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by Posma Sariguna Johnson Kennedy

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Indonesian Defense Industry and Minimum Essential Force

Posma Sariguna Johnson Kennedy ¹

¹ Faculty of Economics and Business, Indonesian Christian University, Jakarta, Indonesia

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Abstract: (Indonesia made the Minimum Essential Force target as an answer to the country's defense needs which are faced with a limited defense budget. This study aims to see how far the national defense industry plays a role in fulfilling the minimum essential force targeted by Indonesia in building its defense. The method used in this study is qualitative with a descriptive type, where the research data comes from secondary data sources from various related literature through documents, journals, or others. Empowerment of the national defense industry in supporting the needs of national defense requires a long process and needs to be carried out on an ongoing basis. Until now, this process is still constrained by various challenges, such as insufficient funding for military technology research and development, problems in defense cooperation, and transparency in the procurement of defense equipment. It is necessary to encourage the achievement of the MEF target by empowering the defense industry to maximize the use of domestic defense equipment production.

Keywords: Defense Industry, Indonesian Defense Industry, Minimum Essential Force

I. INTRODUCTION

The purpose of implementing Indonesian National Defense according to Law Number 3 of 2002[1] concerning Defense is "to maintain state sovereignty, the territorial integrity of the Unitary State of the Republic of Indonesia (NKRI), and the safety of the entire nation from threats and disturbances to the integrity of the nation and state." For this reason, it is necessary to support the main means of the defense system (or defense equipment) with high technology that can operate quickly and precisely. This need needs to be balanced with efforts to utilize the national industry to meet security equipment needs. Obstacles in building a national defense industry are not solely related to technical matters but also related to defense industry policies and strategies. The discrepancy between the need for defense equipment and the technical and financial capabilities of the national industry is one of the reasons for the backwardness and dependence of defense and security equipment on other countries.[2,3]

It must support efforts to provide defense infrastructure through the defense industry. Law Number 16 of 2012[4] concerning the Defense Industry states that, "the defense industry is part of the national industry determined by the Government to partly or wholly produce defense and security equipment. And maintenance services to fulfill strategic interests in the defense and security sector located in the territory of the Unitary State of the Republic of Indonesia." Empowerment and strengthening of the national Defense Industry are not only aimed at self-sufficiency in meeting the needs of the Main Weapons System but also towards the goal of growing the national economy by making the maximum possible use of all of the nation's potential, both material resources, human resources, production capacity, and mastery of technology.[5]

The defense industry is an industry that has the ability to produce defense equipment or has other links to produce defense equipment. "The defense industry includes the main equipment industry, the main and/or supporting component industry, the component and supporting industry (supplies), and the raw material industry"[4]. To remove dependence on defense equipment from producing countries and prepare for modern warfare in the future, Indonesia has no other choice but to realize the development of the domestic defense industry immediately. One of them is to redevelop the domestic arms industry, which has been running well[6].

Indonesia made the Minimum Essential Force target in response to the country's defense needs which are currently faced with a limited defense budget. Minimum Essential Force urges development system and strength building system. From this explanation, the development of the national defense industry is very important. This study aims to see how far the national defense industry plays a role in fulfilling the minimum essential force targeted by Indonesia in building its defense.

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II. METHODS

The method used in this research is qualitative with descriptive type. Secondary data sources are related literature through documents, journals, or reports relating to the subject or object studied. In addition, this research also looks at laws and regulations and other applicable provisions, especially Law Number 16 of 2012 concerning the Defense Industry (UU 16/2012)[4] and other regulations.

III. RESULTS AND DISCUSSION

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A. Minimum Essential Force

Minimum Essential Force (or MEF) is the national development mandate in the defense field stipulated in Indonesia's 2010-2014 Medium Term Development Plan[7]. The main interest of forming the MEF in Indonesia is to correct planning factors, implementation mechanisms, and the defense budget and stay within the management system for state decision-making according to the level of authority. In the 2010-2014 National Defense General Policy, MEF is the minimum basic force standard for the TNI, which is prepared for being the main and fundamental requirement in carrying out the main tasks and functions of the TNI effectively in dealing with actual threats[8].

