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World Food Programme
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Projected increase in acute food insecurity due to war in Ukraine[1]

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Summary

The World Food Programme (WFP) estimates the increase in acute hunger following the Ukraine conflict, modelling the pass-through of price increases on global grain and energy markets from international to domestic markets and the ensuing loss of access to food by those who could barely afford a minimal diet before the conflict-driven price rises. We examine two scenarios: for the conflict ending within the next month, and continuing beyond April 2022. For the 81 countries with WFP operations, we find that acute hunger will rise by an additional 33 million people in the first scenario and an additional 47 million people in the second scenario, from a pre-war baseline of 276 million people who were already in the grip of acute hunger. Altogether, this means that up to 323 million people could become acutely food insecure in 2022.

Introduction

Through Ukraine and Russia's links to the rest of the world, the conflict in Ukraine has implications for food security far beyond the Black Sea. Some countries are impacted because of particular economic ties to Russia – for example Cuba or neighbouring Kyrgyzstan and Tajikistan, which heavily depend on remittances from Russia. Arguably the most important impact pathway from the war in Ukraine to world hunger, however, runs through the conflict's impact on global grain and energy markets.

Both Ukraine and Russia are key players in highly concentrated international wheat and maize markets. The expected shortfall in supplies has caused further price hikes for these food commodities. Moreover, Russia plays a critical role in global oil and gas markets, which has led to energy price hikes and heightened volatility since the onset of the

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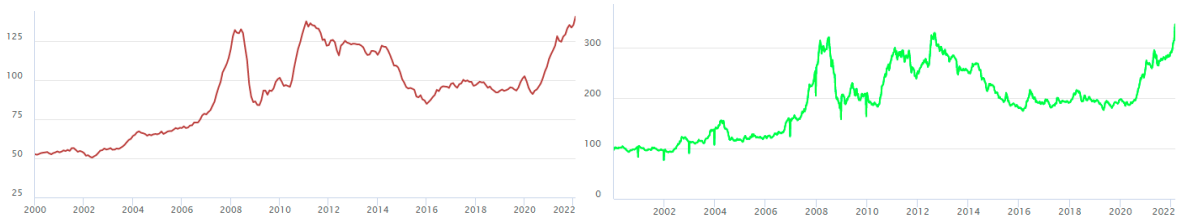
conflict. As these price increases transmit to local markets in poor countries, those previously barely able to afford an energy-sufficient diet won't have enough money to do so anymore.

With food prices on a relentless rise since mid-2020, the additional pressure due to the conflict has pushed prices into the realms of the 2008 and 2011 food price crises. FAO's Food Price Index, a measure of the monthly change in international prices of a basket of food commodities, reached a new all-time high in February 2022 – and prices remained volatile since then.

Figure 1: FAO Food Price Index (left) and IGC Grains and Oilseeds Index (right)



Source: http://www.amis-outlook.org/indicators/prices/en/

To get a sense of the magnitude of the food security implications of today's price increases, we look towards past crises and how they played out. FAO's initial estimates had put the impact of soaring international food and fuel prices at an additional 115 people million in 2007/08, including 75 million pushed into chronic hunger in 2007 and a further 40 million in 2008.[2] These estimates have been revised since, however, with global undernourishment now showing a steady decline from 2005 until 2015. FAO analysis from 2019 explains the lack of an uptick in chronic hunger during the 2007/08 food and fuel price hikes with a policy response which softened the pass-through of international prices as well as coping mechanisms by net food-consuming households; the analysis also emphasizes that national averages might hide variation and the most vulnerable people experiencing food insecurity.[3]

Meanwhile, the World Bank estimated that the impact of both rising food and fuel prices in 2007/08 pushed between 130 million and 150 million people around the world into poverty.[4] Further World Bank research, using a different methodology and limited to low-income countries, calculated that the first food price spike, in 2008, led to an increase of 105 million poor people in low-income countries.[5] The same authors estimated an

[2] FAO. 2008. The State of Food Security and Nutrition in the World 2008. High food prices and food security – threats and opportunities; https://www.fao.org/news/story/pt/item/8836/icode/

[3] FAO, IFAD, UNICEF, WFP and WHO. 2019. The State of Food Security and Nutrition in the World 2019. Safeguarding against economic slowdowns and downturns. Rome, FAO.

