# THE IMPACT OF THE WAR ON THE COUNTRY'S FOOD SECURITY IN MODERN CONDITIONS OF SOCIO-ECONOMIC DEVELOPMENT

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Abstract: The article makes an attempt to systematize theoretical provisions, experience, good practices, and cases. In the field of the provision of food security in territorial coomunities during armed conflicts. Global approaches to food security are analyzed, and the correlations between food insecurity and the intensity of war conflicts is traced. The article considers, in particular, cases of Ukraine and African countries. It is shown that good governance on local level is crucial in tackling the root causes of food insecurity.

Keywords: local self-government; territorial community; regional administration; food security.

#### 1 Introduction

Every significant conflict in human history has tested and validated the thesis that poverty and hunger are inextricably linked to conflict. Shemyakina [38] correctly points out that at least three Sustainable Development Goals (SDGs) of the United Nations (UN) - namely, SDG2 (Zero Hunger), SDG3 (Good Health and Well-Being), and SDG16 (Peace, Justice, and Strong Institutions) - intersect the subject of conflict and food insecurity. Armed conflict and food shortages have a detrimental effect on people's health and well-being, both alone and together.

Food security is defined as "having, at all times, both physical and economic access to sufficient food to meet dietary needs for a productive and healthy life" [41]. Numerous studies have shown that conflict has a detrimental influence on food security. Food availability, food access, and food usage are the three pillars of food security [39]. By including the idea of stability, which combines availability and access, these pillars were expanded to four [12]. To put these ideas succinctly, they are as follows: Food availability guarantees an adequate supply; access denotes the ease with which people may receive the food they require; utilization denotes the amount of nutrients people consume; and stability denotes the question of whether food is always accessible to people [12].

One of the main causes of food insecurity is armed conflict. Approximately 60% of the world's undernourished population and over 80% of the 155 million stunted children reside in nations afflicted by violence [34]. The majority of Somali populations affected by severe food insecurity reside in regions that are either under siege or controlled by al Shabaab, a militant Islamist organization. In 2022, an estimated 43,000 individuals perished due to famine [1]. Droughts, floods, storms, and other natural catastrophes are examples of climatic events that have been happening more frequently and spreading farther, which can worsen the effects of armed conflict on food security. Certain climatic phenomena, such soil erosion, gradual temperature increases, and reduced water supply, have compounding consequences. Catastrophic climate disasters can be, however, man-made – such as blowing up the Kakhovka dam in 2023 during war in Ukraine.

The study by Pettersson et al. [36] from 2021 examined the patterns of armed conflict worldwide between 1946 and 2020 using UCDP/PRIO data, with a particular emphasis on intrastate, internationalized intrastate, extrastate, and interstate conflicts.

The number of internationalized intrastate conflicts - a conflict type in which one or both parties got military backing from an outside state - rose significantly between 2006 and 2020. The number of internationalized intrastate conflicts than quadrupled, from 9 to 25 cases, between 2012 and 2020 [36].

Mass hunger follows many of the deadliest modern wars. Starvation is a weapon in some situations [34] – the example of it is seen in the current Russia-Ukraine war, when in the occupied territories Russian invaders create artificial humanitarian catastrophe.

The United Nations Security Council (UNSC) unanimously adopted a resolution on May 24, 2018, denouncing the use of famine and food shortages as military tactics. The threat to the lives of tens of millions of people was acknowledged, marking the first time the Council has ever addressed the matter. The resolution, which is aimed at nations that are now involved in civil or international conflicts, asks all sides to preserve food supplies, farms, marketplaces, and other means of distribution. It declares that starving civilians as a tactic of warfare may be illegal and requires that parties to the conflict provide humanitarian relief workers unrestricted access to communities in extreme need. In reality, nevertheless, participants to war disputes do not abide by this agreement.

The FAO is quite worried about the state of food security in Ukraine right now. Port closures, the halting of oilseed crushing operations, the implementation of export license limitations, and the prohibition of certain crops and food goods have all resulted from the war. People were left stranded and faced acute shortages of food, water, and energy supplies while important cities were surrounded and heavily bombarded. People are likely to continue to experience acute levels of hunger and malnutrition as long as there is instability and disruptions to local and national food systems [13]. It is obvious that there is a significant and growing problem with food security as a result of the war. Due to physical access restrictions, damage to houses, valuable assets, agricultural land, roads, and other civilian infrastructure, and other factors, it has already severely affected livelihoods throughout the agricultural growing season.

