

RANAI SMART NAVAL BASE CONCEPT AS FORWARD OPERATION BASE (FOB) IN SUPPORTING MARITIME DEFENSE STRATEGY

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ABSTRACT

Lanal Ranai is a Naval Base whose working area is in the Indonesian Border Area with Vietnam, Malaysia, Brunei Daruslam and is directly opposite the South China Sea. This strategic position brings great opportunities as well as threats for Lanal Ranai in carrying out its main duties as one of the main components of maritime defense. This research develops the concept strategy of the Smart Naval Base Ranai in supporting the maritime agriculture strategy. The strategy is prepared with a SWOT analysis, then the selected strategy is developed into the composition of Key Performance Indicators. The results of the analysis resulted in the selected strategy being the SO strategy with 6 (six) sub-strategies: (1) SO1 Improving the facilities and service quality of the Lanal Ranai port by utilizing the support of the Central and Regional governments and collaborating with public ports; (2) SO2 Improving the ability to enforce maritime security by increasing cooperation with maritime stakeholders; (3) SO3 Improving the HR management system, financial system and service system by utilizing technological developments; (4) SO4 Improving the comfort of the work environment and productive work culture by utilizing technological developments; (5) SO5 Improve Lanal Ranai facility services by utilizing maritime community awareness and increasing maritime economic activities and (6) SO6 Improving the sustainability of Lanal Ranai by utilizing maritime community awareness and maritime economic growth.

Keywords: Maritime Defense Strategy, Lanal Ranai, Smart Naval Base, SWOT-AHP.

1. INTRODUCTION

Indonesia as a maritime country has a wide sea area. A very strategic location and abundant natural resources are a source of wealth that can be managed for Indonesia's development. This is of course a challenge for Indonesia, because this wealth can be a source of wealth that can be utilized for the social welfare of society but can also be an attraction for foreign parties which can trigger threats to control and exploit this wealth.

The dynamics of the development of the global, regional and national strategic environment, and Indonesia's geographical location which is at the crossroads of 2 (two) continents and 2 (two) oceans, has made Indonesian waters a communication channel and sea transportation route for the international world, as well as a crossing for national interests. various countries in the world. This condition creates various types of threats that have implications for national defense both physically and non-physically. Types of threats, in the form of military, non-military, and hybrid threats, are generally real and not yet real threats.

In an effort to maintain and protect the country from all forms of threats and disturbances to all elements of the nation, the concept of national defense is formulated. National defense is one of the functions of government, which is carried out through a universal national defense system involving all citizens,

territories and national resources and national infrastructure and is carried out in a total, integrated, directed and continuous manner.

The national defense system is a universal defense system, implemented in an integrated manner by combining military defense and non-military defense. Military defense is held to deal with military threats by placing the TNI as the main component supported by reserve components and supporting components. The development of maritime defense areas is carried out on a spatial basis by empowering geospatial data and information. The development of the maritime defense area is intended to strengthen the national defense system at sea which is capable of dealing with threats, and to support the security of the national border area including disaster mitigation. Regional development is supported by a defense area spatial planning information system that can ward off any threats and disturbances both from outside and from within the region

In sea operations, both in terms of OMP and OMSP, the Naval Base performs the function of being an advanced base and service function for all elements of the Indonesian Navy that are held in operations. Based on the standardization of the TNI-AL base, it is formulated that there are at least 5 (five) service functions carried out by the TNI-AL Base, namely Port Facility Service Support, Supply Facility Service Support, Ship Care and Maintenance Facility

Service Support, Boarding Facility Service Support and Health Service Support, Spiritual and Recreation. The waters of the North Natuna Sea are one of the strategic seas for Indonesia, countries in the Asian region and for the world, because the waters of the Natuna Sea are international shipping lanes that connect Europe, Asia, China and the Pacific countries. Quoting from CSIS and the World Maritime Council, approximately 25% of the world's shipping flows pass through this sea with a valuation of goods reaching US\$ 5.3 trillion. In addition to these facts, Natuna waters also have abundant natural resources, both oil and gas and in the fisheries sector. Natuna's oil reserves are estimated at 14,386,470 barrels, while natural gas is 112,356,680 barrels. In the marine fisheries sector, Natuna has a fishery potential of 504 thousand tons or a 21% contribution to Indonesia's fish catch.

