

## The Strategy of the Indonesian Army in Logistics and Material Support to Enhance Border Security Operations in the Indonesia–Papua New Guinea Border Area

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### Abstract

The border area between the Republic of Indonesia and Papua New Guinea (RI–PNG) is characterized by difficult geographical conditions, limited infrastructure, and a high level of security vulnerability, which require optimal logistics and material support to sustain security operations. However, in practice, the provision of logistics and material support by the Indonesian Army still faces various challenges, particularly in planning, management, and optimization. These conditions have the potential to affect the continuity and effectiveness of operational tasks in border areas. This study aims to analyze the forms and strategies of logistics and material support implemented by the Indonesian Army in supporting border security operations in the RI–PNG region. This research employs a descriptive qualitative method with data collected through interviews, field observations, and document analysis. Data analysis is conducted using the analytical framework of defense science theory, the Ends–Ways–Means strategic theory, and military logistics management theory. The results indicate that logistics and material support includes the provision of essential supplies, phased distribution mechanisms, and adaptive utilization at the unit level. Support strategies are implemented through operation-based planning, administrative-operational management, and field-initiative-based optimization. However, the logistics system remains conventional and has not been fully integrated. This study concludes that strengthening region-based planning, integrating logistics information systems, enhancing personnel competence, improving distribution infrastructure, and conducting continuous evaluations are necessary. These recommendations are expected to improve the sustainability and effectiveness of logistics and material support in border security operations in the RI–PNG area.

**Keywords:** Logistics Support, Ends–Ways–Means Strategy, RI–PNG Border, Military Strategy, Security Operations



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### INTRODUCTION

The Indonesia–Papua New Guinea (RI–PNG) border region represents one of the most strategically significant and operationally challenging areas in Indonesia’s national defense system. As a frontier zone of national sovereignty, the region is characterized by dense tropical forests, mountainous terrain, limited transportation infrastructure, and vast distances between operational posts. These geographical and infrastructural constraints create substantial challenges for military mobility, force sustainment, and logistics distribution. According to the National Border Management Agency (BNPP), the Papua border segment remains the most difficult border area to manage in Indonesia due to limited accessibility, inadequate infrastructure, and persistent security vulnerabilities (BNPP, 2022). Border security operations conducted by the Indonesian Army (TNI AD) in the RI–PNG region are not solely concerned with territorial surveillance and prevention of cross-border violations. They also involve maintaining continuous military presence, ensuring operational readiness, and supporting national sovereignty in remote and strategically sensitive areas. In such environments, logistics and material support become critical enablers of operational effectiveness. Military units deployed in border areas require uninterrupted access to food supplies, fuel, ammunition,

medical resources, communication equipment, and other operational necessities to sustain mission performance.

Despite its strategic importance, military logistics support in Papua continues to face considerable challenges. The geographical isolation of many border posts increases dependence on air transportation and riverine routes, both of which are vulnerable to weather disruptions and capacity limitations. Statistics Indonesia reported that logistics costs in Papua are approximately 2.5 to 3 times higher than those in Java due to transportation constraints and infrastructure deficiencies (BPS, 2022). Consequently, delays in logistics distribution frequently affect the continuity of operational activities and reduce overall mission effectiveness. Similar findings were reported by Somad (2023), who emphasized that Indonesia's border security system still experiences weaknesses in logistics sustainability, distribution mechanisms, and supporting operational facilities in remote regions.

In contemporary military operations, logistics is no longer viewed merely as an administrative support function. Modern defense doctrines recognize logistics as a strategic capability that directly influences operational success. NATO (2018) defines military logistics as the process of planning and executing the movement and sustainment of forces, ensuring that military units remain operational throughout deployment, sustainment, and redeployment phases. Likewise, the U.S. Department of Defense (2022) identifies logistics planning, procurement, transportation, inventory management, and maintenance as essential components of military readiness. Therefore, effective logistics systems must not only provide adequate resources but also ensure that supplies reach operational units in the right quantity, at the right place, and at the right time. The strategic importance of logistics becomes increasingly evident in border security operations. The Indonesian Defense White Paper identifies border security as a crucial element of national defense policy aimed at safeguarding sovereignty and territorial integrity (Ministry of Defense of the Republic of Indonesia, 2015). However, the implementation of logistics support in Papua remains largely constrained by conventional management systems, limited infrastructure, and insufficient integration of logistics information systems. These challenges highlight the need for a more adaptive and strategically oriented logistics framework capable of responding to dynamic operational requirements.

