

The Impact of Main Weapon System Procurement on Indonesian Defense Industry: A Study of Model State Defense Policy

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Abstract

This article was prepared to convey the results of a research conducted in the scope of discussion around the impact of main weapon system procurement on the Indonesian defense industry which is part of a study of model state defense policy. The main weapon system procurement being discussed in this study is the joint production of the main weapon system. Furthermore, the Main Weapon System procurement in Indonesia usually use the offset and technology transfer schemes. The problems that occur with this policy include the following: budget factors, political factors, national defense industry capacity, investment, targets to achieve the Minimum Essential Force (MEF), as well as strategic internal studies from the Indonesian National Armed Forces. Based on these problems, the impact of the Main Weapon System procurement and its implementation will be further analyzed to find the formulation of a comprehensive policy model as a study of defense policy in order to accelerate the fulfillment of the MEF Phase III in 2024 and to achieve Indonesian defense industry autonomy. A model of state defense policy will guide the Main Weapon System procurement so that it has a real impact on acceleration of the Indonesian defense industry autonomy.

Keywords: Main Weapon System procurement, Minimum Essential Force (MEF), model state defense policy, independent defense industry.

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I. Introduction

A state defense policy is always directed toward endeavors towards achieving national interests. The defense policy of Main Weapon System in Indonesia always focuses on the policy instrument before and after the implementation of cooperation on main weapon system procurement. The policy may apply to any country with which Indonesia has defense cooperation, and it includes, among others: 1) Technology Transfer; 2) Main Weapon System budget; 3) Use of Defense Diplomacy; 4) Use of Main Weapon System; and 5) Maintenance (Harley, 2011).

The Main Weapon System procurement in Indonesia is expected to meet the needs of defense forces and achieve targets of Main Weapon System requirements through the framework of the Minimum Essential Forces (MEF). Therefore, the main topic of discussion of this study concerns with how the Main Weapon System procurement bring about impact to the Indonesian defense industry through an analytical study of the model state defense policy. It is worth noting that defense industry is one of the most important components of the national defense capability and strength. A strong and independent defense industry has two major impacts: direct impacts on the defense capability, and its impacts to the national economy and technology development (LIPI, 2020). The expected final impact is the self-determination of the Indonesian defense industry, which begins with policy implementation. In addition, the existence of the defense industry should be followed with the country's high capacity. It must be achieved as Indonesia will be the main supplier to support its domestic requirement as well as other countries interested in the products from the Indonesian main weapon system products.

However, the problem that always occurs in the policy making process when it comes to the Main Weapon System is that a perception that domestic Main Weapon System is more expensive and has rather lower quality than those coming from abroad still persists (Indonesia MoD, 2003 in LIPI, 2020). This perception remains as a reference to this day for some policy makers in determining the Indonesian defense industry policy in terms Main Weapon System production. Furthermore, there is a tendency for policy makers to consider foreign Main Weapon System, particularly those imported from specific developed countries, to be more reliable and prestigious. The Main Weapon System policy can be exercised in form of purchasing or procurement with partnerships, development, and joint production by using two schemes, namely the offset and technology transfer scheme. Some of these procurements are carried out at the bilateral level with other countries in the form of Government to Government (G to G) and Business to Business (B to B) schemes. Thus,

the policy process needs to be well formulated until the end of its implementation in the form of policy evaluation. Therefore, the model policy plays a very important role in determining the pre-implementation and postimplementation of a policy. The following table shows you details of the Indonesian Main Weapon System cooperation.

Table 1.1 Indonesia's Cooperation in Main Weapon System Production Cooperation Until 2022

Dimension	Army	Navy	Navy and Air Force
Main Weapon System	Frigate	Aircraft DassaultRafale	Submarine & Aircraft
Country	Netherland	French	South Korea
Scheme	Joint Production	Joint Production	Joint Production

Source: taken and processed from various sources, mainly from <https://www.kemhan.go.id>

The policy of Main Weapon System procurement is further supported by Law No. 16 of 2012 on Defense Industry. It is worth considering that several policies of the Main Weapon System procurement carry many far-reaching consequences as they directly reflect Indonesia's preparedness in dealing with potential threats and disturbances toward state sovereignty. In this regard, the achievement of the Indonesian Main Weapon System procurement up to the MEF Phase III does not seem to be optimal. This is evident from the quantity and quality of the Main Weapon System that needs to be optimized continuously in accordance with the long-term policy of Indonesia's national defense policy and measurement in terms of the period of its fulfillment. Based on the facts mentioned above, the following data in Table 1.2 below represents the fulfillment of the Third Phase of MEF (Year 2020 – 2024), which are:

