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READINESS OF THE INDONESIAN NATIONAL ARMY IN SUPPORTING THE DEFENSE ECONOMY

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ABSTRACT

The budget is said to be the cause of the unpreparedness of the Indonesia National Armed Force (TNI) to defense Indonesia from any threats. However, a comparison between 2009 and 2020 shows that the budget increase has almost quadrupled in 12 years, however, the increase in the level of readiness of the TNI did not reach even two times in the last 12 years. In dealing with this phenomenon, the authors analyze the causes of the unpreparedness of the TNI by using systems thinking and SWOT analysis methodologies. Research shows that the cause of the unpreparedness of the TNI is inconsistency in implementing plans and determining priorities in the procurement of defense equipment. The solution to this problem is to make careful planning before deciding on the purchase of defense equipment and implement it in accordance with Law no. 16 of 2012, where the purchase of defense equipment from abroad must be followed by the transfer of technology that will strengthen the domestic defense industry and the level of readiness of the TNI. Based on the SWOT analysis of the implementation of Law no. 16 of 2012, technology transfer with joint production is considered to be more beneficial for Indonesia as a whole.

KEYWORDS

Minimum Essential Force, Defense Equipment, Transfer of Technology, Defense economic, Indonesia.

Introduction

The dynamics of changes in the strategic environment that are currently occurring have the characteristics of VUCA, namely volatility, uncertainty, complexity and ambiguity. This kind of environment poses various threats and opportunities for the national interest in Indonesia. Some of the actual threats that occur in Indonesia are the Covid-19 pandemic, the South China Sea, and armed criminal groups (KKB). The Indonesian National Army (TNI) is tasked with preventing military and non-military threats, as well as contributing to advancing the nation and state. During peacetime the TNI is needed as a force in assisting the government through various special tasks or known as Military Operations Other than War (OMSP) (Armawi, 2019).

In order to protect the national interest from threats, the TNI's readiness in dealing with threats must be considered. The following is a comparison of TNI readiness based on the defense and security audit of the Ministry of Defense - TNI in 2009 and the Ministry of Defense of the TNI in the 2020 defense proceedings in Dr Ade Muhammad's KKDN Presentation (2022) as follows:

Based on the table above, it can be seen that Indonesia's defense budget in 2020 increased by 389% or it can be said to increase almost 4 times from 2009. However, this increase in budget is not reflected in the increase in TNI readiness. It is known from the table, the increase in TNI readiness from 2009 to 2020 for the Indonesian Army increased by 4.19%, the Indonesian Air Force by 48.45%, and the Indonesian Navy by 16.12%. This explains that the increase in TNI readiness is not proportional to the increase in the budget, especially for the TNI AD and TNI AL. Only the Indonesian Air Force experienced an increase that was more or less the same as the increase in the budget. TNI AD even only experienced a very small increase. So when viewed from the average, the capability of the TNI only reached 69% in 2020, an increase of 24% from 2009. The following is the detailed data on defense budget allocations in 2020, namely (Sahabuddin, 2022):

The table above shows that in terms of the allocation of defense expenditures, it can be seen that the largest allocation is in personnel expenditures, then goods expenditures, followed by capital expenditures.

This shows that the increase in the budget does not guarantee the readiness of the TNI, which can be concluded that the cause of the unpreparedness of the TNI does not come from the budget but there are problems in its strategic management. Problems in strategic management can be in the form of budget allocation, budget priority errors, budget use, etc. It can be seen from the table of defense budget allocations from 2020 that the purchase of defense equipment is only 25% of the total defense budget.

Research methods

This study uses a systematic literature study of relevant previous studies. A systematic literature study identifies, selects, and critically assesses research to answer clearly formulated questions (Dewey &Drahota, 2016). This article will use a descriptive analysis method with a qualitative approach (Astuti&Ratnawati, 2020) with a SWOT analysis. SWOT analysis (strengths, weaknesses, opportunities, and threats) is a framework used to evaluate a company's competitive position and to develop strategic plans. SWOT analysis assesses internal and external factors, as well as current and future potential (Kenton, 2021). This article also uses systems thinking methodology to describe the structure of the phenomena that occur. According to Peter Senge (1990), systems thinking is a discipline to look at the whole and a framework to see interrelationships rather than things, to see patterns of change (Arnold & Wade, 2015). Causal Loop Diagrams and System Archetypes are tools of systems thinking. Causal Loop Diagram is an important tool to describe the feedback structure in a system (SDBB, 2018). While the system archetype is a common and usually repeated pattern of behavior in organizations (Taborga, 2011). System archetypes can be used as a diagnostic tool to better understand the dynamics of a particular set of behaviors that have manifested undesirable conditions (Taborga, 2011).

