

The Impact of the Russo-Ukrainian War on Global Food Security

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Abstract:

The ongoing conflict between the Russian Federation and Ukraine has had significant repercussions for global food security, impacting both countries and millions worldwide. The war, which began on February 24, 2022, has caused extensive damage and loss of life, intensifying the global food crisis. According to the FAO, the conflict has led to an escalation of food insecurity on a broad scale.

This article seeks to provide an overview of the economic and social dimensions of this crisis, focusing on how the conflict has disrupted food supply chains, agricultural production, and access to essential food resources, ultimately endangering the food security of vulnerable populations globally.

Keywords: Russian-Ukrainian war, Food security, Agricultural production, Dependency.

Jel Classification Codes : N54, Q10, Q17, Q11.

Résumé : L'impact de la guerre entre la Fédération de Russie et l'Ukraine sur la sécurité alimentaire mondiale est un sujet de grande importance, car il affecte non seulement les deux nations en conflit mais aussi des millions de personnes dans le monde. Cet article explore les dimensions économiques et sociales de la crise alimentaire exacerbée par le conflit.

"La guerre qui a débuté le 24 février 2022 a causé des dégâts considérables et des pertes en vies humaines importantes. De toute évidence, la guerre a conduit à une situation d'insécurité alimentaire généralisée et qui s'aggrave." - FAO.

Cet article vise à synthétiser les éléments clés liés à l'impact de la guerre Russie-Ukraine sur la sécurité alimentaire mondiale.

Mots-clés : Guerre russo-ukrainienne, Sécurité alimentaire, Production agricole, Dépendance.

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Introduction

The conflict between Russia and Ukraine, which began in February 2022, has had widespread repercussions on the global stage. One of the most significant effects has been on global food security, as the war has severely disrupted markets, worsening an already critical food crisis.

Often called the "breadbasket of Europe," Ukraine is a key player in global grain supply. The conflict has not only impacted the countries involved but has also affected many other nations dependent on these imports. Alongside extensive human loss and damage to key urban areas, the war has devastated rural regions and led to mass displacement, all of which have further worsened food security.

Both Ukrainian and Russian communities have suffered, with farmers' ability to work severely affected by lack of access to essential resources, destruction of homes, and damaged infrastructure. Roads, agricultural land, and other critical resources have been hit, and entire regions face significant environmental damage. The conflict has resulted in port closures, halted oilseed production, and export restrictions on some food products. Major cities continue to be shelled, leaving residents isolated and grappling with shortages of food, water, and energy.

This article aims to explore a key question:

How has the Russian-Ukrainian war impacted global food security?

In other words, to what extent has the global economy been affected by the Russia-Ukraine war?"

Research Hypothesis:

The war between Russia and Ukraine has a devastating impact on global food security due to the roles of the Russian Federation and Ukraine as major suppliers in the global market for essential food commodities and strategic food resources.

The importance of this research

lies in highlighting the issue of global food security and the global food supply chain in the shadow of the war between Russia and Ukraine and its impact on food trade.

Research Methodology

To address the research question and verify the hypothesis, a descriptive-analytical approach was chosen.

Before examining this issue in depth, it's important to understand the concept of food security as defined by the Food and Agriculture Organization (FAO) of the United Nations.

1. Definition of food security by the FAO

According to the FAO, "food security exists when everyone has continuous physical, social, and economic access to enough safe and nutritious food that aligns with their dietary needs and preferences to lead an active, healthy life" (COMMITTEE ON WORLD FOOD SECURITY, 2021). This concept is shaped by four core elements: availability, access, utilization (nutritional absorption), and stability (maintaining the other three over time). Research frequently centers on these dimensions when examining food security (Webb et al., 2006; Barrett, 2020). In a 2006 policy document, the FAO emphasizes the strategic importance of these four dimensions in enhancing food security (FAO, 2006).

A 1999 general comment also highlights the need for food availability and accessibility, both economically and physically. It underscores the importance of dietary adequacy (utilization) and the role of governments in ensuring that vulnerable populations have access to sufficient nutrition even when resources are limited—a key aspect of stability (Committee on Economic, Social, and Cultural Rights, 1999).