At the same time, in the landscapes of war conflicts, the primary role in restoring and maintenance of food security belongs to regional administrations and territorial communities. Research in this field, with support of available cases, represents crucially important task today, under the conditions of increasing tensions and war conflicts of various nature in different parts of the world.

## 2 Materials and Methods

The methodological basis of the study was general scientific methods, providing for a comprehensive approach to solving the research problem. The study was carried out using such research methods as methods of system and comparative analysis, analogies, generalization of accumulated experience (good practices), case analysis (case studies).

## 3 Results and Discussion

Armed conflicts can have a compounding effect on food consumption and health (morbidity and mortality patterns) through simultaneous or delayed effects. These effects can include the four facets of food security (availability, access, utilization, and stability), individual care practices, health services, and a healthy living environment [9]. In particular, armed conflicts threaten food security in a number of ways: they cause direct damage to crops, livestock, agricultural infrastructure, and assets; they also cause disruptions to local food markets and the food supply chain; they cause displacement; they instill fear and uncertainty about how they will meet their needs in the future; they injure human capital;

and they aid in the spread of disease [8; 33; 40]. The household's food security may be indirectly threatened by disruptions to food systems and markets, which could raise food prices or reduce household purchasing power, or by a reduction in access to cooking fuel and water [3]. Additionally, increased transaction costs may result from the difficulty of reaching exchange markets in the event of infrastructure destruction, such as roads, train lines, and other structures [5; 11; 14; 17; 18].

These detrimental impacts extend to how food is prepared, fed, and distributed throughout the home. According to research, shocks or stressors, such as armed conflicts, typically cause physical and financial disruptions to the food supply chain. This can result in food shortages, food losses, or price volatility in both rural and urban areas, with both immediate and long-term consequences for acute and chronic hunger and malnutrition [6].

Many studies have been conducted to assess the effects of war on agriculture, including the labor supply, land, infrastructure, outputs, inputs, and land availability as a result of direct exposure to conflict. The data points to three key conclusions. First of all, they demonstrate that the disruption and destruction of farm output, including livestock, crop products, and agricultural land abandonment, causes a considerable drop in productivity in conflict-affected regions [43]. Furthermore, easily transportable agricultural produce can be taken away to feed armed group members and supporters. By making less food available to the local population, this might lead to an increase in food insecurity. Studies by George et al. [16] in the context of armed warfare in Nigeria provide evidence for this. It is demonstrated that heightened violence diminishes agricultural yield, particularly for certain key crops, and the amount of land harvested. They discover that in addition to increasing cattle thefts and losses, conflict also lowers farmers' cattle holdings by decreasing purchased livestock. On the other side, agricultural input damage and loss, including disturbance of land tenure arrangements, can have a significant effect on food supply. These inputs include seeds, fertilizer, insecticides, herbicides, and other chemicals. According to George et al. [16], there is an infrastructure effect brought about by harm done to agricultural equipment both on and off the farm, such as tractors, irrigation systems, wells, fences, and storage facilities. They contend that this influence makes it more difficult for farmers to recover during and after a crisis.

The second conclusion drawn from the literature is that, in certain cases, when conflict sides are financed by agricultural income, military wars may actually increase agricultural output. Jaafar and Woertz [19] provide an illustration of this, demonstrating how the Islamic State in Syria and Iraq (ISIS) coerced landowners to continue farming because it was a significant source of revenue. Research conducted in Sierra Leone by Gbanie et al. [15] suggests that violence might increase agricultural productivity among internally displaced people (IDPs). The authors demonstrate how internally displaced people (IDPs) could uproot agricultural operations from their original places and increase them in their new ones. Lastly, because violent conflicts restrict the incentives for technological advancements, agricultural output becomes more expensive and archaic and has less access to markets.

The coping mechanisms that households utilize to safeguard their food security, livelihoods, and productivity during times of conflict have received enough attention in the economic literature. For example, several writers demonstrate how family and individual tactics are flexible and likely to change both before and throughout a lengthy dispute [21–30]. A variety of tactics are typically used, such as adjusting crop production portfolios, reallocating labor, destroying or hiding livestock (and other visible assets), altering land use patterns, migrating, collaborating economically with local ruling groups, and engaging in other activities that reduce the likelihood of victimization and uncertainty. These tactics have a variety of detrimental effects on the quantity and quality of consumption, calorie intake, food expenditure, and food production [2].

Collier [7] discovered back in 1999 that during civil conflicts, the GDP per capita decreases at a rate of 2.2 percent annually. Compared to other economic sectors, the agricultural industry experiences a comparatively higher degree of physical devastation. The majority of conflicts and fighting occur in rural regions, where rebel and insurgent organizations may readily locate safe havens.