[4] World Bank. 2008. Global economic prospects 2009: commodities at the crossroads. The World Bank.

[5] Ivanic, M., & Martin, W. 2008. Implications of higher global food prices for poverty in low‐income countries. Agricultural Economics, 39, 405-416.

additional increase in poverty of 44 million people for the second food price spike at the beginning of 2011.[6]

With prices at similar levels in 2008 and 2011, but the first spike's poverty fallout estimated to be more than twice that of the second, what can we expect to see following the price peaks reached because of the Ukraine conflict? The main reason for the lower estimated number of people pushed into poverty in 2011 than in 2008 was prices increasing from a higher baseline level to the 2011 peak than to the 2008 price peak. While prices reached the same heights in 2011, their relative gains were lower than in 2008.

The International Grains Council (IGC) Grains and Oilseeds Index (GOI) – which, as a daily index of export prices, already shows price implications of the conflict not yet captured in the monthly FAO Food Price Index – gained 144 percent from July 2006 until the July 2008 price peak and climbed 60 percent from July 2010 towards the price peak in February 2011. Meanwhile, the IGC GOI has increased by 90 percent since mid-2020, by 24 percent since the beginning of 2022, and by 13 percent from 21 February, the Monday before the Russian invasion, until today (23 March). Within only about a month, export prices for wheat and maize have risen by 22 percent and 20 percent, respectively.

To gauge the implications of the conflict in Ukraine for acute hunger – through the ensuing price hikes for basic food staples – we look at two scenarios with different consequences for prices. In a first scenario we assume that the conflict is resolved on the ground within the next five to six weeks and there is a quick return to pre-conflict realities. In a second scenario, we assume that the conflict continues beyond two months and has much more severe consequences for global agricultural markets.

The next section lays out our methodology, followed by sections describing the data we use and the results we obtain, before concluding with a discussion of the findings.

Methods

We estimate the global increase in acute hunger, via loss of access to food because of higher wheat, maize and oil prices, in four steps. We first count the people who do not earn enough to pay for an energy-sufficient diet in 2021 – that is, before the onset of the Ukraine conflict. Secondly, we estimate the conflict-related increases in the cost of the energy-sufficient diet for two price scenarios. We then, in a third step, count the people who do not have access to an energy-sufficient diet at this higher cost. Lastly, we take the difference between the pre- and post-conflict headcounts, computed in the first and third step, to estimate the number of people who were pushed into acute hunger by the conflict.

[6] Ivanic, M., Martin, W., & Zaman, H. 2012. Estimating the short-run poverty impacts of the 2010–11 surge in food prices. World Development, 40(11), 2302-2317.

An energy-sufficient diet, as defined in the SOFI 2020 report, provides adequate calories for an adult to be able to complete an average workload (that is, 2,329 kcal per day).[7] This is achieved using only the basic starchy staple for a given country, such as maize, wheat or rice. Retail prices for this basic staple make up the diet's costs. The cost of the energy-sufficient diet is computed to identify the absolute lowest cost of meeting calorie needs from the cheapest starchy staple available in a country, establishing a lower bound on the cost of short-term survival at each place and time.[8]

To count the people who do not earn enough to pay for such a diet before the conflict pushed up prices, we take the income distribution, total population and cost of an energy-sufficient diet for each country. As our latest available income-distribution data is for 2019, we adjust the distribution for economic growth in 2020 and 2021, and particularly the effect of the COVID-19 pandemic, by shifting them according to changes in real GDP in 2020 and 2021. We neglect possible changes in the shape of the distribution.

With SOFI 2020 reporting the cost of the energy-sufficient diet in 2017 US Dollar, we use exchange rate and local food inflation data to bring the cost of the diet to 2019 price levels, the same as our income data. More specifically, we calculate

$$COD_{2019} = \frac{COD_{2017} * FX_{2017} * \ Food\ inflation_{2017/2019}}{FX_{2019}}$$

where COD_t denotes the cost of the diet for year t in US Dollars; FX_t denotes the exchange rate for year t; and $Food\ inflation_{t1/t2}$ denotes local food inflation in years t1 to t2.

