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„Managing Food Security: Exploring Strategies in the Context of the  
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## Abstract

The following thesis examines the impact of the Russia-Ukraine war on global food security, focusing on the strategies employed to mitigate food insecurity resulting from the conflict. The study explores key initiatives such as the Black Sea Grain Initiative (BSGI), the EU Solidarity Lanes, and the Grain from Ukraine programme, which aim to facilitate the export of Ukrainian agricultural products despite the ongoing hostilities. Through a comparative analysis of economic, political, and legal dimensions, the thesis assesses the effectiveness of these strategies in maintaining food supply chains and mitigating food insecurity in regions heavily reliant on Ukrainian exports. The research highlights the complex interplay between military conflict and food security, emphasizing the need for robust international cooperation and innovative policy solutions to address these challenges. A conclusion is reached that while significant efforts have been made, the persistent volatility and risks in the Black Sea region continue to pose substantial threats to global food security, necessitating ongoing vigilance and adaptive strategies.

In der folgenden Arbeit werden die Auswirkungen des Krieges zwischen Russland und der Ukraine auf die globale Ernährungssicherheit untersucht, wobei der Schwerpunkt auf den Strategien liegt, mit denen die aus dem Konflikt resultierende Ernährungsunsicherheit gemildert werden soll. Die Studie untersucht Schlüsselinitiativen wie die „Black Sea Grain Initiative“ (BSGI), die EU-Solidaritätswege und das Programm „Grain From Ukraine“, die darauf abzielen, den Export ukrainischer Agrarprodukte trotz des anhaltenden Krieges zu erleichtern. Durch eine vergleichende Analyse wirtschaftlicher, politischer und rechtlicher Aspekte wird in dieser Arbeit die Wirksamkeit dieser Strategien bei der Aufrechterhaltung von Lebensmittelversorgungsketten und der Minderung der Ernährungsunsicherheit in Regionen, die stark von ukrainischen Exporten abhängig sind, bewertet. Die Untersuchung verdeutlicht das komplexe Zusammenspiel zwischen militärischen Konflikten und Ernährungssicherheit und unterstreicht die Notwendigkeit einer soliden internationalen Zusammenarbeit und innovativer politischer Lösungen zur Bewältigung dieser Herausforderungen. Letztlich wird dargelegt, dass die anhaltende Volatilität und die Risiken in der Schwarzmeerregion trotz erheblicher Anstrengungen weiterhin eine erhebliche Bedrohung für die globale Ernährungssicherheit darstellen und ständige Wachsamkeit und Anpassungsstrategien erfordern.

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## Abbreviations

ATMs – Autonomous Trade Measures

BS – Black Sea

BSF – Black Sea Fleet

BSGI – Black Sea Grain Initiative

FAO – Food and Agricultural Organization

FIES – Food Insecurity Experience Scale

FSIN – Food Security Information Network

GNAFC – Global Network against Food Crisis

GFSI – Global Food Security Index

GOI – Grain and Oilseeds Index

GOIF – Grains and Oilseeds Freight Index

GRFC – Global Report on Food Crisis

ICC – International Criminal Court

IGC – International Grains Council

ISPS Code – International Ship and Port Facility Security Code

LOAC – Law of Armed Conflict

MENA – Middle East and North Africa

NATO – North Atlantic Treaty Organization

PoU – Prevalence of Undernourishment

SOLAS – Convention for the Safety of Life at Sea

SDG – Sustainable Development Goal

TEN-T – Trans-European Transport Network

UNICEF - United Nations Children's Fund

WFP – World Food Programme

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## Pledge of Honesty

On my honour as a student of the Diplomatische Akademie Wien, I submit this work in good faith and pledge that I have neither given nor received unauthorized assistance on it.

*Katharina Alexandra Joó*

## 1. Introduction

Following the unprovoked Russian Aggression in Ukraine, global food supply chains were clearly damaged leading to severe food security issues in the Global South, especially in the Middle East and North Africa; a region highly dependent on food imports due to its climatic conditions and its complex political-economical context. With an import dependency of around 50%, the Middle East and North Africa account to the largest importers of grain in the world. Especially Russia and Ukraine, both considerable players in terms of the export of grain, traditionally provide the region with considerable amounts of the latter: Both countries traditionally account for around 20% of global exports of corn, 30% of barley and wheat and for 75% of sunflower oil exports.<sup>1</sup> Overall, Ukraine alone exported 5 to 6 million tonnes of grain per month in pre-war times, constituting around 10% of the global grain market. However, a distinction must be drawn to global grain production, where only 2% can be attributed to Ukraine, while India and China figure as the largest grain producers, with around 13% and 17%.<sup>2</sup>

Approximately 35% of the world population rely on wheat as their main diet item, but not all of them have the capacity for domestic production. Especially developing countries often heavily rely on imports.<sup>3</sup> Given that a number of Middle Eastern nations are among those most reliant on agri-food supplies from Russia and Ukraine, the area is seen as one of the most affected by the unprovoked aggression in Ukraine. These nations include, in order of reliance, Türkiye, Egypt, Sudan, Tunisia, Morocco, and Saudi Arabia. Additional findings suggest that certain nations, including Lebanon, Yemen, and Jordan, are especially susceptible to existential threats due to lacking imports; this is the case, for example, with Egypt, ranking among the biggest importers of Ukrainian and Russian cereals.<sup>4</sup>

These nations are not only dependent on food imports, but also usually have smaller food stocks and tend to be less able to handle rising costs associated with food imports, reason why they

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<sup>1</sup> Woertz, Eckart. "The Russian War Against Ukraine: Middle East Food Security at Risk." German Institute of Global and Area Studies (GIGA), 2022. <http://www.jstor.org/stable/resrep41431>.

<sup>2</sup> Rastogi, Kashish, and Carmen Ang. "These Are the Top 10 Countries That Produce the Most Wheat." World Economic Forum, August 4, 2022. <https://www.weforum.org/agenda/2022/08/top-10-countries-produce-most-wheat/>.

<sup>3</sup> Zachmann, Georg, Pauline Weil, and Stephan Cramon-Taubadel. "A European Policy Mix to Address Food Insecurity Linked to Russia's War." Bruegel, 2022. <http://www.jstor.org/stable/resrep46878>.

<sup>4</sup> Al-Saidi, Mohammad. "Caught off Guard and Beaten: The Ukraine War and Food Security in the Middle East." *Frontiers in Nutrition* 10 (February 21, 2023). <https://doi.org/10.3389/fnut.2023.983346>.

are even more effected by ruptures in food supply chains.<sup>5</sup> It is therefore crucial that initiatives that aim at combating food insecurity are taken in order to find short-term as well as long-term solutions.

In this regard, international action is essential in finding solutions and coordinating help. The EU, for example, can provide policies that either increase agricultural production, shift agricultural production towards food, reduce domestic consumption or improve global food allocation. Especially through the latter, the allocation of food resources can be considerably improved in times of crisis.<sup>6</sup>

According to the FAO, armed conflict is considered to be among the primary drivers for food insecurity. In times of war, when ports close, harvest fail and manpower is short, production is considerably reduced. The case of Russia and Ukraine clearly shows how logistical disruptions, but also external factors like economic sanctions restricting trade effect the costs and possibilities of food imports and exports.<sup>7</sup> To combat these effects it is especially crucial to keep the trade routes open and to commit greater financial and political resources to support grain exporters from Ukraine. Additionally, enhanced supply and increased productions would help vulnerable regions, like the MENA region, for which a general 4% year-on-year decrease in the production of cereals is expected by the WFP.

In order to successfully aid the region in tackling food insecurity a mix of different policies is needed. Policies that retain and develop trade channels from Ukraine, facilitate greater food production in vulnerable countries, and minimize harmful consumption are the most appropriate means of addressing existing difficulties in the short-term, while strengthening the resilience remains priority when thinking about long-term consequences.<sup>8</sup>

The proposed Master Thesis will focus on comparing different short-term solutions in the light of the importance and actuality of the topic. Food Security is without doubt one of the most pressing challenges of our time and therefore needs to be addressed adequately. This paper, based on existing literature and research, aims to take a further step in this direction.

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<sup>5</sup> Zachmann, Georg, Pauline Weil, and Stephan Cramon-Taubadel, *A European Policy Mix to Address Food Insecurity Linked to Russia's War*, 2022.

<sup>6</sup> Zachmann, Georg, Pauline Weil, and Stephan Cramon-Taubadel, *A European Policy Mix to Address Food Insecurity Linked to Russia's War*, 2022.

<sup>7</sup> Woertz, Eckart, *The Russian War Against Ukraine: Middle East Food Security at Risk*, 2022.

<sup>8</sup> Zachmann, Georg, Pauline Weil, and Stephan Cramon-Taubadel, *A European Policy Mix to Address Food Insecurity Linked to Russia's War*, 2022.



## 2. Effects of the Russia-Ukraine War on food security

### 2.1. Food security

According to the definition of food security established at the World Food Summit 1996, the latter is defined as „when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life”<sup>9</sup>, lining out the subsequent pillars of food security: food availability, economic and physical access to available food as well as utilization, also denominated nutritional security. Some organizations add a fourth pillar, stability, which considers the consistency of availability, access, and utilization over time. Consequently, if some or all of these pillars are disrupted, food insecurity exists.<sup>10</sup> Food security is disrupted by several factors, including but not limited to, shocks, economic or other, conflicts or crisis. Crisis can either be slowly developing and long-lasting, as are extreme climate patterns, or they can first appear unexpectedly as shocks, but with persistent impacts on the food security of the affected population.<sup>11</sup> Food insecurity can be chronic, meaning it persists over time – mainly due to structural issues –, or acute, occurring at a specific time with a severity that endangers lives, livelihoods, or both, irrespective of the causes, context, or duration.<sup>12</sup>

Still, food security is a multifaced concept with numerous definitions. For most of human history it was common, largely due to the limitations of agricultural productivity and Malthusian dynamics. Advances in agricultural technology, such as plant breeding and chemical fertilizers, have dramatically increased food availability. However, issues of access and utilization remain critical. The concept of food security originated in the mid-1970s, initially focusing on the supply of basic foodstuffs. Over time, there has been a shift from focusing solely on food production to considering economic access whereafter definitions have evolved to include access, stability, and utilization aspects. In 1996, the World Food Summit identified the core of what food security means and presented the most widely accepted

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<sup>9</sup> “What Is Food Security? There Are Four Dimensions.” World Bank. Accessed May 29, 2024. <https://www.worldbank.org/en/topic/agriculture/brief/food-security-update/what-is-food-security>.

<sup>10</sup> Barrett, Christopher B., and Erin C. Lentz. “Food Insecurity.” Essay. In International Studies Compendium Project. S.l.: Wiley-Blackwell Publishing, 2009.

<sup>11</sup> “WFP Global Operational Response Plan: Update #10 – February 2024.” UN World Food Programme, February 27, 2024. <https://www.wfp.org/publications/wfp-global-operational-response-plan#:~:text=Ending%20world%20hunger%20is%20one,and%20where%20data%20is%20available>.

<sup>12</sup> FSIN and Global Network Against Food Crisis. “Global report on food crises (GRFC) 2024“, Rome: 2024. <https://www.fsinplatform.org/report/global-report-food-crises-2024/>.

definition, however, its evolution reflects a broader understanding of the complexities involved and the importance of addressing both chronic and transitory food insecurity.<sup>13</sup>

In general, food insecurity is inherently unobservable and elusive, which makes its measurement complex and central to the literature on the subject. However, there are measurement strategies, that vary by the unit of analysis, either individual, household, community, country, continent, or world and are typically grouped based on whether they focus on availability, access, or utilization. The way food insecurity is measured, significantly influences intervention strategies aimed at achieving food security objectives.<sup>14</sup>

At the national level, food security is often gauged through food balance sheets that track production, stock levels, and import capacities, though these measures may not capture regional disparities. Access to food is assessed using livelihood-based measures like the Household Economy Approach and the Coping Strategy Index, which consider the activities, assets, and capabilities necessary for sustaining a living. Prices and terms of trade also serve as indicators of food access, particularly for rural households. On the individual level, food intake is measured through recall data or direct observation, while anthropometric indicators such as weight-for-height and height-for-age assess nutritional status. Despite these methodologies, the complexity of accurately capturing food insecurity is compounded by factors such as intra-household food distribution, micronutrient deficiencies, and the need for consistent interpretation of diverse data sources. Effective measurement often necessitates triangulation of multiple indicators, addressing both chronic and transitory food insecurity influenced by various socio-economic and environmental factors. It must consider regional disparities and intra-country variability, emphasizing the need for multi-criteria analysis and the inclusion of diverse, context-specific data sources to understand the nuanced dynamics of food security comprehensively. Additionally, advanced early warning systems to provide timely and actionable insights into food security dynamics.<sup>15</sup>

Furthermore, it has to be taken into account that food insecurity, malnutrition and hunger are sometimes used synonymously. Albeit so, they do not mean the same and describe different circumstances. Hunger is defined as the physical sensation of discomfort due to insufficient dietary energy, if persistent, leading to chronic undernourishment. The FAO measures this

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<sup>13</sup> Clay, Edward. "Food security: concepts and measurements. Trade reforms and food security: conceptualizing the linkages", Rome: UN Food and Agricultural Organization, 2022, 25-34. and Barrett, Christopher B., and Erin C. Lentz, *Food Insecurity*.

<sup>14</sup> Barrett, Christopher B., and Erin C. Lentz, *Food Insecurity*.

<sup>15</sup> Barrett, Christopher B., and Erin C. Lentz, *Food Insecurity*. and Clay, Edward, *Food security: concepts and measurements. Trade reforms and food security: conceptualizing the linkages*.

through the Prevalence of Undernourishment (PoU) indicator, thereof using hunger and undernourishment interchangeably.<sup>16</sup> Food Insecurity, as defined above, occurs when people lack access to sufficient safe and nutritious food, impacting their growth, development, and health. FAO uses the Food Insecurity Experience Scale (FIES) to assess food insecurity levels. While the FIES measures food security on a household-level base, the PoU is focused on food availability on a global and regional scale.<sup>17</sup>

Food Security can be distinguished in terms of levels of severeness: if existing, it is either categorised as mild, moderate or severe. Severe food insecurity, where individuals go without food for days, often equates to hunger.<sup>18</sup> Malnutrition, in comparison,<sup>19</sup> arises from inadequate, unbalanced, or excessive intake, and includes states of undernutrition, overnutrition, as well as deficiencies in essential vitamins and minerals. Being caused by unequal and unfair distribution of nutritious food, similarly to food insecurity, these two are closely linked, with food insecurity being defined more broadly. Considering all that, diverging numbers and different approaches throughout publications on food insecurity scales, can be explained.

