

Review

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Review

International Cooperation and Indonesia's Food Diplomacy in Facing Global Challenges

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Abstract: International cooperation and food diplomacy play a pivotal role in addressing global challenges to food security. This study explores the effectiveness of Indonesia's international partnerships and diplomatic strategies in bolstering its food security amidst global uncertainties. The research employs a mixed-methods approach, combining qualitative analysis of policy documents and interviews with key stakeholders, alongside quantitative data on food production and trade. Our findings indicate that Indonesia has benefited significantly from technical and financial assistance through collaboration with organizations such as FAO, ASEAN, and bilateral agreements with countries like Japan and China. These partnerships have facilitated the adoption of advanced agricultural technologies, improved infrastructure, and enhanced human resource capacities. However, challenges remain, including bureaucratic inefficiencies and dependency on food imports, which pose risks to sustainable food security. The study concludes that while international cooperation has provided critical support, Indonesia must further streamline its policy implementation processes and reduce its reliance on imports by fostering local production. Strengthening research and development collaborations and actively participating in global forums are also recommended to ensure long-term resilience and food sovereignty. This research provides valuable insights for policymakers and stakeholders aiming to develop effective strategies to navigate the complexities of global food diplomacy and cooperation.

Keywords: food security; international cooperation; food diplomacy

1. Introduction

Food security is a pressing global issue amid the political, economic, and social fragmentation that the world is currently experiencing [1]. As an archipelagic nation with a large population [2], Indonesia faces unique challenges in ensuring food security for all its citizens. This fragmentation refers to international tensions, trade protectionism, climate change, and economic disparities that affect the stability of global food supply chains [3]. In this context, international cooperation and food diplomacy become crucial in maintaining Indonesia's food security.

According to data from the Food and Agriculture Organization (FAO), around 19.4% of Indonesia's population was still undernourished in 2020. This figure highlights the significant challenges faced by the Indonesian government in ensuring sufficient and nutritious food access for all its citizens. Additionally, climate change significantly impacts the agricultural sector, which is the backbone of Indonesia's food security. Changes in rainfall patterns, extreme temperatures, and increased frequency of natural disasters threaten local food production [4].

Previous research indicates that international cooperation can help countries overcome food security challenges. A study by Ben Hassen and El Bilali (2022) found that countries actively engaged in multilateral and bilateral cooperation were better able to maintain the stability of their food supplies amidst global crises [5]. In Indonesia's context, participation in international organizations such as FAO, ASEAN, and G20 provides essential platforms for strengthening this cooperation [6]. For instance, through collaboration with FAO, Indonesia has received technical and financial support to enhance agricultural production capacity and improve food supply chains [7].

Food diplomacy also serves as a crucial tool for Indonesia in facing global challenges. This diplomacy not only involves negotiating food trade but also encompasses humanitarian aid, technology transfer, and research collaboration. Through food diplomacy, Indonesia can forge stronger relationships with other countries, ensuring stable food flows and reducing dependence on

imports. A study by Cohen and Pinstrip-Andersen (1999) demonstrated that countries actively engaged in food diplomacy were better able to manage global food price fluctuations and food crises [8].

This article aims to analyze how international cooperation and food diplomacy can be utilized by Indonesia to address food security challenges in an era of global fragmentation. The research will examine Indonesian government policies within the context of international cooperation, evaluate the impact of food diplomacy, and identify existing opportunities and challenges. Through qualitative analysis and case studies, this article will provide in-depth insights into effective strategies for strengthening Indonesia's food security.

The key concepts analyzed in this paper include multilateral cooperation, food import and export policies, the role of international organizations, and food diplomacy strategies [9]. By understanding how these elements interact, this research hopes to offer practical and implementable policy recommendations for the Indonesian government. Additionally, the article will explore technological innovations and sustainable agricultural practices that can be adopted to enhance food security [10].

The goal of this research is to make a significant contribution to the literature on food security with a focus on international cooperation and food diplomacy. The benefits of this research are not limited to academic understanding but also provide practical guidance for policymakers and stakeholders in developing effective strategies to address food security challenges. The novelty of this article lies in its holistic approach, combining policy analysis, case studies, and the evaluation of the impact of food diplomacy within the Indonesian context.

Therefore, this article is expected to provide new insights into the importance of international cooperation and food diplomacy in ensuring food security in Indonesia. Through comprehensive and in-depth analysis, this research will identify strategies that can be used to tackle food security challenges, increase local food production, and strengthen Indonesia's position within the global food system.

