

Agricultural Battalions to Enhance National Defense Food Security Under Policy Establishment of 500 Units

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Abstract

Purpose: This study analyzes the establishment of 500 Agricultural Battalions (YON TP) as a response to non-traditional food security threats in Indonesia and its role in strengthening national defense under VUCA conditions.

Research Methodology: This study uses a qualitative document-based policy analysis using official regulations, ministerial reports, and inter-agency agreements.

Results: Results show that YON TP can strengthen the four FAO pillars of food security through production, distribution, and training functions, but effectiveness depends on governance clarity and peace-war context differentiation.

Conclusions: Military involvement in food systems may create dual-function risks if civilian oversight is weak, while comparative cases show success depends on farmer empowerment, decentralization, and agroecological approaches.

Limitations: This study is limited to qualitative document analysis without field validation or quantitative measurement of program performance.

Contribution: This study contributes by integrating FAO food security framework with VUCA and hybrid threat perspectives to analyze the role of Agricultural Battalions (YON TP) in strengthening Indonesia's food security under complex governance conditions. Practically, it offers policy insights on the importance of governance clarity, civilian oversight, and farmer empowerment to ensure that military involvement in food systems remains effective, sustainable, and aligned with national resilience goals.

Keywords: *Adaptive TNI, Agricultural Battalions, Food Security, Food Security Nexus, National Defense*

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1. Introduction

Global and regional geopolitical dynamics have ushered in a VUCA era (Volatility, Uncertainty, Complexity, Ambiguity) characterized by rapid change, high uncertainty, interdependence complexity, and ambiguous information (Bennett & Lemoine, 2014). The spectrum of available threats poses challenges to states within a strategic framework that is no longer limited to traditional forms of military aggression but encompasses various hybrid threats involving military techniques and non-military intervention methods, economic interventions, supply chain sabotage, information, and food crises (Fridman, 2019; Glenn, 2009; Hoffman, 2007). Hybrid threats in the food sector can manifest as manipulation of global commodity prices, deliberate plant disease spread, food dependency

propaganda, or disruptions in strategic food distribution channels. Indonesia, the largest archipelagic nation in the world with over 280 million people, faces food-related vulnerabilities that cannot be overlooked. Despite having abundant agricultural natural resources, Indonesia relies on imports of rice, corn, soybeans, and sugar ([Lasminingrat & Efriza, 2020](#); [Salasa, 2021](#)). This dependency is exacerbated by the conversion of productive agricultural land, catastrophic climate variability, and a lack of post-harvest infrastructure. The 2023 Indonesian Defense White Paper indicates that in the event of a food crisis, national destabilization by non-military threats resembles open military threats ([Kementerian Pertahanan, 2015](#)). Therefore, food security is not only a welfare issue but also a national defense issue that requires a cross-sectoral approach, including the participation of the Indonesian National Armed Forces (TNI).

In response to the realization of new threats faced through non-military means, the government led by President Prabowo Subianto, through the Ministry of Defense and TNI, has launched the establishment of 500 Agricultural Battalions (YON TP) on a national scale for the period 2025–2029. The set target consists of managing 250,000 hectares of fertile land located in 326 districts in Indonesia, addressing at least 500 hectares of land for each battalion. This policy will consist of the continuation and expansion of a long-discontinued food estate program in Central Kalimantan to ensure the food logistics independence of the Indonesian National Armed Forces (TNI) at every unit level, both in peace and wartime.

The legal basis for the establishment of YON TP includes; The establishment of the Agricultural Battalions (YON TP) policy is grounded in several constitutional, legal, and institutional frameworks that regulate national defense and food security governance in Indonesia. These include Article 30 of the 1945 Constitution concerning the people's defense and security system, Law No. 3 of 2002 on National Defense particularly Articles 2, 13, and 20 which regulate Military Operations Other Than War (MOOTW) and the military's role in assisting local governments in addressing food crises, as well as Article 7 paragraph (2) letter b number 9 of Law No. 34 of 2004 on the Indonesian National Armed Forces (TNI) which emphasizes military support for regional governments. In addition, TNI Commander Regulation No. 2 of 2025 establishes Food Security Production Units through the formation of Food Security Production Companies in every TNI unit (TNI Commander, 2025). The policy is further strengthened by inter-agency cooperation through the Memorandum of Understanding between the Ministry of Defense and the TNI Commander (No. 10/MOU/HK.220/M/4/2020) and between the Ministry of Agriculture and the TNI (No. 04/MOU/HK.230/M/12/2023).

Although the current discourse and initial development of YON TP through pilot food estate projects began in 2020, systematic academic evaluations of the national policy for 500 battalions are very limited. Most previous studies emphasize technical agricultural elements or project assessments in selected locations ([Mulyono, 2023](#); [Sianipar & Tangkudung, 2021](#)). A comprehensive analysis of the YON TP policy, as described in the context of the Four Pillars of Food Security from the FAO, food security nexus, and comparative studies with other countries, particularly post-Soviet Cuba, has yet to be conducted. More than just a sectoral policy, the establishment of YON TP represents a paradigm shift in Indonesia's defense doctrine, from a TNI centered on traditional military (only equipped to face conventional threats) to adapting to food emergencies, climate change, and supply chain failures (along with other new threats). This means that YON TP is not simply an additional battalion but a policy infrastructure to combat hybrid threats in the food sector. We believe that the novelty in this work lies in the effort to articulate the adaptive dimensions of the TNI as a key parameter in the national food security strategy within the concept of a national food defense industry that has been neglected in research-based approaches in Indonesia and the development of the Defense-Food Security Nexus Model as an integrated perspective.

This study aims to examine the Agricultural Battalions (YON TP) policy through multiple analytical perspectives to provide a comprehensive understanding of its strategic relevance and implementation challenges. First, it reviews the YON TP policy strategy using the FAO Four Pillars of Food Security and the food security nexus approach to assess its contribution to availability, access, utilization, and

stability dimensions. Second, it identifies key barriers to the national implementation of the 500 battalions policy, including governance, coordination, and operational challenges. Third, it conducts a comparative analysis between YON TP and similar military–agricultural programs in China, Myanmar, Thailand, and Cuba to extract policy lessons and best practices. Fourth, it proposes the development of an adaptive TNI model and a Defense–Food Security Nexus framework as an innovative approach to address non-traditional security threats. Finally, the study develops a theoretical model alongside practical policy recommendations aimed at optimizing the effectiveness and sustainability of the YON TP program within Indonesia’s national food security and defense strategy.