The FAOs declared goal, following the UN Sustainable Development goal 2, *Zero Hunger*, to be achieved by 2030, is to “end hunger, achieve food security and improve [sic] nutrition [...]”<sup>20</sup>. As elaborated, even though one might not suffer from hunger, they can still lack the availability of a nutritious and balanced diet and therefore be food insecure. It therefore goes without saying that strategies to combat hunger start with ensuring an adequate supply of food for all, but also take into account its nutritional balance and affordability and thus equally aim to tackle food insecurity.<sup>21</sup> However, the achievement of the SDG 2, is becoming more and more difficult in light of rising environmental threats and newly emerging conflicts.

Taking the factors into consideration, that influence food security, on the primary level of observation, the global level, the World Food Programme, in its report “WFP Global

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<sup>16</sup> “Hunger and Food Insecurity.” Food and Agriculture Organization of the United Nations. Accessed June 1, 2024. <https://www.fao.org/hunger/en/>.

<sup>17</sup> “Hunger and Food Insecurity.” Food and Agriculture Organization of the United Nations. Accessed June 1, 2024. <https://www.fao.org/hunger/en/>.

<sup>18</sup> “Hunger and Food Insecurity.” Food and Agriculture Organization of the United Nations. Accessed June 1, 2024. <https://www.fao.org/hunger/en/>.

<sup>19</sup> Marriott, Bernadette P., Birt, Diane F., Stallings, Virginia A., and Yates, Allison A, “Present knowledge in nutrition. volume 2, clinical and applied topics in nutrition”, London: Academic Press, 2020.

<sup>20</sup> “Goal 2 | Department of Economic and Social Affairs.” United Nations. Accessed June 1, 2024. <https://sdgs.un.org/goals/goal2>. and “About FAO.” Food and Agricultural Organization of the United Nations. Accessed June 1, 2024. <https://www.fao.org/about/about-fao/en/#:~:text=Our%20goal%20is%20to%20achieve,world%20without%20hunger%20and%20poverty>.

<sup>21</sup> United Nations, *Goal 2: Zero Hunger - United Nations Sustainable Development*.

Operational Response Plan: Update #10 – February 2024”, in February of this year, found that in 2024, 309 million people are experiencing high and severe levels of food insecurity in 72 observed countries<sup>22</sup>. The Global Report on Food Crisis identified (GRFC) 2024, identified that in 2023, over 281.6 million people across 59 territories suffered from acute food insecurity. This is already about 24 million people more than in 2022, when approximately 258 million across 58 countries were considered to be suffering from acute food insecurity and much more than in 2021, where the number of acutely food insecure people was at 193 million across 53 different countries. A trend underlining that the number of people in acute food security was on the rise. The GRFC argues that this is not last due to the conflict in Ukraine. an expected increase in 2024.<sup>23</sup> As of recent estimates, about 923 million people were undernourished in 2007, with a strong correlation between extreme poverty and food insecurity. The majority of the food insecure population lives in developing countries.<sup>24</sup> Despite global food abundance, distribution problems persist, leading to regional disparities. Economic volatility and price spikes, such as those in food and fuel, exacerbate food insecurity.

A comparison before and during the war shows clear differences between the levels of food insecurity, with rising numbers in Ukraine and Russia and the Middle Eastern and the North African countries figuring among the most affected, as elaborated below.

## 2.2. Conflict and food insecurity

The Global Report on Food Security Crisis (GRFC) 2024, jointly published by the Food Security Information Network (FSIN) and the Global Network against Food Crisis (GNAFC), similarly to the FAO, identified conflict as the primary driver for food insecurity. The consensus-driven analysis presented in the form of the GRFC analysed global, regional and country-level acute food insecurity in 59 countries, which were selected upon the applicability of multiple criteria, identifying those countries that are affected by food insecurity and have respective data available. It came to the conclusion that, while weather extremes and economics shocks were primarily responsible for food insecurity affecting 72 million and 75 million people in 2023, conflicts account for 135 million people facing high levels of acute food insecurity in 20 of the countries examined.<sup>25</sup>

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<sup>22</sup> UN World Food Programme, *WFP Global Operational Response Plan: Update #10 – February 2024*.

<sup>23</sup> FSIN and Global Network Against Food Crisis. “Global report on food crises (GRFC) 2024“, Rome: 2024. <https://www.fsinplatform.org/report/global-report-food-crises-2024/>.

<sup>24</sup> Barrett, Christopher B., and Erin C. Lentz, *Food Insecurity*.

<sup>25</sup> FSIN and Global Network Against Food Crisis. “Global report on food crises (GRFC) 2024“, Rome: 2024. <https://www.fsinplatform.org/report/global-report-food-crises-2024/>.

The Global Food Security Index<sup>26</sup>, last published in 2022, likewise reveals a strong correlation between armed conflict and reduced food security scores. Conflict disrupts nearly every component of the food system, including production, harvesting, processing, transportation, input supply, financing, marketing, and consumption. The GFSI particularly emphasizes that armed conflict severely impacts supply-chain infrastructure, which is crucial for transporting food from farms to consumers.<sup>27</sup>

The ongoing war in Ukraine has thus inflicted extensive damage and losses on its agriculture sector, impacting not only its domestic economy but also regional and international food security. Before the conflict, Ukraine was a significant contributor to global agriculture, particularly in wheat and oilseed production and export. Additionally, the war has severely affected agricultural infrastructure, leading to substantial financial losses estimated at billions of dollars.<sup>28</sup> Global wheat and corn markets, for example, faced losses of approximately 116,05 billion dollars due to the conflict.<sup>29</sup>

The war has also constrained Ukraine's export capacity, leading to shifts in export patterns and increased food prices in some regions. The blockade of Black Sea ports has limited export routes, prompting the EU to establish Solidarity Lanes, alternative export routes, to facilitate land-based exports. However, challenges in onward transport and storage have led to oversupply issues in neighbouring countries and temporary import bans. Efforts to mitigate market distortions include diplomatic collaboration between the EU and Ukraine and the establishment of a humanitarian corridor along the western coast of the Black Sea. Despite these efforts, which will be elaborated on in more detail latter in this thesis, export volumes remained limited, impacting global food markets and contributing to price volatility.

Furthermore, Ukraine itself is severely affected: The conflict has caused a decrease in the total planted area, with significant abandonment of cropland in frontline areas, impacting wheat and sunflower seed production. Reductions in productivity, coupled with high input costs, have led

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<sup>26</sup> The Global Food Security Index (GFSI) assesses food security across 113 countries, focusing on the four pillars of food security. It is developed by Economist Impact and Corteva Agriscience, it uses 68 indicators to determine vulnerability to food insecurity. (Economist Impact, *Global Food Security Index*)

<sup>27</sup> Economist Impact. "Global Food Security Index 2022 Global Report", London: The Economist Group, 2022. <https://impact.economist.com/sustainability/project/food-security-index/>.

<sup>28</sup> FSIN and Global Network Against Food Crisis. "Global report on food crises (GRFC) 2024", Rome: 2024. <https://www.fsinplatform.org/report/global-report-food-crises-2024/>.

<sup>29</sup> Poursina, Davood, K. Aleks Schaefer, Sidany Hilburn, and Tuff Johnson. "Economic Impacts of the Black Sea Grain Initiative." *Journal of Agricultural Economics* 75, no. 1 (May 25, 2023): 457–64. <https://doi.org/10.1111/1477-9552.12549>.

to decreased farm gate prices, affecting farmers' profits.<sup>30</sup> When evaluating the impact of conflicts on food security levels, studies generally focus on the demand side rather than the supply side of food products in times of conflict. The production although often neglected, however, is just as affected by belligerent encounters and equally relevant when assessing rising food insecurity. Especially in the current case, a war waging in the world's "food basket", concerns of ensuring proper functioning of Ukraine's domestic agricultural production are imminent. Ukrainian farmers face difficulties in the production, due to lost irrigation infrastructure, damaged fields, and are subjected to the dangers of planting and harvesting in zones of war. Especially attacks on civilian infrastructure, including grain storage facilities and irrigation systems, have disrupted production and supply chains, increasing production costs. Landmines have contaminated arable land, further hindering agricultural activities.<sup>31</sup> Demining those areas will take a long time and hinder Ukraine to reach the same level of pre-war production. Additionally, huge shares of Ukrainian farmland are either abandoned or under Russian control.<sup>32</sup> Ukraine has an estimated of 41,5 million ha of highly fertile land<sup>33</sup>, of which about 5,2 to 6,9 million ha have been abandoned since the beginning of Russia's aggression, according to satellite observations.<sup>34</sup> This abandoned farmland, lies on the front lines of the current war. Additionally, Russia has occupied precious farmland. Large shares of occupied territory, were important zones of pre-war agricultural production between 2016 and 2020: The regions of Donetsk, Luhansk, Kherson, and Zaporizhzhia, currently under occupation, were responsible for around 21% of Ukraine's wheat production, 17% of its barley, 14% of its rapeseed, 9% of its soybeans, and 19% of its sunflower seeds.<sup>35</sup> Consequently, it is little surprising, that significant portions of current yields are harvested in territory occupied by Russia. Therefore, albeit an increase in yields in Ukraine in 2023 has been observed, contrarily to a decrease in farmland in the same period, the revenues generated from the first do not primarily benefit the Ukrainian farmers but are collected by the Russian besieger. Increased

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<sup>30</sup> FSIN and Global Network Against Food Crisis. "Global report on food crises (GRFC) 2024", Rome: 2024. <https://www.fsinplatform.org/report/global-report-food-crises-2024/>.

<sup>31</sup> FSIN and Global Network Against Food Crisis. *Global report on food crises (GRFC) 2024*.

<sup>32</sup> "Farming amidst a War: Satellite Data Reveals Productive yet Challenging Season for Ukraine." NASA Harvest, December 19, 2023. <https://nasaharvest.org/news/farming-amidst-war-satellite-data-reveals-productive-yet-challenging-season-ukraine>.

<sup>33</sup> Deininger, Klaus, Daniel Ayalew Ali, Nataliia Kussul, Andrii Shelestov, Guido Lemoine, and Hanna Yailimova. "Quantifying War-Induced Crop Losses in Ukraine in near Real Time to Strengthen Local and Global Food Security." *Food Policy* 115 (February 2023): 102418. <https://doi.org/10.1016/j.foodpol.2023.102418>.

<sup>34</sup> NASA Harvest, *Farming amidst a War: Satellite Data Reveals Productive yet Challenging Season for Ukraine*.

<sup>35</sup> Glauber, Joseph. "Ukraine and Global Agricultural Markets Two Years Later." Web log. IFPRI (blog). International Food Policy Research Institute, February 26, 2024. <https://www.ifpri.org/blog/ukraine-and-global-agricultural-markets-two-years-later>.

export cost, caused by challenges in the transportation of harvested produce, as well as higher costs for imports of seeds and fertilizers, and future costs in relation to rebuilding Ukrainian agriculture, additionally add to this, leading to spiking prices, which have to be absorbed by local farmers. As a result, some Ukrainian producers face enormous economic difficulties putting them at the risk of plunging into poverty.<sup>36</sup> Not least to that, Ukraine itself is home to about 11 million people who suffer from food insecurity and the wars devastating effects in 2023, the WFP estimates. Furthermore, the agricultural sector, accounts for the highest number of civilian casualties in Ukraine caused by mines underlining the danger producers face in times of war.<sup>37</sup>

### 2.3. Middle East and North Africa

According to the definition of food insecurity the Middle East and North Africa, also referred to as MENA, a region almost congruent with what is called the Arab World, encompassing a total of twenty-one countries as per definition of the World Bank, figure among those most severely affected alongside other regions in Africa and Latin America. Due to the economic, social and political heterogeneity of the region, every country needs to be assessed individually in terms of food insecurity. However, some common challenges to agriculture are shared by all countries in the region including harsh climatic conditions increasing through the effects of climatic change, limited water resources and ongoing political conflicts, which destabilize the whole region. The Middle East and North Africa, for example, has the lowest per capita water availability globally, with 85% of available water used for agriculture, directly affecting food production. Hence, the region's food security is further compromised by the lack of stable food production, leading to price increases and market instability.<sup>38</sup>

Additionally, conflicts disrupt food supply chains by damaging infrastructure and hindering transportation of goods. Key conflicts in the region, such as those in Syria, Yemen, and the Israel-Palestine conflict, which erupted last October, exacerbate food insecurity by restricting access to agricultural lands and creating difficulties for importing and exporting goods.<sup>39</sup> The GFCR highlighted that food crisis especially escalated in Palestine (Gaza Strip), now region of

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<sup>36</sup> NASA Harvest, *Farming amidst a War: Satellite Data Reveals Productive yet Challenging Season for Ukraine*.

<sup>37</sup> Riquier, Marie, and Henrique Garbino. "War in the Breadbasket: Landmines and Food Security in Ukraine - Ukraine." Stockholm International Peace Research Institute, November 16, 2023. <https://reliefweb.int/report/ukraine/war-breadbasket-landmines-and-food-security-ukraine>.

<sup>38</sup> Kozielc, Anna, Piecuch, Jakub, Daniek, Kamila, and Luty, Lidia. "Challenges to Food Security in the Middle East and North Africa in the Context of the Russia–Ukraine Conflict." *Agriculture* 14, no. 1 (January 21, 2024): 155.

<sup>39</sup> Kozielc, Piecuch, Daniek and Luty, „Challenges to Food Security in the Middle East and North Africa in the Context of the Russia–Ukraine Conflict.”, 155.

the most severe food crisis. There, acute food security is expected to worsen further throughout 2024, similarly to Sudan and Haiti, with the reason in all countries being conflict or violence.<sup>40</sup>

Population growth and trends of urbanization also play significant roles in the MENA region, with the UN estimating a 50% increase in population by 2050. While, urbanization can offer opportunities for larger markets and innovative technology, it also presents challenges in terms of access to food. Furthermore, political instability can lead to neglect of the agricultural sector, reducing access to essential resources like advice, credit, and insurance, ultimately decreasing food production and increasing import dependence.<sup>41</sup>

Thus, an overall higher share of agricultural imports and a dependency thereof, renders these countries in the region commonly referred to as Middle East and North Africa more vulnerable to price shocks, which in turn can affect the affordability as well as the availability of food. Still, food self-sufficiency does not seem to be a feasible option, unless increased investments are made in innovations and technologies increasing the countries' resilience to climate change and hence trying to equalise or to keep the deterioration of the already limited water and soil resources in check. Another option, namely the diversification of food imports, through the establishment of stronger ties with alternative international partners and regional cooperations, might be a solution for the medium and long run, but impossible to be achieved in a short time span and thus unfit to solve current challenges.<sup>42</sup>

While some countries in the Middle East and North Africa might be able to mitigate negative effects on their citizens given that considerable resources are available as for example in Algeria, other states with more limited resources – Egypt, Tunisia, Morocco – or states facing internal struggles – Libya –, however, stand no chance to combat imminent threats without the help from the international community.<sup>43</sup>

The dependency on imports from Russia and Ukraine was highest in Egypt, with close to 85% of all wheat imports originating from those countries prior to the war. Similarly, Lebanon imported 60% of its wheat from Ukraine in the year 2020; Tunisia's share of imports from Russia and Ukraine was measured to be 47%; Morocco imported almost 25% and Jordan more

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<sup>40</sup> FSIN and Global Network Against Food Crisis, *Global report on food crises (GRFC) 2024*.

