

Strengthening National Defense Economy through Agricultural Sector Resilience: A SWOT Analysis of Indonesia's Food Security Strategy

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Abstract: This study examines how agricultural sector dynamics reinforce Indonesia's national defense economy, addressing the underexplored link between agricultural performance and non-military state resilience. A descriptive qualitative approach employing SWOT analysis was used to map internal capabilities and external environmental factors shaping the agricultural sector's contribution to defense economics. Findings reveal strategic strengths including abundant natural resources (12.66% of GDP in Q1 2025) and labor absorption capacity (28.15% of the national workforce), alongside critical weaknesses such as low productivity (2.3 tons/ha versus Vietnam's 4.5 tons/ha), limited technology adoption, and significant land conversion (approximately 100,000 ha/year). Opportunities from rising food demand and self-sufficiency policies are counterbalanced by threats from climate change vulnerability and global price volatility. This study uniquely integrates agricultural macroeconomic indicators into non-military state defense frameworks, providing an integrated policy matrix that bridges agricultural economics and defense resilience—an underexplored intersection in Indonesian scholarship. Recommendations include: (1) agricultural modernization through precision farming technology adoption, (2) supply chain infrastructure strengthening, and (3) land preservation policies integrated with defense economic planning. This research contributes a strategic framework demonstrating that food sovereignty serves as a foundation for national resilience against non-military threats, offering actionable guidance for policymakers in defense and agricultural sectors.

Keywords: Agriculture Sector; Defense Economy; Food Security; Swot Analysis

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A. Introduction

Indonesia, a highly populated nation, is recognized as an agrarian state where the agricultural sector plays a strategic role in the national economy. The agricultural sector serves as a primary economic pillar, contributing significantly to the Gross Domestic Product (GDP). Statistical evidence presented by Sihite et al. (2025) indicates that agriculture accounts for approximately 12%-13% of the total GDP. Furthermore, the sector plays a critical role in labor absorption, employing up to 30% of the national workforce. This figure highlights that a substantial portion of the Indonesian population relies on agriculture as their primary source of livelihood across various regions. Beyond job creation, this sector drives downstream economic activities, including agro-processing industries, logistics services, and marketing networks, thereby expanding the multiplier effect to foster inclusive economic growth. Without a robust agricultural foundation, national economic resilience remains highly vulnerable to global challenges. The agricultural sector's contribution to GDP reflects Indonesia's capability to maintain food self-sufficiency, strengthen economic resilience, and provide a foundation for fortifying the defense economy. Figure 1 illustrates the contribution of the agriculture, forestry, and fisheries sectors to Indonesia's GDP.