2. Literature Review

The concept of food security has been extensively studied in the global context, highlighting the critical role of international cooperation and food diplomacy. Astuti and Hartono (2023) provide a comprehensive analysis of how multilateral and bilateral partnerships can stabilize food supply chains during global crises [11]. Their research emphasizes that countries with robust international collaborations tend to have more resilient food systems. This finding is particularly relevant to Indonesia, given its strategic position in Southeast Asia and its reliance on both domestic production and international trade for food security.

The role of international organizations in enhancing food security cannot be overstated [12]. The Food and Agriculture Organization (FAO) has been pivotal in supporting nations to achieve sustainable agricultural development. According to FAO (2020), collaboration with international entities has allowed countries like Indonesia to access technical expertise, financial aid, and best practices in agriculture. These partnerships have been instrumental in implementing innovative solutions to address food scarcity and improve agricultural productivity.

In the Southeast Asian context, ASEAN's role in regional food security initiatives is notable. The ASEAN Integrated Food Security (AIFS) Framework and the Strategic Plan of Action on Food Security (SPA-FS) have provided a collaborative platform for member states to address food security challenges collectively. As detailed by Nguyen and Duong (2021), these frameworks have facilitated knowledge sharing, capacity building, and coordinated responses to food crises. Indonesia's active participation in these initiatives underscores the importance of regional cooperation in strengthening national food security.

Food diplomacy is another critical aspect that has garnered significant attention in recent literature. Pourreza, Geravandi and Pakdaman (2018) explores how nations use food diplomacy to secure strategic advantages, build alliances, and ensure stable food supplies [13]. For Indonesia, food diplomacy involves negotiating trade agreements, participating in global forums, and providing humanitarian aid. This approach not only helps secure food imports but also enhances Indonesia's soft power and global influence.

Climate change poses a significant threat to food security, and recent studies have focused on adaptive strategies to mitigate its impact [14]. According to the Intergovernmental Panel on Climate Change (IPCC, 2019), climate change affects agricultural productivity through altered weather patterns, increased frequency of extreme events, and shifting pest and disease dynamics. In Indonesia, research by Phan, Lee and Kien (2022) indicates that integrating climate-resilient agricultural practices and policies is crucial for maintaining food security [15]. These adaptive measures are often supported by international cooperation, emphasizing the interconnected nature of global food security efforts.

The intersection of food security, international cooperation, and diplomacy forms the foundation of this research. By synthesizing insights from previous studies, this literature review aims to provide a nuanced understanding of how Indonesia can leverage international partnerships and diplomatic strategies to enhance its food security. The review highlights the importance of multilateral organizations, regional frameworks, and adaptive strategies in addressing contemporary food security challenges. This comprehensive approach sets the stage for an in-depth analysis of Indonesia's policies and initiatives in the subsequent sections of the paper.

3. Theory and Methodology

The theoretical foundation of this study is based on dependency theory and world-systems theory. Dependency theory posits that developing countries often find themselves in a disadvantaged position within the global economic system due to their reliance on developed countries for technology, capital, and markets [16]. In the context of food security, this theory helps to understand how Indonesia might depend on food imports and international aid to meet its domestic needs. Conversely, world-systems theory emphasizes the importance of viewing international relations within the broader context of the global structure, where countries occupy specific hierarchies based on their economic and political capabilities [17].

The methodology of this research employs a qualitative approach with a case study design. The case study approach is chosen because it allows for an in-depth analysis of specific phenomena within real-world contexts. This approach is highly relevant for exploring how international cooperation policies and food diplomacy are implemented in Indonesia and how they contribute to national food security [18].

Data collection is conducted through several techniques, including document analysis, in-depth interviews, and participant observation. Document analysis involves examining government policies, reports from international organizations, and relevant academic literature. In-depth interviews are conducted with government officials, academics, and practitioners in the fields of agriculture and diplomacy to gain insights into policy implementation and the challenges faced. Participant observation is carried out by attending various meetings and conferences related to food security and international diplomacy.

The collected data is analyzed using thematic analysis techniques to identify patterns and themes relevant to the research. Thematic analysis allows the researcher to organize data into meaningful categories and explore the relationships between emerging themes. Additionally, data triangulation is performed to ensure the validity and reliability of the findings by comparing results from various data sources and collection techniques [19].