<sup>41</sup> Kozielc, Piecuch, Daniek and Luty, „Challenges to Food Security in the Middle East and North Africa in the Context of the Russia–Ukraine Conflict.”, 155.

<sup>42</sup> Kozielc, Piecuch, Daniek and Luty, „Challenges to Food Security in the Middle East and North Africa in the Context of the Russia–Ukraine Conflict.”, 155.

<sup>43</sup> Ben Hassen, Tarek, and Hamid El Bilali. “Conflict in Ukraine and the Unsettling Ripples: Implications on Food Systems and Development in North Africa.” *Agriculture & Food Security* 13, no. 1 (April 8, 2024). <https://doi.org/10.1186/s40066-024-00467-3>.



than 34% of its wheat from the two major wheat producers on the northern coast of the Black Sea. The Russian-Ukrainian conflict, therefore, further aggravated an already precarious situation and led to a rapid increase in the number of people who are food insecure: already in the first three month the number rose from 26 Million people in February 2022 to 28.3 Million people in May 2022.<sup>44</sup> Latest data, gathered and made available by the FSIN and the GNAFC in the Global Report on Food Crisis (GRFC) 2024 , show that 36.7 Million people are currently food insecure in the Middle East and North Africa.<sup>45</sup> While this number, however, not only takes into account the effects of the Russian aggression in Ukraine but several factors, analysing specific country profiles, shows the war's consequences more clearly.

### 3. The Black Sea

The Black Sea, a semi-open sea located at the intersection of the European and the Asian continent, forms a major intersection between the East, West, North and South.<sup>46</sup> It is a transit zone between Central Asia, Eastern Europe, the Caucasus and Middle Eastern countries and thereof a critical crossroad between countries representing different value systems. Considered as either a bottleneck or a facilitator for global trade, the Black Sea holds a strategic position in connecting Asia, Europe and Africa trade wise and hence arose to being of uttermost importance in the light of the Russian aggression against Ukraine and the consequent disruption of global supply chains. Additionally, the region holds considerable amounts of natural gas resources in the Romanian, Turkish and Ukrainian offshore areas, which offer a potential alternative to Russian energy resources and a reduction of Europe's dependency on the latter; a goal set high on the agenda of the European Union.<sup>47</sup>

The Black Sea is directly bordered by six countries: Bulgaria, Romania, Georgia, Türkiye, Ukraine and Russia.<sup>48</sup> With two of these countries currently in the state of war, light was shed on a geopolitically highly important part of the world, where a “gradual escalation of frozen

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<sup>44</sup> OECD. 2022. "Russia's Aggression Against Ukraine and Impacts in the MENA Region." In Navigating beyond COVID-19: Recovery in the MENA Region, OECD Publishing, Paris. <https://doi.org/10.1787/48300c64-en>.

<sup>45</sup> FSIN and Global Network Against Food Crisis, *Global report on food crises (GRFC) 2024*.

<sup>46</sup> Anastasov, Pavel. "The Black Sea Region: A Critical Intersection." NATO Review, May 25, 2018. <https://www.nato.int/docu/review/articles/2018/05/25/the-black-sea-region-a-critical-intersection/index.html>.

<sup>47</sup> Nate, Silviu, Antonia Colibășanu, Andriy Stavvytskyy, and Ganna Kharlamova. "Impact of the Russo-Ukrainian War on Black Sea Trade: Geoeconomic Challenges." *Economics & Sociology* 17, no. 1 (March 2024): 256–79. <https://doi.org/10.14254/2071-789x.2024/17-1/16>.

<sup>48</sup> Nate, Silviu, Antonia Colibășanu, Andriy Stavvytskyy, and Ganna Kharlamova, *Impact of the Russo-Ukrainian War on Black Sea Trade: Geoeconomic Challenges*.

conflicts into hot ones throughout the 21<sup>st</sup> century”<sup>49</sup> can be observed. Ever since the end of the Cold war and the dissolution of the Soviet Union, new actors, primarily Bulgaria and Romania, attempted to join the powerplay in the region, falling under the sphere of influence of the western powers not long after. Tensions between Russia and the US and the EU aggravated further following increased western interest in the region expressed due to enhanced efforts of territorial extension by Russia and i.a. expressed thorough enhances enlargement efforts of NATO in the early 2000s and continued to deteriorate not last due to Russia’s annexation of the Crimea in 2014. With the ongoing war, the Black Sea now turned into a highly tens region, with the “neutral” player Türkiye acting as mediator and international great powers, especially the US and the EU, extending their sphere of influence in the region.<sup>50</sup> With three border countries in the NATO (Bulgaria, Romania and Türkiye), two of them also part of the European Union (Bulgaria and Romania), the Black Sea is considered a geopolitical not and a border area between western powers on one side and RU on the other side. Some of the goals of the geographical west, however, albeit united by shared values, differ from each other. While the primary concern of the European Union’s foreign policy is focussed on the stabilization, security and the Unions access to energy resources in the region, the US is set to hinder the extension of Russia’s sphere of influence, creating a barrier from a Russia, that sees itself threatened by the open-door policy supported by NATO and the EU.<sup>51</sup>

In addition, Chinas role in the region is significantly increasing, although it remains still rather insignificant when compared to other countries. With the thought of protecting its own interest, primarily of economic nature, at the core of its evaluations, China supports efforts set to reduce further economic disruptions. To some of the regional players in the Black Sea a similarly important role is attributed. Türkiye, Romania and Bulgaria are as geopolitically relevant as is their action during the ongoing war in Ukraine. Türkiye and Romania, in particular, are considered to become strong players in terms of ensuring naval and trade security and boosting regional cooperation once the war has ended. Now, in times of war, Romania’s importance already increased through its option of offering alternative trade routes along roads, rails and routes along the Danube River, which are urgently needed in view of the trade difficulties in

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<sup>49</sup> Tatlioglu, Erman. “Geopolitics of the Black Sea after the Cold War: State and Prospects.” *Genesis: исторические исследования*, no. 2 (February 28, 2023): 74–85. <https://doi.org/10.25136/2409-868x.2023.2.39682>.

<sup>50</sup> Tatlioglu, Erman, *Geopolitics of the Black Sea after the Cold War: State and Prospects*.

<sup>51</sup> Nate, Silviu, Antonia Colibășanu, Andriy Stavvytsky, and Ganna Kharlamova, *Impact of the Russo-Ukrainian War on Black Sea Trade: Geoeconomic Challenges*.

the Black Sea.<sup>52</sup> Türkiye, which assumes a geo-identity of neutrality or “precious loneliness”<sup>53</sup>, decided to follow an independent foreign policy, keeping ties with both Russia and Ukraine as well as brokering between the latter in its position as mediator. With this, it could gain a great benefit from the war, extending its power significantly. In distinction to other regional powers, Türkiye has a strong army and navy and is highly involved in the region’s energy infrastructure.<sup>54</sup> Additionally, according to the 1936 Montreux Convention, it holds – and makes use of – the right to restrain naval traffic to and from Black Sea through the Turkish Straits, making its role pivotal in terms of both security issues and secure trade flows.<sup>55</sup>

Security and trade flows, in particular, are of uttermost importance in the light of the Russian aggression in Ukraine. With the conflict heavily disrupting trade, Russia’s and Ukraine’s importance for trade has been highlighted. Taken into consideration that Russia is not only an immensely important geopolitical player in the Black Sea, but also a considerable economic power, rising tensions – and escalations thereof – have enormous effects on global economy, including global trade.

For Russia the Black Sea is crucial for the states trade policies, as agricultural exports are primarily shipped via trade routes in a sea important due to its logistically beneficial position. The Black Sea trade routes have further proved beneficial for Russia since the beginning of the war, as they enable shipments to countries, that have not imposed sanctions on Russia and therefore provide alternative sources of income to compensate economic losses. Despite owning a small percentage of the coastline under international law, Russia exerts significant influence over the region. Throughout history it made sure to project dominance over larger parts of the coastline than it is attributed. It’s control over parts of the Black Sea coastline has been reinforced through regional conflicts, such as the 2008 intervention in Georgia and the 2014 annexation of Crimea. Currently Russia exercises dominance over about one third about the Black Seas coastline and it is the predominant naval power. In particular, the country’s Black Sea fleet (BSF), headquartered in Sevastopol, Crimea, was seen as a critical military asset for projecting power in the Mediterranean, Middle East, North Africa, and Southern Europe.<sup>56</sup>

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<sup>52</sup> Nate, Silviu, Antonia Colibășanu, Andriy Stavitsky, and Ganna Kharlamova, *Impact of the Russo-Ukrainian War on Black Sea Trade: Geoeconomic Challenges*.

<sup>53</sup> Karagiannis, Emmanuel. “The Clash of Geo-Identities in the Black Sea.” *Georgetown Journal of International Affairs* 24, no. 2 (November 30, 2023): 211–17. <https://doi.org/10.1353/gia.2023.a913648>.

<sup>54</sup> Tatlioglu, Erman, *Geopolitics of the Black Sea after the Cold War: State and Prospects*.

<sup>55</sup> Wölfer, Klaus. “Turkey and the Black Sea Region after Ukraine.” *GIS Reports*, April 20, 2022. <https://www.gisreportsonline.com/r/black-sea/>.

<sup>56</sup> Latschan, Thomas. “The Black Sea’s Role in Russia’s War on Ukraine – DW – 09/14/2023.” *dw.com*, September 14, 2023. <https://www.dw.com/en/the-black-sea-plays-a-key-role-in-russias-war-on-ukraine/a-66517223>

Early in the Ukraine conflict, it faced significant challenges from Ukrainian anti-surface and drone capabilities, which contested its dominance. As a result, the Black Sea fleet shifted from an offensive to a defensive posture, prioritizing protection and detection tasks while adapting to the prolonged conflict and therefore turning more resilient.<sup>57</sup> However, since autumn 2023, Ukraine has further achieved significant victories in the maritime domain, crippling around 30% of Russia's Black Sea Fleet. Unexpectedly, it has managed to outmanoeuvre the Russian Navy despite limited naval resources. Utilizing missile systems and unmanned drone boats, Ukraine has crippled a significant portion of the Russian fleet, disrupting supply lines to occupied southern Ukraine. Consequently, the Russian BSF has relocated major assets away from Crimea due to vulnerabilities. Russia's naval operations in the northwest Black Sea have ceased, showcasing Ukraine's effective maritime strategy. Regarding the war, Ukraine's achievements challenge the notion of a stalemate and suggest that Ukraine can inflict substantial damage on Russian forces.<sup>58</sup> Additionally, the closure of the Turkish Straits under the Montreux Convention limited NATO's presence in the Black Sea also again created logistical challenges for the Russian Black Sea Fleet<sup>59</sup>. Despite it turning more resilient and Russia remaining a formidable force on land and air, Russian dominance in the BS is continuously being challenged due to war-related losses, which is why Türkiye moves to the centre of attention. Its strategic position and naval capabilities make it crucial in countering Russian control.<sup>60</sup>

The current powerplay in the BS, however, has immense economic consequences, especially on trade relations. The Black Sea remains crucial for Russia's economic trade, in particular for oil exports, making the safe navigation of commercial vessels a priority.<sup>61</sup> The same applies to Ukraine, whose grain is primarily shipped via Black Sea ports. Still, it is Russia that heavily impeded shipments in the Black Sea, though blocking trade routes, withdrawing from the Black Sea Grain Initiative in July 2023 and increasingly deploying sea mines since its drop out. Through the establishment of the grain export corridor near the western Black Sea coast,

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<sup>57</sup> Delanoë, Igor. "Russia's Black Sea Fleet in the 'Special Military Operation' in Ukraine." Foreign Policy Research Institute, February 7, 2024. <https://www.fpri.org/article/2024/02/russias-black-sea-fleet-in-the-special-military-operation-in-ukraine/>.

<sup>58</sup> Hockenos, Paul. "Ukraine Is Winning the War's Other Front." Foreign Policy, April 2, 2024. <https://foreignpolicy.com/2024/04/02/ukraine-war-black-sea-russia-front/>. and Boyse, Matthew, George Scutaru, Mykhailo Samus, and Antonia Colibasanu. "The Battle for the Black Sea Is Not Over." Hudson Institute, April 16, 2024. <https://www.hudson.org/security-alliances/battle-black-sea-not-over-matthew-boyse-george-scutaru-mykhailo-samus-antonia-colibasanu>.

<sup>59</sup> Delanoë, Igor, *Russia's Black Sea Fleet in the 'Special Military Operation' in Ukraine*.

<sup>60</sup> Latschan, Thomas. "The Black Sea's Role in Russia's War on Ukraine – DW – 09/14/2023." dw.com, September 14, 2023. <https://www.dw.com/en/the-black-sea-plays-a-key-role-in-russias-war-on-ukraine/a-66517223>.

<sup>61</sup> Latschan, Thomas, *The Black Sea's Role in Russia's War on Ukraine – DW – 09/14/2023*.

Ukrainian ports around Odesa are again operating at full capacity, with grain exports returning to prewar levels. This maritime route, hugging NATO-member coasts, has been crucial for Ukraine's economy, but nevertheless the presence of naval mines further complicates maritime activities. Ukrainian ports and shipping, also along the latter mentioned route, remain at risk from Russian disruption.<sup>62</sup>

Possible future disruptions would be particularly harmful as Russia and Ukraine are major suppliers of agricultural produce, in the Black Sea basin – key area for agricultural exports – as well as globally. Prior to the war Russia and Ukraine were accountable for 30% of the global barley and wheat exports and both figured among the top five exporters of wheat, barley, sunflower seeds and maize.<sup>63</sup> Together, both countries, were responsible for 18% of global grain exports.<sup>64</sup> Prior to the war, Ukraine alone exported 60 million tons of grain, a total of 10% of the global market.<sup>65</sup> Additionally, it supplied about half of the global markets sunflower oil and a fifth of the world's global barley market, earning it the name “breadbasket of Europe”<sup>66</sup>. For the country, agriculture provided over 40% of its revenue.<sup>67</sup> Exports were primarily shipped to the Middle East and North Africa, with 90% of its wheat exports going to Africa and Asia between 2026 and 2021.<sup>68</sup> However, in addition to some North African countries like Egypt or Libya, it also supplied considerable amounts of maize to the EU and China. Russia, besides playing a major role as a grain producer, is also a crucial exporter of gas and fertilizer. Its primary goods of export are indeed oil and gas, accounting for a large share of its revenue.<sup>69</sup> Russia comprises 11% of the global oil exports and additionally, supplies about 13 % of the global fertilizer market.

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<sup>62</sup> Hockenjos, Paul, *Ukraine Is Winning the War's Other Front*. and Boyse, Matthew, George Scutaru, Mykhailo Samus, and Antonia Colibasanu, *The Battle for the Black Sea Is Not Over*.

