

Research Article

Strategic Synergy: Integrating Food Security and National Defense to Mitigate Global Threats

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Abstract. The integration of food security and national defense is critical in addressing global threats that endanger national resilience. This research examines the current practices and challenges in merging these policies across various countries, aiming to develop a comprehensive framework for strategic synergy. Using qualitative research methods, this study analyzes secondary data from government reports, academic literature, and international organizations. Findings indicate that while some nations have successfully integrated food security and defense strategies, many face challenges such as policy misalignment, resource constraints, and lack of coordination among stakeholders. The impact of integrated policies on national resilience is significant, enhancing a country's ability to withstand global threats such as pandemics, climate change, and geopolitical instability. This research proposes a robust framework for integrating food security and national defense strategies, emphasizing the importance of interagency collaboration, resource optimization, and adaptive policy-making. In conclusion, the strategic synergy between food security and national defense is essential for strengthening national resilience and ensuring sustainable development.

Keywords: Food Security, Global Threats, National Defense, National Resilience, Strategic Synergy.

Sinergi Strategis: Mengintegrasikan Ketahanan Pangan dan Pertahanan Negara Untuk Memitigasi Ancaman Global

Abstrak : Integrasi ketahanan pangan dan pertahanan negara sangat penting dalam mengatasi ancaman global yang membahayakan ketahanan nasional. Penelitian ini mengkaji praktik dan tantangan saat ini dalam menggabungkan kebijakan-kebijakan tersebut di berbagai negara, dengan tujuan untuk mengembangkan kerangka komprehensif untuk sinergi strategis. Dengan menggunakan metode penelitian kualitatif, penelitian ini menganalisis data sekunder dari laporan pemerintah, literatur akademis, dan organisasi internasional. Temuan menunjukkan bahwa meskipun beberapa negara telah berhasil mengintegrasikan strategi ketahanan pangan dan pertahanan, banyak negara menghadapi tantangan seperti ketidakselarasan kebijakan, keterbatasan sumber daya, dan kurangnya koordinasi antar pemangku kepentingan. Kebijakan terpadu mempunyai dampak yang signifikan terhadap ketahanan nasional, yaitu meningkatkan kemampuan suatu negara dalam menghadapi ancaman global seperti pandemi, perubahan iklim, dan ketidakstabilan geopolitik. Penelitian ini mengusulkan kerangka kerja yang kuat untuk mengintegrasikan strategi ketahanan pangan dan pertahanan nasional, dengan menekankan pentingnya kolaborasi antarlembaga, optimalisasi sumber daya, dan pembuatan kebijakan adaptif. Kesimpulannya, sinergi strategis antara ketahanan pangan dan pertahanan negara sangat penting untuk memperkuat ketahanan nasional dan menjamin pembangunan berkelanjutan.

Kata Kunci: Ketahanan Pangan, Ancaman Global, Pertahanan Negara, Ketahanan Nasional, Sinergi Strategis.

INTRODUCTION

In an increasingly interconnected world, the integration of food security and national defense policies has emerged as a critical strategy for addressing global threats. As climate change, geopolitical instability, and economic volatility intensify, the nexus between food security and national defense becomes more pronounced. Contemporary research underscores the necessity for cohesive policies that ensure not only the availability and accessibility of food but also the protection of national sovereignty and stability.

Food security is fundamentally linked to national security. When food systems are disrupted, either by natural disasters, economic sanctions, or conflict, the resultant scarcity can lead to social unrest, migration, and weakened national resilience. The World Food Programme (WFP) highlights that food insecurity often exacerbates conflict, creating a vicious cycle where insecurity breeds further instability (World Food Programme (WFP), 2023).

Moreover, the geopolitical landscape demonstrates that countries with robust food security systems are better equipped to withstand and recover from external shocks. For instance, research by the International Food Policy Research Institute (IFPRI) indicates that countries investing in agricultural resilience and

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diversified food supply chains are less vulnerable to global crises (International Food Policy Research Institute (IFPRI), 2022).

