

ANALYSIS OF THE FOOD INSECURITY GENERATED BY THE WAR IN UKRAINE

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Abstract: *The Russian invasion of Ukraine has economic consequences worldwide and is causing a food shortage. Russia and Ukraine are two key suppliers of agricultural products, and this conflict, which has driven two major players out of the market, has once again shown how fragile the global food supply chain is. A lasting global food crisis has become one of the most profound consequences of Russia's war against Ukraine, contributing to hunger and poverty. Moscow has blocked most supplies from Ukraine, one of the world's biggest wheat producers, and Russian military attacks on Ukrainian energy infrastructure are also disrupting the flow of food. The paper is an investigation into the disruption of the global agricultural supply chain, affecting food supplies and causing a rise in agricultural food prices worldwide.*

Keywords: *food shortage, market, supply, hunger, food price*

INTRODUCTION

Agriculture provides food for mankind and has the role of satisfying the need for food among the populations of all the countries of the world. [10] The progress of global agriculture has brought to light the contribution of this activity as an important actor of economic growth. [12] The development of agriculture has contributed to ensuring the national essence and food security. [1] The lagging behind of agriculture in the countries undergoing development has widened the economic disparities between the developed countries and the poor ones. [6] The relaunch of agriculture in countries with food shortages ensures social stability and material unity of the communities. [7] The progress of global agriculture has brought to light the contribution of this activity as an important actor of economic growth. For all countries, agriculture has constituted an internal and balanced actor in the harmonization of economic development internal and the release of social conflicts generated by the food crisis. [3] The development of agriculture has led to economic growth in the most important sectors, contributing to ensuring the national economy and food security. [4] This has widened the economic disparities between poor and poor countries. The relaunch of agriculture in countries with food shortages ensures social stability and financial stability of the communities. [11] The progress of world agriculture has brought to light the contribution of this activity to economic growth. [9] For all countries, agriculture constituted a strong balancing factor in harmonizing economic development internal and the smoothing of social conflicts generated by the food problem. [5] The development of agriculture favored economic growth in the most diverse sectors, contributing to ensuring national independence and a food security. [8] According to the share of the agricultural population in the population total, agriculture is stated to be the main (or one of the main) production branch of the world economy: the agricultural population represents over 40% of the total population, and the proportion of the active population from the economic point of view comes to represent almost 50%.

All of humanity is threatened by a possible food crisis, where, in addition to defining it, there should be also taken into account the conditions of triggering and manifestation in various conditions, including those generated by a war, as it happens in Ukraine. This conflict in Ukraine could have a major impact on the stability of the global food supply, given that the two belligerent countries, plus Kazakhstan, represent for

example a third of the world's wheat production, which can lead to major dysfunctions in the world trade of this product and not only.

The fact that Ukraine has reached a long-term conflict, the products cannot be loaded and the world markets cannot be supplied. Large importers such as Egypt, Jordan, Algeria, Saudi Arabia or Turkey need to ensure their domestic wheat needs. Unfortunately, Russia's invasion of Ukraine has repercussions that go far beyond Ukraine's borders, in unexpected ways.

Maize and wheat are the most cultivated cereals in the world. If a major exporter, such as Ukraine, stops delivering, the consequences for global food security are dire.

In 2021, Russia and Ukraine ranked first in the world in the export of barley, corn, rapeseed, seeds and sunflower oil. Together, they exported almost 30% of the global amount of wheat. Russia exported 17% of the world's wheat, while Ukraine - 20% of rapeseed. But Russia's invasion of Ukraine has disrupted the global agricultural supply chain, is already affecting food supplies and driving up food prices around the world. Russia's aggressive strategy includes blocking and bombing ports, which play a vital role for exports. The war started by Russia in Ukraine in 2022 may lead to a food crisis, and the phenomenon has the potential to last for years.

