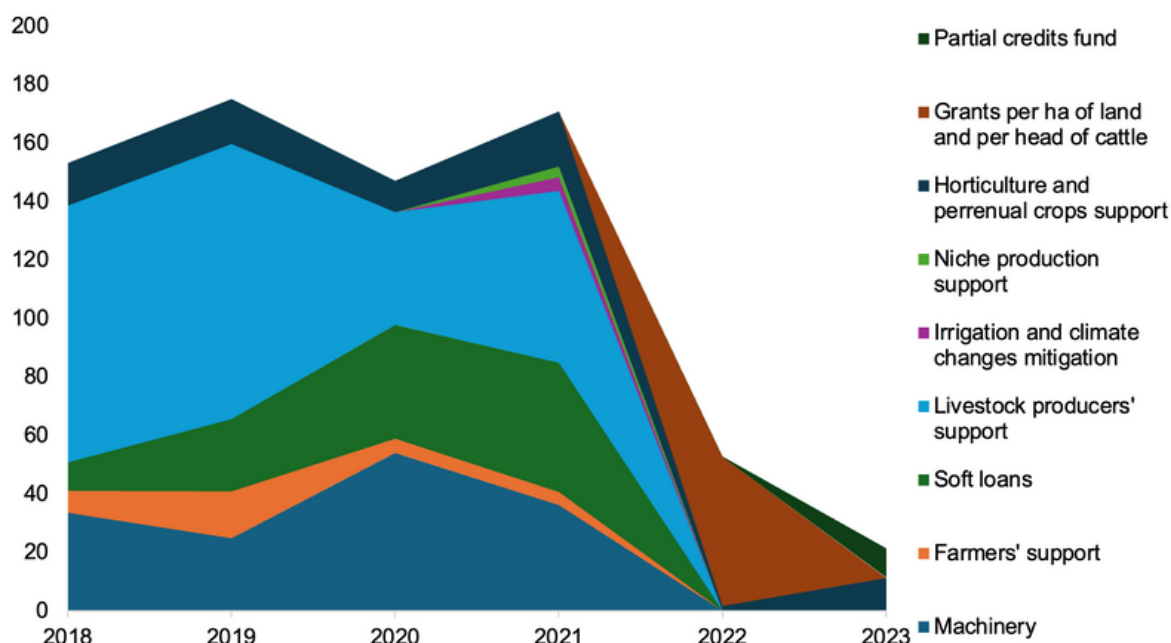
in equity provided by the government and a matching amount will be received from the World Bank Group. The fund covers up to 50% of the credit received by small-sized producers (up to 500 hectares).

Table 1. Main support pillars in 2018-2023, mln. USD

Support Pillar	2018	2019	2020	2021	2022	2023
Machinery	33.6	24.8	54.1	36.3		
Farmers' support	7.5	16.1	4.9	4.4		
Soft loans	9.8	24.8	38.9	44.1		
Livestock producers' support	87.9	94.1	38.6	59.0		
Irrigation and climate				4.6		
Niche production support				3.8		
Horticulture and perennial crops	14.5	15.4	10.8	18.8	1.8	11.3
Grants per ha and per head					50.9	0.0
Partial credits fund					0.3	10.0
Total	153.2	175.2	147.2	170.9	52.9	21.3

Source: Ministry of Agricultural Policy and Food of Ukraine

Figure 30. Main support pillars in 2018-2023, mln. USD



Source: Own calculations based on Ministry of Agricultural Policy and Food, Ministry of Finance, and Verkhovna Rada Data

7.2. Grant support

During 2022-2023, a series of grant programs were introduced, amounting to **over 6 billion UAH**, which played a crucial role in sustaining the agricultural industry. Notably, the «eRobota» program, with a contribution of 5 billion UAH from the Ukrainian government and over 1 billion UAH from USAID, emerged as one of the largest initiatives aimed at developing small and medium-sized agricultural businesses, processing enterprises, horticulture, and greenhouse farming, as well as supporting veterans and their families. These grants addressed various needs, including business development, agricultural support, social support, and sector resilience.⁵⁰

However, to further enhance the effectiveness of grant support in the agriculture sector, measures should be taken to broaden access to funding, especially for newly established enterprises and small wine producers, and improve the process of informing potential grantees. It is critically important to simplify the application and reporting procedures and establish a transparent system for granting support from both the state, private companies, and international organizations. This will ensure more efficient resource utilization and stimulate further development of the Ukrainian agricultural sector, enhancing its competitiveness and export potential.

