

# Analysis of Indonesian buffer zone location selection in anticipating an increase in conflict escalation in the Indo-Pacific region

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Abstract	Buffer zones have a strategic role in managing conflict. Properly determining a buffer zone can help reduce tensions between countries, prevent conflict escalation and provide time and space for the countries involved in diplomacy. In the context of Indonesia, as a large country in the Indo-Pacific region, determining the Indonesian Buffer Zone (IBZ) will have significant implications for regional and global security. Determinations must consider national interests and state security, while on the other hand, it is necessary to consider the interests of neighboring countries and maintain good relations. Therefore, it is important to identify these challenges and see opportunities for multilateral collaboration in determining the Indonesian Buffer Zone. In this research, the author intends to identify and determine perceptions of Indonesia's outer islands, which will be used as buffer zones using the Delphi method. In the next stage, the author will identify the criteria and sub-criteria for Indonesia's outermost islands in the Indo-Pacific Region as well as obtain ranking priorities using the Analytic Network Process (ANP) approach in developing the Indonesian Buffer Zone, so that analysis can be carried out to determine the right strategy for island development the chosen. Where, later the island area selected as the Indonesian buffer zone can be developed and utilized properly and appropriately. Furthermore, in the next stage, the author uses the Game Theory method to describe the comparison of capabilities and threat interactions between the buffer zone of selected outer islands in Indonesia compared to the buffer zone or military bases of countries from the BRICS and AUKUS alliances that have interests in the Indo-Pacific Region. In this research, it is assumed that the two defense pacts have implemented policies or strategies in this game in the context of developing their military strength in the Indo-Pacific Region. So, it is hoped that Indonesia, as the third player, can anticipate appropriate strategies and policies to maintain the stability of the Indo-Pacific Region.
Keywords	Asia Pacific Conflict, Buffer Zone, Delphi, ANP, Game Theory



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## INTRODUCTION

The Indo-Pacific is a region that involves the Pacific Ocean and the Indian Ocean as an important maritime zone in the world.<sup>1</sup> This area is one of the areas that is quite 'hot' because the

<sup>1</sup> Gurpreet S Khurana, "The 'Indo-Pacific' Idea: Origins, Conceptualizations and The Way Ahead," *Journal of*  
Published by Institut Agama Islam Sunan Giri (INSURI) Ponorogo; Indonesia  
Accredited Sinta 6

dynamics of the interests of large countries in the world are being threatened by China's unilateral claim to the North Natuna Sea based on the nine dash line. The North Natuna Sea is a type of sea that is surrounded by several main lands and has borders with various state jurisdictions. Geographically, the North Natuna Sea itself is part of the Pacific Ocean, which covers the area from the Karimata and Malacca Straits to the Taiwan Strait with a span of around 3,500,000 square kilometers (1,400,000 square miles).<sup>2</sup>

The policies formed by the United States in the Indo-Pacific region are a redefinition and positioning of the relationship between the United States and China as a framework for comprehensive strategic competition.<sup>3</sup> The aim of United States military policy in the North Natuna sea has increased with intelligence actions and the sending of combat ships such as destroyers and aircraft carriers to carry out joint exercises in the area. The United States' well-organized military force system is formed by formations of aircraft carriers, submarines, unmanned drones and bombers linked to China's defense system in the North Natuna Sea.



Figure1.1 Map of the Indo-Pacific

(Source: Indonesian Encyclopedia Yizuo Academy, 2022)

Southeast Asian countries that are members of the Association of Southeast Asian Nations

*Indian Ocean Rim Studies* 2, no. 2 (2019): 58–76.

<sup>2</sup> Mochammad Imam Chadhafi, *Diplomasi Pertahanan Maritim Indonesia Di Laut Natuna Utara*, vol. 1 (Jejak Pustaka, 2021); Fadhly Nurman Hassanal Abdullah, “Analisis Kebijakan Luar Negeri Indonesia Dalam Perubahan Nama Laut Tiongkok Selatan Menjadi Laut Natuna Utara Tahun 2017” (FISIP UIN Jakarta, 2019).

<sup>3</sup> Abhiram Singh Yadav, *Indo-Pasifik: Sebuah Konstruksi Geopolitik* (Elex Media Komputindo, 2022); Umar Harun, “Buku: Politik Kebijakan Poros Maritim,” 2020.

