

#### **UKRAINE**

Note on the impact of the war on food security in Ukraine
20 July 2022





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#### **OVERVIEW OF THE SERIES**

As part of its response to the ongoing conflict in Ukraine, the Food and Agriculture Organization of the United Nations (FAO) is issuing a series of quarterly updates on the impact of the war on agriculture and food security in the country. Drawing on recent surveys conducted by FAO and analyses completed by partners and other agencies, the series provides the latest information on key aspects of the agricultural and food security situation in Ukraine.

### Key messages

- ▶ Because of the war, between 20 and 30 percent of the area where winter crops were sown is likely to remain unharvested. Moreover, the conflict has forced farmers to reduce the sown land with spring crops by around 20 percent compared to last year. Overall, the reduced area harvested and limited access to inputs are expected to result in a decline in yields and in a reduction of cereal production by 40 percent compared to the previous year's exceptional results.
- ▶ With harvesting season starting, Ukraine will soon exhaust its available grain storage capacity. Considering the above-average production in 2021 and abrupt stop of maritime export channels, silos in the country will not have sufficient capacity to store winter and spring crops, which will be harvested in 2022. With the harvest of winter crops starting in July and spring crops beginning later in the year, the current lack of adequate storage needs to be addressed as a matter of urgency.
- ▶ Access to and affordability of food within the country remain major concerns. Loss of income sources, coupled with increased food production costs, market disruptions and transportation bottlenecks are having a significant impact on access and affordability of food commodities.
- ▶ Availability and access to critical agricultural inputs including seeds, fertilizer, fuel and plant protection products will continue to have negative consequences for the next sowing and growing seasons, and will ultimately be reflected in food prices, driving them still further upwards.
- ▶ Rural households and smallholder farmers, who contribute to a significant portion of the country's agricultural production, continue to suffer the consequences of the war. While increased prices in the domestic market should contribute to increased earnings for producers in the short term, high prices of inputs and supply chain constraints may have a negative impact on their production and income.
- ▶ In order to address these challenges, FAO recommends the following actions: rapid increase in supply chain and storage investment; diversification of export options and processing efforts; increased support for agricultural production, storage and marketing for small and medium holders, taking into account the different needs of women and men; and enhanced and regular monitoring of food security and agricultural value chains.

# Executive summary

While the situation in Ukraine remains dynamic and unpredictable, there is growing evidence that loss of income, supply chain disruptions, increasing prices and dependency on food assistance have significantly affected the access to and affordability of food.

Prices of basic goods, including food, have increased significantly across the country, particularly in areas with active fighting. In April, the most significant increases in food prices occurred for wheat flour (17 percent), buckwheat (27 percent) and millet (35 percent). Other significant increases were observed for pork, milk, butter, sugar and cooking oil (between 7 and 13 percent). In this regard, recent data show a reduction of almost 40 percent in purchasing power of an average consumer in Ukraine, signaling a significant reduction in food access for Ukraine's population.

Initial estimates from June indicate the preliminary damage to the agriculture sector is between USD 4.3 billion and USD 6.4 billion due to the conflict, including damage to infrastructure such as irrigation, storage, machinery and equipment, shipping infrastructure, greenhouses, field crops, livestock and processing units.

Based on the area planted and expected decline in yields, the current forecast for the 2022 cereal harvest indicates a production of 51.1 million tonnes: 20 million tonnes of wheat, 24 million tonnes of maize, and about 7 million tonnes of other coarse grain. If these estimates are confirmed, they would represent about 60 percent of the exceptional harvest from the previous year.

The sudden halt of maritime exports in February 2022, and the slow pace of exports being shipped using land and river routes, have curtailed the availability of storage space for the upcoming harvest. As of May 2022, some 14 percent of all grain storage facilities in Ukraine were either damaged or destroyed. In addition to this, approximately 10 percent of grain storage is currently under Russian control. Considering the current pace of exports, domestic consumption and losses, the amount of cereal and oilseed currently in storage is more than four times higher than in the previous season at the same period.

The winter wheat harvest starts in early July and, because of the war, between 20 and 30 percent of the areas where winter crops were sown are likely to remain unharvested. The unavailability of fuel is the critical factor determining the area that will be harvested. For spring planting, initial estimates show that the conflict made farmers reduce the sown land for spring grains and pulses by around 20 percent compared to land sown in 2021.

Availability and access to critical agricultural inputs – including seeds, fertilizer, pesticides, equipment, fuel and livestock supplies – are of particular concern. This is mostly driven by a combination of limited availability from disrupted logistics services and financial issues faced by agricultural producers. Prices of fuel, cereal seeds, plant protection products and fertilizer registered significant increases across the country.

Livestock producers lack physical and economic access to animal health supplies, including commercial veterinary drugs, animal feed and feed additives. Moreover, a 25 percent reduction of the livestock population was observed nationally among smallholders, mainly through forced slaughtering to reduce costs.