Using SWOT analysis and system thinking, this article will discuss the structure of the TNI readiness phenomenon using systems thinking, followed by a SWOT analysis of the phenomenon. Based on the SWOT analysis, an appropriate strategy is made and the structure of the strategy uses systems thinking. This article will close with conclusions and suggestions from the author.

Results and Discussion

Minimum essential force (MEF) is a national defense strategy where the minimum basic strength is part of the TNI's posture to respond to actual threats to national defense. Quoted from Kompas.id, there are three stages of fulfilling the MEF, namely (Slamet JP, 2021):

1. Phase 1, carried out from 2010 to 2014 with the achievement of 54.97% of the target of 57.24%.
2. Phase 2, carried out from 2015 to 2019 with the achievement of 63.19% of the target of 75.54%.
3. Phase 3, carried out from 2020 to 2024 with a 100% achievement target.

Similarly, Chairman of the Centra Initiative and Member of the Civil Society Coalition for Security Sector Reform Al A'raf stated that Indonesia's defense problem is not due to a lack of budget, but the wrong scale of priorities (Radjah, 2021). Based on the data above and the background, the above phenomenon can be approached using a system thinking archetype type fixes that fails as shown below:

The picture above shows that the MEF as Indonesia's defense strategy has a target to prepare the TNI's minimum basic strength from threats to national defense in 2024. In order to achieve this readiness, the MEF development strategy was carried out starting from 2010. However, this strategy did not work well. smooth, because there are factors that are not taken into account, namely the scale of priorities in the use of the budget. The government is inconsistent in implementing plans and determining priorities, such as buying used goods as a mode and preferring maintenance over buying new (Radjah, 2021).

The impact of determining this priority scale causes the MEF target to not be met, which means that the TNI's readiness performance does not meet the predetermined target. So that there is a gap between the desired target and the target achieved, as in phase II where the achievement was 63.19% of the target of 75.54%, which means a gap of 12.35%. Even Muhammad Farhan, Member of Commission I from the Nasdem Party Faction, stated that there will be difficulties in fulfilling the MEF in 2024 (Kustiasih, 2021).

SWOT Analysis of TNI's Current Readiness

Strength •As the fourth most populous country in the world with 262 million people, Indonesia has a total military force of 975,750 personnel, 435,750 of whom are on active duty. Can catch up in military technology with transfer of technology Large population provides an opportunity to increase manpower in the form of reserve components	Weakness •Tidak konsisten dalam implementasi perencanaan dan menentukan skala prioritas •Transparansi dan akuntabilitas bermasalah •Pembelian alutsista bekas dibandingkan dengan beli baru •Sarana dan Prasarana belum memadai •Penerapan ToT berdasarkan UU No. 16 Tahun 2012 masih belum berjalan dengan baik
Opportunity •Political support from the president and the ministry of defense in the form of policies and regulations •Support in the form of a defense budget AUKUS partners cause France to approach Indonesia to sell its defense equipment	Threat Countering America's Adversaries Through Sanctions Act (CAATSA) which has the power to impose sanctions on countries that buy defense equipment from Russia The COVID-19 pandemic has hampered the defense sector development agenda because part of the budget was allocated to the PEN program.

National defense can benefit from the infrastructure and infrastructure budget. Because infrastructure spending is able to increase military resilience, this installation implements important and essential infrastructure for local communities. Indonesia is an archipelagic and maritime country which has a wide coastline. Therefore, infrastructure investment can ensure military readiness and limit the potential for failure in