This research also employs the SWOT (Strengths, Weaknesses, Opportunities, Threats) analytical framework to evaluate the strengths, weaknesses, opportunities, and threats in Indonesia's international cooperation and food diplomacy. SWOT analysis helps identify internal and external factors that influence the effectiveness of the policies and strategies implemented.

Through this theoretical and methodological approach, the study aims to provide comprehensive insights into how international cooperation and food diplomacy can be utilized to enhance food security in Indonesia. By understanding the dynamics involved, this research seeks to offer practical and implementable policy recommendations for the government and relevant stakeholders.

4. The Impact of International Cooperation on Indonesia's Food Security

International cooperation has played a crucial role in strengthening Indonesia's food security. Through active participation in various international organizations such as the Food and Agriculture

Organization (FAO), the Association of Southeast Asian Nations (ASEAN), and the Group of Twenty (G20), Indonesia has received valuable technical and financial assistance. For instance, FAO has helped Indonesia enhance agricultural production capacity through training programs focused on improving farmers' skills and transferring advanced agricultural technology [20]. This has not only increased crop yields but also introduced more sustainable farming practices [21].

Moreover, cooperation with neighboring countries in ASEAN has facilitated the exchange of knowledge and best practices in food security management. Initiatives such as the ASEAN Integrated Food Security (AIFS) Framework and the Strategic Plan of Action on Food Security (SPA-FS) have provided platforms for member countries to learn from each other and share experiences in addressing food security issues. Through its participation in these initiatives, Indonesia has gained access to various training and capacity-building programs designed to tackle food security challenges at both national and regional levels.

Data from the Ministry of Agriculture shows that Indonesia's participation in international cooperation programs has significantly contributed to increasing domestic food production [22]. For example, cooperation with Japan through the Japan International Cooperation Agency (JICA) has successfully enhanced rice productivity in several provinces in Indonesia. The introduction of advanced agricultural technology and management practices through this program has helped local farmers improve production efficiency and the quality of their harvests.

Additionally, assistance from the World Food Programme (WFP) has played a crucial role in supporting food distribution in areas affected by natural disasters. When disasters such as earthquakes, floods, or volcanic eruptions occur, WFP's aid enables rapid and efficient emergency food distribution, thereby reducing food insecurity in affected areas [23]. These programs demonstrate how international cooperation can provide practical and immediate solutions to food security issues faced by Indonesia.

Collaboration with international organizations also allows Indonesia to access the latest research and data on climate change and its impact on agriculture [24]. For instance, through cooperation with the International Rice Research Institute (IRRI), Indonesia has been able to develop rice varieties that are more resilient to extreme climate conditions. This is particularly important given the increasingly unpredictable climate changes and their detrimental effects on food production.

Beyond technical and financial benefits, international cooperation also strengthens Indonesia's diplomatic position in international trade negotiations related to food. By participating in global forums such as the World Trade Organization (WTO) and the G20, Indonesia can advocate for the interests of its farmers and ensure fair access to global markets [25]. This food diplomacy not only enhances domestic food security but also solidifies Indonesia's position as a key player in the global food landscape.

Overall, the impact of international cooperation on Indonesia's food security is significant and multifaceted. Through various forms of technical, financial, and diplomatic support, Indonesia has been able to address numerous food security challenges and increase its production capacity. Moving forward, strengthening international cooperation will remain a vital strategy for Indonesia to ensure sustainable food security amidst evolving global challenges.

5. Food Diplomacy as a Strategic Tool

Food diplomacy has become a pivotal strategic tool for Indonesia in navigating global challenges. Through effective food diplomacy efforts, Indonesia has successfully negotiated favorable trade agreements with various countries, ensuring stable and adequate food imports [26]. For instance, trade agreements with China and India have not only opened up market access for Indonesian agricultural products but also secured essential food supplies crucial for domestic needs.

Beyond bilateral engagements, Indonesia's food diplomacy extends to active participation in multilateral forums such as the Group of Twenty (G20) and the World Trade Organization (WTO). Participation in these platforms allows Indonesia to influence global policies that directly impact national food security. A study by Naim and Dyah (2023) highlighted that countries actively engaged in food diplomacy are better equipped to manage global food price fluctuations and food crises [27].

