

Analysis of Indonesia's Primary Weapon Systems Modernization Policy as a Geopolitical Strategy in Southeast Asia, 2020–2025

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Article Info

Keyword:

Modernization of Defense Equipment; Indonesian Geopolitics; Defense Strategy; Minimum Essential Force; Southeast Asia Security.

Abstract: The geopolitical dynamics of Southeast Asia during the 2020–2025 period have been shaped by intensifying great power rivalry, rising tensions in the South China Sea, and the transformation of security threats toward multidimensional forms, positioning the modernization of Indonesia's main weapon systems (alutsista) as a critical instrument for strengthening national defense while reinforcing the country's geopolitical posture. This study analyzes Indonesia's defense modernization policy as a geopolitical strategy and identifies structural constraints affecting its implementation through a qualitative descriptive policy analysis based on literature review and secondary data from defense policy documents, government reports, and international security publications, grounded in realist theory and foreign policy analysis that emphasize the state's role within an anarchic system characterized by power competition and security dilemmas. The findings indicate that modernization performs a dual defense–geopolitical function by enhancing military readiness, supporting Minimum Essential Force (MEF) targets, strengthening deterrence, maintaining regional balance of power, and elevating Indonesia's strategic bargaining position; however, its effectiveness remains constrained by limited defense budgets, technological dependence on foreign suppliers, underdeveloped domestic defense industry capacity, and inconsistent long-term strategic planning. The study also evaluates modernization through indicators of deterrence posture, strategic signaling, and defense industrial autonomy to measure its geopolitical effectiveness beyond material capability enhancement. The study concludes that the success of defense modernization as a geopolitical strategy depends on the integrated alignment of defense policy, defense diplomacy, and national defense industrial development to achieve sustainable strategic autonomy and reinforce regional stability amid intensifying geopolitical competition

Article History : Received 20-02-2026, Revised 25-02-2026, Accepted: 09-03-2026

How to Cite :

Yasmin, M. A. F., Prayuda, R., & Sary, D. V. (2026). Analysis of Indonesia's Primary Weapon Systems Modernization Policy as a Geopolitical Strategy in Southeast Asia, 2020–2025. *KEMUDI : Jurnal Ilmu Pemerintahan*, 10(2), 85-96. <https://doi.org/10.31629/kemudi.v10i2.8248>

INTRODUCTION

Strategic transformations in the global environment over the past decade have generated profound implications for the security architecture of the Asia Pacific region. Intensifying great power competition, the gradual erosion of the liberal international order, and shifts in the global distribution of economic and military power have repositioned the region as both an engine of economic growth and a focal arena of geopolitical contestation. These structural changes have increased the strategic salience of the Indo Pacific, elevating its role within global security calculations and intensifying interstate rivalry across multiple domains including maritime control, military presence, and technological supremacy (Hurrell, 2024).

Within this evolving global landscape, Southeast Asia occupies a particularly strategic position. The region sits at the intersection of major sea lines of communication linking the Indian Ocean and Pacific Ocean, making it indispensable to global trade circulation and energy transportation. Consequently, geopolitical competition among major powers has increasingly manifested within Southeast Asian maritime spaces, most notably in the South China Sea. The intensification of territorial disputes, overlapping sovereignty claims, and militarization of contested features has transformed the regional security environment into one characterized by persistent tension and strategic uncertainty (Shen Wu, 2024).

During the 2020 to 2025 period, the regional threat landscape has expanded beyond conventional interstate conflict. Southeast Asia has experienced the emergence of multidimensional non traditional security threats including gray zone coercion, maritime militia operations, illegal resource exploitation, cyber intrusions, and transnational organized crime. These developments have complicated national defense planning as states must now prepare for hybridized threat environments that blur the boundaries between military and non military challenges. As a result, defense policy recalibration has become imperative for maintaining national resilience within an increasingly complex strategic setting (Loo, 2005).

In response to these shifting dynamics, defense modernization has emerged as a central policy priority across Southeast Asia. ASEAN member states have pursued military capability enhancement programs aimed at strengthening deterrence capacity, improving operational readiness, and safeguarding territorial sovereignty. Defense modernization within this context functions not solely as a technological upgrade but also as a strategic instrument through which states communicate resolve, capability credibility, and geopolitical positioning within the regional balance of power structure (Gindarsah and Priamarizki, 2015).