⁵⁰ KSE Agrocenter. (2024). Grant support of agricultural sector in 2022-2023. Link: https://kse.ua/wp-content/uploads/2024/01/tablitsya-2_p.pdf

7.3. Legislative changes in agriculture

During the years 2022-2024, the legislative activity of the Verkhovna Rada of Ukraine was largely focused on the adaptation of domestic legislation to the standards of the European Union, taking into account the needs of modern agricultural and land policy, as well as the needs of the country under martial law. This period was characterized by the active implementation of reforms that covered a wide range of areas, from agricultural policy and food safety to the regulation of genetic engineering activities.

European integration initiatives in the field of agricultural policy

The year 2022 became an important stage in the process of European integration of Ukraine, especially in the agricultural sector. Four key laws were adopted with the aim of harmonizing Ukrainian legislation with European legislation.⁵¹ One of the most significant was Law No. 2718-IX, which established European safety standards for materials in contact with food products. And the Law of Ukraine No. 3339-IX of 23.08.2023 was adopted, which implements the practice of proper production control of GMOs.⁵²

Laws such as No. 2763-IX⁵³ and No. 2775-IX⁵⁴ are aimed at improving the protection of rights to plant and seed varieties, as well as at improving state regulation in the field of handling pesticides and agrochemicals, strengthening protection of bees and preventing poisoning.

Law No. 2800-IX «On Geographical Indications of Alcoholic Beverages»⁵⁵ opened the door to the protection of national brands at the international level, stimulating the production of high-quality alcoholic beverages.

Land reforms under martial law

The adoption of three laws regulating land relations during martial law reflects the government's efforts to adapt to new challenges. Laws No. 2145-IX,⁵⁶ No. 2247-IX,⁵⁷ and No. 2698-IX⁵⁸ introduced special regulations to optimize the use of land resources in the agricultural sector, simplify the transfer of land for lease, and create conditions for ensuring food security. This made it possible to use agricultural land as efficiently as possible to meet the needs of the population and the army, and also contributed to the restoration of production facilities relocated from the war zone.

⁵¹ Law of Ukraine No. 2718-IX dated October 1, 2023 "On materials and objects intended for contact with food products" <https://zakon.rada.gov.ua/laws/show/2718-20#Text>

⁵² Law of Ukraine No. 3339-IX dated 23.08.2023 "On state regulation of genetic engineering activities and state control over placement on the market of genetically modified organisms and products" <https://zakon.rada.gov.ua/laws/show/3339-20#Text>

⁵³ Law of Ukraine No. 2763-IX dated 16.11.2022 "On Amendments to Certain Legislative Acts of Ukraine on Bringing Legislation in the Field of Protection of Rights to Plant Varieties and Seed Production and Nurseries into Compliance with the Provisions of European Union Legislation" <https://zakon.rada.gov.ua/laws/show/2763-20#Text>

⁵⁴ Law of Ukraine No. 2775-IX dated July 27, 2023 "On Amendments to Certain Laws of Ukraine Regarding Improvement of State Regulation in the Field of Handling Pesticides and Agrochemicals" <https://zakon.rada.gov.ua/laws/show/2775-20#Text>

Development of fisheries

Law No. 2989-IX⁵⁹ became an important step in the development of fisheries, introducing electronic auctions for the right to commercial fishing and reducing the administrative burden on business. This reform not only improved the regulation of the industry, but also ensured the preservation of aquatic biological resources and promoted the development of competition.

Improvement of notarial regulation

The adoption of the law on the improvement of notarial regulation in the aspect of acquiring rights to land plots simplified the procedures for citizens and created favorable conditions for the development of the agricultural sector, in particular, due to the reduction of bureaucratic barriers and the⁶⁰ introduction of electronic document flow.

Modernization of reclamation systems

Adoption of the draft law on reclamation systems opened the way for attracting investments and modernization of water management infrastructure, which is critically important for supporting agriculture in conditions of climate change and growing water resource needs.⁶¹

Promotion of investment and recovery

In 2024, a law was adopted simplifying the procedure for changing the purpose of land plots in order to attract investments for the rapid reconstruction of Ukraine. This decision will certainly contribute to the intensification of economic activity, especially in the field of industry and energy, and will provide the country with the necessary resources to overcome⁶² the consequences of military actions.