In addition to these four, the FAO has identified two other critical factors: agency and sustainability. Sustainability, highlighted in international guidelines, encourages nations to adopt policies, laws, and measures that protect ecosystems, ensuring sustainable food production for current and future generations (FAO, 2005, Guideline 8).

Agency, as proposed by researchers such as Kabeer (1999), the World Bank (2005), and Ibrahim and Alkire (2007), is fundamental to development. Defined by Sen (1985), agency reflects a person's freedom to pursue goals or values they deem meaningful. This idea goes beyond resource access, encompassing empowerment—the ability to improve one's circumstances and influence societal policies (Alsop and Heinsohn, 2005). Essentially, agency reflects the power individuals and communities have to control their situations and influence policies that affect them, which is vital in addressing growing inequities within food systems and addressing power disparities among stakeholders.

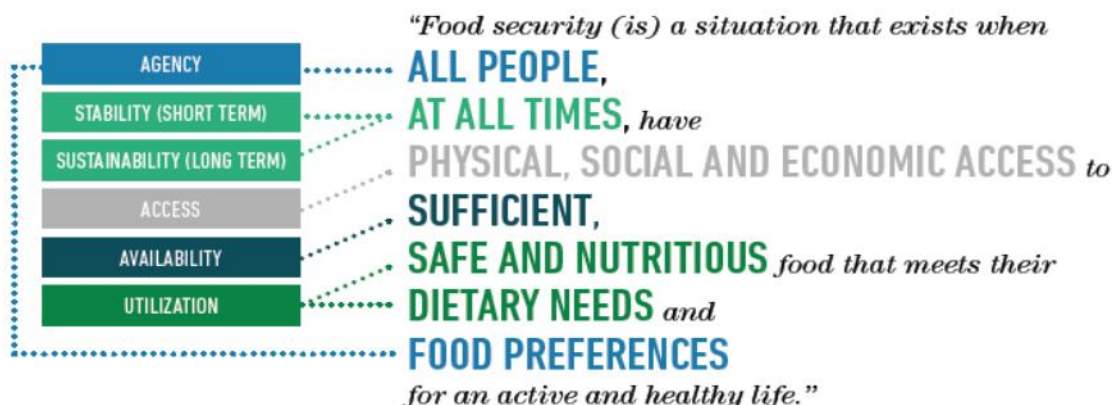
The High-Level Expert Group has highlighted that both "agency" and "sustainability" are key elements of food security directly linked to the right to food. Although these ideas are not new, they are increasingly important in today's context.

In conceptual and strategic frameworks, adding these dimensions to common conceptions of food security aligns with the conclusions and analyses drawn

from scientific research conducted over the past decade. See Figure 1 and Box 1 below.

FIGURE 1

IDENTIFYING SIX DIMENSIONS OF FOOD SECURITY
IN ITS CURRENT DEFINITION



Source: Report of the High-Level Expert Group titled "Food Security and Nutrition: A Global Vision Statement for 2030," Committee on World Food Security, Forty-Seventh Session, 8–11 February 2021. www.fao.org.

BOX 1

THE SIX DIMENSIONS OF FOOD SECURITY

Availability	Having a quantity and quality of food sufficient to satisfy the dietary needs of individuals, free from adverse substances and acceptable within a given culture, supplied through domestic production or imports.
Access (economic, social and physical)	Having personal or household financial means to acquire food for an adequate diet at a level to ensure that satisfaction of other basic needs are not threatened or compromised; and that adequate food is accessible to everyone, including vulnerable individuals and groups.
Utilization	Having an adequate diet, clean water, sanitation and health care to reach a state of nutritional well-being where all physiological needs are met.
Stability	Having the ability to ensure food security in the event of sudden shocks (e.g. an economic, health, conflict or climatic crisis) or cyclical events (e.g. seasonal food insecurity).
Agency	Individuals or groups having the capacity to act independently to make choices about what they eat, the foods they produce, how that food is produced, processed, and distributed, and to engage in policy processes that shape food systems. The protection of agency requires socio-political systems that uphold governance structures that enable the achievement of FSN for all.
Sustainability	Food system practices that contribute to long-term regeneration of natural, social and economic systems, ensuring the food needs of the present generations are met without compromising the food needs of future generations.

