The impact of Russia’s war against Ukraine on global food security – April 2022

This second note of the Knowledge Centre for Global Food and Nutrition Security analyses an additional 60 papers published between 25 March – 19 April. The information included in the first note is not repeated. This note has a similar structure than the first one and the different sections display updated information and knowledge. This note does not reflect an official position of the JRC or any other services of the European Commission.

**Key knowledge**
- Only 50% to 70% of spring and summer crop area may be planted in Ukraine
- Ukraine’s capacity to export grain and vegetable oil is very limited and missing quantities on global markets will hardly be compensated
- Export bans and restrictions further destabilize agricultural markets
- Prices of energy, agricultural commodities and fertilizers have reached unprecedentedly high levels in April
- Affordability of fertilizers is severely restricted for smallholder farmers in developing countries
- High price inflation drives poverty rate higher and food price inflation worsens food security threats in vulnerable countries, especially in urban areas
- Targeted social safety nets appear as the preferred policy response in this context
- Indebtedness of low-income countries limits their financial capacity to cope with the crisis
- The food crisis highlights the need for more resilient and sustainable food systems

Impact on global agricultural production and exports

Impact on Ukrainian production

Due to dry weather in the southern Oblasts and shortages of labour, fuel, and agricultural inputs in the whole country, forecasts for the current agricultural season have been revised downward [JRC]. The Ukrainian government estimates that between 50 to 70% of agricultural land could be sown this spring [multiple sources]. According to a survey done by the Ukrainian government, only one fifth of almost 1,300 large agribusinesses have enough fuel to plant this spring [RFI, NYTIMES].

In addition, Russia may have placed land-mines in fields, destroyed farm equipment, irrigation canals, and large granaries [Bloomberg, Stars and Strips, NYTIMES]. 50% of wheat production and 25% of corn production are located in the combat zone [Epoch Times].

Ukraine has therefore sent to the EU a list of most pressing needs including fuel, seeds, fertilizers, pesticides, veterinary drugs, and agricultural machinery [Ouest France].

Some Ukrainian farms are also at risk of bankruptcy due to the impossibility of selling products and paying operating expenditures [Stars and Stripes].

Impact on production outside Ukraine

FAO’s preliminary forecast for global wheat production points to a fourth consecutive annual increase to 790 million tonnes. The bulk of the growth is expected to originate from North America. The US Department of Agriculture estimated that the acreage of wheat planted in the US would increase by about 3% in 2022 [ChathamHouse]. However [AOMIS] notes that early indications from the US suggest that increased wheat plantings are unlikely.
The EU has opted an exceptional and temporary derogation to allow the production of food and feed crops on fallow land that would allow farmers to increase their sowing area for maize, sunflowers and protein crops [European Commission]. China allocated USD 550 million to promote winter wheat cultivation [AMIS].

However, availability of fertilizers and climate conditions remain two important parameters of future production [ChathamHouse]. A further troubling development for global food supplies is Russia’s dependence on imported pesticides and seeds [TMG].

Impact on Ukrainian exports

With the closure of Black Sea ports, exports of cereals have been drastically reduced [FAO, AMIS]. Grains exports are currently limited to 500,000 tons a month, down from as much as 5 million tons before the war [Bloomberg]. Cereals are being transported by rail and barge on the Danube to ports in Bulgaria and Romania [Hellenic shipping news & other sources]. The Ukrainian government has asked the EU to plan for storage and logistic support for the next harvests [Ouest France].

Impact on exports from other countries

The International Grains Council estimates that the global grains trade, not including rice, could shrink by 12 million tons this season, the most in at least a decade [Bloomberg]. For wheat alone, UN predicts that the world will miss 5 million tons of Ukrainian wheat and 3.5 million of Russian wheat, 1% of world wheat consumption [The Saxon].

Exports from Russia have slowed down since the beginning of the war [FAO] as a result of the reluctance of traders and vessels owners to do business with Russia, soaring freight insurance premiums for the Black Sea and Sea of Azov, and possible payment difficulties [FAO, Hellenic shipping news, IFPRI, ChathamHouse].

India has stepped in the wheat export market thanks to a record production in 2021/2022 and large available stocks [AMIS, Reuters, Bloomberg]. Government is encouraging wheat exports by asking port and railway authorities to give priority to outbound wheat cargoes [Reuters]. India is negotiating access to markets in Egypt, Turkey and China, three of the four largest importers, and other potential buyers, including Bosnia, Nigeria and Iran, according to the Ministry of Commerce [Bloomberg].