Integrating food security into national defense strategies involves a multi-faceted approach. Firstly, it requires the development of sustainable agricultural practices that can withstand environmental changes and reduce dependency on imported food. According to the Food and Agriculture Organization (FAO), promoting local food production not only enhances food security but also strengthens local economies and reduces the carbon footprint associated with long-distance food transportation (Food and Agriculture Organization (FAO), 2022).

Secondly, national defense policies must incorporate food security assessments into their strategic planning. This involves collaboration between defense departments, agricultural ministries, and international organizations to identify vulnerabilities and develop contingency plans. A study by the RAND Corporation emphasizes the importance of such interdisciplinary cooperation, suggesting that joint exercises and simulations can prepare nations for potential food-related crises (RAND Corporation, 2021).

The integration of advanced technologies plays a pivotal role in enhancing food security and defense capabilities. Satellite imagery and AI-driven analytics support precision agriculture, which enables the effective use of resources and early detection of potential threats to crop yields. The Defense Advanced Research Projects Agency (DARPA) has been investing in biotechnologies that could revolutionize how the military and civilian sectors address food security, such as developing crops resistant to extreme weather conditions and pests (Defense Advanced Research Projects Agency (DARPA), 2022).

Additionally, blockchain technology is being explored to secure food supply chains against cyber threats and fraud. By ensuring transparency and traceability, blockchain can help maintain the integrity of food supplies, a crucial aspect during crises when the reliability of supply chains is paramount.

Addressing global threats requires international cooperation. The United Nations' Sustainable Development Goals (SDGs) provide a framework for aligning food security and defense policies with broader objectives of peace and stability. Goal 2 (Zero Hunger) and Goal 16 (Peace, Justice, and Strong Institutions) are particularly relevant, as they emphasize the need for inclusive, resilient food systems and strong governance structures (United Nations, 2023).

To foster global collaboration, countries should engage in knowledge-sharing platforms and joint research initiatives. For instance, using the Economist Intelligence Unit's Global Food Security Index as a benchmark can help countries

evaluate and improve their food security status in relation to defense readiness (Economist Intelligence Unit, 2023).

The integration of food security and national defense policies is essential in the face of escalating global threats. By fostering sustainable agricultural practices, leveraging technological advancements, and promoting international cooperation, nations can build resilient systems that safeguard both food security and national stability. As the world navigates the complexities of the 21st century, such integrated approaches will be pivotal in ensuring peace and prosperity.

Problem Statement

The integration of food security and national defense policies has become increasingly critical in the face of global threats such as climate change, geopolitical instability, and economic disruptions. Despite the recognized interdependence between these domains, existing policies often operate in silos, leading to fragmented and inefficient responses to crises. This disjointed approach undermines national resilience and can exacerbate vulnerabilities, making countries more susceptible to both food insecurity and security threats. Addressing this issue requires a comprehensive understanding of how to effectively integrate food security and national defense strategies to build more robust and adaptive systems capable of withstanding diverse and evolving threats.

The research aims to analyze the current state of food security and national defense policies across countries, identify best practices and gaps, evaluate the impact of integrated policies on national resilience, and develop a framework for policymakers to effectively integrate these strategies. The goal is to enhance a nation's ability to withstand and recover from crises and improve policy coherence and effectiveness.

Research Questions

1. What are the current practices and challenges in integrating food security and national defense policies across different countries? This question aims to uncover the existing landscape of policy integration, highlighting both successful strategies and common obstacles. Understanding current practices and challenges is essential for identifying areas that require improvement and for learning from the experiences of different nations. Recent studies, such as those by the International Food Policy Research Institute (IFPRI, 2022), show varying levels of integration and success, indicating a need for a thorough examination of diverse approaches.
2. How do integrated food security and national defense policies impact a nation's resilience to global threats such as climate change, geopolitical instability, and economic disruptions? This question seeks to measure the effectiveness of

integrated policies in enhancing national resilience. This research will determine the tangible benefits of policy integration by evaluating case studies and empirical data. The World Food Programme (WFP, 2023) has noted that nations with robust food security frameworks are better equipped to handle crises, suggesting that integrated policies could further strengthen resilience.