The global food system is undergoing severe tests in these years, it being weakened by the pandemic, global warming, the energy crisis and the breakdown of supply chains, much too damaged by the sanitary situation, and now also by the war in Eastern Europe.

The invasion of Ukraine is, however, the catalyst of this crisis, which is gaining in scope. Ukraine is among the largest exporters of wheat in the world. Cereals are one of its main economic segments: the country exported more than 46 million tons in 2021 alone, while Russia is the main exporter of wheat globally. Together, the two countries supply 12% of traded calories.

But the food supply problem, compounded by inflation and alarmingly rising prices, is leading to a cost of living that many simply can no longer afford.

MATERIALS AND METHODS

The key research methods employed were analysis and synthesis, analogy, and graphics to resemble the results. The data provided by the World Bank and the European Council were analyzed.

RESEARCH RESULTS

Known as the granary of Europe, Ukraine has been among the largest agricultural producers and exporters in the world. In its bid to subjugate Ukraine, Russia has targeted food warehouses, stolen crops and agricultural equipment, destroyed Ukraine's food processing and transportation capabilities, and, crucially, blockaded Ukrainian ports in Black Sea to prevent the export of Ukrainian grain.

Ukraine is a major exporter of grain to Africa and the Middle East. Before the Russian invasion, Ukraine exported up to six million tons of grain per month. The total volume includes 18.578 million tons of wheat, 22.4 million tons of corn and 5.7 million tons of barley. Before the Russian invasion, Ukraine was exporting up to six million tons of grain a month, but in recent months volumes have dropped to around one million tons. Grain exports in 2022 were 43.4% lower than in 2021 (2.49 million tons), which the authorities attributed to the blockade of Ukrainian seaports, which are a key element of the infrastructure of Ukrainian export.

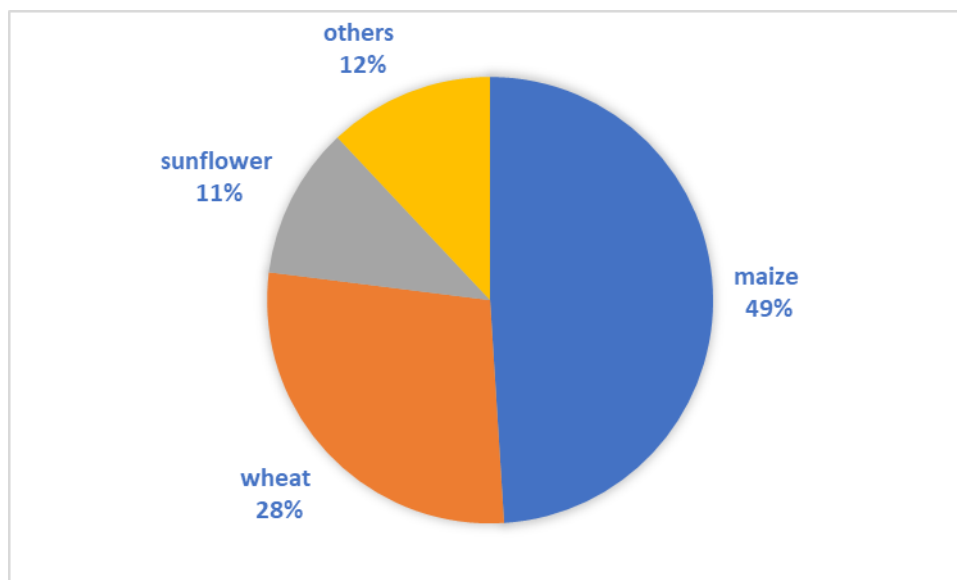


Figure 1. Ukraine cereals exports in 2022

In the entire marketing year 2021-2022, Ukraine exported 18.74 million tons of wheat (+12.6% annually), 23.54 million tons of maize (+1.9%), 5.75 million tons of barley (+35.9%) and 70,900 tons of flour (-44.1%).