Grain exports from the EU, Australia, US, Brazil, Argentina have also increased but are constrained in some places by loading capacity and freight cost [AMIS, Bloomberg].

In parallel, the war in Ukraine has triggered an alarming global surge in government controls on the export of food [World Bank, AMIS]. 35 countries are imposing export restriction on various commodities (cereals, vegetable oils, beef), either in the form of export bans, exports licensing requirements, or taxes. Export and import controls currently encompass about 21% of world trade in wheat, for example [World Bank].

During the food crisis 2008-2011, exports restrictions, up to 70% of the global wheat market, exacerbated the crisis by driving up wheat prices by 30% [World Bank].

Set generally to contain inflation and secure food supply, export restrictions drive global prices higher, making it difficult for net food importing countries to purchase food. Moreover, export bans tend to be contagious [IFPRI].

In regard to 2022/23 marketing year, the EU foresees that its grains exports to be 30% higher and its grains imports 42% lower [European Commission].

Impact on the fertilizer market

Fertilizer prices have spiked since the war broke out, moving along with gas prices and with constraints on supply arising from trade policy measures taken by individual countries and trade sanctions [multiple sources].
Potash exports from major producer Belarus are cut off [IFPRI], and China suspended fertilizer exports until June 2022 to ensure domestic availability [ChathamHouse, RTBF]. Russia announced restrictions on exports of nitrogenous and phosphate-based fertilizer exports for six months from December 2021 [ChathamHouse] and is considering an export ban [IFPRI].

Belarus can still sell potash to the Russian market, a move that could push Russian companies to export more. But as of today, Russians are not able to export sizable quantities [Bloomberg, AMIS].

Impact on fertilizers use

When investing in fertilizer, farmers must balance the return on investment. The “breakeven ratio” – is typically around six for a cereal crop (6kg of grain needed to pay for 1kg of nitrogen fertilizer), but with the rise in fertilizer prices it is currently around ten [WEF]. The affordability gap of urea vis-à-vis cereal prices has widened remarkably, even exceeding the unaffordability of the 2006-08 crisis [TMG].

This could significantly curtail fertilizer use in forthcoming planting seasons and pose a significant risk to agriculture production around the globe, especially in the most price-sensitive markets [World Bank, Chatham House]. Higher input costs will either be passed directly on to consumers or result in lower input use, leading to reduced quantity of harvests. Either way, the soaring costs of fertilizers will negatively impact food accessibility, and therefore, food security [World Bank].

In many countries (e.g. India, China, Philippines, Nigeria, Ghana, Togo, etc.), state subsidy programs will be running at high cost [AMIS, IFPRI]. For instance, in India, the government is expected to spend a record USD 20 billion in subsidies to farmers and fertilizer firms this fiscal year to avoid shortages and keep prices affordable [Reuters].

Farmers in many parts of Africa are struggling to access fertilizers. Prohibitive costs could reduce incentives to increase production, dampening the poverty-reduction benefits of higher food prices [IFPRI]. The Economic Community of West African States’ (ECOWAS) is the second largest supplier with 12% of the market, and Nigeria has the capacity to partly substitute for the missing imports in the region. Still, West Africa imports 82% of its potassium consumption [IFPRI]. In Malawi, many farmers are now turning to biofertilizers [DEVEX].

Impacts on agricultural commodity prices

The FAO Food Price Index averaged 159.3 points in March 2022, up 17.9 points (12.6 percent) from February, a new highest level since its inception in 1990. The latest increase reflects new all-time highs for vegetable oils, cereals and meat sub-indices, while those of sugar and dairy products also rose significantly [FAO].
This excessive level of volatility is underpinned by the high concentration in cereals markets - 7 countries provide 86% of wheat export supplies, 4 countries account for 85% of maize export supplies [WFP]. It also highlights the fact that many staple crops and oilseeds are substitutable, price rises for one food type can prompt similar price movements for other types [ChathamHouse]. War related wheat, maize, sunflower oil supply disruptions have influenced sorghum, barley, palm, soy and rapeseed oil prices [FAO]. Rising price volatility affects production decisions and can spur speculative behavior [IFPRI].