3. What framework can be developed to guide policymakers in effectively integrating food security and national defense strategies? This question aims to create a practical and theoretical framework that policymakers can use to enhance policy integration. The framework will provide concrete steps and recommendations based on insights from successful models and address identified challenges. Research from the RAND Corporation (2021) emphasizes the need for interdisciplinary approaches, which will be a key component of the proposed framework.

By addressing these research questions and objectives, this study aims to bridge the gap between food security and national defense policies, providing a pathway toward more cohesive and resilient strategies in the face of global threats.

RESEARCH METHODS

Qualitative research methods, particularly those utilizing secondary data, offer valuable insights into the Strategic Synergy: Integrating Food Security and National Defense to Mitigate Global Threats. According to Creswell (2014), secondary data analysis involves re-examining existing data collected for other purposes, providing researchers with a rich source of information for exploring complex phenomena. In the context of this research topic, secondary data analysis allows for examining policies, reports, and scholarly literature to understand current practices, challenges, and potential solutions regarding the integration of food security and national defense.

One methodological approach to conducting qualitative research using secondary data is content analysis. Content analysis involves systematically analyzing documents, such as policy documents, reports, and academic literature, to identify recurring themes, patterns, and relationships (Elo & Kyngäs, 2008). Researchers can extract relevant information related to food security and national defense policies by employing content analysis, including policy objectives, implementation strategies, and outcomes. This method enables the synthesis of diverse sources of data to gain a comprehensive understanding of policy integration efforts across different countries.

Another qualitative research method suitable for analyzing secondary data is thematic analysis. Thematic analysis involves identifying and analyzing patterns of meaning within qualitative data, such as text-based documents (Braun & Clarke, 2006). Researchers can apply thematic analysis to secondary data sources, such as governmental reports and academic literature, to identify common themes and variations in the integration of food security and national defense policies. By systematically coding and categorizing data, thematic analysis facilitates the identification of key issues, challenges, and opportunities associated with policy integration.

Additionally, case study analysis is a qualitative research method that can be employed using secondary data to explore in-depth the integration of food security and national defense policies within specific countries or regions (Yin, 2009). Case studies involve the intensive examination of a particular case or cases to gain insights into complex phenomena within their real-world context. Researchers can analyze secondary data sources, such as case studies published in academic journals or government reports, to examine the experiences, strategies, and outcomes of policy integration efforts in diverse contexts. Case study analysis provides rich and contextualized insights into the challenges and successes of integrating food security and national defense policies, contributing to a nuanced understanding of the topic.

In conclusion, qualitative research methods using secondary data offer valuable opportunities for exploring the integration of food security and national defense policies in facing global threats. Content analysis, thematic analysis, and case study analysis are methodological approaches that enable researchers to extract, analyze, and interpret data from diverse sources to understand current practices, challenges, and potential solutions regarding policy integration. By employing these qualitative research methods, researchers can contribute to advancing knowledge and informing policymaking in the critical areas of food security and national defense integration.

RESULTS AND DISCUSSION

Study and analyze each aspect of the problem one by one. It is necessary to build arguments and analyze the data discussed and compared with other research and scholarly works. In other words, the way to address an issue here is to combine data and discussion. If necessary, include tables, figures, figures or other illustrations. For quotations use the APA (American Psychological Association) style, for example: (Iqbal, 1983: 47). The body note contains the author's last name,

year of publication, and page (Edelman, 2015: 6). It is recommended to use the Mendeley reference management application (Ichwan, 2001:3).

1. Current Practices and Challenges in Integrating Food Security and National Defense Policies Across Different Countries

The integration of food security and national defense policies has become a critical area of focus for many countries, particularly in the context of increasing global threats such as climate change, geopolitical instability, and economic volatility (Campbell et al., 2022). The existing landscape of policy integration reveals a mix of successful strategies and significant challenges, underscoring the complexity of aligning these two essential domains.