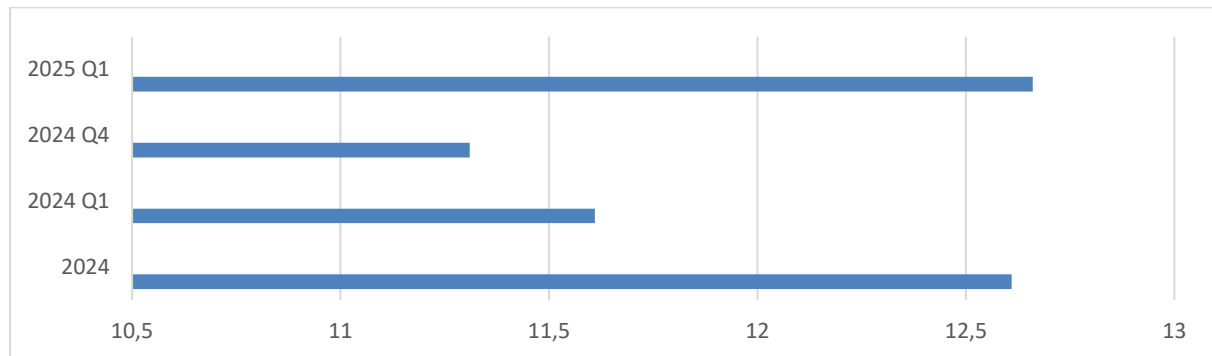


Figure 1. GDP Distribution

Based on the GDP distribution data for the agriculture, forest, and fisheries sector, its contribution to Indonesia's total GDP stood at 12.61% in 2024, with the first quarter recording 11.61% and the fourth quarter 11.31%, whereas the first quarter of 2025 reached 12.66%. These data demonstrate relatively high stability despite quarterly fluctuations. From a defence economics perspective, this contribution carries strategic implications, as food security and self-reliant local production bolster economic stability, thereby enabling a more optimal allocation of resources toward national defense and security. The agricultural sector serves as a vital foundation that fortifies Indonesia's defense economy, where in increased efficiency, modernization, and production diversification can solidify its contribution to GDP while enhancing overall national resilience.

In the dynamics of national development, agricultural productivity is regarded as a key indicator that evaluates the extent to which this sector efficiently utilizes resources, enhances commodity competitiveness, and maximizes its contribution to

overall economic growth. Agricultural productivity not only reflects the volume of output generated but also offers insight into the capacity of an agricultural system to withstand global market competition, making productivity enhancement vital in public policy formulation. Research conducted by Fuadi and Istiqomah (2025) in Central Java Province, it demonstrates that rice productivity serves as an indicator of agricultural modernization correlated with regional food security. This underscores that productivity gains are measured not merely by output quality, but also by their impact on the welfare of agrarian communities.

The contribution of the agricultural sector extends beyond crop yields, directly intersecting with national economic resilience as an integral component of state defense. Increased agricultural productivity demonstrates the sector's capacity to maximize output through the efficient utilization of production inputs, thereby reducing reliance on imports by enhancing adaptability to external pressures such as global price fluctuations. Furthermore, a productive agricultural sector fortifies social and political stability, ultimately strengthening the national economic capacity to confront various non-military threats. This aligns with the argument by Wati et al. (2025) that by integrating the agricultural sector into the non-military state defense strategy, Indonesian can build a robust agricultural foundation to support national social and economic stability.

Despite the crucial role of the agricultural sector, its underlying challenges remain a pressing topic that warrants attention. The agricultural sector in Indonesia is still perceived as lacking sufficient government attention. This observation is supported by research conducted by Ridho and Riofita (2025) which asserts that while agriculture is a vital economic component contributing to national income through GDP, labor absorption, food security, and export earnings, it has not yet been prioritized as a core driver of economic development. Therefore, a comprehensive study utilizing a SWOT analysis approach is imperative to formulate appropriate policy strategies that strengthen the sector's role in the national defense economy. This analysis is expected to provide an in-depth identification of policy strategies capable of supporting national defense economics. This study addresses the following research questions: 1. How does the agricultural sector strategically contribute to Indonesia's national defense economy? 2. What are the internal strengths and weaknesses of the agricultural sector in supporting defense economic resilience? 3. What external opportunities and threats affect the agricultural sector's role in national defense? 4. What policy strategies can optimize the agricultural sector's contribution to national defense economics?

B. Methods

This study employs a descriptive qualitative approach to explore the phenomenon and provide a comprehensive understanding of the strategic role of the agricultural sector in supporting national defense economics in Indonesia (Lubis & Murhayati, 2025). Rather than relying on numerical data, this approach allows for an in-depth examination of contextual conditions, policy frameworks, and

systematic interactions within the defense economy.

Research Place and Context

The geographical context of this research is centered on Indonesia, focusing on national-level policies, national security strategy frameworks, and the broader agricultural ecosystem operating across the Indonesian archipelago.

Data Sources and Respondents

Because this study adopts a secondary qualitative design, primary field respondents were not utilized. Instead, data were gathered entirely from official secondary sources, including peer-reviewed academic journals, relevant books, official publications from national government bodies such as the Ministry of Agriculture and the Ministry of Defense, and publications from recognized international institutions. These curated secondary sources serve as a robust foundational basis for the thematic discussion and strategic evaluation.

Data Collection Instruments and Procedures

Data collection was conducted through a systematic literature review and document analysis process. The operational procedures involved searching and filtering national and international publications, extracting relevant facts and policy directions based on key thematic areas, and synthesizing the evidence to build a coherent conceptual foundation for strategic evaluation.