Rural households and smallholder farmers significantly contribute to the country's agricultural production. High prices of inputs, constraints along the value chain, increased production costs, especially fuel, and limited processing capacities are having a significant impact on their production and income.

The war has different impacts on men and women, with multiple and intersecting forms of discrimination affecting women, youth, persons living with disabilities, displaced people, refugees and elderly people. The disruption of infrastructure and family structures, and the lack of mobility pose a significant risk to women and girls, reducing their economic opportunities, access to remittances, healthcare and social assistance, while increasing their workloads and risks of violence.

### Introduction

The war in Ukraine, which started on 24 February 2022, has resulted in significant damage to all economic activities in Ukraine, including agriculture, which is a key driver of the economy at all levels.

The war has triggered population displacement, damaged civil infrastructure and restricted the movements of people and goods, preventing farmers from tending their fields, and harvesting and marketing their crops and livestock products. It has also led to disruptions in essential public services such as transportation, markets, banking, and the provision of water and energy. FAO is particularly concerned about the closure of Black Sea ports, lack of adequate capacity in alternate export routes and inadequate grain storage capacity in the country.

Farmers have experienced localized shortages of inputs due to the damage to, or closure of, key supply chains (e.g. the blockade of Black Sea ports) and resulting bottlenecks. Limited capacity in alternate chains (e.g. European Union land and river transshipment) have negatively affected agricultural operations. Farmers face these challenges amidst general increases in production costs resulting from rising prices of fertilizer, fuel and other agricultural inputs globally. Many farmers who took out commercial credit before the start of the war are now unable to repay their debts and maintain their credit worthiness. Attacks on civilian infrastructure (including airstrikes and heavy artillery) and the occupation of Ukrainian territory and active military engagements, which have been happening in southern, eastern and northern areas of the country, continue to pose serious threats to agricultural production and those working in the sector. These threats are compounded by more widespread input supply shortages – fuel in particular – and major logistical complications which continue to affect the whole country, and are growing in severity.

Although significant damages have occurred, following the retreat of the active fighting to the eastern part of the country in early April 2022, economic activities have resumed in some areas, including in agriculture, enabling farmers to take advantage of the remaining window for sowing spring crops and applying fertilizer to winter crops. In these areas, farmers returning to their fields were often faced with the urgent need to remove unexploded ordnances before they could safely apply fertilizer to winter crops or prepare their land for spring crops.

Ukraine will soon exhaust its available grain storage capacity. Considering the above-average production in 2021 and abrupt closure of maritime export channels, silos in the country will not have sufficient capacity to store winter and spring crops harvested in 2022. With the harvest of winter crops starting in July and spring crops beginning later in the year, the current lack of adequate storage represents a pressing concern. Moreover, there are concerns about disruption to the harvest of winter grains, in particular due to fuel shortages which impede the maintenance of spring crops. Additional threats to maintaining production are agricultural labour availability, constrained by displacement and

mobilization of agriculturalists into the Armed Forces of Ukraine and other military formations; high prices and overall access to, and availability of, agricultural inputs, particularly fuel; disruption of logistics and food supply chains; abandonment of and reduced access to agricultural land; damage to crops due to military activity, especially during vegetative stages in spring/early summer; and destruction of food system assets and agriculture related infrastructure.

Ukraine is among the most important producers of agricultural commodities in the world. The country is a net exporter of agricultural products and a leading supplier of foodstuff and fertilizer to the global market. A large number of food and fertilizer importing countries, many of which fall into the least developed country and low-income food-deficit country groups, rely on Ukrainian food supplies to meet their consumption needs. The war in Ukraine creates a number of risks for the global agricultural markets.1

#### Price risks

Production shortfalls in Ukraine may only be partially compensated by alternative sources during the 2022/23 marketing season. Moreover, it is happening in the context of a weakened economic prospect following the COVID-19 pandemic, increasing prices of food and other key commodities, such as energy, and high inflation. The capacity of many exporting countries to boost outputs and shipments may be limited by high production and input costs. The resulting global supply gap could raise international food and feed prices. If the war keeps crude oil prices high and continues to limit exports beyond the 2022/23 season, a considerable supply gap would remain in global grain and sunflower seed markets – even as other exporting countries expand their output in response to the higher output prices – keeping global prices elevated well above baseline levels

#### Logistical risks

Damages to inland transport infrastructure and seaports, as well as storage and processing infrastructure led to the disruption of commercial shipping operations and exacerbated the already elevated costs of maritime transportation thus increasing the costs of food imports.

#### Humanitarian risks

If the war results in a prolonged reduction of food exports by Ukraine, it will exert additional pressure on international food prices, with detrimental effects on economically vulnerable countries.

