

The following report on Ukraine is a targeted analysis conducted by the FEWS NET Early Warning Team in response to ongoing events in the region. FEWS NET does not have a presence in Ukraine and does not cover Ukraine through the standard mechanisms used for monitoring and projecting food insecurity in our [29 reporting countries](#). As such, analyses on Ukraine are based on available secondary data and analysis, including from [IFPRI](#) and [NASA Harvest](#). Future analyses on Ukraine can be found [here](#); more in-depth country-specific analyses for FEWS NET monitored countries can be found on each country's webpage on the [FEWS NET website](#).

Key Messages

In Ukraine:

- As of April 1, over 11 million people have been displaced by conflict in Ukraine and an estimated 100 billion USD worth of infrastructure has been destroyed. Supply chains and trade have been significantly disrupted, leading to a dramatic decline in exports of agricultural commodities and disruptions to imports of essential non-food commodities, such as fuel and seeds. In the east, sieges of population centers by forces of the Russian Federation are leaving many without electricity, heat, food, and/or water. Though the Ukrainian government has enacted policies to ease financial burdens on citizens, many Ukrainians have lost their normal income sources due to displacement, disruptions to economic and business activity in conflict-affected areas, destruction of property, withdrawal of major companies, and supply chain disruptions.
- Though many better-off displaced households are likely to have resources in electronic bank accounts, poor displaced households, separated from assets and income-earning, are likely to be facing Stressed! (IPC Phase 2!)¹ outcomes when supported by assistance or Crisis (IPC Phase 3) outcomes in the absence of assistance. Among households who remain in their home areas, some poor households who were dependent on lower-wage jobs—including daily wage laborers and factory workers—are likely Stressed! (IPC Phase 2!) or in Crisis (IPC Phase 3) given loss of income-earning opportunities and already reduced coping capacity due to COVID-19 impacts and high food prices. The greatest concern for food insecurity exists for households in urban areas under siege—including Mariupol and Chernihiv—where many households across wealth groups are likely facing Crisis (IPC Phase 3) or worse outcomes amid shortages of food, water, and medicine.
- As spring planting commences in March/April, agricultural livelihoods in conflict-affected areas are being disrupted by the direct impacts of active conflict, including population displacement, inability to access fields, damage to farming equipment, and supply chain disruptions which are preventing some farmers from accessing needed inputs like seeds and fuel. According to government estimates published on March 25, [5.99 million hectares](#) are expected to be planted under spring crops, 22 percent less than last year. This is among the most optimistic estimates published so far. Though significant uncertainty exists, it is possible that agricultural production in Ukraine—both winter and spring crops—could decline by as much as [25-50 percent or more](#), driven by reduced area planted in the spring season, crop losses due to damage, and reduced yields due to shortages of fertilizer and fuel. The extent of crop damage is highly uncertain and depends on the spread, intensity, and duration of the conflict through the harvest period starting around July.
- Though significant uncertainty exists, an estimated 2.5-4.99 million people in Ukraine (around 5 to 10 percent of the national population) will likely need humanitarian assistance to prevent food consumption gaps and protect livelihoods in the near term. This compares with an estimated 0.5-1.0 million people who likely required humanitarian assistance in 2021. However, humanitarian access is significantly challenged and attempts to establish humanitarian corridors have largely failed. An end to the conflict is urgently needed to protect the population.

¹ The Integrated Phase Classification (IPC) Acute Food Insecurity scale is a five-phase scale of increasing severity. The scale ranges from None/Minimal (IPC Phase 1) to Catastrophe/Famine (IPC Phase 5). At Crisis (IPC Phase 3) or higher levels, urgent humanitarian food assistance is required to protect lives and livelihoods. At Emergency (IPC Phase 4), high levels of acute malnutrition and hunger-related mortality are evident. When a household is in Catastrophe (IPC Phase 5), they have an extreme lack of food and/or other basic needs even after employing all available coping. Famine (IPC Phase 5) is an area-level classification, declared when at least 20 percent of the population is in Catastrophe; the prevalence of acute malnutrition is above 30 percent if measured using weight-for-height; and the Crude Death Rate greater than 2/10,000/day. An (!) indicates that the classification would likely be at least one IPC Phase worse without current or programmed humanitarian assistance. To learn more about the IPC, visit the [IPC page](#) on FEWS NET's website.

Globally:

- Immediately following the Russian Federation’s invasion of Ukraine on February 24—and increasingly as the private sector withdrew from Ukraine and broke ties with Russia and Belarus in response to sanctions and insecurity—global markets responded to concern about future supplies of energy, fertilizer, key food commodities, and other commodities (such as metals), driven by the importance of Ukraine, Russia and Belarus as global suppliers. Prior to the invasion, global prices of energy, fertilizers, and key food commodities, including staple grains and oil seeds, were already significantly elevated and have increased rapidly following the invasion. Prices of these commodities are expected to remain high or to continue rising throughout 2022, and shortages of some commodities are possible in countries highly dependent on imports, with low-income countries the most vulnerable.
- Higher import prices will translate into higher retail food prices in import-dependent countries, with food security hardest hit in low-income, net food importing countries due to low financial capacity to respond through policy measures including food subsidies to support poorer households. In these countries and others, rising prices of food and essential non-food commodities including fuel will further constrain the resources of poor households, with poor urban households among the worst affected due to high market dependence.

Table of Contents

- Key Messages.....1
- Current status of conflict.....2
- Current food security situation in Ukraine.....3
- Current global impacts.....8
- Projected scenario of Russian ongoing invasion.....11
- Projected food security outcomes in Ukraine.....12
- International supply and market outlook.....13
- Projected global food security impacts.....16

For background information on 1) demographics and livelihoods of Ukrainians; 2) Ukrainian agricultural production and exports; and 3) infrastructure and logistics in Ukraine, please refer to pages 3-7 of FEWS NET’s initial analysis found [here](#).

Current status of conflict

The ongoing war in Ukraine has significantly disrupted the lives and livelihoods of Ukrainians across the country. The below details on the location of the conflict and tactics deployed provide background for understanding the food security impacts.

On February 24, the Russian Federation began a full-scale invasion of Ukraine. The Russian army proceeded simultaneously along three main fronts: the northern front towards Kyiv via Belarus; the eastern front towards Sumy and Kharkiv from Belgorod, Russia; and the southern front towards Kherson and Mariupol from Russian-occupied Crimea (Figure 1). Early assaults by paratroopers and special forces to seize Kyiv and Kharkiv were not successful. Ukrainian resistance was likely underestimated, and Russian forces outpaced their supply divisions, resulting in units running out of food, fuel, and munitions. The Russian military responded by regrouping and laying siege to major population centers not yet under its control, with multiple bombing [campaigns targeting civilians](#) and civilian infrastructure, including thermal power stations and gas pipelines in eastern Ukraine. The Russian military claimed control of two major cities in southern Ukraine with the capture of the port city of Berdyansk on February 27, and the capture of Kherson on March 3.

Figure 1. Map of conflict in Ukraine as of March 21, 2022



Source: New York Times

In the first half of March, heavy fighting continued around Kyiv, with clashes at the international cargo airport and military test site Antonov Airport to the north, and the M01 highway, which connects Chernihiv to Kyiv. In the east, Kharkiv faced near constant bombardment from Russian artillery. Russia continued to make steady advances, choosing to encircle major cities when faced with significant resistance, and seize smaller cities with access to the Ukrainian rail infrastructure, which it relies on for resupplying forces. In the south, Russian forces had greater success in advancing into Ukrainian territory, due in part to their ability to access the rail lines, whereas resupplying Russian forces in the north and east continued to be a challenge. As of the third week of the conflict, Russian forces had seized all of the Ukrainian coast on the Sea of Azov, encircling Mariupol and cutting it off from Ukrainian government-controlled territory. Russian forces also established a distant blockade of Ukraine's Black Sea coast.

As of late March, the Russian Federation has continued to intensify tactics targeting civilians, including surrounding and bombing population centers from the air, restricting access to food and water, and attacking humanitarian corridors. Russian ground advances have reportedly stalled on multiple fronts in the north and south. However, in the east, Russian forces continue to push westward from the Donbas region, where fierce fighting is reportedly impacting many towns and villages in front line areas. Kherson remains the only major city taken by Russian forces, though smaller cities including Melitopol, Berdiansk, Polohy in the south, and Konotop in the north have also been taken (Figure 1). Mariupol and Kharkiv have suffered some of the most significant damage from bombing but remain under Ukrainian control. Similarly, in the south, Russian forces have not yet seized cities west of Kherson, having faced resistance in Mykolaiv. Airstrikes have also continued in western Ukraine. By the end of March, Russia signaled that it was “scaling back” operations around Kyiv and Chernihiv, an announcement that has been confirmed by the withdrawal of troops on the northern front. With this, the Russian Federation revised its stated war aims, saying that its “main goal” is gaining full control of Donbas. However, this pledge was followed with heavy bombardment in Chernihiv the following day.

Current food security situation in Ukraine

A population's food security is dependent on effective functioning of mechanisms that support: 1) availability of food (including domestic production, imports, and the functioning of trade and supply chains); 2) peoples' ability to physically access food (population mobility); 3) peoples' ability to afford food (including income-earning, expenditure requirements, and prices); and 4) the stability of all of these components over time. In addition to food itself, availability and prices of other essential non-food commodities including fuel matter for food security because: 1) people must also afford other essential expenditure including for housing, heating, medical needs, and livelihoods; and 2) supply and prices of other essential commodities such as fuel impact trade, livelihoods, and prices of food and other important commodities. In this section, we review the status of each of these fundamental elements and, in the final section, synthesize these elements into an assessment of the current food security situation in Ukraine.