These facts make Natuna waters a target for control, control and utilization by interested countries. One of the real threats today is claims by the Chinese state. This presents the potential for unavoidable conflict between Indonesia, regional countries, China and the United States in the region. In facing the dynamics of the strategic environment which shows an increase in escalation of conflicts and maritime threats, the President of the Republic of Indonesia mandated the TNI Commander to increase the TNI's strength in the Natuna region to uphold state sovereignty, especially from the maritime aspect. The complexity of the maritime aspects of threats that occur in the North Natuna waters.

Ranai Naval Base is one of the TNI Naval bases in the Natuna Islands which is the base for TNI elements in carrying out military operations in upholding maritime defense and security in the Natuna sea waters. The current capability of the Ranai Base has not been able to integrate all components of the Integrated Fleet Weapons System (SSAT) which involve non-military maritime potential in enhancing maritime defense capabilities. Limited facilities and infrastructure and lack of institutional synergy are still the main obstacles. Efforts are needed to increase the effectiveness and efficiency of base functions based on smart systems in the management and service system of Pangkalan Ranai

2 LITERATURE REVIEW

2.1 Geopolitics and Geostrategy

Geopolitics is defined as a political system or regulations in the form of national policies and strategies that are driven by geographic national aspirations a country, which if implemented and successful will have a direct impact on the political system of a country. Geopolitics rests on social geography (geographical law), regarding geographical situations, conditions or constellations and everything considered relevant to the geographical characteristics of a country.

Geostrategy is a state political policy based on the country's geographical constellation. Indonesia's geostrategy is contained in the concept of National Resilience which consists of a set of relations for all aspects of the nation to maintain the integrity and sovereignty of the State in facing all forms of threats that come from outside as well as challenges to the state that arise from within. These aspects consist of Tri Gatra and Panca Gatra Aspects which as a whole are called Asta Gatra.

2.2 Indonesia's conception of the world's maritime axis.

In order to become a World Maritime Axis country, it is necessary to carry out sustainable development in the aspects of infrastructure, politics, socio-culture, law, security and economy. Upholding the territorial sovereignty of the Republic of Indonesia, revitalizing the maritime economic sectors, strengthening and developing maritime connectivity, rehabilitating environmental damage and conserving biodiversity, as well as increasing the quality and quantity of marine maritime resources.

2.3 Maritime Defense Strategy

Maritime Defense is an act of self-defense from all forms of threats to a country's maritime sovereignty. The right way for Indonesia to counteract the dynamics of hybrid threats in the maritime aspect is to develop and strengthen its maritime defense strategy and form the main components through the restructuring of Ministries/Agencies based on Military, Politics, Economics, Civil and Information.

3. MATERIALS

This chapter will explain the stages in the research starting from problem identification, data collection, identification of internal and external factors, determination of IFAs and EFAs, preparation of strategy matrices, strategy weighting, determination of the best strategy, analysis and discussion, drawing conclusions and suggestions.

3.1 Methodology

The methodology used in this research is approximation qualitative research, namely after the researcher collects data from interviews and written materials and then conducts inductive data analysis. Developing a strategy in the Smart Naval Base Ranai concept is done by compiling internal and external factors into SWOT elements.

3.2 Data Collection

Analysis of internal factors was carried out by carrying out observations and assessments obtained from open interviews with Lanal Ranai personnel and KRI Elemental Commanders who had served at Pangkalan Ranai.

Developing a Strategy Matrix. Next, the preparation of the SO (Strength-Opportunity) strategy matrix was carried out; determining the WO

Strategy (Weakness Opportunity); determining the ST Strategy (Strength-Threat); determining the WT (Weakness-Threat) Strategy. After the Strategy Matrix is formed, it is continued with compiling the main strategies and mapping the main strategies to be able to sort out the main strategies based on the technology strategy category, the human resource category and the environment category.

To determine the weight of the strategy, pairwise comparisons are carried out by distributing questionnaires to the Expert. Furthermore, the data from the questionnaire is processed using the Expert Choice application.

