

The Maintenance and Utilization of the Indonesian Army Reserve Personnel for National Defense

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ABSTRACT

This study examines the maintenance and utilization of Indonesia's Army Reserve Component (*Komcad*) within its Total Defense System (*Sishankamrata*). The research, based on qualitative methodology focusing on document analysis, assesses *Komcad's* policy, legal foundation, challenges, and opportunities. Findings reveal that effective readiness hinges on recruitment, continuous training, logistics, and civil-military coordination. Significant gaps identified include budget constraints, poor inter-agency coordination, low public awareness, and limited technology use. The study concludes that while Law No. 23/2019 provides a strong legal basis, effective implementation requires comprehensive policies, greater integration into national defense planning, and digital innovation to ensure *Komcad's* long-term sustainability and effectiveness.

INTRODUCTION

National resources play an important role in supporting the country's defense system as part of a universal defense strategy. Optimal management of these resources, including human, natural, and artificial resources, can strengthen the country's ability to face various threats that threaten the nation's sovereignty and integrity (Setyanto, 2024). The philosophical basis for managing national resources for national defense is based on the values contained in Article 27 paragraph (3) of the 1945 Constitution, which states that every citizen has the right and obligation to participate in national defense efforts (Faridah & Afifuddin, 2023). The Total People's Defense and Security System (*Sishankamrata*) is the foundation of Indonesia's national defense, which combines military and non-military elements. This framework emphasizes the importance of the participation of all citizens in national defense (Herriyanto, 2023). According to Law Number 3 of 2002 concerning National Defense, national defense efforts are mandatory for all Indonesian citizens and are implemented through a comprehensive people's defense system, which includes the Indonesian National Armed Forces (*TNI*), reserve components, and supporting components. Indonesia's defense posture primarily emphasizes territorial integrity, sovereignty, and national security against external threats. With support from the Reserve Component and civil defense system, the *TNI* plays an important role in this framework. In addition, the defense system is essentially defensive in nature because it uses strategic deterrence and layered defense techniques that are adapted to the geography of the Indonesian archipelago (Laksmiana, 2010). This strategy ensures a broad and sustainable national defense, which forms a decentralized and democratic national governance structure.

Indonesia's reserve component is an important component of the country's defense system, which functions to support the Indonesian National Armed Forces (*TNI*) in both conflict and non-conflict situations. The reserve component, officially regulated by Law Number 23 of 2019 concerning Management of National Resources for National Defense, consists of civilian volunteers who have undergone basic military training and are registered as members of the national mobilization force. They serve as a strategic reserve ready to be deployed during national threats, conflicts, or emergencies, increasing the preparedness, resilience, and sustainability of Indonesia's comprehensive defense system (*Sishankamrata*). Reserve forces not only have a combat role, but they can also assist in disaster management, border security, and civil-military collaboration, which are part of the increasingly complex nature of national defense. Thus, as a mechanism for civilian participation, it emphasizes that national defense is the collective responsibility of all citizens, not just the obligation of professional military personnel (Indrawan, 2015). This paradigm increases national solidarity, encourages citizen participation, and provides strategic depth to address conventional and non-conventional security challenges.

Despite the established legal framework and strategic importance of *Komcad*, several research gaps persist regarding its effective implementation and long-term viability. While Law No. 23/2019 provides a foundation, there is a lack

of comprehensive empirical studies detailing the actual effectiveness of current recruitment and training initiatives in producing a consistently high-caliber and ready reserve force. Further investigation is needed to understand the practical challenges and successes in integrating *Komcad* personnel into existing *TNI* command structures during both peacetime and crisis scenarios. Specifically, the effectiveness of various administrative and logistical support mechanisms for reservists requires more in-depth analysis to identify potential bottlenecks and areas for improvement.

Moreover, there is a limited understanding of the factors influencing the retention and motivation of *Komcad* members beyond their initial training, particularly concerning non-monetary incentives and their impact on long-term commitment. Research is also scarce on the specific roles and effectiveness of *Komcad* in responding to the evolving landscape of non-traditional threats, such as cyber warfare and complex disaster scenarios, and how their skills are continuously developed to meet these challenges. A deeper exploration into the perceptions and awareness of the general public regarding *Komcad's* role and importance could also shed light on potential barriers to recruitment and societal support.