Based on the example of Russia' invasion of Ukraine, Nguyen et al. [35] suggested schematical depiction of interrelations between interstate war, food security, and the circle of violence and hunger (see Figure 1).

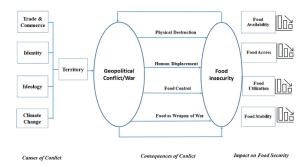


Figure 1. Interrelations between interstate war, food security, and the circle of violence and hunger [35]

It would seem that a major focus of the humanitarian, development, and peace nexus should be food security. Simultaneously, a deeper understanding of local strategies for responding to food crises and conflict is required.

It is correctly stated by Kemmerling et al. [20] that a number of food crises in recent decades have shown the shortcomings of the international community in managing food (in)security in war situations. Humanitarian relief missions have the issue of reaching individuals in need of food supplies while also avoiding escalating the war, while national governments or belligerents are sometimes unable or unwilling to respond appropriately to food emergencies. As a result, many impacted communities now have to deal with food insecurity on their own.

Humanitarian aid, development intervention, and peacebuilding must all be integrated into food assistance programs. Improving the food consumption of impacted individuals and communities is the main goal of short-term food aid during food emergencies and violent conflicts. Relief efforts in civil conflict situations, however, frequently encounter difficulties in promptly and appropriately reaching those most in need, ensuring the safety and security of assistance personnel, and obtaining the essential data of impacted communities [40]. However, experts caution that food aid might negatively impact smallholders' lives, the growth of local capabilities, and local food production and markets [20]. Preventing the detrimental effects of food aid in conflict contexts requires a precise and locally relevant knowledge of the conflict and its context. However, these interventions typically have a longer-lasting effect than the provision of food (or cash/vouchers) right away, and they already involve development assistance or transitional measures like social cohesion, the restoration of damaged infrastructure, support for sustainable livelihood strategies, and the establishment of safety nets specifically for displaced people, host communities, and returnees [10]. Therefore, long-term food aid can be extremely important for strengthening local capacity, increasing agricultural output, and finally solidifying peace. For instance, helping internally displaced households in northeastern Nigeria cultivate their own food has reduced reliance on food assistance and enhanced a feeling of community [10].

It is appropriate to discuss the definition of food system resilience in this context, which was put forth by Bene et al. [4]: the capacity of various individual and institutional actors within the food system to preserve, safeguard, or effectively recover the system's primary functions in the face of disruptions. Policy

development and territorial community initiatives to ensure food security during conflict should center on this food resilience.

Bene et al.'s study [4] made use of empirical data from Burkina Faso's northeast, where a conflict is now raging. Their study set out to record and examine the effects of that dispute on the local food system's operation, with a particular focus on the merchants' resilience. The data reveals that, in contrast to what is frequently seen with farmers, traders' resilience did not appear to be greatly influenced by their amount of assets. Rather, it seems more crucial to have moved to Sebba lately in order to maintain the degree of flexibility required to react to the fast worsening circumstances. The analysis also shows that the operators who performed better than the rest of the group, or "positive deviants", were resilient primarily because they were able to lessen the effects of shocks more effectively. However, this resilience did not protect them from experiencing sharp declines in their trading business. In the end, the system's overall resilience could not be sustained by the positive deviants alone. It results in a disastrous decline in the amount of food exchanged (up to 50% for some items), which brings about the system's failure and a ten-fold rise in the local population's food insecurity. The rapid changes observed in the Acute Food Insecurity Phase IPC 5-stage system between end 2017 and mid-2022 demonstrate how the food security of the local population degraded concurrently with the deterioration of the security situation in the country's north and northeast. The evolution of the expected number of food insecure people in the province of Yagha between 2018 and 2022 reveals that the situation has been fast becoming worse and follows the regional trend (see Figure

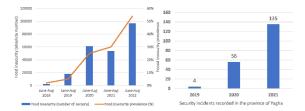


Figure 2. Left: prevalence of food insecurity in the Yagha province; Right: occurrence of security incidents in the Yagha province [4]

Bene et al.'s [4] compilation of the percentage of food traders who were actively engaged in the sale of particular food products revealed a sharp decline in the transit or sale of those goods due to armed attacks. According to the statistics, every single respondent who had engaged in cereal dealing stated that their activities had decreased. Cooking oils, sugar, and beans were the next most impacted food goods; over 50% of the merchants in those categories reported a significant decrease in their business. Meat, milk, potatoes, and fish were the least impacted goods. However, at least 25% of the dealers still reported significant interruptions even for such goods. The percentage of traders reporting serious interruption was greater than 30% for all other goods.

