Strategic Decision Measurement Ofnaval Base Stationdevelopment In A Border Area: A Case Study

By Adi Bandono

STRATEGIC DECISION MEASUREMENT OF NAVAL BASE STATION DEVELOPMENT IN A BORDER AREA: A CASE STUDY

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ABSTRACT

The world economy path that uses Indonesian sea lanes can make Indonesia as the world's maritime axis. The construction of Naval Base in the border area has been prioritized to increase the strength of maritime defense as an important pillar of Indonesia's development. Due to the current conditions of necessity in some border areas, it is necessary to formulate a strategy of Navy Base development. The use of Borda-SWOT combination methods can measure the priority of a strategic value decision. The result of analysis showed that the development in the boundary area using S-T strategy was the weight of 10.66% where the Navy base had Strength's influence with the weight of 17.89%. The priority formulation of the strategy of Navy Base facility development was to build facilities Command Headquarters - Housing Facilities and Mess - Service Facilities - Port Facilities and Communication Facilities.

KEYWORDS : Naval Base, Priority Strategic Decision, Border Area

1. INTRODUCTION

Indonesia's archipelago territory located on the crossroads of continents and oceans make Indonesia as a regional economic crossing paths of various countries. More than 40% of the world's economic pathways use Indonesian maritime or maritime lanes including using path that pass through the territory of the Indonesian Archipelagic Sea Pass (ALKI) (Ismah Rustam, 2016). Vessel of foreign countries whether commercial vessels or warships that are through the ALKI can pass without having to ask permission first to the Indonesian government. The existence of ALKI gives security consequences in Indonesian waters mainly because many of the economic crossing lines are also the border of Indonesia with other countries.

Joko Widodo as Indonesian President has launched the national strategic policy of Indonesia as the World Maritime Axis. This strategic policy brings Indonesia's ideals towards the excellence in the maritime field. The excellence of the maritime state as expressed by the President is performed through development based on the 5 main pillars of building maritime culture, maintaining and managing marine resources, building maritime infrastructure and connectivity, strengthening maritime diplomacy and building maritime defense forces (Murniningtyas, 2016).

Building maritime defense forces becomes one of the important instruments to maintain the situation and stability of the region on the border of the country. One of the role of the military force presence in the border of the country is to support the smoothness and sustainability of the wheels of the country's economy. In addition, the presence of Indonesian maritime defense forces serves as a unit of state interest to observe the dynamics of the surrounding region (Adhira, 2017). This is because the conditions in some border areas of Indonesia which is also the path of the world economic path still requires a lot of attention. Some of the strategic

aspects that need to get important attention are sovereignty aspect, defense aspect and economic aspect.

Therefore, the Navy as one of the defense components will deploy the power of the Integrated Fleet Weapon System (SSAT) throughout Indonesia including the cross-sea route on the state border (Santoso et al., 2013). Thus, the development of Navy Base in Indonesian maritime territory bordering with other countries is an important priority (Saputra & Nadlir, 2016). However, the declining budget outlook (Figure 1) and the ever-changing geostrategic environment have urged the Navy's institution to change its decision-making strategy to build a Naval Base (Russell et al., 2015) (Trisutrisno, 2016) (Wicaksono & Asmara, 2017)
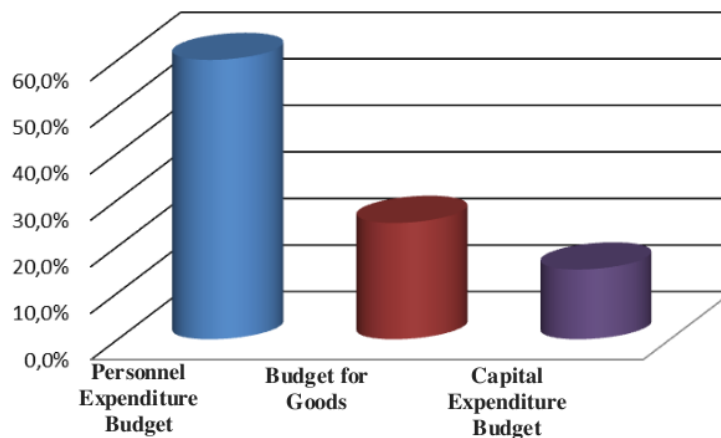

Fig 1. The Expenditure of Indonesian Defense Budget

(Trisutrisno, 2016)

Therefore, every planning and implementation of the Navy's development is always based on policies that sharpen and strengthen the Navy's development program toward Minimum Essential Force (MEF). The preparation of programs and activities along with budget allocations is implemented realistically and prioritizing the priority principle. The development of the Navy Base on the border prioritizes the construction of facilities and basic infrastructure facilities on strategic islands (Kemhan, 2017). It is expected that the acceleration of Naval Base development in the border area can help the development goals in the border areas. The targets of border area development are prosperity, security and environment (Sholihah, 2016).