The impact of Russia’s war against Ukraine comes on top of the ongoing effects of the COVID-19 pandemic (strong global demand and disruption in supply chains). Other drivers of this spike include:
- Energy prices which have increased by 24% in March [World Bank]. When crude oil prices rise there is a threshold at which the production of biofuels from food crops - especially maize - becomes economically attractive. This is the reason why agricultural energy feedstock tend to correlate with crude oil prices [TMG].
- Soaring freight costs. The impact on higher container freight rates on inflation, estimated by UNCTAD, is an additional increase of 2.2% (7.5% for small islands developing countries) in consumer prices [UN];
- Elevated agricultural input costs [FAO];
- Climate events, for instance, La Niña-related production threats in parts of South America [AMIS].

Meanwhile, unlike in previous crises, the FAO’s Rice Price Index recorded little changed from February levels and is still 10 percent below its year-earlier value [FAO], except for 100% broken rice due to strong demand from Asian feed producers [AMIS].

Impact on future prices

Since February, forward markets for grains have risen significantly. Wheat and oilseeds futures prices reached record highs in March both on Euronext and CME, while maize reached a near record price, indicating that the market expects long-running disruption [ChathamHouse, AMIS]. This is also underpinned by the very low level of stocks: for wheat, global needs can be satisfied for just 45 days, and for maize, only 29 days [TMG].

A protracted war in Ukraine and the growing isolation of Russia’s economy could keep food, fuel and fertilizer prices high for years [WEF].

Impact on global food security

The first element to consider is inflation. Surging economic activity, supply-chain disruptions, and soaring commodity prices combined in 2021 have pushed global inflation to its highest level since 2011 in developing economies [World Bank].

Higher prices can erode the value of real wages and savings, leaving households poorer. Low- and middle-income
Households tend to be more vulnerable to high inflation than wealthier households [World Bank].

Soaring international food and energy prices worsen inflationary pressures, especially for net-food importing countries since transmission of volatility from international markets is more common when imports fulfil a large part of domestic requirements [ChathamHouse]. The world’s poorest countries tend to be food-importing countries [World Bank].

The second element to consider is that 80% of countries with data available experienced higher food inflation than non-food inflation in February [World Bank]. About 15 percent of all countries have reported increases in real food prices larger than four percent in the first 2-3 months of 2022 [World Bank].

Some examples of countries where prices of staple food are at abnormal high levels with potential negative impact on access to food [FAO]:

<table>
<thead>
<tr>
<th>Country</th>
<th>Food Item</th>
<th>Yearly Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mali</td>
<td>sorghum, millet</td>
<td>65%</td>
</tr>
<tr>
<td>Nigeria</td>
<td>coarse grains</td>
<td>25%</td>
</tr>
<tr>
<td>Somalia</td>
<td>maize, sorghum</td>
<td>200%</td>
</tr>
<tr>
<td>South Sudan, Soudan, Uganda</td>
<td>maize</td>
<td>100%</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>food</td>
<td>75%</td>
</tr>
<tr>
<td>Colombia</td>
<td>food</td>
<td>25%</td>
</tr>
<tr>
<td>El Salvador</td>
<td>maize</td>
<td>60%</td>
</tr>
<tr>
<td>Peru</td>
<td>wheat flour</td>
<td>57%</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>rice</td>
<td>65%</td>
</tr>
</tbody>
</table>

Poorer households in low- and middle-low-income countries, who remain in their vast majority net buyers of food, are likely to be hit harder by current inflationary pressures considering that about 40% of their expenditures relate to food [World Bank].

In 2008, the food crisis brought on a significant increase in malnutrition, particularly in children. Many households pawned family valuables to buy food. Some studies showed school drop-out rates of as much as 50% among children from the poorest households [World Bank].

The third element to consider is that 60% of least developed countries and other low-income countries are in debt distress, limiting the ability of governments to cope with crisis [UN]. Developing countries spend on average 16% of their export earnings in servicing their debt obligations, with Small Island Developing States spending more than twice this figure [UN].

The World Bank analyses that low- and middle-income economies owed five times as much to commercial creditors as they did to bilateral creditors, and that much of this debt involves variable interest rates. The World Bank foresees that over the next 12 months, as many as a dozen developing economies could prove unable to service their debt. This could influence currency depreciations which in turn could drive poverty rates rapidly higher [World Bank].

The UN analyses that there are 69 countries (1.2 billion people) significantly exposed to all three channels of transmission of the crisis: rising food prices, rising energy prices, and tightening financial conditions.
According to World Bank, the combined effects of the pandemic and Russia’s war against Ukraine will lead to an additional 75 million to 95 million people living in extreme poverty in 2022, compared to pre-pandemic projections.

