



AgEcon SEARCH

RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.



1,000 Days of Ukraine-Russia's War: Projections vs. Reality

Iuliia Tetteh

Department of Agriculture
Illinois State University

Joana Colussi

Department of Agricultural and Consumer Economics
University of Illinois

December 4, 2024

farmdoc daily (14): 219

Recommended citation format: Tetteh, I. and J. Colussi. "1,000 Days of Ukraine-Russia's War: Projections vs. Reality." *farmdoc daily* (14): 219, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, December 4, 2024.

Permalink: <https://farmdocdaily.illinois.edu/2024/12/1000-days-of-ukraine-russias-war-projections-vs-reality.html>

A thousand days after the full-scale Ukraine-Russia conflict began, the question remains: will Ukraine be able to remain relevant in the global agricultural market? Despite some economic growth in mid-2024, Ukraine's GDP remains 22% below 2021 levels, and recovery to pre-war levels is estimated to take five years if the war ends now. Given the decline in metal exports, agriculture now accounts for 63% of export revenue, compared to 40% before the war. This article examines the impact of the war on Ukraine's agricultural sector, particularly in corn and wheat production and exports, since the conflict began nearly three years ago.

Impact of the War on Ukraine's Agricultural Sector

Preliminary estimates indicate that the war in Ukraine has caused \$80 billion in damages and losses to the agricultural sector. This includes \$10 billion in damaged assets, with 57% attributed to machinery and equipment, and \$70 billion in losses, largely from lost revenue and increased costs due to the conflict. According to the National Aeronautics and Space Administration (NASA), Ukraine has lost between 5 and 7 million acres of farmland—equivalent to 7.5% of the country's total cropland—due to occupation, proximity to active combat zones, or contamination with landmines.

Currently, Ukraine is the most heavily mined country in the world, with approximately 2 million landmines laid since 2022, contaminating 23% of its territory. To address this, Ukraine has begun exploring innovative technologies and approaches, such as drones and sensors integrated with AI and machine learning, to survey suspected hazardous areas. These efforts are crucial for restoring Ukraine's agricultural potential by reclaiming cropland that is currently unsuitable for production due to mine contamination.

Since the beginning of the war, Russia has conducted at least 50 attacks against Ukraine's export infrastructure in the Black Sea region, damaging over 300 port facilities and 23 civilian vessels, and



We request all readers, electronic media and others follow our citation guidelines when re-posting articles from farmdoc daily. Guidelines are available [here](#). The farmdoc daily website falls under University of Illinois copyright and intellectual property rights. For a detailed statement, please see the University of Illinois Copyright Information and Policies [here](#).

destroying more than 100,000 metric tons of agricultural products (Welsh et al., 2024). The growing rate of missile attacks on Ukraine's Black Sea port infrastructure in recent months could significantly limit the country's export capabilities.

Ukraine's Corn and Wheat Production

Before Russia's invasion, Ukraine was a major global exporter of grains (primarily corn and wheat) and vegetable oils, supplying both European Union countries and low-income nations in Asia and Africa. In the 2024/25 marketing year, Ukraine's grain and oilseed production is projected to decline from 82 million metric tons in 2023/24 to 73-75 million metric tons (WASDE, 2024). The war's negative impact on Ukraine's agricultural production and exports over the past three years are illustrated in Table 1.

Table 1. War-Time Corn and Wheat Production in Ukraine

	Change in production compared to 5-year average	Change in area harvested compared to 5-year average	Change in yields compared to 5-year average
2022/23	-20%	-19%	-1%
2023/24	-3%	-16%	14%
2024/25*	-22%	-18%	-5%
	Change in production compared to 5-year average	Change in area harvested compared to 5-year average	Change in yields compared to 5-year average
2022/23	-23%	-19%	-6%
2023/24	-18%	-28%	14%
2024/25*	-18%	-25%	9%

ILLINOIS * Forecast Source: Author's own calculations using data from WASDE reports. The reported estates are based on the five-year averages (2017/2018 MY through 2021/2022 MY). **farmdocDAILY**