Effective management and deployment of reserve personnel in Indonesia is becoming increasingly important given changes in global and regional security. Indonesia, a vast and diverse archipelagic country, faces multiple security issues, such as territorial disputes, natural disasters, and maritime threats, as well as non-traditional threats such as terrorism and cybercrime. The strategic integration of the Reserve Component increases operational flexibility and depth of defense capabilities, enabling the Indonesian National Armed Forces (*TNI*) to respond more quickly and effectively to a variety of contingencies in multiple locations. Leveraging trained reserves also offers a low-cost way to enhance military readiness without the need to maintain a significant standing force, as defense funding remains limited. In accordance with Indonesia's comprehensive defense strategy, the Total People's Defense and Security System (*Sishankamrata*), reserve forces are an important part of civil-military cooperation, especially in disaster response and humanitarian assistance. According to Indrawan, R., & Efriza, E. (2018), ensuring the readiness, sustainability, and integration of reserves in national defense planning is a strategic imperative and a constitutional obligation. This reflects the emphasis placed by Indonesian law on broad participation in defense.

In the context of a comprehensive national defense policy, this article examines the policy, effectiveness, and operational challenges associated with the management of the Indonesian Army's reserve component. The Indonesian government has enacted Law No. 23/2019 on the Management of National Resources for National Defense to assist the Indonesian National Armed Forces (*TNI*) in times of national emergency or conflict. While the implementation of this policy raises important questions about institutional coordination, recruitment tactics, preparedness, logistical sustainability, and public engagement, the legal framework provides a foundation. This study seeks to explore how Indonesian Army reserve personnel are currently maintained and utilized, identify the key

challenges and gaps within the existing system, and examine potential strategies for optimizing the reserve component in order to strengthen national defense preparedness.

LITERATURE REVIEW

National Security Theory in the Indonesian Context

National security theory, at its core, emphasizes the protection of three fundamental elements: state sovereignty, territorial integrity, and the safety of the population (Buzan, 1991). In the Indonesian context, this theoretical framework has been adapted to fit the country's unique characteristics as a large, democratic, archipelagic state. Indonesia's national security doctrine is grounded in a comprehensive approach known as the *Total Defense and Security System (Sistem Pertahanan dan Keamanan Rakyat Semesta or Sishankamrata)*, which mandates the involvement of all elements of society military and civilian in defending the nation (Ministry of Defence, 2020). This broad concept mirrors national security theory by seeking to ensure that no part of the population or territory is left vulnerable to threats, whether they be external invasions or internal disturbances.

Indonesia's vast geography makes territorial integrity a uniquely complex aspect of its national security. With over 17,000 islands, the country faces persistent threats such as maritime boundary disputes, illegal fishing, piracy, and regional insurgencies. The Indonesian Navy and Coast Guard play essential roles in monitoring and securing maritime borders, particularly in strategic areas like the Natuna Islands, which have seen tensions with foreign actors, including China (Laksmana, 2011). The preservation of territorial integrity also includes countering internal separatist movements, most notably in Papua, where the Indonesian government combines security operations with regional development and political dialogue.

Lastly, the safety of the population is increasingly understood through a broader, multidimensional security lens. Beyond traditional military threats, Indonesia must address natural disasters, pandemics, terrorism, and cybercrime threats that directly affect the well-being of its citizens. As highlighted by Widodo and Roespinoedji (2022), the integration of civilian agencies in national resilience planning, as well as investment in early warning systems and emergency response capacities, are critical to protecting the population. This reflects an ongoing shift from state-centric to human-centric security, reinforcing the idea that national security is not solely about defending borders but also about safeguarding the daily lives of the people within them.

