Foreign Agricultural Service
Global Market Analysis
International Production Assessment Division
Web: https://ipad.fas.usda.gov

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Commodity Intelligence Report

Ukraine: Overview of MY 2023/24 Wheat Harvest

USDA's estimate of Ukraine wheat production for marketing year (MY 2023/24) is 22.5 million metric tons (mmt), up 5 percent from last year, but down 16 percent relative to the 5-year average. Yield is estimated at a record 4.50 tons per hectare, up 17 percent from last year and 13 percent from the 5-year average. Harvested area is estimated at 5.0 million hectares (mha), down 11 percent from last year and 26 percent from the 5-year average.

For reasons of reliable data availability, USDA's Ukraine estimates include Crimea but exclude the currently occupied by Russia territories. At present, Ukraine can be divided into two zones, areas in conflict and areas not in conflict (Figure 1). As elaborated by USDA's agricultural office Kyiv, Ukraine (FAS-Kyiv), due to the ongoing war there is no official and reliable information about the status of Ukraine's agriculture in the conflict zone. As a result, area and production data currently provided by FAS-Kyiv, Ukraine's Ministry of Agriculture (MinAg) and the State Statistical Service of Ukraine (SSSU), which inform USDA's forecasts, do not reflect the entire country. For the MY 2023/24 season the MinAg planted area information for both the MY 2023/24 winter and spring crops excludes the currently occupied territory of the Donetsk, Zaporizhzhia, Luhansk and Kherson regions. This is based on an official note included in the daily MinAg planting and harvest reports. MinAg also does not include Crimea. USDA crop production estimates for Ukraine, however, include estimated output from Crimea. Crimean area and production numbers are extracted from the agricultural crop reports provided by the Russian Statistical Agency, Rosstat. In summary, due to the above-mentioned lack of official data for the occupied territories USDA's Ukraine estimates for all crops do not reflect the whole country. Other estimates such as those from the International Grains Council, include these occupied regions in their estimates and are higher as a result.

Wheat in Ukraine is predominantly planted in the fall between early September and mid-November (Figure 1). This winter portion of the crop accounts for 97 percent of the total wheat production. Winter wheat harvest generally occurs between late-July and mid-August.

Ukraine's MinAg publishes, on a weekly basis, planting and harvest progress at the oblast level which provides users with timely data. Based on these reports, MY 2023/24 wheat harvest is now complete. MinAg harvest data is in bunker weight, which reflects the output prior to cleaning or drying depending on the crop. Net output for wheat is

approximately 98 percent of the bunker weight. The net-to-bunker conversion percent is based on the 5-year average computed, excluding 2022 because of the war. The corresponding yield at harvest is also referred to as bunker yield since it is based on the bunker production. As of September 21st, bunker yield is at 4.73 t/ha from a 4.7 mha harvested area (Figure 2). Applying the previously discussed average net-to-bunker conversion rate of 98 percent gives a net yield of around 4.64 t/ha excluding Crimea and approximately 4.50 t/ha including Crimea. MinAg's harvest results indicate a record yield this season. As of September 21, farmers have harvested 22.2 mmt of wheat (in bunker weight and excluding Crimea); this is substantially below average due to the impact of the Russian invasion of Ukraine (Figure 3). This season's wheat harvest, however, is higher than last year's crop, which was the lowest on record since 2013. Due to the war, Ukraine's farmers face several major issues, including limited financial resources, shortage of imported seeds, fertilizers, and agrochemicals, as well as inadequate access to functioning agricultural equipment. As a result, at the start of the growing season, it was anticipated that the wheat yield would be down year-to-year. Timely precipitation, however, provided adequate moisture reserves resulting in overall above-average vegetation status (Figure 4). Vegetation health as captured by the Vegetation Health Index (VHI) shows better crop vigor this season as compared to last season, not only during the key yield formation stages, but throughout the whole growing season (Figure 5). Thus, the higher than initially expected output and record yield this season are mainly attributed to favorable and better than last season weather, which in turn allowed to offset some of the input-related implications to this season's wheat production.