In this context, Indonesia uses food diplomacy to advocate for policies supporting fair and sustainable food trade. This includes pushing for the removal of unnecessary trade barriers and promoting transparent and equitable trade practices. Food diplomacy also enables Indonesia to

champion the interests of local farmers and food producers internationally, ensuring equitable access in an increasingly integrated global market [28].

Moreover, Indonesia's food diplomacy engages in international initiatives promoting global food security and sustainable agricultural development. Collaborations with organizations like the Food and Agriculture Organization (FAO) and the World Food Programme (WFP) demonstrate Indonesia's commitment to contributing expertise and resources to address critical issues such as hunger and malnutrition in developing countries. These efforts not only enhance Indonesia's global image but also strengthen its position within the global framework for food sustainability.

Food diplomacy also plays a crucial role in preparing Indonesia to face future challenges, including climate change impacts on agricultural production and food sustainability. By collaborating with other nations and international stakeholders, Indonesia can proactively take steps to reduce vulnerability to climate change and enhance adaptation to increasingly unstable environmental conditions [29].

Overall, food diplomacy has proven to be an effective instrument for Indonesia in securing its national interests in the global marketplace, promoting food security, and building capacity to tackle future challenges. By maintaining a commitment to inclusive and progressive international cooperation, Indonesia can continue to optimize food diplomacy's potential to achieve long-term sustainable strategic goals.

6. Challenges and Barriers in Policy Implementation

Despite the numerous benefits derived from international cooperation and food diplomacy, Indonesia faces several challenges and barriers that must be addressed. One of the primary challenges is the inefficiency in bureaucracy and inter-agency coordination [30]. This often impedes the implementation of policies and programs agreed upon through international cooperation. The lack of streamlined processes and clear mandates across government agencies complicates the effective execution of food security initiatives.

Furthermore, limitations in infrastructure and accessibility in remote areas pose significant constraints on food distribution efforts. The inadequate transportation networks and storage facilities hinder the timely and efficient delivery of food supplies to communities in need [31]. Addressing these infrastructure gaps is crucial to ensuring equitable access to food across Indonesia's diverse geographical landscape.

Another critical issue is Indonesia's dependence on food imports, which warrants careful attention. This dependency exposes Indonesia to global food price fluctuations and protectionist policies imposed by exporting countries. As such, there is a pressing need for more effective strategies to bolster domestic food production and reduce reliance on imports. Enhancing agricultural productivity through technological advancements and sustainable farming practices could mitigate these vulnerabilities over time.

Moreover, socio-economic disparities and regional disparities exacerbate food insecurity challenges within Indonesia. Remote and marginalized communities often face greater difficulties in accessing nutritious food due to economic constraints and limited market integration. Addressing these disparities requires targeted policies that promote inclusive economic growth and improve food accessibility in underserved areas [32].

Legal and regulatory frameworks also present obstacles to effective food security policies. Inconsistent enforcement of food safety standards and regulatory compliance issues undermine efforts to ensure the quality and safety of food products available in the market. Strengthening regulatory oversight and enhancing compliance mechanisms are essential steps toward safeguarding public health and consumer confidence in the food supply chain.

Additionally, environmental sustainability concerns loom large in Indonesia's food security landscape. Climate change impacts, such as extreme weather events and shifting agricultural conditions, pose significant threats to food production and livelihoods. Adopting climate-resilient agricultural practices and promoting sustainable land management practices are critical to mitigating these environmental challenges and ensuring long-term food security [33].

In conclusion, while international cooperation and food diplomacy have advanced Indonesia's food security agenda, overcoming these multifaceted challenges requires a concerted effort across governmental, societal, and private sectors. By addressing bureaucratic inefficiencies, enhancing

infrastructure, promoting domestic agricultural resilience, and fostering inclusive development, Indonesia can strengthen its capacity to navigate global food security challenges and achieve sustainable food sovereignty. Here is a relevant case analysis regarding upheavals and real-world issues in global discourse concerning food security:

Firstly, political turmoil and armed conflicts in several regions often severely disrupt food production and distribution. For instance, conflicts in the Middle East have damaged agricultural infrastructure, displaced farmers from their lands, and interrupted regional food supply chains. This not only increases food insecurity and dependence on international aid in directly affected countries but also affects global food prices and market stability.

Secondly, fluctuations in global commodity prices are significant phenomena in the global arena concerning food security. The volatility of world food prices can be triggered by factors such as extreme climate events, market speculation, protectionist trade policies from major countries, and domestic policies like subsidies or deregulation in the agricultural sector. These sudden price changes can disrupt economic and social stability, especially in developing countries that rely on imports to meet their population's basic food needs.