wartime operations. In Indonesia itself, national facilities and infrastructure are included in Indonesia's defense strategy, namely as a supporting component. These national facilities and infrastructure can be used for the benefit of welfare during times of peace and used for the benefit of national defense during times of emergency or war. However, in reality, the facilities and infrastructure in Indonesia are not adequate, both in terms of quantity and quality which are partly due to the absence of a hub port, not managed with integrity, less effective and efficient, and the ineffectiveness of intermodal transportation and interconnection between port infrastructure, warehousing, transportation and hinterland areas (Supply Chain Indonesia, 2017). Indonesia adheres to a defense system for large islands in which the defense of the archipelagic state views the entire island, Indonesian waters and all their contents and the air space above them as a unified whole; placing large islands as the main base of defense strengthened by the defense of a group of small islands, as well as the surrounding waters, which are arranged in layers and cover each other starting from the outer mandala, main mandala, and inner mandala, in order to maintain the entire sovereignty and jurisdiction National Unitary State of the Republic of Indonesia (NKRI). In order for this strategy to be used, it is necessary to develop adequate facilities and infrastructure in the five largest islands in Indonesia, namely Java, Sumatra, Sulawesi, Kalimantan and Papua.

Transfer of Technology in Indonesia is also still far from optimum, it can even be said that technology transfer is a classic program that often fails to be realized (Laoli, 2014). Technology transfer is an important program to encourage industrial growth in Indonesia, including the defense industry. There are several reasons why technology transfer often fails in Indonesia, but mainly due to the lack of Human Resources who fit the classification and specialize in technology transfer and the large capital required. On the other hand, Indonesia is also still not ready to supply the raw materials needed by the industry. It can be seen that around 80% of the raw materials used for production purposes are still imported.

Procurement of defense equipment is very thick with politics between countries and is one of the risks that need to be considered when acquiring defense equipment equipment. According to the defense procurement agency, the defense equipment procurement process is a rational process, in which the agency can achieve optimal results between military needs and economic costs (Kurc, 2012). This is even stated in Law No. 16 of 2012 where when importing defense equipment, there is a condition that there is no guarantee of potential embargoes, political conditionality and obstacles to the use of Defense and Security Equipment Tools (Alpahankam). An embargo sanction was once given to Indonesia from the United States due to the conflict in Timor Leste. This is what rationalizes the importance of the independence of the Indonesian defense industry, so that Indonesia is able to supply its defense equipment needs independently without depending on other countries. America also issued a US federal regulation that has imposed sanctions on Iran, Russia, and North Korea which is also known as The Countering America's Adversaries Through Sanctions Act (CAATSA).

Based on the Gun vs Butter concept, there is consideration in government allocations to defense versus social programs when deciding on a budget. Both of these fields can be very important for the economy of a country. Depending on the global security environment, defense may take priority over the social, especially in times of war. Times of war can have a substantial effect on a country's economy and the progress of its society (Farley, 2020). When there was a non-military threat in the form of the Covid-19 pandemic, the government focused on handling the pandemic, so that a lot of the government budget was allocated for the National Economic Recovery (PEN) program. This also happened at the ministry of defense, where the Covid-19 pandemic caused the defense sector development agenda to be hampered because part of the budget was allocated to the PEN program. This is the right response because the threat of Covid-19 is a real threat that needs to be resolved immediately because of its impact on the socio-economic conditions of the Indonesian people. However, this has caused a slowdown in the development of the defense sector in Indonesia.

Based on the SWOT analysis above, if each point is given a score of 1 each, then the result is a strength worth 3, weakness is worth 4, opportunity is worth 3, and threat is worth 2. Based on this score, the strategy that can be used is the WO strategy or also called Weakness Opportunity Strategy, which means that it is implemented based on the utilization of existing opportunities by minimizing existing weaknesses. The WO strategy aims to improve internal weaknesses by taking advantage of external opportunities.

Therefore, the right strategy is to implement it by making careful planning before deciding on the purchase of defense equipment and implementing it in accordance with Law no. 16 of 2012, where the purchase of defense equipment from abroad must be followed by the transfer of technology that will strengthen the domestic defense industry. Based on the explanation above, the most suitable archetype is the reinforced loop archetype from Sange as shown below:

The picture above explains that with good planning in purchasing defense equipment, one of which is prioritizing technology transfer by implementing the regulations of Law no. 16 of 2012 properly it will strengthen the defense industry. This priority was chosen based on the industry's readiness for technology implementation such as infrastructure, human resources, budget and supply chain. A limited budget requires careful planning when selecting a transfer of technology because it requires large capital. A strong defense industry implies that the defense industry is able to meet the needs of defense equipment from the TNI, thereby increasing the level of readiness of the TNI. The increased readiness of the TNI will approach the target of the MEF that has been determined. In order to achieve the MEF target, it is necessary to implement a strategy that prioritizes technology transfer.