(ASEAN), which are generally “weak countries”, are in at least some options.<sup>4</sup> Firstly, to ally with China so that it does not become an enemy or secondly to strengthen ourselves by forming a common bond and balancing China.<sup>5</sup> In the case of ASEAN member countries' efforts to anticipate potential conflicts that may occur, ASEAN plays the role of an international organization with representatives of the governments of member countries or an Intergovernmental Organization (IGO) which has the duties and functions of being a communication forum between countries' governments in one region. ASEAN's efforts to anticipate political escalation of tensions in the Indo-Pacific region are by increasing the defense budget. Based on data released by Abuza in 2020, there is an intensity of increase in defense budgets by ASEAN countries over a period of 10 years from 2010 to 2019 based on Figure 1.2.

Table 1.1 Indonesia's Defense Budget from 2018-2023

No	Year	Big Budget	Information
1	2018	106,68	Trillion
2	2019	115,4	Trillion
3	2020	136,9	Trillion
4	2021	125,9	Trillion
5	2022	133,4	Trillion
6	2023	134,32	Trillion

(Source: CNBC Indonesia, 2022)

Indonesia's Defense Budget has also consistently increased from 2018 to 2023 based on Table 1.1, namely by an average of 3.1% per year.<sup>6</sup> Where the Ministry of Defense's budget ceiling in 2018 was IDR 106.68 trillion, then increased to IDR 115.4 trillion in 2019, then jumped significantly to IDR 136.9 trillion in 2020. However, in 2021, the Ministry of Defense's budget fell to IDR 125, 9 trillion and in 2022 the Ministry of Defense will receive a budget ceiling of IDR 133.4 trillion. Meanwhile, Indonesia's defense budget for 2023 is IDR 134.32 trillion. The size of the budget is mostly to finance personnel expenditure, but developing the TNI's posture is also a serious concern for the state. The use of the budget is aimed, among other things, at continuing the

<sup>4</sup> A Kardiyat Wiharyanto, *Sejarah Asia Tenggara: Dari Awal Tumbuhnya Nasionalisme Sampai Terbanggunnya Kerja Sama ASEAN* (Sanata Dharma University Press, 2012).

<sup>5</sup> Endah Rantau Itasari and Dewa Gede Sudika Mangku, “Elaborasi Urgensi Dan Konsekuensi Atas Kebijakan Asean Dalam Memelihara Stabilitas Kawasan Di Laut Cina Selatan Secara Kolektif,” *Harmony* 5, no. 2 (2020): 143–54.

<sup>6</sup> Arfin Sudirman, Yusa Djuyandi, and Fajri Syahal Guna Pratama, “Memahami Dinamika Kerjasama Industri Pertahanan Dalam Kerangka Indonesia Australia Defence Security Dialogue,” *Journal of Political Issues* 4, no. 2 (2023): 120–36.

development of the TNI's posture to fulfill the Minimum Essential Force through modernizing the Land-Sea-Air defense equipment, strengthening defense in strategic strait areas by strengthening the Coastal Missile Defense System and Coastal Surveillance System as well as strengthening and developing the national defense industry. through increased promotion of cooperation and implementation of trade return policies (Public Relations Bureau of the Secretariat General of the Ministry of Defense, 2021).

Table 1.2 Table of Foreign Warship Activities in the North Natuna Sea

o.	Date	Activity Type
	Sunday, July 25 2023	HMS PF A Tidespring departed from Brunei Darussalam.
	Tuesday, July 27 2021	HMS Richmond passes through the waters of Subi Reef.
	Tuesday, July 27 2023	HMS Fort Victoria is in the Singapore Strait.
	Thursday, July 29 2023	USS The Sullivans is in the waters of Subi Reef.
	December 15, 2023	HMS Kent passes through the waters of Subi Reef.
	28 May 2022	HNLMS Evertsen passes through the waters of Subi Reef.
	Thursday, July 29 2023	USS The Sullivans is in the waters of Subi Reef.
	Thursday, July 29 2023	HMS Queen Elisabeth passes through the waters of Subi Reef.