Total Defense System in Indonesia

The Total Defense System in Indonesia, known as *Sistem Pertahanan dan Keamanan Rakyat Semesta (Sishankamrata)*, represents a comprehensive and integrated approach to national defense that mobilizes all national resources both military and non-military for the purpose of protecting state sovereignty, territorial integrity, and the safety of the population. This doctrine is rooted in the belief that defense is not solely the responsibility of the armed forces but a

collective duty involving civilians, government institutions, and the private sector (Ministry of Defence, 2020). The system is legally reinforced through Law No. 3/2002 on State Defense, which outlines that every citizen has the right and obligation to participate in national defense. According to Indrawan et al., (2018), *Sishankamrata* is designed to adapt to both conventional and non-conventional threats, including natural disasters, terrorism, cyberattacks, and hybrid warfare. Its core principles emphasize territorial defense, layered deterrence, and the strategic mobilization of reserve and supporting components, such as the recently formalized *Komponen Cadangan*. As a defense model rooted in Indonesia's historical struggles and sociopolitical context, the Total Defense System reflects both the country's geographic complexity and its emphasis on societal cohesion and resilience.

The Indonesian Military Reserve Component

The Indonesian Military Reserve Component (*Komponen Cadangan* or *Komcad*) is a relatively recent development in Indonesia's defense strategy, formally established under Law No. 23/2019 on the Management of National Resources for State Defense. This law provides a legal framework for mobilizing national resources, especially human capital, as part of the *Total Defense and Security System (Sishankamrata)*. According to Zulkarnain & Josias Simon Runturambi (2022), the formation of the reserve component represents a shift towards a more inclusive and comprehensive defense model, where civilian volunteers, after undergoing military training, are registered and prepared to be mobilized in times of national threat. The establishment of *Komcad* aims to strengthen strategic defense depth without burdening the state with the high cost of maintaining a large standing military force during peacetime.

The implementation of *Komcad*, however, has encountered several operational, logistical, and social challenges. These include limited public awareness, skepticism from segments of civil society, budgetary constraints, and questions about the integration of reserves into existing military command structures (Indrawan et al., 2018). Moreover, the recruitment process must ensure that participants meet minimum physical and educational standards while maintaining national unity and avoiding politicization. The initial training of *Komcad* volunteers, managed by the Indonesian National Armed Forces (*TNI*), includes basic military skills, discipline, and knowledge of defense responsibilities. While the law ensures that *Komcad* personnel remain civilians unless mobilized, the blurred lines between military and civil domains have sparked debates on civil-military relations and the future direction of national defense policy.

Strategically, the *Komcad* is expected to serve as a force multiplier and a crucial component in responding to hybrid and non-traditional threats, including natural disasters, cyberattacks, and regional tensions. As Laksmana (2020) notes, the success of the reserve component depends not only on regulatory frameworks but also on its acceptance by society and its alignment with Indonesia's democratic values. Clear guidelines will help ensure that reserve and support components can contribute effectively to countering non-military and

hybrid threats, while providing adequate legal protection for the parties involved. This is essential to creating a defense system that is adaptive, integrated and responsive to modern security challenges (Estika et al., 2024). The *Komcad* initiative reflects Indonesia's attempt to modernize its defense posture in line with international best practices while preserving national identity and cultural values. The concept also echoes similar systems in countries like Singapore and South Korea, which integrate trained civilian reserves into national defense. Continued research and policy evaluation will be essential to ensuring the sustainability and effectiveness of *Komcad* as part of Indonesia's long-term defense architecture.

Comparative Studies

A comparative analysis of military reserve systems across countries shows that different methods are influenced by strategic culture, threat assessment, and civil-military interactions. The Reserve Component, consisting of the National Guard and the Army Reserve, is regularly deployed in domestic and international operations in the United States through the Total Force Policy (Feaver & Kohn, 2001). Singapore's reserve system is an essential part of national defense due to Universal Military Service, which requires Singaporean males to serve two years in the military and receive reserve training every year. This makes the reserve system play an important role in deterring regional threats and enhancing community cohesion (Nurhuda et al., 2021). In addition, South Korea has one of the most formidable reserve forces in the world due to its proximity to North Korea. According to Moon (2005), every male citizen enters the reserve force after completing mandatory active duty and undergoes regular mobilization training to maintain combat readiness. Although countries have different structural models, one thing in common is that the reserve force not only serves as a military supplement, but also serves as a means to deter strategic attacks, strengthen national security, and stop social militarization. This experience taught Indonesia a lot about how to improve the reserve component (*Komcad*) in the total defense structure (*Sishankamrata*).