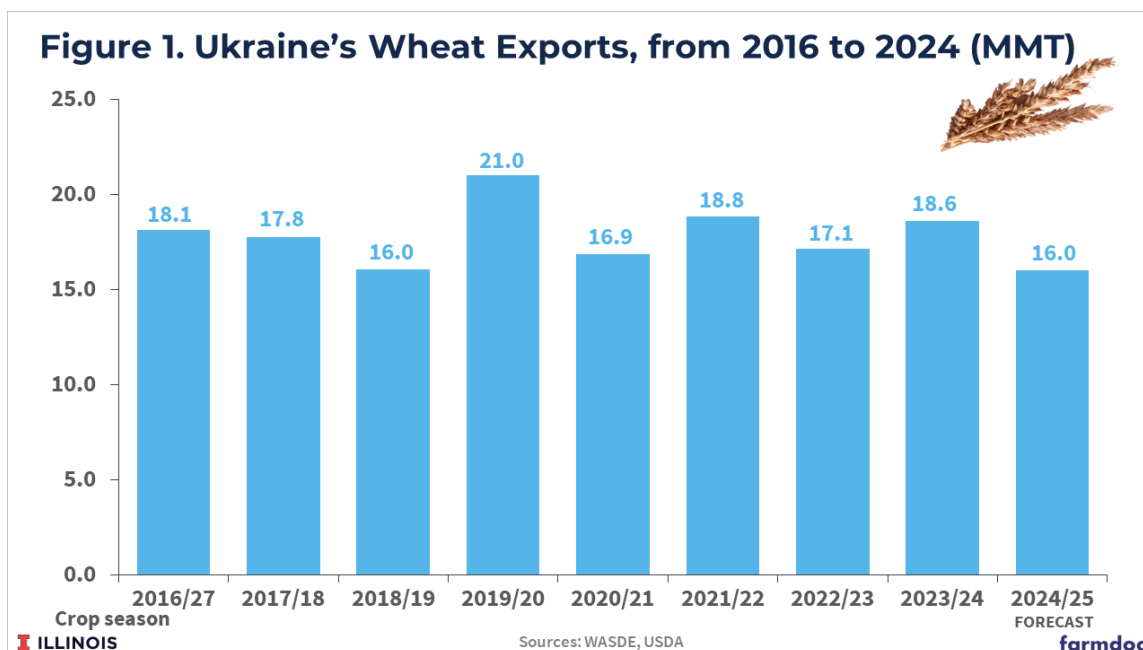
Ukraine has lost nearly half of its wheat production, primarily due to a decline in acres harvested rather than yields. As shown in Table 1, a significant increase in wheat yields during the 2023/24 and 2024/25 marketing years has partially offset the sharp reduction in harvested area compared to pre-war levels. In a scenario of low yields, the country's wheat production potential would be significantly compromised.

Corn production has also been negatively affected by the war. The number of corn acres harvested has declined, although to a lesser extent than wheat. This trend can be attributed to the regional distribution of production—wheat is more heavily concentrated in the east and south, while corn is more evenly distributed across the central and northern parts of the country—and to producers' responses and adaptability to market signals, such as prices and the ability to deliver grain to export destinations.

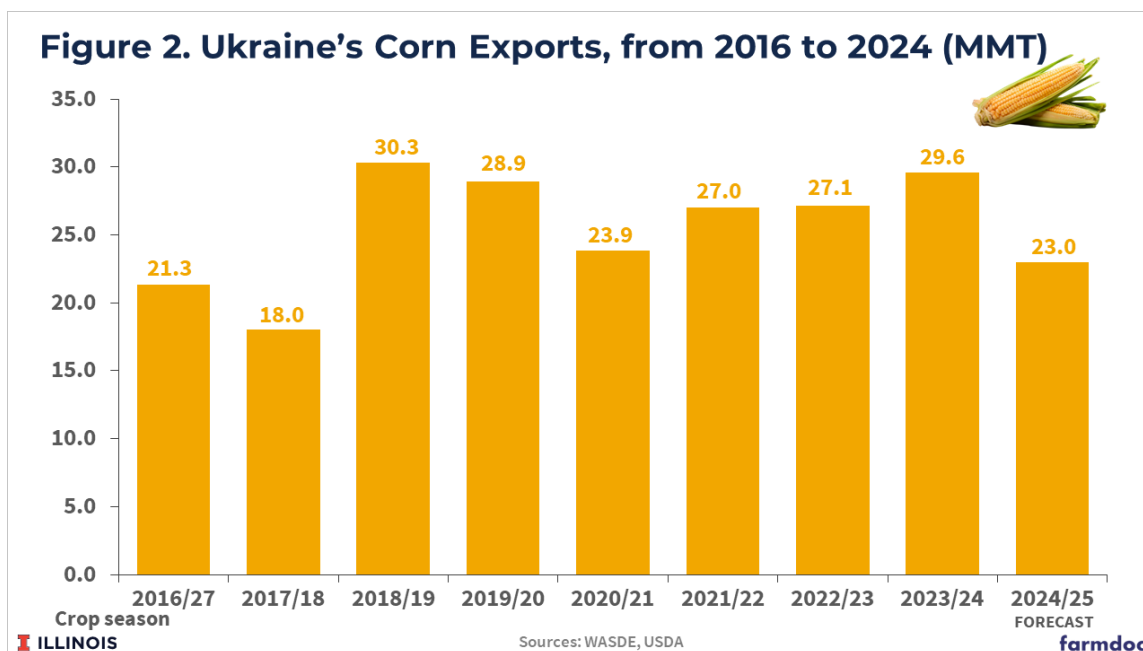
The decline in corn production is driven by both a reduction in the area harvested and lower yields. However, the 2023/24 marketing year stands out as an exception, as exceptionally high corn yields nearly offset the reduction in harvested area. Overall, since the start of the war, Ukraine's corn production has averaged 20% less than pre-war levels.