Table 1.2 Main Weapon System Physical Fulfillment Data Per Service

	Before MEF	MEFI	MEF II (2015-2019)	MEF III (2020-2024)	Ideal Posture
Army		64,81%	74,62%	100%	
Light Weapon	92.156	613.043	649.062	723.564	783.462
Artillery/Rocket/ Missile	962	1.144	1.371	1.354	2.162
Tactical Vehicles	1.321	1.641	2.000	3.738	4.858
Aircraft	67	104	121	224	1.224
Navy		55,55%	68,72%	100%	
Battleship	144	146	161	182	262
Submarine	2	2	4	8	12
Aircraft	62	72	85	100	160
Amphibious Vehicle	413	440	503	978	1.481
Air Force		43,97%	44,40%	100%	
Aircraft	211	261	267	344	469
Radar	17	20	20	32	32
Missiles	0	0	0	72	96
Air Defense Artillery	20	24	24	64	216

Source: Zahara and Nazhid, 2020 in Laksono and Nugraha, 2022.

Based on the data, the MEF achievement in Phase II (2015-2019) for land, sea, and air components falls short by 25.38%, 31.28%, and 55.60%, respectively, from the MEF Phase III achievement (2020-2024). Therefore, it is necessary to accelerate the achievement of the target to 100% by 2024, especially for the Indonesian Air Forces whose MEF achievement falls far behind the Army and the Navy. This is not an easy target to achieve when the current situation dynamics with various political challenges, budget issues, human resource capacity issues, and many studies on the strategy of the Indonesian National Armed Forces Main Weapon System as described previously is taken into account. Moreover, these problems are only worsened by the fact that Indonesia is currently still recovering after the Covid-19 pandemic since 2019-2022, which brings a

significant direct impact to the aspect of state budget(Hanan,2020).

The support toward the direction of the independence of Indonesian defense industry is also given through the Presidential Regulation No. 8 of 2021 on the General Policy of State Defense in 2020-2024. This regulation brings about consequences toward revitalization of the Indonesian defense industry to be an advanced, strong, modern, and independent Main Weapon System producer to meet the needs of Indonesia's national defense (Laksono and Nugraha, 2022). Several regulations that provide legal protection in the procurement of the Main Weapon System and development of the defense industry in Indonesia include:

- a. Law Number 16 of 2012 on Defense Industry
- b. Presidential Regulation Number 27 of 2019 on Terms and Procedures for Procurement of Defense and Security Equipment of Defense Industry Products with Long-Term Contracts
- c. Regulation of the Minister of Defense of the Republic of Indonesia Number 8 of 2021 on General Policy of State Defense for 2020-2024
- d. Regulation of the Minister of Defense of the Republic of Indonesia Number 17 of 2014 on the Implementation of the Main Weapon System Procurement within the Institution of the Ministry of Defense and the Indonesian National Armed Forces
- e. Other by-laws or implementing guidelines

Source: compiled by authors from various relevant regulations, August 2022.

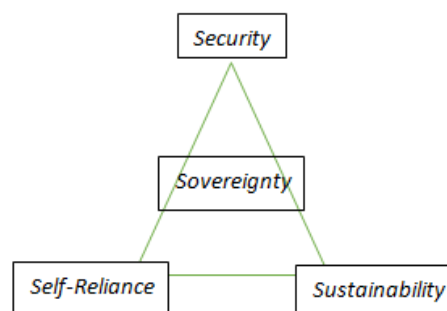
These various regulations serve as the legal basis in the implementation of the policies in the Main Weapon System fulfillment with various models or forms of cooperation. According to Bitzinger (2009) and Bishoyi (2011) (in Luthfi, 2021), the forms of cooperation in the industry of defense and Main Weapon System are:

1. Co-production and co-development
2. Joint venture
3. Acquisition
4. Dual-use technology transfer
5. Joint research and development
6. Joint production
7. Joint marketing

These various forms of procurement, if viewed from the focus of the policies, need to be carried out in an integrated and sustainable manner. It is due to the fact that a procurement of Main Weapon System is complex. Hence, it requires the maturity of implementation at the policy level on a multi-year basis. Therefore, a comprehensive policy framework can be found in the form of a model policy for the Main Weapon System procurement in the future and is targeted to achieve self-determination of the Indonesian defense industry.