Several previous studies have explored military logistics and border management issues. Mahasyahputra et al. (2023) analyzed logistics disparities between Jakarta and Papua and found significant structural inequalities caused by infrastructure limitations and high transportation costs. Sarjito (2024) examined Indonesia's defense logistics transportation system and identified infrastructure deficiencies, bureaucratic inefficiencies, and resource limitations as major obstacles to effective logistics operations. Sipahutar et al. (2024) emphasized the importance of Integrated Logistics Support (ILS) in enhancing operational readiness among military task forces in Papua. Furthermore, Hermanto and Saragih (2025) argued that defense logistics in border regions functions not only as operational support but also as an instrument of regional stability and civil-military relations. Although these studies provide valuable insights, most focus on logistics infrastructure, transportation systems, border governance, or integrated logistics concepts in general. Limited attention has been given to the formulation of military logistics strategies specifically designed to support border security operations in the RI-PNG region. Existing studies rarely examine how logistics objectives, implementation mechanisms, and available resources interact to ensure operational sustainability in remote border environments.

This limitation constitutes the primary research gap addressed by the present study. Unlike previous studies, this research adopts the Ends-Ways-Means strategic framework

developed by Lykke (1997) to analyze military logistics support in border security operations. The study views logistics and material support as a strategic variable that directly influences operational continuity, force readiness, and mission effectiveness. By integrating defense science, military strategy, and military logistics management theories, this research provides a comprehensive framework for understanding how TNI AD organizes logistics support in one of Indonesia's most challenging operational environments. Therefore, the objective of this study is twofold: first, to analyze the forms of logistics and material support provided by the Indonesian Army in supporting RI–PNG border security operations; and second, to examine the strategies employed to ensure operational readiness, logistics sustainability, and mission effectiveness in the border region. The findings are expected to contribute to the development of military logistics theory and provide practical recommendations for enhancing logistics support systems in future border security operations.

### **Research Gap and Novelty**

Existing studies on military logistics and border security operations have primarily focused on logistics infrastructure, transportation systems, integrated logistics support (ILS), and border governance. Previous research has highlighted challenges related to logistics distribution in Papua, including geographical constraints, limited infrastructure, high transportation costs, and the need for integrated logistics management to sustain military operations. However, these studies generally examine logistics from operational and managerial perspectives without comprehensively analyzing logistics and material support as a strategic component of border security operations. Furthermore, limited research has specifically investigated how the Indonesian Army (TNI AD) formulates and implements logistics and material support strategies to sustain operational readiness and mission effectiveness in the Indonesia–Papua New Guinea (RI–PNG) border area, which is characterized by extreme terrain, limited accessibility, and dynamic security challenges. This study addresses the identified gap by examining the Indonesian Army's logistics and material support strategy through the application of the Ends–Ways–Means strategic framework. Unlike previous studies that focus mainly on logistics systems or border management, this research positions logistics and material support as strategic variables that directly influence operational sustainability and border security effectiveness. The novelty of this study lies in its integration of defense science, military strategy, and military logistics management theories to analyze the alignment between operational objectives (Ends), logistics implementation mechanisms (Ways), and available resources (Means) within the context of RI–PNG border security operations. Consequently, this research offers a comprehensive strategic perspective and provides practical recommendations for strengthening military logistics support, operational readiness, and the sustainability of border security operations in Papua.