Ukraine's Corn and Wheat Exports

Despite lower production levels of wheat, Ukraine has been able to meet its domestic and export demand since the beginning of the war. Domestic demand has dropped significantly—by 26%—and continues to decline faster than wheat production, leaving adequate grain stocks available for export. The decline in domestic wheat use is primarily driven by a smaller population base and the loss of the livestock industry. The availability of wheat, combined with the establishment of functioning export routes, has allowed for lower but relatively stable exports compared to initial projections.



Ukraine's corn growers and exporters beat the odds in the first two years of the war, as corn exports were higher than pre-war levels (see *farmdoc daily*, [October 11, 2023](#)). This was primarily due to large beginning stocks in 2022/2023, high yields in the 2023/2024 marketing year, and the country's ability to secure shipping routes through the Black Sea Grain Deal, Solidarity Lanes via the EU, and later with Danube Ports and the Grain Corridor (see *farmdoc daily*, [November 2, 2023](#)).



According to the World Agricultural Supply and Demand Estimates (WASDE/USDA), Ukraine's corn exports are projected to decline by 6.6 million metric tons in the 2024/2025 marketing year compared to the previous year. However, Ukrainian sources remain more optimistic, reporting a 29% increase in exports during October and November 2024 compared to the same period in 2023 ([Samoliuk, 2024](#)). Additionally, the share of grain shipments through seaports has reached 81% of all shipments, the highest level since the war began, indicating that export logistical routes are functioning effectively despite the ongoing conflict.

Overall, Ukraine's share in the global corn market has declined, though not as severely as expected: from 30.3% in the 2018/2019 marketing year to a projected 24% in the 2024/2025 marketing year. Similarly, its share in the global wheat market has decreased from 16% to 15%. To maintain export levels and its position in the global market, the Ukrainian government, agribusinesses, and commodity groups are focusing their efforts on securing export logistics routes and diversifying export markets. A follow-up *farmdoc* daily article in January will provide more details on exports.

Final Considerations

Overall, as Ukraine is entering another winter season in this war, any additional loss of cropland will be detrimental to its grain production capacity, and any further declines in yields (weather or input-related) can significantly jeopardize the country's grain production. Despite significant losses in production and infrastructure, efforts to secure export routes, improve yields, and adapt to market conditions have enabled the country to maintain a presence in the global corn and wheat markets. Looking ahead, sustaining these efforts, alongside international support and innovative strategies, will be critical to ensuring Ukraine's long-term agricultural recovery and its continued relevance in global agricultural market.

References

International Energy Agency. (2024). Ukraine's energy security and the coming winter: Ukraine's energy system under attack. Retrieved from <https://www.iea.org/reports/ukraines-energy-security-and-the-coming-winter/ukraines-energy-system-under-attack>

NASA Harvest. Farming amidst war: Satellite data reveals productive yet challenging season in Ukraine. Retrieved from <https://www.nasaharvest.org/news/farming-amidst-war-satellite-data-reveals-productive-yet-challenging-season-ukraine>

Samoiliuk, M. Center for Economic Strategy. Tracker: Economy during the war. November 4, 2024. Retrieved from <https://ces.org.ua/en/tracker-economy-during-the-war/>

Tetteh, I., J. Colussi and N. Paulson. "The Second Harvest Under Missiles: Update on the Situation in Ukraine." *farmdoc daily* (13):186, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, October 11, 2023.

Tetteh, I., J. Colussi and N. Paulson. "Exploring New Export Routes for Ukrainian Grain." *farmdoc daily* (13):201, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, November 2, 2023.

The Economist. How many Ukrainian soldiers have died? November 26, 2024. Retrieved from <https://www.economist.com/graphic-detail/2024/11/26/how-many-ukrainian-soldiers-have-died>

United Nations Development Programme. In Ukraine, tackling mine action from all sides to make land safe again. October 14, 2024. Retrieved from <https://www.undp.org/eurasia/stories/ukraine-tackling-mine-action-all-sides-make-land-safe-again>