II. Literature Review

Based on the research background that has been previously discussed in the introduction section, an understanding that can be drawn is that Main Weapon System procurement is complex in nature and requires solid implementation at the policy level on a multi-year basis. Hence it requires the right policy. The output expected from the implemented policies comes in the form of the capacity fulfillment of the Main Weapon System as well as self-determination of the Indonesian defense industry. In this regard, according to Ron Matthew and Curie Maharani (in Luthfi, 2021), independence can be achieved through a simulation of the Iron Triangle of National Sovereignty, which is described as follows:



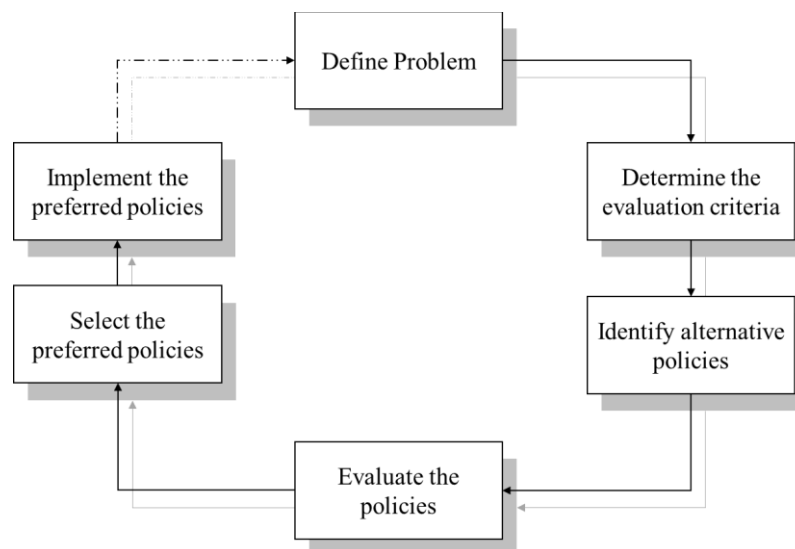
Picture 1. Iron Triangle of National Sovereignty

Source: Ron Matthew and Curie Maharani in Luthfi, 2021.

Based on the description of the scheme, national defense is given the priority to maintain the country's current development program. In the context of self-determination of the defense industry, it depends on the country's self-reliance in a sustainable manner and the conducive situation that comes with security (RonMathew andCurie Maharani,in Luthfi,2021).

In the policy studies,the definition of public policy according to W.I.Jenkins(in AbdoellahandRusfiana, 2016) is a series of interrelated decisions taken by a person or group of political actors regarding the goals that have been chosen and the ways to achieve them.Meanwhile,David Easton as quoted inAnggara (2014) stated that public policy is the authoritative allocation of values for the whole society.

Furthermore, based on the definitions given, public policy can simply be interpreted as an action taken by political actors after going through certain considerations in order to achieve a certain goal. As a policy is stated through certain considerations, obviously there is a process that must completed in its formulation asseen in Picture2.1.



Picture2.1 Patton&Sawicki ModelPublic Policy Formulation

Source:Nugroho,2003

This model representsthe process of public policy formulation. It is not only the most classic simple rational model, but also the most widely used model as a reference for decision makers as described by Patton and Sawicki(in Nugroho,2003).The model policy is a representative of several selected aspects of a problem. Themodel can be based on a theory and used to test and explain the formulation of a theoretical formulation.