In line with the computation of the economic access indicator in FAO's SOFA 2021 report, we consider a diet unaffordable when its cost exceeds 63 percent – the share that the poorest people in low-income countries, on average, spend on food – of people's income.[9] An energy-sufficient diet is affordable with an income X_t if

$$0.63 * X_{2021} \geq COD_{2021}$$

which is equivalent to

$$0.63 * X_{2019} * (1 + GDP_{2020}) * (1 + GDP_{2021}) * Inflation_{2019/2021} \geq COD_{2019} * Inflation_{2019/2021}$$

Here, GDP_t denotes real GDP per capita change in year t.

To gauge the changes in the cost of the energy-sufficient diet due to the conflict, we model the transmission of assumed increases in international prices for wheat, maize and oil to domestic prices. The diet cost estimates are based on retail prices, which include expenses for transport to the retail outlet. Therefore, we first estimate the share of transport or fuel costs in the overall cost of the diet and then separately consider the

[7] The reference adult is a non-pregnant and non-lactating woman aged 30 doing moderate physical activity.
[8] FAO, IFAD, UNICEF, WFP and WHO. 2020. The State of Food Security and Nutrition in the World 2020. Transforming food systems for affordable healthy diets. Rome, FAO.
[9] FAO. 2021. The State of Food and Agriculture 2021. Making agri-food systems more resilient to shocks and stresses. Rome, FAO.

impact of global oil price increases on the transport-related part of the costs and the impact of global food price increases on the remainder of the diet costs.

Based on WFP's annual food procurement costs of US$1.7 billion (or US$141 million/month on average) for 2019 and estimated fuel costs for the same year, we estimate that transportation or fuel accounts for 12 percent of the cost of diet.[10]

Following World Bank research, we use long-run price transmission coefficients of 1.15 for wheat and 0.75 for maize, on average across countries, for price transmission from international to domestic markets.[11] We assume that price transmission for wheat and maize is proportional to their respective shares of net imports in total domestic supply, that is,

$$PT_{Wheat} = 1.15 * \frac{Wheat\ import\ dependency}{Mean(Wheat\ import\ dependency)}$$

with

$$Wheat\ import\ dependency = \frac{Wheat\ imports - Wheat\ exports}{Wheat\ supply}$$

for wheat and equivalent equations for maize.

For crude oil, we assume 80 percent pass-through to domestic fuel prices. Behind this coefficient are estimates by WFP's Supply Chain Division of the link between the global crude oil price and changes in fuel costs for WFP operations as well as World Bank estimates.[12] Again, we assume country-specific price transmission to be proportional to dependency on imports of oil or oil products.

$$PT_{Oil} = 0.8 * \frac{Oil\ import\ dependency}{Mean(Oil\ import\ dependency)}$$

with

$$Oil\ import\ dependency = \frac{Oil\ imports - Oil\ exports}{Oil\ imports}.$$

While we take global oil price hikes, through price transmission, to affect 12 percent of diet costs, the extent to which wheat or maize price changes, trickling down from global to local markets, impact diet costs depends on the importance of these two staple foods in the local diet. Therefore, instead of applying the domestic price changes to the entire 88 percent of the diet costs that are not transportation costs, we apply them to estimated wheat- and maize-related costs. With an energy-sufficient diet consisting of starchy

[10] WFP, Annual Performance Report for 2019; and WFP's Supply Chain Division for estimated average fuel costs for WFP in 2019.

[11] Table 3.4 (mean of GIEWS data- and literature-based estimates) in Gillson, Ian, and Amir Fouad, eds. 2015. Trade Policy and Food Security: Improving Access to Food in Developing Countries in the Wake of High World Prices. Directions in Development. Washington, DC. World Bank.

[12] Figure 3.1 in Gillson, Ian, and Amir Fouad, eds. 2015. Trade Policy and Food Security: Improving Access to Food in Developing Countries in the Wake of High World Prices. Directions in Development. Washington, DC. World Bank.

staples, we take the domestic wheat and maize price changes to affect a share of the non-fuel diet cost, which equals the share of calories from wheat and maize in total calories from cereals and roots.

Taken together, this results in diet costs accounting for the effect of the Ukraine conflict of

$$COD_{Ukraine} = COD_{2021} * (1 + 0.88 * (GP_{Wheat} * PT_{Wheat} * CS_{Wheat} + GP_{Maize} * PT_{Maize} * CS_{Maize}) + 0.12 * GP_{Oil} * PT_{Oil})$$

with GP_i denoting the world market price for commodity i, PT_i price transmission for commodity i and CS_i commodity i's share in total calories from cereals and roots.

