

Original Article

Indonesian Defense Industry and Minimum Essential Force

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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 intends to determine the extent to which Indonesia's national defense sector contributes to the minimal force that Indonesia has set as a goal for its defense. The research method employed in this study is qualitative with a descriptive type, and the secondary data sources used in it include documents, journals, and other pieces of linked literature. The process of empowering the national defense sector to satisfy the demands of national defense is lengthy and must be ongoing. This process is still being hampered by a number of issues, including a lack of money for military technology research and development, difficulties with defense cooperation, and lack of transparency in the acquisition 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

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," as stated in Law Number 3 of 2002[1] concerning defense, "Indonesia has established a national defense system." Because of this, it's essential to complement the primary defense system components (or military equipment) with cutting-edge technology that can function rapidly and correctly. In order to meet the demand for security equipment, attempts to use the national industry must be balanced with this necessity. 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 back initiatives to use the defense sector to supply infrastructure for defense. According to Law Number 16 of 2012[4] regarding the Defense Industry, "the defense industry is a national enterprise determined by the Government to produce defense and security equipment in whole or in part. In the defense and security sector, which is on the territory of the Unitary State of the Republic of Indonesia, maintenance services are provided to meet strategic interests. By maximizing the use of all of the nation's potential, including its material resources, human resources, production capacity, and technological expertise, empowerment and strengthening of the national defense industry aims to increase national economic growth as well as self-sufficiency in meeting the needs of the Main Weapons System. [5]

The defense sector is a sector that has the capacity to create defense-related goods or has connections to do so. According to Wikipedia, "the military industry encompasses the main equipment industry, the main and/or supporting component industry, the component and supporting industry (supplies), and the raw material industry"[4]. Indonesia must start developing its own defense sector right now in order to reduce its reliance on nations that produce defense goods and get ready for future contemporary warfare. One of them is to revive the successfully operating indigenous arms industry [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. This justification demonstrates how crucial it is for the national defense industry to grow. This study intends to determine the extent to which Indonesia's national defense sector contributes to the minimal force that Indonesia has set as a goal for its defense.

II. METHODS

This study employed a qualitative, descriptive methodology. Secondary data sources are literature that is relevant to the topic or object being investigated, such as books, journals, or reports. 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

A. Minimum Essential Force

The national military development mandate, known as the *Minimum Essential Force (or MEF)*, is laid forth 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. *MEF* is the minimum basic force standard for the TNI in the 2010–2014 National Defense General Policy, and it is prepared to be the primary and essential prerequisite in carrying out the TNI's main tasks and functions successfully in dealing with real threats[8].

From 2010 through 2024, a staged growth of the *MEF* of the Indonesian defense forces will take place. 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 *MEF* programme intends to strengthen and modernize the defense force so that it is more capable of carrying out military and peace duties. "The government must continue to pursue the completion of the *MEF* target with various priority and strategic operations. 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. As part of the *MEF* initiative, Indonesia plans to develop its defense force using the capability-based defense approach. The growth of military capabilities includes purchasing defense equipment in accordance with threat assessment and financial capability". [11].[12]

Zahara & Arjun[10] explained, "In 2007, the Government started the *MEF*. The *MEF* strategy was then implemented in three parts starting in 2009: the first phase from 2010 to 2014, the second phase from 2015 to 2019 and the third phase from 2020 to 2024. With the conclusion of *MEF* phase III, or at the end of 2024, 100 percent participation in the *MEF* programme is the goal. Yet, in line with information from the Directorate General of Defense [10], *MEF* accomplishments in *MEF* I and *MEF* II still need to fall short of the predetermined goal. Only 63.19 percent of the *MEF* phase II target of 75.54 percent had been achieved as of October 2019. The development of the TNI's defense equipment in the *MEF* programme from Strategic Plan I to Strategic Plan (Renstra) II is shown in the accompanying Figure for the three facets of defense." [12]

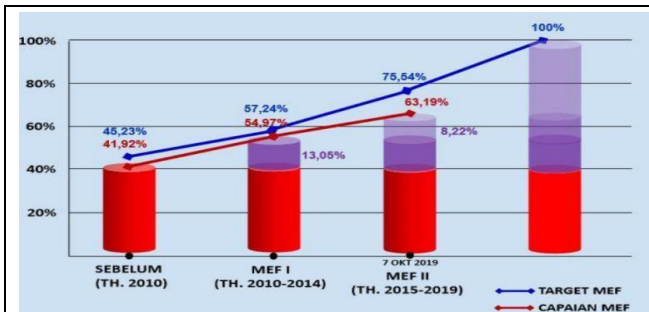


Fig.1 Achievements in the Physical Aspects of MEF Defense Equipment Field (as of Oct 7, 2019)