Source: Report of the High-Level Panel of Experts titled "Food Security and Nutrition: A Global Vision Statement Towards 2030," Committee on World Food Security, Forty-seventh Session, February 8-11, 2021. www.fao.org.

2. The factors threatening food security in the world :

2-1 Conflicts and wars: The escalating number and severity of conflicts worldwide have had a catastrophic impact on food security and nutrition. As a result, millions of people across the globe are facing acute food shortages and are teetering on the edge of famine.

2-2 Economic crises: Economic and financial crises have disrupted numerous global activities, especially agricultural production. This has led to increased levels of hunger and food insecurity, hindering efforts to eradicate various forms of malnutrition worldwide, particularly in vulnerable economies.

2-3 Climate change is a primary driver of the alarming rates of malnutrition, particularly in developing countries and regions like Africa, which continue to grapple with severe droughts induced by shifting climate patterns.

Among the factors mentioned above, the first factor will be focused upon, using the conflict between the Russian Federation and Ukraine as an example.

3. What is the relationship between the Russian Federation and Ukraine:

Russia and Ukraine both originated from a single, unified civilization that, for centuries, shared the same culture, religion, and language. The people within this culture identified themselves as Rusichy or, more simply, as Rus. These are peoples who have lived together for thousands of years, sharing a common origin and connected by language, mindset, religion, and culture. Ukraine's decision to separate from Russia went through several stages that ultimately led to Ukraine's emergence as an independent state. These stages are briefly outlined as follows:

After the February Revolution of 1917 in Russia, Ukraine was briefly independent until 1921, when it became a Soviet republic. In 1991, following the dissolution of the Soviet Union, it regained its independence. However, relations between the two countries have remained fraught with various disputes, leading to successive crises that culminated in the conflict between them that began in 2022.

4. Russia and Ukraine: Major Agricultural Producers, Role of Both Countries in Global Agriculture:

The Russian Federation and Ukraine are major players in global trade and hold a key position in supplying global markets with food commodities and fertilizers.

In 2021, before the conflict began, Ukraine held an important position in the global market, supplying about 30% of the world's wheat exports and 20% of corn exports (<https://www.consilium.europa.eu/fr/infographics/how-the-russian-invasion-of-ukraine-has-further-aggravated-the-global-food-crisis/>), placing it as the fourth-largest exporter of these grains.

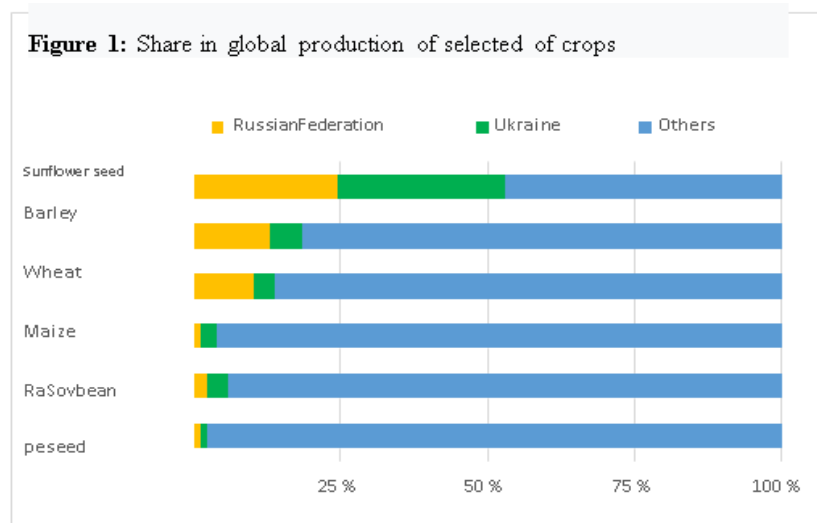
On the other hand, the Russian Federation holds only a comparatively modest share of the global corn export market, which was 3% between 2016-2017 and 2020-2021.

In the oilseed sector, their contribution to global production has been particularly significant regarding sunflower oil, of which just over half of the global production (78% of the global supply) during this period came from the two countries.

The previous Federation is also among the major exporters of fertilizers. Thus, in 2021, it ranked first in nitrogen (N) fertilizer exports, second in potassium (K) supply, and third in phosphate (P) fertilizer exports globally.