<sup>63</sup> Lin, Faqin, Xuecao Li, Ningyuan Jia, Fan Feng, Hai Huang, Jianxi Huang, Shenggen Fan, Philippe Ciaia, and Xiao-Peng Song. “The Impact of Russia-Ukraine Conflict on Global Food Security.” *Global Food Security* 36 (March 2023): 100661. <https://doi.org/10.1016/j.gfs.2022.100661>.

<sup>64</sup> Hickson, Alice. “Beyond the Black Sea Grain Initiative: Combating Food Insecurity Amid the Russia-Ukraine War.” New Lines Institute, September 19, 2023. <https://newlinesinstitute.org/geo-economics/food-security/beyond-the-black-sea-grain-initiative-combating-food-insecurity-amid-the-russia-ukraine-war/>.

<sup>65</sup> Berman, Noah, and Mariel Ferragamo. “How Ukraine Overcame Russia's Grain Blockade.” Council on Foreign Relations, February 27, 2024. <https://www.cfr.org/article/how-ukraine-overcame-russias-grain-blockade>.

<sup>66</sup> “Reviving Ukraine's Breadbasket.” FAO Investment Centre | Food and Agriculture Organization of the United Nations | Support to Investment | Food and Agriculture Organization of the United Nations. Accessed June 5, 2024. <https://www.fao.org/support-to-investment/news/reviving-the-breadbasket/en/>.

<sup>67</sup> Berman, Noah and Ferragamo, Mariel, *How Ukraine Overcame Russia's Grain Blockade*.

<sup>68</sup> “Food Security and Affordability.” European Council. Accessed June 4, 2024. <https://www.consilium.europa.eu/en/policies/food-security-and-affordability/>.

<sup>69</sup> “Russia's Trade and Investment Role in the Global Economy.” Congressional Research Service, January 17, 2023. <https://crsreports.congress.gov/product/pdf/IF/IF12066>.

Consequently, the otherwise beneficial proximity of the Black Sea to the Middle East and North Africa, now shows its flip side: Countries that had established thorough trade routes with both Ukraine and Russia, are now just as affected by the growing tensions in the Black Sea area. With agricultural produce and fertilizers being the main export commodities of Ukraine and Russia, the consequences are severe and the risk to food security in countries that are crucially dependent on these exports is heavily heightened.

## 4. Methodology

Against the backdrop of the Russian Aggression in Ukraine, which largely disrupted the global food trade, this paper aims to identify how food security strategies put in place impacted the food insecurity in the Middle East and North Africa (MENA), previously enhanced by the war. In order to conduct a well-balanced research, three different food security strategies will be analysed in a comparative approach. The three Case Studies of choice are: The Black Sea Grain Initiative, the EU-Solidarity Lanes Action Plan and the Grain From Ukraine Initiative. I propose to compare those three initiatives, because, while following the same objective – namely reintroducing vital exports from Ukraine –, all three Strategies follow a different structure and organisation and use a different set of methods. Assessing and comparing the efficiency and the criticisms around those three initiatives might help to identify how crisis induced Food Security issues are best addressed.

The analysis of these cases will further evolve around the following questions:

- How, if so, did the Black Sea Grain Initiative, the EU-Solidarity Lanes Action Plan and Grain From Ukraine Initiative impact the level of food insecurity in the MENA region?
- In which aspects did they differ and was this difference decisive for their outcome?
- Which approaches work best when combating conflict induced food insecurity?

In order to answer this questions, recent academic literature will be used and announcements as well as policy briefs from the FAO, the WFP and the World Bank will be assessed. Additionally, data obtained from media reports, statistical analysis and relevant articles from admissible journals will be taken into consideration. For the analysis of trade flows additional data will be assessed and interpreted.

In the interest of achieving the best possible result, this work focussed on the time after the unprovoked Russian invasion in Ukraine on 24<sup>th</sup> of February 2024. While historical might add further value to this paper, the main analysis will focus on the period after February 2022.

## 5. Strategies

### 5.1. Black Sea Grain Initiative

By July 2022 the Black Sea Grain Initiative, a comprehensive agreement governing the safe passage of agricultural goods in the Black Sea was implemented through the signing of two Memoranda of Understanding, between on the one hand Ukraine and Türkiye, governing the safe export of grain out of Ukraine, and on the other hand Russia and Türkiye on the reintroduction of Russian food and fertilizers to the global market.<sup>70</sup> The agreement brokered by the U.N. and Türkiye partially reopened the Black Sea for the shipping of agricultural goods, allowing crucial agricultural goods to leave the country. Thus, following its implementation, significant quantities of grain have been exported under the supervision of a U.N. Joint Coordination Centre, entrusted with the implementation and the oversight until the termination of the agreement. First concluded for a total of 120 days, the BSGI was extended twice, despite Russian hesitation and threats of suspension. A fourth prolongation, however, lacked Russian support, leading to the termination of the BSGI in July 2023. In the period between July 22 2022 and July 17 2023, a total of 32.9 Million metric tons of grain, mostly corn and wheat, left the ports of Odesa, Chornomorsk, Pivdennyi (Yuzhnyi) on their way to Türkiye and beyond.<sup>71</sup> 725.000 tonnes of the latter have been shipped by the World Food Programme (WFP) alone to i.a. Ethiopia, Somalia and Yemen through operations for humanitarian support, including but not limited to the “Grain from Ukraine” programme. Shortly after its termination, the fear of a renewed decline in grain exports after the end of the so-called Grain Deal materialised. However, as other alternative export routes have also been established in the meantime and countries have partially adapted to the initially sudden trade disruption, trade numbers rose again.

The Black Sea Grain has significantly shaped the debate on the safe export of agricultural produce from Ukraine and hence food security in the Middle East and North Africa. In the following analysis chapters, the economic, political and legal effects and implications thereof are discussed in more detail.

### 5.2. Solidarity lanes

Between May 2022 and February 2024 about 126 million tons of goods could be exported from Ukraine and approximately 47 million tons imported. Of the goods exported, about 43% were

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<sup>70</sup> “Russia-Ukraine Black Sea Grain Deal: All You Need to Know.” Al Jazeera, July 17, 2023. <https://www.aljazeera.com/news/2023/7/17/russia-ukraine-black-sea-grain-deal-all-you-need-to-know>.

<sup>71</sup> “Black Sea Grain Initiative | Background.” United Nations. Accessed May 3, 2024. <https://www.un.org/en/black-sea-grain-initiative/background>.

shipped via Black Sea ports through the BSGI; the other 57% left the country via alternative logistical routes either established or enhanced through the implementation of the EU-Ukraine Solidarity Lanes Action Plan. Imports, ranging from military goods and fuel to humanitarian aid, were solely made by those alternative land routes and inland waterways.<sup>72</sup> The EU-Ukraine Action Plan for Solidarity Lanes, informally referred to as Solidarity Lanes, was put in place on 12 May 2022 and envisioned the establishment of alternative and optimised logistical routes for agricultural goods via road, rail or inland waterways to facilitate Ukraine's agricultural export and enhance bilateral trade between the Member States of the EU and Ukraine. Assessing the key bottlenecks in the export of foodstuffs the European Commission in its Action Plan additionally highlights the need for other market players to provide and support Ukraine with freight rolling stock, vessels and lorries, in order to overcome obstacles in the transport of goods, emerging inter alia from differently sized rail gauges and insufficient availability of special machinery. Equally, the existing transport network and transshipment capacities must be used more efficiently as well as custom operations simplified and accelerated. Likewise, existing storage capacity in the EU shall be made available for temporary storage of grain from Ukraine and thus ensure that the current crops can be harvested, and new seeds can be sown.<sup>73</sup> In order for these goals to be reached, the package included autonomous trade measures (ATMs), waiving tariffs and quotas for the import of agricultural produce from Ukraine to the EU.<sup>74</sup>

Financed <sup>75</sup>by the EU, the latter, together with partner institutions, has contributed more than 2 billion euros to the Solidarity Lanes project, investing in capacity building, repair works and the liquidity of the contractors, over the past two years. Besides Ukraine, especial emphasis was put on Moldova, with whom an additional transport agreement has been signed in the frame of the Solidarity Lanes action plan, allowing for enhanced produce transportation via roads.<sup>72</sup> With crucial transportation routes going from Moldova through Ukraine, Moldavian trade was heavily affected by the current war.<sup>76</sup> Thus, on 29 June 2022, the EU and Moldova entered a

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<sup>72</sup> "Solidarity Lanes: Latest Figures – February 2024." European Commission: Directorate-General for Mobility and Transport, March 21, 2024. [https://transport.ec.europa.eu/news-events/news/solidarity-lanes-latest-figures-february-2024-2024-03-21\\_en](https://transport.ec.europa.eu/news-events/news/solidarity-lanes-latest-figures-february-2024-2024-03-21_en).

<sup>73</sup> "Food Security and Affordability - Consilium.Europa.Eu." Council of the European Union. Accessed May 3, 2024. <https://www.consilium.europa.eu/en/policies/food-security-and-affordability/>. and European Commission, "An action plan for EU-Ukraine Solidarity Lanes to facilitate Ukraine's agricultural

<sup>74</sup> Dodd and Welsh, „Fracturing Solidarity: The Grain Trade Dispute between Ukraine and the European Union“.

<sup>75</sup> "EU-Ukraine Solidarity Lanes: European Commission." EU Solidarity with Ukraine. Accessed June 7, 2024. [https://eu-solidarity-ukraine.ec.europa.eu/eu-assistance-ukraine/eu-ukraine-solidarity-lanes\\_en](https://eu-solidarity-ukraine.ec.europa.eu/eu-assistance-ukraine/eu-ukraine-solidarity-lanes_en).

<sup>76</sup> "Supporting Ukrainian Exports and Improving Connections to the EU: Eu Strengthens Cooperation with Ukraine and Moldova." European Commission , June 29, 2022.



special Agreement on the Carriage of Freight by Road. With this agreement Moldova was opened the possibility to enhance road exports from Moldova to the EU, helping it access bigger markets in- and outside of the EU. The agreement has additionally greatly strengthened the Solidarity Lanes and has recently been extended until 31 December 2025.<sup>77</sup>

Moreover, with the Solidarity Lanes action plan, the first step was taken to integrate both Ukraine and Moldova in the Trans-European Transport (TEN-T) Network. The TEN-T policy aims to develop a high-quality, multimodal transport infrastructure across the EU, enhancing connectivity, economic growth, and environmental sustainability. It consists of core and comprehensive networks, with key corridors, four of which shall be extended to Ukraine and Moldova, to better connect their (agricultural) markets with the EU and world markets. Currently, the TEN-T regulation is being revised to align with the European Green Deal and Sustainable and Smart Mobility Strategy. Using the momentum, the European Commission amended the formerly submitted proposals for revision of December 2021 in July 2022, adding the envisioned extension of the four European Transport Corridors to Ukraine and Moldova.<sup>78</sup>

Albeit this product of European solidarity was indeed at first a striking success in enhancing Ukrainian export, especially due to the lift of import quotas and tariffs for its products, the programme faced headwinds from most of Ukraine's neighbouring countries. The so-called "frontline five", namely Poland, Romania, Hungary, Slovakia and Bulgaria, quickly observed that subsidised agricultural products from Ukraine were flooding their national markets and lowering prices. Intended primarily for transit, grain and related produce, got stuck in Ukraine's neighbouring countries and constituted an "unfair competition"<sup>79</sup> for the local farmers to compete with. The local farmers income consequently reduced, leading to an increasing number of voices demanding their respective government to implement trade restrictions on Ukrainian produce.<sup>80</sup> In Poland, for example, it was observed by the EU, that a total of 3.4. Million tons of Ukrainian grain of the whole of 4.1. Million tons that entered the country between April 2022

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<sup>77</sup> Bonini, Emanuele. "Road Transport, EU-Moldova Agreement Extended until Dec. 31, 2025." Eunews, March 26, 2024. <https://www.eunews.it/en/2024/03/26/road-transport-eu-moldova-agreement-extended-until-dec-31-2025/>.

<sup>78</sup> "Commission Amends Ten-T Proposal to Reflect Impacts on Infrastructure of Russia's War of Aggression against Ukraine." European Commission - Directorate-General for Mobility and Transport, July 27, 2022. [https://transport.ec.europa.eu/news-events/news/commission-amends-ten-t-proposal-reflect-impacts-infrastructure-russias-war-aggression-against-2022-07-27\\_en](https://transport.ec.europa.eu/news-events/news/commission-amends-ten-t-proposal-reflect-impacts-infrastructure-russias-war-aggression-against-2022-07-27_en). and "Trans-European Transport Network (TEN-T)." European Commission. Accessed June 7, 2024. [https://transport.ec.europa.eu/transport-themes/infrastructure-and-investment/trans-european-transport-network-ten-t\\_en](https://transport.ec.europa.eu/transport-themes/infrastructure-and-investment/trans-european-transport-network-ten-t_en).

<sup>79</sup> "EU to Tighten Control over Ukraine's Grain Exports to Ease Farmers' Concerns." Ukrainska Pravda, March 1, 2024. <https://www.pravda.com.ua/eng/news/2024/03/1/7444603/>.

<sup>80</sup> Dodd, Emma and Welsh, Caitlin. "Fracturing Solidarity: The Grain Trade Dispute between Ukraine and the European Union." Center for Strategic and International Studies, February 20, 2024.

and March 2023, stayed within the country, despite the lack of intention, reason being that the transport routes in the neighbouring countries are equally bad equipped and fail to deal with the large export volumes coming from Ukraine.<sup>81</sup> Consequently, costs for exporting Ukrainian produce along the Solidarity Lanes, existing road, rail and water infrastructure increased.<sup>82</sup>

In response to this deemed unfair competition, polish authorities creased to the pressure of their population and introduced unilateral import bans against Ukrainian grain on 19 April 2023, following unsuccessful mitigation attempts by the European Union. On 23 May a compromise was reached between the “frontline five” and the EU, when the latter adopted exceptional and temporary preventative measures. These measures included tariff waivers, import quotas as well as safeguard measures and were coordinated and supervised by a Joint Coordination Platform. Set to expire on September 15, 2023, the agricultural ministries of Poland, Romania, Hungary, Slovakia and Bulgaria made a joint declaration on 23 July, demanding the extensions of the ban to further prevent possible destabilization of the agricultural market. The EU, having assessed that the market has stabilized, however, left it to expire, whereupon Hungary, Poland and Slovakia resumed state-level bans on domestic sale. The EU’s decision of 31 January 2024 to extend ATMs for Ukraine further exacerbated the situation, leading to the resumption of trucks blocking the polish-ukrainian boarder, this time completely. Subject to political manoeuvres, diplomatic efforts and diverging public opinion, further negotiations remained without significant compromise for months.<sup>83</sup> On 29 April of this year, the last boarder crossing between Poland und Ukraine has been unblocked, after farmers were supposedly influenced by a speech by polish Prime Minister Donald Tusk. The Prime Minister was urging truck drivers and farmers to stop road-blocking activities, referring himself to the necessity not to harm Ukraine – a question of solidarity, which will be further elaborated on. Additionally, farmers have previously been granted subsidies in the height of 522 million dollars by their government, which tries to absorb newly emerging costs.<sup>84</sup>

### 5.3. Grain From Ukraine

On 26 November 2022, the 90<sup>th</sup> anniversary of the Ukrainian Famine in the 1930s– Holodomor – another food programme was introduced, supplementing the BSGI and the Solidarity Lanes.