According to WFP, acute hunger could rise by an additional 33 to 47 million people, from a pre-war baseline of 276 million acute hungry people. This contrasts with FAO previous projections of 8 to 13 million additional undernourished people. WFP argues that it is unlikely that vulnerable households and governments have the same coping capacities as in 2007/08.

The World Bank notes that the very poorest households living below the global poverty line are less vulnerable to inflation, and that for one-fifth of households around or below the poverty line who are net food sellers, higher food prices could be good for them. A number of poverty assessments examining the impact of previous major food price crises have shown high food prices to be a driver of poverty reduction in the long run (e.g. Cambodia, Bangladesh, India, Uganda, and Ethiopia) [World Bank].

It is expected that higher inflation in developing countries will hurt primarily the urban poor and vulnerable people living just above the poverty line [World Bank]. IFPRI’s analysis in Sudan illustrates the vulnerability of urban poor.

Urban poor households are most affected, as their wheat consumption drops the most, while the welfare of rural poor households, which constitute the majority of the population, is least affected by these wheat market shocks given their relatively low per capita consumption of wheat products in 2022 (only about 12 kg/person) [IFPRI].

**Hunger hotspots (non-exhaustive list)**

WFP estimates that sub-Saharan Africa will be the most affected region in terms of food insecurity.

FAO assesses that about 33.4 million people are projected to face severe food insecurity in West Africa due to protracted conflicts, high food prices and reduced harvests. The highest incidence of food insecurity is reported in Nigeria, the Niger, Burkina Faso, Mali, Sierra Leone and Chad [FAO]. WFP is scaling up its response to reach 22 million people with lifesaving and resilience building assistance.

In Eastern Africa, cereal prices increased to unprecedented levels and multiple shocks drive up the number of food insecure [FAO]. In the past decade the number of refugees in eastern Africa has nearly tripled, going from 1.82 million in 2012 to almost 5 million today including 300,000 new refugees last year alone [WFP]. Over 70% of refugees in need of assistance do not receive a full ration due to funding shortfalls [WFP]. Drought across the horn of Africa makes the situation critical (Somalia, Kenya, Ethiopia) and the number of hungry people could spiral from the currently estimated 14 million to 20 million through 2022 [WFP].

Adverse weather conditions in North Africa and Southern Africa have curtailed 2022 cereal production prospects and could add on the effects of high food prices [FAO, JRC]. FAO predicts food insecurity to worsen in 2022.

In the MENA region, unprecedented hikes in food prices coupled with low purchasing power is likely to drastically increase the number of malnourished children [UNICEF]. The region is home to high rates of undernutrition and micronutrient deficiencies [UNICEF]. World Bank assesses that Syria and Yemen are particularly vulnerable to soaring food prices and that acute food insecurity will worsen. At the recent pledging event for Yemen, the donors committed approximately 30% less than in 2021—in spite of the higher projected needs [IFPRI].

In Latin America and the Caribbean, there could be many more families at risk of food insecurity and falling into poverty in 2022 due to higher inflation and food prices [World Bank & FAO].

The UN and World Bank underline the increase likelihood of civil strife as a result of food inflation, particularly in environment of heightened political instability. An UNCTAD analysis of historical data reveals that civil unrest and increases in agri-food commodity prices are highly correlated.

**Impact on the cost of humanitarian action**

WFP estimates that the procurement bill is expected to increase by USD 23 million per month as a result of the war’s impact on supply and prices, while transportation costs are expected to rise by USD 6 million per month owing to high energy prices.
Policy Recommendations

Among the “most popular” policy recommendations (see table below):

- Scaling-up targeted social safety nets to protect the vulnerable from price spikes;
- Keeping trade in food and fertilizers open, avoiding export bans and restrictions to reduce pressure on global prices;
- Strengthening overall transparency of food markets to reduce uncertainty and discourage protectionism.

There is strong evidence on the positive impacts and cost-effectiveness of social protection for poverty reduction, human capital formation, job creation, resilience building, and female empowerment [World Bank].

In comparison, food subsidies schemes are often too poorly targeted (e.g. Egypt) and waste significant resources [IFPRI]. For instance, subsidizing bread across income levels is not only very expensive for governments, it’s regressive, it encourages food waste and poor diets, and it can be very hard to repeal politically once a crisis is over [World Bank]. Yet, the setup of targeted transfers requires more time and government capacity than flat subsidies [World Bank].