⁵⁵ Law of Ukraine No. 2800-IX dated November 23, 2023 "On geographical indications of alcoholic beverages" <https://zakon.rada.gov.ua/laws/show/2800-20#Text>

⁵⁶ Law of Ukraine No. 2145-IX dated March 24, 2022 "On Amendments to Certain Legislative Acts of Ukraine Regarding the Creation of Conditions for Ensuring Food Security in Martial Law" <https://zakon.rada.gov.ua/laws/show/2145-20#Text>

⁵⁷ Law of Ukraine No. 2247-IX of May 12, 2022 "On Amendments to Certain Legislative Acts of Ukraine Regarding the Peculiarities of Regulating Land Relations in Martial Law" <https://zakon.rada.gov.ua/laws/show/2247-20#Text>

⁵⁸ Law of Ukraine No. 2698-IX dated 10/19/2022 "On Amendments to Certain Legislative Acts of Ukraine Regarding the Restoration of the System for Registration of Agricultural Land Lease Rights and Improvement of Land Protection Legislation" <https://zakon.rada.gov.ua/laws/show/2698-20#Text>

⁵⁹ Law of Ukraine No. 2989-IX dated 21.03.2023 "On Amendments to Certain Legislative Acts of Ukraine Regarding Improvement of State Regulation in the Field of Fisheries, Conservation and Rational Use of Aquatic Biological Resources and the Field of Aquaculture" <https://zakon.rada.gov.ua/laws/show/2989-20#Text>

⁶⁰ Law of Ukraine No. 3065-IX dated 02.05.2023 "On Amendments to Certain Legislative Acts of Ukraine on Improving the Legal Regulation of Notarial and Registration Acts Upon Acquisition of Rights to Land Plots" <https://zakon.rada.gov.ua/laws/show/3065-IX#Text>

⁶¹ Draft law (reg. No. 3562-IX dated 06.02.2024) on amendments to some legislative acts on improving the management system of engineering infrastructure facilities of state-owned reclamation systems, <https://itd.rada.gov.ua/billInfo/Bills/CardByRn?regNum=7577&conv=9>

⁶² Law of Ukraine No 3563-IX dated 06.02.2024 «On the introduction of amendments to some legislative acts of Ukraine regarding the simplification of the procedure for changing the target designation of land plots to attract investments for the purpose of rapid reconstruction of Ukraine», <https://zakon.rada.gov.ua/laws/show/3563-IX#Text>

7.4. Further reforms

The priorities of further reforming of Ukraine's agri-food sector are defined by **Agriculture and Rural Development Strategy until 2030**. The main goals of the strategy are:

1. Creation of an inclusive policy for the development of agriculture and rural areas: institutional capacity.
2. Ensuring public needs for high-quality, nutritious and safe food products: achieving food security.
3. Ensuring the sustainability of the agricultural sector: maintaining a stable and fair income of producers, increasing their competitiveness.
4. Effective use of land: demining, land reform.
5. Climate-oriented agriculture: climate change mitigation and adaptation.
6. Modernization of the agricultural sector: development of processing, innovation, digitization and exchange of knowledge.
7. Creation of conditions for the development of rural areas.⁶³

These goals are aligned to the priorities of the **Ukraine Facility Plan**, according to which the post-war recovery of

agriculture is closely linked to the Ukraine's integration to the EU. In particular, **the reform agenda for the sector in 2024-2027** is based on six main reforms:

Reform 1. Aligning the institutional framework on agriculture and rural development to the EU policy.

Reform 2. Ensuring functional land market.

Reform 3. Improving the institutional and administrative set up for managing investment programmes.

Reform 4. Improvement of the official public electronic farm register.

Reform 5. Long-term development of the irrigation system to increase climate resilience of the sector.

Reform 6. Demining of land and water areas.⁶⁴

In general, the reform plan is aimed at increasing the institutional capacity of Ukrainian agriculture, increasing its resilience to external shocks, and more balanced distribution of state support between various subsectors and groups of stakeholders.

⁶³ <https://minagro.gov.ua/news/minahropolityky-prezentuvalo-stratehiu-rozvytku-silskoho-hospodarstva-ta-silskykh-terytorii-v-ukraini-do-2030-roku>

⁶⁴ <https://www.ukrainefacility.me.gov.ua/en/>

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