From an agroclimatic perspective, Ukraine can be divided into three zones: Steppe, Forest-Steppe and Forest zone (Figure 7). This season's sub-regional yield statistics as well as the 5-year pre-war average (MY 2017/18 and MY 2021/22) area, production and yield statistics for each zone are captured in Figure 8. Traditionally, USDA takes into consideration the final crop statistics published by SSSU; this report, however, focuses on the MinAg harvest data as there is no final SSSU report published for MY 2023/24.

Historically, based on the 5-year pre-war average, the Steppe zone was the top wheat producing area in Ukraine. Prior to the conflict, the region accounted for 48 percent of total production and 56 percent of the total wheat harvested area (Figure 8). This zone, however, is typically characterized with the lowest average yields as compared to the rest of the country (Figure 8). This season harvest data indicates that yield was above average and better than last season in the part of the zone captured in the MinAg report. Currently, a significant part of the Steppe zone is occupied by Russia, and as stated earlier, there is no reliable and routine information that allows us to properly assess the status of Ukraine's agriculture in the Steppe zone. Because the official government statistics do not include estimates for the occupied oblasts, it is not possible to adequately evaluate the change in harvested area and production due to the ongoing conflict.

Traditionally, yields in the Forest-Steppe zone have been the highest in the country at 4.98 mt/ha (Figure 8). Harvest data reported record bunker yield for this season at 5.84

mt/ha, which is 17 percent above the 5-year average. Pre-war, this zone used to account for approximately 32 percent of the total wheat harvested area and 38 percent of the total wheat production (Figure 8). Harvested area in the Forest-Steppe zone, however, has decreased by 14 percent after the war began (computed by comparing the 5-year pre-war average against the MY 2023/24 harvested area). Likely reasons for the area drop include the aforementioned issues farmers face related to inputs and finances, as well as possible crop shifting to more profitable and easily tradable commodities.

Pre-war, the Forest zone, located in the northernmost part of Ukraine, had accounted for the smallest share of the total in terms of harvested area and production, about 12 percent and 14 percent, respectively (Figure 8). This season, harvested area has increased by 4 percent relative to the 5-year pre-war average. Harvest data indicates near-average but better yields this season relative to the last couple of years.

As discussed earlier, timely precipitation and abundant soil moisture have boosted the yields across all zones in Ukraine, resulting in overall record yield for this season's wheat crop (Figure 9). The ongoing conflict, however, has caused some reshuffling in the general wheat production geography, giving more weight to the highest yielding Forest-Steppe zone. Currently, the Forest-Steppe zone accounts for approximately half of Ukraine's wheat production or 47 percent, up from 38 percent in the pre-war years. The overall share of the Steppe zone, which used to be the lead wheat producer has dropped to approximately 36 percent of total wheat production. This decrease is explainable with the war as well as the above-mentioned lack of reliable agricultural data from the conflict areas.

