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OFFICE OF THE DIRECTOR OF NATIONAL INTELLIGENCE

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# **Assessment of Impact of Russia's Invasion of Ukraine on Food Security**

June 2023

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## **EXECUTIVE SUMMARY**

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As directed by Section 6808 of the Intelligence Authorization Act for Fiscal Year 2023 (Pub. L. No. 117-263), this report is provided by the Director of National Intelligence in coordination with the Intelligence Community. It examines the impact of Russia's invasion of Ukraine and occupation of Ukraine's eastern regions on global food security. It also examines whether Russia has deliberately worsened global food security and confiscated Ukraine's grains. This report is unclassified and includes a classified annex.

This report finds that Russia's invasion of Ukraine in 2022 caused disruptions in global food supply and higher and more volatile global food prices. The onset of war also led to an immediate and rapid rise in the prices of agricultural inputs, such as fertilizers and fuel, and prices remained elevated for most of 2022. Several developments, including increased production in other countries, the ability of global markets to adjust to changing supply and demand signals, and the Black Sea Grain Initiative—facilitated by the United Nations (UN), which enabled Ukrainian agricultural products to exit Ukraine's Black Sea ports and reach international markets—lowered global food prices to pre-conflict levels by the end of 2022, although domestic food price inflation as of this year remain high in many countries.

The combination of high domestic food prices and historic levels of sovereign debt in many countries—largely caused by spending and recessionary effects of the COVID-19 pandemic—has weakened countries' capacity to respond to heightened food insecurity risks. These factors probably will undermine the capacity of many poor countries to provide sufficient and affordable food to their populations through the end of the year.

The report also finds that Russian forces have confiscated Ukrainian grain for their own exports and consumption and have complicated Ukraine's ability to export its commodities

## **ASSESSMENT OF IMPACT OF RUSSIA'S INVASION OF UKRAINE ON FOOD SECURITY**

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The direct and indirect effects of Russia's invasion of Ukraine in February 2022 were major drivers of one of the most disruptive periods in decades for global food security, as reflected in higher prices for food and agricultural inputs. Ukraine and Russia are among the world's largest exporters of agricultural products and inputs, and war-related disruptions to this trade contributed to the spike in global prices.

- In 2021, Russia and Ukraine exported about 34 percent of globally traded wheat, 17 percent of corn, and 73 percent of sunflower oil, according to UN statistics. In 2021, either Russia or Ukraine, or both, ranked among the top three global exporters of barley, corn, rapeseed and rapeseed oil, sunflower seed and sunflower oil, and wheat. Russia also ranks among the world's top exporters of nitrogen, potassic, and phosphorous fertilizers, according to the UN's Food and Agriculture Organization (FAO) and U.S. Department of Agriculture (USDA).
- In March 2022, the FAO Food Price Index, which measures a basket of globally traded food commodities, reached the highest level recorded since its introduction in 1996. Russia's blockade of and damage to Ukraine's Black Sea ports, in addition to navigation hazards such as mines, choked Ukraine's ability to export millions of tons of corn and wheat.
- Additional supply concerns in oil and natural gas—used in transporting commodities and as a key input for nitrogen fertilizers, respectively—and a pullback from shipping and insurance providers because of higher risks and caution with respect to the extent of sanctions on Russia further heightened market volatility and raised food prices. By mid-2022, global fertilizer prices reached near record levels—the highest prices were reached in 2008—which limited the ability of farmers worldwide to access supplies and diminished yields in many countries.
- War-related stresses to global food security in 2022 were further compounded by droughts in Canada, the Middle East, South America, and the United States, as well as by high demand from the People's Republic of China which resulted in the lowest inventory levels of corn, soybeans, and wheat in more than a decade.

Food security concerns have abated since the start of this year, judging from lower global prices, although some of the war-induced pressures on food security are likely to linger at least through the end of this year. By March, prices had fallen largely because of increased production and an easing of volatility in markets, according to the World Bank's fertilizer price index, but they still remained more than double the prices from 2018 through 2020.