Thus, in order to measure the strategic decision of Naval Base development in Indonesian border area, the Borda method and SWOT method is used. The Borda method can show which alternatives are better in pairwise comparisons. The decision-making is based on an alternative choice of various Naval expert respondents by making the criteria into a numerical calculation (Garcia-Lapresta et al., 2008). While the SWOT method analysis is useful to create strategic formula by conducting an overall evaluation of the strengths, weaknesses, opportunities, and threats. The end result of the SWOT approach is to obtain a decision which shows the variable along with the added value or less value (Wang, 2007).

By combining Borda-SWOT method in measuring the strategic of decision-making

process, a precise ranking of strategic variables in the development plan of Naval Base in the border area will be generated. Furthermore, this strategic planning can be used as a tool of the organization to start and manage its main tasks. Strategic planning is part of a research operation based on a multi-criteria decision-making (MCDM) process. MCDM-based research operations are a series of alternatives evaluations in a set of criteria to achieve optimal strategic formulation (Triantaphyllou et al., 1998).

The benefit of this study is the development plan of Naval Base that has the benefit and great contribution in the border region. The order of development priorities is part of the strategy formulation in order to enhance the benefit of Naval Base development to be perceived immediately by the border community development target. In addition, it also provides a case study for the development of the Naval Base and its facilities in the future.

In this paper, the Methodology used would be described in Section 2, Research Results in Section 3, Discussion in Section 4, and Conclusions in Section 5.

2. METHODOLOGY

2.1. Naval Base Development

The functions of the Naval Base Station are classified into 5Rs including Base as Replenishment/Refueling, a Repairing Place, a Resting Place, a Refreshing Place, and a Resistance (Base for Defense) (Suharyo et al., 2017). In order to carry out the function, the main facility that must be built in an Naval Base, including Port facilities, Maintenance and Repair facilities, Supplies facilities, Personnel maintenance facilities and Base building facilities. While the supporting facilities of the main facilities consist of Housing and Messing facilities, Command Headquarters facilities, Public facilities, Communication facilities, Defense facilities, Service facilities, and Operating and Training facilities (Indonesian Navy Headquarters, 2013). The following Figure 2 is the amount of budget for the construction of Naval Base facilities
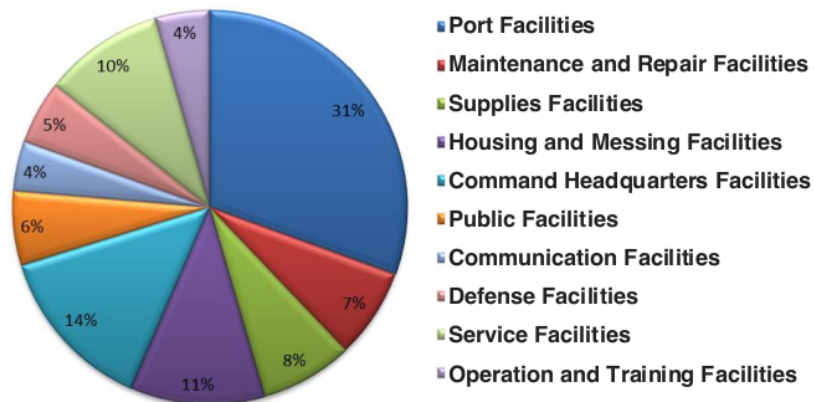

- Port Facilities
- Maintenance and Repair Facilities
- Supplies Facilities
- Housing and Messing Facilities
- Command Headquarters Facilities
- Public Facilities
- Communication Facilities
- Defense Facilities
- Service Facilities
- Operation and Training Facilities

Fig. 2 The Amount of Navy Base Facilities Budget Development (Indonesian Navy Headquarters, 2013).