2. Literature Review

The integrated analytical framework proposed in this research is a model of the Defense-Food Security Nexus that unites five main theories highlighted in the introduction above: the Four Pillars of the FAO, food security nexus, empowerment theory, hybrid threats and VUCA (Volatility, Uncertainty, Complexity, and Ambiguity), and the adaptive TNI (Indonesian National Armed Forces), forming a coherent holistic logical framework to explain the contribution of the YON TP (Task Force Command) policy to food security and national defense. Theoretically, this model is based on the idea that in a world of hybrid threats and VUCA, food security cannot be separated from national security (food security is national security). Therefore, food crises cannot only be addressed by civil technical ministries but must also involve defense actors while maintaining democratic civilian control.

The Defense-Food Security Nexus model in this dissertation consists of three relationships: Structural Nexus of the TNI: Explains how the TNI organization can contribute to building the above-mentioned four FAO pillars, particularly in terms of access and stability. The territorial system of the TNI serves as a security infrastructure that also functions as food infrastructure at the village level ([Agastia, 2023](#)). Functional Nexus: Describes the dual role of soldiers contributing to their resilience against hybrid threats ([Agastia, 2023](#); [Fridman, 2019](#)). In peacetime, soldiers act as facilitators and companions to civilian farmers; however, during war or national crises, they can switch to being primary producers and distributors. The differentiation of these roles is at the core of the adaptive function of the TNI. Governance Nexus: Examines how the YON TP policy should be utilized within a stable civilian control policy framework based on strong civilian oversight to prevent the militarization of agriculture and the resurgence of the dual function of the ABRI (Indonesian Armed Forces) ([Agastia, 2023](#); [Faisol et al., 2025](#)). This nexus allows for the integration of democratic governance principles with food security programs across the military in food security activity. This explains the evolution from non-traditional threats to the YON TP policy and integrates the five main theories (Four Pillars of the FAO, food security nexus, empowerment theory, hybrid threats and VUCA), the concept of adaptive TNI, and the ultimate state of food security and national defense ([Anthony, 2008](#); [Caballero-Anthony, 2018](#)). Therefore, this study not only individually combines different theories but also embeds them into a new integrative analytical model - the Defense-Food Security Nexus Model - which is one of the main theoretical contributions of this research.

2.1 Theoretical Framework

This research weaves together five central, interconnected theoretical perspectives. The Defense-Food Security Nexus model unifies these frameworks into a structure that allows for the understanding of their interactions in the context of YON TP policy analysis. The analysis model based on the Defense-Food Security Nexus Model is presented in Figure 1. Such visualization demonstrates the pathways between hybrid threats and VUCA, through YON TP policy, leading to outcomes in food security and national defense while considering evidence from other countries.

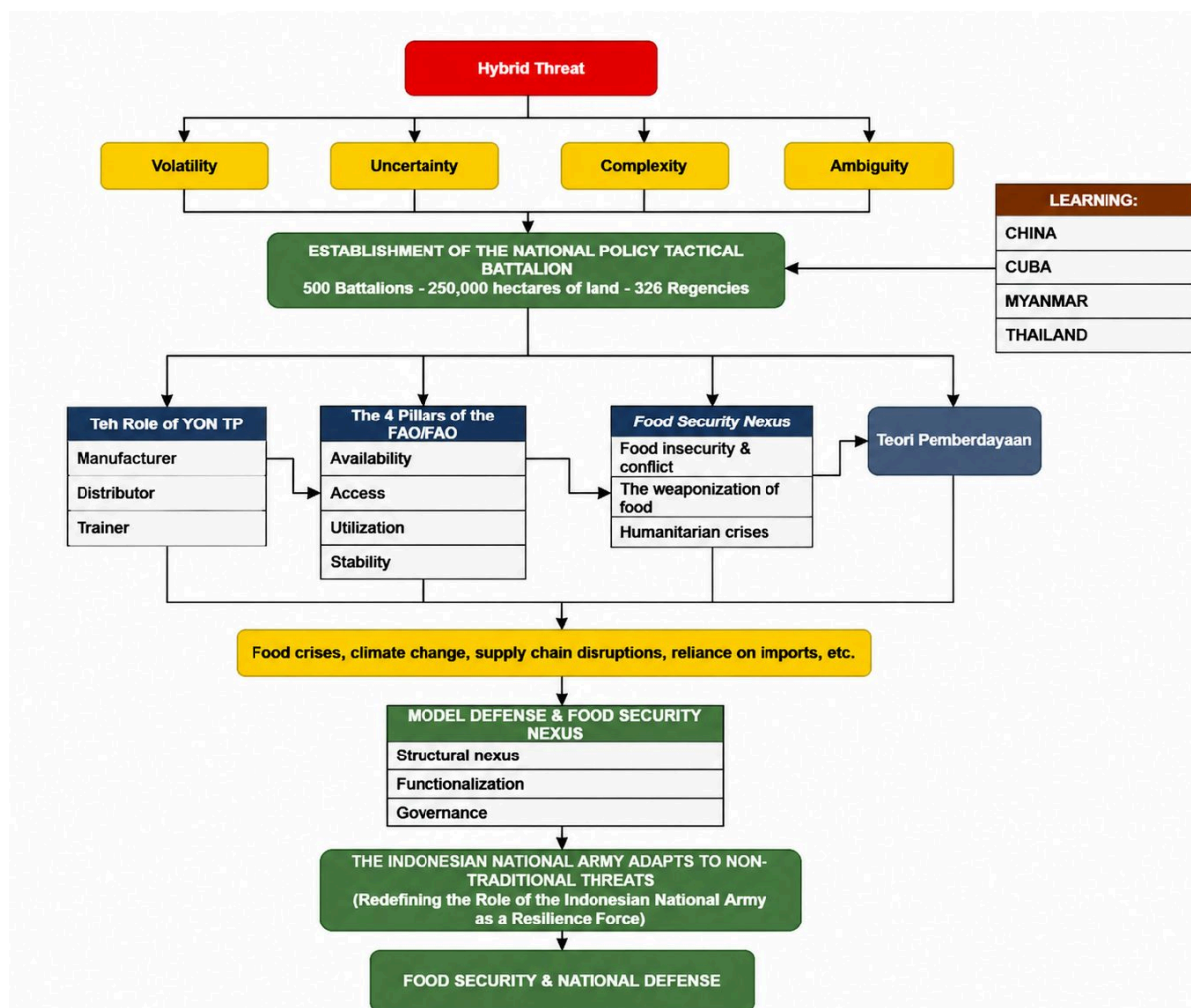


Figure 1. Analysis framework of the defense-food security nexus model

Figure 1 indicates that YON TP policy is not isolated but situated within a nexus of threats, theories, and international learning, targeting the adaptive development of the military (TNI) as a novelty of this work. Therefore, in the following subsection, we will refer to this diagram to examine whether these components are included.

2.2 FAO (2001) Four Pillars of Food Security

According to the definition from the World Food Summit in 1996 by FAO in 2001, food security is: "Food security exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (FAO, 2006, 2008). This definition comprises four elements: availability, access, utilization, and stability.