From a geopolitical perspective, the modernization of primary weapon systems carries implications that extend far beyond battlefield utility. It contributes to shaping regional threat perceptions, influences strategic calculations among neighboring states, and operates as a signaling mechanism within defense diplomacy interactions. Military capability enhancement can alter bargaining leverage in bilateral and multilateral engagements while reinforcing a state's deterrence posture without necessitating overt military confrontation. Accordingly, defense modernization must be understood as an integral component of geopolitical strategy rather than a purely technical defense policy measure.

Within the realist theoretical framework, military capability constitutes a fundamental instrument of state power in an anarchic international system. States pursue military modernization to ensure survival, deter aggression, and maintain equilibrium within competitive security environments. The development of advanced weapon systems signals not only operational strength but also political resolve and strategic intent. Consequently, modernization contributes simultaneously to deterrence credibility, balance of power maintenance, and strategic autonomy preservation.

Indonesia's geopolitical position renders defense modernization particularly consequential. As the largest archipelagic state in Southeast Asia, Indonesia possesses vast maritime territory encompassing critical international shipping routes. Its geographic location at the crossroads of global trade flows imposes strategic responsibilities to secure sea lanes, protect maritime resources, and maintain regional stability. Indonesia's defense posture must therefore address both traditional territorial defense requirements and broader geopolitical pressures emanating from great power rivalry (Endyka Triono Dachi et al., 2023).

Within this strategic context, the modernization of Indonesia's main weapon systems has become a central pillar of national defense policy. The modernization agenda is institutionally framed within the Minimum Essential Force doctrine, a long term defense planning framework designed to achieve proportional military capability without provoking destabilizing arms race

dynamics. MEF emphasizes the development of core defense capacities necessary to safeguard sovereignty, enforce maritime jurisdiction, and maintain credible deterrence posture.

Nevertheless, the implementation of Indonesia's defense modernization policy continues to encounter structural constraints. Limited fiscal capacity restricts procurement acceleration, while dependence on foreign defense technology complicates long term capability sustainability. The domestic defense industrial base, although developing, has yet to achieve full technological self reliance. These structural limitations influence procurement cycles, force regeneration timelines, and Indonesia's strategic autonomy in defense capability development (Anissa and Djuyandi, 2021; Ekwandono, 2022).

Scholarly discourse increasingly highlights that Indonesia's modernization trajectory operates at the intersection of military strengthening and defense diplomacy commitments. Procurement oriented modernization has not always been accompanied by synchronized development in diplomatic signaling or defense industrial integration. This imbalance raises questions regarding the long term geopolitical effectiveness of modernization as an instrument of strategic influence (Rosyidin and Kusumawardhana, 2023; Alma Evelinda Silalahi, 2023).

Within regional security studies, Indonesia's alutsista modernization cannot be interpreted solely as a response to operational defense requirements. Rather, it represents a strategic policy choice shaped by evolving threat perceptions, regional power configurations, and Indonesia's foreign policy doctrine emphasizing strategic autonomy and non alignment. Modernization reflects Indonesia's effort to preserve deterrence credibility while avoiding entrapment within alliance rivalries or escalatory arms competition.

Defense modernization therefore operates as a form of defensive geopolitics. It enhances military capability while simultaneously shaping regional perceptions of Indonesia as a stabilizing actor committed to cooperative security norms. This calibrated posture enables Indonesia to balance deterrence strengthening with diplomatic reassurance, reinforcing its role as both a security stakeholder and a guardian of regional equilibrium.

Moreover, modernization generates multidimensional implications beyond military capability. It influences Indonesia's bargaining position in defense diplomacy, stimulates domestic defense industrial development, and strengthens national resilience against emerging hybrid threats. The interaction between military capability enhancement, industrial capacity building, and geopolitical signaling underscores the complexity of modernization as a comprehensive strategic instrument.

Despite its strategic importance, academic analysis examining Indonesia's alutsista modernization as a geopolitical strategy remains relatively limited. Existing studies often emphasize procurement patterns or budgetary trends without fully exploring the linkage between military capability development and regional power positioning. This analytical gap underscores the need for research that situates modernization within broader geopolitical and security theoretical frameworks.

Based on this strategic and scholarly context, this study aims to analyze Indonesia's main weapon systems modernization policy as a geopolitical strategy in Southeast Asia during the 2020 to 2025 period. The analysis examines how modernization contributes to strengthening deterrence posture, enhancing strategic bargaining leverage, and reinforcing Indonesia's regional power projection capacity. The study also identifies structural constraints that may influence the long term geopolitical effectiveness of modernization within the evolving Indo Pacific security architecture.