2.2. Indonesian Maritime Power Development

Indonesia as an archipelagic country has a geo-strategic aspect that demands the development of naval power as the main theme in the

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development of Indonesia's defense force (Perwita & Komeini, 2012). In Indonesia maritime development, the policy is strongly influenced by political policy, economy, defense, and state interest (Vertzberger, 1984). The Navy's development program towards MEF is performed not only with the modernization of defense to ensure Indonesia's territorial sovereignty and marine resources to be maintained, but also to keep the navigation path and maritime trade safe. In the development of naval power, the Naval Base development is based on six characteristics that influence the condition of national naval power such as geography, natural resources, climate, land area, community character and character of local government (Gindarsah & Priamarizki, 2014).

2.3. Borda Method

De Borda's voting method is used to rank out problems with multicriteria (Costa, 2017). The measurement steps with Borda method are as follows:

a) Evaluator determination, decision makers, judges or members of the jury sourced from experts

b) The elements determination or alternatives to be classified

c) Assessments collection from each evaluator in the form of perceptual assessments to form alternative sequences

d) A ranking score association for each alternative, as well as evaluate the main purpose of the problem

e) For each alternative, add up the rank rank rankings

f) Getting the final ranking of the alternatives.

In Borda's rule, it is known that the points given or ratings to each alternative is based on voter preferences or experts. In this method if there are (n) alternatives, then the first choice score has a weight of (n-1), the second choice score has a weight of(n-2) and so on until the last option, which is 0 points. Based on the measurement of the voter number on the criteria, the Total Frequency (Rt) can be calculated with the following formula

$$\text{(1)}$$

$$R1 = \sum_{j=1}^{n} R_{1j} \qquad \text{(2)}$$

; where j = (n-1), (n-2), ..., (n-n)

As for knowing Weight (W_i) on each choice variables, it is formulated into:

$$W_i = \frac{R_i}{\sum_{i=1}^{m} R_1} \qquad \text{(3)}$$

; where i = variable option

So, the priority rank of variable option is

$$W_{i1} > W_{i2} > W_{i3} \dots > W_{in} \qquad \text{(4)}$$

; where n is the amount of variable option.

The theoretical characteristic of Borda's measurement is to determine the value of the majority of variables whose median value is consistent. While the ranking of variables is defined as the majority as well as the highest weight among the chosen various options (Mohajan, 2011).

2.4. SWOT Method

SWOT approach Analysis is a simple way to communicate an idea or policy. This technique is very effective because it is structured, objective, and focused on strategy with strong goals (Heyer, 2004). The information obtained has been

systematically represented in the matrix, in which the combination of the four matrix factors is a tool in determining strategy. SWOT can build optimal strategies by relying on strengths and reducing their weaknesses, while also taking advantage of opportunities and determining plans to eliminate threats to be faced (Živković et al., 2015). By maximizing Strengths and Opportunities, and simultaneously minimizing *Weaknesses* and *Threats*, it will result in strategic decisions of several factors or variables (Jyrki Kangas, 2016). Some strategies that can be used in the SWOT matrix (Table 1) is the S-O (Maxi-Maxi) Strategy, W-O (Mini-Maxi) Strategy, S-T (Maxi-Mini) Strategy, and W-T (Mini-Mini) Strategy (Gretzky, 2010).

Table 1. SWOT Matrix
(Gretzky, 2010)

SWOT Matrix	Strength (S) Existing internal conditions and can be strengthened in planning.	Weakness (W) Internal conditions that can be improved in planning.
Opportunity (O) External conditions that can be taken advantage of.	S-O Strategy Utilizing Internal strength to take advantage of opportunities	W-O Strategy Fixed internal flaws by taking advantage of opportunities
Threat (T) External conditions that can not be controlled and have a negative impact.	S-T Strategy Use the power to avoid or reduce the impact of threats	W-T Strategy Defensive strategy to reduce internal weakness and avoid threats