Selection of the best strategy is done by comparing the weights of each strategy resulting from data processing carried out in the Expert Choice application. Each strategy is organized into groups of types of technology policy, human resource, and environmental policies. Next, the ranking of each strategy is carried out.

3.3 Data Analysis

Based on the existing problems in the research, the research method used in this study is an evaluative research and development method using a SWOT analysis to identify and formulate several strategies for management policies and services of Pangkalan Ranai based on Smart Systems.

Strategy analysis is carried out by comparing the weight of the strategies in each strategy category and the linkages between the selected strategies and aspects of the maritime defense strategy.

Preparation of Key Performance Indicators (KPI) is carried out by identifying the duties and responsibilities of each related key element indicator, as well as achievement target indicators that can be measured within a certain period of time.

4. RESULT AND DISCUSSION

4.1 Identification of Internal and External Factors

Identification of internal factors is done by carrying out an analysis of Lanal Ranai's internal and external environment. Internal environmental analysis was carried out to determine the strengths and weaknesses of Lanal Ranai in carrying out its main duties, especially as an advanced base in supporting the maritime defense strategy. While the external environment analysis is carried out to determine external factors that can influence Lanal Ranai's internal processes, both in the form of opportunities and threats faced in carrying out their main duties.

Identification of internal and external factors was carried out through literature studies and in-depth interviews with several related experts. The identified

internal and external factors are then assessed to identify SWOT elements. Strength and Weakness Elements are generated from Internal factor analysis while Opportunities and Threats are generated from External factor analysis.

4.1.1 Internal factor

Element Strength questionnaire indicators and data. Based on the internal factor analysis, there were 9 (nine) S1-S9 indicators on the strength element. These indicators are compared in pairs to determine the hierarchy of importance weights.

Table 1. Element Strength Indicator.

No	Code	Indicator
1	S1	Ability to support maintenance personnel
2	S2	Ability to support base facilities
3	S3	Marine security enforcement capabilities
4	S4	HR management system capability
5	S5	Have a comfortable work environment
6	S6	Accountable financial system
7	S7	The existence of a sustainable base
8	S8	Productive work culture
9	S9	Support port facilities independently

Element Weakness Questionnaire Data and Indicators. Based on internal factor analysis, 10 (ten) W1-W10 were obtained. indicator on element weakness. These indicators are compared in pairs to determine the hierarchy of importance weights.

Table 2. Element Weakness Indicator.

No	Code	Indicator
1	W1	Maintenance and repair facilities
2	W2	Ability to support KRI supplies and personnel
3	W3	Integrated maritime potential development system
4	W4	Human resources according to DSP
5	W5	Integrated service system
6	W6	IT based planning system
7	W7	Integrated surveillance system
8	W8	Integrated kamla operation control system
9	W9	Integrated financial system
10	W10	Integrated early warning system

4.1.2 External factor

Element Opportunity questionnaire indicators and data. Based on the analysis of external factors, there are 7 (seven) indicators in the Opportunity element. These indicators are compared in pairs to determine the hierarchy of importance weights.

Table 3. Element Opportunity Indicator.

No	Code	Indicator
1	O1	Central and Regional Government Support
2	O2	Development of IT Technology
3	O3	Development of data network infrastructure
4	O4	Development of Public Port Facilities
5	O5	Maritime stakeholder cooperation
6	O6	Maritime awareness in society
7	O7	Maritime Economic Activity Growth

Element Threats questionnaire indicators and data. Based on the analysis of internal external factors, there were 9 (nine) indicators T1-T9 on the Threats element. These indicators are compared in pairs to determine the hierarchy of importance weights.

Table 4. Element Threats Indicator.

No	Code	Indicator
1	T1	Transportation infrastructure
2	T2	Availability of liquid supplies
3	T3	Availability of docking facilities
4	T4	Availability of spare parts

5	T5	There is overlapping regulations in the maritime sector
6	T6	The low quality of education and public awareness
7	T7	Maritime navigation security vulnerabilities
8	T8	There are illegal natural resource management activities
9	T9	There are law violations and crimes at sea

Based on the analysis of internal and external factors, SWOT elements are produced. Each factor is used as an indicator for each element which will then be weighted at the weighting stage. To obtain the data used for the weighting of the SWOT elements, a questionnaire was distributed in the form of pairwise comparisons between indicators in each SWOT element. Furthermore, the data will be processed using the expert choice 11 software application. The resulting data is in the form of the weight of each indicator for each element.