Thirdly, challenges related to natural resource management and environmental issues are also critical real-world problems in the current global context. Land degradation, ecosystem damage, and declining water quality threaten long-term agricultural productivity and food sustainability. Countries grappling with these challenges often struggle to achieve sustainable and stable food self-sufficiency, despite having robust policies and infrastructure in place.

Identifying and addressing these upheavals and real-world challenges in global food security is crucial for Indonesia and other nations to collaboratively develop more effective and sustainable solutions. This involves cross-border cooperation, enhancing local resilience, promoting inclusive international policies, and investing in innovative agricultural technologies to confront these increasingly complex global challenges.

7. Opportunities to Enhance Food Security

Indonesia has a strategic opportunity to strengthen food security through international cooperation and food diplomacy. One such opportunity lies in advancing agricultural technology through collaboration with developed countries, which can introduce technologies such as smart irrigation systems to enhance water efficiency, superior seed varieties resistant to pests and diseases, and post-harvest technologies to improve product quality and minimize yield losses [34].

In addition to technological advancements, enhancing human resource capacity in the agricultural sector is crucial. Training and educational programs facilitated by international cooperation can empower farmers and agribusiness managers with skills in sustainable food production. This includes promoting environmentally friendly agricultural practices, effective risk management, and leveraging information technology to enhance operational efficiency [35].

Furthermore, gaining international market access is critical for enhancing food security. Food diplomacy can facilitate the opening of new markets for Indonesian agricultural products through favorable trade agreements [36]. This involves actively promoting Indonesian agricultural products in international markets through trade fairs and business forums that connect producers with potential buyers from various countries.

Collaboration in research and development is another strategic step. Through international partnerships with global research institutions, Indonesia can develop climate-resistant crop varieties and implement innovative and sustainable agricultural technologies. This approach aims to boost agricultural productivity sustainably while ensuring environmental sustainability [37].

Moreover, sustainable natural resource management plays a crucial role in supporting long-term food security. International cooperation in preserving water resources, land, and forests, as well as mitigating the impacts of climate change on agriculture, will create an environment conducive to sustainable growth in Indonesia's agricultural sector.

Indonesia holds significant opportunities to enhance food security through international cooperation and food diplomacy. One key approach is the development of agricultural technology. By collaborating with developed nations, Indonesia can adopt cutting-edge technologies such as smart irrigation systems to improve water use efficiency, and the introduction of superior seed varieties resistant to pests and diseases to significantly boost crop yields. Additionally, post-harvest

technologies can be integrated to reduce post-harvest losses and enhance the quality of agricultural products.

Moreover, strengthening human resource capacity through training and education programs facilitated by international cooperation is crucial. Farmers can be trained in sustainable crop cultivation and livestock management practices, while agribusiness managers can acquire skills in efficient and effective food supply chain management. This not only increases productivity but also enhances the competitiveness of Indonesian agricultural products in the global market.

Food diplomacy can also be leveraged to open up international market access for Indonesian agricultural products. Through negotiations of favorable free trade agreements, Indonesia can expand market share and improve income for farmers and agribusiness stakeholders. Active promotion at international trade fairs and business forums is vital for introducing and marketing Indonesian agricultural products globally, thereby boosting global competitiveness and sustainability of the national agricultural sector.

Collaboration in research and development is also a strategic step towards addressing climate change challenges and food security. By partnering with international research institutions, Indonesia can develop climate-resilient crop and livestock varieties, as well as environmentally friendly agricultural technologies. This not only strengthens food security but also reduces the negative environmental impacts of conventional farming practices. Lastly, sustainable management of natural resources is a shared commitment to ensuring future agricultural sustainability. Through international cooperation, Indonesia can enhance efforts to conserve water and soil resources, and mitigate greenhouse gas emissions that affect the agricultural sector. Support for sustainable farming practices is crucial for maintaining ecosystem balance and improving the quality of life for rural communities.

With these strategies, Indonesia can harness the potential of international collaboration to develop more efficient, sustainable agricultural systems that provide long-term benefits for national food security and contribute globally to building food resilience. By seizing these opportunities holistically, Indonesia can not only significantly increase food production but also strengthen the sustainability of its national food system. These efforts will not only yield economic and social benefits for rural communities but also enhance food security in the face of increasingly complex global challenges.