Infrastructure and logistics

Active conflict has damaged and destroyed civilian and public infrastructure across the country, including critical fuel, gas, electricity, and water management infrastructure, health facilities, and schools. As of late March, the Ukrainian government estimated that at least 100 billion USD worth of infrastructure had been destroyed. Eastern Ukraine has been worst affected, though air and missile strikes have also killed civilians and damaged infrastructure in western Ukraine. [Road closures and bridge destruction](#) have been reported in conflict zones such as Donetsk, Luhansk, Mykolaiv, Kharkiv, Mariupol, Kherson, Sumy, and the surrounding areas of Kyiv. At least five [cargo vessel and tanker attacks](#) have been reported near Olvia, Mykolaiv, and Odessa port facilities. Damage to grain storage and exportation infrastructure has also been reported. In addition to infrastructure damage, security risks for civilians and commercial activities are [limiting land transportation](#) and consequently disrupting supply chains. Though rail transportation lines remain operational in most of the country, service is disrupted in Russian border areas and conflict-affected cities (Figure 2).

Figure 2. Disruptions to Ukrainian railway services as of April 14, 2022



Source: FEWS NET using base map from [Logistics Cluster](#) and railway services data from Ukrainian Railways

Civilian impact and displacement

In the east, sieges of population centers by forces of the Russian Federation are leaving many survivors without electricity, heat, food, and/or water. Worst-affected has been Mariupol, under siege for more than a month as of early April. On March 16, deputy mayor of Mariupol Serhiy Orlov [estimated](#) that 80-90 percent of buildings in Mariupol had been damaged or destroyed. An estimated [5,000 people](#) in Mariupol had been killed as of late March, and utility workers were burying the dead in mass graves in the center of the city. Humanitarian corridors have largely failed, and many civilians remain trapped in the city. Available information suggests that some households are surviving on whatever food they have in their homes, while others do not have sufficient food and water. At least three children have reportedly died from dehydration, according to BBC news reports. Meanwhile, in the north, Chernihiv is also surrounded by Russian forces, with reports indicating that the humanitarian situation is getting worse. Additionally, at least 36 cases of civilian detentions of activists, local politicians, and journalists by Russian forces have been verified by the United Nations (UN) in eastern occupied areas and some southern parts of Ukraine, according to BBC news reports, and there are [mounting reports](#) of civilian killings by Russian forces.

The IOM estimates that more than [11 million people](#) have fled their homes due to the conflict as of April 1. Of these, more than 7 million are internally displaced in both eastern and western Ukraine and more than 4 million are in neighboring countries, with the rest. UNICEF reports that more than 4 million children under eighteen were displaced as of March 24, of whom 1.8 million are in neighboring countries, with the rest internally displaced. The Mayor of Kyiv on March 24, while acknowledging challenges in providing accurate figures, estimated that about half of the city's population had left (though some had come back to fight). The western city of Lviv has become a transit hub for people leaving Ukraine as well as a hub for some humanitarian operations, though it came under intense [attack from Russian missiles](#) in late March. UN teams are offering psychosocial support and seeking to protect vulnerable displaced people—including women and unaccompanied children—from trafficking, though these crimes are likely still occurring.

Neighboring countries continue to welcome and provide support to Ukrainian refugees despite significant population inflows. According to BBC news reports, the population of Warsaw has increased by almost one-fifth as of late March. The government of Poland passed a bill (with around 1.75 billion USD allocated) allowing refugees to stay, work, access social security, and send children to local schools for the coming 180 days, with the possibility of extension. While the refugee influx is likely straining some public infrastructure and resources, many refugees are spending money in local economies, providing some support to local businesses and economies. However, in a non-representative mobile phone survey by [Premise](#) from March 18 to 25, around half of respondents in Poland, Romania, and Moldova reported that their community was somewhat or very concerned about the impact of Ukrainian refugees on the local labor market.

Economy and income-generation

The conflict has significantly disrupted normal business and economic activity in Ukraine, reducing government revenue and households' access to income. Though government authorities have responded quickly with policy measures to mitigate impacts, the economy has likely contracted by as much as [35-60 percent](#) in March alone, according to various estimates reported by the Ukrainian government.

In areas affected by active conflict, stores, restaurants, and other businesses are opening only sporadically if at all. The government has been encouraging businesses and restaurants to continue operations to the extent possible, and has been facilitating this by publishing maps showing citizens which stores and restaurants are currently open in their area. However, as of March 19, the government reported having received 700 requests by businesses wishing to relocate to western Ukraine as part of a new [business relocation program](#), with 50 businesses already relocated by that date. Additionally, many people whose livelihoods are dependent on trade or fishing—throughout the supply chains—are expected to be experiencing disruptions to normal work due to the closure of ports and total lack of access to the Black and Azov seas. Though it is likely that many employers are continuing to pay salaries, those who are informally employed are likely experiencing reductions in income-earning.

Meanwhile, foreign businesses and their employees have largely [withdrawn](#) from the country or relocated to the west. The government has stated that it is working to protect the [metallurgy, agriculture, and IT sectors](#), which provide the country with important export revenue, though it is not clear what specific actions are being taken, and large companies in these sectors—including Bunge, ADM, and Cargill in the agricultural sector—are among those who have paused operations until further notice. These firms accounted for 18 percent of Ukraine's [wheat exports](#) in 2021 and 16 percent of [maize exports](#) in 2020. According to FAO, oilseed crushing operations have also been [suspended](#). Agrohholdings² normally also control

² [Agroholding](#): a consolidated set of parent and controlled subsidiary agricultural companies

warehouses and processing plants and, as such, the withdrawal of these companies could pose an additional barrier to exports.

To ease burdens on households, businesses, and traders, the government has [enacted](#) fiscal policies, including: eliminating excise taxes on all imported goods, reducing value added tax (VAT) for fuel from 18 percent to 7 percent, and reducing all other income taxes from a mandatory 18 percent to 2 percent under a “pay-what-you-can” model.

As of March 28, international partners had provided financial support to the government of Ukraine, amounting to around 4 billion USD in response to the crisis, according to Ukrainian government officials. In late March, the National Bank of Ukraine reported possessing [27.7 billion USD in foreign reserves](#), up by 315.6 million USD since the beginning of the war due to purchases of currency from banks and 60 million USD from the International Bank for Reconstruction and Development. This is likely sufficient to support the government’s immediate needs—including financing ongoing imports—and is expected to be sufficient to normalize the foreign exchange market once the conflict ends.

Daily cash [withdrawal limits](#) for citizens were increased from 30,000 to 100,000 UAH on March 21. Ukrainian banks are still generally [functioning](#), according to news reports, though physical damage due to the conflict is causing some localized service disruptions and delays. Meanwhile, the National Bank continues to [ease regulations](#) in order to facilitate continued operations. According to BBC news reports, municipal workers are still providing services such as cleaning streets, and Ukrainians are generally still getting paid. Given [significant financial support](#) from the international community, it is expected that pensioners and recipients of other forms of social support are also largely continuing to receive their normal benefits, to the extent that they are able to physically access functioning facilities.

Overall, income-earning is likely below average for a significant share of households, especially in eastern areas. According to a non-representative survey launched by FEWS NET through Premise, targeting households with smartphones in Kharkiv, Donetsk, Dnipropetrovsk, Kyiv, and Kyiv city, 15 percent reported that their income in the past week was below average while around 40 percent of surveyed households reported that their income in the past week was significantly below average.

Food and fuel availability and prices

In order to protect the nation’s supply of food and other essential goods given the conflict-driven disruptions to normal trade, the government has taken several measures to promote imports, restrict exports, and boost strategic reserves. On February 28, the [government of Ukraine](#) expanded the list of critical imports to include military products, meat and edible offal, milk and dairy products, vegetables, nuts, coffee, and tea. On March 6, the government banned exports of livestock, frozen beef, meat, meat offal, rye, oats, buckwheat, millet, sugar, and salt, and added wheat, a grain mixture of wheat and rye, corn, chicken meat, chicken eggs, and sunflower oil to the list of commodities requiring export licenses. On March 10, the state [announced](#) its intention to purchase Ukrainian grain and other food commodities to support national reserves. Overall, levels of food stocks in Ukraine are expected to be high. According to the Ukrainian [Deputy Minister of Agrarian Policy and Food](#), Ukraine has about 6 million tons of wheat relative to an annual consumption requirement of about 8 million tons; 15 million tons of corn relative to an annual consumption requirement of 7 million tons; a five-year stock of sunflower oil; and a year-and-a-half stock of sugar.

However, disruptions to supply chains are causing shortages of food and other essential commodities including fuel in localized areas of the country. Though the situation is fluid, cities under siege (including Mariupol and Chernihiv) and eastern border areas where rail service has been disrupted are expected to be among the hardest hit. According to the results of a non-representative survey implemented by [Premise](#) from March 2 to 25, a majority of respondents were dissatisfied (somewhat or very) with their household’s access to food in eastern border oblasts. The highest average scores (lowest satisfaction) were 3.80 in Kherson, 3.77 in Chernihiv, and 3.70 in Kharkiv (Figure 3).

Meanwhile, fuel availability is of high concern. National supply is running low, with traders reportedly selling fuel at inflated prices in some remote areas. Typical fuel importation supply chains have been significantly disrupted and, in early April, the Russian military has increased long-range missile strikes targeting [Ukrainian fuel supplies](#), including in western areas. This is expected to be straining typical livelihoods dependent on fuel—including in the agricultural and transportation sectors—and is putting upward pressure on prices of food and non-food commodities due to increased transportation costs.

