



# Food Insecurity: Looming Food Crisis

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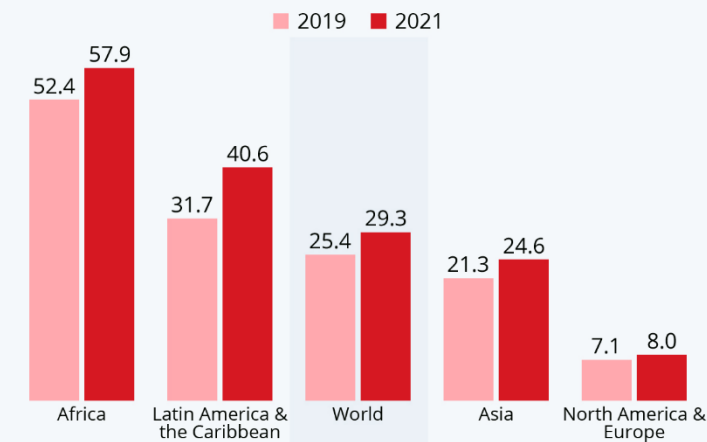
The ongoing Russo-Ukrainian War coupled with climate change and aftermath of COVID-19 has brought about a massive food security challenge, as the number of people facing acute food insecurity has increased by more than 150% from pre-pandemic levels - a staggering figure for such a short span [1]. Food insecurity is generally a direct result from conflict, economic hyperinflation, climate change, and rising commodity prices among many more. All of these factors have played a part in the last few years causing a rise in the number of families and children who are facing food insecurity. Unfortunately, global food insecurity leads to a cycle that is very difficult to break, it results in hunger, continued unrest, eventually leading to more poverty, violence, and with that, climbing food prices. As many as 828 million people around the world are at risk of starvation, with almost 60% of those, living in areas that are plagued by wars and violence [2]. These shocking statistics calls for action to be made in order to slow down this food crisis and ensure these millions of families have enough food to survive. This should encourage all of us to act. It simply is unacceptable.

The pandemic caused by COVID-19 has certainly impacted our society in various ways, with economic tension and food scarcities among the many worsening situations during the pandemic and likely to last long after. Labour shortages around the world are being reported and are directly linked to shutdowns due to COVID-19 measures, usually in an effort to minimize the spread of the disease. Unfortunately, while these lockdowns were clearly crucial to save lives, it is now evident that there is indeed a large trade-off between containing the virus and maintaining economic and food stability. There are lessons to learn, and we must prepare for another pandemic and apply strategies to mitigate supply chain disruptions. The supply of many food products significantly slowed down during COVID-19 lockdowns, further weakening food security globally. Richer countries managed to stay afloat, while gaps widened for poorer countries who were previously struggling well before the pandemic. According to the Food and Agriculture Organization of the United Nations (FAO), regions such as Africa and Latin America have seen one of the highest increases in food insecurity [3]. According to the FAO *"The increase in global hunger in 2021 reflects exacerbated inequalities across and within countries due to an unequal pattern of economic recovery among countries"* [3].

The restrictions also impacted food exports by disrupting international trade, thereby even further exacerbating food insecurity. Along with these supply chain issues, COVID-19 has also caused a shift in demand toward cheaper and less nutritional foods due to rising food prices. Another issue further aggravating food insecurity is the fact that the public, in well developed countries, are in a state of panic when it comes to food shortages. Many people are not used to seeing empty grocery store isles, leading to the hoarding of products, which leads to further shortages, especially towards those who needs the products most, such as the elderly, larger families, and those with special needs.

## Covid Exacerbates World Hunger

Share of population experiencing moderate/severe food insecurity, by region (in percent)



Source: FAO | The State of Food Security and Nutrition in the World 2022



statista

Food insecurity comparison in 2019 & 2021 [3].