(Source: Puskodal TNI-AL, 2023)

This increase in activity from China, the United States and friendly countries of the United States must of course be well anticipated by Indonesia based on Table 1.2. Despite Indonesia's status as a non-claimant and neutral in this conflict, in the dynamics that occur in the international system, especially in conflict situations, every country will do whatever it can to survive in the international world, including increasing state security using the development of military power. On this basis, Indonesia needs efforts to defend itself, namely the country needs military strength and its supporting instruments. In relation to this, the Indo-Pacific is in the position of a gateway for various forces from conflicting countries to seek position and protection when conflict occurs. Apart from developments in the strategic environment, it is clear that currently there is a change in the security and strategic environment due to the formation of a new balance. Indonesia's position has its own role, where Indonesia prefers to be neutral in responding to conflicts in the Indo-Pacific. Indonesia is required to be able to prepare itself for increased political escalation in the

region. Therefore, Indonesia must prepare a deterrence strategy and one of these strategies is to build an Indonesian Buffer Zone in the outermost island area which directly borders the Indo-Pacific region.

In this research, the author used the Delphi method to identify and determine criteria and sub-criteria by involving a group of experts or policy makers in identifying criteria and sub-criteria for Indonesia's outermost islands in the Indo-Pacific Region as well as determining the best location to become an Indonesian Buffer Zone. The next stage uses the ANP method to give weight to the criteria and sub-criteria which are then used to determine the best alternative for the location of the Indonesian Buffer Zone in dealing with increasing conflict escalation in the Indo-Pacific Region. The next stage uses the Game Theory method. At this stage, a simulation will be carried out between Indonesia, BRICS and AUKUS, where the three of them are assumed to have implemented policies or strategies in this game. The game scenario, namely between Indonesia, BRICS and AUKUS, uses cooperative and non-cooperative forms. In general, the steps taken are to create a pay-off table for each country, then determine the amount of profits and losses for each country based on the chosen strategy.

This research was carried out aiming at the objectives to be achieved, including a) Determining the best strategy for the Indonesian state to use in anticipating an increase in conflict escalation in the Indo-Pacific Region. b) Identify variables from the perception of the best strategy in anticipating an increase in conflict escalation in the Indo-Pacific Region. c) Determine the location of the Indonesian Buffer Zone in anticipating an increase in conflict escalation in the Indo-Pacific Region.

## METHOD

In this research, the author used a qualitative descriptive statistical approach.<sup>7</sup> According to Bogdan and Taylor quoted by Lexy.J. Moleong, a qualitative approach is a research procedure that produces descriptive data in the form of written or spoken words from people and observed behavior.<sup>8</sup> This research uses a qualitative approach where data collection is carried out using instruments in the form of questionnaires and interviews.

Primary research data comes from data collected by the author himself from the first source or place where the research object was carried out. Primary data in this research came from Sops Headquarters, Srena Headquarters, Sintel Headquarters, TNI AL Operations Service, TNI AL Base

<sup>7</sup> Tamarinde L. Haven and Dr Leonie Van Grootel, "Preregistering Qualitative Research," *Accountability in Research* 26, no. 3 (2019): 229–44; Christophe Lejeune, *Manuel d'analyse Qualitative* (De Boeck Supérieur, 2019).

<sup>8</sup> Lexy J Moleong, "Qualitative Research Methodology, Cet," *XI. Bandung: PT Remaja Rosdakarya*, 2018.

Facilities Service and Puskodal TNI AL. Secondary research data comes from data that has been previously collected by other researchers, agencies or other sources that have been tested/valid. This secondary data was obtained from literature, articles, journals and sites on the internet relating to the research conducted.

Research subjects are agencies or organizations directly involved in the research, including:

a. WaAsintel Kasal b. Kasal Hublu Expert Staff c. Paban 5 Straops Sopsal Mabesal d. Pabandya Binkamla Sops Mabesal e. Paban 1 Srena Mabesal f. Pabanren Disfasal Mabesal g. Head of OPS Puskodal Headquarters. The data collection techniques used in this research were divided into two, namely: a) Primary data collection was obtained from sources who served at Sops Headquarters, Srena Headquarters, Service Faslan Headquarters, and Puskodal TNI-AL. b) Secondary data collection was obtained from literature, articles, journals and a compilation of regulations relating to the research carried out.

As a tool in using data collection methods, researchers will use structured interview guidelines, questionnaire guidelines, and observation guidelines. Data analysis is intended to find elements or parts that contain smaller categories of research data. In this research, researchers collaborate with sources to obtain patterns that match the object under study. The author uses the Game Theory method to simulate in this research, namely between Indonesia, BRICS and AUKUS where the three are assumed to have implemented policies or strategies in this game. The game scenario, namely between Indonesia, BRICS and AUKUS, uses cooperative and non-cooperative forms. The Delphi method is used to identify and determine criteria and sub-criteria by involving a group of experts or policy makers in determining the best location to become an Indonesian buffer zone. The next stage is an analysis carried out using the ANP method to give weight to the criteria and sub-criteria which are then used to determine the best alternative for determining the location of the Indonesian Buffer Zone in dealing with increasing conflict escalation in the Indo-Pacific region.