Together, the Russian Federation and Ukraine accounted for an average of 19%, 14%, and 4% of global production of barley, wheat, and corn, respectively, during the period from 2016-2017 to 2020-2021. Thus, in 2021, these federations ranked among the top three global exporters of wheat, corn, rapeseed, sunflower seeds, and sunflower oil (or either one or both of them did). See Figure 2 below.

Indeed, the fertile plains of the Ukrainian steppe are often considered the breadbasket of Europe. Together, these two countries account for nearly 25% of global grain production. As a result, this war has caused shockwaves through global markets.



Source: FAO XCBS system

5. Global agricultural market and global food security

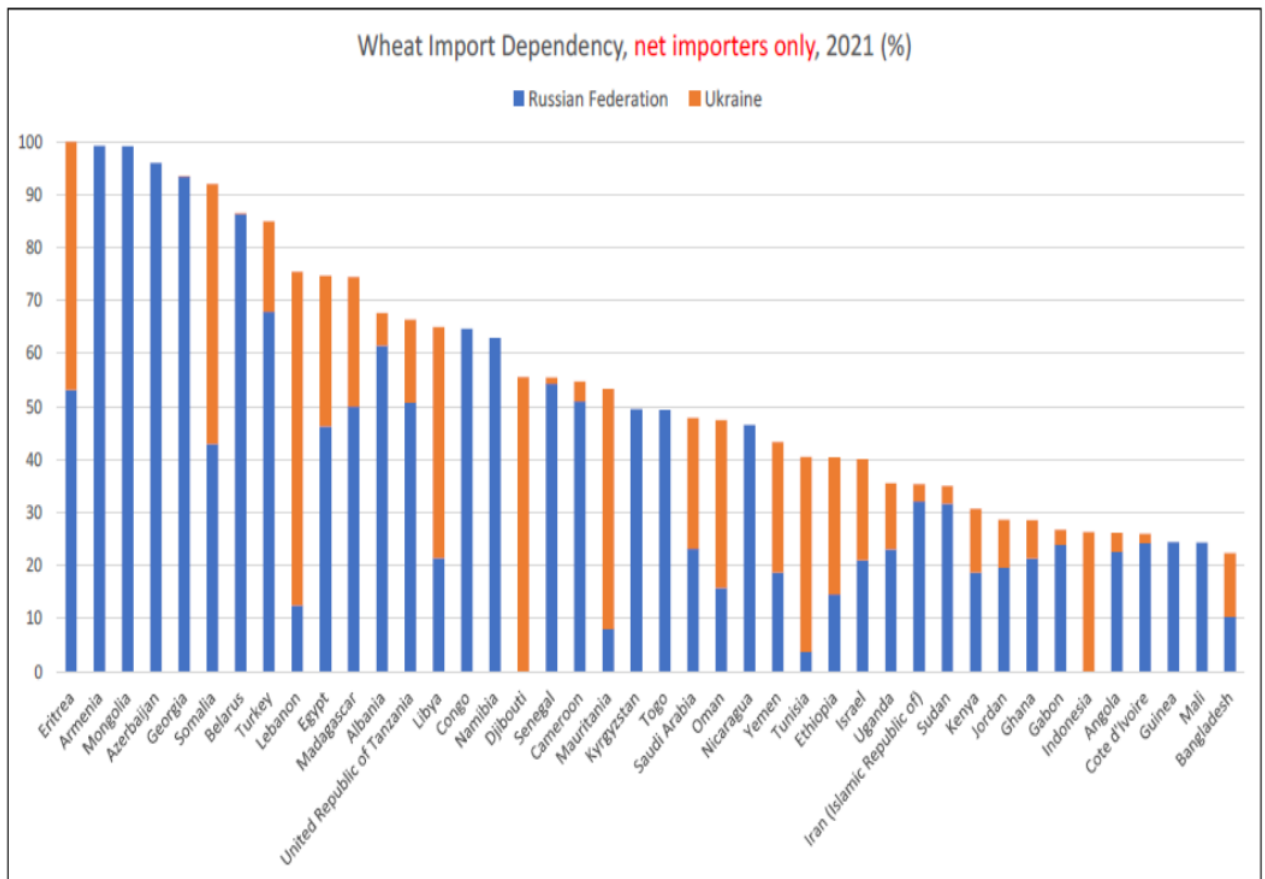
The significance of the Russian Federation and Ukraine in global agriculture is underscored by their roles as net exporters of key agricultural products, which are essential for maintaining the stability of global food markets. Together, these nations dominate export volumes, especially in crops like corn, barley, and rapeseed, with an even larger share in sunflower oil. Over the past three marketing years (2018-2021), the two countries controlled nearly 80% of global sunflower oil exports, a striking figure that highlights their centrality in this sector.