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<sup>81</sup> “How Much Grain Is Ukraine Exporting and How Is It Leaving the Country?” BBC News, April 2, 2024. <https://www.bbc.com/news/world-61759692>.

<sup>82</sup> Dodd and Welsh, „Fracturing Solidarity: The Grain Trade Dispute between Ukraine and the European Union“.

<sup>83</sup> Dodd and Welsh, „Fracturing Solidarity: The Grain Trade Dispute between Ukraine and the European Union“.

<sup>84</sup> Filippov, Anton. “Why Polish Farmers Agreed to Unblock Border with Ukraine.” European Pravda, April 24, 2024. <https://www.eurointegration.com.ua/eng/news/2024/04/25/7184640/>. and “Polish Farmers Suspend Blockade of Ukraine Border.” Al Jazeera, April 29, 2024. <https://www.aljazeera.com/news/2024/4/29/polish-farmers-suspend-blockade-of-ukraine-border>.

With the programme “Grain From Ukraine”, President Volodymyr Zelenskyy, in cooperation with the UN World Food Programme, launched a humanitarian food programme aiming at aiding countries on the verge of famine through the supply with grain. Supplied free of charge this programme was envisioned to combat acute food shortages, malnutrition and therefore food insecurity in a number of countries, identified as recipients by the UN WFP, Ukraine and the programme’s partner countries as those in the biggest need for assistance. In the frame of “Grain From Ukraine” agricultural products are directly purchased from local farmers in Ukraine by countries and International Organisations that chose to be part of this initiative and consequently transported across the Black Sea to the target country. Ukraine supports, helps and advises in matters of grain purchase and logistics. By introducing this project, Ukraine underlines its commitment to living up to its role as a major grain and foodstuff provider for countries in North Africa and the Middle East and thereby combating food insecurity. “Grain From Ukraine” currently lists a number of partner countries and IOs, that have decided to join the initiative. Jointly, as of November 2023, about 170 000 tons of grain could be exported via more than 150 ships to countries in need, among those Ethiopia, Somalia, Kenya and Yemen.<sup>85</sup>

On the second International Summit on Food Security, after having been launched on the first one one year prior, “Grain from Ukraine” President Zelenskyy stressed the importance of the initiative and Ukraine as a major food supplier. He had noted that 34 countries and organisations had joined the initiative in its first year and more than 25 countries have contributed a total of USD 220 million to the initiative. Collaborative effort in financing transportation of wheat or direct donations of the latter have made it possible to address food induced humanitarian crisis. Thus, the programme has proved successful and is planned to expand further, noted the President.<sup>86</sup>

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<sup>85</sup> “Grain from Ukraine.” Ministry of Foreign Affairs of Ukraine, March 14, 2024. <https://mfa.gov.ua/en/grain-ukraine>. and Paul, Amanda. “‘Grain from Ukraine’ Continues to Ensure Global Food Security.” Welcome to EPC - European Policy Centre, November 27, 2023. <https://www.epc.eu/en/publications/-Grain-from-Ukraine-continues-to-ensure-global-food-security~560964>.

<sup>86</sup> “Joint Statement of the International Summit ‘Grain from Ukraine.’” Official website of the President of Ukraine, November 25, 2023. <https://www.president.gov.ua/en/news/spilna-zayava-mizhnarodnogo-samitu-zerno-z-ukrayini-87269>. and “Ukrainian Grain Donation Bolsters WFP’s Response in Northeast Nigeria amidst Inflation and Food Price Spikes: World Food Programme.” UN World Food Programme, February 29, 2024. <https://www.wfp.org/news/ukrainian-grain-donation-bolsters-wfps-response-northeast-nigeria-amidst-inflation-and-food>.

## 6. Comparative analysis

In the following sections the economic, political, and legal dimensions of the strategies, as well as possible security implications, will be presented and analysed in the frame of a comparative analysis.

### 6.1. Economic dimension

#### 6.1.1. Price-level developments

The economic shock caused by Russia's aggression in Ukraine has heavily influenced food price levels. While the costs of food and fertilizers had already been heightened due to several factors, including the COVID-19 pandemic, unfavourable harvests, and droughts ascribable to changes in the climate as well as a generally observed rise in global demand, the war in Ukraine further exacerbated the situation, leading to sharp increases in wheat and maize prices. For Western countries the tackling of the consequences of rising energy costs has been a priority high on the agenda since the beginning of the war, while in the Middle East and North African concerns about rising food prices, influenced by rising fertiliser and the before-mentioned energy prices, surpassed the latter.<sup>87</sup>

In March 2022 food prices have reached an all-time high, remaining elevated until early summer, when the Black Sea Grain Initiative allowed the trade routes to be reopened in the Black Sea. Following a decline to prices at pre-war levels by December 2022, costs for foodstuff further declined until January 2024, when the FAO noted that agricultural commodity prices were at the lowest compared to the past three years.<sup>88</sup> Still, despite global food prices falling, many countries experienced a rise in local food prices. In the MENA region, high food levels, high inflation coupled with collapsing currencies could be observed. Lebanon and Syria have been hit the hardest, with food inflation at 138% and 105%, respectively, while Iran, Türkiye, and Egypt faced over 61% inflation in early 2023 and even higher percentages in the following months. The combination of high inflation, currency depreciation, and stagnant incomes has left many households struggling to afford basic food items.<sup>89</sup>

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<sup>87</sup> Ben Hassen, Tarek, and Hamid El Bilali. "Conflict in Ukraine and the Unsettling Ripples: Implications on Food Systems and Development in North Africa." *Agriculture & Food Security* 13, no. 1 (April 8, 2024). <https://doi.org/10.1186/s40066-024-00467-3>.

<sup>88</sup> Welsh, Caitlin. "Russia, Ukraine, and Global Food Security: A Two-Year Assessment." CSIS, February 27, 2024. <https://www.csis.org/analysis/russia-ukraine-and-global-food-security-two-year-assessment#:~:text=Because%20of%20Russia's%20invasion%20of,lowest%20level%20in%20three%20years.https://www.csis.org/analysis/russia-ukraine-and-global-food-security-two-year->

<sup>89</sup> "Food Inflation and Currency Collapse Threaten Food Security in Middle East and North Africa: World Food Programme." UN World Food Programme, March 23, 2023. <https://www.wfp.org/news/food-inflation-and->

To further demonstrate, the rise in food prices, the Grain and Oilseeds Index (GOI) of the International Grains Council (IGC) will be used to demonstrate price trends for the seven key commodities reflected by the index, namely wheat, maize, barley, sorghum, rice, soybeans, and rapeseed, which in addition are important export commodities of Ukraine. The trade-weighted index shall thus underline the strong effect of the Russia-Ukraine war on commodity prices. Secondly, the second index established by the IGC called the IGC Grains and Oilseeds Freight Index (GOFI) attempts to reflect freight costs in the trade of grains and oilseeds, inter alia wheat, rice, maize, barley, and soybeans, on a weekly basis and as accurately as possible and thus calculate the average cost of transportation. This index covers 68 shipping routes from major exporting regions such as Argentina, Australia, Brazil, the Black Sea, Canada, the EU, and the USA.<sup>90</sup> Besides commodity prices, prices for transportation of the latter are crucially impacting the quantity of goods supplied.

Figure 1: IGC Grains and Oilseeds Index (GOI)



Source: <https://www.igc.int/en/markets/m1> Source: <https://www.igc.int/en/markets/marketinfo-go1.aspx>

Figure 1 shows the price development of the seven agricultural commodities mentioned above on a global level. Albeit the data at hand has not only been subject to the impacts of the ongoing Russian aggression in Ukraine, but considers a global level impacted by shocks in various countries, the consequences of the first

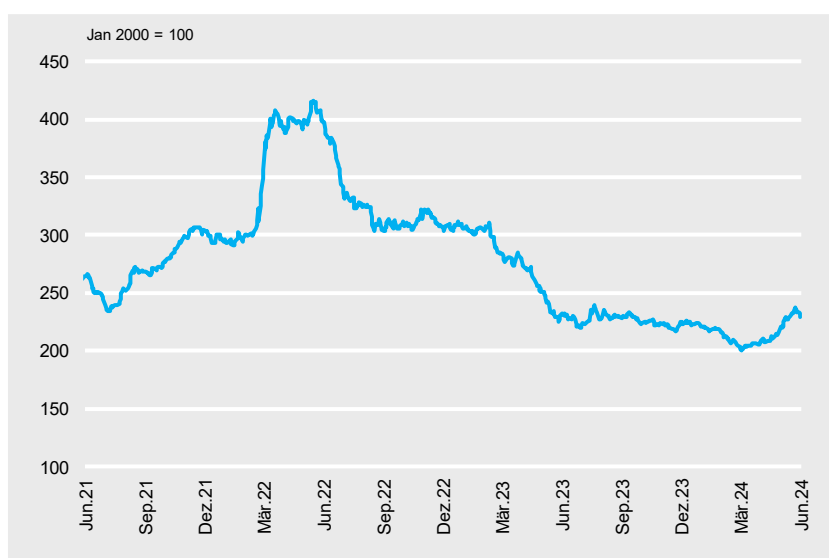
are nevertheless visible, reason being their severity. Similarly, to what has been mentioned, spikes in prices can be observed in March of 2022, one month after the invasion started, showing the market's reaction to Russia's invasion. Thereafter, price levels dropped between July and August, which can possibly be argued by the launch of BSGI. The following months,

currency-collapse-threaten-food-security-middle-east-and-north-africa. and "Lebanon Food Inflation." Trading Economics. Accessed June 7, 2024. <https://tradingeconomics.com/lebanon/food-inflation>.

<sup>90</sup> "IGC Creates Global Grains and Oilseeds Index." WorldGrain, April 11, 2016. <https://www.world-grain.com/articles/622-igc-creates-global-grains-and-oilseeds-index>.

the market slowly adopted to the initial shock, except for another rise during the summer of 2023, probably in reaction to increased blockings of ports in the BS, shedding light on the interconnectedness of price developments and trade. Figure 2, showing the global price development of barley, elucidates this point with greater clarity, given that this commodity is a critical export for both Ukraine and Russia. Subsequent data on trade developments will further underline the described tendencies, leading to the conclusion, that the market was responsive to the BSGI, which had a considerable positive impact on price and trade levels.

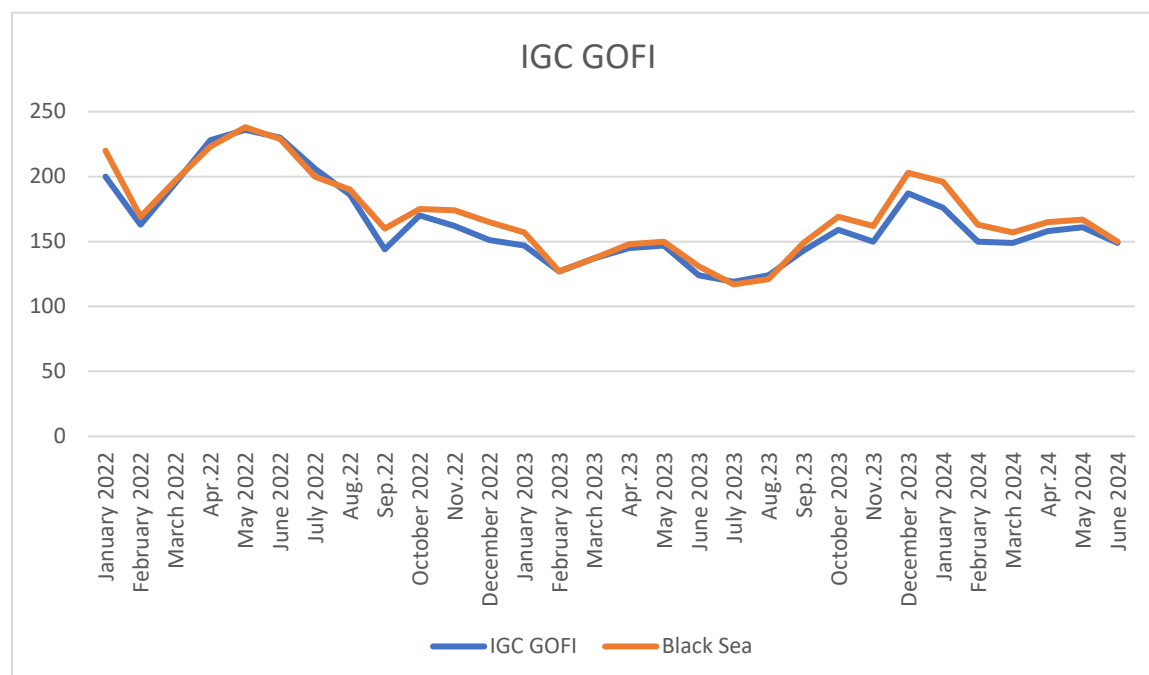
Figure 2: IGC Grains and Oilseeds Index -Barley



Source: <https://www.igc.int/en/markets/m2> Source: <https://www.igc.int/en/markets/marketinfo-goi.aspx>

The IGC Grains and Oilseeds Freights Index presented in Figure 3 indicated the level of freight costs world-wide and in the Black Sea in particular. Since the beginning of the war the Black Sea was used as an additional battlefield on the front between Ukraine and Russia and thus faced increasing security concerns, as will be consequently elaborated. Hence, freight transport costs rose and still rise in parallel with geopolitical tension in the region. Figure 3 clearly illustrated this trend, with generally lower freight costs for grain and oilseed in the period between July 2022 and July 2023.

Figure 3: IGC Grains and Oilseeds Freight Index (GOFI)



Source: International Grains Council. Accessed June 7, 2024. The IGC Grains and Oilseeds Freight Index (GOFI) uses the first week of January 2013 as its base value, setting the index at 100.91

Additionally, the cost of goods that are purchased and distributed through initiatives of humanitarian aid by organizations like the WFP and UNICEF has gone up due to rising global food costs, leading to increased expenses for the latter in times when emergency services and in-kind assistance is urgently needed.<sup>92</sup> Reason for why the WFP is in need for additional financial support.<sup>93</sup> By establishing the “Grain From Ukraine” initiative such support could have been gained and additional aid to countries facing severe levels of food security provided, as exemplified by a shipment of 25,000 tons of wheat from Ukraine to Nigeria in early 2024 that was co-financed by nine countries.<sup>94</sup>

Worldwide grain and oilseeds prices reflect changes in supply and demand among major countries involved in their production, consumption, import, and export. Thus, the evaluation

<sup>91</sup> “Freight Rates - Methodology.” International Grains Council. Accessed June 7, 2024. And “Freight Rates - Data.” International Grains Council. Accessed June 7, 2024. <https://www.igc.int/en/markets/marketinfo-freight.aspx>. and “IGC Creates Global Grains and Oilseeds Index.” WorldGrain, April 11, 2016. <https://www.world-grain.com/articles/622-igc-creates-global-grains-and-oilseeds-index>.