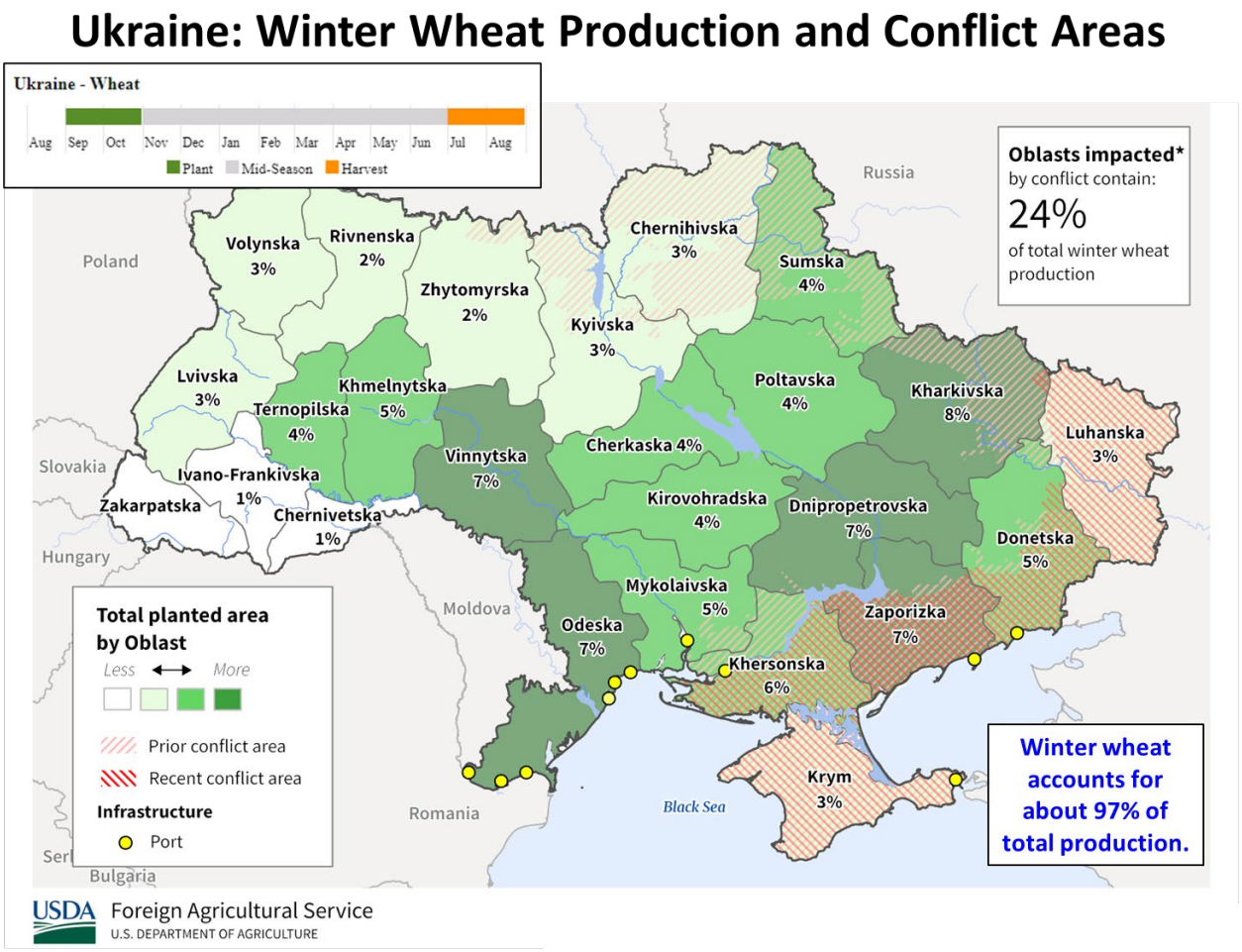

Figure 1. Ukraine: general overview of winter wheat production by oblast. Source: State Statistical Service of Ukraine (Ukraine production statistics); Rosstat (Crimea); Crop Explorer (crop calendar information); Institute for the Study of War (war extend).