## **RESULTS AND DISCUSSION**

### **ANP Data Processing (Analysis Network Process)**

ANP data processing is carried out after the results of the ANP questionnaire which has been distributed to experts to be filled in have been collected again. The number of experts in this ANP is six people. Making the questionnaire uses a network model reference that has been formed. The questionnaire was created based on the relationship between sub-criteria, both

innerdependence and outerdependence, and the preference relationship between criteria and goals (goals) by means of pairwise comparisons between clusters and between cluster nodes (See Model Figure).

This questionnaire aims to find out how big the relationship is based on expert assessments. The expert requirements or criteria in ANP are the same as the expert requirements or criteria in Delphi. The numerical values applied to all comparisons are obtained from the 1 to 9 comparison scale established by Saaty, as in the following table:

Table 4.18 Pairwise Comparison Matrix

Level of Importance	Definition
1	Both elements are equally important
3	One element is slightly more important than the other.
5	One element is actually more important than the other elements.
7	One element is clearly more important than the others.
9	One element is absolutely more important than the other.
2,4,6,8	The middle value between 2 adjacent assessments.

(Source: Saaty, 1990)

The steps in the ANP method in general are: Developing model construction, creating a pairwise comparison matrix (Pairwise Comparisson), calculating eigenvalues and eigenvectors, calculating consistency, then creating a supermatrix starting with the Unweighted Supermatrix, Weighted Supermatrix, and Limitting stages Supermatrix.

### **Analytical Network Process (ANP) Relationship Structure**

The ANP relationship structure consists of criteria which include sub-criteria and alternatives. This ANP relationship structure has relationships between criteria, sub-criteria and each alternative inner dependence. This ANP linkage structure is a summary of all identifications of all related elements. The network consists of 1 (one) goal or goal, 3 (four) clusters of criteria, namely security, transportation access and supporting facilities as well as the alternative cluster. This linkage structure is used as a basic pattern in entering the linkage structure linkage pattern in the ANP method.

The arrows in Figure 4.5 of the ANP manual network indicate the influence between elements, the base of the arrow means the element that influences, while the direction of the arrow means the element that is influenced. Connections or relationships that occur between elements in different criteria clusters are called outer dependent relationships, while relationships that occur between elements in a criteria cluster are called inner dependent.

In this research, after the data has been obtained and has gone through a geometric calculation process, the data will be input for the data processing process using super decision software to obtain values from the entire matrix of total relationships between criteria and sub-criteria which shows the influence of one sub-criterion on other sub-criteria or between Criteria with sub-criteria, whether within one cluster or outside the cluster, as well as obtaining weights from the criteria and sub-criteria, where to be able to describe the influence relationship, a threshold value of  $\geq 0.1$  is given to see the influence between sub-criteria. In the next stage of determining the ranking of all alternatives in this research, the final result will be obtained, namely the ranking of the existing alternatives.

#### Indonesian Buffer Zone Location Selection Model Construction.

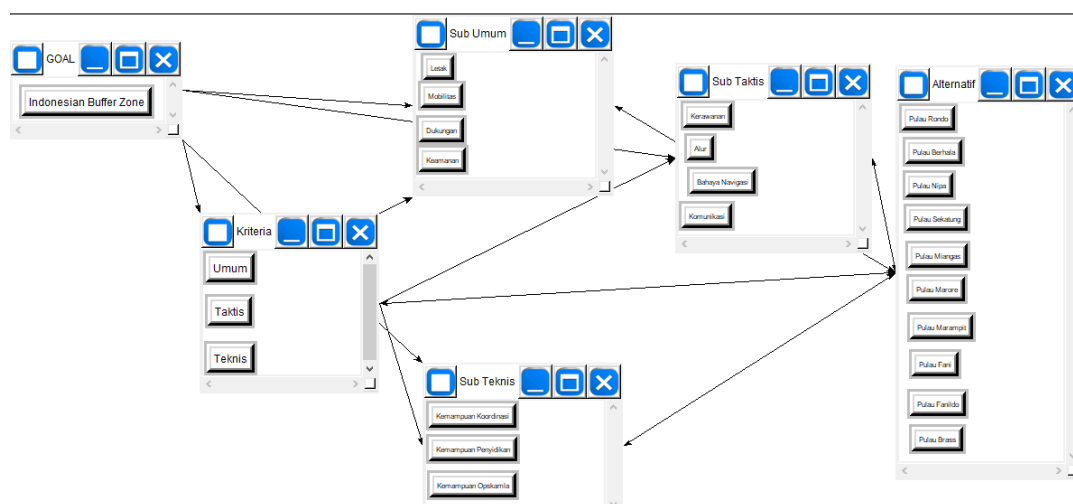


Figure 4.11 Construction Model for Indonesian Buffer Zone Location Selection.