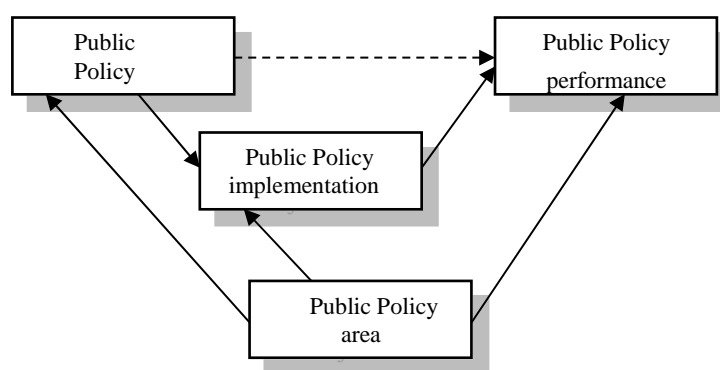
In this study, the model policy that will be applied is the public policy model of Thomas R. Dye(2013). This is a model that will be identified in each of the policy steps carried out in the Main Weapon System procurement, including the strategic aspects such as political, economy, and resources. The following is a table of Thomas R. Dye (2013) model policy which is used as a theory of analysis and synthesis.

Table2.1Models of Public Policy

No.	ModelPolicy	Description
1.	<i>Processmodel</i>	The process model views policy making as a series of political activities.
2.	<i>Institutionalmodel</i>	The institutional model focuses on the impacts of political and governmental institutions onpublic policy.
3.	<i>Rationalmodel</i>	The rational model implies that the government should choose a policy that maximizes profits for the public while minimizingcosts.
4.	<i>Incrementalmodel</i>	The incremental model sees public policy largely as a continuation of the previous government activities by simply modifying or adding activities.
5.	<i>Groupmodel</i>	The group model views public policy as the result of struggles among social groups.
6.	<i>Elitemodel</i>	The elite model views public policy as the impact of political and governmental institutions onpublic policy.
7.	<i>Publicchoicemodel</i>	The public choice model uses economic analysis to study public policy.
8.	<i>Gametheorymodel</i>	The game theory describes policy as an outcome from the interaction between two or more rational participants.

Source:Dye(2013:15-30)

Thus, through the application of public policy theory to the subject matter, it is expected that results of an analysis regarding how the implementation of the policy for the Indonesian Main Weapon System procurement that has been carried out so far can be obtained. In this regard, one should ultimately be able to tell whether the policies that have been adopted are in line with the objectives to be achieved by the government in the defense industry, which is to accelerate the self-determination of the Indonesian defense industry. Not only that the public policy evaluation can be used to assess the implementation or impact of a certain policy, but also to assess the process and strategy of the policy. In this matter, the public policy evaluation has three aspects (see Picture 2.4), which are policy formulation evaluation, policy implementation evaluation, and policy environment evaluation (Nugroho, 2003).



Picture 2.4 Public Policy Evaluation

Source: Nugroho, 2003

Furthermore, William N. Dunn (2003) describes the three functions of public policy evaluation, which are: to provide valid and reliable information about policy performance, contribute to the clarification and criticism of the values that underlie the selection of goals and targets, and contribute to the application of other policy analysis methods including the formulation of problems and recommendations. As for the steps that need to be considered in evaluating public policy are stated by Edward A. Suchman, as quoted by Situmorang (2016), as follows:

1. Identification of the program objectives to be evaluated
2. An analysis of the problems
3. Description and standardization of activities
4. Measurement of the level of changes that occur
5. Determination whether the change under study is caused by related activities or due to other factors
6. Provision of several indicators to determine the existence of an impact

Public policy evaluation theory can analyze the achievement of Indonesian Main Weapon System development roadmap through previously implemented defense cooperation policies.

III. Methods

This current study is conducted through qualitative research method with descriptive analysis technique. The main sources of research in this study are parties who are considered to have a direct connection or involvement in the Main Weapon System policy. Primary data in this study are obtained from information or assessment results, while secondary data are obtained through document review. The data analysis technique used is triangulation method by combination of the researcher's logical reasoning, intuition, and instincts as well as the obtained research data. The analysis process is adjusted to the research objectives before it is then concluded. In addition to the conclusion, suggestions and recommendations for academic and practical contributions will also be presented.