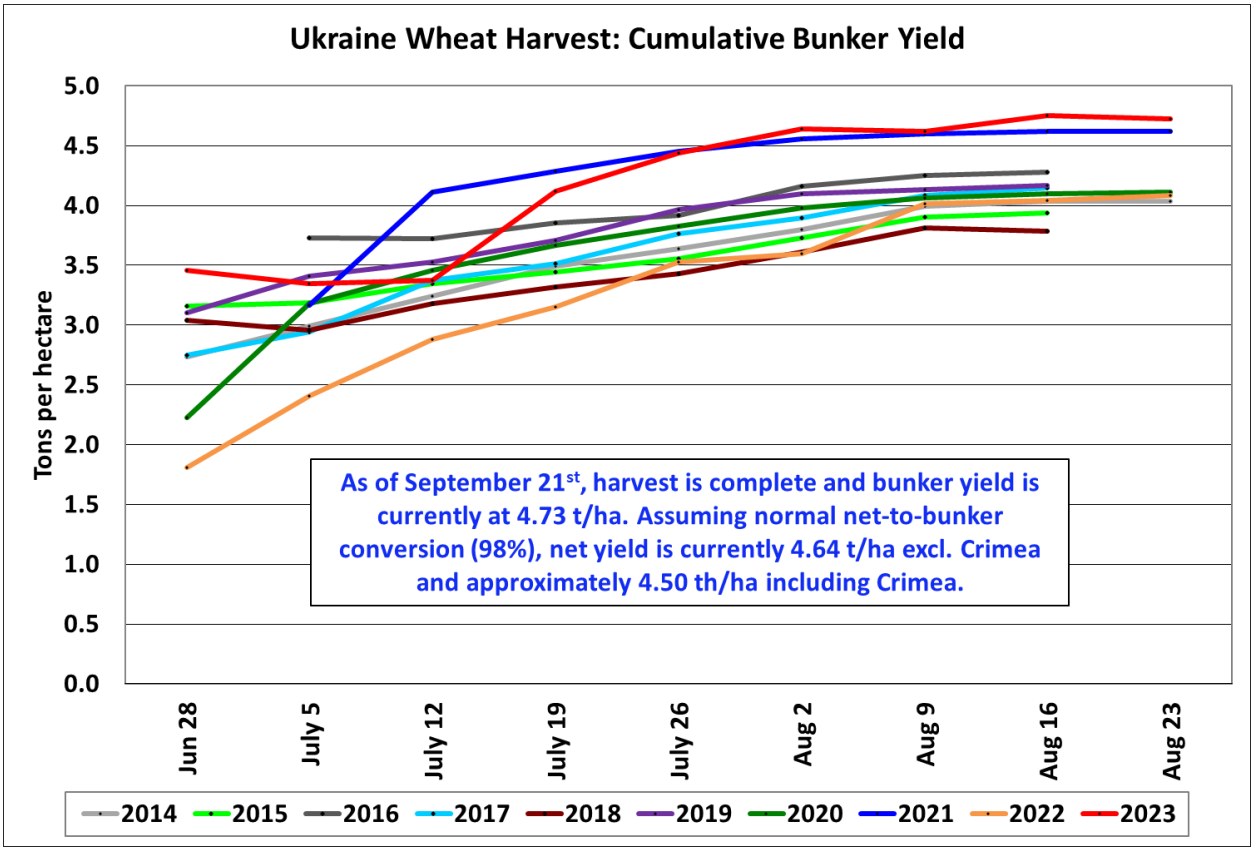

Figure 2. Ukraine wheat yield based on MinAg's harvest data. Source: Ukraine Ministry of Agriculture