Through this analytical focus, the research seeks to contribute to regional security scholarship by situating Indonesia's defense modernization within the intersection of military capability development, geopolitical strategy, and cooperative security dynamics.

RESEARCH METHOD

This study employs a descriptive analytical qualitative design to systematically map Indonesia's defense modernization developments while interpreting their strategic significance within the regional security environment. Descriptive analysis outlines patterns of force development, procurement trajectories, and capability transformation, while analytical interpretation evaluates their geopolitical functions in shaping deterrence posture, regional power equilibrium, and Indonesia's strategic positioning.

The unit of analysis centers on Indonesia's defense modernization policy, particularly the transformation of primary weapon systems across land, naval, and air domains. The research

examines capability enhancement, force structure evolution, procurement strategies, and operational readiness to capture the material dimension of defense strategy and its geopolitical implications.

The temporal scope is limited to 2020–2025, corresponding with the acceleration of Minimum Essential Force Phase III implementation and intensifying Indo-Pacific geopolitical competition. This timeframe ensures analytical linkage between domestic modernization policy and external strategic dynamics.

Data are collected through literature review of secondary sources, including defense policy documents, government publications, defense white papers, state budget reports, military expenditure databases, international strategic research publications, and peer-reviewed journals. Document analysis techniques are used to examine procurement records, budget allocations, industrial participation, and technological upgrading patterns, situating Indonesia's modernization within Southeast Asian security developments.

The analysis integrates three frameworks. Realist security theory interprets modernization as a rational response to structural pressures. Defense policy analysis examines institutional planning instruments such as MEF doctrine and procurement governance. Geopolitical strategy mapping evaluates impacts on deterrence credibility, defense diplomacy leverage, and regional security positioning (Schelling, 1966; Till, 2018).

Modernization is operationalized through three interrelated dimensions: military capability development, geopolitical signaling, and strategic autonomy. The first dimension assesses force transformation outputs, including procurement diversification, platform upgrading, readiness enhancement, and joint operational integration across service branches. Capability development is evaluated not only quantitatively but also qualitatively in terms of interoperability, force projection flexibility, and deterrence posture in maritime and archipelagic operational environments.

The second dimension examines modernization as a form of geopolitical signaling. Defense acquisitions and strategic partnerships are interpreted as instruments of perception shaping that communicate Indonesia's strategic intent, deterrence credibility, and regional positioning within Southeast Asia's security architecture. Procurement patterns and defense diplomacy engagements further reflect calibrated signaling designed to avoid escalation while sustaining strategic relevance.

The third dimension focuses on strategic autonomy, particularly the degree to which modernization strengthens domestic defense industry participation, technology absorption, and maintenance self-reliance, thereby reducing external dependency and enhancing long-term defense sustainability. Emphasis is also placed on institutional learning processes and the gradual consolidation of national defense technological capacity.

Validity is ensured through source triangulation and cross-reference verification between national policy documents, international defense databases, and independent strategic reports, reinforced by temporal cross-checking of expenditure and procurement data.

Overall, this qualitative framework enables holistic analysis of Indonesia's alutsista modernization as both a defense instrument and a geopolitical strategy contributing to deterrence strengthening, regional balancing, and the consolidation of strategic autonomy in Southeast Asia.

RESULT AND DISCUSSION

A. Military Capability Development: Modernization as Material Power Accumulation

The modernization of Indonesia's primary weapon systems between 2020 and 2025 unfolded within a rapidly transforming Indo Pacific strategic environment characterized by intensifying major power rivalry and maritime contestation. Escalating tensions in the South China Sea and the growing militarization of critical sea lanes generated multidimensional pressures that shaped Indonesia's defense policy recalibration. Strategic competition among global powers expanded beyond territorial disputes into influence projection across maritime chokepoints, technological ecosystems, and regional security alignments, thereby reinforcing the necessity for Indonesia to strengthen its deterrence posture while preserving regional stability (Storey, 2021).