The number of people who can still afford an energy-sufficient diet after factoring in the cost increases driven by the conflict are those with an income X_{2021} for which

$$0.63 * X_{2021} \geq COD_{Ukraine}\,.$$

Scenarios

Scenario 1

Our first scenario presumes that the conflict will not last beyond April. We assume that, due to the closing of Ukrainian ports and severe disruptions of shipping in the Black Sea, none of the remaining Ukrainian or Russian exports for the 2021/22 marketing year – 14 million tons of wheat and 16 million tons of maize were foreseen for shipment between now and June – will leave the countries. Meanwhile, we do not assume any negative impact of the conflict on the upcoming harvest, in Ukraine or elsewhere, for the 2022/23 marketing year.

In terms of prices, we estimate that the shortfall in supplies to the global market translates into an increase for both wheat and maize prices in the short term, followed by a return to pre-conflict price levels in the second half of 2022, with the beginning of the new marketing season.

We base the associated price changes on research showing that a decrease in calories globally available from basic staple foodstuffs – maize, rice, soybeans and wheat – results in a 7 percent increase in the average price for these commodities.[13] The 30 million tons of lost grains from Russia and Ukraine translates into a 1 percent loss of total global calories and, hence, a 7 percent increase in prices for the four basic staples. Assuming that this uptick in price results from price changes in wheat and maize only, we get to an 18 percent increase in price for these two commodities, in line with what is currently observed in export prices. More specifically, for an initial average price P_0 ,

[13] https://asmith.ucdavis.edu/news/russia-ukraine, which refers to Roberts, Michael J., and Wolfram Schlenker. 2013. "Identifying Supply and Demand Elasticities of Agricultural Commodities: Implications for the US Ethanol Mandate." American Economic Review, 103 (6): 2265-95

$$P_0 = {}^1\!/_4 \left[\frac{P_{Wheat}}{CAL_{Wheat}} + \frac{P_{Maize}}{CAL_{Maize}} + \frac{P_{soybeans}}{CAL_{Soybeans}} + \frac{P_{Rice}}{CAL_{Rice}} \right],$$

where P_i is the price per ton[14] and CAL_i are the calories per ton for commodity i, and an increased average price P_1 with the rise in the average price due to an increase in Δ in the price for wheat and maize,

$$P_1 = {}^1\!/_4 \left[\left(\frac{P_{Wheat}}{CAL_{Wheat}} + \frac{P_{Maize}}{CAL_{Maize}} \right) (1 + \Delta) + \frac{P_{soybeans}}{CAL_{Soybeans}} + \frac{P_{Rice}}{CAL_{Rice}} \right],$$

the average increase of 7 percent,

$$\frac{P_1 - P_0}{P_0} = 0.07\,,$$

results in

$$\Delta = 0.07 * \frac{\frac{P_{Wheat}}{CAL_{Wheat}} + \frac{P_{Maize}}{CAL_{Maize}} + \frac{P_{soybeans}}{CAL_{Soybeans}} + \frac{P_{Rice}}{CAL_{Rice}}}{\frac{P_{Wheat}}{CAL_{Wheat}} + \frac{P_{Maize}}{CAL_{Maize}}} = 0.18\,.$$

We assume a crude oil price of US$100 per barrel in 2022, up by one third from its previous average level of US$75 per barrel.

Scenario 2

Our second scenario presumes that the conflict will last beyond April. We assume that the fighting will not only prevent the remaining 30 million tons of wheat and maize exports for the 2021/22 marketing year to leave Russia or Ukraine; it will also have strong repercussions for Ukraine's 2022/23 wheat and maize production, where potential labour, input and machinery supply disruptions lead to a cutting of grain harvests by half. In addition, we take Russia's 2022/23 harvest and exports to be affected – albeit less so than Ukrainian production – suffering a reduction by 25 percent.