<sup>92</sup> Welsh, Caitlin. “Russia, Ukraine, and Global Food Security: A Two-Year Assessment.” CSIS, February 27, 2024. <https://www.csis.org/analysis/russia-ukraine-and-global-food-security-two-year-assessment#:~:text=Because%20of%20Russia's%20invasion%20of,lowest%20level%20in%20three%20years.https://www.csis.org/analysis/russia-ukraine-and-global-food-security-two-year->

<sup>93</sup> Welsh, Caitlin, *Russia, Ukraine, and Global Food Security: A Two-Year Assessment*.

<sup>94</sup> “Ukrainian Grain Donation Bolsters WFP’s Response in Northeast Nigeria amidst Inflation and Food Price Spikes - Nigeria.” ReliefWeb, February 29, 2024. <https://reliefweb.int/report/nigeria/ukrainian-grain-donation-bolsters-wfps-response-northeast-nigeria-amidst-inflation-and-food-price-spikes>.

of both commodity prices as well as transport related costs is crucial, as they indicate on one hand where crisis hot-spots might emerge and on the other hand point to shifts in policies, such as strengthening trade relations or changes in government stockpiling and purchasing strategies, which again significantly impact global food prices and their volatility, thus informing economic and political decisions.<sup>95</sup>

### 6.1.2. Trade

Food security hinges on effective trade systems. Ensuring access to nutritious food requires open, fair trade. However, current trade systems face economic challenges like market-distorting subsidies and export restrictions as well as those directly originating from crisis.<sup>96</sup> The ongoing war in Ukraine has since the beginning severely disrupted food supply chains leading from Ukraine to China, the EU, Asia, the Middle East and Africa.<sup>97</sup> Since its beginning, a significant increase in trade policy measures related to food and fertilizer has been observed, as nations have actively employed these policies to react to threats on their economy. However, little have shown great success. Especially those countries, that have been heavily reliant on imports from Ukraine prior to the war, as have been Egypt, Türkiye, Mongolia, Georgia and Azerbaijan, face great challenges.<sup>98</sup> The MENA region, already experiencing significant food security issues before the war and heavily dependent on imports from Ukraine, was particularly affected by trade disruptions. The risk of food insecurity among the populations rose dramatically in a region where agricultural imports accounted for 22% of the regions total import of goods in 2020. Still, even though the countries in the Middle East and North Africa share common challenges due to inter alia similar geographical features and climatic conditions, a country-level analysis is necessary to properly assess impact of war. In the light of the limited scope of this paper the focus will thus be put on Egypt. In 2020, Egypt, the world's largest wheat importer, imported close to 85% of their wheat from Russia and Ukraine, figuring among

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<sup>95</sup> Bangar Raju, Totakura, Ayush Bavise, Pradeep Chauhan, and Bhavana Venkata Ramalingeswar Rao. "Analysing Volatility Spillovers between Grain and Freight Markets." *Pomorstvo* 34, no. 2 (December 21, 2020): 428–37. <https://doi.org/10.31217/p.34.2.23>.

<sup>96</sup> "Food Security Rests on Trade - OECD." OECD, February 28, 2019. <https://www.oecd.org/agriculture/food-security-rests-on-trade/>.

<sup>97</sup> "Ukraine Grain Exports by Country 2023." Statista, July 2023. <https://www.statista.com/statistics/1333847/ukrainian-agricultural-exports-via-the-black-sea-by-country/#:~:text=China%20was%20the%20leading%20export,Spain%2C%20while%20Turkey%20ranked%20t> hird.

<sup>98</sup> Lin, Faqin, Xuecao Li, Ningyuan Jia, Fan Feng, Hai Huang, Jianxi Huang, Shenggen Fan, Philippe Ciais, and Xiao-Peng Song. "The Impact of Russia-Ukraine Conflict on Global Food Security." *Global Food Security* 36 (March 2023): 100661. <https://doi.org/10.1016/j.gfs.2022.100661>.



their biggest importers and constituting the perfect example for a deeper analysis of possible effects of the BSGI.<sup>99</sup>

The consequent analysis of UN data on trade flows shows what has already been concluded by researchers in the field<sup>100</sup>: an immensely positive impact of the Black Sea Grain Initiative on supply chains and trade flows in the Black Sea as well as globally. The following four graphs show global exports from Ukraine for four of its main commodities, wheat, grain, barely and maize, between January 2022 and February 2024. The exported quantities of the latter will be analysed against the background of key events of the two major food security strategies at hand, the Black Sea Grain Initiative, and the Solidarity Lanes. A conclusion shall be drawn about which of the two mentioned strategies contributed, and if so, in what regard to fostering secure export from Ukraine. The “Grain From Ukraine” programme, as of different nature without an primarily economic focus, will be spared in this chapter.

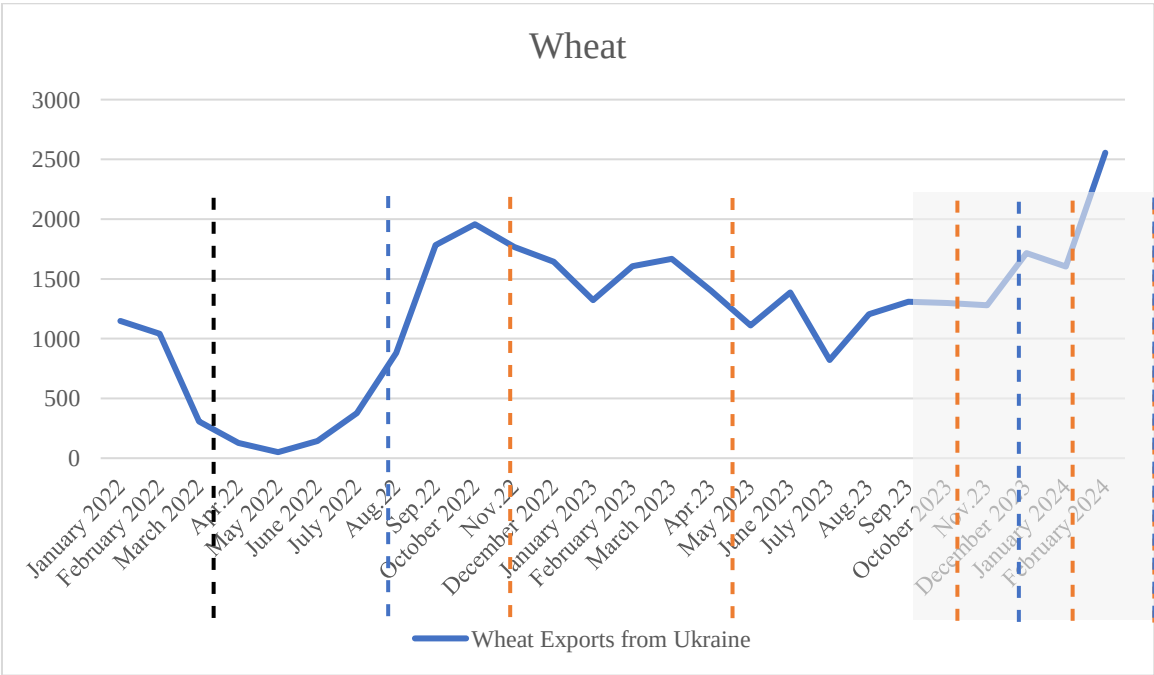
For reasons of simplicity and better visibility the key moments indicated in the following graph, which are to be equally applied to the other three on Grain, Barley and Maize exports, are displayed in the table below. In the graph itself, the colours orange, for the BSGI (Black Sea Grain Initiative), and blue, for SL (Solidarity Lanes), shall serve as a guidance.

| <i>Date</i>                      | <i>Key Event</i>                                                               |
|----------------------------------|--------------------------------------------------------------------------------|
| <i>February 2022</i>             | Invasion of Ukraine                                                            |
| <i>May 2022</i>                  | Establishment of SL                                                            |
| <i>July 2022</i>                 | Initiation of the BSGI with the first shipment being shipped on 01 August 2022 |
| <i>November 2022</i>             | 1 <sup>st</sup> extension of the BSGI                                          |
| <i>March 2023</i>                | 2 <sup>nd</sup> extension of the BSGI                                          |
| <i>April 2023</i>                | Unilateral import bans on Ukrainian goods                                      |
| <i>May 2023</i>                  | 3 <sup>rd</sup> extension of the BSGI                                          |
| <i>May 2023 – September 2023</i> | Compromise between the EU and the “frontline five”                             |
| <i>July 2023</i>                 | Russia terminates BSGI                                                         |
| <i>January 2024</i>              | EU extends ATMs for Ukraine                                                    |

<sup>99</sup> “Russia’s Aggression against Ukraine and Impacts in the MENA Region.” Navigating beyond COVID-19 : Recovery in the MENA Region | OECD iLibrary. Accessed June 7, 2024. <https://www.oecd-ilibrary.org/sites/c4fce555-en/index.html?itemId=%2Fcontent%2Fcomponent%2Fc4fce555-en#back-endnotea0z3>.

<sup>100</sup> Kormych, Borys, Tetyana Averochkina, and Liudmyla Kormych. “Black Sea Grain Initiative: Bringing Lawfare to Conventional Armed Conflict.” Australian Journal of Maritime & Ocean Affairs, February 12, 2024, 1–18. <https://doi.org/10.1080/18366503.2024.2316455>.

Figure 4. **Global Wheat Exports from Ukraine between January 2022 and February 2024**  
total wheat imports in million kilograms



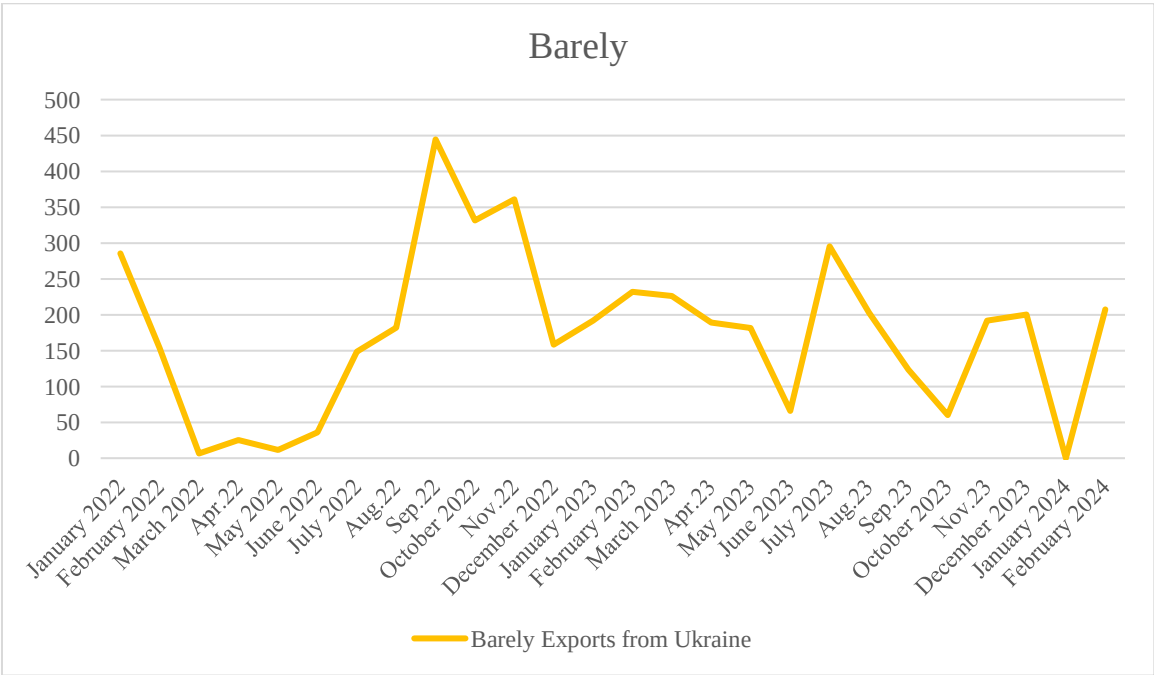
Source: UN Comtrade database. This data was downloaded using the following tariff line: HS 1001 (wheat).

Figure 5. **Global Grain Exports from Ukraine between January 2022 and February 2024**  
total grain imports in kilogram



Source: UN Comtrade database. This data was downloaded using the following tariff line: HS 1007 (grain).

Figure 6. **Global Barley Exports from Ukraine between January 2022 and February 2024**  
total barley imports in million kilograms



Source: UN Comtrade database. This data was downloaded using the following tariff line: HS 1003 (barley).

Figure 7. **Global Maize Exports from Ukraine between January 2022 and February 2024**  
total maize exports in million kilograms

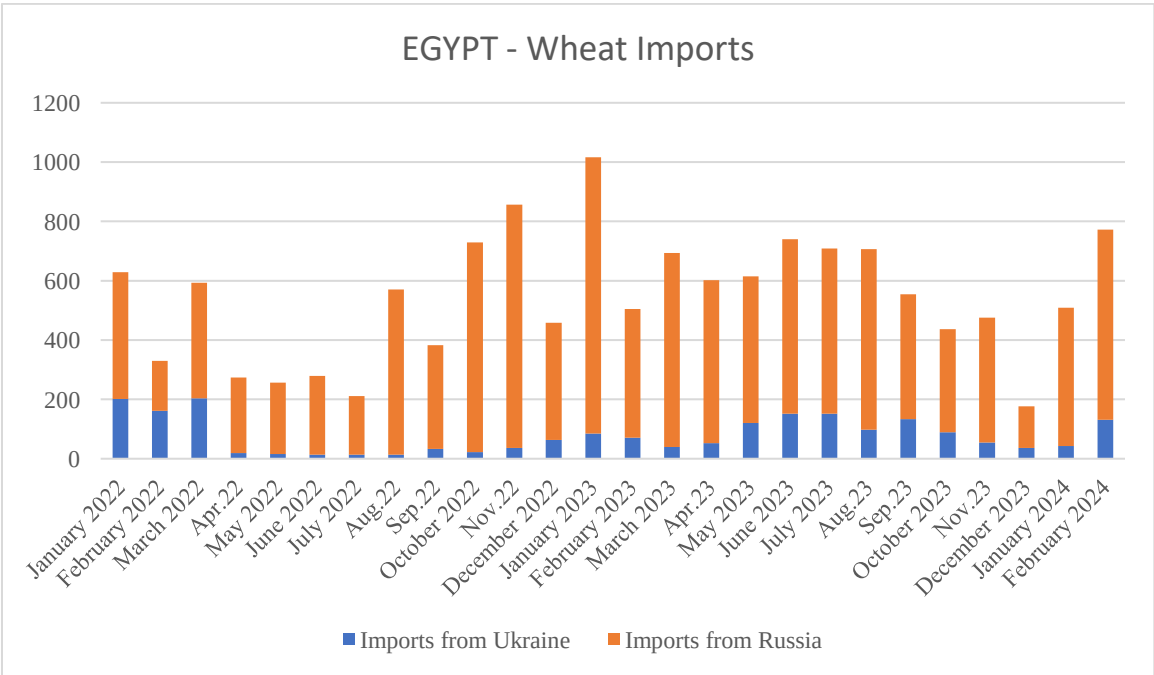


Source: UN Comtrade database. This data was downloaded using the following tariff line: HS 1005 (maize).