This high concentration of exports is not limited to food products but also extends to fertilizers, where the Russian Federation ranks among the world's leading suppliers. Many countries, particularly those classified as least developed or low-income, rely heavily on these imports to sustain their food production. For instance, Eritrea sourced all its wheat imports from Russia (53%) and Ukraine (47%) in 2021. Similarly, several countries in North Africa, Western, and Central Asia are highly dependent on wheat from these two nations. Over 30 net wheat-importing countries depend on Russia and Ukraine for more than 30% of their wheat imports, with almost 50 countries importing at least 30% of their wheat needs from these sources, and 26 of these relying on imports for over 50% of their wheat requirements.

Given this reliance, countries vulnerable to disruptions in food and fertilizer supplies from Russia and Ukraine will need to establish contingency plans. Strategies may include diversifying supply chains and identifying alternative

sources capable of meeting demand to ensure food security amid geopolitical uncertainties.

Figure 3: Some countries are heavily reliant on wheat imports from Ukraine and the Russian Federation



Source: Calculs de la FAO à partir de données de TDM. <https://openknowledge.fao.org/server/api/core/bitstreams/c8fabb9b-f6c7-48c6-95f2-63ac8638e1b7/content>.

The FAO has recognized the important role played by Ukraine and the Russian Federation in global food product exports, which it has categorized into three groups:

1. The risks associated with the food and agricultural market.
2. Macroeconomic risks.
3. Humanitarian risks

6. Food insecurity before and during the war:

International food prices had already surged to unprecedented levels before the conflict began. This rise was driven by market dynamics, along with elevated costs for energy, fertilizers, and agricultural services. The conflict further intensified these issues. In March 2022, the FAO Food Price Index set a new record, increasing by 12.6 percent from February and by 33.6 percent compared to the previous year. It also surpassed the February 2011 peak by 15.8 percent. This occurred amid food markets struggling with steep prices and obstacles created by the global COVID-19 pandemic.

At a food security council meeting, speakers noted that even before the conflict, the world was already grappling with a "dangerous mix" of challenges from conflicts, climate issues, and the pandemic. Yet, as pointed out by Norway and others, the war has worsened an already fragile global food security situation (press.un.org/fr/2022/cs14894.doc.htm). The conflict has severely disrupted supply chains, causing sharp increases in food prices and interruptions in agricultural production due to ongoing violence, damaged infrastructure, and farmers' inability to access their lands. This has significantly reduced global grain supplies.

Given this scenario, the ongoing conflict will have far-reaching effects on global markets and food supplies, impacting many nations—especially low-income countries dependent on food imports—and putting vulnerable communities at even greater risk (170th Session, 13-17 June 2022, FAO, www.fao.org).

7. Repercussions on global food security and its impact on countries dependent on imports from Russia and Ukraine

1) Impact on Agricultural Production

The damage to agricultural infrastructure and limited access to markets have significantly affected Ukrainian farmers' capacity to produce food. Furthermore, disruptions in the availability of fertilizers and other essential agricultural inputs due to the conflict pose a serious risk to future harvests (<https://www.futuribles.com/impacts-de-la-guerre-en-ukraine-sur-les-marches-ag/>). Projections show that crop yields in Ukraine could decline by as much as 28% in the upcoming season (<https://press.un.org/fr/2023/cs15502.doc.htm>).

In addition, with Russia being a primary provider of fertilizers, price hikes and supply disruptions are adding to the strain on global agricultural output (<https://blogs.worldbank.org/fr/voices/la-guerre-en-ukraine-aggrave-la-crise-alimentaire-en-afrique-de-louest-et-au-sahel>).