Comparing the latest data on the Food and Agriculture Organization, Ukraine exported 5.97 million tons of grain, including 4.86 million tons of maize, 0.89 million tons of wheat, 0.18 million tons of barley and 0.005 million tons of flour.

Ukraine exported 44.72 million tons of grains in the 2020-2021 marketing year, including 16.64 million tons of wheat, 23.08 million tons of maize, 4.23 million tons of barley, 126,900 tons of flour and 18,400 tons of rye flour.

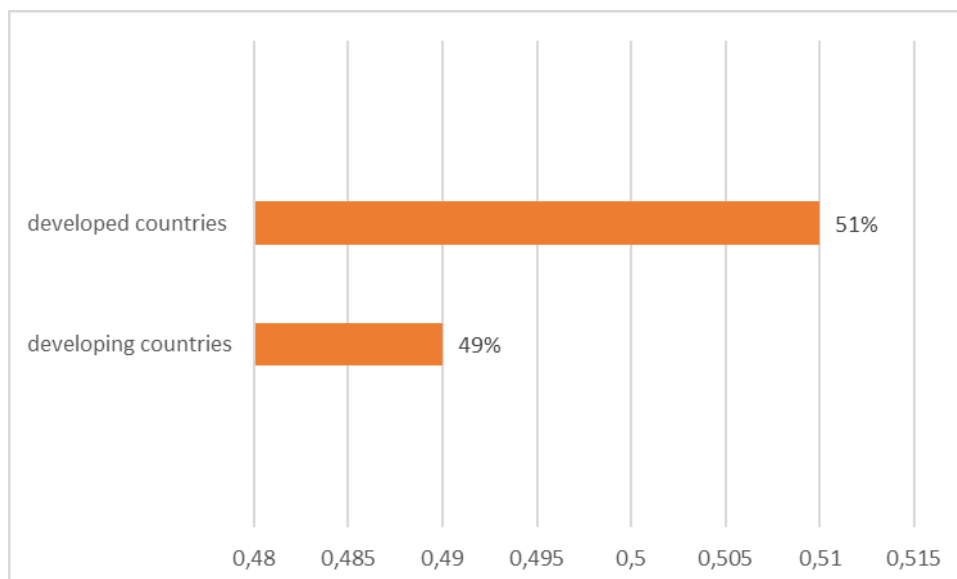


Figure 2. Maize exports percentage in 2022

In 2022, maize that has been exported from Ukraine to developing countries represents 49% of total exports, while maize sent to developed countries accounts for 51% of total exports.