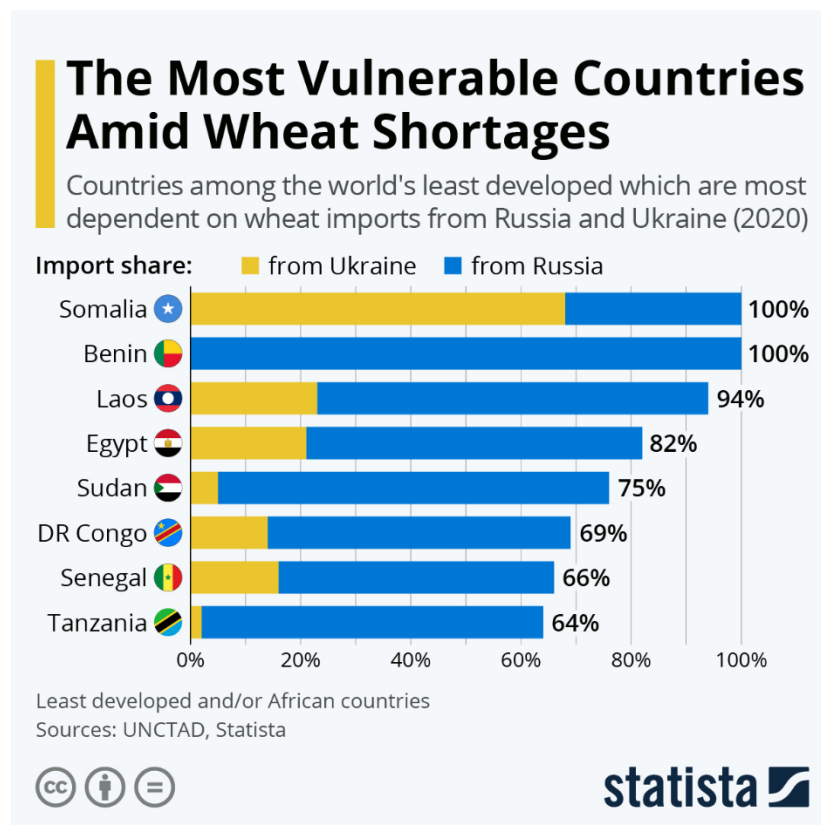
The world has learned many lessons from the pandemic and lockdowns. However, there are key plans and strategies that many countries have utilized to ensure that these shortages are short-lived and contained. For example, to combat lockdown restrictions, agricultural farms and food processing plants have been deemed an essential service that enjoy uninterrupted operation [4]. The European Union (EU) has also discouraged trade restrictions in favour of keeping trading channels open to meet demand [4]. These methods, along with others, help reduce the impact on food supply and ensure that the world's food security is preserved.

The COVID-19 recovery, especially in the supply chain aspects, has definitely been harsh. The soaring inflation rates due to the disruptions in supply chains coupled with the conflict in Ukraine has put food prices at record highs. The very rapid recovery in 2021 from the pandemic, combined with bottlenecks in supply chains that are still recovering, has resulted in soaring prices for goods, as governments and corporations struggle to meet the unexpected high demand. Both this rapid recovery and the conflict in Ukraine have contributed to the high inflation rates we see today. High inflation rates are extremely dangerous, especially when it is not offset by increased wages, as this effectively leads to reduced buying power for the average consumer. Quality of life and accessibility to necessary goods became much worse as inflation rates continued to skyrocket during 2022. Evidently, one of the large contributors to food scarcity is high inflation, making it extremely difficult for families to satisfy demand. In fact, according to Statistics Canada, the inflation rate in June 2022 reached an astonishing 8.1%, the largest year over year increase since January 1983 [5]. Clearly these inflation numbers are of great concern, especially for low-income families who spend a large portion of their income on food. Unfortunately, with food inflation comes another challenge, food fraud. Food fraud is a consequence of rising prices, which is the act of altering the ingredients of food for economic motivation. This illegal act can happen in various ways, replacement of key ingredients with inferior counterparts or the addition of preservative/colours that are not properly labelled and approved. Most of the time, food fraud is associated with major safety implications and can be very dangerous, especially to low-income families who are more prone to such illegal acts in their search for cheaper food sources. In fact, the Canadian Food Inspection Agency (CFIA) has reported cases of

adulteration of honey with foreign sugars, with as much as 11.5% of honey samples returning unsatisfactory results in terms of authenticity [6].