2/ Effects on Developing Countries

Developing countries, which heavily rely on grain imports for their food supply, are the hardest hit. The increase in food prices has led to a food crisis in many regions, particularly in North Africa, the Middle East, and Sub-Saharan Africa. Millions of people are at risk of falling into food insecurity, worsening already precarious living conditions.

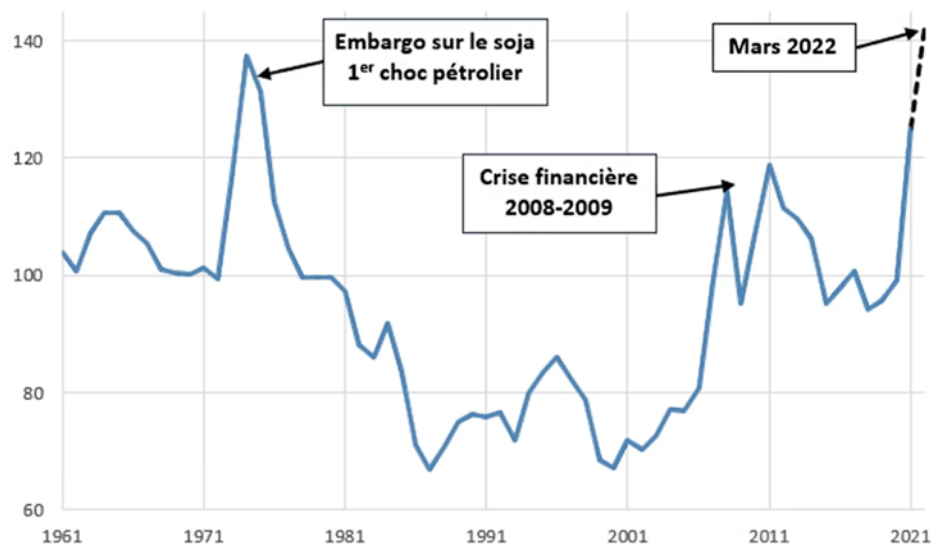
3) Disruptions in Exports and Price Increases

Ukraine was previously a top global exporter of wheat, corn, and sunflower oil. However, since the conflict began in February 2022, Ukrainian wheat exports have declined by over 90% in the first few months due to Russian forces blocking Ukrainian ports. This blockade has drastically limited Ukraine's export capacity, impacting market access for many countries reliant on these imports.

Roughly 90% of Ukraine's agricultural exports were transported by sea, primarily through Black Sea ports. The Russian invasion nearly halted all port activity, resulting in a steep decline in export levels. Although the European Union established solidarity corridors and efforts were made to reopen ports, export volumes are still well below those seen before the war. This has led to a historic rise in food prices, even surpassing peaks from the 2008 and 2011 food crises: wheat prices have surged by 48%, and corn prices by 28%, compared to pre-conflict levels.

These price hikes are particularly challenging for developing nations heavily dependent on these imports. This situation directly impacts food access for vulnerable populations, especially in Africa and the Middle East, where a significant portion of the population relies on Ukrainian grain (<https://press.un.org/fr/2022/cs14894.doc.htm>).

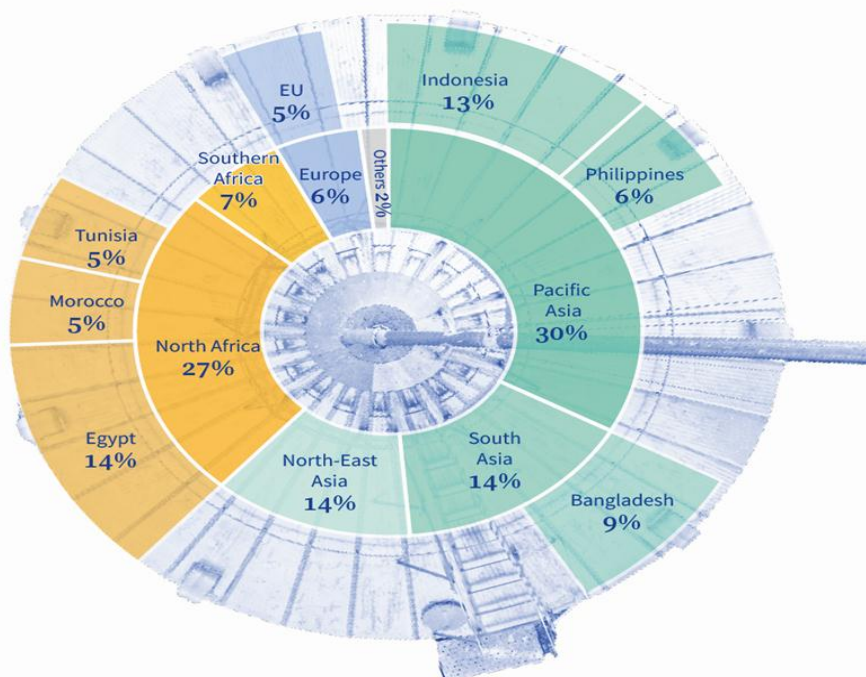
Figure 4: Real Price Index of Food Products (base 100 in 2014-2016)