For the Ukraine winter crop, FAO expects that nearly 30 percent of area planted will not be harvested, and there will be a fall in yields by 10 percent for the remainder.[15] Combined with greater expected post-harvest losses due to labour shortages or lack of functioning storage infrastructure, this supports the assumed 50 percent loss in winter crop production. For spring crop production, FAO sees a 40 percent cut in area planted and only 20 percent of fuel needs covered;[16] other observers expect a potentially even higher reduction in planted area.[17] Our assumptions for Russia are based on war constraining trade, affecting both grain exports as well as agricultural inputs. The Russian

[14] We use export prices as of 21 February 2022, with US3YC (Gulf) for maize, Thai 100% Grade B for rice, Argentina (Up River) for soybeans and EU France Grade 1 (Rouen) for wheat, as reported on https://www.igc.int/en/markets/marketinfo-prices.aspx.

[15] FAO. 2022. The importance of Ukraine and the Russian Federation for global agricultural markets and the risks associated with the current conflict (25 March 2022 Update).

[16] FAO. 2022. The importance of Ukraine and the Russian Federation for global agricultural markets and the risks associated with the current conflict (25 March 2022 Update).

[17] https://farmpolicynews.illinois.edu/2022/03/planted-acres-in-ukraine-could-fall-by-half/

agricultural sector is also heavily dependent on imported inputs, notably of pesticides and seeds; lack of access to these could significantly reduce crop production.

After an initial 18 percent hike in wheat and maize prices, these would remain elevated for the rest of 2022, rather than returning to pre-conflict levels starting in July 2022, as under scenario 1. Following the same logic as in scenario 1 – using the association of a 1 percent decrease in world calories from maize, rice, soybeans and wheat with a 7 percent average price increase for these commodities – wheat and maize prices will rise by 30 percent overall in 2022 under scenario 2.[18]

Again, we assume a crude oil price of US$100 per barrel in 2022.

Data

Table 1 summarizes the main data sources for the variables we use to estimate the impact of the Ukraine conflict on food security.

Table 1: Summary of the main data

Variable	Source	Reference year
Cost of energy sufficient diet	SOFI 2020	2017
Income distribution	World Bank – PovcalNet	2019
Population	UN DESA	2022
Food Inflation	Trading Economics	2017 - 2019
Annual exchange rate	IHS Markit	2017, 2019
GDP per capita growth	IHS Markit	2020, 2021
Imports and domestic supply for wheat and maize	FAOSTAT – Food Balance	2019
Calories from wheat, maize, total cereals and roots	FAOSTAT – Food Balance	2019
Fuel imports and exports	World Bank – World Development Indicators	2020

For some countries, data from the main source is not available. In these cases, we use alternative data sources. For countries where the SOFI 2020 does not report the cost of an energy sufficient diet, we calculate the cost of a 2,329-calorie diet based on the main staple in the country. If PovcalNet does not report a country's income distribution, we use the income distribution of a country with similar per capita GDP. We further impute missing food inflation data with headline inflation data from IHS Markit. Index Mundi serves as an alternative data source for agricultural trade and supply data when

[18] We estimate a 25 percent reduction in the Russian wheat and maize harvest to translate into a 34 percent price rise, whereas a 25 reduction in the Russian grain destined for exports to would imply a 26 percent price increase. We work with the average of 30 percent.

unavailable from FAOSTAT. If calorie shares are unavailable for a country, we use the ones of neighbouring countries with similar eating habits. We rely on data from the Observatory of Economic Complexity to fill gaps in oil trade data.

Results

We estimate the food security implications of the Ukraine conflict for the set of 81 countries included in WFP's Global Operational Response Plan 2022.[19] For the first scenario, the total number of acutely food insecure is expected to rise by 33 million people, which is equivalent to a 12 percent increase relative to the baseline. In the second scenario, acute hunger is estimated to increase by 47 million people or 17 percent. The 276 million people who were acutely food insecure in these countries before the Ukraine conflict constitute our baseline. Altogether, this means that up to 323 million people could become acutely food insecure in 2022.

In both scenarios, sub-Saharan Africa is most affected, in absolute terms as well as relative to the baseline of already acutely food insecure. The absolute increase is about 20 million people for RBD, RBJ and RBN combined in the first and 30 million in the second scenario. Table 2 summarizes the results for both scenarios disaggregated by WFP's Regional Bureaux.