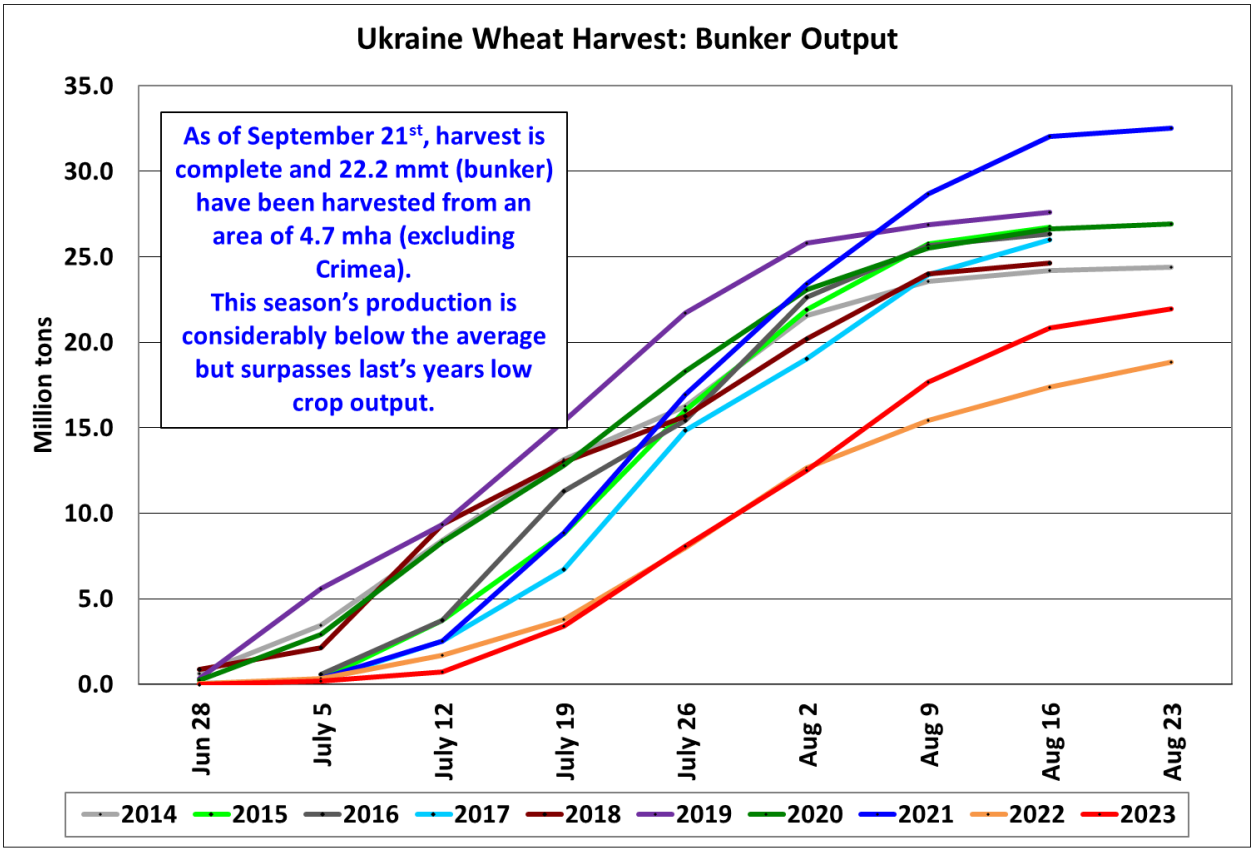

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Figure 3. Ukraine wheat production based on MinAg's harvest data. Source: Ukraine Ministry of Agriculture