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The development of the MEF of the Indonesian defense forces will be carried out in stages starting from 2010 to 2024. The focus of the MEF is on fulfilling the three dimensions of strength in carrying out joint operations and increasing the deterrence effect with the readiness of the main weaponry equipment on a minimum scale. Or in other words, MEF leads to the fulfillment of heavy equipment, namely conventional warfare equipment [9]. The 2015-2024 Batch Development Policy through the purchase of defense equipment by domestic and foreign industries must be followed by the transfer of technology and knowledge to ensure proper use and maintenance. It can estimate that from 2015 to 2024, the purchase of defense equipment will become a major project.

The Government must still pursue the fulfillment of the MEF target with various priority and strategic activities. "The MEF program aims to develop and modernize the defense force so that it becomes more effective in carrying out military and peace missions. Thus the fulfillment of the MEF also relies on state-owned enterprises in the defense industry. Zahara & Arjun[10] stated that procurement is one of MEF's four development elements. Attempts are made to procure defense, especially defense equipment, to use products produced by state-owned domestic defense industries. Indonesia applies the concept of *capability-based defense* in planning for developing its defense force as implemented in the MEF program. Capability-based defense is the development of military strength, including procuring defense equipment based on threat identification based on budget capability" [11],[12]

Zahara & Arjun[10] explained, "the Government initiated the MEF in 2007. Then the MEF policy began to be implemented in 2009 and was divided into three phases: the first phase in 2010-2014, the second phase in 2015-2019, and the third phase in 2020 -2024. The MEF program is targeted to reach 100 percent at the end of MEF phase III, namely at the end of 2024. However, according to data from the Directorate General of Defense[10], MEF achievements in both MEF I and MEF II still need to be below the set target. In October 2019, MEF achievement only reached 63.19 percent of the MEF phase II target of 75.54 percent. The following Figure shows the achievements of the development of the TNI's defense equipment in the MEF program from Strategic Plan I to Strategic Plan (Renstra) II for the three dimensions of defense." [12]



Fig.1 Achievements in the Physical Aspects of MEF Defense Equipment Field (as of Oct 7, 2019)

NO	URAIAN	MEF I 2010-2014				MEF II 2015-2019				MEF III 2020-2024				POSTUR IDEAL	
		SEBELUM MEF	JMLAH	%	KAPASITAS	RENC	CAPAI	%	KAPASITAS	RENC	CAPAI	%	KAPASITAS	JML	%
1	TNI AD		64.90%		68.97%		75.54%		75.54%		100%		100%		68.97%
2	TNI AU		68.97%		75.54%		75.54%		75.54%		100%		100%		75.54%
3	TNI AL		75.54%		75.54%		75.54%		75.54%		100%		100%		75.54%
	Prosedur	0.00%	0.00%		0.00%		0.00%		0.00%		0.00%		0.00%		0.00%

Fig.2 Data on the Achievement of the Physical Aspects of the 2010-2024 Defense Equipment System[12]

The data in the table above shows that, “the fulfillment of the TNI's defense equipment still needs to meet the MEF achievement targets fully. In the land dimension, the fulfillment of the *MEF* Renstra-II targets reached 74.2%, and the fulfillment of light weapons and cannons/rockets/missiles met the target and experienced a significant increase compared to Renstra-I, but not for combat facilities and aircraft. On the maritime dimension, the fulfillment of warships, submarines, and aircraft almost met the achievement targets, although the fulfillment of marine combat facilities had yet to reach the targets set. The sea dimension itself reached 68.72% of the *MEF* target. The air dimension in Strategic Plan -II achieved 44.40% of the *MEF* target. The achievement of the fulfillment of defense equipment in Strategic Plan II is still very far from the target set. During this Strategic Plan period, it did not fulfill the procurement of radar, missiles, and Air Strike Counter. The current condition of the three dimensions of the TNI's main weaponry equipment shows that Indonesia still needs to work on fulfilling the main weaponry system to support the national defense system”[13].[12]