The ANP Model construction is the result of creating a network using Super Decision software. This model is structured in the form of a hierarchy oriented from top to bottom, where at the top level are the goals to be achieved. Next, the levels below consist of criteria and sub-criteria which are the basis for calculations using Super Decision software. At the lowest level, there are alternative location options with a total of ten locations to be selected, namely Rondo Island, Berhala Island, Nipa Island, Sekatung Island, Miangas Island, Marore Island, Marampit Island, Fani Island, Fanildo Island, and Brass Island.

#### Pairwise Comparison Matrix (Pairwise Comparisson)

The paired matrix in this research is the questionnaire answers from 6 respondents, which is also referred to as the Geomean Matrix which is a combined opinion, which is a new matrix whose elements ( $g_{ij}$ ) come from the geometric average of individual opinion matrix elements



whose consistency ratio (CR) values meet the requirements . The purpose of compiling this combined opinion matrix is to form a matrix that represents existing individual opinion matrices. The following is the existing pairwise comparison formula based on the geometric mean:

$$a_{In} = (a_{i1} \times a_{i2} \times \dots \times a_{in})^{1/n}$$

$a_i$  = i-th respondent's rating

aw = composite rating

n = number of respondents

Next, the results of the combined matrix calculation are entered into a pairwise comparison in Super Decision, as shown in table 4.19 below:

### Criterion Pairwise Comparison Matrix

Table 4.19 Geomean Pairwise Comparisson Criteria.

Rounding Pairwise Values Geomean Criteria for 7 Respondents			
Criteria	Tactical	Technical	General
Tactical	<b>1</b>	0.333	3
Technical	3	<b>1</b>	5
General	0.333	0.200	<b>1</b>

1. Choose	2. Node comparisons with respect to Indonesian Buffer Zo~	3. Results
Node Cluster	Graphical Verbal Matrix Questionnaire Direct	Normal hybrid
Choose Node	Comparisons wrt "Indonesian Buffer Zone" node in "Kriteria" cluster	Inconsistency: 0.03703
Indonesian Buf~	Teknis is moderately more important than Taktis	Taktis 0.25828
Cluster: GOAL	1. Taktis >=9.5 9 8 7 6 5 4 3 2 2 3 4 5 6 7 8 9 >=9.5 No comp.	Teknis 0.63699
Choose Cluster	2. Taktis >=9.5 9 8 7 6 5 4 3 2 2 3 4 5 6 7 8 9 >=9.5 No comp.	Umum 0.10473
Kriteria	3. Teknis >=9.5 9 8 7 6 5 4 3 2 2 3 4 5 6 7 8 9 >=9.5 No comp.	

Figure 4.12 Geomean Pairwise Comparisson Criteria

(Data processed with Super Decision)

### Sub Criteria Pairwise Comparison Matrix

Table 4.20 Geomean Pairwise Comparisson General Sub Criteria

Rounding Pairwise Values Geomean Criteria for 7 Respondents				
General Sub Criteria	Support	Security	Place	Mobility
Support	<b>1</b>	3	3	3
Security	0.33	<b>1</b>	0.33	0.33
Place	0.33	3	<b>1</b>	0.50
Mobility	0.33	3	2	<b>1</b>

Table 4.21 Geomean Pairwise Comparisson Tactical Sub Criteria.