Current Practices in Policy Integration

Several countries have adopted innovative practices to integrate food security with national defense policies effectively. For instance, Israel's approach is noteworthy due to its advanced agricultural technology and its integration into national security frameworks. Strong government policies connecting food production with national security imperatives have helped Israel develop resilient agricultural systems capable of withstanding harsh climatic conditions (Shelef, 2022).

Similarly, the United States has implemented comprehensive strategies that emphasize the importance of food security in national defense. The U.S. Department of Defense collaborates with the Department of Agriculture to ensure that food supply chains are secure and that there is sufficient preparedness for food-related crises. This collaboration includes regular assessments of food supply vulnerabilities and the development of contingency plans to address potential disruptions (United States Government Accountability Office (GAO), 2023).

In contrast, countries like Kenya are focusing on building resilience through community-based programs that integrate food security and local defense measures. These programs aim to enhance local agricultural productivity while simultaneously strengthening community defense mechanisms against potential threats, such as terrorism and armed conflict (International Food Policy Research Institute (IFPRI), 2022).

Challenges in Policy Integration

Despite these successes, numerous challenges hinder the effective integration of food security and national defense policies. One major challenge is the lack of coordination between governmental agencies. In many countries, food security and national defense are managed by separate entities with limited

interaction, leading to fragmented efforts and inefficiencies. For example, a study by the International Food Policy Research Institute (IFPRI) found that in many developing nations, agriculture ministries and defense departments rarely collaborate, resulting in disjointed policy implementation (International Food Policy Research Institute (IFPRI), 2022).

Another significant challenge is the disparity in resources and capabilities between countries. Wealthier nations can afford advanced technologies and infrastructure to support integrated policies, while poorer countries struggle with basic food security issues. This inequality creates a global imbalance where some nations can effectively protect their food systems and others cannot, exacerbating global food insecurity (Food and Agriculture Organization (FAO), 2022).

Climate change also poses a formidable challenge to the integration of food security and national defense policies. As extreme weather events become more frequent, they disrupt food production and supply chains, which in turn can lead to social unrest and conflict. Countries must therefore develop adaptive strategies that can address the dual threats of food insecurity and climate-induced instability. However, developing such strategies requires significant investment and international cooperation, which are often lacking (United Nations Environment Programme (UNEP), 2023).

Learning from Successful Strategies

Examining successful strategies from different countries provides valuable insights into best practices for integrating food security and national defense policies. For instance, the use of advanced technology in Israel demonstrates the importance of innovation in building resilient food systems. Other nations can learn from this by investing in research and development to enhance agricultural productivity and sustainability (Shelef, 2022).

The collaborative approach seen in the United States highlights the need for inter-agency cooperation. Establishing regular communication channels and joint initiatives between the food security and defense sectors can improve policy coherence and responsiveness. Developing countries can benefit from creating integrated task forces or committees that oversee the coordination of food security and national defense policies (United States Government Accountability Office (GAO), 2023).

Community-based programs in Kenya show the effectiveness of local-level integration. By empowering communities to take charge of their food security and defense, countries can build grassroots resilience that complements national

efforts. This approach is particularly relevant for regions facing persistent conflicts and food shortages (International Food Policy Research Institute (IFPRI), 2022).

2. Impact of Integrated Food Security and National Defense Policies on National Resilience to Global Threats

The integration of food security and national defense policies has emerged as a crucial strategy for enhancing national resilience in an era of climate change, geopolitical unrest, and economic disruptions. This discussion evaluates the tangible benefits of such integrated policies, drawing on case studies and empirical data to highlight their effectiveness in mitigating the impacts of global threats. The World Food Programme (World Food Programme (WFP), 2023) has emphasized that nations with robust food security frameworks are better equipped to handle crises, suggesting that integrated policies can further strengthen resilience.