Indonesia's force development trajectory during this period was institutionally anchored in the Minimum Essential Force framework, which functions as the principal guideline for national military transformation. The MEF doctrine prioritizes proportional capability fulfillment

based on threat assessment, geographic vulnerability, and fiscal sustainability rather than force maximization. In its third implementation phase, emphasis was placed on technological upgrading, integrated command systems, and cross service operational readiness as central pillars of restructuring. Through this framework, Indonesia sought to generate credible minimum deterrence capacity capable of safeguarding national interests across land, maritime, and aerial domains without triggering destabilizing arms competition (Ministry of Defense of the Republic of Indonesia, 2023).

From a fiscal perspective, defense expenditure demonstrated gradual yet consistent growth, reflecting sustained governmental commitment to modernization. Military spending increased from approximately 7.7 billion United States dollars in 2020 to nearly 8.8 billion United States dollars by 2025 (SIPRI, 2024). This upward trajectory signaled prioritization of procurement renewal, logistical reinforcement, maintenance systems, and technological integration. Importantly, allocation patterns indicate a structural shift from platform acquisition toward lifecycle sustainment and operational readiness investment, suggesting a more mature and sustainability oriented modernization approach.

Despite this expansion, defense spending remained calibrated against macroeconomic capacity and broader national development priorities. Defense planning required careful alignment with infrastructure investment, social welfare expenditure, and post pandemic economic recovery initiatives. Such balancing illustrates how modernization pacing was shaped not solely by threat perception but also by domestic fiscal resilience and revenue sustainability considerations (Ministry of Finance of the Republic of Indonesia, 2022). Sustainable modernization therefore depended on the state's capacity to harmonize security imperatives with long term development commitments.

The sustainability of defense financing further depends on procurement structures and long term fiscal exposure. Several major acquisition programs rely on government to government credit arrangements and export financing mechanisms that distribute costs across extended repayment periods. While these instruments accelerate capability acquisition, they simultaneously generate future fiscal obligations linked to exchange rate volatility, interest accumulation, and maintenance cost escalation. Because lifecycle expenditure encompassing training, spare parts, infrastructure, and system upgrading often exceeds initial acquisition value, modernization sustainability is determined not only by procurement affordability but also by long term fiscal resilience and budget absorption capacity. If procurement expansion surpasses absorption capacity, modernization could produce enduring budgetary crowding effects.

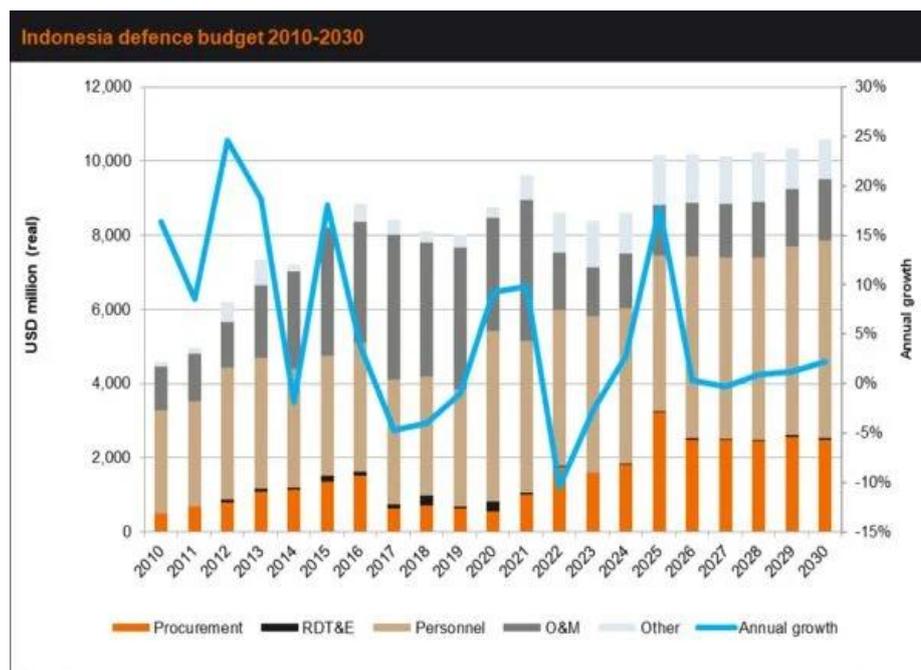


Figure 1. Indonesia Defense Budget Trend 2020 to 2025
 Source: Stockholm International Peace Research Institute, 2024

Budget escalation patterns after 2022 reveal accelerated growth that corresponds with improved fiscal space and increased policy prioritization toward defense strengthening (National Development Planning Agency, 2021). This trend underscores the interdependence between macroeconomic recovery and defense capability expansion, reinforcing the argument that fiscal health constitutes a structural prerequisite for sustainable military modernization. In this context, modernization is not merely a security policy choice but also a function of national economic performance.