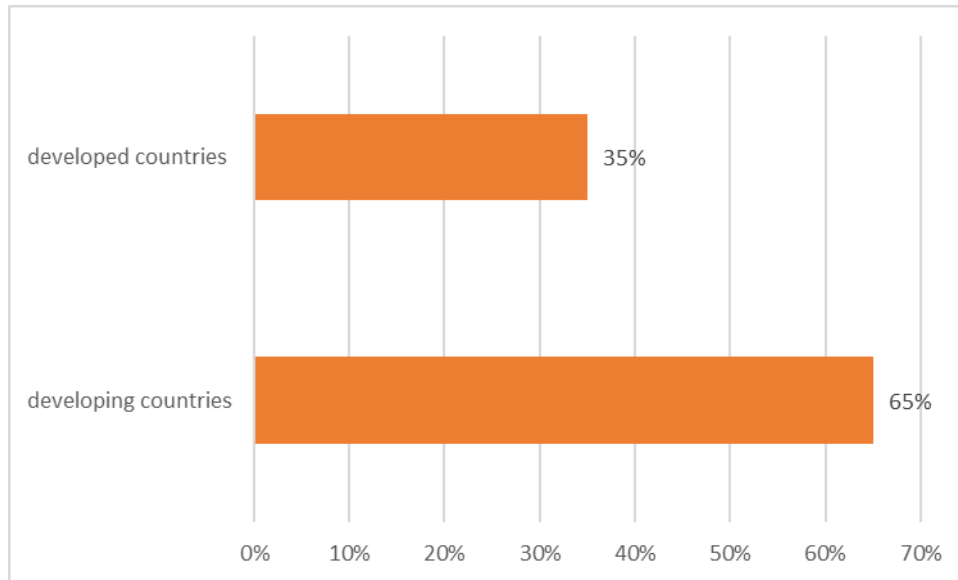


Figure 3. Wheat exports percentage in 2022

In 2022, wheat that has been exported to developing countries represents 65% of total grain exports, while wheat sent to developed countries accounts for 35%.

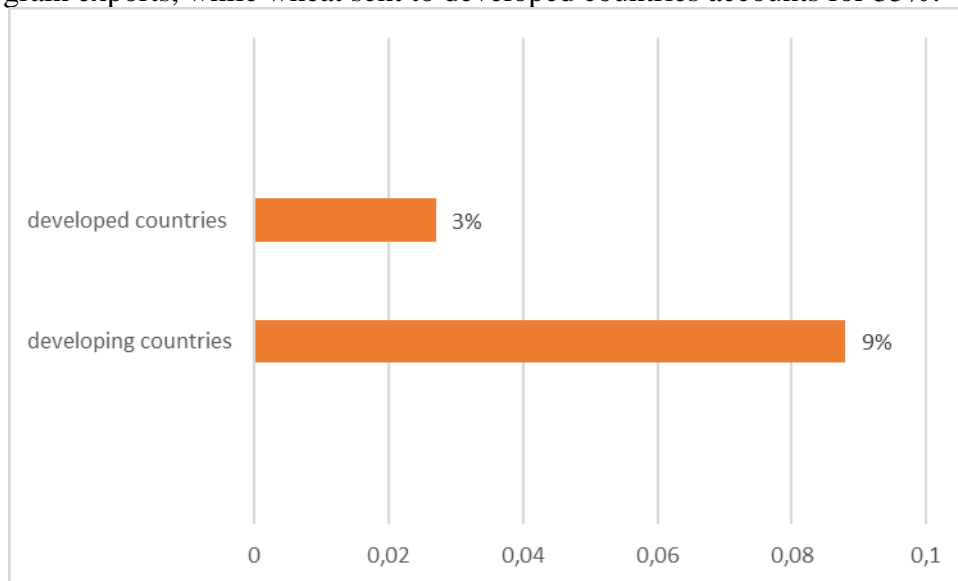


Figure 4. Sunflower exports percentage in 2022

Sunflower products exported in 2022 from Ukraine to developing countries represent 9% of total exports and those exported to developed countries 3%.

With the most important ports blocked, Ukraine used the railway lines for exports to the West, but also the ports on the Danube, while they worked. In the past three months, about 25 million tons of grain have been stuck in ports because of the war. Russia, meanwhile, continued to produce grain and export via the Black Sea and the Sea of Azov. However, the sanctions imposed on Russia have hampered Russian exports from a logistical point of view, as well as from a payment point of view, which has made many transactions difficult, if not impossible. Sanctions could also halt Russian imports of essential goods, including pesticides or seeds, which could affect crop quality. Global food shortages also mean rising prices. Increases in every product category have already started since the end of 2020, but the grain and vegetable oil markets - where Russia and Ukraine play important roles - are the most affected. The food price index hit a record high in

March 2022, when it was 12.6% higher than in February. These developments pose a threat to food security in countries that are already economically vulnerable and heavily dependent on Russian wheat. These are primarily the countries of the Middle East, Africa and Central Asia.