IV. Results

Based on the background description associated with theoretical analysis, which is then processed using research methods, it can be analyzed that in the macro level, the implementation of Main Weapon System procurement often still encounters problems from both technical and non-technical perspective. The problem is complex, particularly because there are other influencing factors as mentioned in the background of this research and several basic problems, which include, *firstly*, the absence of a Main Weapon System roadmap for the procurement policy that has been implemented. The roadmap is a critical part to record the Main Weapon System management from the period of budgeting, purchasing, development or production, maintenance, all the way to the use and evaluation. Hence, the research locus is to determine the defense policy model based on the procurement of Main Weapon

System production. *Secondly*, referring to the document of Macroeconomic Framework and Principles of Fiscal Policy in 2021, the Ministry of Defense uses the budget to support the achievement of defense development targets including the use of force, modernization of the Main Weapon System and non-Main Weapon System, and defense infrastructure. However, the financing is still carried out through the scheme of foreign debt loan by adjustment of the Indonesian State Revenue and Expenditure Budget ceilings. In addition to that, a fairly large budget allocation is also used for personnel expenditures. This has resulted in the incomprehensible policy on the Main Weapon System procurement that has been carried out for a long period of time, much less in achieving self-determination of the defense industry.

Based on the National Defense and Security Technology Research agenda for 2020 – 2024, the policy directions and main priorities of defense and security technology are directed to:

- 1) Increase focus, capacity, and capability of research and development results in defense and security technology
- 2) Accelerate the process of diffusion and utilization of research and development results in defense and security technology
- 3) Strengthen the science and technology institutions in defense and security technology which includes the researchers, research facilities and development, comprehensiveness, and updated data on the performance of national science and technology and partnerships.
- 4) Create innovation in defense and security technology with the appropriate incentive schemes
- 5) Use a demand-pull approach which is suitable for the needs of the Indonesian Armed Forces and the Indonesian National Police supply push approach to encourage capacity improvement of the defense industry, as well as national security.
- 6) Develop a clear national roadmap for defense and security technology as the focus of the research theme
- 7) Prioritize the application of the national defense and security technology through various utilization of manufactured products.

Those directive points are points to strengthen the independence of the defense industry, as Indonesia currently is still faced with the reality that it relies highly on other countries. This self-determination is also influenced by political factors such as restrictions and embargoes (LIPI, 2020). Furthermore, the readiness and capacity of the Indonesian defense industry to carry out procurement is also required because of the use of a transfer of technology and defense offset scheme to produce several material components as a complete Main Weapon System product. (Muradi, 2020:1).

Based on this consideration, an analysis of the capacity and competitiveness of the Indonesian defense industry will be performed. This becomes relevant when the defense industry is experiencing a lot of progress from the managerial aspect, advancement of the latest technology specifications, increasing demand, and projected progress and other improvements that lead to the realization of a strong, self-determined, and highly competitive Indonesian defense industry. The following is the significance of the Main Weapon System procurement policy towards the realization of the self-determination of the defense industry.

Table 3.1
Self-Determination Analysis toward the Strategic Environment of the Indonesian Defense Industry

No	Defense Industry	Field of Industry	Main Weapon System Products	Prospect/Market/Competitiveness
1.	PT Len Industri	Electronics	(1) Railway signaling system (2) Urban transport development (3) Telecommunication infrastructure network (4) Electronics for defense (5) Solar Power Plant (6) Radar	Heads of Agreement (HoA) on the Technology of Electronics Defense, between PT Len Industri and Thales International SAS, France.
2.	PT Dirgantara Indonesia	Aircraft	(1) N219 Nurtanio (2) NC212-200 (3) NC212-400 (4) NC212I (5) CN235 (6) CN295 (7) N245	Sales of transport aircraft type CN-235 and NC-212 to Senegal, Vietnam, and Thailand worth up to US\$161 million.
3.	PT Pindad	Defense products and industrial products	(1) Weapons (2) Ammunitions	Sales of ammunitions, weapons, and combat vehicles to Southeast Asian countries, Africa, Arab, South Korea, Nigeria, and Timor