Scores for each indicator were obtained from distributing questionnaires to several experts. The resulting data is in the form of value intervals based on a Likert scale from 1-5. The results of the recapitulation of the scores on each element are as follows:

Table 5. Score Element Strength Ranai Naval Base

No	Kode	Indikator	Score			
			EX1	EX2	EX3	Average
1	S1	Ability to support maintenance personnel	4	2	3	3,00
2	S2	Ability to support base facilities	5	3	3	3,67
3	S3	Marine security enforcement capabilities	4	3	3	3,33
4	S4	HR management system capability	4	4	3	3,67
5	S5	Have a comfortable work environment	4	4	3	3,67
6	S6	Accountable financial system	3	4	3	3,33
7	S7	The existence of a sustainable base	4	3	3	3,33
8	S8	Productive work culture	4	3	3	3,33
9	S9	Support port facilities independently	3	4	3	3,33

Element Weaknesses score. Scoring was carried out by 3 (three) experts. The results of each

expert's assessment are averaged to obtain a score for each indicator.

Table 6. Score Element Weakness Ranai Naval Base

No	Code	Indicator	Score			
			EX1	EX2	EX3	Average
1	W1	Maintenance and repair facilities	2	2	2	2,00

2	W2	Ability to support KRI supplies and personnel	4	4	3	3,67
3	W3	Integrated maritime potential development system	3	3	3	3,00
4	W4	Human resources according to DSP	3	3	3	3,00
5	W5	Integrated service system	3	3	3	3,00
6	W6	IT based planning system	3	2	2	2,33
7	W7	Integrated surveillance system	3	3	3	3,00
8	W8	Integrated kamla operation control system	3	3	3	3,00
9	W9	Integrated financial system	3	4	3	3,33
10	W10	Integrated early warning system	3	3	3	3,00

Element Opportunity Score. Scoring was carried out by 3 (three) experts by filling out a questionnaire. The results of each expert's assessment are averaged to obtain a score for each indicator.

Table 7. Score Element Opportunity Ranai Naval Base.

No	Code	Indicator	Score			
			EX1	EX2	EX3	Average
1	O1	Central and Regional Government Support	5	4	3	4,00
2	O2	Development of IT Technology	3	2	2	2,33
3	O3	Development of data network infrastructure	3	2	2	2,33
4	O4	Development of Public Port Facilities	4	4	4	4,00
5	O5	Maritime stakeholder cooperation	5	5	4	4,67
6	O6	Maritime awareness in society	4	3	3	3,33
7	O7	Maritime Economic Activity Growth	4	3	3	3,33

Elemental Threats score. Scoring was carried out by 3 (three) experts by filling out a questionnaire. The results of each expert's assessment are averaged to obtain a score for each indicator.

Table 8. Score Element Threats Ranai Naval Base

No	Code	Indicator	Score			
			EX 1	EX 2	EX 3	Average
1	T1	Transportation infrastructure	4	2	2	2,67
2	T2	Availability of liquid supplies	5	3	2	3,33
3	T3	Availability of docking facilities	1	1	1	1,00
4	T4	Availability of spare parts	2	1	1	1,33
5	T5	There is overlapping regulations in the maritime sector	2	2	2	2,00
6	T6	The low quality of education and public awareness	2	2	2	2,00
7	T7	Maritime navigation security vulnerabilities	2	2	3	2,33
8	T8	There are illegal natural resource management activities	1	1	3	1,67
9	T9	There are law violations and crimes at sea	2	4	2	2,67

4.2 Results

Data processing was carried out using the Expert Choice 11 software application using the AHP procedure to determine the importance hierarchy of each indicator in each SWOT element. The resulting data is in the form of a hierarchy of importance for each indicator in each SWOT element.