Food prices in Ukraine were already [significantly elevated](#) prior to the invasion and have increased further since then due to reduced supply, increased demand from households stockpiling, and rising costs of transportation due to higher fuel prices and insecurity along travel routes. According to data from FAO, prices of wholesale wheat and maize continued to increase in February (Figure 4). [Trading Economics forecasts](#), updated on March 30, 2022, expect inflation in the first quarter of 2022 to stand at 13 percent. Higher food prices are likely straining poor households’ available resources.

Ukraine has a [large supply](#) of fertilizer in the country, expected to be sufficient for the spring campaign. The government also banned [fertilizer](#) exports to ensure input availability for the remainder of the growing season. There is greater concern for the supply of seeds and fuel due to logistical challenges that have disrupted imports. Some farmers who had already paid for [seeds](#) have not received them due to importers’ inability to import them into Ukraine. In response, the Minister of Agrarian Policy [has stated](#) that the government launched an online form where farmers can report their level of preparation for sowing and any needs they have, and the government will facilitate connection with suppliers of needed resources. However, it is unclear how successful this program has been in reaching farmers with seeds and other needed inputs.

The Ukrainian Deputy Minister of Agrarian Policy and Food reported that spring planting will likely begin later than normal due to the long winter. It is expected that planting started in mid-March in the southern regions and will likely start after April 10 throughout the rest of the country. In addition to the government’s efforts to support access to inputs, other policy measures to support the planting season include the exemption of essential agricultural workers from military service and the suspension of registration requirements for agricultural machinery during the period of martial law.

However, conflict is likely causing disruptions to planting in some areas due to security concerns (including due to active conflict and [mines](#)), damaged machinery, and disruptions to labor supply. Some large agroholdings—including [Harveast](#) and [Agrogeneration](#)—have already reported disruptions to planting in Donetsk due to proximity to fighting and reduced access to inputs including fertilizer. Perhaps even more concerning than the supply of seeds is the country’s shrinking fuel supply. The Minister of Agrarian Policy [acknowledged](#) that fuel would be the most critical challenge to planting.

In Ukraine, fertilizer is normally applied in [late March](#) as soon as the land is sufficiently dry. For winter crops, the first [nitrogen fertilizer application](#) is ongoing as of late March. According to government estimates, 7.6 million hectares of grain crops were planted for the 2021/22 production season in late 2021, similar to last year’s levels (Figure 5). Winter wheat accounts for more than 95 percent of annual wheat production.

Though information is limited, it is likely that crop damage to date has been minimal given the early growth stages of most crops, as winter wheat started to emerge out of dormancy—likely in southern areas first—in mid-March. However, some reports indicate that the Russian military is [targeting](#) and has [damaged agricultural machinery and land](#). The Ukrainian Nation Conservation Group has estimated that [more than 30 percent of the country’s arable lands](#) are in the zone at risk of direct impacts of conflict (Figure 6). It is also likely that some farmers in eastern conflict-affected areas have been displaced and are not able to tend to their crops.

Humanitarian assistance

As of March 17, the Ukrainian government reported it had received [70,000](#) metric tons (MT) of humanitarian aid from other countries. By March 20, this figure had increased significantly, to [6.5 million tons](#). Significant humanitarian goods are being sent by road and [train](#) to the eastern, southern, and Kyiv regions. However, conflict continues to [prevent humanitarian movement](#) in many areas, significantly hampering humanitarian efforts according to the UN. In areas under siege and, likely, in other hard-to-reach areas where supplies are running low, many remain in dire need of assistance. In total, the World Food Programme reported reaching [over one million people](#) in Ukraine—mostly in eastern areas—with food and cash assistance by early April. UN partners are also working to provide shelter, blankets, medicine, water, and hygiene supplies.

Figure 3. Average satisfaction with household food access, Likert Scale (1-5); 1=very satisfied; 2=satisfied; 3=neither satisfied nor dissatisfied; 4=dissatisfied; 5=very dissatisfied; no data from Crimea and Chernivtsi

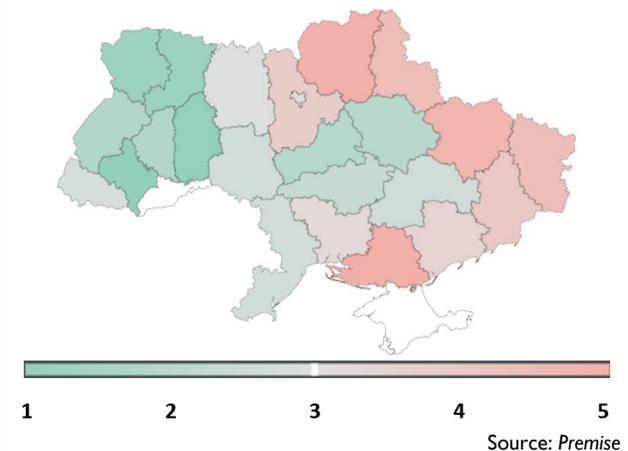
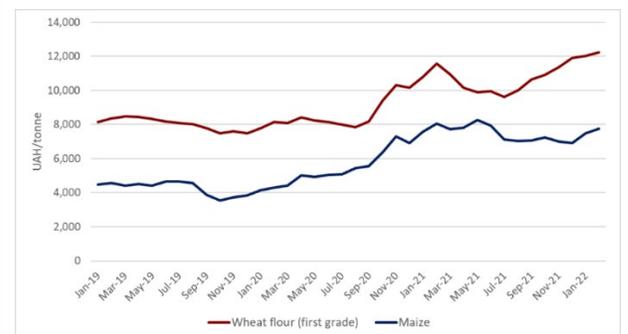


Figure 4. Wholesale prices of wheat flour and maize in Ukraine, national average, January 2019 to February 2022



Source: FEWS NET using FAO data

The United Nations Development Programme (UNDP) reports having a [large presence in Ukraine](#) and is working with government, civil society, and private sector partners to address humanitarian needs and support the provision of public services. Over [1,230](#) UN personnel in Ukraine, and 100 humanitarian organizations are implementing or planning activities in every oblast in all sectors. However, the Nutrition Cluster reports [no partner presence in most oblasts](#) as of March 30. [UNDP](#) reports working with the Ukrainian government to explore options for cash transfer programs including for temporary basic income (TBI), covering [2.57-3.62 million people](#).

Current food security outcomes

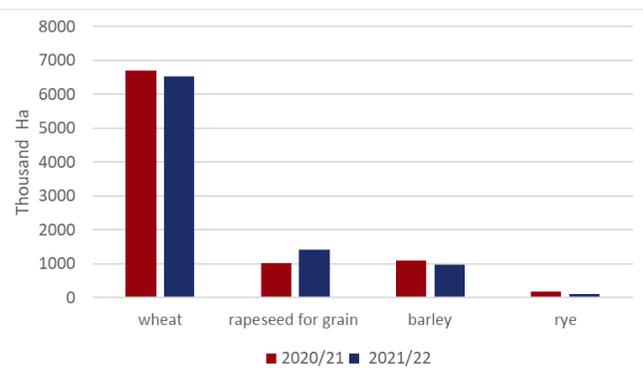
Despite Gross Domestic Product (GDP) growth of 3 percent in 2021, alongside increased government spending on wages, salaries, and pension payments, some poor households in Ukraine were likely already struggling to meet their basic needs prior to the invasion due to the prolonged impacts of COVID-19 on income-earning, the ongoing rural lean season, and higher prices of food and other essential goods. Nevertheless, prior to the invasion, most Ukrainian households were likely able to meet their minimum food and essential non-food needs given improvements in the economy and income-earning and a bumper harvest in 2021. Across the country, FEWS NET estimated 0.5-1.0 million people were expected to require humanitarian assistance in 2021, with the highest concentration among poor households in urban areas and in the Donbas region.

Since late February 2022, the war in Ukraine has displaced over 11 million people. Many of the better-off are likely to have electronic bank accounts and monetary resources sufficient to meet their food and essential non-food needs alongside significant support from humanitarian organizations, governments of neighboring countries receiving refugees, and the communities hosting internally displaced households. However, many poor displaced households separated from assets and income-earning are likely struggling to meet their needs given transportation and housing costs alongside high food prices. For these households, Stressed! (IPC Phase 2!) outcomes in the presence of assistance and Crisis (IPC Phase 3) outcomes in the absence of assistance are likely. Additionally, it is likely that large influxes of displaced people are straining community resources—including the availability of food and medicines—in destination areas. Other populations have been unable to flee due to conflict-related movement restrictions (including in cities under siege), due to disabilities and old age and consequently unable or unwilling to travel, or due to lack of resources. In areas facing shortages of food, fuel, and medicine, many of these vulnerable households are expected to require urgent assistance.

Across the country, many Ukrainians have lost their normal income sources due to the impacts of the conflict on businesses, including the withdrawal of foreign companies and disruptions to normal economic activity. While many better-off and middle-income households are likely able to draw upon their savings and/or rely on family and friends for support, some poor households who were dependent on lower-wage jobs—including daily wage laborers and factory workers—are likely facing Stressed! (IPC Phase 2!) outcomes supported by assistance or Crisis (IPC Phase 3) outcomes in the absence of assistance given already reduced coping capacity due to COVID-19 impacts on income-earning and high food prices.