### **RESEARCH METHODS**

This study employs a qualitative research design with a case-study approach to examine the Indonesian Army's logistics and material support strategy in supporting border security operations along the Indonesia–Papua New Guinea (RI–PNG) border. A qualitative approach is considered appropriate because the research seeks to explore strategic processes, logistics management practices, decision-making dynamics, and operational challenges within a complex military environment rather than to measure variables quantitatively. The case selected for this study is the logistics and material support system implemented by the Indonesian Army in sustaining border security task forces operating in the RI–PNG border region, an area characterized by difficult terrain, limited infrastructure, and high operational

demands. Data collection was conducted through multiple qualitative techniques to ensure the depth and credibility of the findings. Primary data were obtained through semi-structured interviews with key informants directly involved in logistics planning, management, and distribution, including logistics officers, operational commanders, and personnel responsible for supporting border security operations. Secondary data were collected through document analysis, including official military regulations, operational reports, logistics planning documents, government publications, and relevant academic literature. Field observations were also conducted to obtain a comprehensive understanding of logistics implementation and operational realities in border areas.

To guide the analytical process, this study adopts three complementary theoretical frameworks. First, Defense Science Theory is utilized to understand the role of logistics support within the broader context of national defense and border security. Second, Arthur F. Lykke Jr.'s Ends–Ways–Means strategic framework is employed to analyze the alignment between operational objectives (Ends), logistics implementation mechanisms (Ways), and available resources (Means) in supporting border security operations. Third, Military Logistics Management Theory is used to examine logistics planning, procurement, inventory management, distribution systems, and sustainment processes within the Indonesian Army's logistics structure. Data analysis was conducted using the interactive model proposed by Miles, Huberman, and Saldaña, consisting of data condensation, data display, and conclusion drawing. Interview transcripts, field observations, and documentary evidence were systematically coded and categorized to identify major themes related to logistics support, operational readiness, distribution effectiveness, and logistics sustainability. To enhance the trustworthiness of the findings, triangulation was applied by comparing information obtained from different data sources, informants, and documentary evidence. Through this methodological approach, the study aims to generate a comprehensive understanding of how the Indonesian Army organizes and implements logistics and material support strategies to enhance operational readiness and mission effectiveness in the RI–PNG border region.

## **RESEARCH RESULTS AND DISCUSSION**

This section presents the empirical findings derived from interviews, field observations, and document analysis concerning the Indonesian Army's logistics and material support strategy in supporting border security operations along the Indonesia–Papua New Guinea (RI–PNG) border. The findings are organized according to the two main research focuses: (1) the forms of logistics and material support provided by the Indonesian Army, and (2) the strategies employed to ensure operational readiness, logistics sustainability, and mission effectiveness in border security operations.

### **Forms of Logistics and Material Support**

The findings indicate that logistics and material support provided to RI–PNG Border Security Task Forces consists of essential operational supplies, including food rations, fuel, ammunition, medical supplies, communication equipment, transportation assets, and maintenance support. The logistics system is implemented through a phased distribution mechanism involving central logistics depots, regional logistics facilities, and forward operating posts located along the border area. Due to the geographical characteristics of Papua, logistics distribution relies heavily on a combination of land, river, and air transportation. This support system is designed to ensure the continuity of operational activities and maintain the readiness of personnel deployed in remote border locations. Field data further reveal that logistics distribution frequently encounters challenges related to difficult terrain, adverse weather

conditions, transportation limitations, and long distances between logistics hubs and border posts. As a result, some units must implement adaptive logistics management practices, including local resource utilization, inventory prioritization, and emergency stock management. These adaptive measures have contributed to sustaining operational effectiveness despite the limitations of the existing logistics infrastructure. However, the findings also indicate that the logistics support system remains largely conventional and has not yet been fully integrated through real-time logistics information systems.