SWOT Analysis Strategy for the implementation of Law no. 16 Year 2012

Based on the strategic structure above, a SWOT analysis can be made as follows:

Strength	**Weakness**
•No need to do research from scratch because it will adopt technology from other countries Have a fairly large bargaining power because there are not too many defense equipment buyers, so they can choose the technology transfer they want	•Inadequate quality human resources •The cost of RnD is still small There is no experience in the technology field to be transferred
Opportunity	**Threat**
•Policies based on Law no. 16 of 2012 which supports the implementation of the technology transfer strategy Offset as a competitive advantage for foreign companies Very fast technological developments	•Limiting imports from other countries in the supply of raw materials for the defense industry Embargo from the country selling defense equipment

Transfer of technology has several advantages, including as a way to eliminate limitations in order to improve the quality of life of the Indonesian people and strive to improve and master technology. In addition, it is hoped that the transfer of technology can improve the ability of human resources and increase the productivity of human resources. However, the environment surrounding the transfer of technology is complex, one of which is the very fast development of technology. It is possible that when Indonesia has received technology transfer, new, more up-to-date technologies will emerge. So the knowledge gained from technology transfer has become obsolete. Broadly speaking, there are obstacles and problems faced in technology transfer, namely:

1. Limited understanding of technology concepts, and lack of a consistent framework for understanding them.
2. Lack of systematic planning for technology transfer in developing countries or misunderstanding of the underlying philosophy.
3. Lack of bilateral science and technology advantages in the technology transfer process (mutual benefit).
4. Lack of a systematic and integrated engineering and socio-economic approach to the technology transfer process.
5. Lack of a relevant quantitative framework or approach for the analysis and evaluation of technology transfer to developing countries.

Based on the problems above, it can be concluded that the problem in technology transfer is the application after getting the technology transfer. Technology transfer can be obtained in various ways, namely:

R&D strategic partnerships, licensing, joint ventures, and joint production or it can also be referred to as defense offsets in defense. Another important issue in technology transfer is the tendency of developed countries to develop technology, and the knowledge developed so that the technology will be useful to them. This implies that developed countries become monopolistic in developing, using and managing technology. This also means that technology tends to be designed for the large-scale production of high-quality, high-end goods, using large capital and high-level professional skills in place of mere labour, and replacing natural resources with synthetic materials. This means that it is difficult for developing countries to produce these technologies even though they have received technology transfers because they are unable to produce high quality goods, the ability of their human resources, and the basic materials to produce these technologies.

Technology transfer can promote skills development and training as well as increase innovation through development and development in Indonesia. The more advanced the defense industry in Indonesia can also provide jobs so that it can improve people's welfare. The government also benefits in that if the number of workers increases, it will also increase state income from income taxes (PPh 21). In addition, if the defense industry advances, the Indonesian defense industry can compete with other countries in the arms trade, thereby increasing export potential. This will be a long term sustainability and growth in the defense industry in Indonesia.

Many researchers state that defense offsets are inconsistent in generating economic value. Therefore, to bring the best results in the offset policy, it is necessary to prioritize. Such as the understanding of economics according to Paul A. Samuelson, which states that the economy is the ways that humans and their groups use to utilize limited resources and obtain various commodities and distribute them for later consumption by the community. This also applies to the security needs of people who can use limited resources to create peace. Therefore, in carrying out defense offsets, a priority scale needs to be carried out. In the 2021-2030 period, it is hoped that Indonesia will be able to import military aircraft, land military vehicles, radar, missiles and military ships in order to help master advanced technology.

Indonesia must give priority to certain sectors based on the level of content of advanced technology, economic value, and readiness to absorb technology. Preferably, Indonesia is not too greedy in getting offsets for each classification of weapons because of the unpreparedness of the defense industry in Indonesia and this will also cause the defense in Indonesia to not focus on exploring defense technology which should be a priority. It is possible that not all technologies can be supported by the current Indonesian defense industry. Coupled with limited resources it would be better to focus on certain technologies only. Therefore, in defense offsets, it is necessary to consider the readiness in Human Resources, the current capacity of the Indonesian defense industry, as well as the need for mastery of advanced technology in the future.