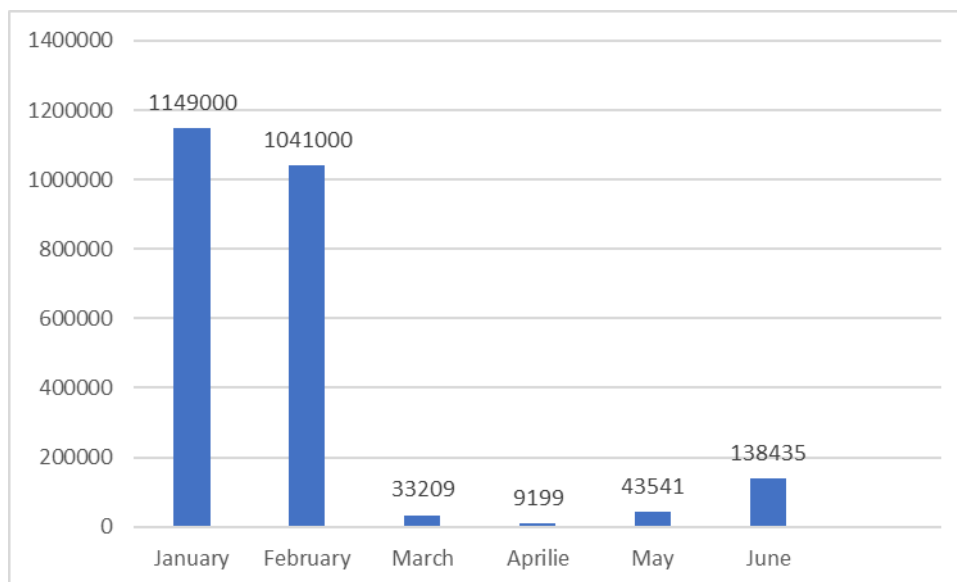


Figure 5. Ukraine's wheat export in 2022 (tons)

Ukrainian grain exports were affected, according to the European Council, the highest wheat price was reached in May 2022, namely 522.29 dollars/ton. In July 2022, the price dropped to 382.5 dollars/ton and in October it increases again, reaching the value of 437.95 dollars/ton.



Figure 6. Wheat price in 2022, after the outbreak of the war (dollars/ton)

African countries, which were already facing a food crisis due to the COVID-19 pandemic and natural disasters (droughts, floods, landslides), now have to deal with food shortages and rising prices.

In addition to bombing Ukrainian grain warehouses, Moscow is restricting its own food exports as a form of blackmail. From the data resembled above, if action is not taken soon, the consequences will be felt for years to come.

The war in Ukraine had a negative influence on Romanian agriculture, with implications that cannot yet be quantified, and farmers are currently in an extremely delicate situation, Romania has become a net importer from a net exporter of cereals and oilseeds. Almost three million tons of cereals and oleaginous plants entered the territory of Romania through the border points with Ukraine and Moldova. Although our country obtained a smaller production of wheat than in previous years due to the drought, of the 4-5 million tons available for export, until this date Romania was only able to export 2 million tons. Even though Romania is a plant raw material producing country and therefore not dependent on Russia or Ukraine for imports, the main effects are still seen in production costs. Rising gas price, problems related to the small number of domestic chemical fertilizer factories make the prices high.

CONCLUSIONS

Large quantities of Ukrainian grain entered the market of the EU states both through its opening accepted by the European bloc to help Ukraine in the war with Russia, as well as due to logistical blockages that caused shipments of Ukrainian grain originally intended for third countries to remain on the markets of central and eastern European countries.

The manifestation of the food crisis does not necessarily manifest itself through a shortage of food, but can also be realized through very high prices, which make food products unaffordable for the disadvantaged categories of the population. Theoretically, an effective and clearly targeted intervention should consist in providing food aid to disadvantaged population categories through various distribution channels, supplied by the State Reserve. However, the dependence on wheat imports is noted, considering the practice wheat producers to export after harvesting a large part of it, so that wheat is imported for consumption. The only element that would stabilize, under the crisis, the situation on the grain market, would be the state reserve.

As a recommendation, more measures should be proposed to limit market distortions caused by Ukrainian food imports, adding that if these do not work, taxes and quotas should be reintroduced.

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