Table 1. Contribution of YON TP to the four pillars and FAO food security framework

FAO Pillar	YON TP Policy Target	Success Indicator (2029)	Potential Risks
Availability	Food production from 250,000 ha of land	Additional national rice/corn production $\geq 5\%$	Conversion of ecologically unsuitable peatland
Access	Distribution through TNI supply chains to 326 districts	Reduction of food price disparities between regions	Overlap with BULOG/private sector

FAO Pillar	YON TP Policy Target	Success Indicator (2029)	Potential Risks
Utilization	Standardization of soldier nutrition & MBG program	Reduction of stunting rates in target areas	Focus on quantity rather than quality of nutrition
Stability	Food logistics reserves for peace & war situations	TNI food supply autonomy for at least 6 months	Difficulty maintaining stability with a limited budget

Table 1 shows that YON TP can collectively complement the four FAO pillars. Nevertheless, the stability pillar is the most challenging. It heavily relies on long-term budget allocations and food reserves, including differentiating roles between peace and war situations. Therefore, the next section will explore stability more holistically as shown in the food security nexus concept.

2.3 Food Security Nexus Concept

The concept of the food security nexus is integrative, recognizing that food insecurity acts as a catalyst for conflict, political instability, social unrest, mass exodus/migration, and national security threats, as well as the impact of conflict on integrated food security ([Agastia, 2023](#); [Delgado, & Tschunkert, 2022](#); [Falk, Asari, Bahar, Behera, Braun, Caquet, Colwell, Damania, Ebi, El-Beltagy, Elouafi, Honma, Iskanda, Köhler, Koundouri, Lal, Leinen, Mulligan, & Nishikawa, 2026](#); [Muljo, Prasada, & Nugroho, 2023](#)). Although this approach has evolved since its formulation by the FAO (1974), which began with food security, it has now been complemented by Amartya Sen to focus on access and stability, especially considering that hunger persists even when food is available ([Delgado & Tschunkert, 2022](#)). The strategic risk council by [Ellison, Sikorsky, Parera, Femia, Cicarelli, Conger, Hugh, and Wong \(n.d.\)](#), for instance, has established three areas of interaction: Food insecurity and conflict: Food scarcity can contribute to social unrest, mass migration, and inter-group conflicts. Food as a weapon: States and non-state actors can use food as tools of political or economic coercion. Humanitarian crises: Extreme crop failures can lead to famine and loss of livelihoods.

The YON TP in the Indonesian perspective represents the military's involvement in agriculture, which can be interpreted as a preventive approach from the food security nexus; however, there is a possibility that this could undermine civilian dominance if not managed through strong democratic governance mechanisms ([Faisol, Herdiawanto, Candialmeera, & Jihadine, 2025](#)). This view emphasizes the potential synergistic effects of the TNI's involvement in the food sector: YON TP can strengthen food reserves based on national stability that is independent of global market volatility on one hand, and thus, the potential to normalize military roles in the civil domain could regenerate the dual-function pattern of ABRI during the New Order era ([Agastia, 2023](#); [Alaf, Prihantoro, & Suprpto, 2026](#); [Budi, Sutanto, & Purwanto, 2026](#)).

2.4 Empowerment Theory

Community empowerment, especially of farmers in the same area, is essential for sustainable food security programs, as it entails active participation in facing multi-disaster threats and enhancing farmers' household economic systems ([Agastia, 2023](#); [Deffrinica et al., 2020](#); [Rahman, 2023](#); [Yusriadi et al., 2026](#)). Empowerment emphasizes community participation in decision-making and resource management, for instance, in terms of technical assistance and strengthening farmer groups along highways and borders and other border areas to reduce poverty ([Deffrinica et al., 2020](#); [Rahman, 2023](#)). In YON TP, empowerment lies in delivering farming techniques, using soldiers as intermediaries with technical assistance, and involving local farmers in the production and distribution value chain; thus, minimizing the risk of losing civilian ownership due to the militarization of agriculture ([Agastia, 2023](#); [Faisol et al., 2025](#)).

However, empowering local farmers is a prerequisite for the sustainability of food security programs through participation via strengthening household economies ([Agastia, 2023](#); [Deffrinica et al., 2020](#); [Rahman, 2023](#); [Yusriadi et al., 2026](#)). These aspects will be discussed in the challenges and recommendations section of YON TP: its realization in terms of the effectiveness of previous military-agricultural cooperation in various regions and the lack of motivation ([Agastia, 2023](#)).

2.5 Hybrid Threats and VUCA

Hybrid threats by [Fridman \(2019\)](#) and [Bennett and Lemoine \(2014\)](#) provide rationale for how YON TP, as a strategic adaptation of the TNI, needs to be implemented amidst increasing threats beyond the military arena, especially in the domain of food security. Types of hybrid threats in the food sector include sabotage of supply chains, deliberate spread of pests/diseases, and propaganda that leads to dependency on food imports from foreign countries, characterized in the context of food insecurity triggering social conflicts and destabilization ([Agastia, 2023](#); [Delgado, & Tschunkert, 2022](#); [Mulyo, Prasada, & Nugroho, 2023](#)).

Volatility, uncertainty, complexity, and ambiguity the VUCA concept emphasizes non-traditional environments such as climate crises and global supply chain disruptions that require adaptation to respond ([Bennett & Lemoine, 2014](#)). We predict that when the adaptive strategy of YON TP consists of the dual roles of the military as producers and distributors of food, Indonesia will be better resilient to these threats and capable of countering the loss of civilian supremacy by maintaining more effective governance ([Agastia, 2023](#); [Alaf, Prihantoro, & Suprpto, 2026](#); [Faisol, Herdiawanto, Candialmeera, & Jihadine, 2025](#)).

2.6 Model of the Defense-Food Security Nexus as an Integrative Framework

Non-traditional threats (non-traditional security, NTS) as a concept have emerged since the post-Cold War global era and are now also evident in international relations literature and security studies in the form of cross-border and multilateral issues such as food security crises, water scarcity, mass migration, global pandemics, and climate change, thus posing direct threats to national resilience ([Anthony, 2008](#); [Caballero-Anthony, 2018](#); [Delgado & Tschunkert, 2022](#); [Falk et al., 2026](#)). Unlike traditional military threats that are kinetic, direct, and aimed at state actors, NTS threats are asymmetric, cross-border, multi-dimensional, and more often lack actors (stateless threats), demanding adaptive responses through civil-military cooperation ([Agastia, 2023](#); [Anthony, 2008](#); [Caballero-Anthony, 2018](#)). In Indonesia, NTS, particularly food insecurity, not only causes social unrest and mass migration but also leads to the loss of the nation's economic resilience, as exemplified by the relationship between food instability and conflict as well as political destabilization ([Alaf et al., 2026](#); [Budi et al., 2026](#); [Mulyo et al., 2023](#); [Mulyono, 2023](#)).