Ukraine has long been labelled as the “breadbasket” for Europe due to its significant market share by volume for wheat, corn, barely, and sunflower oil. In fact, Ukraine is ranked the fifth largest exporter for wheat globally [7]. The war largely brings about major concern for food affordability, rather than availability, for low-income households due to the imposed trade restrictions. These restrictions have consequently significantly raised the prices for fertilizers, forcing many farmers to replace high quality fertilizer requiring crops such as wheat to soy which is not as fertilizer dependent. This further causes a shift to lower nutritional value diets for many people around the world. In fact, poorer countries like Somalia, for example, severely depend on Ukraine and Russia for their Wheat supply. This in turn forces people to turn to cheaper food alternatives, contributing to malnutrition. The graph on below showcases countries that are most vulnerable to wheat shortages, primarily due to their reliance on wheat imports [8].

Countries dependent on Ukraine and Russia for Wheat [8].



Another indirect consequence of the war is the many export restrictions that countries have applied in order to protect local food supply and lessen the impacts of inflation. As seen in the 2007-2008 food crisis, many countries applied export restrictions, which in result exacerbated the situation by increasing the prices of these goods in the global market. In fact, on October 2<sup>nd</sup>, 2022, China imposed export bans on corn starch, bringing the total share of traded calories that are restricted to 6.98% as of October 2022 [9]. While these export restrictions ease the local food supply, they spell disaster for global food security and prices. In the 2007-2008 food crisis, instead of mitigating food inflation, these global food exports in fact resulted in skyrocketing international market prices. Protectionism in general heightens the instability in global food markets, especially in times of conflict and war.

Moreover, panic buying at both the individual and country level similar to what we saw from the COVID-19 restrictions have also exacerbated food supply concerns. This is especially an issue for European countries relatively close to Ukraine. For example, in March 2022, more than a third of the population in the United Kingdom hurried to stock up on pasta and cooking oils, forcing retailers to ration specific food items [10]. The Chinese government has also been, arguably, hoarding food supplies on a significant scale, accumulating about 60% and 51% of the global rice and wheat supplies, while China only amounts to roughly 20% of the world's population [11]. These alarming statistics reveals how panic buying is of significant concern, as it results in major prices increases for other countries in the global market.

Another impact of the war that can be easily forgotten is the impact on the progress towards the UN Sustainable Development Goals (SDGs). The global food crisis is causing an increase in poverty and hunger, especially in poorer nations. The surge in energy costs has also driven numerous governments to increase fossil fuel production to keep up with energy demands, delaying the progress for renewable energy and net zero emission goals.

Climate change has also always been a key player in food insecurity across the globe. As global populations continue to rise, the demand for food will also be at record highs. However, it is predicted that the food supply will only diminish as global warming and climate change impacts are harming the agriculture industry. In fact, the Intergovernmental Panel on Climate Change (IPCC) released a report predicting that global crop yields will diminish by about 2% - 6% with each passing decade [12]. A wide range of direct and indirect impacts are caused by climate change, from heat waves to droughts and flooding. While increased CO<sub>2</sub> concentrations in the air can increase crop yields, too much of it can reduce the nutritional value of those crops, resulting in lower quality products. The increased temperatures have also directly accelerated evapotranspiration in plants and soils, leading to a lack of water for crops to properly thrive. Countries that already experience high temperatures such as Africa and South Asia will have even more difficulty adapting to increasing temperature and will have an immediate impact on crops such as wheat that are not very heat tolerant.

Global warming in general brings many other indirect challenges to the global food supply. Rising sea levels across the world put many agricultural lands in jeopardy. The melting glaciers will also severely damage the global fresh water supply, making it even more challenging for crop irrigation. Furthermore, climate change as also been attributed to lengthening of the season cycles, causing major instability for sensitive crops along with disturbances of terrestrial precipitation, evaporation, and soil moisture.