METHODOLOGY

Using qualitative methodology, this study focuses largely on document analysis to study the policy framework, legislative structure, and how the Army Reserve Component operates within the realm of national defense. Document analysis is a methodical method for studying official documents, both printed and electronic, with the aim of understanding their meaning, improving their understanding, and expanding empirical knowledge (Bowen, 2009). In this analysis, various primary sources were used, including presidential and ministerial regulations, Law Number 23 of 2019 concerning Management of National Resources for National Defense (UU PSDN), Indonesian National Army (*TNI*) doctrine publications, and policy documents from the Ministry of Defense. In addition, secondary sources, including defense white papers, academic journals, and think tank research, were evaluated to incorporate the reserve system into a comprehensive total defense strategy. Thematically, the records

were examined to see patterns in recruitment, maintenance, mobilization preparation, and integration of the Army Reserve Component into Indonesia's military strategy.

RESEARCH RESULTS AND DISCUSSION

Maintenance Mechanisms of Reserve Components in Indonesia

The maintenance of Indonesia's *Komponen Cadangan* (reserve components) is a critical aspect of the country's broader defense strategy under the *Total Defense and Security System*. Maintenance mechanisms refer to the systems and processes designed to ensure that reserve personnel remain trained, connected, and ready for mobilization when needed. According to Law No. 23/2019 and Government Regulation No. 3/2021, once individuals complete their initial military training and are designated as reserve members, they are required to participate in regular refresher training organized by the Ministry of Defense and coordinated with the Indonesian National Armed Forces (*TNI*). This training aims to maintain discipline, physical fitness, and combat readiness, while also reinforcing the organizational connection between the reserves and active-duty forces.

Another important component of maintenance is societal and institutional support. For *Komcad* to be effective, the public must view reserve service as legitimate and beneficial. This includes securing support from local governments, employers, and educational institutions to accommodate the part-time military role of reservists. As Laksmana (2020) argues, maintaining a capable reserve force requires more than military training; it requires embedding the idea of national defense as a shared civic duty. Programs that offer incentives, career recognition, or educational benefits can strengthen long-term commitment and effectiveness. Thus, Indonesia's maintenance mechanisms for *Komcad* must balance military discipline with civilian life, ensuring that reserves remain both ready and willing to serve when called upon.

1. Recruitment and Training Initiatives

The efficacy of reserve forces largely depends on the caliber and consistency of training and recruitment programs. Law No. 23/2019 on National Resource Management for National Defense stipulates the physical and psychological requirements for registration of Reserve Components (*Komcad*) in Indonesia. Basic military training is conducted by the Indonesian National Armed Forces (*TNI*) as part of the recruitment process. This training is conducted with the aim of improving critical defense capabilities and skills (Republic of Indonesia, 2019). Countries such as Singapore and South Korea use compulsory military service and ongoing reserve training, indicating that continuous skill enhancement is necessary to maintain an effective reserve component (Nurhuda et al., 2021). To maintain national readiness, *Komcad* must ensure training quality aligns with evolving defense requirements.

2. Administrative and Logistical Assistance

If the reserve force is to survive in the long term, it needs effective administrative and logistical support. This includes clear regulations on registration records, mobilization protocols, uniform distribution, and access to military health services. The Indonesian *Komcad* is supervised by the Ministry of Defense and the TNI. This requires interagency cooperation for data administration, readiness monitoring, and resource allocation (Yani, 2021). Without a strong administrative infrastructure, reserve personnel can be isolated from the defense framework, hindering rapid mobility in emergencies. Other countries' reserve systems suffer from logistical deficiencies, including delays in provisioning and equipment shortages. To ensure efficient operations, these deficiencies must be addressed immediately (Murray & Mansoor, 2006).