Land force modernization during the observed period followed a consolidation model centered on qualitative enhancement rather than numerical expansion. Regeneration of armored platforms, improvement of firepower systems, and reinforcement of mobility assets were prioritized to maintain battlefield relevance. This approach aligns with Indonesia's doctrinal emphasis on territorial defense rather than expeditionary projection. By strengthening survivability, mobility, and integrated fire support within existing force structures, land forces preserved deterrent credibility while operating within fiscal constraints.

Naval modernization, by contrast, demonstrated selective expansion oriented toward maritime projection and logistical mobility. Amphibious platforms assumed strategic importance in troop deployment, humanitarian response, and sealift capacity across dispersed islands. The expansion of amphibious fleets reflects Indonesia's archipelagic defense doctrine, which prioritizes rapid inter island force distribution and maritime domain control (International Institute for Strategic Studies, 2024). This selective expansion illustrates how modernization priorities were calibrated to geographic realities and strategic vulnerability assessments.

Table 1. Development of Indonesia's Strategic Military Assets 2020 to 2025

No	Weapons System	2020	2021	2022	2023	2024	2025
1	Main Battle Tanks	315	315	314	313	313	313
2	Submarines	5	5	5	4	4	4
3	Amphibious Ships	156	162	168	168	168	168

Source: International Institute for Strategic Studies, 2024

Quantitative trends in major strategic assets further confirm that modernization emphasized qualitative optimization over numerical growth. The regeneration of submarine capabilities corresponded with maintenance cycles, refits, and technological upgrading rather than operational decline (Bitzinger, 2020). Meanwhile, the steady increase in amphibious vessels indicates prioritization of mobility and logistical projection essential for archipelagic defense operations. Taken together, these patterns demonstrate that Indonesia's modernization trajectory between 2020 and 2025 was structured around capability refinement, operational sustainability, and geographically grounded deterrence rather than force maximization.

B. Geopolitical Signaling: Modernization as Strategic Communication

Indonesia's defense modernization between 2020 and 2025 functioned not only as capability enhancement but also as an instrument of strategic communication within the regional security environment. The deterrence effects generated during this period derived primarily from improved operational readiness, enhanced interoperability across services, and integrated command and control systems rather than numerical superiority alone (Anwar, 2021). Increased readiness elevates the perceived cost of coercive action by potential adversaries, thereby reinforcing Indonesia's preventive defense posture. Simultaneously, these capability improvements shape regional perceptions and strengthen Indonesia's diplomatic leverage in multilateral security engagements.

Within the Southeast Asian context, Indonesia's modernization interacted with the region's security dilemma dynamics. Even defensive capability enhancement may stimulate reciprocal responses if not accompanied by transparency and confidence building. To mitigate escalation risks, Indonesia complemented modernization with defense diplomacy initiatives, transparency measures, and active participation in multilateral exercises (Tan, 2020). This calibrated approach reinforces Indonesia's position as a stabilizing regional actor committed to cooperative security norms (Laksmana, 2019).

At the doctrinal and cultural level, Indonesia's military modernization reflects a defensive strategic orientation rooted in non expansionism and the principles of an independent and active foreign policy. Capability development is calibrated to safeguard sovereignty and prevent coercion without provoking alliance polarization or heightened threat perception within Southeast Asia. Rather than pursuing dominance, Indonesia emphasizes persistent presence, territorial denial, and equilibrium maintenance as core deterrence mechanisms. This trajectory positions Indonesia as a middle power that balances military strengthening with regional confidence building imperatives.

Beyond its security dimension, modernization has stimulated the strengthening of Indonesia's domestic defense industry. Technology transfer agreements, joint production arrangements, and procurement offset policies have expanded national manufacturing capacity while reducing reliance on external suppliers (Sukma, 2022). Domestic industrial participation not only enhances production capability but also accelerates technological absorption and engineering skill development. Over time, industrial reinforcement constitutes a critical pillar of long term strategic autonomy.