# Impact on food security

Before the escalation in February, Ukraine's eastern regions of Donetska and Luhanska oblasts were already facing a food crisis, with around 383 000 people acutely food insecure as of 2021. Moreover, between 2019 and 2021, the country had 9.9 million moderately and severely food insecure people (as per the Food Insecurity Experience Scale (FIES) measuring chronic food insecurity).

While the situation in Ukraine remains dynamic and unpredictable, there is growing evidence that loss of income, supply chain disruptions, increasing prices and related dependency on food assistance is significantly affecting the access to and affordability of food across the country.

Preliminary analyses estimate that, as a result of the war, the projected decline of Ukraine's GDP (by around 45 percent in 2022) may increase the poverty rate in the country, with approximately 60 percent of the population forecast to be in poverty by 2023,<sup>4</sup> presenting major risks to the food security of vulnerable households and communities.

In terms of food security indicators, the latest United Nations World Food Programme (WFP) assessment found that one third of all households were food insecure, of which 5 percent were severely food insecure. Another 28 percent were moderately food insecure or experiencing food consumption gaps and an inability to meet food needs without applying negative coping strategies.<sup>5</sup>

The highest levels of food insecurity have been reported in areas most heavily impacted by the war, particularly eastern and southern oblasts, such as Luhanska (56 percent of the population), Kharkivska (50 percent), Khersonska (46 percent) and Donetska (45 percent), as well as northern Chernihivska (45 percent) and Sumska (41 percent). In these oblasts, one in every two households was found to be food insecure.

It is likely that these oblasts were facing higher levels of food insecurity due to significant access challenges for humanitarian assistance.7 Similarly, access constraints have also caused major reductions in food security in besieged cities and other areas of active conflict. Urban areas are more likely to be affected compared to rural ones,8 with resulting food insecurity in urban areas likely to be more severe. In eastern besieged cities, shortages of food, water, electricity and heat were reported, while the comparatively few humanitarian corridors that have been established have been unable to adequately respond to vulnerable people's basic necessities. Shortages of infant formula and clean water are likely contributing to increases in acute malnutrition in the worst-affected areas, while presenting the risks of major communicable disease to infants and children. In areas such as Mariupol, the destruction of water infrastructure has placed the entire urban population at risk of cholera and other water-borne communicable diseases, amidst shortages of alternate water purification materials, medicines and destroyed medical facilities. 10

While the number of internally displaced persons has been decreasing since March, in June around 14 percent of the entire population of Ukraine was internally displaced as a result of the conflict (6.3 million people). 11 Poor displaced households are severely affected by the loss of assets and income generating activities, resulting in more concerning levels of food insecurity, and are in need of assistance. 12 Food insecurity was found to be more prevalent among internally displaced persons (IDPs) (54 percent) compared to resident populations (23 percent). Among all IDPs, those in the eastern (62 percent) and southern (59 percent) oblasts were the most food insecure. At the national level, households that were both displaced and separated from other members of their households displayed the highest levels of food insecurity (56 percent). 13 Moreover, an FAO assessment shows that the majority (almost 60 percent) of interviewed internally displaced households previously had income from agricultural activities, which has now been lost because of the conflict. The assessment, which surveyed 289 registered farmers, was based on semi-structured interviews about the situational context in their respective areas.14

The war has severely disrupted economic activities, heavily reducing government revenue and household income. As of May, around 34 percent of respondents to the FAO assessment reported that they no longer had an income source and were dependent on assistance to meet their basic needs. This figure was highest among respondents living in Kharkivska oblast (46 percent), followed by Khersonska, Chernihivska and Kyivska oblasts (36–39 percent). Around 22 percent of all surveyed households reported some market disruptions in the form of shops not operating or only partially operating with limited opening times due to restocking issues. In Kyiv city and the eastern and northern oblasts, this disruption appeared more pervasive, with around one in four respondents reporting that stores were not operating regularly in their neighbourhoods at the time of the survey between early March and early April. This information confirms that both economic and physical access to food are the main food security concerns.

As a result of these market disruptions, prices of basic goods, including food, have increased significantly across the country, particularly in areas with active fighting due to severe supply chain disruptions. Three quarters of all respondents reported significant increases in prices occurring in the two weeks before the survey. Respondents in the eastern, southern and northern parts of the country were more likely to report price increases, with the figure going up to 90 percent in the Sumska oblast and over 80 percent in Donetska, Luhanska, Odeska, Khersonska, Kharkivska and Chernihivska oblasts. <sup>16</sup> Food price increases affected the entire country but were more pronounced in areas close to active fighting. The average price of a 'standard basket of goods', which considers only 21 essential food products, increased by more than 4 percent between February and May. <sup>17</sup> Food price spikes have been reported with the highest increases in Khersonska oblast (30 percent), followed by Chernihivska and Zaporizka. <sup>18</sup> Between April and May, the most significant increases compared to