Table 2: Increase in acute food insecurity by scenario

Regional Bureau	Number of countries	Pre-conflict acutely hungry (baseline)	Scenario 1		Scenario 2	
			Absolute change	Relative change	Absolute change	Relative change
		million	million	percent	million	percent
RBB	14	62	5	8	7	12
RBC	12	42	4	9	6	15
RBD	20	41	7	17	10	24
RBJ	12	51	8	15	10	19
RBN	10	52	7	14	10	20
RBP	13	27	2	8	4	13
Total	**81**	**276**	**33**	**12**	**47**	**17**

Note: Countries of the following regions are allocated to WFP's Regional Bureaux (in parentheses): Asia and the Pacific (RBB), Middle East and North Africa (RBC), West Africa (RBD), Southern Africa (RBJ), East Africa (RBN) and Latin America and the Caribbean (RBP).

Discussion

Although our estimated increase in acute hunger is not directly comparable with poverty and undernourishment estimates from the 2008 and 2011 food price crises, these related earlier estimates place our 33 to 47 million additional acutely hungry within a plausible

[19] WFP. 2022. WFP Global Operational Response Plan 2022 Update #4 (February 2022). Rome, WFP.

range. While food prices are at the same levels as during the earlier spikes, their relative increase following the Russian invasion into Ukraine was smaller, accounting only for part of the steady climb from mid-2020 that brought them to current highs.

Regarding FAO's finding of a much lower increase in undernourishment than initially estimated, in today's situation, with labour markets still struggling to recover from the COVID-19 pandemic, incomes depressed and 60 percent of low-income countries in debt distress or at high risk thereof, it is unlikely that vulnerable households have the same coping capacities as in 2007/08 or that countries can easily finance measures to buffer the shock on the ground.

Useful to give a rough estimate of the global food security fallout from the Ukraine conflict, our model is relatively simple and omits several pathways – both for the conflict to affect hunger and to soften such impact – which can be significant for some countries. These include special economic or financial ties to Russia, dependence on grain imports from Black Sea countries, the share of 2021/22 exports that is still outstanding, and the existence of stocks to buffer a shortfall in grain imports in the short run or the overall health of a country's economy.

The contraction of the Russian economy will likely have an impact on countries reliant on the Russian economy, which our model currently does not capture. Many migrant workers in former Soviet countries in Central Asia, such as Uzbekistan, Tajikistan and the Kyrgyzstan, work in Russia and send remittances. These have large importance in their home countries' economies.[20] Moreover, economies that have strong trading or financial ties with Russia, such as Cuba, Syria or Armenia, will likely feel an economic downturn in Russia at home.

While our model factors in import dependencies, it does not capture a stronger effect from direct reliance on grain imports from Ukraine and Russia. Countries in the Middle East and North Africa in particular – including Egypt, Turkey, Lebanon, Syria, Tunisia, Algeria, Morocco and Sudan – have heavily relied on grain imports from Russia and Ukraine in recent years. These countries might not only face a shortfall in the short run, depending on the share of 2021/22 exports still outstanding, but, in addition to paying higher prices, they will also have to source from farther afield and handle increased transport costs.

Countries' ability to cope with higher prices for staple commodities on international markets can vary widely – and with it the domestic food security implications from identical shocks. Even if facing lower-than-expected imports, countries with large grain reserves would not have to purchase grain at peak prices, if these are of limited duration. Similarly, countries with healthy finances are in a better position to smoothen the transmission of higher prices to poor consumers – for example, through food subsidies or by expanding social safety nets – than those countries already in debt distress. At the

[20] https://www.aljazeera.com/economy/2022/2/16/the-russia-ukraine-crisis-is-squeezing-central-asian-economies; World Development Indicators

same time, oil exporting countries will see their finances improve with rising prices on international energy markets. Not accounting for these differences is a limitation of our model.

Recommendations

With the food security of millions of people at stake, it is key to put in place measures and policies, both at country and global level, that can help mitigate the conflict's food security impact around the world.

1 *Address the four root causes: conflicts, climate crises, the consequences of COVID-19 and costs*

The Ukraine conflict does not happen in a vacuum. In an increasingly unstable world that is still grappling with the aftermath of the COVID-19 pandemic, while faced with an accelerating climate crisis and food prices at record levels, the Ukraine crisis has taken a bad situation and made it much worse. It is key to address all four root causes of hunger – not only the rising cost of food but also conflicts, the climate crisis and the consequences of the COVID-19 pandemic.