NO	URAIAN	MEF-I 2010-2014		MEF-II 2015-2019				MEF-III 2020-2024				POSTUR IDEAL				
		KONDISI SEBELUM MEF	s.d MEF-I	RENC	CAPAI	s.d MEF-II 11 Des 2018 (817)	s.d MEF-II 11 Des 2018 (812)	RENC	CAPAI	s.d MEF-III	CAPAI	JML	% (810)			
1	TNIAD			64.89%		74.82%								49.33%		
	a. Senjata Ringan	32	155	813,343	84,73%	128	417	36,81%	643	962	89,70%	723	564	783	462	82,85%
	b. Meriam / Roket / Rudal	965	1.444	84,46%	3.835	2277	1.371	103,29%			1.364	2.182	55,41%	2.182	55,41%	
	c. Bombar	1.321	1.641	43,90%	730	358	2.000	53,50%			3.738	4.858	41,17%	4.858	41,17%	
	d. Pesawat Terbang	87	104	49,43%	77	17	121	54,02%			224	1.224	9,89%	1.224	9,89%	
2	TNIAL			88,85%		68,72%								45,47%		
	a. KRI	144	145	89,22%	48	32	161	88,46%			182	262	81	45%		
	b. Kapal Selam	2	2	100,00%	3	2	4	80,00%			8	12	33,33%	12	33,33%	
	c. Pesawat Udara	63	77	77,00%	16	13	85	85,00%			100	160	63,13%	160	63,13%	
	d. Pangkalan Maritim	413	440	44,69%	46	0	503	51,43%			919	1.481	33,96%	1.481	33,96%	
3	TNI AU			43,97%		44,40%								32,84%		
	a. Pesawat	211	261	75,97%	301	6	267	77,82%			344	469	36,93%	469	36,93%	
	b. Radar	111	201	82,59%	27	0	29	82,59%			38	32	92,56%	32	92,56%	
	c. Rudal	0	0	0,00%	13	0	0	0,00%			72	96	0,00%	96	0,00%	
	d. F3U	20	24	37,50%	36	0	24	37,50%			64	216	11,11%	216	11,11%	
	Presentase			43,92%		54,80%								62,58%		42,48%

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

According to the information in the table above, "the TNI's defense equipment fulfilment still needs to reach the *MEF* achievement targets totally. On the terrestrial dimension, the *MEF* Renstra-II targets were completed to a level of 74.2%, and light weapons, cannons, rocket launchers, and missiles met their goals and significantly outperformed Renstra-I, but not combat facilities and aircraft. The completion of warships, submarines, and planes on the maritime dimension nearly met the achievement targets, but the completion of marine combat facilities has not yet done so. The sea dimension alone met the *MEF* target to the tune of 68.72%. Strategic Plan II's air dimension met 44.40% of the *MEF* goal. Strategic Plan II's completion of defense equipment requirements is still far distant from the goal 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

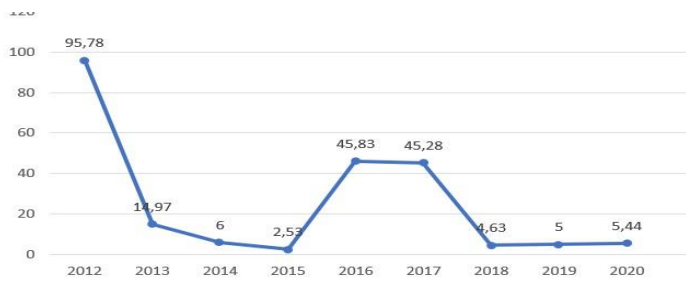
Although now is the era of globalization, many countries have diverse and unequal powers[14]. Classically, forces still impose their will on others[15]. According to Stoessinger[16], "The ability of a country to employ material and intangible resources to affect the behavior of other countries is referred to as power. Huntington[17] includes a range of resources, including those that are economic, military, institutional, demographic, political, technical, social, and so forth. The activities that determine state power in the political-military, economic, spatial, demographic, and technological aspects, which at a specific time reflect the determinants of power, are collectively referred to as national power [18].