Data Analysis Technique

Data analysis was performed using a qualitative SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis framework. SWOT serves as a core analytical tool to systematically map internal and external factors as part of an in-depth strategic analysis based on Kotler and Armstrong's theory (Calista & Wandebori, 2025). As highlighted by Benzaghta et al. (2021) SWOT analysis serves as a fundamental key tool in strategic planning, applicable across diverse disciplines. Furthermore, in qualitative inquiry, SWOT analysis remains widely recognized as a holistic strategic framework to evaluate internal capacities and external dynamics without necessitating quantitative evaluation matrices such as Internal Factor Evaluation (IFE) or External Factor Evaluation (EFE) (Chakrabarty, 2024). By adopting this qualitative SWOT framework. This study captures the strengths, weaknesses, opportunities, and threats surrounding Indonesia's sector (Sari et al., 2024), thereby establishing an analytical foundation to explain the strategic role of agriculture as a vital pillar in supporting Indonesia's national defense and economic stability.

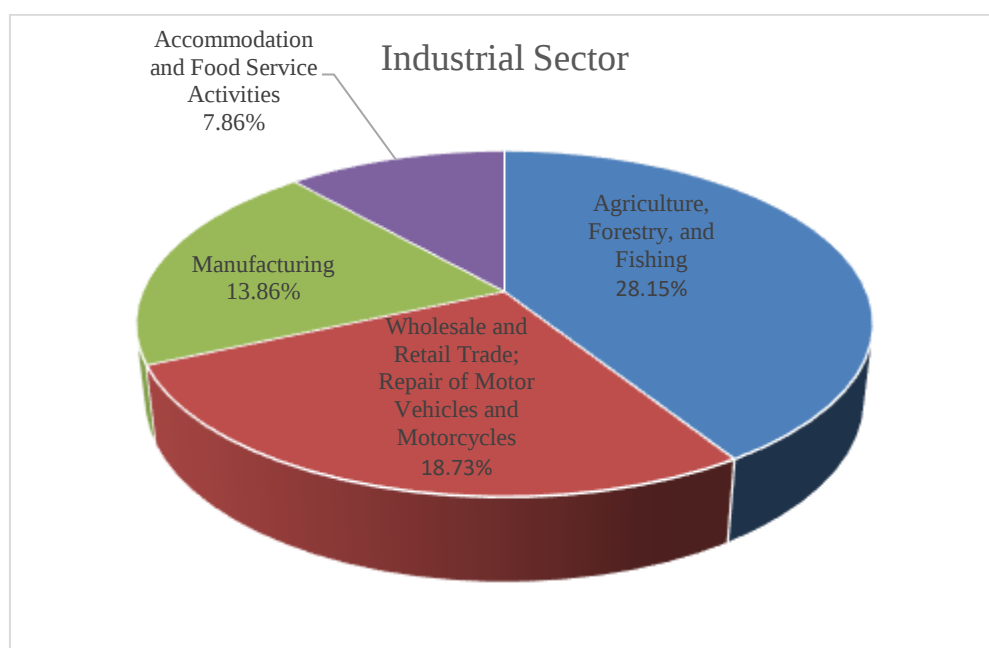
C. Results and Discussion

The agricultural sector serves not merely as a producer of basic food commodities but plays a vital strategic role in safeguarding national sovereignty and supporting the

defense economy. As an agrarian nation facing increasingly complex strategic dynamics, Indonesia's agricultural sustainability has a direct impact on food supply stability, employment, and national resilience against non-military threats. To address the research questions, this study provides a comprehensive analysis covering the mapping of strategic roles, linkages to the defense economy, a qualitative SWOT evaluation, and policy implications.

The Strategic Role of Agriculture in National Economic Development

The agricultural sector holds a strategic position in Indonesia's economic structure. This role is reflected not only in its contribution to national food security but also in its capacity to absorb a substantial portion of the labor force and drive economic activity in rural areas.