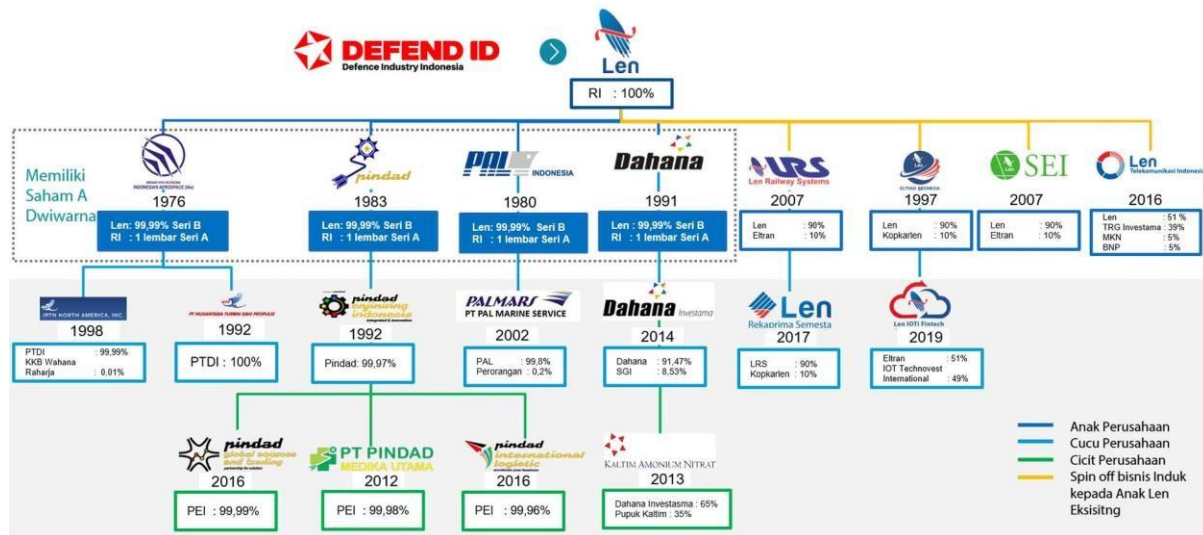
			(3) Special vehicles (4) Heavy equipment (5) Mining infrastructures (6) Cybersecurity	Lesteworth up to US\$32,6million.
4.	PT Dahana	Integrated explosives products for mining activities (oil and gas) and construction	(1) Drilling and blasting (2) Explosives	Export 338.5 Tons of Explosive Cartridge Emulsion produced by Dahana's Energetic Material Center (EMC) to Australia worth up to US\$2 million.
5.	PT PAL		(1) NavalShipbuilding (2) Submarine (3) MerchantShipbuilding (4) Energy (5) MaintenanceAndOverhau	Sales of two units of Strategic Sealift Vessels to the Philippines worth US\$86.9 million. Company has a competitive edge over other similar players in the industry.

Source:processed from various officialwebsites of each defense industry and fromindodefence.com/,August2022.

The data in the previous table provides a factual depiction that Indonesian defense industry products are able to penetrate the international market and have the opportunity to compete in the international market. These achievements need to be continuously improved, one of which is through strengthening the policy on the main weapon system procurement that support self-determinationand place the Indonesian defense industryto a higher level of international competitiveness.

Endeavors towards self-determination was also supported with the establishment of a Defense Industry State Owned Enterprise (*Badan Usaha Milik Negara - BUMN*) in 2018, DEFEND ID, which is expected to increase the Domestic Component Level (*Tingkat KomponenDalamNegeri - TKDN*) to 50% for key technologies. In doing so, the target to become the world's top 50 industry in the defense industry will slowly but surely be achieved by 2024,(<https://www.kemhan.go.id/>).The followingimage shows the composition of the State-owned Enterprises holding in the defense industry to supportself-determination and policies of the defense industry:

Picture3.1DEFENDID Organizational Structure and Hierarchy



Source:<https://indodefence.com/>,accessed on8August2022.

In line with this, Government Regulation No. 5 of 2022 regulates the addition of the State Equity Participation (*Penyertaan Modal Negara - PMN*) into the Share Capital of the Company (Persero) of PT Len Industri on January 12, 2022. The Defense Industry SOE, DEFEND ID, consists of PT Len Industri (Persero) as the holding holding company, and PT Pindad, PT Dirgantara Indonesia, PT PAL Indonesia, and PT Dahana as members of the holding. Meanwhile, the government owns 1 share of the Seri A Dwiwarna share of the four companies and 100% of PT Len Industri's shares.

V. Discussion

In this part, there are several important findings that were made on the impact of the main weapon system procurement on the self-determination of the defense industry, which is in the policy aspect. The problems with the procurement policy of main weapon system come with the absence of a road map for the main weapon system and a budgeting system. In principle, both problems can be resolved by appropriate policymaking. Therefore, based on the results of the study, the findings show a complex rational policy model as a solution to these problems. The following is a complex rational policy model which is a development of the simple rational policy model of Patton and Sawicki (1993).