Figure 1. Element Strength's weight

The results of data processing on the Strength element with an inconsistency value = 0.1 are declared valid because they do not exceed the required tolerance value limit

Elemental Weakness Weights. Determination of weights is done by pairwise comparisons between indicators with the indicator comparison structure as follows:

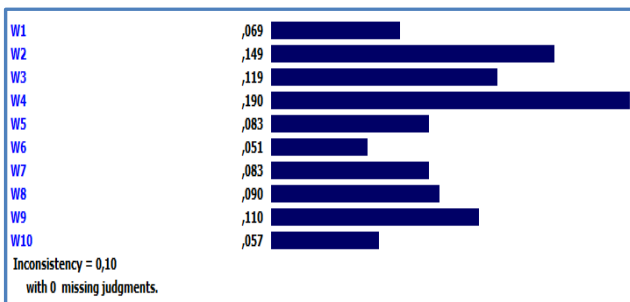


Figure 2. Element Weakness Weights

The results of data processing on the Weakness element with an inconsistency value = 0.10 are declared valid because they do not exceed the required tolerance value limit, which is not more than 0.1.

Element Opportunity's weight. Determination of weights is done by pairwise comparisons between indicators with the indicator comparison structure as follows:

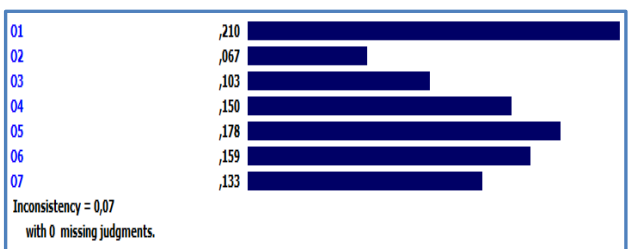
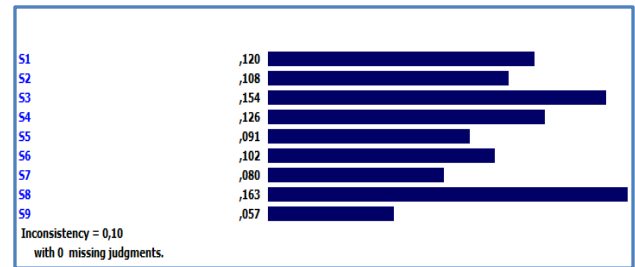
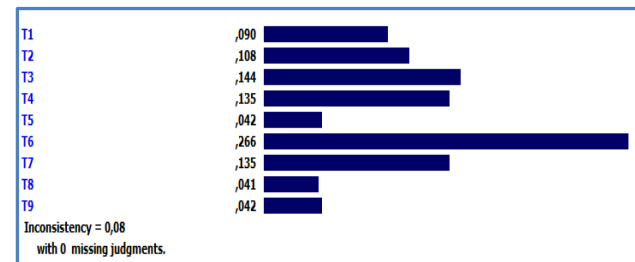


Figure 3. Element Opportunity Indicator Weights



The results of data processing on the Opportunity element with an inconsistency value of = 0.07 are declared valid because they do not exceed the required tolerance value limit.

Elemental Threats weight. Determination of



weights is done by pairwise comparisons between indicators with the indicator comparison structure as follows:

Figure 4. Element Threats Indicator Weight

4.3 Discussion

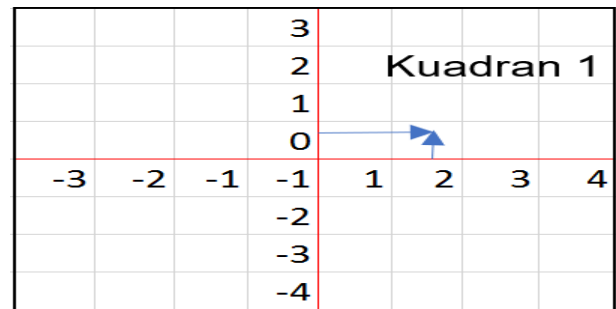
According to field research, the psychological There are several combinations of strategies produced in the SWOT analysis, including the SO (Strength-Opportunity) strategy, which is a strategy created by utilizing all the strengths possessed to seize and take advantage of the maximum opportunities. ST Strategy (Strength-Threats) is a strategy made based on the strengths of the company to anticipate existing threats. The WO (Weakness-Opportunity) strategy is a strategy implemented based on exploiting existing opportunities by minimizing existing weaknesses. While the WT Strategy (Weakness-Threat) is a strategy based on defensive activities, trying to minimize weaknesses and avoid threats.