Rounding Pairwase Values Geomean Criteria for 7 Respondents				
Tactical Sub Criteria	Chan nel	Navigation Hazards	Vulnerability	Communication
Channel	1	5	3	5
Navigation Hazards	0.20	1	0.50	0.50
Vulnerability	0.33	2	1	3
Communication	0.20	2	0.33	1

1. Choose	2. Node comparisons with respect to Taktis		3. Results
Node Cluster	Graphical Verbal Matrix Questionnaire Direct		Normal Hybrid
Choose Node	Comparisons wrt "Taktis" node in "Sub Taktis" cluster		Inconsistency: 0.04923
Taktis	Alur is strongly more important than Bahaya Navigasi		Alur 0.5579
Cluster: Kriteria			Bahaya Na~ 0.0916
Choose Cluster			Kerawanan 0.2317
Sub Taktis			Komunikasi 0.1186
	1. Alur	>=9.5 9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9 >=9.5	
	2. Alur	>=9.5 9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9 >=9.5	
	3. Alur	>=9.5 9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9 >=9.5	
	4. Bahaya Navigasi	>=9.5 9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9 >=9.5	
	5. Bahaya Navigasi	>=9.5 9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9 >=9.5	
	6. Kerawanan	>=9.5 9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9 >=9.5	

Figure 4.14 Geomean Pairwise Comparisson Tactical Sub Criteria

(Data processed with Super Decision)

Table 4.22 Geomean Pairwise Comparisson Technical Sub Criteria

Rounding Pairwase Values Geomean Criteria for 7 Respondents			
Technical Sub Criteria	Coordination	Scam up	Investigation
Coordination	1	0.20	0.20
Scam up	5	1	2
Investigation	5	0.50	1

1. Choose	2. Node comparisons with respect to Teknis		3. Results
Node Cluster	Graphical Verbal Matrix Questionnaire Direct		Normal Hybrid
Choose Node	Comparisons wrt "Teknis" node in "Sub Teknis" cluster		Inconsistency: 0.05156
Teknis	Kemampuan Opskamla is strongly more important than Kemampuan Koordinasi		Kemampuan~ 0.081
Cluster: Kriteria			Kemampuan~ 0.551
Choose Cluster			Kemampuan~ 0.351
Sub Teknis			
	1. Kemampuan Koord~	>=9.5 9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9 >=	
	2. Kemampuan Koord~	>=9.5 9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9 >=	
	3. Kemampuan Opska~	>=9.5 9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9 >=	

(Data processed with Super Decision)

Table 4.23 Geomean Alternative Pairwise Comparisson Criteria

Pembulatan Nilai Pairwise Kriteria Geomean 7 Responden										
Kriteria Alternatif Lokasi	Pulau Berhala	Pulau Brass	Pulau Fani	Pulau Fanildo	Pulau Marampit	Pulau Marore	Pulau Miangas	Pulau Nipa	Pulau Rondo	Pulau Sekatung
Pulau Berhala	1	7	7	7	7	7	7	7	7	7
Pulau Brass	0.14	1	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Pulau Fani	0.14	0.33	1	1.00	1.00	3.00	3.00	3.00	3.00	3.00
Pulau Fanildo	0.14	0.33	1.00	1	0.50	5.00	5.00	5.00	3.00	3.00
Pulau Marampit	0.14	0.33	1.00	2.00	1	3.00	3.00	3.00	3.00	3.00
Pulau Marore	0.14	0.33	0.33	0.20	0.33	1	0.33	0.33	0.33	0.33
Pulau Miangas	0.14	0.33	0.33	0.20	0.33	3.00	1	0.33	0.33	0.33
Pulau Nipa	0.14	0.33	0.33	0.20	0.33	3.00	3.00	1	3.00	2.00
Pulau Rondo	0.14	0.33	0.33	0.33	0.33	3.00	3.00	0.33	1	0.33
Pulau Sekatung	0.14	0.33	0.33	0.33	0.33	3.00	3.00	0.50	3.00	1

### Calculating Eigen Values, Eigen Vectors, Consistency Ratio (CR)

Testing the Consistency of the Pairwise Comparison Matrix between Criteria at the Level The aim is to determine the level of consistency of the pairwise comparison matrix between each other to obtain the Consistency Ratio (CR) value. The following is data processing for testing the consistency of Geomean value pairwise comparison matrices between general sub-criteria at the objective level, see Table 4.17 Pairwise Comparison Matrix Criteria above.