Against this backdrop, the TNI is tasked with evolving into a flexible force capable of responding to a spectrum of threats that are not only doctrinally but also structurally and operationally diverse. This adaptation process is handled with a definition of three main steps: dual-role readiness (the military's response to operate in the field while they engage in military missions and, in practical terms, for civil roles, such as for agriculture, in certain contingencies); decentralized resilience (each TNI unit or unit's capability to handle local crises); and the integrative role of civil stakeholders (the TNI operates to collaborate in the context of democratic civil control). The establishment of YON TP is the literal realization of the adaptive TNI model in the context of food security.

This study argues that YON TP, if well-designed, is positioned to serve as a best practice template for other developing agrarian countries on how to mainstream armed forces into national security policies without sacrificing civilian supremacy. Therefore, the novelty of our work lies not only in evaluating policies but also in creating the concept of "adaptive TNI" in the form of a new lens.

Table 2. The implementation of five principles food security nexus

Principle	Description	Key Indicators
Role Differentiation	TNI roles differ between peacetime and wartime	Regulations governing role differentiation
Decentralized Resilience	Each unit has its own food security area	Availability of food reserves in each battalion
Farmer Empowerment	Local farmers are subjects, not objects	At least 70% of production inputs from partner farmers
Civil Control	Parliamentary and public oversight of budgets, land, production	Annual reports published

Principle	Description	Key Indicators
Ecological Sustainability	Prioritization of non-peat dry land, agroecology	Zero conversion of peatland and protected forests

Table 2 show this model which explains the evolution from non-traditional threats to the YON TP policy and integrates the five main theories (Four Pillars of the FAO, food security nexus, empowerment theory, hybrid threats and VUCA), the concept of adaptive TNI, and the ultimate state of food security and national defense. Therefore, this study not only individually combines different theories but also embeds them into a new integrative analytical model - the Defense-Food Security Nexus Model - which is one of the main theoretical contributions of this research.

3. Research Methodology

3.1 Research Design

A qualitative approach with a document-based policy analysis design is adopted for this research (Dalglish et al., 2020). This design is chosen because the research focuses on the national policy at an early implementation stage in 2025–2029 and does not yet have access to primary field data and key informants such as YON TP commanders, particularly due to security and bureaucratic reasons.

3.2 Data Sources

Data is collected from three main groups: Category 1 is Primary Policy Documents: Presidential Regulation No. 66 of 2021 concerning the Logistics and Food Reserve Agency; TNI Commander Regulation No. 2 of 2025 concerning Food Resilience Production Units within the TNI; Law No. 3 of 2002 concerning National Defense; Law No. 34 of 2004 concerning the TNI; Memorandum of Understanding between the Ministry of Defense and the TNI Commander (10/MOU/HK.220/M/4/2020); Memorandum of Understanding between the Ministry of Agriculture and the TNI (04/MOU/HK.230/M/12/2023). Category 2 is Official Reports and Government Publications: Annual Reports from the Ministry of Defense (2021–2024); Financial Records regarding the State Revenue and Expenditure Budget (allocation for food estates and YON TP); Publications from the TNI Information Center; Reports from the Agricultural Instrument Standardization Agency. Category 3 is Supporting Literature: Journal articles and journals indexed by SINTA or from independent outlets worldwide; the book *Cuba Against the Green Revolution* (Rosset et al., 1994); verified news from established national media (ANTARA, Beritasatu, RRI, Kompas, and CNN Indonesia) relevant to the period between 2020 and 2025.

3.3 Data Analysis Technique

3.4 Data Validity

For the validity and credibility of the research, this study applies theory triangulation (comparing findings with four theoretical perspectives) and data source triangulation (comparing information from policy documents, official reports, media, and scientific literature). Debriefing sessions are conducted with two colleagues in the fields of defense policy and food security.

3.5 Data Visualization

To enhance analysis and contribute to its understanding, Figure 1, the conceptual framework of the Food Security-Defense Nexus Model, and Tables 1, YON TP's contributions to the 4 pillars of FAO, Table 4, comparison of military-agriculture programs from five countries, Table 5, optimization recommendations, and Table 6, policy implications and priority actions are also included in this volume. Data tables and figures are presented in accordance with the findings of the document analysis.

4. Results and Discussions

YON TP was developed to provide military independence in food logistics. The policy implications are: (a) relations with BULOG during peacetime, YON TP production must flow through BULOG to maintain price stability; (b) uniform food reserves each battalion should have a minimum food reserve of three months (peacetime) and six months (wartime readiness); (c) infrastructure readiness storage/cooling facilities and transport (equipment) must be prepared before production begins (Faisol

[et al., 2025](#); [Rosset et al., 1994](#); [Trinata et al., 2025](#)). Through the four mentioned priority actions, YON TP policy has a better chance of success without compromising democratic rights and preserving ecology.

4.1 Policy Perspective of YON TP Based on the Four Pillars of FAO

Referring to the research report on policy documents, three main roles of the YON TP strategy supporting the four FAO pillars were identified, including food producers through direct management of agricultural land, distributors via the logistics supply chain of the military, and trainers/facilitators who train and empower civil farmers ([Budi et al., 2026](#)).

Table 3. Impact of YON TP on the 4 FAO food security pillars

FAO Pillar	YON TP Policy Targets	Success Indicators (2029)	Potential Risks
Availability	Food production from 250,000 ha of land	Additional national rice/corn production $\geq 5\%$	Conversion of ecologically unsuitable peatland
Access	Distribution through the military supply chain to 326 districts	Reduction of food price disparities between regions	Overlap with BULOG/private sector
Utilization	Nutritional standardization for soldiers & Free Nutritious Food Program	Reduction of stunting rates in target areas	Focus on quantity (not quality) of nutrition
Stability	Food logistics reserves for peace & war situations	Military food supply independence for at least 6 months	Difficult to maintain stability during budget constraints

Table 3 summarizes the contributions of these roles. The analysis of the table shows that both the availability and access pillars receive significant weight in policy implementation, while the utilization and stability pillars require further strengthening.

Food Producers: Based on the idle land (1.4 million hectares) identified (Pratama, 2025), YON TP will become a major additional producer. However, the availability pillar will heavily depend on the land. The food estate experience in Central Kalimantan shows that productivity only reaches 3.2 tons of harvested dry grain per hectare, which can be considered lower than the target of 5 tons per hectare ([Nurdin, 2025](#)), due to the unfavorable conditions of peatland.

Distributors: One of the comparative advantages of the military is its territorial logistics system, capable of managing natural disasters and distribution to rural areas. This strengthens the access pillar, particularly for the third space of access: frontier, outermost, and disadvantaged communities. Member of Commission I of the Indonesian House of Representatives, Major General TNI TB. Hasanuddin, emphasized that in times of war, the military must operate independent logistics depots in each region (Allan & witokaryono, 2025; [Herawati et al., 2025](#); Rizaldi & Kliwantoro, 2025).