Figure 5. SWOT Strategy Quadrant Plotting

The chosen strategy is in quadrant 1 or often known as the SO (Strength-Opportunity) strategy, which is a progressive strategy that is made by utilizing all the strengths you have to seize and take advantage of as many opportunities as possible.

The Strategy Ranking is done to determine the priority of the chosen strategy. Ranking is done by calculating the weight of the combination of constituent elements of each strategy. From the results of the weight calculation, the 3 (three) best strategies were selected which were then used as the

basis for the development and implementation of the



strategy. Based on the weight of each strategy, the following strategy rankings are generated:

Table 9. Rank Strategy

No	Code	Strategy	Weight	Rank
1	SO1	Improving the facilities and quality of services at the Lanal Ranai port by utilizing the support of the Central and Regional governments and in collaboration with public ports.	0,2052	I
2	SO2	Increase the ability of maritime security enforcement by increasing cooperation with maritime stakeholders.	0,0274	III
3	SO3	Improving the HR management system, financial system, and service system by utilizing technological developments.	0,0153	VI
4	SO4	Improving the comfort of the work environment and productive work culture by utilizing technological developments.	0,0170	V
5	SO5	Improving Lanal Ranai facility services by utilizing maritime community awareness and increasing maritime economic activities.	0,0315	II
6	SO6	Increasing the sustainability of Lanal Ranai by utilizing maritime community awareness and maritime economic growth.	0,0233	IV

The research succeeded in identifying internal and external factors that influenced the building of the Smart Naval Base Ranai. Identification results produce 19 internal factors. Furthermore, an expert assessment was carried out to find out the factors that are strengths or are still weaknesses for Lanal Ranai. This is important to do in order to know the parts that should receive the focus of management and utilization or there are parts that need to be repaired.

The results of the assessment showed that there were 9 (nine) factors which had become strengths that supported Lanal Ranai in carrying out his main duties, while 10 (ten) factors were still weaknesses. From the ability of physical facilities and the ability to carry out their duties on average it has become an aspect of strength. However, there are still some weaknesses, such as the long bureaucratic system due to the absence of an integrated system and the fulfillment of personnel needs that have not

been met. These limitations lead to less effective and efficient services carried out.

Based on the identification of external factors, there were 15 factors related to the development of Lanal Ranai. Furthermore, these factors are analyzed into opportunity factors that can be exploited and factors that become threats that must be faced. From the results of the analysis, 7 (seven) external factors became opportunities and 8 (eight) became threat factors.

The strategy was developed by implementing information system integration that combines Lanal Ranai's external and internal strengths in a Management Information System based on big data, internet of things (IoT), and the development of artificial intelligence (AI). The strategic steps implemented in order to build the Smart Naval Base Ranai can be carried out by building and developing a Network Centric Principles system such as the

concept developed by Admiral Jay L. Johnson at the US Naval Institute Annapolis Seminar, 1997. The principles built are based on the following principles: (1) a good communication network will increase the dissemination of information more freely; (2) proper dissemination of information will increase a comprehensive understanding of the situation; (3) a good understanding of the situation will encourage self-synchronization which accelerates decision making; and (4) operational effectiveness and efficiency will increase. Development of an integrated system related to the development of C4ISR infrastructure (Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance).

5. CONCLUSIONS

Based on the description above, conclusions can be drawn from the results of the research and discussion as follows:

- a. Research can identify internal and external factors that influence Lanal Ranai in carrying out its main duties as an advance base in improving the national maritime defense system.
- b. Research can produce the best strategy for Lanal Ranai by implementing Smart Naval Base to support maritime defense.
- c. Research can produce KPIs as a guideline for Lanal Ranai in compiling key indicators as instruments for measuring performance achievement in various perspectives.

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