After obtaining the importance values between criteria in geomean form, the next step is to determine the normalization matrix dividing each criterion cell in the table by the number of criteria in one column. An example of a matrix normalization calculation:

Matrix first row Support column

= first row cell value / total Support column value

=  $1 / 2 = 0.500$

Matrix first row Security column

= first row cell value / total Security column value

=  $3 / 10 = 0.33$

Matrix first row column Location

= first row cell value / total Layout column value

=  $3 / 6 = 0.474$

First row matrix Mobility column

= first row cell value / total Mobility column value

=  $3 / 5 = 0.621$

Table 4.24 Criteria for Normalized Pair Matrix

Pairwise Comparison Normalization				
General Sub Criteria	Support	Security	Place	Mobility
Support	0.500	0.300	0.474	0.621
Security	0.167	0.100	0.053	0.069

Place	0.167	0.300	0.158	0.103
Mobility	0.167	0.300	0.316	0.207
Total	1.000	1.000	1.000	1.000

After obtaining the normalization matrix results, the next step is to determine the Priority Vector (PV) calculation (See Table 4.18), namely: the average value of each row by dividing the number of each row by the number of criteria. Examples of Priority Vector (PV) for General Criteria elements are:

General PV = Sum of first row values / 4

PV Umum =  $0.456 / 4 = 0.114$

PV Umum = 11.4%

Table 4.25 Matrix Criteria with Priority Vector (PV)

Pairwise Comparison Normalization					Total	Priority Vektor (PV)	% PV
General Sub Criteria	Support	Security	Place	Mobility			
Support	0.500	0.300	0.474	0.621	1.894	0.474	47.4%
Security	0.167	0.100	0.053	0.069	0.388	0.097	9.7%
Place	0.167	0.300	0.158	0.103	0.728	0.182	18.2%
Mobility	0.167	0.300	0.316	0.207	0.989	0.247	24.7%
Total	1.000	1.000	1.000	1.000	4.000	1.000	100.0%

Based on Table 4.18, the Priority Vector (PV) values obtained from the Indonesian Buffer Zone Location Selection Criteria in Anticipating Increased Conflict Escalation in the Indo-Pacific Region are as follows:

Support PV = 47.4%

Security PV = 9.7%

Put PV = 18.2%

Mobility PV = 24.7%

The highest priority vector percentage is: General Support Sub Criteria, 47.4%. So the most influential criterion in selecting the location of the Indonesian Buffer Zone in anticipating increased conflict escalation in the Indo-Pacific region is support.

After obtaining the weighting matrix and priority vector values, the next step is to calculate the consistency ratio for each criterion and sub-criteria. To get the consistency ratio value, the steps taken first are (1) Finding the eigen value, (2) Calculating the consistency of the vector, (3) Calculating  $\lambda$  max, (4) Calculating the consistency index value, and (5) Calculating the consistency ratio. The following steps are carried out:

## 1. Looking for eigenvalues

$$\text{Eigen Value} = (\text{Weighting Matrix}) \times (\text{priority vector})$$

$$= \begin{bmatrix} 1 & 0.33 & 3 & 1 \\ 3 & 0.33 & 0.33 & 3 \\ 1 & 0.33 & 3 & 2 \\ 3 & 0.33 & 1 & 1 \end{bmatrix} \times [0.474 \ 0.097 \ 0.182 \ 0.064] = [2.053 \ 0.398 \ 0.755 \ 1.060]$$

## 2. Calculation of vector consistency

The vector consistency value is obtained from the eigen value divided by the priority vector partially for each row

$$\text{Support} = 2.053 / 0.474 = 4.335$$

$$\text{Security} = 0.398 / 0.097 = 4.101$$

$$\text{Put} = 0.755 / 0.182 = 4.147$$

$$\text{Mobility} = 1.060 / 0.247 = 4.287$$

$$\text{Total consistency vector} = 16.87$$

3. Calculate the  $\lambda$  max value

$$\lambda \text{ max} = \text{Total consistency vector} / n$$

$$\lambda \text{ max} = 16.87 / 4$$

$$\lambda \text{ max} = 4.22$$

## 4. Calculating the Consistency Index (CI) value

$$CI = \frac{(\lambda_{\text{maks}} - n)}{n - 1}$$

$$CI = \frac{(4.22 - 4)}{4 - 1}$$

$$CI = \frac{0.22}{3} = 0.072$$

## 5. Calculating Consistency Ratio (CR).

Consistency Ratio (CR) is obtained from the Consistency Index divided by the Random Index (RI). Based on Table 4.26 Random Index Values are as follows:

Table 4.26 Random Criteria Matrix Index Values

N	1	2	3	4	5	6	7	8	9	10
RI	0.92	0.00	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.51

So the RI for matrix order 4 is 0.90

$$CR = \frac{CI}{RI} = \frac{0.072}{0.90} = 0.081$$

According to Thomas L. Saaty, the assessment results received are matrices that have a consistency ratio of less than or equal to 10 percent ( $CR \leq 0.10$ ). So the level of consistency is satisfactory and effective in making ANP decisions. However, on the other hand, if it is greater

than 10 percent, it means that the assessment that has been carried out is random and needs to be corrected. The CR value obtained is 0.081, which means less than 0.10. So the level of consistency of the criteria for selecting the location of the Indonesian Buffer Zone in anticipating increased conflict escalation in the Indo-Pacific region is acceptable, satisfactory and effective.