2.5. Conceptual Framework

A research flow diagram integrating Borda and SWOT methods (Figure 3) will help to measure strategic decision making processes. The Borda-SWOT method is a simple alternative to present another explanation that priority decisions have a widespread impact in society (Ishida & Oguro, 2017). In addition, the construction of Naval Base in the border area is a strategic decision that has a wide impact on the maritime environment to make Indonesia as a maritime axis of the world.
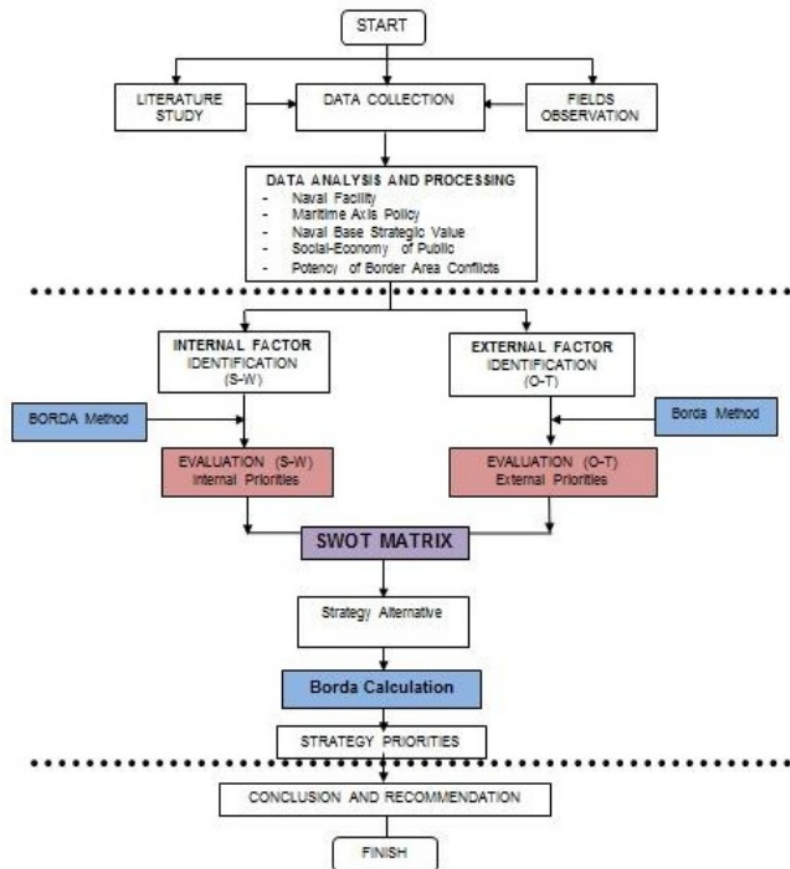
Fig. 3. Research Diagram of Borda-SWOT Integration

(Ishida & Oguro, 2017)

3. RESULT OF RESEARCH ANALYSIS

3.1 Numerical Calculations Design

Borda-SWOT primary data processing was conducted by interviews and questionnaires to officers of officials within the Naval Base Area, Naval Base Facilities Office, and Navy officers who have both technical and strategic expertise. Placement of SWOT criteria was shown on SWOT Analysis Software sourced from expert data. Interview data and questionnaires were subsequently processed using Excel to get weighted calculations according to numerical design calculations with the the priority ranking strategy as the final results.

3.1.1. Internal Criteria

Tabel 2. Primary Data of Strength and Weakness

Source: Expert Data Processing and Questionnaire

<table>
<tr><td rowspan="14">Internal Criteria</td><td colspan="3">Strengths</td></tr>
<tr><td>S.1</td><td>World Maritime Axis Policy</td><td>85</td></tr>
<tr><td>S.2</td><td>Strategic Location</td><td>68</td></tr>
<tr><td>S.3</td><td>Naval Base</td><td>51</td></tr>
<tr><td>S.4</td><td>Operation Area</td><td>46</td></tr>
<tr><td>S.5</td><td>Defense System Readiness</td><td>35</td></tr>
<tr><td colspan="3">Weaknesses</td></tr>
<tr><td>W.1</td><td>Development Center</td><td>74</td></tr>
<tr><td>W.2</td><td>Supporting Facilities</td><td>64</td></tr>
</table>

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W.3	Availability of Shipyard	55
W.4	Availability of Area Logistics	54
W.5	Availability of Public Facilities	38

T.2	Shipping Safety	66
T.3	Separatism	55
T.4	Sailing Lane Volume	54
T.5	Social Cultural Insecurity	39

3.1.2. External Criteria

Table 3. Primary Data of Opportunities and Threats

Source: Expert Data Processing and Questionnaire

External Criteria	Opportunities		
	O.1	National Patriotism	69
	O.2	Availability of Fields	65
	O.3	Geostrategic and Geo-economy	56
	O.4	Resident Population	56
	O.5	Area Supports	39
	Threats		
	T.1	Illegal Act	71