A number of recommendations seems more contentious. Subsidizing fertilizers is one them. If subsidies are applied indiscriminately, it risks increasing demand and fertilizer prices worldwide and it does not help in the end [World Bank]. A study by IFPRI found that while subsidizing fertilizer prices increases use, yields, and household income, it discourages use of organic-based materials and methods to maintain soil fertility [DEVEX].

Some policy recommendations are more forward-looking and focus on the transition toward more resilient and sustainable food systems. For instance, the promotion of more sustainable diets to reduce the dependence on major grains, or the promotion of agroecological farming to reduce the dependence on energy-intensive synthetic fertilizers.

[TMG] put in perspective maize exports from Ukraine and Russia with the quantities of maize used by the USA and the EU for biofuels and animal feed, questions the sustainability of intensive livestock farming and the overconsumption of meat, and concludes that tough decisions will need to be made to reallocate available resources to safeguard food security for all.

### List of policy recommendations from analyzed documents

<table>
<thead>
<tr>
<th>Immediate policy responses</th>
<th>Long-term policy responses</th>
</tr>
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<tbody>
<tr>
<td>Targeted social safety nets</td>
<td>Enhanced and Diversify food production</td>
</tr>
<tr>
<td>Focusing on the inputs of smallholder food producers (seeds, fertilizers, and fuel)</td>
<td>Incentivize more sustainable diets, including reduced meat consumption</td>
</tr>
<tr>
<td>Target food subsidies towards the most needy</td>
<td>Incentivize agroecological farming</td>
</tr>
<tr>
<td>Boost humanitarian aid</td>
<td>Diversify trade relationships</td>
</tr>
<tr>
<td>Keep trade in food products open</td>
<td>Reduce food waste</td>
</tr>
<tr>
<td>Keep trade in fertilizers (inputs) open</td>
<td>Establish common strategic reserves and sharing arrangements in food-deficit regions</td>
</tr>
<tr>
<td>Establish a food, fuel and fertilizer-import facility for the poorest and most affected countries</td>
<td>Strengthen WTO rules on market-distorting trade restrictions</td>
</tr>
<tr>
<td>Exempt humanitarian assistance from export bans, extraordinary taxes and duties</td>
<td>Strengthen speculation controls</td>
</tr>
<tr>
<td>Strengthen overall transparency of food markets</td>
<td>Avoid introducing new subsidies to encourage production of one crop over another</td>
</tr>
<tr>
<td>Release existing food stocks</td>
<td>Don’t release land from fallow and long term set asides for production</td>
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### Source: World Bank

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A looming global food crisis: What should the global response be?

As the war in Ukraine continues, millions of children in the Middle East and North Africa are already facing acute food insecurity, and the situation is expected to worsen with the onset of the rainy season in Western Africa.

Food security: implementation of the FARM initiative

Projecting the impact of spiraling costs, surging conflict, and soaring climate disasters create a desperate future for millions of refugees across eastern Africa.

Projected increase in acute food insecurity due to war in Ukraine

Food and oil price hikes drive up costs for cash-strapped WFP operations in West Africa as region faces record hunger

Do No Harm: Measured policy responses are key to addressing food security impacts of the Ukraine crisis

From bad to worse: How Russia-Ukraine war-related export restrictions exacerbate global food insecurity

West Africa faces mixed food security impacts from the Russia-Ukraine conflict

Is another food crisis unfolding?

As Ukraine war hikes prices, Global South farmers turn to organic alternatives as fertilizer costs rise

Malawian farmers turn to organic alternatives as fertilizer costs rise

Hellenic shipping news: Grains shipments from Black Sea ports slowly gain traction: sources

Ukraine’s wheat harvest, which feeds the world, can’t leave the country

Guerre en Ukraine. Kiev détaille ses besoins à l’Europe avant la période des semis

Global food crisis: Europe must choose between retreat and responsibility

Brazil Needs Potash and Belarus Is Looking for Ways to Supply It

The $120 Billion Global Grain Trade Is Being Redrawn by Russia’s War in Ukraine

West Africa faces historic food crisis driven by conflict, price surge

Un mois et demi après le début de la guerre en Ukraine, quelles menaces et incertitudes sur l’agriculture européenne ?

War in Ukraine to Have Long-Term Impact on Food Prices: UN Report

Because of the war in Ukraine, the world is threatened with famine: one in five may end up in poverty

Marchés des céréales, le conflit entre la Russie et l’Ukraine réactive des tensions alimentairesmondiales

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