By analysing the figures, a clear correlation between the strategies deployed and the trade flows of wheat, grain, barely and maize can be observed. However, interestingly, each commodity

reacted with a different intensity, allowing conclusions to be drawn about which commodity has been transported in which way. Nevertheless, what all commodities have in common, is a growth in export numbers once the market had absorbed the initial shock of the Russian aggression in 2022. Followingly, barley, wheat and maize exports have seemingly risen after the deblocking of Ukrainian Black Sea ports in July 2022, whereas grain exports appear to have resumed quicker through new road, rail and alternative waterway shipments provided through the EU Solidarity Lanes. Still, both the BSGI and the Solidarity Lanes, elaborated in the framework of the EU, are not the only strategies that have been put in place in order to reopen trade routes from and to Ukraine. Hence, additional policy action may deceive this conclusion, however, assumably only to a minor extend as the strategies at hand are by far the strongest ones launched so far.

Figure 8. **Wheat Imports of Egypt from Ukraine and Russia between January 2022 and February 2024**  
total wheat imports in million kilograms

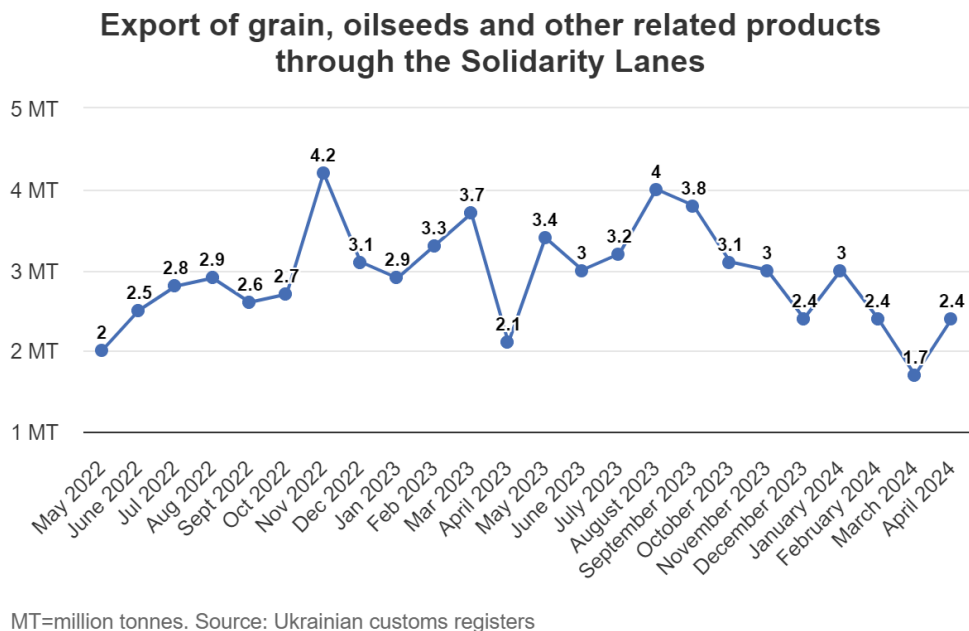


Source: UN Comtrade database. This data was downloaded using the following tariff line: HS 1001 (wheat).

Figure 8 takes a closer look on the country level. It illustrates first, Egypt’s dependency on primarily Russian, but also Ukrainian wheat imports and secondly, a slow adaption, similar to what can be observed in regard to price-levels. Moreover, the figure shows that Russian exports to Egypt, similarly to those originating from Ukraine, varied over time and thus have been equally, albeit to a smaller extend, affected by the ongoing war. However, for Russia, disrupted trade routes play but a minor role in comparison to economic sanctions, which Russia identified as primary reason for the decline in Russian exports. This argumentation is repeatedly used by

Russia to avert the international community's attention from blocked ports by blaming sanctions for primarily disrupting food supply lines and consequently enhancing food insecurity threats. Albeit not wrong in essence, restrictive measure, compared to damages caused by destroying agricultural infrastructure while waging a war in Europe’s declared breadbasket, outweighs the first mentioned.

Through the Solidarity Lanes at total of more than 61 million tonnes of Ukrainian grain, oilseeds and other products have been exported between March 2022 and January 2024, thus, about 60% of Ukraine’s grain was able to be transported via road, rail and ports on the Danube, out of the country since the beginning of the conflict.<sup>101</sup> Based on the graph below, the key developments of the Solidarity Lanes programme, including the imposition of unilateral trade measures in April 2023, can be observed.<sup>102</sup>



The findings elaborated above are in line with what scholars had previously found: First, the Russian-Ukraine war had a server impact on the global agri-food-price and trade market, secondly, the Black Sea Grain Initiative had a major influence on price-levels in the short term and thirdly, the long term effect of the BSGI is smaller, as consequence of enhanced resilience to shocks through adjustments in planting and storage decisions in Ukraine and trade

<sup>101</sup> FSIN and Global Network Against Food Crisis. “Global report on food crises (GRFC) 2024“, Rome: 2024. <https://www.fsinplatform.org/report/global-report-food-crises-2024/>.  
<sup>102</sup> “EU-Ukraine Solidarity Lanes: European Commission.” EU Solidarity with Ukraine. Accessed June 7, 2024. [https://eu-solidarity-ukraine.ec.europa.eu/eu-assistance-ukraine/eu-ukraine-solidarity-lanes\\_en](https://eu-solidarity-ukraine.ec.europa.eu/eu-assistance-ukraine/eu-ukraine-solidarity-lanes_en).

diversification towards new partners.<sup>103</sup> In terms of reducing transportation costs, the Black Sea Initiative, has clearly shown most effective, as the Black Sea remains the biggest trade hub and routes through the latter the most efficient trading routes in place once operating smoothly. Still, rising insurance costs for freights, in the Black Sea, albeit positively affected by the implementation of the BSGI, will remain a factor to be considered, given the regions unstable security situation. Overall, the BSGI managed to achieve its humanitarian goal of reducing prices and enhancing export (about 17.8 million tonnes of grain and foodstuffs between August 2022 and January 2023<sup>104</sup>) and thus, having a major economic impact. The Solidarity Lanes in turn, have had less of an impact cost and trade wise, as alternative trade routes through other countries are confronted with equally economic and bureaucratic hurdles, adding to the overall cost of shipment.<sup>105</sup> However, they provided a crucial alternative, when ports have been blocked, enabling significant quantities of Ukrainian foodstuffs to leave the country.

## 6.2. Political dimension

The war in Ukraine has a wide range of political implications and so do the strategies employed to combat food insecurity threats caused by the latter. Against the backdrop of the powerplay in the Black Sea area, observing the behaviour of the most important players, intending to extend their power in the region, is highly interesting. While Türkiye manifests its position by assuming the role of the mediator, thereby strengthening its position in the Black Sea and becoming increasingly important in view of the post-conflict-landscape, Russia uses different means during its war on Ukraine to further extend its scope of influence. Even though there is a wide array of measures Russia is taking to strengthen its position in the current war in Ukraine, the focus of the following analysis will be set on one of the latter, as consequence of the limited scope of this paper.

In the war in Ukraine, Russia is using food as a weapon to exert power. In early 2022, Dmitry Medvedev, former president of Russia holding the position of deputy chairman of the Russian Security Council since 2020, referred to food as Russia's "silent weapon. Quiet but

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<sup>103</sup> Poursina, Davood, K. Aleks Schaefer, Sidany Hilburn, and Tuff Johnson. "Economic Impacts of the Black Sea Grain Initiative." *Journal of Agricultural Economics* 75, no. 1 (May 25, 2023): 457–64. <https://doi.org/10.1111/1477-9552.12549>.

<sup>104</sup> "Hunger Map Data - Year in Review 2023." WFP. Accessed June 7, 2024. <https://static.hungermapdata.org/insight-reports/latest/global-summary.pdf>.

<sup>105</sup> Kormych, Borys, Tetyana Averochkina, and Liudmyla Kormych. "Black Sea Grain Initiative: Bringing Lawfare to Conventional Armed Conflict." *Australian Journal of Maritime & Ocean Affairs*, February 12, 2024, 1–18. <https://doi.org/10.1080/18366503.2024.2316455>.

formidable.”<sup>106</sup> By August 2023, President Vladimir Putin further added that Russia “has the capacity to replace Ukrainian grain, both commercially and as free aid to needy countries.”<sup>107</sup> With this, Russia first, declared openly that it will use food as a weapon in its war against Ukraine and secondly, that it intends to further “replace Ukraine” in its role as a major grain supplier. Russia therefore weakens its opponent by depriving it from crucial revenue made through agricultural exports, while taking advantages of the shortfall caused by Ukraine's losses.<sup>108</sup>

Russia is using agricultural exports as a soft power and, while morally highly questionable, the strategy bore fruits: albeit it is unclear whether Russia exported more to countries, which were, and are still, in smaller quantities, recipients of major shares of Ukrainian agricultural produce, total numbers show that Russian export of key agricultural commodities has increased while Ukrainian exports have decreased since 2022.<sup>109</sup>

As will be elaborated further on, by using food as a weapon, Russia is breaching international law, in particular violating International Humanitarian Law, endangering populations. With supplying food, free of charge or supporting shipments in the framework of the UN to vulnerable countries highly dependent on imports, Russia is pursuing, albeit critical food imports are undoubtedly important, a cause that is far from noble, but rather pointing to the very nature of the weaponization of food.<sup>110</sup> While many Heads of States and the EU urge Russia to stop its actions, little can be done to ultimately incentivise Russia to end this practice.

Hence, ways have to be found to weaken Russia's “weapon” either through humanitarian initiatives, like “Grain From Ukraine”, alternative trade routes or financial aid. By doing so, it is important that a common approach is taken, tackling security challenges together in the framework of International Organisations or bilateral agreements, for joint efforts lead to better outcomes. The “Black Sea Grain Initiative”, for instance, sets a great example for joint cooperation. Furthermore, financial, military as well as declaratory support are crucial for Ukraine to strengthen its position.

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<sup>106</sup> Kern, Franz. “Russian Regime Calls Food Its ‘Silent Weapon.’” Commodity Board Europe GmbH, April 5, 2022. <https://commodity-board.com/russian-regime-calls-food-its-silent-weapon/>.

<sup>107</sup> Sebastian, Clare. “Analysis: Russia Wields ‘silent Weapon’ of Grain Exports to Weaken Ukraine | CNN Business.” CNN, October 5, 2023. <https://edition.cnn.com/2023/10/05/economy/russia-wheat-exports-ukraine-war/index.html>.

<sup>108</sup> Welsh, Caitlin, and Joseph Glauber. “Food as the ‘Silent Weapon’: Russia's Gains and Ukraine's Losses.” CSIS, February 29, 2024. <https://www.csis.org/analysis/food-silent-weapon-russias-gains-and-ukraines-losses>.

<sup>109</sup> Welsh, Caitlin, and Joseph Glauber, *Food as the ‘Silent Weapon’: Russia's Gains and Ukraine's Losses*.

<sup>110</sup> “Russia Must Stop Using Food as a Weapon.” EEAS, August 2, 2023. [https://www.eeas.europa.eu/delegations/kyrgyz-republic/russia-must-stop-using-food-weapon\\_en?s=301](https://www.eeas.europa.eu/delegations/kyrgyz-republic/russia-must-stop-using-food-weapon_en?s=301).

In that regard, a highly precarious question has been raised with the implementation of the Solidarity Lanes, namely the question of solidarity. More precisely, weighing solidarity with another state against one's own interests. While the majority of states worldwide, including most of Ukraine's closest neighbours, condemn Russia's unjustified aggression in Ukraine, for it proves difficult to show solidarity once one's own interests are jeopardised, as was the case in Poland, Romania, Hungary, Slovakia and Bulgaria. When the latter mentioned governments started to impose import bans on Ukrainian goods, President Zelenskyy harshly criticised the situation, calling it an "erosion of solidarity" with Ukraine. He was joined by other EU member states outside of eastern Europe, claiming that blockades endanger the "European Project". And while rightfully so, the governments of the "frontline five" had to cease to the pressure coming from within their countries and take measures to protect their economy. With Ukraine filing a complaint against import bans of the beforementioned countries with the WTO in autumn 2023 and voicing threats to use retaliatory restrictions, Polish president Andrzej Duda reminded Ukraine that they are in fact supporting the country, despite having to impose import restrictions on Ukrainian agricultural produce. Additionally, threats were made to revoke military aid, by both Polish prime minister Morawiecki and Slovakia's now prime minister Fico. Both politicians voiced this threat right before elections were held in their country, inter alia showing how the rhetoric and challenges of the war are used for accumulating votes. However, the threats never materialised and both countries continued to support Ukraine. Still, with rising inconsistencies among allies, Russia's position is strengthened and the Solidarity Lane project, albeit good in essence, consequently weakened.<sup>111</sup>

### 6.3. Security dimension

Furthermore, with the war in Ukraine waging, the Black Sea has turned into a war zone. Thus, in addition to export restrictions, production difficulties and blocking of seaports, security concerns have been added due to sea mines and drone attacks launched by both Russia and Ukraine. The Sea itself turned into a battlefield, underlining serious security issues in the Black Sea, inter alia related to food security. Thus, even though ports are open for shipments to leave Ukraine with vital exports of grain and other foods, insurance costs for freight shipments are increasingly high, again impeding proper trade flows.

Following Russia's withdrawal from the BSGI in July 2023, a noticeable increase in the deployment of sea mines in the Black Sea was observed, posing a threat for shipments in the

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<sup>111</sup> Dodd, Emma, and Caitlin Welsh. "Fracturing Solidarity: The Grain Trade Dispute between Ukraine and the European Union." CSIS, February 20, 2024. <https://www.csis.org/analysis/fracturing-solidarity-grain-trade-dispute-between-ukraine-and-european-union>.



area and disrupted Ukraine's Black Sea export routes. While the sea mines, deployed by Russia since the beginning of the war, were primarily meant to target grain shipments coming from Ukraine as well as port facilities of the latter, several commercial ships have also been hit. Hence, in January 2024, six months after the termination of the BSGI, Türkiye, Romania, and Bulgaria have signed a trilateral agreement to clear mines in the Black Sea to enhance shipping safety, especially for grain vessels from Ukraine. The Memorandum of Understanding, which was signed in Istanbul on January 11, establishes a Mine Countermeasures Task Group among the three NATO allies.<sup>112</sup> An estimate of 400 to 500 mines have been deployed in the Black Sea by Russia and Ukraine since the beginning of the war.<sup>113</sup>

The joint operation will deploy minesweepers and minehunters, supported by helicopters and drones from each country, to protect shipping lanes.<sup>114</sup> For now, the initiative is limited to these three nations, whereof, from a Romanian stance, only Türkiye has the expertise and equipment necessary to operate efficiently.<sup>115</sup> It may expand to include other Black Sea states after the war. While the effort is intended to be peaceful and won't involve new NATO vessels, it signifies regional cooperation and could pave the way for greater NATO involvement in ensuring maritime security in the Black Sea.<sup>116</sup> Nonetheless and despite efforts to clear the Black Sea from sea mines, shipping companies might consider the risk as too high and opt for not to operate in the Black Sea at all. This, in consequence, reduces the number of export freighters, hence the number of exports, and as a result fails to minimise food insecurity threats in the Middle East and North Africa.