Trainers/Facilitators: In times of peace, the territorial military can function as frontline agricultural extension workers, acting as "motivators, facilitators, innovators, and dynamizers" for local farmers ([Agastia, 2023](#); [Astuti et al., 2021](#)). This role aligns with empowerment theory ([Effendi, 2023](#)) and is supported by the TNI Commander Regulation No. 2 of 2025, emphasizing "Assistance from Local Governments."

Considering the food security nexus, the military's contribution to food security has two opposing dimensions. On the positive side, YON TP can contribute to the stability of the national system ([Herawati et al., 2025](#)). On the negative side, there is the potential revival of the dual-function model of the military ([Faisol et al., 2025](#)). To illustrate the application of such dilemmas in other countries, Table 4 lists military-agriculture programs facing similar challenges in five countries: Indonesia, China ([Tüysüzöğlu & Kurt, 2022](#)), Myanmar ([Forsyth & Springate-Baginski, 2022](#); [Myoe, 2023](#)), Thailand ([Agastia, 2023](#); [Madiyoh et al., 2021](#)), and Cuba ([Rosset et al., 1994](#)).

The data at the table level were collected from policy documents, annual reports, and academic literature.

The positive aspect is that YON TP has the potential to strengthen the stability pillar of FAO food security by enabling food reserves independent of the unstable global market. Military-managed food reserves provide adequate food security in crisis situations and can thus also avert crises that could lead to food shortages and social unrest ([Herawati et al., 2025](#)). On the negative side: Normalization of military involvement in the civilian sector risks reviving the dual-function pattern of the military from the New Order era, threatening civilian supremacy and democracy ([Faisol et al., 2025](#)). Similar critiques have been voiced by Trinata et al., (2025) and several members of the House of Representatives. Therefore, YON TP policies must explicitly differentiate between peaceful and wartime situations with the military.

Based on this analysis, recommendations are made to help optimize YON TP's support for the Four FAO Pillars and the food security nexus while reducing the dilemma of agricultural militarization by ensuring civilian hegemony ([Faisol et al., 2025](#); [Herawati et al., 2025](#)). These recommendations stem from the analysis of policy documents ([Budi et al., 2026](#)), international comparisons ([Madiyoh et al., 2021](#); [Myoe, 2023](#); [Rosset et al., 1994](#); [Tüysüzöğlu & Kurt, 2022](#)), and empowerment principles ([Agastia, 2023](#); [Astuti et al., 2021](#); [Effendi, 2023](#)), and recommend a stronger response, including strengthening the currently weak utilization and stability pillars.

4.2 Differentiated roles related to national security conditions of the military:

In peacetime: The military functions as a supporter (trainer/facilitator) in coordination with the Ministry of Agriculture and BULOG, and food production is distributed using normal market mechanisms to avoid overlaps ([Budi et al., 2026](#)) and the risk of dual-function ([Faisol et al., 2025](#)). In wartime/crisis: The military plays a primary role in providing/distributing territorial logistics for 6 months, as the civilian sector system may fail ([Herawati et al., 2025](#)). This separate differentiation needs to be regulated in legislation beyond Government Regulations, not the TNI Commander Regulation No. February 2025, to strengthen civilian control as in the Thai model and avoid the authoritarian pattern of Myanmar ([Forsyth & Springate-Baginski, 2022](#); [Myoe, 2023](#)).

Optimization of producer roles with ecological validation: Prioritizing non-peatland from 1.4 million hectares of idle land to achieve the target of 5 tons of harvested dry grain per hectare, which should be taken as a learning principle from the food estate disaster ([Nurdin, 2025](#)), and also to have data triangulation for validity ([Yusriadi et al., 2026](#)). Strengthening the utilization and stability pillars: Creating evidence-based nutrition programs (not just quantity), collaborating with FAO, offering peer debriefing ([Yusriadi et al., 2026](#)), and creating hybrid food reserves that make civil farmers the main subjects (like in Cuba) ([Bouffange, 2023](#); [Rosset et al., 1994](#)).

Empowering farmers with military trainers: Emphasizing the role of Babinsa as "motivators, facilitators, innovators, and dynamizers" ([Agastia, 2023](#); [Astuti et al., 2021](#)), with a focus on food sovereignty; emphasizing food sovereignty like Cuba rather than military food security ([Rosset et al., 1994](#)) to address resource access issues in 3T. These recommendations need to be enforced from the bottom up, through an integrated joint command center (TNI-Polri-Kementan) together ([Budi et al., 2026](#)) and regular sustainability audits.

4.3 Comparison with Military-Agriculture Programs in Other Countries

To complement the analysis, this study compares Indonesia's Territorial Agricultural Battalion program with similar military agriculture programs in four other countries: China ([Tüysüzöğlu & Kurt, 2022](#)), Myanmar ([Forsyth & Springate-Baginski, 2022](#); [Myoe, 2023](#)), Thailand ([Agastia, 2023](#); [Madiyoh et al., 2021](#)), and Cuba ([Rosset et al., 1994](#)). This comparison is presented in Table 4.

4.3.1 Myanmar: Agricultural and Livestock Battalion

The Myanmar Tatmadaw has an Agricultural and Livestock Battalion directly managed by the Tatmadaw, with operational scales covering dozens of battalions ([Myoe, 2023](#)). Senior General Min Aung Hlaing inspects agricultural operations in Myanmar, such as his own, and food production is

emphasized as a means of welfare for the soldiers' families and logistics, according to Min Aung Hlaing's remarks ([Forsyth & Springate-Baginski, 2022](#); [Steinmüller, 2021](#)). This battalion conducts farming from scratch, contributing to supplies and selling its harvest to the community at subsidized amounts, often involving land takeovers ([Forsyth & Springate-Baginski, 2022](#); [Myoe, 2023](#)). However, this model has a much stronger association with the authoritarian military regime since the takeover on February 1, 2021, which has led to prolonged conflict and instability ([Steinmüller, 2021](#); [Vicol et al., 2024](#)).

4.3.2 China: Xinjiang Production and Construction Corps (XPCC/Bingtuan)

In China, the Xinjiang Production and Construction Corps (XPCC or Bingtuan), established in 1954 from over 100,000 PLA soldiers redirected to agriculture for expansion purposes along the northwestern border region ([Tüysüzöğlu & Kurt, 2022](#)). The XPCC is a unique paramilitary organization that combines the roles of the Party, Military, Government, and Corporations ([Li et al., 2022](#); [Tüysüzöğlu & Kurt, 2022](#)). By the end of 2019, XPCC managed 1,244,770 hectares of agricultural land and had over 3.1 million residents ([Li et al., 2022](#); [Maloney & Moody, 2024](#); [Yee, 2025](#)).