### Creating a Supermatrix

The super matrix represents interactions and relationships between criteria, subcriteria and location alternatives. This matrix reflects the dependencies between these elements in the decision-making process. The formation of super matrix calculations in this research is balanced using Super Decisions software. This software helps in:

1. Calculates unweighted and weighted supermatrix matrices.
2. Calculates the supermatrix limit, which shows the relative priority between alternative locations.

The results of supermatrix calculations, including unweighted supermatrix, weighted supermatrix, and bounding supermatrix, are presented in Appendix 3.

### Determining Ranking Alternatives

Below is the picture of the normalized limit values by cluster for each alternative along with their ranking.

Here are the priorities.				
Icon	Name		Normalized by Cluster	Limiting
No Icon	Pulau Berhala		0.08089	0.039764
No Icon	Pulau Brass		0.04655	0.022884
No Icon	Pulau Fani		0.04732	0.023262
No Icon	Pulau Fanildo		0.04631	0.022766
No Icon	Pulau Marampit		0.09928	0.048807
No Icon	Pulau Marore		0.05409	0.026592
No Icon	Pulau Miangas		0.14676	0.072148
No Icon	Pulau Nipa		0.08372	0.041158
No Icon	Pulau Rondo		0.03945	0.019393
No Icon	Pulau Sekatung		0.35561	0.174817
No Icon	Indonesian Buffer Zone		0.00000	0.000000

Figure 4.16 Alternative weighting with Super Decisions software

Figure 4.16 shows four alternative locations for the Indonesian Buffer Zone in Anticipating Increased Conflict Escalation in the Indo-Pacific Region, namely: Rondo Island, Berhala Island, Nipa Island, Sekatung Island, Miangas Island, Marore Island, Marampit Island, Fani Island, Fanildo Island, and Brass Island. Analysis with Super Decision software shows Sekatung Island as

the best choice with a weight of 0.3556, Miangas Island (0.1468), Marimpit Island (0.0993), Nipa Island (0.0837), Berhala Island (0.0809), Marore Island (0.0541), Fani Island (0.0473), Brass Island (0.0466), Fanildo Island (0.0463) and Rondo Island (0.0395). So, Sekatung Island is recommended, because it has the highest score in terms of the established criteria.

## CONCLUSION

Berdasarkan hasil Analisis Game Theory terhadap skenario strategi terbaik Indonesia dalam mengantisipasi peningkatan eskalasi konflik di Indo-Pasifik yaitu dengan melaksanakan strategi pembangunan kapasitas maritim dan pertahanan untuk melindungi kedaulatan nasional dengan melaksanakan pembangunan Indonesian Buffer Zone (IBZ) dalam rangka menangkalkan ancaman keamanan. Berdasarkan proses metode Delphi dengan melibatkan dua putaran survei yang dilakukan terhadap expert judgement, dengan tujuan mengumpulkan dan menyempurnakan pendapat hingga mencapai konsensus. Hasil evaluasi menunjukkan bahwa didapat kriteria umum (letak, mobilitas, dukungan, dan keamanan), kriteria taktis (kerawanan, alur, bahaya navigasi, dan komunikasi) dan kriteria teknis (kemampuan koordinasi, penyidikan, dan opsamla) terbukti valid (raters agreement) dalam pengukuran variabel persepsi Indonesian Buffer Zone dalam mengantisipasi peningkatan eskalasi konflik di Kawasan Indo-Pasifik melalui metode delphi putaran kedua. Dalam penentuan lokasi Indonesian Buffer Zone dengan menggunakan metode ANP terpilih Pulau Sekatung terletak di ujung utara Kepulauan Natuna, Provinsi Kepulauan Riau. Lokasi ini sangat strategis karena berada di Laut Cina Selatan, yang merupakan kawasan dengan kepentingan geopolitik tinggi. Letaknya yang dekat dengan jalur pelayaran internasional menjadikannya sangat penting untuk pengawasan maritim untuk mengantisipasi peningkatan eskalasi konflik di Kawasan Indo-Pasifik.

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