Though information is limited, shortages of staple food commodities continue to be reported due to supply chain disruptions, especially in eastern border areas and, most severely, in cities under siege. This is reducing dietary diversity for many households in Ukraine and driving food consumption gaps in areas affected by severe shortages. The greatest concern exists for urban households in cities under siege, including in Mariupol and Chernihiv. In these areas, some households are relying on whatever dwindling food supplies they had in their homes, though many households whose homes have been damaged

Figure 5. Area sown with winter cereals in the 2020/21 and 2021/22 production seasons



Source: FEWS NET using data from the Ukrainian Statistics Service

Figure 6. Agricultural land area in Ukraine (shaded in orange and red); red color shows agricultural land area in conflict-related risk zone



Source: UNCG

or destroyed are living in shelters without such resources. Particularly in Mariupol after more than a month of siege and subsequent shortages of food within the city, a significant number of households across wealth groups are likely facing Crisis (IPC Phase 3) or worse outcomes and urgently require humanitarian assistance. Shortages of infant formula and clean water continue to be reported in Mariupol and are likely occurring elsewhere. It is possible that these shortages are driving rising rates of child acute malnutrition in worst-affected areas. An end to the conflict is urgently needed to protect the population.

According to data from a non-representative survey, launched by FEWS NET through Premise, targeting households with smartphones in Kharkiv, Donetsk, Dnipropetrovsk, Kyiv, and Kyiv city, one quarter of surveyed households reported that the amount of food they accessed was below average, while around a third of households reported that the amount of food they accessed in the past week was significantly below average. Around 17 percent of surveyed households reported food consumption scores (FCS) and reduced coping strategy (rCSI) scores suggesting that they were facing food consumption gaps indicative of Crisis (IPC Phase 3) or worse outcomes. Respondents in Donetsk were worst affected, with around a quarter reporting scores suggesting food consumption gaps and Crisis (IPC Phase 3) or worse outcomes. Though significant uncertainty exists, an estimated 2.5-4.99 million people in Ukraine (around 5 to 10 percent of the national population) likely need humanitarian assistance to prevent consumption gaps and protect livelihoods across the country, with the greatest number in eastern conflict-affected areas.

Current Global Impacts

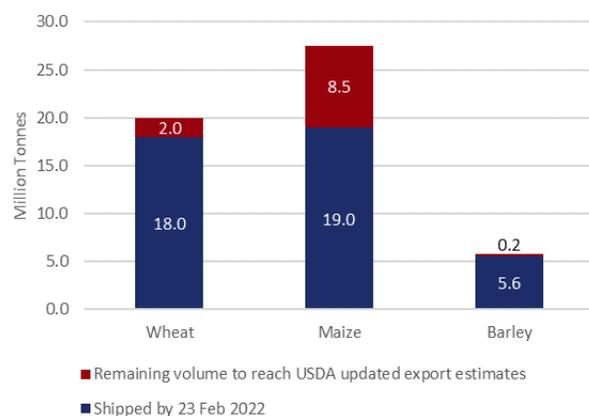
Disruptions to Black Sea traffic and exports

Conflict in Ukraine has disrupted exports from some of the world's most important suppliers of food, fuel, and fertilizer. Prices of these commodities have risen as the global market responded. In this section, we review the status of Black Sea exports, the impacts of sanctions on the Russian Federation, and global fuel, fertilizer, and agricultural commodity markets. The Black Sea region is [typically responsible](#) for 75 percent of the world's sunflower oil exports, 30 percent of the world's wheat exports, and 20 percent of the world's maize exports, with maize being primarily [used for feed](#). Ukraine and Russia are key global suppliers of grains (together contributing about a quarter of global exports), edible oil, and other commodities exported through these ports.

In Ukraine, export volumes normally peak between July and November, driven by wheat exports. Growing concern over the potential for a military conflict resulted in higher-than-normal export volumes in January and the first weeks of February 2022. With the invasion, Black Sea and Sea of Azov ship traffic effectively halted. When the Ukrainian Government [suspended commercial shipping](#) until further notice on February 24, it diverted cargo ships to ports in Turkey, Romania, and Georgia. An estimated [200 ships](#) were stranded at Ukrainian ports as of early March due to safety concerns. The Ukrainian government reported on March 30 that more than [90 civilian ships](#) carrying food for the world market remained blocked in the Black Sea region, and [tens of millions of tons](#) of Ukrainian agricultural products intended for export remained in Ukraine. Overall, 10 percent of total projected wheat exports and 31 percent of total projected maize exports for the ongoing 2021/22 marketing year (MY)—which spans from July 2021 to June 2022—are expected to remain in the country as of late February (Figure 7).

Given disruptions to port traffic, Ukraine is working to establish export capacity via rail. According to the [Ukrainian Railways](#) company, grain exports will be diverted to rail—within the parameters of export quotas—and delivered to Romania, Hungary, Slovakia, and Poland, and onward to reach logistics hubs in European countries. [Ukraine's rail network is fully integrated](#) with Belarus, Moldova, Poland, Romania, Slovakia, Hungary, and the Russian Federation. However, rail-based exports are not expected to be occurring at meaningful levels. Previously, [99 percent](#) of Ukraine's wheat exports occurred by sea. Capacity to export by rail is likely highly [limited](#) and will take time to establish, and is currently likely a lower priority than the transport of civilians and military personnel, humanitarian cargo, military equipment, agricultural inputs, and other essential supplies. On March 21, the Ukrainian Agribusiness Club reported that several Ukrainian agricultural companies had exported their first batches of several thousand tons of feed corn by rail.

Figure 7. Remaining marketing year (MY) 2021/22 grain export volumes from Ukraine as of February 23, 2022



Source: [APK Inform](#) and USDA estimates

Though Russian port activity also largely paused in the week following the invasion, on March 9, [news reports](#) indicated that Russia appeared to be letting some ships carrying grain and other food commodities exit the Azov Sea. More recent reports suggest that Russian wheat exports have increased further in the second half of March, despite concerns that export levels would remain minimal due to the impacts of sanctions and logistical challenges. According to the head of IKAR, Russia continues to actively ship through Black Sea terminals and is expected to export two million MT of wheat in March, which if achieved would be near normal levels according to Comtrade data. Though shipping costs have increased, higher global prices of wheat are at least partially compensating, and the depreciation of the Russian ruble is supporting Russian exports. China also lifted a ban on Russian wheat imports in February.

Sanctions on Russia

On February 24, the US Department of the Treasury's Office of Foreign Assets Control (OFAC) and the US Department of State [issued several consecutive waves of economic sanctions](#) on the Russian Federation. These measures targeted Russia's largest financial institutions, restricted Russian access to US capital markets, expelled major Russian entities from the Society for Worldwide Interbank Financial Telecommunication (SWIFT) messaging system, and froze the assets of senior oligarchs and officials in the Russian government. On February 28, the [Central Bank of Russia was blocked from accessing more than 400 billion USD in foreign-exchange reserves](#) held abroad. As a result, the Russian ruble greatly depreciated against the USD, [losing nearly 26 percent of its value since](#) the start of the invasion, before stabilizing and [recovering much of its value](#) as of early April. On March 8, the UK and US declared a ban on imports of Russian oil. In addition to the new restrictions on Russian financial institutions, OFAC took the unprecedented step of [sanctioning Russian President Vladimir Putin](#) and three other senior Russian officials. Additionally, over 30 countries closed their airspace to Russian aircraft. Together with [new export controls](#) administered by the US, these actions turned Russia into one of the most heavily sanctioned countries in the world in a matter of days.

Since then, the US government has imposed additional sanctions on Russia in coordination with Australia, Canada, the UK, and the EU. The White House also announced a [transatlantic task force](#) dedicated to tracking down and seizing Russian assets held in shell companies and trusts overseas. Even formerly neutral countries joined the multilateral coalition, with [Switzerland announcing](#) that it will adopt the EU's sanctions for the first time in history. Moreover, major companies in manufacturing, technology, and finance announced a [suspension of activities in Russia](#), citing safety concerns. Major oil and gas companies, [including BP, Shell PLC](#), and Exxon announced plans to exit Russian operations and joint ventures.

The United States also imposed [new sanctions on Belarus](#) following Belarusian President Alexander Lukashenko's decision to support Russian military operations in Ukraine. These sanctions targeted senior Belarusian defense officials, as well as various entities and individuals in the Belarusian banking and defense sectors. The EU and other foreign governments imposed [similar targeted sanctions](#) including travel bans and asset freezes against [183 individuals and 26 entities in Belarus](#).

Faced with these sanctions and new export control restrictions, multinational companies with Russian affiliates operating in Russia or conducting business with Russian parties had to immediately address these new regulations. Many companies have temporarily paused Russia-related business to assess the potential risks before conducting any new commercial and financial transactions with Russian parties or even continuing existing patterns of trade. Although not currently required by the sanctions placed on Russia, shipping giants Maersk, MSC Mediterranean Shipping Company, and CMA CGM announced a suspension of shipping activities, citing safety concerns and the inability to transact with any sanctioned Russian banks. This is exacerbating global shipping constraints which were [already driving up prices of consumer goods](#) since the global economy began its recovery from the COVID-19 pandemic in 2021.

Companies that continue to conduct business in Ukraine will also need to take steps to avoid any activities involving the sanctioned Russian entities and Russian-occupied [Crimea, Donetsk, and Luhansk](#) regions. [Nearly all commercial and financial activities involving these regions are now prohibited](#), including new investments, contracts, and the provision of goods and services. Further, any indirect attempts to engage in such transactions are equally forbidden. Although some exceptions may apply for humanitarian and other purposes, ensuring compliance under wartime conditions presents significant practical challenges. Companies conducting business in Ukraine will need to screen their local business partners, intermediary banks, and other transaction parties for Specially Designated Nationals and other sanctioned persons. Although the risk of potential sanctions exposure in Ukraine is much lower than it is in neighboring Russia, an undisclosed number of sanctioned parties may still be operating in Ukraine. This new rapidly changing regulatory environment is difficult for businesses to navigate, disincentivizing operations in Russia and Belarus but also in Ukraine.