#### 6.4. Legal dimension

Followingly, the legal dimension of the food insecurity implications of the Russian aggression in Ukraine will be looked at from two stance. First, the role of food and protectory mechanisms to ensure food security and prevent the use of food as a weapon in times of war will be

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<sup>112</sup> “NATO Allies Turkey, Romania, Bulgaria Sign Deal to Clear Black Sea Mines.” Al Jazeera, January 11, 2024. <https://www.aljazeera.com/news/2024/1/11/nato-allies-turkey-romania-bulgaria-sign-deal-to-clear-black-sea-mines>.

<sup>113</sup> Wesolowsky, Tony, and Georgi A. Angelov. “The Battle to Clear the Black Sea of Mines.” RadioFreeEurope/RadioLiberty, January 14, 2024. <https://www.rferl.org/a/black-sea-mines-ukraine-russia-shipping-turkey-bulgaria-romania/32773644.html>.

<sup>114</sup> *NATO Allies Turkey, Romania, Bulgaria Sign Deal to Clear Black Sea Mines*.

<sup>115</sup> Mihai, Catalina, and Sebastian Rotaru. “Romania Approves Participation in the Black Sea Mine Clearance Initiative.” *www.euractiv.com*, April 23, 2024. <https://www.euractiv.com/section/politics/news/romania-approves-participation-in-the-black-sea-mine-clearance-initiative/>.

<sup>116</sup> Nakamura, Hotaka. “Sweeping the Minefield: The Case for a NATO Black Sea Fleet.” Middle East Institute, March 19, 2024. <https://www.mei.edu/publications/sweeping-minefield-case-nato-black-sea-fleet>.

summarised. The second part will concern the legal implications of the three core strategies of this thesis.

The right to food is a human right and was legally recognized in the Universal Declaration of Human Rights Art. 25 and further referred to in the 1966 legally binding International Covenant on Economic, Social and Cultural Rights. It was repeatedly recognized in International Human Rights Conventions and is, by now, a well-established human right with clearly defined normative content. It imposes specific obligations on states to respect, protect, and fulfil this right, which extends to international trade practices. The UN Committee on Economic, Social and Cultural Rights emphasizes that human rights obligations, including the right to food, are applicable to international trade institutions and organizations like the EU. However, the right to food does not have explicit legal bases in EU primary sources. Countries must ensure that international trade laws and treaties do not hinder the realization of the right to food.<sup>117</sup>

In addition, the International Criminal Law and International Human Rights Law provide several regulations that aim to ensure food security in times of war and limit the effect of armed conflict on the latter. For instance, Article 54 the Protocol Additional to the Geneva Conventions of 12 August 1949, relating to the Protection of Victims of International Armed Conflicts (Protocol I) from 8 June 1977, to which both Russia and Ukraine are party, prohibits the deliberate starvation of civilians as a tactic of war. Protocol I also offers increased legal safeguards for “objects indispensable to the survival of the civilian population”, which include but are not limited to food and food-related infrastructure, and regulates humanitarian access to vulnerable populations. Moreover, the use of starvation of civilians as a means of warfare accounts as a war crime under the Rome Statute Art.8(2)(b)(xxxv) of the International Criminal Court (ICC).<sup>118</sup> With Ukraine having accepted jurisdiction of the ICC, a basis was laid for the application of Art. 8 of the Statute.<sup>119</sup> Protective rules in other sectors, as for example in regard to environmental regulations, may additionally help protect food and water systems.<sup>120</sup> Based

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<sup>117</sup> “Challenges of Implementing a Human Rights Approach to Food Security and Nutrition.” HLPE - High Level Panel of Experts, June 16, 2023. <https://www.fao.org/cfs/cfs-hlpe/insights/news-insights/news-detail/challenges-of-implementing-a-human-rights-approach-to-food-security-and-nutrition/en>. and Gruni, Giovanni. “The Right to Food in International Law.” *The EU, World Trade Law and the Right to Food : Rethinking Free Trade Agreements with Developing Countries*, 2018, 15–42. <https://doi.org/10.5040/9781509916238.ch-002>.

<sup>118</sup> Dannenbaum, Tom. “What You Need to Know: International Humanitarian Law and Russia’s Termination of the Black Sea Grain Initiative.” *Just Security*, July 28, 2023. <https://www.justsecurity.org/87414/what-you-need-to-know-ihl-and-russias-termination-of-the-black-sea-grain-initiative/>.

<sup>119</sup> Dannenbaum, Tom. “Legal Frameworks for Assessing the Use of Starvation in Ukraine.” *Just Security*, April 22, 2022. <https://www.justsecurity.org/81209/legal-frameworks-for-assessing-the-use-of-starvation-in-ukraine/>.

<sup>120</sup> Dannenbaum, Tom, *What You Need to Know: International Humanitarian Law and Russia’s Termination of the Black Sea Grain Initiative*.

on these provisions, national criminal codes have initiated investigations into suspected war crimes in Ukraine.<sup>121</sup>

In the past, starvation as a method of war, was often overlooked. A major political step and sign of unity towards combating future atrocious acts of food deprivation, was taken in 2018, when the UN Security Council unanimously adopted Resolution 2471, strongly condemning “starving of civilians, [and] unlawfully denying humanitarian access as warfare tactics”.<sup>122</sup> With the Resolution, a relation was made between conflict and food insecurity, caused by the latter. Its parties explicitly urged anyone from refraining from using food as a weapon and the Security Council reminded of the possibility of imposing sanctions if needed. Russia, part of the Security Council, despite recognising the influence of conflicts on food insecurity, however, downplayed the latter as one factor among others, inter alia unilaterally imposed restrictive measure, which impede trade flows.<sup>123</sup> A similar argumentation can currently be observed, with Russia blaming western sanctions for rising food insecurity concerns in developing countries.<sup>124</sup>

While there is a strong voice against Russia using food as a weapon, urging Russia to stop, accusing it of the weaponization of food and warning it, it is difficult and a politically delicate act trying to stop it from doing so. Russia, as food proves as an effective weapon, will continue using its soft weapon until it does no longer work – the circumstances considered, a highly unlikely scenario. The EU and the US, therefore, support efforts to resume the BSGI and strengthen alternative initiatives aiming at enhancing food security, inter alia the EU Solidarity Lanes<sup>125</sup>, as a means to weaken Russia’s precious weapon.<sup>126</sup> Additionally, increased financial support for effective countries might reduce their need for Russian imports and minimizing its gains. Furthermore, as has been elaborated, a legal framework to combat the crime of weaponizing food is available. The application, however, is subject to hurdles, through time consuming procedures, interpretive questions, and the burden of prove. Albeit diplomatic measures might therefore be more efficient in short time, the legal measure in place provide a solid basis for

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<sup>121</sup> Dannenbaum, Tom. *Legal Frameworks for Assessing the Use of Starvation in Ukraine*.

<sup>122</sup> “Adopting Resolution 2417 (2018), Security Council Strongly Condemns Starving of Civilians, Unlawfully Denying Humanitarian Access as Warfare Tactics | Meetings Coverage and Press Releases.” United Nations, May 24, 2018. <https://press.un.org/en/2018/sc13354.doc.htm>.

<sup>123</sup> UN Meetings Coverage and Press Release, *Adopting Resolution 2417 (2018), Security Council Strongly Condemns Starving of Civilians, Unlawfully Denying Humanitarian Access as Warfare Tactics*.

<sup>124</sup> Bove, Tristan. “Kremlin Blames Western Sanctions for the Global Food Shortage, Not Russia.” *Fortune*, May 24, 2022. <https://fortune.com/2022/05/24/kremlin-blames-western-sanctions-for-global-food-crisis/>.

<sup>125</sup> EEAS, *Russia Must Stop Using Food as a Weapon*.

<sup>126</sup> EEAS, *Russia Must Stop Using Food as a Weapon*. and Nichols, Michelle. “Blinken Accuses Russia of Using Food as a Weapon in Ukraine | Reuters.” *Reuters*, May 20, 2022. <https://www.reuters.com/world/europe/bliken-accuses-russia-using-food-weapon-ukraine-2022-05-19/>.

holding Russia accountable.<sup>127</sup> Now it is of the essence to gather evidence, as is currently done by a groups of human right lawyers, who are working together with Ukraine's public prosecutor in preparing a war crimes dossier to be submitted to the ICC by the end of 2024.<sup>128</sup>

The Black Sea Grain Initiative itself, is considered remarkable for its choice of legal regime, as the agreements rules are neither exclusively related to peacetime nor wartime regulations. Despite, the fact that there exists a legal regime applicable for guaranteeing neutral shipping in times of armed conflict under the Law of Armed Conflict (LOAC), the parties opted to base it on treaties meant to govern the safety of merchant ships, namely the International Convention for the Safety of Life at Sea (SOLAS) and the International Ship and Port Facility Security Code (ISPS Code). Reason being that the conflict between Russia and Ukraine was not directly addressed. Thus, there is a disagreement among experts regarding the binding effect of the two agreements of the BSGI; primarily the Initiative on the Safe Transportation of Grain and Foodstuffs from Ukrainian Ports and secondarily the Memorandum of Understanding between the Russian Federation and the Secretariat of the United Nations on promoting Russian food products and fertilisers to the world markets. While one camp views the agreement as is a internationally binding treaty, the other argues that the agreement is of pure political nature, based on the fact that the reason or the need of the initiative, namely the Russian aggression, was never directly addressed. While it is without doubt, that if directly mentioned, Russia would not have signed any agreement, the solution opted for is criticised as regulations can be circumvented due to loose formulations.<sup>129</sup>

The EU Solidarity Lanes in turn have been introduced in the form of an action plan by the European Commission. As such, it shall help to facilitate coordination between stakeholders, but does not regulate the commercial agreements between the operators and Ukraine. However, the sole establishment of the Solidarity Lanes entailed another implication. As closer cooperation between Ukraine and European operators is envisioned, one step further is taken in terms of Ukraine's rapprochement with the EU.<sup>130</sup>

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<sup>127</sup> Dannenbaum, Tom. *Legal Frameworks for Assessing the Use of Starvation in Ukraine*.

<sup>128</sup> Sabbagh, Dan. "War Crimes Dossier to Accuse Russia of Deliberately Causing Starvation in Ukraine." *The Guardian*, September 24, 2023. <https://www.theguardian.com/world/2023/sep/24/war-crimes-dossier-to-accuse-russia-of-deliberately-causing-starvation-in-ukraine>.

<sup>129</sup> Kormych, Borys, Tetyana Averochkina, and Liudmyla Kormych. "Black Sea Grain Initiative: Bringing Lawfare to Conventional Armed Conflict." *Australian Journal of Maritime & Ocean Affairs*, February 12, 2024, 1–18. <https://doi.org/10.1080/18366503.2024.2316455>.

<sup>130</sup> "Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. An Action Plan for EU-Ukraine Solidarity Lanes to Facilitate Ukraine's Agricultural Export and Bilateral Trade with the EU." EUR-Lex. Accessed June 8, 2024. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022DC0217>.

Grain From Ukraine in turn is a humanitarian food programme by nature and not directly subject to any law, although based on the notion of food as a human right.

## 7. Conclusion

The Black Sea Grain Initiative (BSGI), the EU Solidarity Lanes, and the Grain From Ukraine programme represent distinct strategies to address the heightened food security concerns resulting from the Russia-Ukraine war. Each strategy has a different structure and outcome, reflecting their unique approaches to addressing the crisis. These initiatives are particularly significant for the Middle East and North Africa (MENA) regions, which have been severely impacted. Each strategy aims to support the region through various means, such as food supplies and financial assistance, as exemplified by the Grain From Ukraine programme.

The BSGI has facilitated the safe transportation of grain and other foodstuffs from Ukrainian ports, mitigating the immediate disruption of food supplies. However, its effectiveness is debated due to the loose formulations in its agreements, which some experts argue may allow for circumvention of regulations. Still, its deployment has demonstrated the potential efficacy of similar tools in the future. The EU Solidarity Lanes have been introduced as an action plan to enhance coordination between stakeholders, promoting closer cooperation between Ukraine and European operators. This initiative has also symbolized a step toward Ukraine's closer integration with the EU. The Grain from Ukraine programme, primarily a humanitarian effort, has aimed to provide direct food assistance based on the notion of food as a human right. This programme, in addition, has played a crucial role in supporting vulnerable populations, particularly in regions severely affected by the war's impact on food security.

The analysis of the three strategies at hand indicates that the Black Sea Grain Initiative provided an effective short-term solution by temporarily facilitating Ukrainian grain exports. However, due to the agreement's instability, Solidarity Lanes may prove more resilient in a long-term. To prevent situations like Russia's deliberate delays in freight checks, increased participation from impartial intermediaries responsible for implementing and organizing such agreements is recommended. While the Solidarity Lanes are less favourable in the short term compared to the BSGI due to their impact on trade relations with neighbouring countries, they highlight the importance of international cooperation over bilateral agreements and the importance of solidarity among parties pursuing the same interests. This is particularly crucial in countering the destruction of food and agricultural infrastructure by Russia as well as its weaponization of food. Nonetheless, the Solidarity Lanes underscored the necessity of considering all parties' interests to maintain continuous support and cooperation.

In terms of trade, the Solidarity Lanes proved most efficient in substituting exports when Black Sea corridors were blocked. Despite this, Black Sea ports remain most vital for transporting Ukrainian and Russian grain and food exports. Thus, the BSGI was essential for securing safe exports to MENA countries. The Grain From Ukraine programme, a humanitarian initiative, provided critical assistance to the region, demonstrating international solidarity and alleviating pressure from high prices. However, it also relied on secure trade corridors in the Black Sea.

Despite these efforts, the persistent volatility and risks in the Black Sea region continue to pose substantial threats to global food security. The ongoing war will undoubtedly impact food security and power dynamics in the region. Türkiye, currently a mediator in the conflict, is likely to assume a strengthened position in a post-war scenario. The conflict's ongoing nature underscores the need for robust international cooperation and innovative policy solutions. Adaptive strategies and continuous vigilance are essential to address the challenges and ensure stable food supply chains in the future.

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