- By April, a variety of factors helped bring global food prices, as measured by the FAO, to preinvasion levels. These factors include lower fuel prices relative to the early months of the invasion, easing of supply chain disruptions, dampening of the initial shock and supply volatility experienced during the first several months of 2022, and the UN-brokered Black Sea Grain Initiative to allow Ukrainian grain

exports. However, as of April, domestic food price inflation remained elevated compared to historic averages in almost all countries, according to the World Bank.

The future trajectory of global food prices probably will depend on multiple factors including the continuation or suspension of the Black Sea Grain Initiative, amount of acreage under cultivation in Ukraine, and the cost and availability of fertilizers.

- In September 2022, Russian President Vladimir Putin threatened to suspend its participation in the Black Sea Grain Initiative after which corn and wheat futures prices rose sharply—an indication of the potential sensitivity of global food prices to threats to food shipments from Ukraine’s Black Sea ports.
- Throughout 2022 and early 2023, the war’s effects shrunk usable acreage in Ukraine. Almost 30 percent of agricultural land was unavailable for production in 2022 because of Russian occupation or landmines, according to press reporting. Repairing damaged soil and clearing mines and other unexploded ordnance is likely to take years, according to open-source research.
- Ukrainian farmers will plant about 30 to 35 percent less grain—barley, corn, and wheat—for the harvest this year compared with the planting volumes prior to the invasion, according to a USDA assessment. As of March, the USDA predicted that for the 2022–2023 planting season, Ukraine would produce 25 percent less wheat than the previous five-year average and 20 percent less corn.
- In 2021, 65 percent of Ukraine’s imported fertilizers came from Belarus and Russia, according to USDA analysis. Although Ukrainian farmers continued to plant crops in 2022, their available fertilizers were mainly purchased in 2021, according to the USDA. Fertilizer shortages could further decrease future Ukrainian production.

#### Analysis of the Potential for Political Instability as a Result of Food Insecurity

The inability of governments to provide for their citizens, including because of high food prices, has historically contributed to the fracturing of stabilizing pillars of democratic and autocratic regimes alike, although it is often one of a multitude of factors that ultimately drive political and social instability.

- According to an International Monetary Fund (IMF) study in 2022, weak economic institutions and poor governance adversely affect the capacity of countries to respond to the current food crisis with an adequate policy response, particularly with debt vulnerabilities and lack of state legitimacy. Moreover, weak institutions and corruption are often positively correlated with political and social instability. The IMF study noted many countries located in Sub-Saharan Africa, as well as Afghanistan, Pakistan, Syria, and Yemen as particularly vulnerable.

Lower income countries in the Middle East and North Africa felt the price effects caused by Russia’s invasion of Ukraine most acutely because of their heavy reliance on grain imports from Russia and Ukraine, according to academic research, and pass-through price affects have also spurred inflation in many countries in Sub-Saharan Africa.

- North Africa is the world's largest wheat-importing region, accounting for 15 to 20 percent of global wheat imports, according to analysis by the USDA, and imports supply about 60 percent of North Africa's wheat consumption. Egypt has been the single largest wheat importer in the world for more than a decade, accounting for nearly half of North Africa's wheat imports.
- Governments in Algeria, Jordan, Kuwait, Morocco, Saudi Arabia, and the United Arab Emirates preempted most protests against rising food prices in 2008 and 2011 by raising subsidies, implementing export controls on food, reducing taxes on imports, and raising public-sector wages. Higher expenses and lower revenues, in part related to the pandemic, have since curtailed many Arab governments' capacity to support similar subsidy increases.

### Factors That Could Reduce or Increase the Effects of Food Insecurity on Political Stability and Security

The impact of food security on political stability and security is multifaceted and includes factors such as global food and fertilizer prices, the amount of fiscal space governments have to provide assistance to vulnerable communities, government and industry capacity to deliver sufficient supplies to their populations, and the availability of foreign currency to pay for imported foods. Countries can also sometimes use trade restrictions to help slow food price inflation in their domestic markets.