3. Retention and Motivation

Ensuring the retention and motivation of reserve members is becoming increasingly important in many countries. To maintain the commitment of reserve members, as they maintain their civilian status beyond training or mobilization, economic incentives, recognition, prospects for professional advancement, and national pride are essential (Puslatpur et al., 2023). To encourage continued engagement, the Indonesian government has begun testing non-monetary incentives such as civil service privileges and educational facilities. According to civil-military relations theory, fostering a sense of ownership and shared responsibility between the state and reserve members encourages long-term participation (Feaver, 2003). Public recognition of reserve members' accomplishments and open career paths can boost morale and reaffirm the role of reserve members in national security.

4. Readiness and Skill Development

One important aspect of maintaining reserves is maintaining operational readiness and encouraging continuous skills development. To ensure that reserves are ready for national defense, they must undergo regular training, evaluation, and simulation. In Indonesia, *Komcad* methodology includes annual retraining sessions, but consistency, funding allocation, and availability of advanced equipment and technology remain issues (Yani, 2021). Simulation-based training and digital platforms are combined to compensate for the lack of physical presence (Forster, 2006). Developing *Komcad* skills with conventional and unconventional threats, such as cyber defense and natural disaster response, will enhance their multi-role capabilities and support Indonesia's Total Defense (*Sishankamrata*) goals.

Utilization Strategies of Reserve Components in Indonesia

The utilization of reserve components (*Komponen Cadangan*) in Indonesia is guided by the broader framework of the Total Defense and Security System (*Sistem Pertahanan dan Keamanan Rakyat Semesta* or *Sishankamrata*), which emphasizes the involvement of all citizens and national resources in state defense. According to Law No. 23/2019 and Government Regulation No. 3/2021,

Komcad can be mobilized by presidential decree during times of national emergency, war, or other strategic crises. This legal framework positions the reserve component as a strategic backup force to the Indonesian National Armed Forces (*TNI*), ready to be deployed in military or non-military operations. As noted by Indrawan et al., (2018), the reserve component is designed not only to augment combat power in wartime but also to play supporting roles during peacetime, including territorial defense, disaster relief, and national development efforts in remote regions.

In practice, the strategic utilization of *Komcad* must account for Indonesia's complex geography and diverse threat environment. The archipelagic nature of the country necessitates a decentralized and regionally responsive reserve deployment system. Indrawan et al., (2018) highlights that reserve forces can serve as local security reinforcements in provinces where the *TNI* may have limited presence, thus enhancing rapid response capability and strategic coverage. Additionally, *Komcad* units may be integrated into joint operations, supporting conventional forces in logistics, intelligence gathering, or public security roles, particularly during emergencies such as natural disasters or civil unrest. These non-combat deployments are especially relevant in a country like Indonesia, where the military regularly participates in humanitarian assistance and disaster response (HADR).

However, several scholars have pointed out that effective utilization of *Komcad* requires institutional coordination, ongoing training, and public trust. Without a clear doctrine on how reserves will be activated and integrated into command structures, their operational readiness may be compromised (Laksmana, 2020). Moreover, the balance between maintaining *Komcad's* civilian status and preparing them for military functions remains a challenge in terms of legal clarity and political perception. Therefore, future strategies must focus on establishing clear deployment protocols, inter-agency coordination mechanisms, and public communication to ensure that the reserve force is seen as a credible and professional component of national defense. This calls for sustained policy development, regular exercises, and collaboration between the *TNI*, Ministry of Defense, and civil society stakeholders.

1. Peacetime Roles: Disaster Response and Community Support

During peacetime, reservists go beyond regular military duties and participate in non-combat activities such as disaster response, humanitarian assistance, and community development. During national disasters such as earthquakes, floods, or pandemics, reserve components (*Komcad*) can be used to assist in evacuation, infrastructure recovery, and logistics efforts. This embodies the overall principle of *Sishankamrata*, which states that national defense requires participation from various sectors, including civil defense and social resilience (Indrawan et al., 2018). Participating in these initiatives with *Komcad* not only enhances national preparedness but also increases public trust and cohesion between the military and civilians.