February occurred for wheat flour (17 percent), buckwheat (27 percent) and millet (35 percent). Other significant increases in prices were observed for vegetables, pork, milk, butter, sugar and cooking oil (between 7 and 13 percent). 19 In this regard, recent data show a reduction of almost 40 percent in the purchasing power of an average consumer in Ukraine, signaling a significant reduction in food access for the entire population.<sup>20</sup>

Beyond conflict-driven economic disruption, price increases in Ukraine reflected global increases in the price of food and energy. In May, general inflation was 18 percent year-to-year, 21 and in April food inflation was 22 percent.<sup>22</sup> In combination with the large-scale destruction of infrastructure, increased logistics costs, business disruptions and breakdowns in supply chains, and the shortage of fuel, prices in Ukraine are expected to remain high in the short-to-medium term, with a significant risk of further escalation.

#### Cereal availability and export capacity

At the national level, food security is not considered to be affected by overall problems of food availability. While Ukraine is guaranteed to have sufficient grain reserves for the domestic market, the decreased export will add uncertainty to the global markets and put pressure on global food availability, leading to rising prices and food inflation globally, 23 and significantly decreasing food availability and access in many countries.

Prior to the current crisis, national maritime shipping capacity handled about 90 percent of the country's agricultural commodity exports, which were estimated at approximately 5 to 6 million tonnes per month for grain. The lost capacity of the Black Sea ports cannot be fully replaced by other modes of commodity transport. Shipments by rail are constrained by local challenges of aggregating grain at railway stations in Ukraine and by a lack of suitable rail carriages in neighbouring countries. Moreover, even if the availability of railway cars were to improve, deliveries to Baltic ports via Ukraine's western borders with Poland require investments for the modernization of Ukraine's railway system. An alternate option is to transfer the cargo to different railcars at the border, an expensive and time-consuming operation.

When seaports were functional, approximately 300 000 tonnes of agricultural commodities were exported via rail per month. These volumes have increased since the beginning of the war, however, the maximum feasible export capacity of these routes remains far from the previous capacity of the marine routes.24 This combination of the effective blocking of export and limited domestic storage capacity poses a major threat of potential loss for current grain stocks (from the 2021 harvest), and for the upcoming harvest which is expected to produce 51.1 million tonnes requiring storage in the next months.

BELARUS RUSSIAN FEDERATION POLAND VOLYNSKA 7HYTOMYRSKA Kyiv LVIVSKA POLTAVSKA KHMEI NYTSKA LUHANSKA TERNOPILSKA SLOVAKIA VINNYTSKA IVANO-FRANKIVSKA DONETSKA ZAKARPATSKA DNIPROPETROVSKA KIROVOHRADSKA HUNGARY MYKOLAIVSKA MOLDOVA 7APORI7KA ROMANIA Alternative export route Maritime export route

Figure 1. Ukraine export routes for agricultural products

Source of map: UNOCHA. 2022. Ukraine - Situation overview map (6 July 2022). https://reports.unocha.org/en/country/ukraine, modified by FAO on 12 July 2022 to simplify display and show export routes.

#### Storage of cereals

The sudden halt of maritime exports in February 2022, and slow pace of exports shipped using land and river routes, have curtailed the available storage space for the upcoming harvest. Considering the current pace of exports, domestic consumption and losses, according to FAO estimates, the amount of grain currently in storage (estimated in June 2022 at 22 million tonnes)<sup>25</sup> is more than four times higher than in the previous season at the same period. Many producers and traders are worried about high levels of stock due to the inability to export. In addition, those close to the frontline are in need of assistance to evacuate current stock and fresh supplies from the upcoming harvest to safer areas.

In January 2022, total storage capacity in the country was estimated by the Ministry of Agriculture at 75 million tonnes. As of May 2022, some 14 percent of all grain storage facilities were either damaged or destroyed. Smallholders with damaged and occupied storage represent up to 25 percent of the entities in the most conflict-affected areas and have limited viable options for securing storage capacity.

Remote sensing further indicates visual damage to about 11 percent of the commercial capacities on a national level. This will significantly increase pressure in oblasts such as Chernihivska which was already facing a storage deficit of about 2 million tonnes for the upcoming harvest – considering that 16 percent of farmers at a national level cannot store the upcoming harvest and an additional 23 percent can only partially store it in existing facilities.

Considering areas directly affected by war in the east, only 60.9 million tonnes of storage capacity are currently available. FAO estimates a deficit of storage space for the new harvest at 16.3 million tonnes, which could reach 20 million tonnes if hostilities perpetuate in the eastern regions.