Source : <https://www.futuribles.com/impacts-de-la-guerre-en-ukraine-sur-les-marches-ag/>

As shown in Figure 4 above, the price of agricultural commodities, expressed in purchasing power, exceeded, in March 2022, its previous historical peak reached during the 1973 crisis when the United States imposed an embargo on soybeans and the Organization of Petroleum Exporting Countries (OPEC) imposed one on oil. This decline in prices is likely to last.

Figure 5: Most of Ukraine's wheat goes to poorer countries



Source : <https://www.consilium.europa.eu/en/infographics/how-the-russian-invasion-of-ukraine-has-further-aggravated-the-global-food-crisis/>

The impact of the war on global food markets is so severe because Ukraine is one of the top agricultural exporters in the world, possessing some of the most fertile land on earth.

As shows in figure 5 Ukrainian exports – especially of wheat – are of crucial importance to some Asian and African countries. From 2016 to 2021, they received 92% of Ukrainians wheat.

4) increased food insecurity

The ramifications of the conflict are deeply felt across global food systems. Before the war, around 810 million people worldwide were suffering from hunger. Due to the conflict's impact, this number may rise by an estimated seven to 13 million

(https://www.europarl.europa.eu/RegData/etudes/ATAG/2022/729367/EPRS_ATA%282022%29729367_EN.pdf). Sub-Saharan Africa and the Sahel are especially hard-hit, with forecasts suggesting an additional 7 to 10 million people in these regions could face food insecurity as a result of the war (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10648107/>).

5) Humanitarian Consequences

The war's effects extend into humanitarian consequences, adding strain to regions already experiencing food insecurity. Approximately 800 million people were estimated to be experiencing hunger globally, with the crisis in Ukraine potentially increasing this figure by 7 to 10 million people in vulnerable areas like West Africa and the Sahel (<https://blogs.worldbank.org/fr/voices/la-guerre-en-ukraine-aggrave-la-crise-alimentaire-en-afrique-de-louest-et-au-sahel>). Food shortages are worsening conditions in these areas, where secure access to adequate food is increasingly challenging.

Conclusion:

In response to our research question regarding the impact of the conflict between the Russian Federation and Ukraine on global food security, we confirm our hypothesis. Both countries play a key role in the global wheat market, and their conflict has triggered a food crisis, felt particularly in Africa and the Middle East, which heavily rely on Ukrainian grain exports.

However, it is crucial to recognize that this conflict merely acts as a catalyst for an already existing food crisis, which has been intensified by various factors, including climate change, the economic downturn linked to the COVID-19 pandemic, and other armed conflicts worldwide. These elements have contributed to a rise in the number of people facing food insecurity.

War poses a major threat to global food security by:

- disrupting agricultural supply chains,
- causing worrisome price increases.
- Additionally, economic sanctions on Russia make it more difficult to access essential resources for food production.

Resolving this conflict is therefore essential to restoring global food stability and preventing a prolonged humanitarian crisis.

Food security must be incorporated into all conflict resolution initiatives to ensure a stable supply for vulnerable populations. This requires coordinated international action to address urgent needs and support the hardest-hit countries. Additionally, this crisis should prompt nations reliant on exports from the two countries in conflict to seriously consider solutions for strengthening their food security autonomy, which has been weakened by the Russia-Ukraine conflict.

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