2. Wartime Mobilization: Integration into Regular Forces

Army reserve soldiers serve as an important force enhancer in war or intense combat situations. After receiving basic military training, *Komcad* troops can be assigned to enhance active duty units, address strategic deficiencies, or carry out specific operational functions such as territorial defense, logistics, and rear area security (Yani, 2021). This is similar to the way the United States acts, where the National Guard and Army Reserves are often used during combat operations and fully adopt the concept of Total Force (Feaver & Kohn, 2001). According to Law No. 23/2019, Indonesia's reserve military can be mobilized only after receiving a presidential decree to do so. To ensure a smooth transition during deployment, good integration mechanisms, such as alignment of training standards, consistency of communication protocols, and logistical readiness, are essential.

3. Joint Exercises and Simulations

Joint exercises and military simulations are essential to enhance reserve force readiness and coordination. *Komcad's* involvement in joint training with active *TNI* units helps with tactical coordination, validates operational roles, and enhances interoperability. These exercises can include field exercises, strategic simulations, and tabletop exercises designed for disaster preparedness or national security scenarios. Reserve soldiers in Singapore are required to attend In-Camp Training (ICT) workshops annually to update their skills and adapt to new doctrines (Tan, 2015). For Indonesia, increasing the possibility of joint training will ensure *Komcad* serves as a functional extension of the national military framework by integrating reserve and professional elements.

4. Command and Control Structures

To manage the operations of army reserve units, a strong command and control (C2) framework is essential. Because *Komcad* operates under the direct authority of the *TNI* during mobilization, Indonesia's defense framework ensures a clear chain of command and integration with the established military hierarchy (Republik Indonesia, 2019). A clearly articulated operational theory, reliable communication systems, and predetermined mobilization processes are all factors that determine the difficulty of using reserves. The United States, for example, has a hierarchical command structure. The reserve component serves as a liaison officer and has predetermined planning responsibilities within the operational unit (Murray & Mansoor, 2006). To prevent fragmentation and ensure synchronized and efficient deployment of *Komcad* assets, Indonesia must expedite C2 procedures tailored to reserve operations.

Challenges and Gaps

1. Budgetary Constraints

Limited budget is a significant constraint in the maintenance and utilization of the Indonesian Army Reserve Component (*Komcad*). *Komcad* requires consistent funding for recruitment, training, equipment procurement, logistical support, and annual retraining as a new part of the country's defense

structure. However, Indonesia's defense budget is constrained by competing national objectives, such as infrastructure, education, and health services (Yani, 2021). *Komcad* risks being under-resourced and operationally unproductive if not adequately funded. In contrast, countries such as South Korea and Singapore have invested large and ongoing sums in their reserve systems, recognizing their significant contribution to national preparedness (Nurhuda et al., 2021). To maintain its legitimacy and efficacy as a defense reserve force, ensuring *Komcad*'s financial sustainability is critical.

2. Civil-Military Integration Issues

The military system is not fully integrated with civilian society, especially with volunteer reserve forces such as *Komcad*. According to Feaver (2003), aligning civilian expectations with military discipline, procedures, and command structures is often problematic because the majority of reserve soldiers come from civilian backgrounds and receive short basic training. During mobilization scenarios, civil-military relations become very complicated because rapid integration into operational units is required. In addition, concerns about the politicization of defense activities or the militarization of civilian life can damage public trust if not addressed properly (Nurhuda, N., Widjayanto, J., & Prakoso, L. Y. 2021). To ensure the legitimacy and success of *Komcad*, civil-military relations need to be improved through community engagement, transparency, and ongoing public education.

3. Lack of Public Awareness

The expansion and acceptance of the *Komcad* program is hampered by low public awareness and understanding. Many people in Indonesia are unaware of the roles, benefits, and responsibilities associated with participating in the reserve component, despite Law No. 23/2019 establishing the legal basis (Yani, 2021). Because of this lack of awareness, recruitment becomes more difficult and public support and acceptance of reserve mobilization becomes lower. In contrast, countries have developed a reserve culture, as has the United States. A strong national narrative in Singapore supports the National Guard and National Service (Feickert, 2018; Nurhuda et al., 2021). This narrative suggests that being a reserve member is a patriotic duty (Nurhuda et al., 2021). To increase *Komcad* awareness and engagement, Indonesia should work with educational institutions and utilize media campaigns.