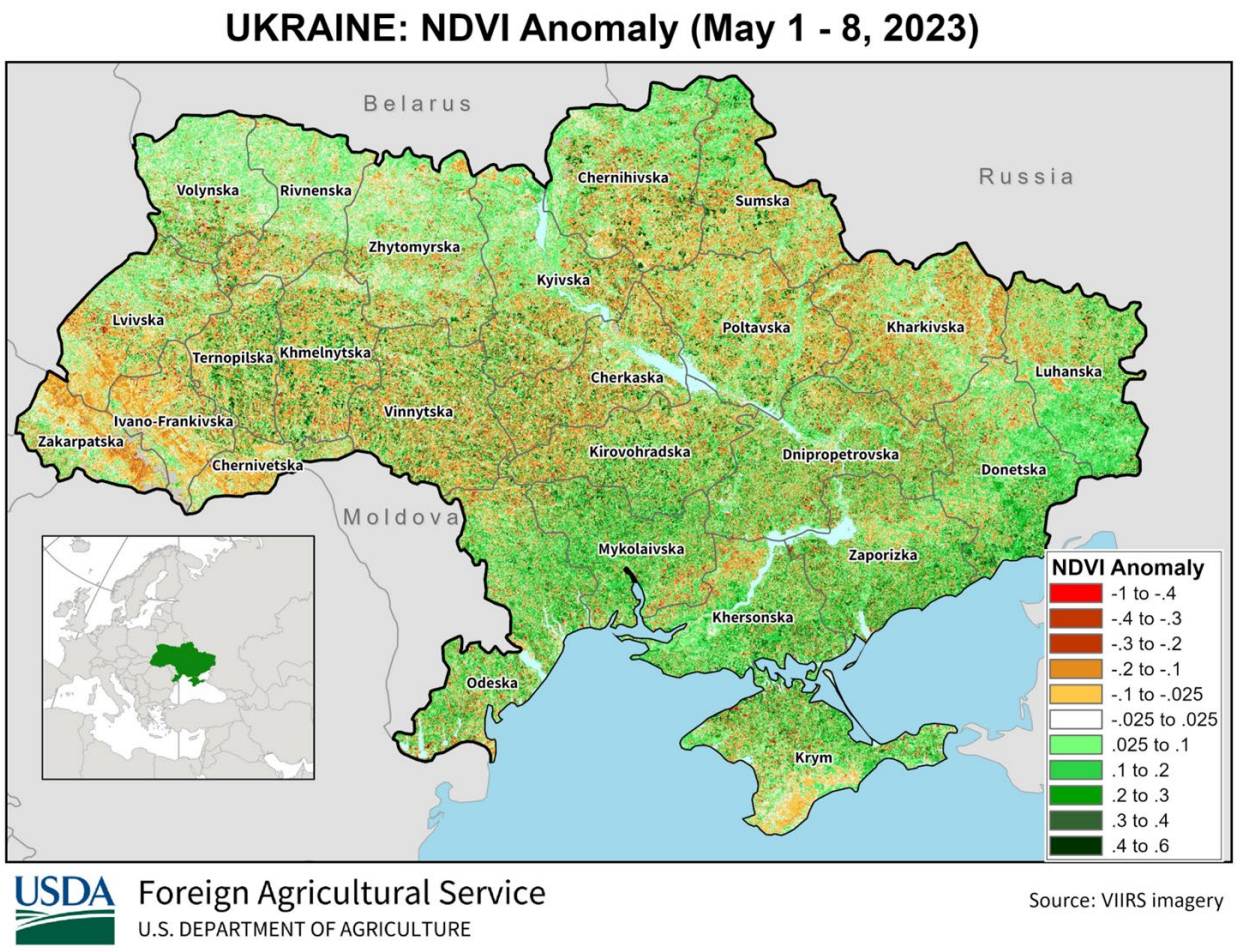

Figure 5. Ukraine: VIIRS Normalized Difference Vegetation Index (NDVI) anomalies from early May when the wheat crop enters the reproductive stages. Source: NASA GIMMS