B. The Indonesian Defense Industry and its Challenges

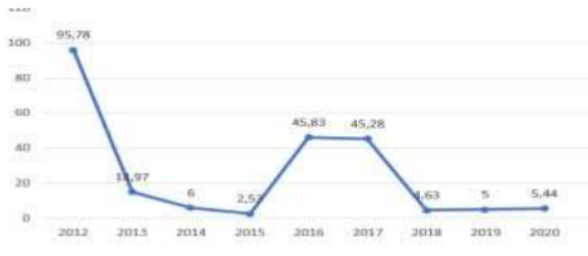
Although now is the era of globalization, many countries have diverse and unequal powers[14]. Classically, forces still impose their will on others[15]. According to Stoessinger[16], “Power is defined as the ability of a country to use tangible and intangible resources to influence the behavior of other countries. Huntington[17] refers to various resources, such as economic, military, institutional, demographic, political, technical, social, and so on. In short, *national power* is all actions that determine state power in the political-military, economic, spatial, demographic, and technological dimensions, which at a certain time reflect the determinants of power[18].

Economic and military resources are the main indicators of national power. Many countries seek to develop their defense industry for their political and strategic interests. It includes the production of military equipment, weapons, and ammunition. The defense industry also includes specialist branches, for example, military aviation companies, military car companies, shipbuilding, or military equipment production facilities. Defense companies use various advanced technologies in many industries, including metallurgy, electrotechnical, electronics, information and technology, aviation, chemical, etc.”[19]

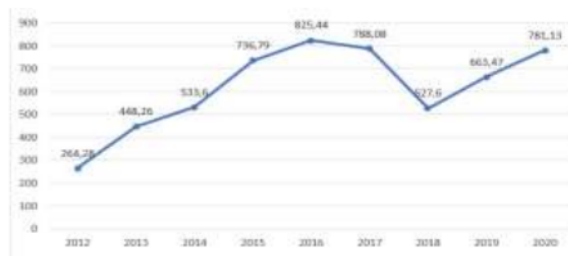
The functions carried out by the defense industry are related to three basic aspects. Namely: defense (military) to meet the needs of the armed forces, economic (financial) in the creation of a gross domestic product, and politics as a measure of state power that influences its position in strategic areas and the world[20]. Increases in military spending occurred in many countries. The amount of defense spending is a determining factor in the development of the defense industry. The most frequent purchase priorities in the 2020-2025 period in various countries are developing information systems and cybersecurity. Such as the modernization of anti-aircraft, air, and anti-missile defense systems and the modernization of equipment, namely border protection equipment, armored vehicles, firing equipment, and high-tech equipment[19].

The Indonesian Defense Industry is “a national industry consisting of state-owned firms (or BUMN) and privately owned enterprises (or BUMS). Either individually or in groups determined by the Government to partly or wholly produce defense and security equipment and maintenance services to meet strategic interests in the field of defense and security located in the territory of the Unitary State of the Republic of Indonesia.”[12] Defense industry SOEs play a role as one of the three pillars of defense industry actors[21]. If the defense industry experiences bankruptcy or is in an unhealthy condition, it will affect the national defense in facing both military and non-military threats. The success of the state-owned defense industry is expected to lead to the independence of the domestic defense industry to achieve the MEF program.

Currently, “Indonesia has several strategic industries in the defense sector, which have assembled and produced several defense types of equipment for the Indonesian National Armed Forces (or TNI). The defense equipment produced by the national defense industry includes; Medium Tanks (Joint venture PT PINDAD and FNSS Turkey), CN235-220 MPA Maritime Patrol Aircraft (PT Dirgantara Indonesia), and 60 m Fast Missile Ship (PT PAL) and others”[22].[12] But behind all this, the number of imports carried out is still relatively high. Based on the SIPRI database[23], during 2015-2019, Indonesia was, on average, in the 17th position of the country's largest import of defense equipment, 1.8 percent of world totals. The development of exports and imports of Indonesia's defense equipment can be seen in the graphic below.



**Fig.3 Development of Defense Equipment Exports
The year 2012-2020 (Million USD)**



**Fig.4 Development of Defense Equipment Imports
The year 2012-2020 (Million USD)**

Source: Ministry of Trade-RI, 2021[24]

The picture above shows that the amount of imports and exports for Indonesia's defense equipment is quite far away, whereas imports are much larger in value. It indicates that the domestic defense industry has yet to meet the need for defense equipment.