4. Coordination Between Agencies

In addition, problems arise because interagency collaboration is necessary for effective *Komcad* implementation. Collaboration between the Ministry of Defense, *TNI*, Ministry of Finance, Ministry of Education and Culture, and local governments is critical to the success of the program. This collaboration includes budget allocations, training infrastructure, academic alliances, and emergency deployment protocols. Conversely, inconsistent mandates, bureaucratic failures, and policy asymmetries often hamper decision-making and implementation (Murray & Mansoor, 2006). For *Komcad* administration, establishing a centralized

coordinating entity or digital command system could improve interagency collaboration and expedite policy implementation. Reserve components are at risk of being disjointed and underutilized if they do not work together well.

Best Practices and Opportunities

1. Policy Recommendations

The government must establish a clear, inclusive, and sustainable policy framework to ensure the smooth operation of the Indonesian Army Reserve. The main difficulty currently is the lack of consistent incentives and guarantees for reserve personnel, which can complicate the recruitment and retention process. To cultivate a motivated reserve force, countries such as the United States and Singapore utilize legal protection for civilian employment, organized training, and financial or educational incentives (Yudha & Prasetyo, 2021). Indonesia must ensure that *Komcad* recruitment is voluntary and meritocratic, and that they receive sufficient public education to foster a sense of nationalism. To build a solid reserve policy framework, a better coordination system between the Ministry of Defense, local governments, and the business sector is essential. Such policies will increase institutional support and public trust for reserve development.

2. Integration with National Defense Strategy

The reserve component's capacity to augment regular forces during a crisis, strengthen territorial defense, and facilitate civil-military collaboration is of strategic value. But this potential can only be utilized if the reserve is incorporated into Indonesia's comprehensive National Defense Strategy (NDS). Currently, *Komcad* is considered a symbolic effort that has no tactical connection to actual military strategy. This can be addressed by integrating the reserve force into joint exercises, territorial defense planning, and crisis response simulations with the Indonesian National Armed Forces (*TNI*). To implement the concept of the Total Defense System (*Sishankamrata*), there must be a reserve responsible for logistics, medical support, cyber defense, and territorial intelligence (Wibowo & Hasan, 2023). In addition, preparedness and coordination can be improved by giving the reserve commander leadership responsibilities during peacetime. Indonesia can enhance its deterrence capabilities and utilize human resources spread across its archipelago by fully integrating the reserve force into the National Defense Strategy.

3. Innovation and Technology in Reserve Management

With digital transformation, there is a huge opportunity to improve the management and operational readiness of reserve personnel. With the adoption of digital databases and mobile platforms, *Komcad* program issues such as participation monitoring, training scheduling, and mobilization can be resolved. For example, South Korea has built a centralized platform to monitor the status of their reserves, training, and mobilization readiness (Nurhuda et al., 2021). Indonesia can implement a similar system to increase transparency and effectiveness. Simulation-based training using virtual reality (VR) or augmented

reality (AR) can also improve tactical skills while reducing costs. To address unusual threats, innovation should include the formation of dedicated reserve organizations, such as cyber defense reserves, consisting of civilian experts in IT and data security. These technologies ensure that reserve forces remain relevant and ready to handle future conflicts.

CONCLUSION AND RECOMMENDATIONS

Critical to Indonesia's Total Defense System (*Sishankamrata*) is the management and deployment of *TNI* Reserve soldiers (*Komponen Cadangan* or *Komcad*). This demonstrates the state's commitment to mobilizing all groups in society to protect the country. As this study shows, although Law No. 23/2019 provides a strong legal basis, effective implementation faces many practical challenges. These include a lack of public awareness, inter-agency coordination issues, underfunding, and a lack of sustainability and readiness of training. To improve reserve management, more comprehensive policies, greater collaboration with national military planning, and digital advancements have strategic prospects. Considering best practices, such as providing civilian employment protection, monitoring readiness with mobile platforms, and establishing special divisions such as cyber reserves, can improve productivity and efficiency. Continuous improvement in doctrine, infrastructure, and community engagement are essential for *Komcad* to serve the *TNI* holistically during times of peace and crisis. By doing so, Indonesia can strengthen its defense and strengthen the unity and resilience of the country when facing security challenges.