The complex rational policy model is interpreted as a pattern of policy actions carried out by political actors after going through certain considerations as influenced by various external and internal policy-forming factors and elements in order to achieve a certain goal. The complex rational model emphasizes that the government should opt for policies that maximize benefits -- multiple benefits -- for the public. The complexity of the policymaking aspect will strengthen complex rational policy outputs in terms of choice of actions and orientation of the desired results, which are depicted through the following scheme in Table 4.1.

Table 4.1 Comprehensive Rational Policy Formulation Model

Planning Stage	Problem formulation	Not only a single problem to be solved, but also other possible problems that may arise as a preventive measure.
	Determination of interest and benefit	To the maximum extent possible, multiple benefits should be obtained from the policy objectives to be achieved.
Implementation Stage	Involvement of stakeholders and its mapping	The involvement of various parties is the key to the implementation of a clear and sound policy.
	Policy implementation	Ensure all implementation details are in accordance with planning and commitment.
Evaluation Stage	Measurement of policy success from various aspects	Challenges that arise are analyzed as a benchmark for policy implementation.
	Shaping policy improvement recommendations	Efforts to create policy objectivity and meaningful output.

Source: Prepared by researcher and represent his research findings, August 2022.

Based on this, a comprehensive rational policy model can be an alternative to the main weapon system policy formulation for the self-determination of the defense industry. A procurement of a main weapon system for Indonesia is a momentum to revitalize the defense industry. Therefore, the main weapon system policy, its objectives, and the main policy formulation must all be in sync. This will be followed by other elements in developing the national defense policies, so that Indonesia will be able to modernize a comprehensive main weapon system and be able to minimize dependence on other countries. The policy model will also be able to guide the governance of Indonesia's main weapon system policy. The implication of this is on the productivity of the self-determined Indonesian defense industry to produce a main weapon system that is efficient for the three components of the Indonesian Armed Forces and the Indonesian National Police as the users of domestically produced main weapon system for national defense and security. Problems that come with partial policies as a result of a non-integrative plan that can hinder the course of procurement can also be minimized through a comprehensive rational policy model. Furthermore, the quality of the main weapon system and proper maintenance management are also factors that are taken into account in the implementation of the policy within the framework of Indonesia's main weapon system policy for national defense. A comprehensive policy model starts from planning to monitoring mechanisms and technical evaluation of policies for the procurement of Indonesian main weapon system production, and studies the impact of main weapon system procurement on the Indonesian defense industry through analysis of existing policy models are then synthesized to obtain a more integrative and comprehensive policy model, which is a model that will be able to cover the main weapon system procurement policy issues raised in this study.

VI. Conclusion

This article attempts to describe the correlation of a main weapon system procurement policy on the self-determination of the defense industry. An important experience for Indonesia, which aims for self-determination of the defense industry, which currently still deals with political, budgeting, human resources, and technological readiness problems. It is very difficult to accelerate self-determination of the defense industry to make it in line with the established MEF achievements. Therefore, in the theoretical analysis, it was found that:

a) An integrated main weapon system procurement policy is needed, from planning and implementation to evaluation, which is a comprehensive rational policy model

- b) It is necessary to establish various advanced regulations as a legal basis to facilitate the implementation of policies with a measurable target of defense industry independence
- c) From the perspective of procurement activities with other countries, it is necessary to put forward comprehensive defense diplomacy and apply multi-stakeholder diplomacy
- d) There is a need for a roadmap for the self-determination of the defense industry, especially after the end of the MEF program in 2024 and a new mapping is needed to maintain Indonesia's defense power through the strength of the defense industry

This finding is the impact of the main weapon system procurement policy on the creation of a self-determined Indonesian defense industry through analysis of model policy for national defense. Theoretically the implication is positive: the policy of cooperation in the main weapon system greatly affects the achievement of the independence of the defense industry. When Indonesia has procured many main weapon systems, the national defense industry continues to grow and improve. In terms of implementing the existing policies, the defense industry has been quite capable of carrying out the interests of the main weapon system policy. In this study, after finding a complex rational policy model, it was concluded that the model can be used as an alternative policy model to be applied in national defense policies in ongoing cooperation and for main weapon system policies in the future.

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