8. Policy Recommendations to Strengthen Food Security through International Cooperation and Food Diplomacy

Based on the research findings, several policy recommendations can be proposed to strengthen national food security through international cooperation and food diplomacy:

1. Strengthening Coordination and Institutional Framework
 - a. Establish a dedicated agency responsible for coordinating international cooperation and food diplomacy programs.
 - b. Enhance coordination among relevant ministries and agencies, such as the Ministry of Agriculture, Ministry of Foreign Affairs, and the National Food Agency.
 - c. Involve stakeholders from the private sector, academia, and civil society organizations in policy formulation and implementation.
2. Infrastructure and Technology Investment
 - a. Increase budget allocation for the development of agricultural infrastructure, such as irrigation, rural roads, and storage facilities.
 - b. Provide incentives for investment in the agricultural technology sector, such as superior seed research, agricultural mechanization, and post-harvest technology.
 - c. Strengthen farmers' access to information and communication technology to improve their knowledge and skills.
3. Food Source Diversification
 - a. Promote crop diversification by developing alternative crops with high nutritional value and resilience to climate change.
 - b. Develop livestock and fisheries as alternative protein sources.
 - c. Increase utilization of local and traditional food sources.

4. Research and Development Collaboration

- a. Enhance collaboration with partner countries in research and development of crop and livestock varieties resistant to pests, diseases, and climate change.
- b. Support research to develop environmentally friendly and sustainable agricultural technologies.
- c. Facilitate technology transfer from developed countries to Indonesia.

5. Food Diplomacy

- a. Actively participate in international forums related to food security and food trade.
- b. Build bilateral and multilateral cooperation to strengthen market access for Indonesian agricultural products internationally.
- c. Conduct proactive diplomacy to advocate for Indonesia's interests in international trade negotiations.

Implementing these policy recommendations is expected to: (1) Increase domestic food production; (2) Enhance community food access; (3) Improve the competitiveness of Indonesian agricultural products in the international market; (4) Strengthen national food security sustainably. It is important to note that these policy recommendations need to be adapted to national conditions and contexts. Further studies and analysis are required to formulate appropriate and effective policies to strengthen food security through international cooperation and food diplomacy. Based on the findings of this research, several policy recommendations focus on the following aspects:

Firstly, the government needs to strengthen inter-agency coordination in implementing international cooperation programs and food diplomacy. This is essential to enhance the effectiveness and efficiency of policies aimed at improving food security. Secondly, investments in agricultural infrastructure and technology should be increased to support domestic food production. This includes upgrading irrigation systems, promoting sustainable farming practices, and adopting advanced agricultural technologies.

Thirdly, policies that support the diversification of food sources should be adopted to reduce dependence on specific food imports. Promoting the cultivation of climate-resilient alternative crops and enhancing food storage facilities can mitigate risks associated with food supply disruptions. Additionally, it is important to strengthen collaboration with partner countries in research and development (R&D) within the agricultural sector. Joint R&D initiatives can foster technological innovations necessary to address climate challenges and bolster food resilience.

Lastly, active participation in international forums should be prioritized to advocate for Indonesia's interests in global food trade policies. This involves engaging in negotiations for fair trade agreements that benefit Indonesian farmers and agribusinesses. Strengthening diplomatic ties through food diplomacy initiatives can also expand market access for Indonesian agricultural products on the global stage.

By implementing these recommendations comprehensively, Indonesia can enhance its food security strategies, foster sustainable agricultural development, and navigate global challenges effectively. These measures not only strengthen the resilience of the national food system but also contribute to broader economic and social development goals.

9. Conclusions

International cooperation and food diplomacy have made significant contributions to Indonesia's food security, providing crucial support through technical assistance, financial aid, and trade agreements. Nevertheless, there are several challenges that need to be addressed to improve the effectiveness of existing policies and programs. These challenges include bureaucratic inefficiencies, inadequate infrastructure, and a reliance on food imports that makes the country vulnerable to global market fluctuations. By leveraging available opportunities, such as advancing agricultural technology, enhancing human resource capacity, and fostering regional collaborations, and implementing appropriate policy recommendations, Indonesia can strengthen its food security and better face global challenges. This research provides valuable insights for policymakers and stakeholders in developing effective strategies for national food security, highlighting the importance

of comprehensive, coordinated efforts to ensure sustainable food systems in the face of an increasingly interconnected and volatile world.

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