Global energy markets

Russia is the world’s second largest exporter of crude oil and the largest exporter of natural gas, with oil being the more profitable export commodity. The main buyers of Russian oil are [China, the Netherlands, Germany, South Korea, and Poland](#). The main buyers of Russian natural gas are [central and eastern European countries](#). Russia produces around [a third](#) of Europe’s gas consumption. Russian [counter-sanctions](#) have not restricted energy exports as of March 10. However, in early April, growing concerns over Russia’s brutal treatment of Ukrainian civilians is prompting renewed [calls to boycott](#) Russian oil and gas.

Global energy prices were already elevated in 2021 and significantly increased following the invasion due to concerns about the [reliability of future supply](#) from Russia given the impacts of existing sanctions and the potential for further sanctions. On February 28, Brent crude oil prices rose above [100 USD per barrel](#) for the first time since late 2014, then [increased further to around 130 USD per barrel](#) by March 8 following the joint US-UK ban on Russian oil imports. The market recovered somewhat in the following week, with prices declining to around 100 USD per barrel by March 16. However, prices have been increasing again since then, and as of March 25 stood at levels over 120 USD/barrel.

Global fertilizer markets

Russia is one of the world’s most important [fertilizer suppliers](#), producing 9 percent of global nitrogen fertilizer, 10 percent of global phosphate fertilizer, and 20 percent of global potash fertilizer, and exporting more than two thirds of its production of each product. In 2021, Russia was the world’s top exporter of nitrogen fertilizers and the second leading supplier of both potassium and phosphorus fertilizers. Belarus produces an additional 17 percent of global potash (potassium fertilizer) and exports almost all of it. Ukraine does not play a significant role in [global fertilizer supply](#).

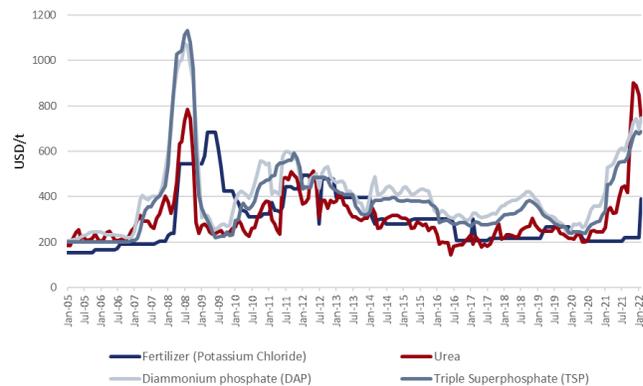
International fertilizer prices [rose significantly](#) throughout 2021 (Figure 8), driven by increased demand following [higher crop prices in 2021](#) and, on the supply side, [high and volatile energy prices](#) (especially for natural gas, which plays a pivotal in the production of nitrogen fertilizer) which increased the cost of fertilizer production. Supply chain disruptions and high transportation costs following the imposition of export restrictions and sharp increases in bulk and container freight rates caused by the COVID-19 pandemic have also put upward pressure on fertilizer prices. Additionally, in October 2021, [Russia restricted fertilizer exports](#), following fears of a shortage, contributing to higher prices. The most notable increases were registered for nitrogen fertilizer (urea), followed by phosphorus fertilizers. Meanwhile, prices of potassium fertilizer (potash) remained relatively stable in 2021.

In the first months of 2022, concerns over building import inventories and low winter buying interest resulted in declining prices of urea. However, following the beginning of conflict in Ukraine, interruptions to nitrogen movement and production in eastern Europe have resulted in rising prices again. Prices of potash also spiked in February 2022.

Global agricultural commodity markets

Russia and Ukraine together accounted for 19, 14, and 4 percent of the global output of barley, wheat, and maize, respectively, between 2016/17 and 2020/21, [according to FAO](#). These two countries alone contributed over half the world’s supply of sunflower oil, on average during this period. They produced a much smaller share of global rapeseed and soybean production, at 6 and 2 percent, respectively.

Figure 8: Fertilizer prices, January 2007 to February 2022



Source: FEWS NET based on World Bank data

Figure 9. Historical futures prices of select commodities, January 1, 2005, to April 1, 2022 average of closing prices



Source: FEWS NET based on Yahoo Finance Data

Global cereal markets were already tight prior to the invasion. Given the [importance of Ukraine and Russia](#) as global suppliers of cereals and edible oils, prices rose significantly for many commodities—including wheat, maize, and soybeans—following the invasion of Ukraine (Figure 9) as global commodity traders responded to fears of supply constraints. By the end of the first week of March 2022, agricultural commodity markets realized their biggest weekly gains in years due to the closure of Ukrainian ports, sanctions against Russia, and the suspension of operations by global agriculture companies operating in Ukraine. By March 8, prices of wheat and corn had reached their highest levels since 2008, while soybean prices also approached highs not seen since 2012. [Rice](#) price increases have been more moderate given record global supply, though the rate of price increases has accelerated slightly following the invasion.

Projected scenario of Russian ongoing invasion

Scenario parameters

Russia's invasion of Ukraine is expected to continue in the near and medium term, at a minimum. In the near term (one to three months), Russia is expected to continue attacking Ukraine on the southern, eastern, and northern fronts, though with varying intensity and tactics used against each front. Russia's ability to successfully achieve all its ostensible goals (strategic control over a majority of large eastern and central urban centers, including Kyiv, and all Black Sea and Sea of Azov ports, and establish a land bridge linking Donbas to Crimea) is unlikely within the next three months. In the north, Russia is likely to continue shelling major cities that Russian forces are unable to control, such as Kyiv and Chernihiv, maximizing damage to civilian infrastructure as leverage to be used during ongoing negotiations with the Ukrainian delegation. Russian forces will likely succeed in establishing a land connection linking Donbas with Crimea, following the imminent collapse of Mariupol, and after likely refocusing of efforts to assert complete control over Donbas (Russia's recently revised "primary objective"). While Russian forces regroup and redeploy following a month of arguably unsatisfactory gains, they are likely to shift to a longer-term siege of significant political centers, also disrupting trade and bolstering their own supply lines by seizing smaller towns with access to the country's main railway connections (particularly those east of the Dnipro River and in the south of the country) and continuing to enforce a de-facto blockade of the Black Sea. Meanwhile, major centers of resistance in central Ukraine—namely Kyiv—will likely continue to be shelled from a distance that is unreachable by Ukrainian defense forces.

In the medium term (four to six months), Ukraine and Russia are likely to find themselves in a protracted conflict resulting in attrition of forces and the destruction of cities, with western and central Ukraine routinely exposed to rocket attacks and shelling from Russian aircraft as Russia increasingly targets military assets in the west to disrupt the flow of arms, fuel, and recruits to the front lines. Ukrainian territory in the east and south of the country is likely to remain under the control of Russian forces. Protests by Ukrainian civilians and the Russian crackdown in response is likely to birth some level of Ukrainian insurgency to which Russians will likely respond with brutality. Measures against both real and perceived "enemies" of Russia are likely to include forced disappearances, extradition to Russia, and prolonged detention. Agreements for ceasefires and humanitarian corridors may be reached, but agreements are unlikely to hold or lead to a significant breakthrough in peace negotiations, as they have to date generally been shown to be false (in the case of humanitarian corridors) or used only as an opportunity to regroup forces.

Impacts on livelihoods and crop production in Ukraine

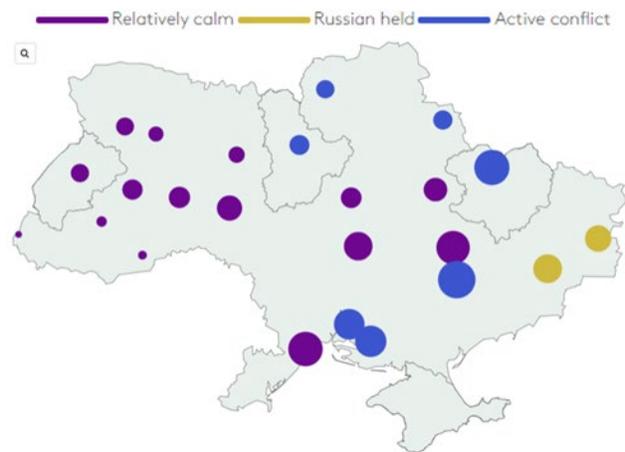
Conflict will continue to damage critical infrastructure, homes, businesses, agricultural land, and productive assets. It will continue to constrain movement, disrupt supply chains, and prevent people from engaging in their normal livelihood activities due to safety concerns. Ongoing conflict will also continue to drive high levels of population displacement within Ukraine (especially to western areas) and abroad. Growing displaced populations will also continue to place pressure on community resources in western Ukraine.

Across the country, typical livelihoods and business activities will continue to be disrupted. Given the significant number who have been displaced or who have joined the military, a smaller share of the population will engage in typical activities in eastern Ukraine. Factories, buildings, and other damaged infrastructure will need to be rebuilt before normal activities can resume. Supply chain disruptions will also impede economic and business activity due to shortages of fuel and other goods. It is also likely that a reduction in consumers due to people leaving eastern areas—as well as reduced consumer purchasing power among those who remain behind due to rising prices—will reduce demand for non-essential goods and services. However, some businesses that are still operational—including those that produce goods needed for the war effort and those that provide services in areas that receive an influx of refugees—will likely benefit from increased demand. Agricultural livelihoods will be among those negatively affected, due to damage to crops, livestock, and equipment, conflict-related move-

ment restrictions, reduced supply of labor, and reduced availability of inputs—especially fuel and seeds but also fertilizer and livestock feed in some cases—due to supply chain disruptions. Even when inputs are available, some poor farmers may be unable to afford sufficient inputs given rising costs. However, the government has expanded agricultural loan programs, and it is likely that most eligible farmers will procure the needed financial support. Overall, these disruptions will likely reduce and disrupt spring planting and winter crop preparation activities, also reducing yields. Shortages of seeds for spring planting particularly threaten maize production.