Source: BPS, 2025

Figure 2. Labor Absorption Indonesia in 2025

The agriculture, forestry, and fishing sector holds a strategic position in Indonesia's economic structure, serving not only as the cornerstone of national food security but also as the backbone of employment generation, particularly in rural areas. According to data on the distribution of the employed population by business sector, this sector accounts for the largest share of employment, absorbing 28.15% of the national workforce (Sepriani & Yuliawati, 2022). Both theoretically and empirically, investment and government expenditure in agriculture yield an output formation, income growth, and broad-based job creation (Rafiqah, 2020; Ridwan et al., 2025). This multiplier effect reinforces the sector's role as a primary catalyst for local economic activity, capable of mitigating poverty and sustaining national economic stability (Koyslal & M. Kuang, 2022). Nevertheless, such high labor absorption masks persistent structural challenges. Offering a critical perspective Vestby et al. (2021), a high concentration of labor in the agricultural sector often triggers disguised

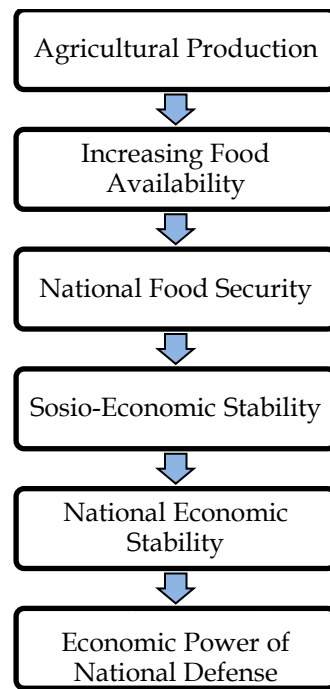
unemployment, a phenomenon rooted in the limited absorptive capacity of the formal and manufacturing sectors. The restricted labor mobility leads to resource misallocation, thereby depressing worker productivity and constraining overall rural welfare.

Based on the analysis, the agricultural sector demonstrates a strategic role as the largest employer and a key driver of the economy through its significant multiplier effect on national growth. However, this high employment rate also presents critical challenges, notably disguised unemployment and low labor productivity. Therefore, strengthening the agricultural sector must not only focus on the volume of labor absorption but should also prioritize modernization to achieve a tangible impact on improving community welfare.

The Interconnection Between Agriculture and Defense Economics

From a defense economics perspective, the agricultural sector plays a crucial role as a strategic foundation for national resilience. Food security extends beyond mere quantitative availability. It encompasses a multidimensional scope that includes accessibility, supply stability, and national sovereignty in achieving self-sufficiency (Lanoe et al., 2025). A robust domestic capacity for sustainable food production serves as a primary pillar in safeguarding the nation against global crises, price volatility, and international supply chain disruptions (Zhang et al., 2022). Consequently, a resilient agricultural sector is an indispensable prerequisite for maintaining state sovereignty against non-military threats.

Nevertheless, an increase in agricultural production capacity alone does not automatically guarantee equitable food security. A critical, analytical lens reveals that production growth unbacked by distribution efficiency, logistics infrastructure improvement, and environmental mitigation can exacerbate food access disparities and resource degradation (Antriandarti et al., 2023). External factors, such as climate vulnerabilities in crop collection, directly impinge upon real food affordability at the consumer level. Consequently, strengthening the agricultural sector must be integrated with robust distribution governance and comprehensive spatial planning policies to optimize its contribution to national resilience. The interrelationships among these variables are systematically illustrated in the structural framework below.



Source : Adapted from (Dwiyono et al., 2023); (Sulistyowarni et al., 2020)

Figure 3. Cocenptual Flowchart of the Relationship Between Agriculture Sector and Defense Economics

Based on Figure 3 above, the interconnected framework originates with agricultural production as the upstream foundation. An increase in agricultural output directly drives enhanced domestic food availability while simultaneously reducing reliance on staple commodity imports (Dinata et al., 2021). A Sufficient and well-distributed food supply incrementally establishes robust national food security (Pawlak & Kołodziejczak, 2020). Ultimately, successful food security in Indonesia directly relates to socio-economic stability, where controlled food prices prevent social unrest and preserve public purchasing power.