### **Logistics and Material Support Strategy**

The research findings show that the Indonesian Army's logistics strategy is implemented through operation-based planning, administrative-operational management, and field-based optimization. Logistics planning is conducted before deployment by estimating operational requirements, determining supply priorities, assessing transportation availability, and identifying potential distribution risks. The planning process considers the unique geographical conditions of the Papua border region, including terrain accessibility, transportation constraints, and threat assessments. This approach aims to ensure that logistics support remains responsive to operational needs throughout the mission cycle. The implementation strategy also emphasizes flexibility and adaptability at the operational level. Logistics officers and unit commanders continuously monitor inventory conditions and adjust distribution priorities according to operational developments. Nevertheless, empirical findings indicate that challenges remain in logistics integration, infrastructure availability, personnel competency development, and information management systems. Consequently, respondents highlighted the importance of strengthening region-based logistics planning, enhancing logistics information systems, improving transportation infrastructure, and increasing logistics personnel capabilities to support future border security operations more effectively.

### **Discussion**

The findings demonstrate that logistics and material support constitute a strategic enabler of border security operations rather than merely an administrative support function. From the perspective of Defense Science Theory, logistics support contributes directly to maintaining national sovereignty and territorial integrity by ensuring the operational readiness of military forces deployed in strategically important border regions. The effectiveness of border security operations depends not only on combat capabilities but also on the ability to sustain forces through reliable logistics support systems. Using Lykke's Ends-Ways-Means framework, the logistics strategy can be understood through the alignment of three interconnected components. The Ends are the successful execution of border security operations and the maintenance of operational readiness. The Ways include operation-based logistics planning, phased distribution mechanisms, inventory management, and adaptive logistics practices implemented by operational units. The Means consist of logistics personnel, transportation assets, infrastructure, financial resources, and logistics support systems available to the Indonesian Army. The findings suggest that while the strategic objectives and implementation methods are generally aligned, limitations in infrastructure and logistics information integration reduce the overall effectiveness of available resources.

From the perspective of Military Logistics Management Theory, the study confirms that logistics effectiveness depends on the integration of planning, procurement, inventory management, transportation, and sustainment functions. Similar to the findings of Sarjito (2024) and Sipahutar et al. (2024), this study reveals that logistics sustainability in Papua requires stronger coordination, infrastructure development, and technology integration. The

absence of fully integrated logistics information systems limits real-time monitoring and decision-making capabilities, thereby affecting logistics responsiveness and operational efficiency. Overall, the findings indicate that the Indonesian Army has successfully maintained logistics and material support for border security operations despite significant geographical and operational constraints. However, future improvements should focus on developing integrated logistics information systems, enhancing transportation infrastructure, strengthening regional logistics hubs, and improving the competencies of logistics personnel. These measures are expected to increase operational sustainability, strengthen logistics resilience, and enhance the effectiveness of border security operations in the RI–PNG border region.

## CONCLUSION

This study concludes that logistics and material support play a vital role in ensuring the success and sustainability of Indonesian Army border security operations along the Indonesia–Papua New Guinea (RI–PNG) border. The findings reveal that logistics support has been implemented through the provision of essential operational supplies, phased distribution mechanisms, and adaptive logistics management practices designed to sustain operational readiness in geographically challenging environments. Despite significant constraints related to terrain, infrastructure, transportation accessibility, and logistics costs, the Indonesian Army has been able to maintain operational continuity through coordinated planning, distribution, and resource management. However, the existing logistics system remains largely conventional and has not yet achieved full integration through modern logistics information systems and technology-based management processes. From the perspective of Arthur F. Lykke Jr.'s Ends–Ways–Means framework, the Indonesian Army's logistics strategy demonstrates a strategic alignment between operational objectives (Ends), logistics implementation mechanisms (Ways), and available resources (Means). The strategic objective of maintaining border security and operational readiness is pursued through operation-based logistics planning, adaptive distribution systems, and administrative-operational management supported by logistics personnel, transportation assets, infrastructure, and budgetary resources. Nevertheless, the study identifies several challenges, including limited logistics infrastructure, inadequate integration of logistics information systems, and the need for greater personnel competency development. Therefore, strengthening region-based logistics planning, enhancing logistics information integration, improving transportation and distribution infrastructure, and increasing logistics personnel capabilities are essential to improving the effectiveness, resilience, and sustainability of logistics and material support for future border security operations in the RI–PNG region.

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