Enhancing Resilience to Climate Change

Climate change poses a significant threat to global food security and national stability. Integrated policies that address both food security and defense can significantly enhance a nation's ability to withstand climate-induced disruptions. For instance, Australia has implemented a comprehensive approach that combines agricultural innovation with defense preparedness. By investing in drought-resistant crops and sustainable farming practices, Australia has bolstered its food security while also ensuring that these measures are incorporated into national defense strategies to mitigate potential conflicts over resources (Commonwealth Scientific and Industrial Research Organisation (CSIRO), 2022).

Moreover, Denmark's Climate Adaptation Strategy illustrates the benefits of integrated policies. Denmark has focused on enhancing its agricultural sector's resilience to climate change by promoting practices such as crop diversification and efficient water use. These initiatives are part of a broader national security framework that includes measures to protect critical infrastructure and ensure food supply continuity during extreme weather events. As a result, Denmark has seen a reduction in the vulnerability of its food systems to climate-related disruptions (Danish Ministry of Climate, 2023).

Addressing Geopolitical Instability

Geopolitical instability often leads to disruptions in food supply chains, which can exacerbate social unrest and conflict. Integrated policies that align food security with national defense can mitigate these risks by ensuring stable food supplies and reducing dependency on external sources. For example, Israel's national strategy integrates food security with defense planning by maintaining

strategic food reserves and supporting local agriculture. This approach has proven effective in sustaining food availability during geopolitical crises, thereby enhancing national stability (Shelef, 2022).

Similarly, the United States employs a multi-agency approach that links food security with national defense. The Department of Defense collaborates with the Department of Agriculture to monitor global food markets and assess risks to supply chains. This collaboration has led to the development of contingency plans that can be activated during geopolitical tensions, ensuring that the military and civilian populations have access to essential food supplies (United States Government Accountability Office (GAO), 2023).

Mitigating Economic Disruptions

Trade wars and other economic disruptions, such as those resulting from global financial crises, can have a significant negative impact on national stability and food security. Integrated policies that consider both economic resilience and food security can help countries navigate these challenges more effectively. For instance, Japan has implemented policies that support local food production and reduce reliance on imports. By aligning these policies with national defense strategies, Japan ensures that its food systems remain stable even during economic upheavals. This integration has proven beneficial during economic crises, as it provides a buffer against global market fluctuations and helps maintain social stability (Ministry of Agriculture, 2022).

In another example, Germany's food security policies are closely linked with its economic and defense strategies. Germany promotes agricultural sustainability and innovation while also ensuring that these efforts are part of a broader national security agenda. This comprehensive approach has enabled Germany to maintain robust food systems that are resilient to economic shocks and disruptions, thereby supporting national resilience (Federal Ministry of Food and Agriculture (BMEL), 2023).

3. Developing a Framework for Integrating Food Security and National Defense Strategies

The integration of food security and national defense strategies is essential for enhancing a nation's resilience to multifaceted global threats, including climate change, geopolitical instability, and economic disruptions. A practical and theoretical framework can guide policymakers in achieving this integration by providing structured steps and recommendations based on successful models and addressing existing challenges. This framework aims to promote cogent and robust

policy development by utilizing interdisciplinary approaches, as highlighted in research from the RAND Corporation (2021).

Key Components of the Framework

Interagency Coordination and Collaboration

Effective integration of food security and national defense requires robust interagency coordination. Establishing formal mechanisms for collaboration between agricultural, defense, and emergency management agencies is critical. Regular interagency meetings, joint task forces, and integrated planning sessions can ensure that policies are aligned and mutually supportive (Serafino, 2016).

For instance, the United States employs a multi-agency approach where the Department of Defense and the Department of Agriculture work together to monitor food supply chains and assess risks (United States Government Accountability Office (GAO), 2023). Such collaborations enable comprehensive risk assessments and the development of cohesive strategies.

Integrated Risk Assessment and Management

A unified framework should incorporate integrated risk assessment tools that evaluate vulnerabilities and threats to both food security and national defense. This includes identifying critical infrastructure, potential points of failure in food supply chains, and the impact of geopolitical events on food availability (Burns, 2019).