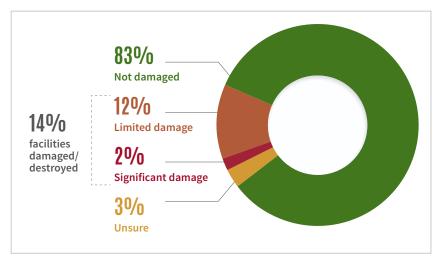


Figure 2. Percentage of damage to grain storage

Source: FAO. 2022. Ukraine: agricultural producers survey (June 2022). [internal document].

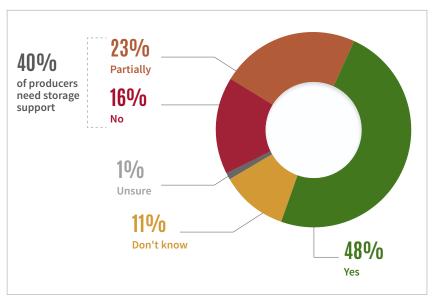


Figure 3. Availability of grain storage for upcoming harvest

 $\textbf{Source:} \ \mathsf{FAO.}\ 2022.\ \textit{Ukraine:}\ \textit{agricultural producers survey (June\ 2022)}.\ [\mathsf{internal\ document}].$ 

# Agricultural production and livelihoods

#### Impact on agriculture

The agriculture sector is critical to Ukraine's economy. Before the war, it generated around 20 percent of the country's GDP and more than 40 percent of total export revenues. The war is expected to continue to have a far-reaching effect on Ukraine's economic growth and erode global food security.26

The war has inflicted damage to agricultural infrastructure around the country, affecting irrigation, storage, machinery and equipment, in-port storage and shipping infrastructure, greenhouses, standing crops, livestock, and processing units. Initial estimates indicate the preliminary damage to the agriculture sector is between USD 4.3 billion<sup>27</sup> and 6.4 billion<sup>28</sup> (between 15 and 22 percent of the total value of agriculture of the country before the war, estimated at USD 29 billion). True figures are likely to be considerably higher, as the above estimates do not include potential damage to the agricultural capital of smallholders located in the war-affected areas, which on average produce around 40 percent of the total agricultural output of Ukraine, inevitably pointing to much higher damage and loss in the sector.<sup>29</sup>

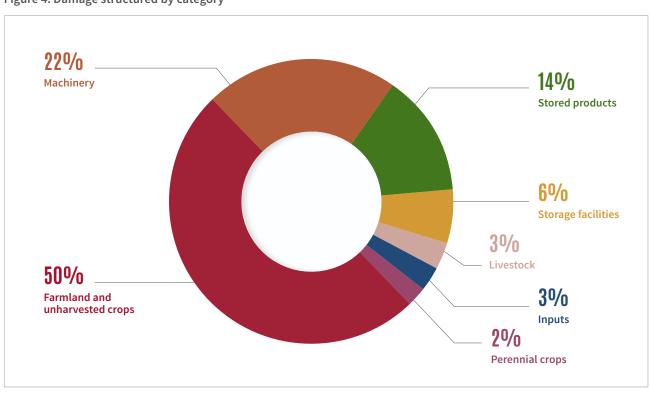


Figure 4. Damage structured by category

Source: KSE (Kyiv School of Economics) and Ministry of Agrarian Policy and Food of Ukraine. 2022. Agricultural war damages review: Ukraine rapid damage assessment. Kyiv. https://kse.ua/wpcontent/uploads/2022/05/Food-security-and-policy-in-Ukraine issue-1 merged.pdf

Against this backdrop, ongoing displacement could pose a considerable challenge to the sector, in a country where rural employment is a critical source of income and livelihoods. Pre-war, approximately 7.5 million of Ukraine's 44-million-person population worked in agriculture. With approximately 14 percent of the total population displaced,<sup>30</sup> this may equate to a deficit of 1.3 million agriculture workers across Ukraine with repercussions on agricultural production, both at commercial and smallholder levels, and associated impact on household income at all levels.

The Ministry of Agrarian Policy and Food of Ukraine (MAPF), in late April, reported that only 40 percent of the national harvesting labour force is likely to be employed in harvesting activities in 2022. However, the Ministry also stated that given the reduced land to be harvested compared to the previous year, this labour force is likely to be sufficient to harvest the winter crops.31

#### Agricultural input availability and supply chains

Availability and access to critical agricultural inputs – including seeds, fertilizer, pesticides, equipment, fuel and livestock supplies – are of particular concern. The challenges are mostly driven by a combination of limited availability stemming from disrupted logistical services (including imports) and financial issues faced by agricultural producers.<sup>32</sup> Most of the commercial cereal producers (66 percent) surveyed by FAO in April 2022 experienced difficulties along the input supply chains and distribution networks, with wholesale supplies impacted the most. The survey addressed representatives of randomly selected companies involved in commercial cereal production from all raions. One company from each raion was selected and interviewed (except for Avtonomna Respublika Krym).