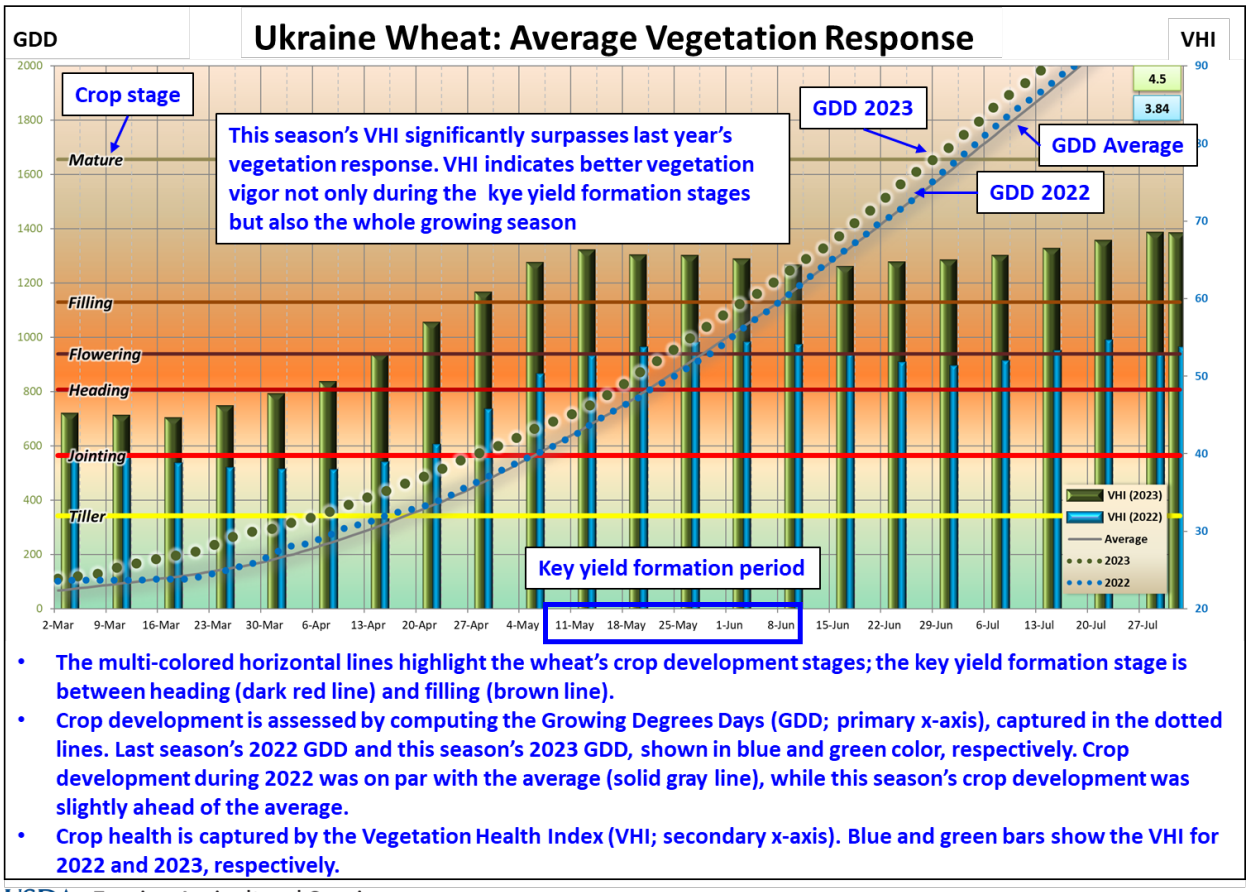

Figure 6. Ukraine wheat: average vegetation response as a function of crop development. Source: USDA.

Figure 7. Ukraine: conflict areas (pink and red stripped area located in the southern part of the country) and agroclimatic zones. Source: Institute for the Study of War (war extent); Hydromet Center of Ukraine (agroclimatic zones).

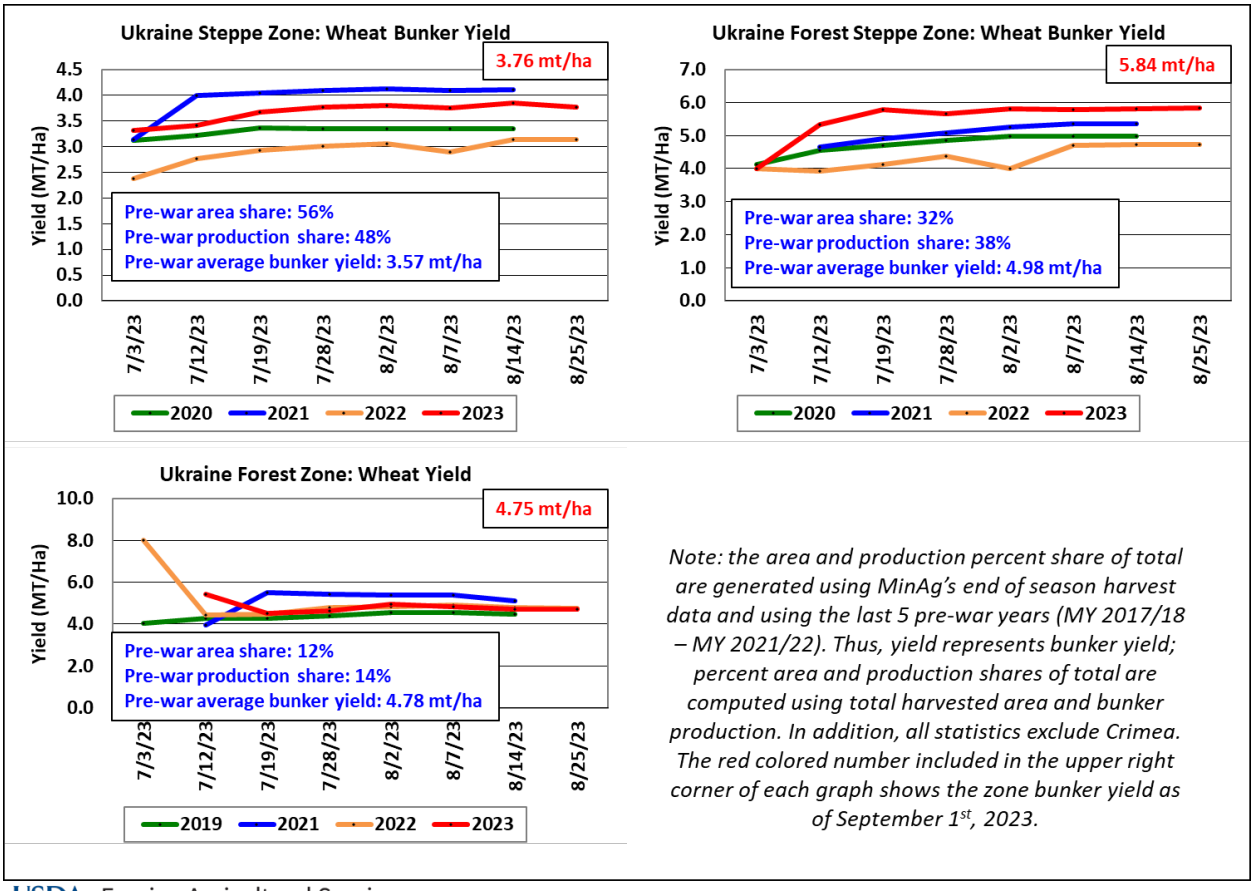

Figure 8. Ukraine sub-regional wheat yields and average pre-war area, production, and yield statistics.
Source: Ukraine Ministry of Agriculture