4.3.3 Thailand: Royal Thai Army Agricultural Factories

Royal Thai Army agricultural factories are available to produce food for the army in Thailand ([Connor et al., 2023](#); [Yang & Cong-hua, 2024](#)), and agricultural technology has advanced. The involvement of the Thai military is not about large-scale production at the primary level with active soldiers but rather more downstream in the agricultural industry and research ([Agastia, 2023](#); [Wu et al., 2026](#)).

4.3.4 Cuba: Post-Soviet Food Defense Model

Cuba is a prominent comparison case to Indonesia. As reported by Peter Rosset and Medea Benjamin in *Cuba Against the Green Revolution* ([Rosset et al., 1994](#)), the devastating collapse of the Soviet Union in 1991 severed Cuba's food supplies, chemical fertilizers, pesticides, and fuel, as the country relied on imports from the Soviet Union and other socialist bloc economies ([Moon et al., 2021](#); [Rosset et al., 1994](#)). In response to the severe food crisis of the "Special Period" following the dissolution of the Soviet Union in 1991, the Cuban military (Fuerzas Armadas Revolucionarias/FAR), led by Raúl Castro (Minister of Defense), took a dominant position ([Bouffange, 2023](#)).

Some measures taken include ([Bouffange, 2023](#)): FAR farming for internal needs instead of taking from the starving civilian population; state agricultural land divided into small plots aggressively managed by cooperatives and family farmers; urban agriculture (organoponicos) developed throughout the island; and low-input organic farming experiments established with the FAR since 1987 before the crisis erupted ([Moon et al., 2021](#); [Rosset et al., 1994](#)). The context and orientation that separate the Cuban model from the Indonesian Territorial Agricultural Battalion program are the context and methods: Cuba has established low-input organic agriculture promoting the participation of smallholders and cooperatives as the main subjects ([Bouffange, 2023](#); [Moon et al., 2021](#)), while Indonesia tends toward large-scale primary production with active military involvement ([Agastia, 2023](#); [Faisol et al., 2025](#)). Cuba promotes farmer-based food sovereignty ([Rosset et al., 1994](#)), while Indonesia focuses on military-based food security ([Agastia, 2023](#)).

Table 4. Comparison of Military-Agriculture Programs: Indonesia, China, Myanmar, Thailand, and Cuba

Aspect	Indonesia (YON TP)	China (XPCC)	Myanmar (Tatmadaw)	Thailand (RTA)	Cuba (FAR)
Year of Massive Start	2025	1954	Colonial, reinforced 2021	1970s	1990s (Special Period)
Scale of Personnel	500 battalions (target)	>100,000 soldiers	Dozens of battalions	Several factories	Entire FAR
Managed Land	250,000 ha (target)	1.24 million ha (2019)	Not published	Limited	State land divided into cooperatives

Aspect	Indonesia (YON TP)	China (XPCC)	Myanmar (Tatmadaw)	Thailand (RTA)	Cuba (FAR)
Production Focus	Rice, corn, vegetables	Cotton, wheat, corn	Rice, corn, livestock	Processed food	Organic vegetables, local food
Approach	Multifunctional units	Integration of party military government	Military as economic manager	Research & downstream	Organic farming, decentralization
Civil Control	Yes (democracy)	No (authoritarian)	No (military junta)	Yes (constitutional monarchy)	Single socialist party
Farmer Empowerment	Object of assistance	Minimal	Indirect	Main subjects (cooperatives)	Subject (cooperatives)
Sustainability	Just started	>70 years	Unstable	>50 years	>30 years

After reviewing Table 4, several patterns emerge: countries with democratic civilian government control, such as Indonesia and Thailand, tend to limit military involvement in the food sector (Thailand: restricted to factories and research (Agastia, 2023; Madiyoh et al., 2021); Indonesia: multifunctional but subject to civilian oversight (Pratama, 2025)). In contrast, authoritarian governments like China (paramilitary XPCC (Li et al., (2022); Tüysüzoğlu & Kurt, (2022)) and Myanmar (dozens of battalions under Tatmadaw (Forsyth & Springate-Baginski, 2022; Myoe, 2023)) tend to dominate this space. However, Cuba stands out as an unprecedented single-party socialist state that promotes land democratization among cooperatives and smallholder farmers while supporting low-input organic agriculture (Bouffange, 2023; Moon et al., 2021; Rosset et al., 1994).

4.4 Lessons from Cuba: Farmer-Based Food Sovereignty Model

The book "Cuba vs. the Green Revolution" (Rosset, Benjamin, & Exchange, 1994) clearly identifies how Cuba survived an acute food crisis after the collapse of the Soviet Union (Special Period, early 1990s). After losing 80% of food imports, chemical fertilizers, and pesticides, Cuba turned to armed actions using the military (FAR) but empowered farmers and cooperatives as key participants in the process. Among the highlights are: the Revolutionary Armed Forces (FAR) meeting its food needs internally rather than relying on burdened civilians (Bouffange, 2023; Rosset et al., 1994). Breaking up state agricultural land into small plots, heavily managed by cooperatives and family farmers (Bouffange, 2023; Moon, Ward, Rodriguez, & Foyo, 2021). Breaking state agriculture land into small plots (mainly managed by cooperatives and family farmers) (Rosset et al., 1994; Safirtri, Abdoellah, Gunawan, Suparman, & Parikesit, 2022). Experimenting with low-input organic farming following a 70% decline in chemical fertilizers and a 50% drop in pesticides and fuel imports (Bouffange, 2023; Moon et al., 2021; Rosset et al., 1994). Decentralizing the food distribution system through cooperatives and reserves at the local government level (Rosset et al., 1994). Cuba serves as a comparative case study relevant to Indonesia. The book *Cuba Against the Green Revolution* by Rosset et al. (1994) illustrates how Cuba sustained itself through a pressing food crisis following the Soviet Union's collapse in 1991 ("Special Period") (Bouffange, 2023; Moon et al., 2021; Rosset et al., 1994). Key actions included FAR providing food for domestic consumption rather than from the civilian population, breaking state agricultural land into small plots (mainly managed by cooperatives and family farmers), rapid urban farming (including organopónicos) across the island, and experimenting with low-input organic farming with FAR since 1987 and decentralizing the food distribution system through cooperatives and reserves at the local government level (Rosset et al., 1994).