3.1.3. SWOT Diagram of Border Maritime Area Development

Using the Borda method in accordance with Tables 2 and 3 above, it was found that existence of Naval Base had a Strength effect to maritime development of border area with weight of 17,89% and rating score of 0.0447 from the whole variable. While the internal factor weight (S-W) was greater than the external factor (O-T) which indicated that maritime development in the border area could be done well if there wass strong commitment from the government despite many challenges faced (Figure 4).
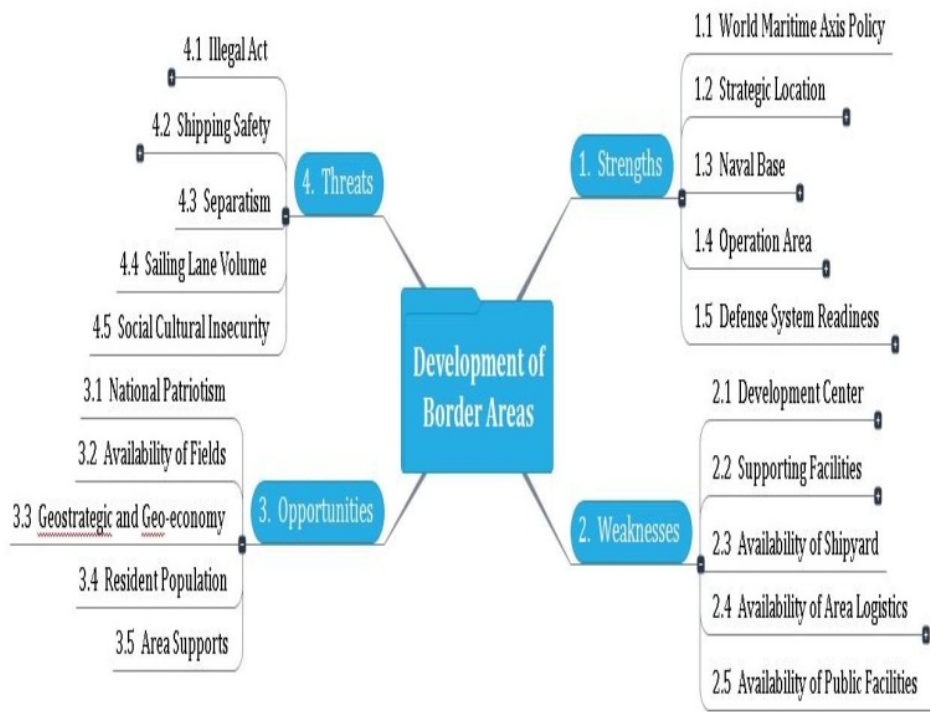

Fig. 4. Research SWOT Diagram

Source: *SWOT Analysis Software*

3.1.4. SWOT Matrix of Border Maritime Area Development

Table 4. Research SWOT Matrix

Internal Factor ╲ External Factor	Strengths S1. World Maritime Axis Policy S2. Strategic Location S3. Naval Base S4. Operation Area S5. Defense System Readiness	Weaknesses W1. Development Center W2. Supporting Facilities W3. Availability of Shipyard W4. Availability of Area Logistics W5. Availability of Public Facilities
Opportunities O1. National Patriotism O2. Availability of Fields O3. Geostrategic and Geo-economy O4. Resident Population O5. Area Supports	**S-O Strategy** Maritime becomes national policy which provides the power to improve maritime security capabilities to protect resources in certain region. **(S1) (S3) (O3) (O5)**	**W-O Strategy** Strong human resources potentially make the economic power in the border region supported by the construction of facilities and infrastructure **(W1) (W4) (O2) (O4)**
Threats T1. Illegal Act T2. Shipping Safety T3. Separatism T4. Sailing Lane Volume T5. Social Cultural Insecurity	**S-T Strategy** The Naval base conducts maritime security operations to prevent illegal activities and keep the shipping lines safe **(S3) (S4) (T1) (T4)**	**W-T Strategy** The facility develompment can reduce the various conflicts of society, especially separatism and other socio-cultural vulnerabilities **(W2) (W5) (T3) (T5)**

Based on the SWOT matrix(Table 4), the maritime development in the border area was using S-T strategy. With a weight of 10.66%, this strategy was implemented with the establishment of Naval Base that serves to provide support for maritime security operations of the Navy to prevent illegal activities and keep the shipping lines safe.