In Ukraine, as Kryvokhizha et al. [31] rightly claim that conditions have already been created to ensure food security, despite military actions and challenges. The initiative "Urban gardening for food security" is able to solve a number of problems presented by the results of the analysis. This initiative aims to create conditions for growing vegetables and other agricultural crops in urban environments, even in wartime conditions. It has the following key components:

- Local production. Urban gardening contributes to the increase of local production of vegetables and other agricultural products. This reduces dependence on longdistance supplies and helps provide the population with fresh, local food.
- Reduction of greenhouse gas emissions. Local production of vegetables in cities shortens supply chains and reduces greenhouse gas emissions, which helps preserve the

- environment and reduce the negative impact on climate change.
- Economical development. The development of urban horticulture contributes to the creation of new jobs, cooperation between farmers and processing enterprises, and also contributes to the development of the field of processing and sale of local food products. This contributes to economic growth in the conditions of war
- Community support. Urban gardening encourages communities to cooperate and work together to grow food.
   This contributes to the cohesion and maintenance of the mental health of the population in conditions of war.

In addition, Kryvokhizha et al. [31] emphasize that it is also important to take into account the potential of Ukrainian farms for the development of organic farming. Crop and livestock wastes can be used as sources of local bioenergy in local projects or as fertilizers.

At the same time, Muriuki et al. [33] offer more robust and direct evidence in favor of the hypothesis that violent conflict impacts individual families in addition to the overall or regional food security. This reaffirmed how important it is for decision-makers to focus their initiatives and responses on households. The study's findings also indicate that families react to conflict in different ways, so it is important to focus treatments with a strategy that takes into account the variety of ways that conflict might have an impact. Thus, these findings are pertinent to ongoing discussions on the most effective mitigating tactics for establishing regional stability that adopt a more local approach as opposed to a national or subnational one.

Indeed, not much is known about the best ways to create policies that can assist households in escaping coupled conflict-hunger traps. Improved micro-level data would presumably greatly accelerate the urgently needed study in this area, and this is one of the primary duties of regional governments and local self-government. Verme and Gigliarano [42] in particular to take into account cutting-edge targeting techniques. When resources are limited, Verme and Gigliarano suggest using Receiver Operating Characteristic (ROC) curves and associated indices to improve targeting. They provide comparatively straightforward graphs that policymakers may use to target based on welfare criteria.

In Ukraine, the Cabinet of Ministers approved the Food Security Strategy until 2027 at a meeting in July this year. The proposed measures include the creation of state reserves, demining of lands, and possible regulation of food prices. The government lists the main challenges to Ukraine's food security: disrupted supply chains, limited opportunities for sea exports (the ports of Nikolaev and Kherson are not yet operating, the port of Mariupol is under occupation), mined territories, and the difficulty of meeting basic needs in frontline regions. Other problems include the destroyed irrigation system in the South on an area of 500 thousand hectares as a result of the terrorist attack at the Kakhovka Hydroelectric Power Station, the destruction of production facilities, and a decrease in production at existing ones. The document defines three strategic goals. The first goal is to fill the market with agricultural products. This will be done by supporting producers, in particular organic producers, in order to gradually replace the import of these products, and by restoring food industry enterprises. The second goal is to ensure the availability of food for everyone, reducing the share of food in the structure of Ukrainians' expenses. To this end, it is proposed to introduce mechanisms for the implementation of effective regulation of agricultural and food markets. In particular, this concerns possible state regulation of prices. The third goal of the strategy is the most comprehensive - ensuring the safety component of food security. The key components of the goal are the creation and filling of state reserves for a list of products determined by the Cabinet of Ministers, the creation of a food security monitoring system, and priority demining of agricultural lands. The government also believes that the Ukrainian agro-industrial complex can become the most attractive investment portfolio in the short term, which is estimated at \$ 57 billion. Among the priority areas, there are irrigation, elevators, biogas, finished products (vegetables, fruits, dairy and meat products), seeds and agricultural machinery, and deep processing products. Despite the proclaimed ambitious plans, the strategy as a whole does not contain specific vector mechanisms for its implementation. The effectiveness of state regulation of prices is also questionable, since price regulation distorts competition and allows less efficient enterprises with high costs to stay in business.

Focusing attention on the power and potential of territorial communities and local self-government in the field of restoring and maintaining food security seems much more optimal strategy. Local governments' support to community-led initiatives to improve food access and safety can greatly reduce food insecurity, and contribute to greater resilience to the impacts of war conflicts.

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