In the subsequent phase, his stability escalates to the broader societal level. Ultimately, bolstering national macroeconomic stability through inflation control and the enhancement of business climate capacity. Sustained macroeconomic stability expands the government's fiscal space to allocate development budgets through its allocation, distribution, and stabilization functions. Including the reinforcement of financial backing for national defense economic (Putra et al., 2025). Through this mechanism, strengthening localized agricultural production gradually transforms into a strategic modality aimed at optimizing national deterrence as well as defense capacity against a broad spectrum of long- term threats.

The agricultural sector serves as a strategic foundation for the national defense economy. Increasing upstream agricultural production strengthens food availability, stabilizes socio-economic conditions, and maintains macroeconomic stability. This stability provides the government with fiscal space to allocate funding toward strategic defense sectors. However, efficient distribution management and supply chain improvements remain essential prerequisites for ensuring that the benefits of

food security are evenly distributed. Ultimately, integrating agricultural policy with strategic fiscal policy is a key modality to strengthen the nation's deterrence against non-military threats.

Swot Analysis of the Agricultural Sector in Supporting Defense Economy

Table 1. SWOT Analysis

Internal Factor	
<i>Strengths</i>	<i>Weaknesses</i>
- Abundant natural resources supporting agricultural production	- Relatively low agricultural productivity compared to other countries
- Large area of agricultural land	- High rate of agricultural land conversion
- High absorption of agricultural labor	- Limited access to technology, capital, and innovation
External Factor	
<i>Opportunities</i>	<i>Threats</i>
- Increasing food demand driven by population growth	- Climate change
- Advancements in modern agricultural technology	- Global price fluctuations
- Government food self-sufficiency programs	- Import dependency on certain commodities
- Potential for export expansion	- Land degradation and loss of production land

Source: *Processed by the author*

Based on the Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis, the agricultural sector in Indonesia plays a strategic role in strengthening the pillars of the defense economy. Internally, Indonesia's strategic capital is rooted in its abundant natural resources, the availability of productive land, and a high labor absorption rate. These characteristics position the agricultural sector not merely as a commercial economic activity, but as a primary pillar of food security that correlates directly with national security and stability. This finding supports the view of Rhofita (2022), who emphasizes that optimizing agricultural potential is an essential key to achieving sustainable national food and energy security.

Nevertheless, the findings of the SWOT analysis also reveal structural vulnerabilities that constrain the optimization of this role. Fundamental weaknesses, such as commodity productivity levels that still lag behind neighboring countries, a high rate of land use conversion, farmers' limited access to capital, innovation, and modern technology. This creates a wide gap between theoretical potential and actual production capacity. However, external dynamics present high-value opportunities, such as surging food demand driven by population growth, the acceleration of agricultural technology, momentum from government food self-sufficiency programs, and potential expansion of export markets.

From another perspective, the external threats facing the agricultural sector are considered quite massive. The pace of climate change, soil degradation, import dependency on certain strategic commodities, and high global food price volatility risk are destabilizing national supply chains. Changes in microclimate patterns, for instance, have been empirically proven to suppress harvest yields. As a project by

Malau et al., (2023), climate variability has the potential to significantly reduce the production of major food commodities if it is not offset by technological adaptation strategies and responsive agricultural policy interventions.

To strengthen its role in the defense economy, the formulation of agricultural policy strategies also needs to consider broader macroeconomic and geoeconomic variables. Adaptive policy responses and the transformation of agricultural modernization have become imperative to mitigate the uncertainties of the global strategic ecosystem (Sahnabel & Kurniati, 2025). At the operational level, strengthening local institutions and stakeholder partnerships has proven essential for overcoming capital allocation weaknesses and accelerating technology transfer to the farmer level (Sihombing, 2023). Furthermore, optimizing logistics systems and leveraging the comparative advantages of domestic agricultural products have been shown to boost market competitiveness while reinforcing the resilience of the national food supply (Lestari, 2026). Furthermore, optimizing logistics systems and leveraging the comparative advantages of domestic agricultural products have been shown to boost market competitiveness while reinforcing the resilience of the national food supply (FAO, 2020).