In principle, the basis of economic theory in the defense industry lies in microeconomics, where the supply chain in supporting business activities is similar to companies in general. Financially the defense industry is declared healthy if its income exceeds its expenses[25]. When viewed from the size of the company's financial performance, several BUMNs often experience losses, indicating a decrease in performance in obtaining profits. The revenue the state-owned defense industry achieves is considered minimal compared to other countries. Judging from one of the financial performance measurements, ROA (*Return On Assets*), the three companies have a minimum ROA value below one and even get a minus value. It can be seen in the image below. As shown in Table 1 below, ROA performance in these three industries still needs to be improved. ROA is a ratio that describes a company's ability to generate profits from its assets[26]. It indicates that the performance of the defense industry still needs to be improved, so it still requires improvement to encourage growth in company profitability and value creation in the products.

Table 1: Defense Industry ROA Measurement 2011-2015

Defense Firm	2011	2012	2013	2014	2015
PT. PAL	-0.4183	-0.0666	-0.0886	0.0030	-0.0281
PT. Dok Kodja Bahari	0.0371	0.0065	-0.0016	-0.1325	-0.0952
PT. Dirgantara Indonesia	-0.1193	0.0055	0.0185	-0.0164	0.0045

Source: Central Government Financial Report [27], 2022

However, "the growth rate of sales revenue or net profit value is also not a guarantee of a good company's financial condition[28]. What also needs to be considered is the company's liquidity level which can be the main cause of company bankruptcy. It can improve assess competitiveness at the company level from the point of view of financial liquidity, which is a key factor in describing the company's condition. Company liquidity, understood as the ability to meet its obligations is considered the most sensitive barometer of the financial situation of companies in the defense industry. Lack of liquidity in various dimensions means risking bankruptcy"[29].[18]

In order to develop the technology of all defense equipment, "it is necessary to increase the capability of research and development of defense technology by the defense industry. All of this requires a long process and time that is carried out on an ongoing basis"[30] Apart from that, it is also necessary to work out how to eliminate the lack of a state budget so that one must seek various financing alternatives. Countries with advanced defense industries need to be supported by top defense capital. At the same time, funding for Indonesia's defense spending is still relatively small[31]. There are at least three main problems in the development of the defense industry in supporting Indonesia's defense needs, as follows[13]:

- Firstly, the need for more funding for research and development makes it difficult for Indonesia to develop technology capable of producing high-tech prototype defense equipment products with strategic value. Consequently, the production of defense equipment still relies on raw materials from abroad, so the results achieved are high-cost defense equipment.
- The second is the problem of procurement cooperation with other countries. To meet the needs of the TNI's defense equipment, the Government is cooperating with various countries. Ideally, foreign procurement must be accompanied by cooperation in the form of technology transfer (offset). *Defense offset* is an agreement between the Government and providers of foreign defense equipment to return a portion of the value gain to the buying country as a condition of buying and selling.

- Third, the problem of “transparency in the procurement of defense equipment. The defense sector has long been prone to corruption, marked by rampant corruption in procuring defense equipment in Indonesia. Moreover, the Corruption Eradication Committee (KPK) has closed its doors to investigate corruption cases, especially involving members of the TNI”[32].

In addition to meeting the *MEF* Program targets, the defense industry is also faced with the dynamics of the strategic environment both regionally and regionally, so to respond to this, the national defense system needs to be adaptive based on several national resources. The end of the cold war, which was marked by the collapse of the Soviet Union in 1991, made the world defense industry sluggish and not as enthusiastic as during the cold war[33].

Overall, the Government's efforts to encourage the empowerment of the national defense industry in meeting defense needs, especially in meeting the *MEF* target for the TNI's main weapon system, still need to be improved. The defense industry still has a limited production capacity and mastery of military technology. Strong commitment and systematic planning are needed to strengthen the synergy between ministries and agencies to achieve the *MEF* fulfillment target by empowering national strategic industries.[13]

IV. CONCLUSION

Empowerment of the national defense industry in supporting the needs of national defense requires a long process and needs to be carried out on an ongoing basis. The Indonesian defense industry faces various obstacles, such as the not-yet-optimal development of military technology, problems in defense cooperation, and transparency in the procurement of defense equipment. The Minimum Essential Force (*MEF*) target has yet to be fully met, most of which is through imports from abroad. This need for *MEF* needs to be encouraged to be met by domestic products through optimal defense industry development. In addition, it must strengthen the modernization of the main weapon system tools transparently and el accountant in its procurement process.

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