The core lesson for Indonesia is that Cuba's success did not rely on the militarization of agriculture but rather on agroecology supported by low-input organic farming and the empowerment of local farmers and cooperatives as the main pillars (Bouffange, 2023; Moon et al., 2021; Rosset et al., 1994). However, Indonesia relies on large-scale primary production with chemical fertilizer inputs and hybrid seeds, as adopted in its Territorial Agriculture Battalions (Agastia, 2023; Faisol, Herdiawanto, Candialmeera, & Jihadine, 2025), which contrasts with Cuba's approach that is neither ecologically sustainable nor financially viable (Moon et al., 2021; Rosset et al., 1994). Cooperatives in Cuba also

represent local food store ownership, where each cooperative member and family farmer must set aside part of their harvest for local community reserves ([Rosset et al., 1994](#)). This practice is highly relevant as the Territorial Agriculture Battalions aim to implement food logistics independence in the region.

4.5 Challenges of Implementing the National Policy for 500 Agricultural Battalions (YON TP)

Based on extensive reviews of policy documents, evidence-based information on food estates ([Agastia, 2023](#); [Wisnaeni & Najib, 2025](#)), and comparisons with international military-agricultural schemes ([Li et al., 2022](#); [Prasetyo et al., 2025](#); [Rosset et al., 1994](#)), five challenges have been identified in implementing the National Policy for 500 Territorial Agriculture Battalions: Land and Ecological Issues: The availability of 250,000 hectares of marginal land suitable for agriculture ([Wisnaeni & Najib, 2025](#)). In Central Kalimantan, experiences with food estates show that not all vacant land is suitable for intensive agriculture due to environmental fragility and the high risk of converting peatland and protected forests ([Agastia, 2023](#); [Wisnaeni & Najib, 2025](#)). Cross-Sector Coordination: At least five ministries (Ministry of Defense, Ministry of Agriculture, Ministry of Home Affairs, ATR/BPN, KLHK) and 326 local governments must complement each other. However, a lack of integrated geographic information systems presents a critical barrier ([Agastia, 2023](#)). Power structures conflict with BULOG, state and commercial actors in the food supply chain who have a voice over it, potentially leading to harm. In the future, some may observe market distortions and inefficiencies in resource allocation as a result. Indigenous Community Rights: Conflicts over land involving indigenous territories are an inevitable outcome, leading to agrarian conflicts ([Lubis et al., 2025](#)). The food estate project in Central Kalimantan has faced criticism for neglecting the rights of the Dayak indigenous community and the principles of Free, Prior, and Informed Consent (FPIC) ([Lubis et al., 2025](#); [Wisnaeni & Najib, 2025](#)).

Human Resource Readiness for Soldiers: Systematic dual-certified skill training (military-agri-business) is needed. Although curriculum and instructors are still in the early stages of development, Prof. Arif Satria, Rector of IPB University, has assured synergy with the TNI. Strategic Policy Recommendations for Improvement on Table 3 presents structured policy recommendations aligned with intervention areas to address these challenges. Targeted policy recommendations focus on different intervention areas, ensuring policy outcomes, from mitigating financial risks to market recovery, can be achieved through combined interventions. Implementers and measurable success indicators accompany each recommendation. Policymakers will utilize this table as a guide for implementation.

4.6 YON TP as a Solution to Non-Traditional Threats

4.7 Discussion

According to the model analyzed above, this research claims that YON TP is more than just an ordinary agricultural policy. In the context of non-traditional threats, YON TP offers three distinct solutions in combination (unique value propositions): First, YON TP provides "protected" food reserves not fully dependent on the global market for food supplies that are vulnerable to it. When conflicts or geopolitical pressures arise, battalions spread throughout Indonesia serve as a safety net that is not easily overwhelmed. Second, through territorial units, YON TP develops resilience each battalion has its own zone of responsibility, where if one zone is hit, the others remain unaffected, and a chain reaction is not triggered. This is different from centralized food reserve models (like BULOG), which have greater exposure to single-point attacks. Third, YON TP has a deterrent effect on non-state actors who may exploit food insecurity politically. Military penetration in agricultural production demonstrates the state's structural readiness and capacity to respond to disruptions in the food supply chain. Thus, YON TP moves beyond the traditional military role as a defense force into the domain of resilience power. The novelty of this research is the explicit identification and formulation of the military's adaptive role as a food defense strategy not covered in existing literature. The implication, in other words, is that the "adaptive military" paradigm can be adapted to address other non-traditional issues, such as water, energy, and public health emergencies.

From Table 5, there are four main policy impacts that require urgent attention: civil control over the military, land governance and indigenous peoples' rights, defense budgeting, and the national logistics system and food reserves. Operationally, Table 4 presents these four consequences along with the risks and actions that need to be prioritized in the short term (0–6 months).

The military's role in the food sector can blur the lines between defense and civilian activities. The policy implications are the need to enhance civil control mechanisms by: (a) the government should actively involve Parliament in regulating the budget, land use, and YON TP production each year; (b) public information must be transparent the government should provide public information on YON TP production, distribution, and budget use; and (c) a clearer regulatory role. If this is not addressed, the danger of democratic regression to the same dual-function military approach becomes very real.

However, targeting 250,000 hectares also has implications for land availability and agrarian conflicts. Necessary strategies include: A) adhering to FPIC (Free, Prior, and Informed Consent) principles when planning land use that may be customary land; B) prioritizing use in critical/non-peat areas with input from the Ministry of Environment and Forestry; C) fair profit-sharing when land is divided between the military and local farmers (e.g., military 30%, farmers/landowners 70%) as a profit-sharing arrangement among them. Cuba has a lesson: military-based agricultural programs are not a solution for all: These operations are heavily dependent on the support of local farmers.

The total budget for 500 YON TP is estimated to reach trillions of rupiah. Some implications for policy are: a) priorities must be considered by the House of Representatives regarding the budget will the budget for YON TP reduce funding for defense hardware and the military; b) efficiency must be assessed in accordance with strict cost-benefit analysis; c) alternative funding sources such as CSR from state-sponsored food producers or public/private partnerships have a role to play.

4.8 Recommendations for Policy Optimization

Table 5. Policy recommendations to enhance YON TP

Area	Recommendation	Implementing Parties	Success Indicators (2027)
Regulation	Establish a Government Regulation on Military Food Logistics Reserves to distinguish between "peacetime" and "wartime" roles.	Ministry of Defense, State Secretariat, Parliament	Regulation published within one year.
Land	Conduct a comprehensive ecological study prioritizing dry land (not peat).	Ministry of Agriculture, ATR/BPN, Ministry of Environment	100% of YON TP land certified according to regulations.
Coordination	Form a Coordination Team to Accelerate Food Production and Independence (Central and Regional Governments).	Coordinating Ministry for Economic Affairs, Ministry of Defense, Ministry of Agriculture, Ministry of Home Affairs	Hold quarterly meetings with measurable outcomes.
Empowerment	Strengthen local communities (farmer community members) and cooperatives as subjects, not objects.	Territorial Military, Regional Agriculture Office	At least 70% of production inputs sourced from partners.
Military Personnel	Integrate dual-skills modules (agriculture and management) into military training programs.	Military Headquarters, IPB, Defense University	50% of YON TP personnel registered as agripreneurs.
Accountability	Make annual reports on YON TP production, distribution, and budget publicly accessible.	Ministry of Defense, Parliamentary Secretariat	Reports published and discussed in Commission I of Parliament.