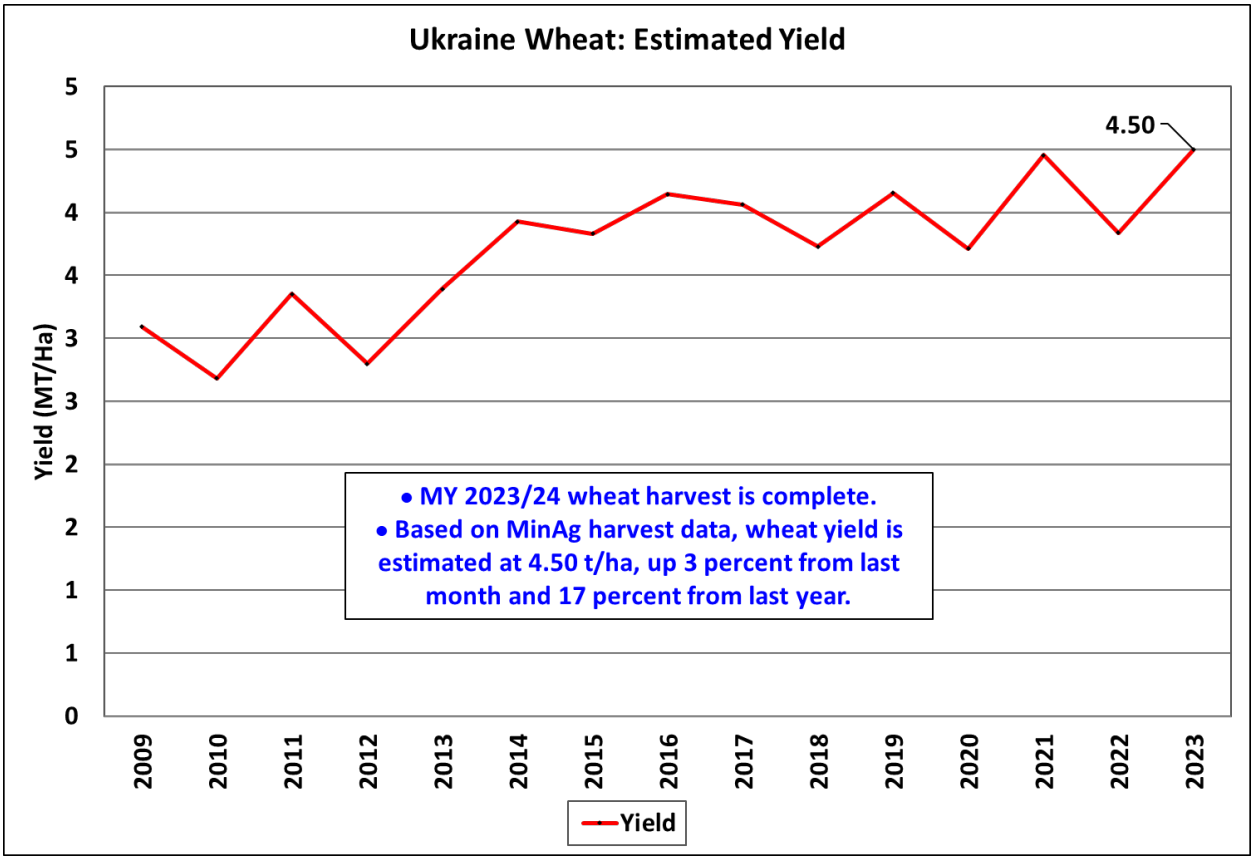

Figure 9. Ukraine wheat yield. Source: USDA PSD Online for 2009-2022); FAS estimate for 2023.

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