Eastern conflict-affected areas will be worst affected, with the magnitude of impacts dependent on the spread, intensity, and duration of conflict through the growing season and during the harvest, which will [begin around July](#) for winter cereals and last through around November. Some western farmers are also likely to be impacted by shortages of agricultural inputs including seeds and fuel, localized damage due to missile strikes, and abandonment of land due to joining the military.

Figure 10. Area planted under winter wheat (size of dot corresponds to relative amount area planted) and scale of military operations by oblast in Ukraine as of mid-March 2022



Source: Fastmarkets

According to government estimates published on March 25, [5.99 million hectares](#) of land are projected to be planted under spring crops (including maize). This is 22 percent less cropped area than last year. This estimate is among the most optimistic released to date, as [previous government estimates](#) and [third party estimates](#) suggested that spring area planted may be reduced by 30-50 percent. Active conflict will also likely cause crop damage and prevent access to fields for crop management activities in the coming months. Conflict-affected areas are responsible for a significant share of the national production of wheat (Figure 10) and other key crops. Overall, production of cereals and oil seeds will likely be less than last year's bumper crop and, depending on the scale of disruptions, below average or even significantly below average at the national level, driven by reductions in conflict-affected eastern areas. Though significant uncertainty exists, it is possible that agricultural production in Ukraine—both winter and spring crops—could decline by [25-50 percent or more](#), driven by reduced spring area planted, crop losses due to damage, and reduced yields due to shortages of fertilizer and fuel. However, early estimates are hypothetical and illustrative, and it remains too early to estimate Ukrainian production levels for the 2021/22 season.

Despite the uncertainty in production levels, the significant reduction in Ukraine's export capacity and additional export restrictions will likely remain the main factors limiting supply to global markets, should the current limitations persist through the harvest period. Should this occur, more Ukrainian production will be destined for domestic markets rather than export markets. Though increased local supply due to reduced exports and, in the east, absent populations, would increase availability of food for local consumption and put downward pressure on prices of locally-produced commodities, rising production costs are likely to place opposing upward pressure on prices of locally produced commodities, and prices of imported goods will also likely increase. Overall, reductions in income-earning from loss of export markets could outweigh any benefits of increased food available for farmers' own consumption, depending on the scale of price increases of other commodities. Although some producers of exported agricultural commodities in western Ukraine could benefit from rising global prices and increased demand, this will likely be limited due to limited export capacity, and it is possible that traders would benefit from more than farmers through higher profit margins, with producer prices remaining low.

Overall, loss of business activity and export revenue—especially from agriculture and metallurgy—will have a sizable negative economic impact on local economies in eastern Ukraine, but also on the national economy. Though significant uncertainty exists regarding the magnitude, UNDP estimates GDP could contract by [between 7 and 60 percent](#) in 2022, the upper end of the range corresponding to economic collapse during a severe and protracted crisis.

Projected food security outcomes in Ukraine

Ukraine's status as a surplus food producing country—producing around [five times](#) its domestic consumption requirements—makes it less vulnerable to global supply and price shocks. Given levels of stocks in the country and additional production in the summer, the national food supply will likely be sufficient to support the population. However, supply chain disruptions

and sieges by Russian forces will likely continue to reduce food availability in some areas and drive localized severe shortages for at least the near term.

Additional households will be displaced or re-displaced as the conflict continues. Many poor households separated from assets and typical sources of income will likely need immediate assistance. Poor households without sufficient resources living in temporary locations are expected to need sustained assistance until livelihoods are re-built at home or in new, permanent locations. Other populations who have been unable to flee—due to movement restrictions caused by conflict (including in cities under siege), due to being disabled or elderly and unable or unwilling to travel, or due to lack of resources—will also likely need various forms of support, though access constraints will likely continue to prevent humanitarian actors from providing assistance to some populations that remain in place.

In rural areas, given the [bumper harvest](#) in the recently concluded 2020/21 production season, many poor households likely have above-average levels of food stocks and/or monetary resources. This is likely to provide some ability to cope with temporary disruptions to income-earning. However, resources among poor and smallholder households in rural conflict-affected areas will likely be stretched thin as time goes on—particularly given rising prices of essential commodities—with Stressed (IPC Phase 2) outcomes likely to persist until food and income associated with the next harvest become available around July. During this time, worst-affected rural households without sufficient resources and/or who are in areas impacted by significant food shortages would likely experience Crisis (IPC Phase 3) or worse outcomes in the short term as stocks are exhausted during the lean months until the next harvest. However, households whose food and/or income from agricultural production are significantly reduced by the impacts of conflict would not experience normal seasonal improvements and may additionally face damage to their homes and other property, with the worst-affected likely requiring assistance to re-build and support their basic needs.

Many urban areas will continue to be devastated by the direct impacts of active conflict. Civilian casualties, high levels of displacement, and significant disruptions to livelihoods, income-earning, and markets are likely in worst-affected urban areas. Many households will likely face consumption gaps and Crisis (IPC Phase 3) or Emergency (IPC Phase 4) outcomes during periods of time when active conflict results in shortages of food or inability to move. Many households in conflict-affected urban areas will require urgent assistance to prevent consumption gaps and ultimately to rebuild their lives and livelihoods.

In both rural and urban conflict-affected areas—as well as in western areas affected by economic decline—poor households without a primary income-earner, including many of the disabled, widowed, elderly, and those who have lost their main income earners due to the war, are likely to be worst affected by losses of typical food and income sources and least able to cope with increased transportation, food, and housing costs in the absence of increased assistance. Above-average levels of remittances are expected while the diaspora and international community are able to sustain increased support to family and friends in Ukraine. However, some localized disruptions to financial services due to damaged infrastructure will likely prevent some households from accessing remittances, pension payments, or other resources held in banks. In the medium and long term, international sanctions on Russia could prevent households in any occupied territory from receiving remittances until the international community takes steps to issue waivers or grant the needed permissions. Despite issued exemptions, sanctions would likely present similar challenges to humanitarian actors seeking to assist Ukrainians in occupied territory, which would hinder the response and disrupt key sources of income for households currently receiving assistance (especially in Donbas).

Though significant uncertainty exists, an estimated 2.5-4.99 million people (around 5 to 10 percent of the national population) will likely need humanitarian assistance to prevent consumption gaps and protect livelihoods in the near term. However, humanitarian access is likely to remain significantly impeded while the conflict persists.

International Supply and Market Outlook

In this section, we provide expectations for global supply and prices of key commodities important for food security—fuel, fertilizer, and staple cereals and oils—and review the countries most dependent on imports from impacted suppliers (Russia, Ukraine, and Belarus).

Commodity supply and price outlook

The US Energy Information Administration (EIA) has reduced projections for Russian oil production. Some reductions in Russian exports of oil and gas are likely due to the impacts of sanctions on the private sector's willingness and ability to engage with Russia. However, reductions are likely to be slight to moderate given Russia's role as a key global supplier amid concerns about reduced global supply and rising prices, alongside Russia's need for export revenue and depreciation of the ruble. Meanwhile, the international community is currently exploring approaches to increase oil and natural gas production

in countries such as Saudi Arabia, Yemen, and the United States. The EIA expects that global oil inventories will build at an average rate of 0.5 million barrels per day from the second quarter of 2022 through the end of 2023, which will ease pressure on crude oil prices. However, in the next six months, any interruptions to Russian oil and gas exports—along with general uncertainty in the market as the conflict unfolds—will continue to put upward pressure on prices. Rising energy prices will contribute to higher transportation costs and shipping costs, much of which is petroleum-based. This along with [constrained cargo capacity](#) is likely to put additional upward pressure on freight costs. Additionally, it remains possible that the international community takes steps to boycott Russian energy given humanitarian concerns, which would put additional upward pressure on prices.

Fertilizer exports by Russia are also likely to be slightly to moderately reduced because of the private sector's unwillingness to transact with Russia and reduced Black Sea shipping capacity. However, the US [exempted Russian fertilizer exports](#) from sanctions on April 1, and Russia will likely seek to continue exports as able given the need for export revenue. In addition to potential reductions in supply, strong global demand and higher global energy prices will put significant upward pressure on prices of fertilizers in 2022. The conflict could lead to shortages of potassium fertilizers (potash) due to the high share produced by Russian and Belarus.

Ukraine is one of the world's top exporters of key agricultural commodities including [wheat, maize, and sunflower seed oil](#). As the conflict continues, Ukraine's capacity to store, transport, and export agricultural commodities will likely be further reduced by damage to—and potentially changing control over—infrastructure, with eastern areas worst affected. According to recent estimates, around [40 percent](#) of all grain elevators and storage capacity are found east of the Dnipro River. As Russian troops attempt to capture towns with strategic rail access, additional railway station closures are expected. Even more significantly, access to Black Sea ports critical for exports will likely remain cut off.