There is a need for offset planning if you want to procure offsets. It is necessary to prepare capacity in the defense industry because it will be the party receiving the offset. So it must be planned in detail how the offsets will be included in the company's work plan, including aspects in it are design, material management organization and project management. Capacity building in the defense industry is not an easy task because it requires a large investment to do so. In addition, reaching the breakeven point may take a long time, especially if you only rely on the domestic market. Therefore, it is necessary for overseas marketing to reach the breakeven point. This can also provide benefits to the economy in Indonesia because it can increase Indonesia's exports.

Based on the SWOT analysis above, if each point is given a score of 1 each, then the result is strength is worth 2, weakness is worth 3, opportunity is worth 3, and threat is worth 2. Based on this score, the strategy that can be used is the WO strategy or also called Weakness Opportunity Strategy, which means that it is implemented based on the utilization of existing opportunities by minimizing existing weaknesses. The WO strategy aims to improve internal weaknesses by taking advantage of external opportunities.

The most appropriate strategy is to obtain technology transfer not through a license but through joint production it will be more profitable for Indonesia, because with joint production Indonesia can learn directly with countries that have more advanced technological capabilities compared to Indonesia, so that the knowledge gained can also be obtained. immediately implemented in Indonesia. Joint production can also be used as an

arena to improve the capabilities of its human resources. This strategy is able to reduce or minimize Indonesia's internal shortcomings when compared to transferring technology through licensing. This strategy will also fulfill the requirements provided by Law no. 16 of 2012 concerning the defense industry regarding the percentage of local content because in joint production Indonesia is actively participating in it.

Conclusion Recommendations and Limitations

Based on the results of the analysis above, it can be concluded that one of the causes of the TNI's lack of readiness even though the budget has been increased almost 4x from 2009 to 2020 is the inconsistency in planning implementation and determining the priority scale in the procurement of defense equipment. This can be seen how nearly 40% of the defense budget is used for personnel expenditure, while only about 25% of the defense ministry's budget can be used for the purchase of defense equipment. This low percentage of purchasing defense equipment has an impact on the modernization of the main weapon system desired by the TNI. Coupled with the lack of transparency and accountability of this strategy and the tendency to buy used weapons systems compared to buying new weapons, this is also a problem in TNI readiness and is a form of weakness in the current strategy. However, Indonesia has the opportunity to achieve TNI readiness because of political support from the president, the defense ministry, and the DPR in the form of policies and budgets as well as the current international political conditions that can provide opportunities to increase TNI readiness. However, the procurement of defense equipment also has a threat when it is influenced by international politics (CAATSA) and also the Covid-19 pandemic which causes a portion of the defense budget to be allocated for the PEN program. The strength of Indonesia is its large population, which means it can be used to increase TNI preparations in the form of reserve components.

Based on the explanation above, there is a solution that the government can do, namely the WO strategy or also known as the opportunity weakness strategy which takes advantage of existing opportunities by minimizing existing weaknesses. The WO strategy aims to improve internal weaknesses by taking advantage of external opportunities. Therefore, good planning in the purchase of defense equipment, one of which is prioritizing the transfer of technology to be taken will strengthen the defense industry. This priority was chosen based on the industry's readiness for technology implementation such as infrastructure, human resources, and supply chain. Based on the reinforcing loop archetype, technology transfer will strengthen the defense industry, which will increase the readiness of the TNI which will ultimately achieve the target of the MEF in order to protect Indonesia's defense from various forms of threats. By transferring technology, Indonesia can minimize RnD costs because it does not look for new technology from the start, in addition to that with many defense equipment manufacturers and few buyers, Indonesia has considerable bargaining power. Coupled with the opportunity from offsets as a competitive advantage for suppliers, they will provide offsets as attractive as possible so that they can be sold, including technology transfer. In addition, technology transfer is also supported in Law no. 16 of 2012 so that with proper implementation, Indonesia can move towards an independent defense industry. However, in this strategy there are several weaknesses in it such as inadequate resources including human resources who understand technology from technology transfer. In addition, the threat of embargoes by other countries and the imposition of limits on resources sold for the defense industry are noteworthy. The application of technology transfer faces many obstacles, such as the lack of infrastructure, the capacity of its human resources, and the lack of understanding of the knowledge gained. Therefore, to deal with this, the most suitable technology transfer is through joint production because with joint production Indonesia can learn directly with countries that have more advanced technological capabilities compared to Indonesia, so that the knowledge gained can also be directly applied. in Indonesia.

This study has limitations, one of which is limited data and information. This study only uses secondary data from newspapers. It is hoped that further research can conduct research using primary data or information sources using interview and observation methods.

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