Area	Recommendation	Implementing Parties	Success Indicators (2027)
Indigenous Peoples' Rights	Free, Prior, and Informed Consent (FPIC) for all land to be used.	Military, Ministry of Village, BPN	Zero agrarian conflicts resulting in human rights violations.

The recommendations in Table 5 contain policies tailored to structured data, based on issues needing intervention. Each recommendation includes the implementing parties and measurable success indicators. This table is considered important for policymakers. Adapted from research findings and best policy recommendations from Cuba (Rosset et al., 1994) as well as recommendations from Parliament. After writing the technical recommendations, these need to be translated into more strategic policy implications. Table 5 will summarize the policy implications and key actions required in the next six months

4.9 YON TP as a Solution to Non-Traditional Threats

According to the model analyzed above, this research claims that YON TP is more than just an ordinary agricultural policy. In the context of non-traditional threats, YON TP offers three distinct solutions in combination (unique value propositions):

First, YON TP provides "protected" food reserves – not fully dependent on the global market for food supplies that are vulnerable to it. When conflicts or geopolitical pressures arise, battalions spread throughout Indonesia serve as a safety net that is not easily overwhelmed.

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Third, YON TP has a deterrent effect on non-state actors who may exploit food insecurity politically. Military penetration in agricultural production demonstrates the state's structural readiness and capacity to respond to disruptions in the food supply chain. Thus, YON TP moves beyond the traditional military role as a defense force into the domain of resilience power. The novelty of this research is the explicit identification and formulation of the military's adaptive role as a food defense strategy not covered in existing literature. The implication, in other words, is that the "adaptive military" paradigm can be adapted to address other non-traditional issues, such as water, energy, and public health emergencies

4.10 Policy Implications

4.10.1 Civil-Military Relations and Civil Control over the Military

The military's role in the food sector can blur the lines between defense and civilian activities. The policy implications are the need to enhance civil control mechanisms by: (a) the government should actively involve Parliament in regulating the budget, land use, and YON TP production each year; (b) public information must be transparent – the government should provide public information on YON TP production, distribution, and budget use; and (c) a clearer regulatory role. If this is not addressed, the danger of democratic regression to the same dual-function military approach becomes very real.

4.10.2 Land Governance and Relevance of Indigenous Peoples' Rights

However, targeting 250,000 hectares also has implications for land availability and agrarian conflicts. Necessary strategies include: A) adhering to FPIC (Free, Prior, and Informed Consent) principles when planning land use that may be customary land; B) prioritizing use in critical/non-peat areas with input from the Ministry of Environment and Forestry; C) fair profit-sharing when land is divided between the military and local farmers (e.g., military

30%, farmers/landowners 70%) as a profit-sharing arrangement among them. Cuba has a lesson: military-based agricultural programs are not a solution for all: These operations are heavily dependent on the support of local farmers.

4.10.3 Defense Budget and National Priorities

The total budget for 500 YON TP is estimated to reach trillions of rupiah. Some implications for policy are: a) priorities must be considered by the House of Representatives regarding the budget – will the budget for YON TP reduce funding for defense hardware and the military; b) efficiency must be assessed in accordance with strict cost-benefit analysis; c) alternative funding sources such as CSR from state-sponsored food producers or public/private partnerships have a role to play

4.10.4 Impact on the National Logistics System and Food Reserves

YON TP was developed to provide military independence in food logistics. The policy implications are: (a) relations with BULOG – during peacetime, YON TP production must flow through BULOG to maintain price stability; (b) uniform food reserves – each battalion should have a minimum food reserve of three months (peacetime) and six months (wartime readiness); (c) infrastructure readiness – storage/cooling facilities and transport (equipment) must be prepared before production begins.

Table 6. Policy implications and priority actions

Policy Implications	Risks if Priority Actions Are Not Followed (0-6 months)	Responsible Parties
Weak civil management	Withdrawal of military dual functions, degradation of democracy	Issue government regulations limiting military involvement in the civilian sector during peacetime
Agrarian disputes & human rights violations	Legal claims, community resistance, negative military image	Implement FPIC in all incidents related to land intersecting with indigenous rights
Loss of state budget	Unsustainability	Conduct independent cost-benefit studies before scaling up to 500 battalions
Conflicts with BULOG/private sector	Market distortions, price uncertainty	Provide a coordination system for production distribution between YON TP and BULOG

Through the four mentioned priority actions in Table 6, YON TP policy has a better chance of success without compromising democratic rights and preserving ecology.

5. Conclusions

5.1 Conclusions

The establishment of 500 Agricultural Battalions (YON TP) is a feasible policy that positions the military more as a resilience force against non-military threats in the context of VUCA. This is a strategic institutional change, and an empirical indication of the military's reorganization capacity as an adaptive force facing non-traditional threats in the food sector. From a Food Security perspective, YON TP can theoretically contribute to the four FAO pillars (availability, access, utilization, stability) by becoming producers, distributors, and trainers/facilitators. However, this policy can also open the door to the militarization of agriculture, placing civil control and indigenous peoples' rights at risk if not handled carefully. Comparisons with Cuba, China, Myanmar, and Thailand show that military agricultural programs succeed only if the program subjects (local farmers) are empowered, if sustainable agroecological responses are implemented, if decentralization is applied, and if roles are distinguished between peacetime and wartime responsibilities that can be limited.

5.2 Research Limitations

This study is limited by its reliance on qualitative document analysis, which restricts empirical validation of the YON TP policy implementation in field settings. In addition, the availability of comprehensive and up-to-date data on the 500 Agricultural Battalions remains limited due to the early stage of policy implementation. The absence of quantitative performance indicators also constrains the ability to measure the actual effectiveness and efficiency of YON TP in achieving food security outcomes across regions.

5.3 Suggestions and Directions for Future Study

Future research should incorporate mixed-method approaches by combining qualitative policy analysis with quantitative field data to assess the real impact of YON TP implementation. Comparative studies across different provinces in Indonesia are also recommended to capture regional variations in implementation effectiveness. Furthermore, future studies should explore the socio-economic impacts on local farmers, governance dynamics, and potential risks of agricultural militarization to ensure a balanced evaluation of the policy within the food security and defense nexus framework.

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Author Contributions

MTG and RMT equally contributed to the conceptualization, data collection, analysis, and writing of the manuscript. MTG focused on policy analysis and theoretical framework development, while RMT contributed to comparative analysis, interpretation of findings, and manuscript refinement. Both authors read and approved the final version of the manuscript.

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