Ukraine's state-run railway is making [preparations](#) to be able to deliver 150 grain carriages per day to Romania, 45 to Poland, 17 to Hungary, and 60 to Slovakia, each carrying up to 70 tons of grain. This translates into an estimated 19,040 tons of grain per day, or 571,200 tons per month. This is only around 10-15 percent of Ukraine's export capacity when shipping through ports, according to the Ukrainian Agribusiness Club. With 10.7 million tons of exportable wheat, maize, and barley remaining in the country as of the end of February, according to USDA, it would take over 18 months to export all remaining grain, while only three months remain in the marketing year. Additionally, these operations are likely to take time to fully establish, and will likely continue to compete with the transport of civilians and military personnel, humanitarian cargo, military equipment, agricultural inputs, and other essential supplies, which will likely continue to be prioritized. Furthermore, should Ukraine's current export quotas and bans on agricultural commodities, socially important goods, and raw materials remain in place, exports would not be expected to exceed levels determined by the government. As a result of these factors, Ukrainian exports in the near term (throughout the remainder of the marketing year) are likely to be minimal.

In early March, [USDA reduced projections for Ukrainian wheat exports](#) from 24 million to 20 million MT (a 17 percent reduction) in the ongoing marketing year 2021/22 given the impact of the invasion and the closure of Black Sea ports, and these estimates may reduce further. Projections for Ukrainian maize exports were revised downward from 33.5 to 27.5 million MT, an 18 percent reduction. More recently, on March 18, the International Grains Council revised expectations for Ukrainian wheat and maize exports to stand at, respectively, 20.8 million MT (similar to USDA's estimate), and 21 million MT (significantly lower than USDA's estimate).

In March, [USDA reduced projections for Russian wheat exports](#) from 35 million to 32 million MT, a 9 percent reduction in the ongoing marketing year 2021/22 given the impact of sanctions, logistical challenges in the Black Sea, and rising transportation costs. Despite challenges due to sanctions, Russian exports of grains are likely to recover due to high global demand, Russia's need for export revenue, and the depreciating ruble. Russia is actively working to export grains to countries which are less concerned about the impacts of western sanctions, including Turkey, Egypt, Libya, and Iran. As such, overall reductions are likely to be slight.

Overall, global supply of cereals and oil seeds will likely contract given the expected sharp reduction in Ukrainian exports and potential slight reduction in Russian exports, though the magnitude remains uncertain as other global producers work to increase export levels. According to preliminary revised USDA projections in early [March](#), decreased exports from Ukraine and Russia were expected to be only partially offset by increases from Australia and India. However, it remains possible that India—the world's second largest producer of wheat but not typically a major exporter—could export significant wheat from its stocks. Other countries, such as Argentina, are also reportedly working to increase export levels to take advantage of high prices. Overall, given generally favorable global production forecasts, many buyers will likely successfully source wheat and maize, or cheaper substitutes, from alternative markets. However, increased demand, reduced supply, and higher production costs due to rising energy and fertilizer prices will drive up prices, and significant price volatility and liquidity constraints will

challenge procurement by highly import-dependent countries. Additionally, global production forecasts continue to be revised, including due to drought conditions related to La Niña and rising fertilizer prices, and could be reduced further. The maize market is likely to be the most negatively affected by the shock to fertilizer supply and prices due to its relatively higher use of fertilizers.

Given reductions in supply of key staple food commodities, concerns also exist for procurement of humanitarian assistance supplies. Pipeline breaks in some commodities are likely as WFP sources from alternative markets. Rising global prices of staple foods and increasing fuel transportation costs will increase already high costs of humanitarian assistance provision. This reduces the buying power of humanitarian agencies, and therefore the amount of humanitarian assistance that can be delivered unless funding shortfalls are filled.

Though significant uncertainty exists, preliminary expectations for global commodity prices are as follows:

- According to [projections](#) by the EIA made on March 3, 2022, crude oil prices are expected to remain above last year and five-year average levels in the near to mid-term. Prices were expected to average 117 USD/barrel in March, 116 USD/barrel in the second quarter of 2022, and reduce slightly to average 102 USD/barrel in the second half of 2022. On average in March, Brent crude prices were near 112 USD/barrel.
- Fertilizer prices are expected to increase significantly, by as much as 40 percent.
- Prices of key staple food commodities including wheat, maize, and edible oils are likely to continue increasing throughout 2022, remaining above prices last year and average levels. In addition to commodities whose supply is directly affected by reduced exports from Russia and Ukraine, such as wheat, maize, and sunflower oil, substitute commodities, such as rice and alternative edible oils, will also likely realize price increases. According to an [FAO-produced](#) scenario of a “moderate” shock to Ukrainian and Russian exports (a reduction of 10 million tons in each country), wheat and rice prices would increase around 8 percent in the 2022/23 marketing year, while in “severe” shock scenario (a reduction of 25 million tons in each country), prices would increase around 20 percent. FEWS NET’s expectations for reductions in exports are less than what is assumed even in FAO’s “moderate” shock scenario. However, it is worth noting that both modeled scenarios assumed that crude oil prices would reach 100 USD/barrel, a level that has already been exceeded.

Countries dependent on imports from impacted suppliers

Ports located in the Black Sea previously handled the shipment of most Ukrainian exports destined for European, Middle Eastern, and East Asian countries (Table 1). Ports located in the Azov Sea are [shallower and have less capacity](#) but were relevant for grain trade to Cyprus, Egypt, Italy, Lebanon, and Turkey.

Table 1. Ukraine seaports specialization and cargo turnover (2020)

Port	Region	Cargo turnover ¹		Specialization
		(Million Tons)	%	
Pivdennyi	Odessa	61.6	39%	Chemicals, metal, ammonia, methanol, crude oil, vegetable, and grain
Mykolaiv	Nikolaev	30.1	19%	Metal, fertilizers, industrial equipment, bulk grain, foodstuffs, and timber products
Chornomorsk	Odessa	23.8	15%	Metals, grain, vegetable oil, crude oil, and agricultural products
Odessa	Odessa	23.3	15%	Crude oil, vegetable oil, metals, sugar, grain, fruits, and general cargo
Mariupol	Donetsk	7.0	4%	General cargo (Bulk and liquid)
Olvia	Nikolayev	3.8	2%	Grain, metal, fertilizers, foodstuff, and general cargo
Izmail	Odessa	3.2	2%	Metal, industrial machines, and general cargo
Kherson	Kherson	2.8	2%	Fertilizer, chemicals, and grain
Berdiansk	Zaporizhia	2.1	1%	Fuel, vegetable oil, grain, and general cargo
Reni	Odessa	0.7	0%	Metals, chemicals, grain, crude oil, and general cargo
Other		0.5	NA	
Total		158.9		

¹ Note: Cargo turnover is the product of a certain quantity of cargo (in tons) and the distance of the transport (in km). Cargo turnover percent is the percentage of total cargo transported in that region

Source: [Ukraine invest](#), [Logistics Capacity Assessment](#) and [SIF-Service](#) (Ukraine).

Europe is highly dependent on natural gas from Russia. Last year, Europe required over 500 billion cubic meters of natural gas, with 40 percent coming from Russia. In March, the US and Europe reached a deal to increase supply of US liquified natural gas to Europe by at least 15 billion cubic meters this year, on top of 22 billion already planned.

Many countries in Eastern Europe and Central Asia have an import dependency of well over 50 percent on Russian fertilizers (Annex 1). [Brazil](#) is the largest importer of fertilizer in the world, sourcing 22 percent of its imports from Russia. India and Benin also import significant quantities of Ukrainian fertilizers. However, most countries have stocks of fertilizer for the upcoming season, so impacts on national supplies would likely be more relevant for future seasons. However, farmers who still need to purchase fertilizer will be impacted by rising prices. Regionally, Latin America is also highly reliant on fertilizer imports and will likely be impacted by rising prices in the future.

Several countries in the Middle East, North Africa, and Asia regions (including [Lebanon, Tunisia, Libya, Pakistan, and Indonesia](#)) have a relatively higher dependence on Ukrainian wheat and will likely need to source grain from other countries at higher prices. The USDA reduced wheat import projections for many countries including Turkey, Egypt, the EU, Afghanistan, Algeria, Kenya, Pakistan, Tanzania, and Yemen based on reduced Black Sea wheat export availability and higher world prices. According to the World Bank, near term supply shortages of wheat are possible in some developing countries dependent on Ukrainian wheat, including Gambia, Lebanon, Moldova, Djibouti, Libya, Tunisia, and Pakistan. Reductions in exports of oilseed and vegetable oil could drive [shortages in Europe, North Africa, Middle East, India, and China](#).

Projected Global Food Security Impacts

Higher prices of energy and agricultural inputs will have short- and long-term impacts on the global food system. Higher prices of inputs will first translate into [higher agricultural production costs](#) and eventually into even [higher food prices](#) as the increased costs are pushed onwards to consumers. Higher fertilizer prices could also lead to lower input use levels, decreasing yields in the 2022/23 crop production season. Should fertilizer shortages occur, this would likely further reduce yields, as crops need all types (nitrogen, potassium, and phosphorus) for growth. Increasing fertilizer prices may also have long-term ripple effects on the supply chain. As farmers consider modifying their usual crop rotation – for example, [reducing the area sown to sunseed, rapeseed and maize](#) and replacing it with cereals like buckwheat, oats, millet for national consumption – export prices and trading patterns may change, along with the labor and materials needed to facilitate production and trade. Given the potential for reduced fertilizer supply and rising prices of fuel and fertilizer in the 2022/23 season, global grain supplies could be impacted far into the future, putting additional upward pressure on food prices.