- The war has added to the strain on public finances even as countries still deal with pandemic-related fragilities in their economies and governance. The stronger impact of rising food prices on poorer countries reflects that poor households tend to spend a larger share of their incomes on food, and the pass-through of global prices to domestic food prices is typically higher than in more advanced economies, according to IMF analysis.
- Most governments of developing economies are struggling with high import prices and debt in an uncertain environment of elevated inflation and a slowdown in growth. As monetary policy tightens to curb inflation—particularly through higher interest rates—borrowing costs will rise, narrowing the scope for government spending and increasing debt vulnerabilities.
- Higher borrowing costs are placing pressure on national budgets and making it difficult for low-income countries to balance scarce foreign-exchange reserves for food and fuel imports and debt servicing, according to IMF analysis. In 2022, about 60 percent of low-income developing countries were at high risk of or in debt distress, and interest rate rises could further endanger financing options for these countries. Government debt in emerging market countries reached a record high in 2021, making them more vulnerable to monetary tightening and rising borrowing costs, according to a separate IMF study.
- Russia is able to increase uncertainty in agricultural markets by delaying ship inspections in the Black Sea or threatening to withdraw cooperation as part of the Black Sea Grain Initiative. The initial accord began in July 2022 for 120 days and

has been extended several times. As a party to the agreement, Russia can negotiate to terminate or modify—or simply threaten to do so—which might limit the volumes of grain reaching the world market or increase prices. Such a move would worsen food availability and prices particularly in those countries reliant on grain exports from Ukraine.

The turbulence in global agricultural commodity markets prompted a number of food-producing countries to restrict food, feed, and fertilizer exports, which contributed to a further tightening of some global supplies. According to the World Trade Organization, although the initial implementation of export restrictions can be attributed to the war, subsequent restrictive measures were introduced because of the need to ensure domestic supply and contain inflationary pressures. For example, India, the world's second-largest wheat producer, largely banned the export of grains in May 2022 amid a heatwave that had endangered the country's crop production.

- As prices stabilized by mid to late 2022, some countries rolled back the initial export restrictions, but food-exporting countries could be prompted to reimpose export restrictions if domestic exigencies pressure governments.
- If major food exporting countries implement similar policies in the coming months or years to ensure domestic supplies and price stability, shortages could emerge in countries reliant on food imports that further undermine social stability. The effect on these populations would be intensified if export restrictions coincided with other events affecting food supplies, such as adverse weather events or price spikes on key inputs like fuel and fertilizers.

### Assessment of Russia's Efforts to Steal Grain from Occupied Territories

Russian forces have expropriated and exported Ukrainian grain from the territories it occupies. According to imagery analysis and open-sourcing reporting, by late 2022, 88 percent of winter crops in areas controlled by Russia were harvested, totaling nearly 6 million tons of wheat.

- Areas under Russian occupation in 2022 housed dozens of grain elevators that stored Ukrainian supplies, according to open-source reporting. These areas include Donetsk, Kharkiv, Kherson, Luhansk, and Zaporizhzhia Oblasts. Sergey Aksyonov, the Russian-appointed leader of illegally annexed Crimea, confirmed in mid-2022 that grain was removed from Kherson and Zaporizhzhia and moved to Crimea, likely for export. In July 2022, the Russia-appointed city council of the port city of Berdyansk in Zaporizhzhia Oblast issued an order to seize wheat and barley from a private company.
- Most of the cargo ships used to transport Ukrainian grain in 2022 out of Russian-occupied areas were Russian, which often would steer along the coast of Turkey, eventually delivering shipments to Syrian ports in Latakia and Tartus, as well as Haifa (Israel), Amirabad (Iran), Poti (Georgia), and Beirut (Lebanon), according to open-source analysis. We cannot confirm if the buyers of the Russian cargoes were aware of the grains' Ukrainian origin.

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- Depending on the point of origin of harvest and storage, Russia probably mixes confiscated Ukrainian grain with grain grown legitimately in Russia, which complicates efforts to determine the extent of stolen Ukrainian grain.

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