The primary measures of a nation's power are its economic and military capabilities. Several nations want to grow their military industries in order to further their political and strategic objectives. It covers the manufacture of weapons, ammunition, and other military hardware. The defense sector also comprises specialized subsectors like military aircraft firms, military automakers, shipyards, or factories making military gear. Defense companies use various advanced technologies in many industries, including metallurgy, electrotechnical, electronics, information and technology, aviation, chemical, etc.”[19]

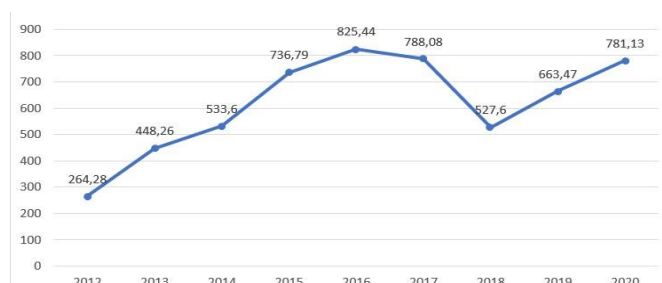
The defense sector performs tasks relating to three fundamental facets. Specifically: politics as a gauge of state power that affects its position in crucial regions and the rest of the globe; economics (financial) to create a gross domestic product; and defense (military) to meet the needs of the armed forces [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 equipment, such as border protection equipment, armoured vehicles, firing equipment, and high-tech equipment, as well as the upgrading of anti-aircraft, air, and anti-missile defense systems[19].

The Indonesian Defense Industry is "a national industry made up of privately held companies (or BUMS) and state-owned businesses (or BUMN). To meet strategic interests in the area of defense and security located on the territory of the Unitary State of the Republic of Indonesia, either individually or in groups, shall produce defense and security equipment and maintenance services, in whole or in part." [12] One of the three foundations of the defense industry actors is the SOE sector [21]. The nation's ability to defend itself against both military and non-military threats will be impacted if the defense industry goes bankrupt or is in poor shape. The independence of the domestic defense industry to carry out the MEF programme is anticipated to follow the success of the state-owned defense sector.

“Indonesia currently has a number of strategic military enterprises that have constructed and produced a variety of defence types of equipment for the Indonesian National Armed Forces (or TNI). The national defence industry also produces 60 m Fast Missile Ship (PT PAL), CN235-220 MPA Maritime Patrol Aircraft (PT Dirgantara Indonesia), and Medium Tanks (joint venture PT PINDAD and FNSS Turkey).”[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. That shows that the local defense sector has not yet been able to supply all the necessary defensive gear.

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. The ROA ratio measures a company's capacity to make money off 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]. The company's liquidity situation, which could be the key factor in a company's bankruptcy, must also be taken into account. From the perspective of financial liquidity, a crucial element in assessing the company's condition, it can enhance assessments of competitiveness at the corporate level. The most sensitive indicator of a company's financial status in the defense industry is thought to be its liquidity, which is defined as its capacity to fulfil its obligations. Bankruptcy is a possibility when there is a lack of liquidity in several areas." [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 major issues preventing Indonesia's military sector from developing and meeting its 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. The outcome is expensive defense equipment because the manufacture of defense equipment still depends on foreign-sourced raw materials.
- The issue with international procurement cooperation is the second. The Government is working with many nations to meet the demands of the TNI's defense equipment. 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.
- The issue of "transparency in the procurement of defense equipment is the third issue. The procurement of defense equipment in Indonesia has long been distinguished by rife corruption in the defense sector. Also, the Corruption Eradication Committee (KPK) has stopped investigating corruption cases, particularly those involving TNI members." [32].

The national defense system must be adaptable based on various national resources in order to address the defense industry's demand to satisfy the MEF Program targets as well as the regional and local strategic environment's dynamics. The collapse of the Soviet Union in 1991, which marked the end of the cold war, caused the global military sector to become sluggish and less enthused than it had been before [33].

Overall, the Government still needs to increase its initiatives to support the national defense industry's empowerment in order to satisfy defense needs, particularly the MEF aim for the TNI's primary weapon system. 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

The process of empowering the national defense sector to satisfy the demands of national defense is lengthy and must be ongoing. The development of military technology, which is not yet at its best, issues with defense collaboration, and lack of openness in the acquisition of defense equipment are only a few of the challenges the Indonesian defense sector must overcome. 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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