Higher global food prices will most significantly impact poor countries who are highly reliant on imports for their staple food supplies, as has been seen in previous global food price crises, due to their inability to insulate the domestic market from disruptions to trade and rising global prices. Additionally, many countries that are highly dependent on Ukraine, Russia, and Belarus for essential fertilizer and food supplies will need to continue to rapidly source or re-source commodities from other countries to avoid shortages (depending on levels of existing stocks), paying higher international prices. Higher import prices will translate into higher retail food prices in import-dependent countries, with food security hardest hit in low-income, net food importing countries due to low financial capacity to respond through policy measures including food subsidies to support poorer households. In these countries and others, rising prices of food and essential non-food commodities including fuel will further constrain the resources of poor households, with poor urban households among the worst affected due to high market dependence. Impacts of international sanctions on the Russian economy will also likely reduce remittance flows from Russia, negatively impacting economies and household income in countries dependent on Russian remittances, including [Armenia](#) as well as [Kyrgyzstan, Tajikistan, and Uzbekistan](#). On the other hand, oil and gas producing countries will likely experience economic benefits from rising global prices and increased revenue and foreign exchange inflows.

These shocks could exacerbate the scale and severity of existing food insecurity in many countries at a time when poor households' coping capacity is already low due to the impacts of the COVID-19 pandemic and rising global prices. Furthermore, the rising costs of humanitarian food assistance provision and limited global funding will likely constrain the international community's ability to meet high assistance needs. Where humanitarian assistance levels are increased, local livelihoods and economies are likely to be negatively impacted over time, increasing vulnerability to future shocks for millions of people in the world's poorest and already food insecure areas. This is of great concern for food security in the future given the increasing frequency of climatic shocks, among others.

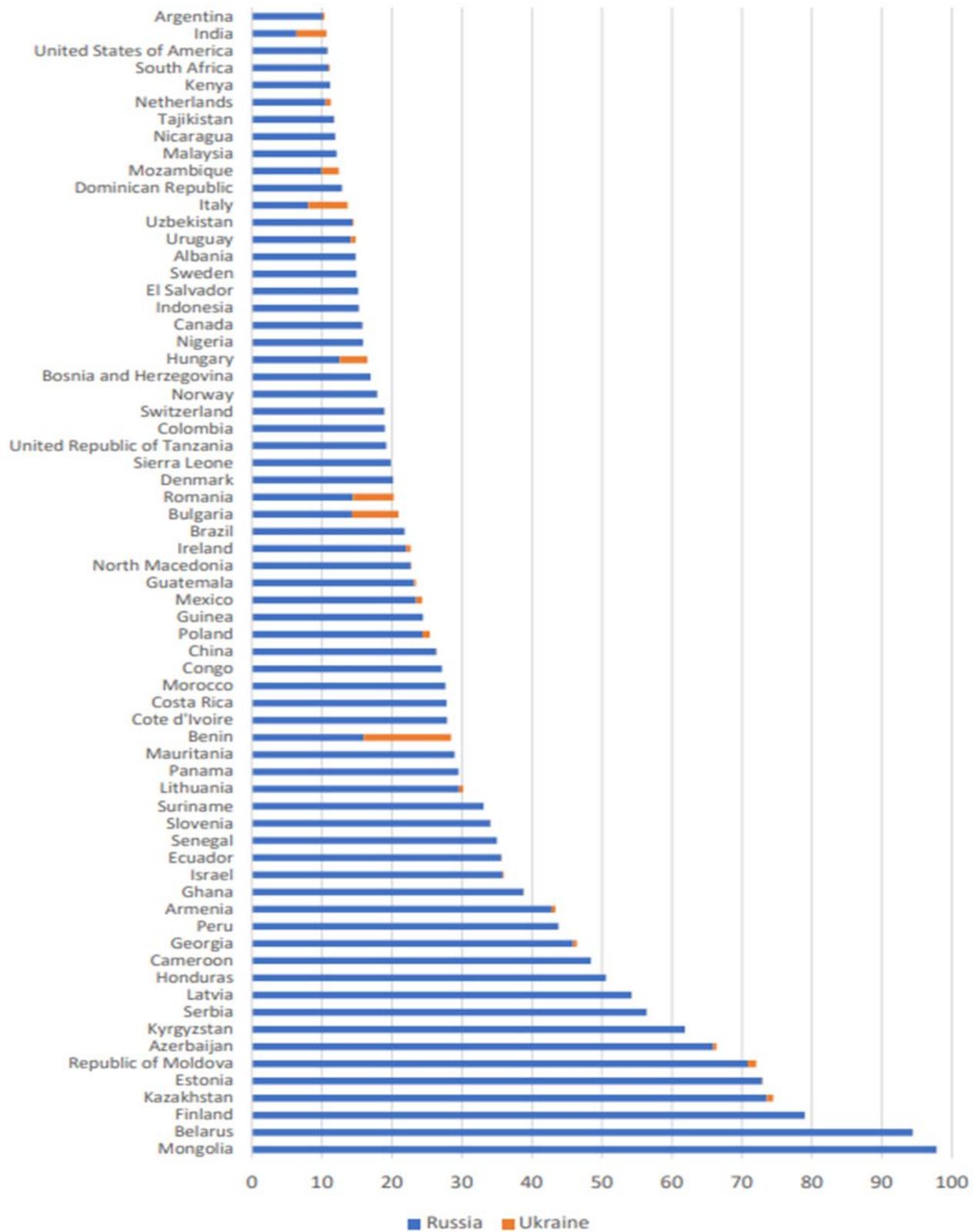
According to [analysis by IFPRI](#), the level of vulnerability of national populations' food consumption to the ongoing food supply and price shocks is assessed to be "extremely high" in Sudan, Lebanon, Yemen, Georgia, Mauritania, Congo, and Oman. Vulnerability is assessed to be "very high" in Egypt, Mongolia, Tajikistan, Albania, and Armenia, the UAE, Djibouti, and Jordan. Vulnerability is assessed to be "high" in Bangladesh, Kenya, Pakistan, and most other lower-middle income countries.

Other [factors](#) that determine country-level vulnerability to respond to these shocks include: the structure of import supply chains, including the number and nimbleness of major traders (many of whom are private companies) to contract new supplies; the country's geographic location, including proximity to alternative source markets; the amount of staple food commodities grown domestically and levels of existing stocks; existing trade policies; the strength of national institutions and ability of the government to respond quickly with appropriate trade and social safety net policies; the degree of international and regional cooperation in response; and [more](#).

Among **FEWS NET monitored countries**, concern is currently highest for Ethiopia, Sudan, and Somalia in East Africa; Nigeria and Burkina Faso in West Africa; Madagascar and Zimbabwe in Southern Africa; Nicaragua in Central America; Yemen; and Afghanistan.

- In **Ethiopia**, amid the shocks of conflict and drought, households are already vulnerable to price spikes, and rising fertilizer, fuel, and food prices will lead to further declines in purchasing power. With the increased cost of imported raw materials, labor demand is likely to decrease in urban areas. Given the increased cost of humanitarian response, and increased competition for humanitarian resources, the ability to respond to the record-level assistance needs is in question.
- **Sudan** imports around half of its wheat from Russia. The ongoing macroeconomic crisis is likely to limit import ability. Prices of substitute cereals (sorghum, millet) are already extremely high, and are likely to increase, limiting poor households' purchasing capacity.
- In **Somalia**, drought and conflict have already led to domestic cereal shortages. Imported food prices – such as rice, wheat flour, and vegetable oil – are also high and above average due to shifting demand, global supply-side constraints, and high fuel and shipping costs. As a result, the population is highly vulnerable to additional price shocks. Wheat flour consumption rivals rice in terms of importance to pastoral and urban households, and Somalia primarily sources wheat either directly from Russia and Ukraine, or indirectly through Turkey, Egypt, and UAE.
- In **Nigeria**, while high international oil prices will increase foreign reserves, it will also drive increased transportation and food costs. High fertilizer prices could affect yields in the next primary agricultural season starting in June, reducing overall food production. Households in northern parts of the country already depend heavily on markets to buy food with limited income; further price increases will only decrease purchasing power.
- **Burkina Faso** depends in part on imported food from Russia (accounting for about 20% of its wheat), and from coastal West African countries that re-export wheat from Russia or Ukraine. Higher staple food prices will come on top of already record-high local prices, further reducing purchasing power among many who are now atypically reliant on markets due to conflict-related disruptions to key food sources.
- In **Madagascar**, international price spikes for petrol, diesel, fertilizer, and food are expected to negatively affect food security outcomes amid the prospect of a below-average harvest in 2022 and continued reliance on humanitarian food assistance and grain imports.
- **Zimbabwe** has the highest petrol and diesel prices in the southern Africa region due to government taxes, and food price hikes are expected with increasing transportation costs, which will further reduce food access amid below-average domestic production. Impacts from reductions in investment inflows from Russia are also possible.
- In **Nicaragua**, the conflict in Ukraine will likely exacerbate the continued political and economic deterioration as Russian imports make up a large percentage of overall cereal and fertilizer imports.
- In **Yemen**, while stocks and incoming imports are expected to last through at least mid-year, the country relies on Russia and Ukraine for nearly half of its wheat imports. Food prices are already rising and sourcing from other markets at higher prices alongside rising energy prices will drive higher food prices. Further, given reliance on food assistance, negative impacts to WFP's capacity to procure is of concern. Increased government revenue from oil exports is expected, though Yemen is a net importer of oil products, making this a net negative for the trade balance.
- In **Afghanistan**, higher global prices of food, fuel, and fertilizer will likely drive rising prices at a time when purchasing power is already low. Afghanistan imports about half of its staple wheat supply.

Annex 1. Share of fertilizer imports (nitrogen, phosphorus, and potassium) from Russia and Ukraine



Source: [FAO](#)