Evidently, climate change in recent years have significantly hurt global food supplies and reserves. Many weather events that have been connected to climate change made the agricultural industry less resilient to shocks like the Ukraine war. Towards the end of 2021, Spain reported only about 35% of the expected average annual rainfall [13]. This lack of rainfall coupled with rising temperatures have led to droughts in both Portugal and Spain in early 2022, with almost 60% - 80% of loss in crops [13]. Similar disastrous events have been reported across Europe and the Middle East, accelerating the depletion of reserves.

While global food shortages remain a big concern heading into 2023, there have been numerous initiatives and strategies to combat food security and ensure food demand is met. First and foremost, financial support for low-income households has been one of the most effective ways to reduce the immediate impact of food shortages. Minimum wage, social assistances, reduced income taxes, and child benefits are among many methods that the Canadian government have utilized to combat food insecurity. Studies have shown that such social policies across multiple provinces have helped reduced the risk of food insecurity for poorer families that are disproportionately impacted [14].

Other countries like the United States have responded to the growing shortages by announcing approximately \$215 million in additional humanitarian assistance towards global food security. This funding will help ease the food security challenges in countries already facing conflict, droughts, and other natural disasters [15]. The World Bank has also stepped up to combat the looming food insecurity crisis with up to \$30 billion funding for new and existing projects in agriculture, social protection, water, and nutrition [16]. This financial aid will also go towards encouraging healthy food

and fertilizer production, enhance existing food systems, and facilitate greater amounts of trade. All of these funds go a long way to lessening the impact of food shortages while also continuing to stimulate the market.

*“Food price increases are having devastating effects on the poorest and most vulnerable”* World Bank President David Malpass said. *“Countries should make concerted efforts to increase the supply of energy and fertilizer, help farmers increase plantings and crop yields, and remove policies that block exports and imports, divert food to biofuel, or encourage unnecessary storage.”* [16].

Food shortages for now are still a big concern coming into 2023, with vast majority of countries adversely impacted. The supply chain issues resulting from the COVID-19 recovery and security measures have certainly caused a massive supply bottleneck. The rising inflation rates as a result from these supply chain issues have also put immense pressure on food suppliers to raise prices, further exacerbating food scarcity. Furthermore, the war in Ukraine has also played a major part in the markets’ inability to properly recover from the pandemic and even further raising food prices. The war caused an additional increase in prices for essential products such as wheat and barely while having a cascading impact on global trade and panic buying across the globe. Furthermore, rising temperatures and increasing amounts of natural disasters have also played a role in reducing the global food supply. From droughts to heatwaves running rampant in countries throughout Europe, global food supply is under even more strain than ever before. The impacts of climate change are also threatening fresh water supply that is heavily relied on for irrigation. The national reserves for many countries are also under threat of depletion. While it may seem that a massive food crisis is just on the horizon, many countries and global organizations have stepped up to protect our current supply and ensure that food scarcity is controlled as much as possible. After all, every country and organization have one major goal in mind, to preserve its population and maintain a healthy environment for its people.

While impacts of the pandemic on food chains are still unfolding, several lessons have emerged. Open and predictable markets have been critical for the smooth distribution of food along supply chains globally to ensure it can move to where it is needed. Unfortunately, while diversified sources of supply have allowed firms along the food chain to adapt rapidly when specific input sources were compromised by transport or logistics disruptions, those with food insecurity and poorer countries with already reduced supply chains did not have these efficiencies and will likely take a long time to gain such stability in the future. Finally, meeting the needs of the most vulnerable groups requires attention to food access. It is not an easy fix, we should try to address this ahead of another pandemic. We must ensure that we learn the lesson from this pandemic and maintain a healthy balance between safety measures and global lockdowns, to confirm that both safety and economic stability is maintained. The continued and ongoing Russian war has also only aggravated the issue, with soaring inflation rates and even weaker food reserves. Many different programs and initiatives have been put into place to slow down the ramifications of food shortages. This has helped the markets recover from COVID-19 and the war, to slowly ramp up supply production in an attempt to mitigate severe food shortages.

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