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Food Security under Armed Conflict



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Global Knowledge Landscape and Public Attention
to Social, Economic, and Humanitarian Dimensions

By

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Introduction

Food security has re-emerged as a central global challenge in the twenty-first century, shaped by the cumulative effects of climate change, economic volatility, demographic pressures, and geopolitical instability. While food security has long been recognised as a multidimensional concept encompassing availability, access, utilisation, and stability, recent crises have exposed the fragility of global food systems and the uneven capacity of countries to absorb external shocks. In this context, food security is no longer solely an agricultural or humanitarian concern but a systemic issue intertwined with macroeconomic stability, social cohesion, and national security.

Armed conflict is among the most severe and complex shocks to food systems, simultaneously disrupting production, logistics, markets, and household livelihoods. Modern conflicts increasingly affect globally integrated agri-food supply chains rather than isolated national systems, amplifying spillover effects across regions and income groups. The recent escalation of large-scale military conflict in Eastern Europe has demonstrated how localised hostilities can rapidly translate into global food price volatility, fertiliser shortages, and heightened food insecurity in import-dependent economies, particularly in the Global South.

Beyond material disruptions, armed conflict also reshapes informational environments and collective perceptions of risk. Public attention to food security intensifies during periods of crisis, reflected in digital traces such as online search behaviour, media coverage, and policy discourse. These attention dynamics are not neutral: they influence political prioritisation, emergency responses, and international cooperation. However, systematic empirical evidence on how public attention to food security evolves during armed conflict, and how it interacts with scientific knowledge production, remains limited.

At the same time, the scientific community has responded to conflict-induced food insecurity with a rapidly expanding body of research. Studies addressing supply-chain disruptions, price transmission, vulnerability mapping, and policy responses have proliferated, yet this literature remains fragmented across disciplines and methodological traditions. Bibliometric evidence suggests that conflict-related food security research exhibits strong temporal clustering around major geopolitical events, raising questions about the responsiveness, sustainability, and thematic evolution of scientific output under crisis conditions.

Food security has long been conceptualised as a multidimensional phenomenon shaped by structural, environmental, political, and socio-economic

forces. Early political-economy approaches highlighted the strategic role of food in international relations, trade policy, and national security, demonstrating that food availability and access are deeply embedded in power structures and governance regimes (Hopkins & Puchala, 1978; Taylor, 1966). Subsequent historical analyses of wartime economies revealed how food provisioning, rationing systems, and trade reorientation became central elements of state resilience during large-scale conflicts, particularly in Europe during the twentieth century (Smith, 1947a; Smith, 1947b; Teuteberg, 2016; Cox, 2023).

The relationship between armed conflict and food insecurity has been extensively documented across diverse historical and geographical contexts. Empirical evidence demonstrates that violent conflict disrupts agricultural production, market functioning, and household coping mechanisms, thereby increasing famine vulnerability and malnutrition risks (de Goyet et al., 1978; Hendrickson et al., 1998; De Waal, 2018; Sitnicki et al., 2024a). Health-oriented studies further reveal that war-induced food deprivation produces long-term physiological and intergenerational effects, including adverse birth outcomes, metabolic disorders, and reduced human capital accumulation (Ravelli et al., 1976; Toverud, 1957; Pedersen, 2002).

Beyond direct caloric shortages, conflict reshapes food systems through environmental degradation, biodiversity loss, and ecosystem disruption. Research on fisheries, agriculture, and pollination systems demonstrates that war and post-war transformations accelerate ecological stress, undermining the sustainability of food supply chains (Pauly et al., 2005; Robinson & Sutherland, 2002; Pimenow et al., 2025a; Ollerton et al., 2014; Moldavan et al., 2023). These findings complement broader sustainability-oriented perspectives that link agricultural intensification, soil and water management, and environmental externalities to long-term food security outcomes (Finkel, 2018; Wolfe & Patz, 2002; Patel, 2013; Moldavan et al., 2024; Zolotnytska et al., 2025).

Recent scholarship has placed particular emphasis on the Russian invasion of Ukraine as a systemic shock to global food security. Quantitative and modelling-based studies document sharp increases in food prices, fertiliser shortages, and supply-chain disruptions affecting both exporting and importing countries (Abay et al., 2023; Lin et al., 2023; Jagtap et al., 2022). These effects extend far beyond the immediate conflict zone, intensifying food insecurity in vulnerable regions such as Africa and parts of Asia, where dependence on grain imports amplifies exposure to geopolitical risk (Ben Hassen & El Bilali, 2022; Behnassi & El Haiba, 2022; Boon et al., 2025).