Prices of agricultural inputs registered significant increases across the country, mainly driven by high prices of fuel. In May, an FAO survey<sup>33</sup> aimed at companies involved in cereal production indicated that seed prices increased by almost 80 percent, and prices of fuel, fertilizer and plant protection products (e.g. pesticides, herbicides and fungicides) increased by around 90 percent.34 These price increases coupled with the increased complexity of logistics will increasingly affect final consumers, further exerting pressure on the prices of food items and eroding overall affordability. The implications for households in Ukraine will be a need to dedicate an increasing share of their income toward food consumption. This is an increasing risk to households preparing for costly winter heating bills driven by ever-rising fuel costs.

100 90 80 70 60 50 30 20 10 0 Cereal seeds Fertilizers Fuel Vegetable seeds/other Pesticides, herbicides, high-value crops fungicides and other plant protection products

Figure 5. Estimated price increases for productive agricultural inputs (May 2022) compared to the previous sowing season

Source: FAO. 2022. Ukraine: Oblast administration survey (May 2022). Internal document.

Domestic fertilizer production has significantly declined, while amounts of imported fertilizer came close to a standstill because of the blockage of ports and restrictions against Belarus, which have driven up prices.35 Due to limited access to financial services and high prices, farmers are likely to reduce the use of fertilizer, incurring negative impacts on yields.<sup>36</sup> A preliminary analysis from FAO, looking only at the use of fertilizer, estimates that national yields are likely to fall by 10 percent compared to average levels due to delayed or missed application of fertilizer and an inability to access inputs to control pests and diseases.<sup>37</sup>

Logistical disruptions and the inability to export or sell to the domestic market, has had an impact on the cash flow of commercial grain producers, with repercussions on their ability to invest resources toward harvesting and sowing activities. The FAO survey aimed at companies involved in cereal production conducted in May 2022 indicated that almost 40 percent of the surveyed producers affirm their company to be in a bad financial situation due to the war. Moreover, producers have expressed an increased need for credit and loans, which are being offered at much higher rates due to the increased risk and increase in demand. Of the surveyed companies, 20 percent affirm that access to credit and loans became more difficult compared to previous years, while another 25 percent of the surveyed producers are no longer able to obtain credit and loans at all following the impact of the war.38

The militarized environment impacts agricultural activities and production. Military operations, curfews, checkpoints and roadblocks significantly constrain means of production, including access to land

and to post-harvest facilities, agricultural services and movement of the seasonal agricultural labour force. This militarized environment contributes to a significant impact on the current agricultural production.<sup>39</sup>

#### Cereal production

Despite the currently high level of carryover cereal stock, the war is having a significant impact on cereal production both in terms of reduced harvest for winter crops and reduced planted area for spring crops.

As of March 2022, it was estimated that about 20 percent of the area planted with 2022 winter crops may not be harvested because of direct destruction, constrained access to fields, labour shortages and/or lack of economic resources. 40 This estimate still applies.

The sowing of spring crops, which include maize, wheat, barley, rapeseed, sunflowers and soybeans is completed, and the harvest of winter crops will start in July. The level of the harvest will depend on the availability of fuel for agricultural machinery and the availability of storage. Based on the area planted and expected decline in yields, the current forecast for the 2022 cereal harvest indicates production at 51.1 million tonnes: 20 million tonnes of wheat (significantly lower than last year's record of 33 million tonnes), 24 million tonnes of maize, and about 7 million tonnes of other coarse grain. If these estimates are confirmed, they would represent about 60 percent of the previous year's exceptionally high harvest. 41 Additional small quantities of minor cereals, such as buckwheat, will also be harvested. Similarly, the harvest of oilseeds is likely to decrease as production of sunflower seed is expected at 7.5 million tonnes (a reduction of 45 percent from the previous year), while production of soybeans and rapeseed is expected at 2.0 million and 1.7 million tonnes respectively.42

For spring planting, MAPF indicated that the conflict has had an impact on the area sown with spring grains and pulses. Initial estimates show a reduction in sown land for spring crops and pulses of around 20 percent compared to the land sown for the same crops in 2021. 43 This was confirmed by FAO data, indicating that 66 percent of the companies sampled reported a similar reduction in arable land size for spring sowing compared to the previous year.44

#### Vegetable production

The war has had a severe impact on the country's vegetable production and marketing, both from a domestic and external trade perspective. The active conflict is still affecting regions that are critical for vegetable production storage and export. Due to internal shortages – caused by supply chain bottlenecks, high prices on the domestic market and high transportation costs – Ukraine has almost ceased vegetable exports. It is expected that the country will become a net importer of basic vegetables this year.

The conflict in the Khersonska oblast is having a significant impact on vegetable production, affecting around 12 percent of the country's onion production and 10 percent of carrot production. The current hostilities in Khersonska oblast are preventing producers from accessing critical vegetable storage facilities in the oblast which are used to store products produced all over Ukraine between autumn and spring, resulting in a compounded impact on the whole vegetable production value chain in Ukraine.