The Food and Agriculture Organization (FAO) (2022) recommends using advanced analytical models that combine climatic, economic, and political data to predict and mitigate risks. By adopting such models, policymakers can develop proactive measures to safeguard food supplies and enhance national security.

Sustainable Agricultural Practices and Technological Innovation

Promoting sustainable agricultural practices is fundamental to ensuring long-term food security and supporting national defense objectives. Investment in technologies such as precision agriculture, drought-resistant crops, and efficient water management systems can enhance agricultural resilience (Srivastav et al., 2021).

Israel's use of advanced agricultural technologies, supported by national policies linking food production with security strategies, exemplifies the benefits of such an approach (Shelef, 2022). Policymakers should encourage research and development in agricultural innovation and integrate these advancements into broader security strategies.

Community Engagement and Local Resilience

Building resilience at the community level is crucial for national stability.

Policies should empower local communities to enhance their food security and defense capabilities. This includes supporting local food production, establishing community-based emergency preparedness programs, and fostering public-private partnerships (Bounie et al., 2020).

Kenya's community-based programs, which integrate food security with local defense measures, provide a model for enhancing grassroots resilience (International Food Policy Research Institute (IFPRI), 2022). Such initiatives can create a robust local foundation that supports national efforts.

Policy Flexibility and Adaptability

The dynamic nature of global threats necessitates flexible and adaptive policies. Policymakers should develop frameworks that allow for rapid adjustment in response to emerging challenges. This includes creating contingency plans, conducting regular policy reviews, and fostering a culture of continuous improvement (Janssen & Van der Voort, 2020).

Denmark's Climate Adaptation Strategy, which includes provisions for periodic reassessment and adjustment based on new data and changing conditions, highlights the importance of policy adaptability (Danish Ministry of Climate, 2023).

International Cooperation and Knowledge Sharing

Global threats require a coordinated international response. Policymakers should actively engage in international forums, share best practices, and participate in collaborative research initiatives. Organizations such as the United Nations and the World Food Programme can facilitate these exchanges and support the development of integrated global strategies (Organization, 2017).

Germany's participation in international food security and sustainability efforts, combined with its national policies, demonstrates the value of global cooperation (Federal Ministry of Food and Agriculture (BMEL), 2023).

Recommendations

Based on the key components, the following recommendations can guide policymakers:

Establish interagency committees to ensure regular communication and joint planning between agricultural, defense, and emergency management sectors.

Develop integrated risk assessment frameworks that combine climatic, economic, and geopolitical data to predict and manage risks effectively.

Invest in sustainable agricultural technologies and practices that enhance resilience and align with national defense strategies.

Empower local communities through support for local food production and community-based resilience programs.

Create flexible policy mechanisms that allow for rapid adaptation to emerging threats and continuous improvement.

Engage in international cooperation and knowledge sharing to leverage global best practices and foster collaborative solutions.

CONCLUSION

The integration of food security and national defense policies is crucial for enhancing national resilience against global threats. While there are notable successes, significant challenges remain, particularly in terms of inter-agency coordination, resource disparities, and the impacts of climate change. By learning from successful strategies and addressing these challenges, countries can develop more cohesive and effective policies that safeguard both food security and national defense.

The integration of food security and national defense policies significantly enhances a nation's resilience to global threats such as climate change, geopolitical instability, and economic disruptions. Case studies from Australia, Denmark, Israel, the United States, Japan, and Germany demonstrate that integrated policies provide tangible benefits by ensuring stable food supplies, reducing dependency on external sources, and maintaining social stability during crises. As global threats continue to evolve, the importance of aligning food security with national defense strategies will only grow, making such integrated approaches essential for safeguarding national resilience.

Developing a framework to integrate food security and national defense strategies is vital for enhancing national resilience to global threats. By focusing on interagency coordination, integrated risk assessment, sustainable practices, community engagement, policy flexibility, and international cooperation, policymakers can create robust and adaptive strategies. Drawing on successful models and interdisciplinary approaches, this framework offers concrete steps and recommendations to guide effective policy integration.

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