The macroeconomic and institutional transmission channels of war-related food shocks have also received increasing attention. Research demonstrates that conflict-driven trade disruptions, currency instability, and employment

shocks interact with food systems, reinforcing broader patterns of economic insecurity (Dobrovolska et al., 2024; Tsymbal & Demediuk, 2025; Megbowon & Zerihun, 2025). Business-level analyses further show that firms operating under extreme conditions adapt unevenly, with implications for food availability, distribution, and affordability (Sitnicka & Serhiiienko, 2025). These findings underscore the interconnectedness of food security, economic security, and institutional resilience during armed conflict.

Parallel to material disruptions, crises profoundly reshape public awareness and behavioural responses related to food. Digital-trace studies using Google Trends demonstrate that pandemics and geopolitical shocks trigger surges in public attention to food availability, nutrition, and sustainability (Mayasari et al., 2020; Portugal-Nunes et al., 2022; Figiel et al., 2023). Similar approaches applied to urban sustainability and smart-city agendas confirm that public interest responds rapidly to external shocks, suggesting that online search behaviour constitutes a valuable proxy for collective risk perception (Hrytsenko et al., 2024). However, the specific dynamics of public attention to food security under armed conflict remain underexplored.

Scientific knowledge production itself exhibits crisis-sensitive dynamics. Bibliometric analyses reveal that food security research intensifies during periods of global disruption, with thematic shifts toward resilience, governance, and sustainability (Abbasov & Gurbazade, 2025; Atashov et al., 2025; Guliyev et al., 2024a). Government policy, institutional design, and demographic pressures emerge as dominant research clusters, reflecting the growing recognition of food security as a governance challenge rather than a purely agricultural issue (Guliyev et al., 2024b). Related bibliometric studies on digitisation, transparency, national security, and war economics further confirm the acceleration and concentration of scientific output around major geopolitical events (Zámek & Zakharkina, 2024; Zozulinsky, 2024; Pimenow et al., 2025a).

Despite these advances, significant gaps remain in understanding the interaction between public attention and scientific discourse on food security during armed conflict. Existing studies typically examine either material food-system disruptions or research trends in isolation, overlooking feedback mechanisms between societal concern, academic agendas, and policy responses. Broader literatures on migration, displacement, and post-conflict reconstruction suggest that governance failures and information asymmetries play a decisive role in shaping crisis outcomes (Betts, 2013; Weinthal et al., 2014; Watts, 2018; Pimenow et al., 2025b), yet these insights are rarely integrated into food security analyses.

The literature demonstrates that food security during armed conflict is a multidimensional and dynamic phenomenon, shaped by historical legacies, environmental constraints, economic structures, public perceptions, and scientific knowledge production. While substantial progress has been made in documenting individual dimensions of this nexus, an integrated analytical framework linking public attention, scientific output, and conflict-driven food insecurity remains largely absent. Addressing this gap provides the conceptual and empirical foundation for the present monograph.

This monograph addresses these gaps by integrating three analytical dimensions that are rarely examined jointly: the conceptual foundations of food security, public attention dynamics during armed conflict, and the evolution of global scientific discourse. By combining indicator-based analysis, digital trace data, and bibliometric methods, the study advances a comprehensive framework for understanding how food security is perceived, studied, and prioritised under conditions of systemic stress.

Methodologically, the monograph adopts an interdisciplinary and data-driven approach. It draws on internationally harmonised food security indicators, large-scale Google Trends data to proxy public attention, and bibliographic databases to map scientific production and collaboration networks. Advanced statistical techniques, including correlation analysis, lead-lag structures, autoregressive distributed lag models, and causality testing, are employed to uncover dynamic interactions between public attention and academic research activity.

The empirical focus on the period of armed conflict enables the identification of both immediate and delayed responses in public interest and scientific output. This temporal perspective is critical for distinguishing short-term attention shocks from more persistent structural changes in research agendas and policy discourse. Furthermore, the cross-country dimension allows for the assessment of heterogeneity in attention–science interactions, reflecting differences in exposure to conflict, institutional capacity, and food system resilience.

By situating food security at the intersection of conflict, public attention, and scientific knowledge production, this monograph contributes to both academic debate and policy practice. It provides evidence-based insights into how crises reshape research priorities and public concern, highlighting the feedback mechanisms that influence policy responses. Ultimately, the study aims to support more anticipatory, coordinated, and knowledge-driven approaches to safeguarding food security in an increasingly unstable global environment.