1. Short-Term and Long-Term Strategies for Improvement

Institutional optimization and increased readiness must be a top priority for the Indonesian government in the near term. To achieve this, the recruitment process must be optimized through extensive outreach efforts, the implementation of uniform training programs, and increased communication between the Ministry of Defense, the *TNI*, and local governments. Creating a centralized digital management platform is essential to monitor *Komcad* registration, training status, and mobilization readiness. The system must ensure data integrity and transparency while reducing bureaucratic delays during a crisis. In the long term, Indonesia must undertake structural reforms to make *Komcad* a strategic defense asset rather than a symbolic reserve. At the planning stage, *Komcad* should be included in the National Defense Strategy (NDS). This will allow reserve forces to actively engage in simulations, strategic exercises, and joint operations. In addition, long-term sustainability requires a multi-year budget for building reserves, procuring equipment, retraining, and mobilization exercises. To ensure *Komcad's* relevance in an increasingly dynamic threat environment, the long-term defense strategy must incorporate technical innovations such as artificial intelligence-based mobilization tools, cyber reserve units, and distance learning platforms.

2. Policy, Training, and Infrastructure Suggestions

At the policy level, the government should improve legal and institutional clarity regarding the rights, benefits, and obligations of reserve personnel. Amendments to Law No. 23/2019 should include provisions for educational and financial incentives, clear pathways for professional development, and better employment protection for reservists. To align *Komcad* development across ministries and local governments, a cross-sectoral policy coordination task force should be established.

Beyond basic orientation, *Komcad* should undergo advanced military training. To maintain operational flexibility, annual refresher courses, simulation-based combat training, and unconventional modules such as territorial intelligence, cybersecurity, and disaster response are essential. Specialized training, especially for medical, engineering, and logistics support positions, can be achieved through collaboration with civilian universities and technical institutions.

The government should provide resources for specialized reserve training institutions with modern technology and logistics support facilities. These centers can serve as continuous training hubs across the region. In addition, military capabilities across the archipelago should be enhanced to ensure *Komcad* can be quickly redeployed both during combat crises and during peacetime. To facilitate seamless connectivity between *Komcad* units and active duty soldiers, a command and control (C2) integration solution must be created in real time.

This study's limitations include its reliance on qualitative document analysis and the absence of field-based data from current reservists or military institutions. Consequently, the results may not fully capture the real-world complexities encountered during community integration, mobilization, or training. Future research should address these limitations by employing empirical methods such as surveys, interviews, or case studies involving defense trainers, policymakers, and members of the Indonesian Army reserve. Comparative studies of reserve systems in other countries, particularly those in Southeast Asia, could also offer valuable insights into innovative models and best practices. Further investigation into the effects of digital tools, public opinion, and regional policy execution would enhance understanding and contribute to the development of a more flexible and efficient reserve force in Indonesia. Additional research could also delve into the long-term socio-economic impact of reserve duty on individual members and their families, and explore the psychological factors influencing motivation and retention within *Komcad*, particularly amidst evolving security challenges and civilian career paths.

ADVANCED RESEARCH

The use of qualitative document analysis and the lack of field-based data from current reservists or military institutions are two of the study's acknowledged drawbacks. As a result, the results could not accurately reflect the real-world difficulties that arise during community integration, mobilization, or training. It is advised that future studies use empirical techniques such as surveys, interviews, or case studies involving defense trainers, policymakers, and reserve

members of the Indonesian Army. Studies that compare the reserve systems of other countries, especially those in Southeast Asia, may also provide insightful information about innovative models and best practices. Additional investigation into the effects of digital tools, public opinion, and regional policy execution would improve comprehension and aid in the creation of a more flexible and efficient reserve force in Indonesia.

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