#### Livestock sector

According to the State Service of Ukraine on Food Safety and Consumer Protection, livestock producers lack physical and economic access to animal health supplies, including commercial veterinary drugs, animal feed and feed additives.45

An FAO assessment targeting representatives of the Department for Agro-Industrial Development indicated a 25 percent reduction in the livestock population among smallholders nationally, mainly through forced slaughtering to reduce rearing costs. This reduction reverses the usual trend in the sector that normally sees livestock populations increase during the spring.46

While livestock destocking (for selling or consumption) may represent an advantage in the short term for indicators of household consumption or for income, this is a negative coping strategy employed under duress that will exhaust productive assets, exposing smallholders to mediumand longer-term vulnerabilities. Replacement of livestock assets will be extremely difficult for these smallholders should the current conditions remain for the foreseeable future.

Of significant importance nationally and regionally, the war is likely to affect the ability of Ukraine to control its animal disease burden, significantly increasing the risk of proliferation of animal diseases, most notably African swine fever, within Ukraine and in neighbouring countries. The government has specifically asked for assistance to tackle this threat to the livestock sector and the industrial production of pork.

#### Swine

Donetska and Luhanska oblasts were among the most important areas of the country in terms of swine production. Following the impact of the war in these regions, the total commercial pig population of Ukraine is estimated to have decreased by 10 percent. As domestic pork demand remains strong, the volume of imported pork in Ukraine increased by almost 150 percent between May 2021 and May 2022, and prices have remained favourable for producers. 47 The lack of export channels for feed commodities has translated into high feed availability domestically, however production costs remain high and the lack of access to credit discourages investment in the sector.

#### Poultry

High production costs, largely due to constrained logistics and the high price of fuel, combined with a low retail price on the market (in April, the retail price dropped by 27 percent) are significant factors impacting the sector. While large-scale egg producers are reducing their production and relocating to safer regions, small commercial producers are often forced to stop production completely.48

The largest warehouse in Ukraine for the storage of frozen chicken products in the village of Kvitneve in the Kyivska oblast was bombed on 12 March 2022. The business spokesperson said that about 8 500 tonnes of poultry is at risk in its remaining facilities because of limited access to other warehouses in southern Ukraine and the Kyivska oblast, due to damaged roads and railways, putting the potential financial impact at more than USD 20 million.49

#### Dairy

In May, purchase prices for milk rose amid a gradual recovery in domestic demand and, at the same time, feed costs for livestock decreased as the domestic feed production market was the only alternative to sell grain given the slowed pace of exports. Dairy farms have reported a shortage of energy for production, an impossibility of exporting exchange-traded products and a significant decline in domestic demand compared to previous years. Stockpiles of milk powder and butter that have accumulated since the first months of the war, continue to put pressure on the storage capacity of processing plants.<sup>50</sup>

#### Smallholder producers

Nationally, smallholder farmers contribute to 85 percent of vegetable production, 70 percent of milk production, 45 percent of poultry production, and almost 40 percent of national swine production.

While increased prices in the domestic market may contribute to higher earnings for smallholder households in the short term, high prices of inputs and constraints along the value chain may have a significant impact on their production and income. Should the crisis become protracted, these producers will experience the erosion of their assets and productive capacity, becoming more vulnerable.

In the swine sector, while there is strong internal demand, favourable selling prices, and cheaper feed costs which positively contribute to the livelihoods of smallholder households, the livelihoods of those operating in the eastern regions are negatively affected with repercussions on their income and purchasing power. For smallholder farmers involved in the milk and dairy sector, increased prices and demand can positively, and temporarily, contribute to their livelihoods, but increased production costs, especially fuel, and limited processing capacities will continue to have a negative impact on their income.<sup>51</sup>

Smallholder farmers in the egg market have been particularly impacted as the drop in prices for eggs - coupled with increased production costs have had negative repercussions on egg production across the country. This creates concerns over food and nutrition security as eggs have a significant role in the diet of vulnerable households.

# Access and logistical update

Insecurity and inaccessibility have been the biggest challenges hampering the efforts of humanitarian actors to respond to people in need. Ongoing hostilities and indiscriminate attacks continue to constrain the free movement of humanitarian convoys transporting aid material and equipment.<sup>52</sup> The increasing number of indiscriminate airstrikes and shelling striking civilians and non-military infrastructure is the most significant threat to humanitarian actors, in particular those working in hard-to-reach areas, placing civilians and humanitarian personnel at increased risk.<sup>53</sup>

Transportation, fuel and access to supplies remain significant issues for humanitarian partners. Recent assessments from the Food Security and Livelihoods Cluster partners in the country indicate that humanitarian access remains limited in many areas, with increasing competition over logistics and transportation assets – such as trucks and drivers – now also impeded by the scarcity of fuel. Contested areas with active conflict in Donetska, Kharkivska and Luhanska oblasts are some of the most inaccessible territories in Ukraine.