The results of the SWOT analysis demonstrate that Indonesia's agricultural sector holds strategic potential as a pillar of the national defense economy, supported by land availability, labor absorption capacity, and abundant natural resources. However, optimizing his role remains constrained by internal challenges such as low productivity and technological limitations, as well as external threats including climate change and global price fluctuations. Therefore, strengthening an agriculture-based defense economy requires technological modernization and adaptive policies to build domestic production resilience, while maintaining flexibility toward international trade dynamics to ensure sustainable national food security.

Strategic Implications for Strengthening the Defense Economy

Based on the findings of the SWOT analysis, the agricultural sector occupies a central position in strengthening the structure of the national defense economy. The linkage between the agrarian sector and national resilience is not limited to meeting basic needs but also encompasses socio-economic stability and national sovereignty. A resilient agricultural sector directly minimizes dependency on strategic commodity imports, which in turn preserves foreign exchange reserves and dampens external shocks caused by global price fluctuations. In modern security, strengthening domestic production capacity serves as a preventive benchmark against non-military threats, including risks of food crises, climate change, and global supply chain disruptions. This argument aligns with the findings of Lasminingrat & Efriza (2020), who emphasize that the development of national food hubs is a key mitigation strategy in supporting national resilience against global crisis threats.

Operationally, national food self-sufficiency serves as the primary foundation of food security, which directly correlates with domestic security stability. Scarcity and spikes

in basic food prices risk triggering socio-political instability. Consequently, the sustainability of food production acts as a vital pillar of passive defense (Kurnia et al., 2020). Therefore, the modernization of agricultural infrastructure. The adoption of precision technology and the enhancement of local commodity competitiveness are not merely sectoral development agendas, but an integral part of a non- military defense strategy to anticipate external challenges(Zevic et al., 2022). Furthermore, optimizing rural-based food resource management reinforces the resilience of local communities against multidimensional threats (Subejo et al., 2018). In the global geopolitical constellation, food supply sovereignty provides Indonesia with stronger geopolitical leverage in international negotiations (Suryana, 2014).

However, the notion of strictly protecting the domestic agricultural sector as a primary defense economy strategy remains a subject of debate. Erokhin (2017), caution that an overreliance on import restrictions can inadvertently disrupt food supply security itself. Overly protectionist policies risk diminishing the availability and quality of food in the local market, while simultaneously leaving the nation vulnerable in the event of domestic crop failures. Therefore, the strengthening of Indonesia's defense economy should be directed toward building a resilient and adaptive local food system, while continuing to leverage global market opportunities judiciously.

D.Conclusions

This study demonstrates that the agricultural sector constitutes a strategic pillar of Indonesia's national defense economy through its contributions to GDP (12.66%), labor absorption (28.15% of workforce), and food sovereignty. The SWOT analysis reveals that while Indonesia possesses considerable strengths in natural resources and labor capacity, optimizing agriculture's defense potential requires addressing structural weaknesses in productivity (2.3 tons/ha), technology adoption (15% adoption rate), and land preservation (100,000 ha/year loss). The findings confirm the theoretical argument that agricultural resilience directly supports non-military defense capacity by reducing external dependencies and stabilizing socio-economic conditions. Theoretically, this study contributes a conceptual framework integrating agricultural economic indicators with defense economics analysis, filling a gap between agricultural studies and security studies. Methodologically, it demonstrates the utility of qualitative SWOT analysis for examining policy intersections that lack quantitative data. Practically, the study provides the following evidence-based policy recommendations:

1. Agricultural Modernization: Scale precision farming technologies through public-private partnerships, targeting a 30% productivity increase by 2030.
2. Supply Chain Infrastructure: Invest in post-harvest storage facilities and logistics networks, particularly in Eastern Indonesia, to reduce distribution losses from 20% to 10%.
3. Land Preservation: Integrate agricultural land protection into spatial planning laws with enforcement mechanisms and incentives for sustainable farming

practices.

4. Strategic Food Reserves: Strengthen national food reserve policies to withstand 3-6 months of external supply disruptions.
5. International Cooperation: Engage in regional food security agreements while maintaining strategic autonomy in staple commodities.

Limitations of this study include reliance on secondary data and national-level analysis that may not capture regional variations. Future research should conduct provincial-level case studies, quantitative modeling of agriculture-defense relationships, and comparative analyses with other ASEAN countries to strengthen the generalizability of findings.

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