Defense modernization has also generated broader civil military technology spillover effects across Indonesia's national innovation ecosystem. Aerospace development contributes to civilian aviation maintenance and avionics advancement, while naval shipbuilding progress strengthens commercial maritime manufacturing. Surveillance radar systems and unmanned platforms possess dual use applications in disaster monitoring, border management, and environmental protection. Such technological diffusion enhances Indonesia's geo economic resilience by integrating defense innovation with civilian industrial upgrading, thereby strengthening both military capability and national development capacity.

Material procurement has been accompanied by institutional restructuring to ensure effective operational absorption of newly acquired systems. The establishment of integrated regional defense commands has enhanced rapid deployment responsiveness in frontier and strategically sensitive areas (Lemhannas RI, 2021). Organizational adaptation and doctrinal harmonization ensure that modernization translates into tangible operational effectiveness rather than symbolic inventory expansion (Ministry of Defense of the Republic of Indonesia, 2022).

Operational mobility has emerged as a decisive capability multiplier within Indonesia's archipelagic geography. The modernization of transport aircraft, rotary platforms, and amphibious logistics fleets has strengthened inter island force projection capacity (Bappenas, 2022). Beyond military functions, these mobility assets support humanitarian assistance and disaster response operations, reinforcing civil military integration and enhancing domestic legitimacy (Ministry of Defense of the Republic of Indonesia, 2023).

In the maritime domain, patrol and surveillance capabilities have been significantly reinforced through offshore patrol vessels and reconnaissance systems. Persistent patrol presence strengthens sovereignty signaling in strategically contested waters while safeguarding global sea lines of communication traversing Indonesian territory (Badan Keamanan Laut RI, 2022; Defense White Paper of Indonesia, 2020). These improvements contribute to a more robust early warning architecture and enhanced maritime domain awareness.

Air power modernization has improved interception capability, maritime strike reach, and airspace denial capacity through avionics upgrading and precision weapon integration (Indonesian Air Force, 2022). Radar network expansion has reduced surveillance gaps and strengthened national early warning systems (Bappenas, 2021). The digitalization of command, control, communication, and intelligence systems enables real time operational coordination and marks Indonesia's gradual transition toward information based warfare (Pusat Penerangan TNI, 2022).

Despite these advancements, structural capability gaps remain visible, particularly in cyber defense resilience, missile interception systems, and space based surveillance capacity. Military digitalization increases vulnerability to cyber threats, requiring strengthened national cyber security architecture (National Cyber and Crypto Agency, 2022). Limitations in space surveillance constrain intelligence autonomy, while missile defense capabilities remain underdeveloped relative to regional strike proliferation trends (Ministry of Defense of the Republic of Indonesia, 2023). These gaps indicate priority sectors for future investment.

Procurement planning has increasingly incorporated lifecycle cost sustainability and domestic industrial participation as core principles (Ministry of Finance of the Republic of Indonesia, 2022). However, the effectiveness of offset and technology transfer arrangements depends heavily on domestic absorptive capacity and external partner compliance (Defense Industry Policy Committee, 2022). Governance reform within procurement institutions seeks to enhance transparency, lifecycle planning coherence, and corruption risk mitigation to ensure that modernization funding translates into operational capability.

Looking forward, modernization planning indicates expansion toward unmanned systems integration and artificial intelligence applications in surveillance analytics and decision support systems (Ministry of Defense of the Republic of Indonesia, 2023). Preparedness for hybrid warfare, including cyber resilience and information security reinforcement, increasingly shapes modernization priorities (Coordinating Ministry for Political, Legal, and Security Affairs, 2022). Whole of government coordination strengthens crisis response coherence and underscores the multidimensional character of Indonesia's modernization trajectory.

Overall, Indonesia's primary weapon systems modernization between 2020 and 2025 represents a calibrated middle power defense strategy. Modernization has reinforced deterrence credibility, maritime sovereignty enforcement, defense diplomacy leverage, and technological capacity while maintaining fiscal sustainability and adherence to regional stability commitments. Through consistent strategic communication and alignment with ASEAN cooperative security norms, Indonesia has strengthened its defense posture without provoking destabilizing military competition in Southeast Asia.

C. Strategic Autonomy: Modernization and Defense Industrial Development

Indonesia's defense modernization plays a critical role in safeguarding maritime economic infrastructure that underpins national resilience. Offshore energy installations, fisheries zones, and undersea communication cables constitute strategic assets vulnerable to geopolitical disruption (Ministry of Marine Affairs and Fisheries of the Republic of Indonesia, 2021). Securing these assets ensures continuity of economic activity amid regional uncertainty and great power competition. Moreover, energy transportation routes crossing Indonesian waters function as vital national security arteries, making sustained naval patrol capability essential for protecting uninterrupted energy logistics and reinforcing the interdependence between defense capability and economic sovereignty.