2 *Provide adequate humanitarian assistance to vulnerable groups*

Providing a lifeline to those furthest behind is critical. Adequate humanitarian assistance is both provided at the right time and in a way that meets essential needs, does no harm, is accessible to all and leaves behind strengthened capability and resilience. Well-targeted social protection interventions, including through horizontal or vertical expansion of existing schemes, can help alleviate hardship. Ensuring that the value of cash-based transfers is still sufficient to meet essential needs, despite rising costs, is crucial in the current price environment.

3 *Consider a food, fuel and fertilizer import facility for the poorest and most affected countries*

Before the conflict affected global markets, many low-income economies were in distress and their governments were struggling with financing imports in hard currencies. Skyrocketing prices exacerbate this situation and can render essential imports inaccessible. Preparing a food, fuel and fertilizer-import facility for the poorest and most affected countries offers protection against unexpected price spikes, which can severely limit access to food for the most vulnerable.

4 *Keep trade flowing and minimize disruptions to supply chains*

Keeping trade open for food, fuel and fertilizer is crucial to containing the increase in food insecurity both within Ukraine and globally. This includes safeguarding agricultural production and food supply chains more broadly, including the storage facilities and infrastructure to move foodstuffs, especially grains, out of the country. How quickly Ukraine can return to meeting domestic and international food demand depends on the

toll that the conflict takes on productive assets as well as ancillary infrastructure such as for processing or distribution.

5 *Avoid ad hoc policy reactions, export restrictions and import subsidies*

Export restrictions in food-producing countries were a main driver of past food-price spikes and volatility in agricultural markets.[21] Governments are strongly advised to avoid export restrictions on essential goods, given the tight markets. Such ad hoc policies, which would only bring relief for the imposing countries in the short run, would further reduce supplies and push up global prices. Importing countries, on the other hand, should similarly avoid ad hoc reactions such as putting in place import subsidies to prop up domestic supplies. While offering short-term relief for the country that puts the measure in place, such beggar-thy-neighbour policies exacerbate the situation for everybody else, by making tight markets even tighter.

6 *Exempt humanitarian assistance from export bans, extraordinary taxes and duties*

WFP relies on procuring food in international markets to provide a lifeline to people in emergencies. While higher price levels already imply that the ability to deliver food assistance decreases, export bans, extraordinary taxes and duties further aggravate the problem – a dire reality recognized by the welcome Joint Statement on Agriculture Exports Prohibitions or Restrictions Relating to WFP, issued in January 2021 by close to 80 WTO members.[22] We strongly urge all countries to exempt humanitarian assistance from restrictive trade policies, in the spirit of the related proposal discussed, but without the required unanimous approval, at the WTO General Council in December 2020.

7 *Strengthen market transparency to provide timely information*

Transparency is critical to keeping markets functioning in times of uncertainty, and when facing adjustments in supply or demand. The Agricultural Market Information System (AMIS) is an inter-agency platform aimed at enhancing food market transparency and policy response. Bringing together the principal trading countries of four main staple agricultural commodities, AMIS assesses global food supplies and provides a platform to coordinate policy action in times of market uncertainty. We recommend strengthening such initiatives to ensure that agricultural trade keeps flowing smoothly.

8 *Rethink energy and agricultural polices to diversify import sources for food and fuel*

Global food and energy markets are highly concentrated. For wheat, 7 countries provide 86 percent of supplies to the global market, while 3 countries hold 68 percent of the world's wheat reserves. Meanwhile, for maize, just 4 countries account for 85 percent of

[21] Headey, D., & Fan, S. (2010). Reflections on the global food crisis: How did it happen? How has it hurt? And how can we prevent the next one? IFPRI Research Monograph (Vol. 165).
[22] https://www.wto.org/english/news_e/news21_e/agri_21jan21_e.htm

export supplies while 2 countries hold 82 percent of the world's maize reserves.[23] The conflict has revealed in no uncertain terms that such high concentration makes these markets vulnerable to shocks and volatility. While there is no short-term solution to this, we recommend that countries rethink their energy and agricultural policies, and diversify sources for food and fuel imports, not only from an environmental perspective but also from the national and economic security standpoint.

[23] USDA, World Agricultural Supply and Demand Estimates, March 2022. In line with the report, we classify the European Union as one entity.

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