4.   DISCUSSION

4.1.   Strategy Priority Weighing of Naval Facility Development

In order to implement the S-T strategy of the SWOT matrix and to build the Naval base, the development of necessary facilities was performed. The objective of the analysis in 10 Naval base facility using the Borda method was to obtain priority facilities (Figure 5).
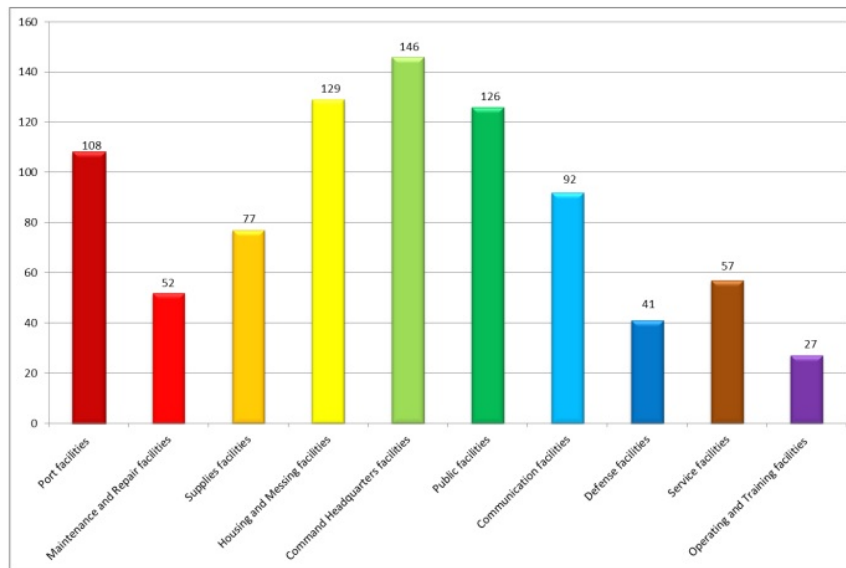
Fig. 5. Diagram of Priority Weinging in Research Strategy

4.2. Strategic Priorities Formulation

The strategic decision formulation of Naval Base Development in border area was obtained from weight calculation from each facility that would be built. The ranking of weighted rankings was a priority order of facility construction required in border areas(Figure 6).
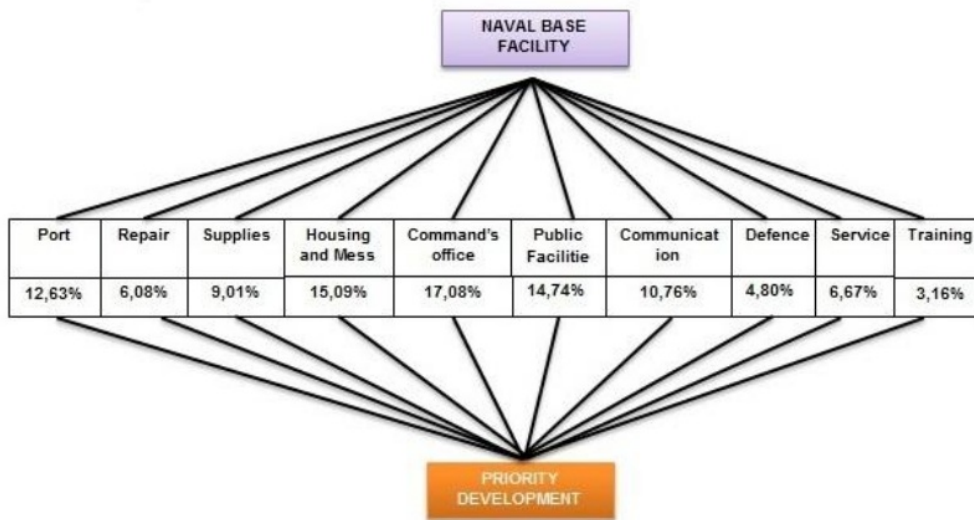

Port	Repair	Supplies	Housing and Mess	Command's office	Public Facilitie	Communication	Defence	Service	Training
12,63%	6,08%	9,01%	15,09%	17,08%	14,74%	10,76%	4,80%	6,67%	3,16%

Fig. 6. Diagram of Research Strategy Priority Formulation

5. CONCLUSION

Strategic decisions measurement of the Naval Base Development in the border area using the Borda-SWOT method is one of the quicker ways of conveying the idea of multi-criteria decision-making. The S-T strategy approach is the

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best strategy to develop a challenging border region. While the development of the Naval Base is an important part of Indonesia's maritime development which has an impact on the security of international shipping lines. Based on the strategy priority formula, it can be known that Naval Base Facilities which have a major impact on the border region is Command Headquarters Development - Housing Facilities and Mess - Service Facilities - Port Facilities and Communication Facilities. It is expected that this research can be continued in the future to know the ability of logistics and administrative support for sea security operations in the border region.

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