Modernization efforts have also strengthened Indonesia's intelligence architecture through the integration of military, maritime, and cyber intelligence streams into centralized fusion centers. This information consolidation enhances threat detection accuracy and improves interagency operational coordination (Pusat Penerangan TNI, 2022). Expanded early warning systems increase Indonesia's capacity to anticipate gray zone coercion, illegal incursions, and hybrid threats before escalation thresholds are reached. As a result, modernization contributes not only to kinetic deterrence but also to anticipatory strategic awareness.

Another essential pillar of strategic autonomy lies in defense supply chain localization and logistical resilience. Policies promoting domestic spare parts manufacturing and maintenance capability aim to reduce vulnerability to geopolitical embargo risks and external supply disruption (Ministry of Defense of the Republic of Indonesia, 2023). Logistical autonomy determines endurance capacity during prolonged crises, particularly when external support may be uncertain or delayed. Without resilient supply chains and sustainable maintenance infrastructure, modernization risks producing technologically advanced yet operationally fragile forces.

Taken together, Indonesia's primary weapon systems modernization between 2020 and 2025 reflects a calibrated middle power defense strategy integrating fiscal sustainability, deterrence credibility, industrial strengthening, and diplomatic signaling. Rather than pursuing military dominance, Indonesia emphasizes defensive resilience, strategic autonomy, and the preservation of regional stability. This multidimensional approach enables modernization to function as both a security instrument and a structural investment in long term national sovereignty.

At the regional level, these modernization outcomes contribute to the maintenance of strategic equilibrium amid intensifying extra regional military competition. Indonesia's carefully calibrated capability development strengthens deterrence without generating destabilizing escalation, allowing it to function as a stabilizing force within ASEAN's cooperative security

framework. Over the long term, such a posture enhances Indonesia's capacity to shape the regional security architecture through balance maintenance and normative leadership rather than coercive power projection.

CONCLUSION

Based on the findings and analysis of Indonesia's main weapon systems modernization policy between 2020 and 2025, it can be concluded that defense modernization has evolved beyond a purely military technical agenda into a multidimensional geopolitical strategy shaped by structural transformations in the regional security environment. The intensification of great power rivalry in the Indo Pacific, the escalation of tensions in the South China Sea, and the proliferation of multidimensional security threats have compelled Indonesia to recalibrate its defense posture in order to remain adaptive within an increasingly contested strategic landscape.

Within this strategic context, the modernization of Indonesia's armed forces has been institutionally anchored in the Minimum Essential Force framework, which functions as the principal guideline for national defense capability development. The MEF orientation emphasizes the attainment of proportional minimum capability rather than force maximization. This posture reflects Indonesia's strategic preference to strengthen deterrence capacity without provoking destabilizing arms competition within Southeast Asia. Consequently, modernization implementation during the observed period prioritized qualitative capability enhancement, operational readiness improvement, and systems integration across military services rather than numerical force expansion.

Empirical analysis demonstrates that Indonesia's modernization trajectory has focused on technological upgrading, interoperability strengthening, and command control integration. This qualitative orientation is strategically relevant for an archipelagic state whose defense effectiveness relies heavily on mobility, maritime surveillance, and rapid deployment capacity across geographically dispersed territories. The selective expansion of naval and amphibious assets, supported by air surveillance enhancement and land force regeneration, illustrates an adaptive modernization model calibrated to Indonesia's geostrategic defense requirements.

From a geopolitical perspective, defense modernization has generated measurable deterrence effects. The enhancement of military readiness and credible force projection capability has strengthened Indonesia's capacity to discourage potential aggression while simultaneously elevating its bargaining leverage in defense diplomacy engagements. Military capability development thus functions not only as an instrument of territorial defense but also as a signaling mechanism that shapes regional perceptions regarding Indonesia's strategic posture and resolve.

At the regional level, Indonesia's modernization must be understood within the dynamics of the security dilemma. Capability enhancement pursued for defensive purposes may still stimulate reciprocal military responses from neighboring states. Recognizing this structural risk, Indonesia has pursued a calibrated strategy balancing military modernization with cooperative security engagement. Defense diplomacy initiatives, joint military exercises, and multilateral participation within ASEAN centered security frameworks have functioned as confidence building mechanisms designed to mitigate escalation risks. This dual track approach underscores Indonesia's geopolitical orientation as a stabilizing and moderating power rather than a revisionist military actor.