Local procurement strategies face substantial challenges as the capacity of markets and the ability to procure supplies varies considerably across different parts of the country. Many distributors are not operational, and stockpiles of crucial goods have been made inaccessible by the ongoing clashes.<sup>54</sup>

# Gender implications of the war

Ukrainian women are primarily responsible for food security and nutrition within their households. They take on a disproportionate share of unpaid care and domestic work, resulting in a double or often triple burden. Increasing food insecurity, as well as water and energy scarcity as a result of the war, may place women and girls at higher risk of domestic violence due to heightened tensions in the household and communities.<sup>55</sup>

A rapid gender analysis conducted by UN Women based on data from before and after the recent war suggests that the war is exacerbating pre-existing inequalities, particularly for older women and single mothers who comprise the majority of Ukraine's poor. There are emerging concerns around sexual and gender-based violence and the unequal access to services and productive resources for those left behind.<sup>56</sup>

The war is diminishing rural people's access to economic opportunities, nutritious food and water, and increasing the workloads of those remaining in the affected areas. The disruption of infrastructure and a lack of mobility pose significant risks to women and girls, who constitute more than 72 percent of social protection recipients, reducing their access to healthcare, social services, and social assistance such as cash and asset transfers. It is also important to recognize the increasing role of women in agriculture as the male agricultural labour force is reduced for the military actions.

In addition, about 90 percent of the people fleeing the country are women and children, and the war has dramatically increased the number of IDPs who face increased exposure to violence. Moreover, disruptions in health services threaten 80 000 women, who were expected to give birth in the period April-June 2022, without access to critical maternal healthcare.<sup>57</sup>

Providing specific support to women in agriculture and making special efforts to integrate them in all decision-making and planning processes is paramount, taking into account their key roles as food producers, farm managers, processors, traders, wage workers, innovators and entrepreneurs, as well as considering the skills of women and youth as resilience builders, and agents of change and reconstruction.

# Recommended response actions

In light of the analysis presented in previous sections, and mindful of the dynamic nature of the situation, FAO recommends the following response actions for the agriculture sector:

#### Maintaining production among small and medium holders

- Provide agricultural inputs to help smallholder farmers meet seasonal deadlines where markets are not functioning, and complementary cash where markets do function, but economic access remains restrictive.
- Establish voucher programmes in coordination with private sector partners to stimulate functionality and continuance of input supply chains (potentially agriculture-specific fuel vouchers).
- Protect household livestock assets through the provision of cash and inputs, including feed, animal health materials and medicines using government-provided lists.
- Provide specific, targeted and appropriate assistance to female and elderly producers in rural areas, by scaling up gender measures targeted to the most affected and vulnerable socioeconomic groups.
- Continue to identify and support rural and agricultural households supporting IDPs.
- Support agricultural livelihoods for IDPs in new locations through agricultural infrastructure rehabilitation projects, making sure to adequately integrate women and youth.

#### Investing in supply chain and storage support

- Make grant schemes available to medium-holder farmers and supply chain actors (private sector) to stimulate market functionality and maintain supply chain operationality.
- Increase access to appropriate storage technologies and facilities (on-farm and off-farm) for producers, associations and traders at various levels, and at strategic locations.
- Support the government by investing in cold-chain infrastructure rehabilitation.
- Provide competitive grants to medium producers, associations and private sector actors (dairy, eggs, meat, value addition, etc.).
- Support coordination between regional actors/states for the fast-tracking of policies and regulations for the facilitation of exports/imports.

#### Diversification of export options and processing efforts

- Advocate for the opening and clearance of Black Sea ports as part of an international and coordinated effort.
- Support the development of alternative export routes and modalities including Ismail, Reni and other land routes.
- Invest in and support the development of government and private sector infrastructure and logistical capacity along routes to overland export facilities.

• Assess the potential for processing existing grain stock into domestically needed products – animal feed, biofuel, value-added products, etc.

#### Ensuring accurate analysis and regular monitoring of food security and agricultural value chains

- Conduct regular assessments to monitor the impact of the war on food security and agricultural livelihoods.
- Undertake rigorous and regular monitoring of the market to understand fluctuations and functionality, bottlenecks and opportunities in alternative markets.
- Assist MAPF with critical logistical planning, mapping and analytical support, including digitalization efforts to provide greater access to updated information by stakeholders.
- Coordinate and conduct ongoing damage and loss estimates to inform recovery and rehabilitation planning.
- Ensure coordination of assessments and analysis with government institutions, Food Security and Livelihood Cluster members and academia.
- Support MAPF with coordination platforms and relevant technical departments with additional technical expertise.

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## Saving livelihoods saves lives

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