Nevertheless, the effectiveness of Indonesia's defense modernization policy remains constrained by structural limitations. Defense budget capacity, although gradually increasing, must remain aligned with broader national development priorities. This fiscal balancing requirement affects procurement scale, modernization speed, and lifecycle sustainability of advanced weapons systems. Technological dependence on foreign defense suppliers continues to limit strategic autonomy, while the domestic defense industrial base has yet to achieve optimal production capability and innovation resilience. Institutional inconsistencies in long term procurement planning further present challenges to sustainable force development.

Despite these constraints, modernization initiatives have begun to stimulate the strengthening of Indonesia's domestic defense industry. Technology transfer arrangements, joint production programs, and industrial offset policies have contributed to the gradual accumulation of indigenous defense manufacturing capability. These developments signal long term strategic intent to reduce external dependency and enhance national defense self reliance. Within a geopolitical framework, defense industrial strengthening constitutes a critical pillar for achieving sustainable strategic autonomy.

In aggregate analytical terms, Indonesia's alutsista modernization between 2020 and 2025 reflects a model of defensive geopolitics integrating military capability enhancement with diplomatic engagement and regional confidence building. Modernization has reinforced national defense credibility while preserving Indonesia's commitment to cooperative security norms and balance of power equilibrium in Southeast Asia. This calibrated strategic posture enables Indonesia to enhance deterrence capacity without undermining regional stability.

The findings of this study indicate that the success of defense modernization as a geopolitical strategy ultimately depends on the integrated alignment of three strategic pillars. The first pillar is defense policy coherence, ensuring synchronization between procurement planning, force structure development, and operational doctrine. The second pillar is defense diplomacy engagement, which mitigates security dilemma escalation while strengthening Indonesia's strategic partnerships. The third pillar is domestic defense industrial development, which underpins long term strategic autonomy and capability sustainability.

Without such multidimensional integration, modernization risks remaining procurement oriented with limited geopolitical leverage. Conversely, when strategically synchronized, modernization becomes a transformative policy instrument capable of strengthening Indonesia's deterrence credibility, strategic autonomy, and leadership role within the evolving Southeast Asian security architecture.

In addition, this study underscores that Indonesia's modernization trajectory reflects the strategic behavior of a middle power navigating complex geopolitical competition. Rather than pursuing military dominance, Indonesia emphasizes capability sufficiency, defensive deterrence, and cooperative engagement. This approach reinforces Indonesia's identity as a regional balancer committed to maintaining stability amid intensifying Indo Pacific power rivalry.

Future research may expand this analysis through comparative assessment of defense modernization trajectories among ASEAN member states. Comparative inquiry examining fiscal capacity, threat perception variation, and defense industrial capability differentials would contribute to deeper understanding of Southeast Asia's evolving balance of power structure. Such studies would also illuminate the long term implications of regional military modernization for strategic stability, alliance formation patterns, and cooperative security prospects.

In practical policy terms, it is highly relevant for the Ministry of Defense to adopt short term targeted measures to reduce technological dependency on foreign suppliers. Priority should be given to structured technology transfer in critical sectors such as maritime surveillance systems, unmanned aerial systems, radar and electronic warfare technology, and maintenance repair overhaul capabilities. Procurement contracts should incorporate mandatory industrial offset clauses tied to measurable local capability benchmarks, including joint research programs, co production schemes, and human resource training pipelines.

In the short term, strengthening partnerships between the Ministry of Defense, state owned defense enterprises, universities, and research institutions can accelerate domestic technological absorption capacity. Establishing a clear roadmap for indigenous subsystem development, particularly in software integration, sensor technology, and platform maintenance, would enable gradual substitution of imported components. Additionally, prioritizing lifecycle support autonomy, including spare parts manufacturing and system integration expertise, would reduce long term strategic vulnerability.

Through these immediate and focused policy steps, Indonesia can begin to systematically address foreign technology dependence while reinforcing the broader geopolitical objectives of modernization. Ultimately, the sustainability of Indonesia's alutsista modernization will depend not only on procurement volume, but on the strategic depth of

technological mastery, institutional coherence, and industrial resilience achieved through deliberate and coordinated policy action.

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