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Development Strategy of Navy Base Capability in Realizing Maritime Security of Traffic Separation Scheme Lombok Strait

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Abstract

Maritime Security means that the maritime area can be controlled, safe, and free from various threats or disturbances. The Indonesian Navy base is part of System Integrated Fleet Weapons (SSAT) which has the function of carrying out maritime security in its working area in the form of operation security sea with deploy all the strength and abilities it has. The Lombok Strait is one of the chokepoints important in The cross voyage south of ALKI II. Enforcement The Lombok Strait Traffic Separation Scheme (TSS) is one of the efforts of the Indonesian government to control the sea in this region. The Indonesian Navy as the driving force organization defense and security maritime, has Denpasar Navy Base and Mataram Navy Base which are adjacent directly to the Lombok Strait TSS. Therefore, that development strategy is needed capability from the second Indonesian Navy Base to realize and guarantee maritime security from various threats like a violation of navigation, violation of law, violation of sovereignty, and threats source Power nature. Determination of development strategy This started with identifying variables that influence the capability Indonesian Navy Base. The next method of modeling System Dynamics uses now reciprocal relationship between variables, which is then done simulation model so that the obtained scenario alternative is best. Scenario results from modeling and simulation that have been done, can become a consideration for the leadership of the Indonesian Navy in determining the right and optimal strategy for the development capability of Denpasar and Mataram Indonesian Navy Bases so that capable realize security maritime in TSS Lombok Strait.

Keywords: *Maritime Security, Capability Indonesian Navy Base, Lombok Strait TSS, System Dynamic Method.*

Introduction

The struggle of the Indonesian nation to realize unity and oneness a unified nation throughout the archipelago as an Archipelagic State was introduced in *the* Declaration Juanda December 13, 1957, which stated that all waters around, between, and connecting the islands of Indonesia are the part that is not inseparable from the jurisdiction of the Unitary State of the Republic of Indonesia (NKRI). The concept of Indonesia as an Archipelagic State was Then recognized worldwide through the International Law of the Sea Convention, or *United Nations Convention on The Law of The Sea* (UNCLOS) 1982 which was ratified in Law of the Republic of Indonesia Number 17 of 1985. Recognition of the principle of an archipelagic state brings consequences for Indonesia with the obligation to accommodate and respect legitimate interests and rights of specific user countries the waters of an archipelagic state, such as right passing by for ships and planes air foreigners who pass through channel sea archipelago so that Indonesia proposed 3 (three) official Indonesian Archipelagic Sea Lanes (ALKI) accepted by *the International Maritime Organization* (IMO) at the 69th Plenary Session *of the Maritime Safety Committee* (MSC) on 19 May 1998. The determination of ALKI in addition to bringing impact positive for activity national For people's welfare, also raises a potential threat to interest national.

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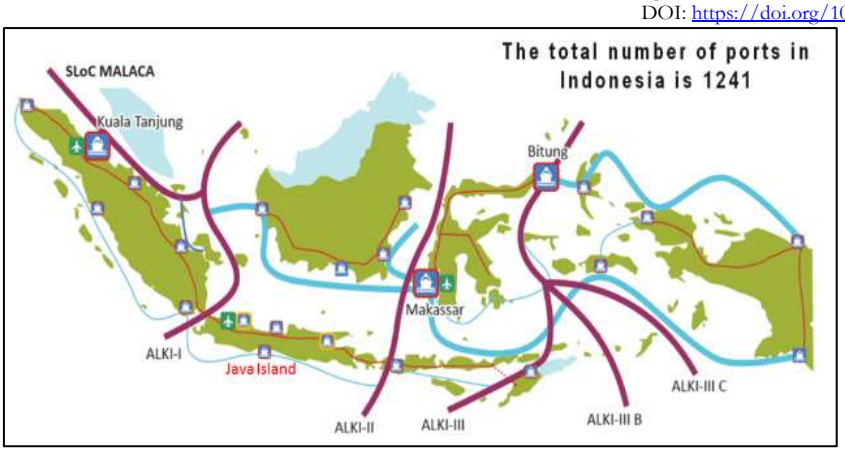

Figure 1. Map of the Indonesian Archipelago Sea Lanes (ALKI)

Between the third ALKI, the ALKI II pathway becomes a track alternative after ALKI I which connects Ocean Pacific and Ocean Indies. Dense Then cross-sailing in the Straits of Malacca and the heating up conflict in the South China Sea make boat world cruises tend to choose the ALKI II pathway. One of the straits in ALKI II which includes 4 (four) *chokepoints* international in Indonesia is the Lombok Strait. Traffic sailing in the strait This Enough crowded. According to data from the Ministry of Transportation in 2018, at least 36,773 ships passed through the Lombok Strait along year. See the complexity of cruises with the risk of high accidents and worries about damaging area conservation maritime in the Lombok Strait, the Indonesian government proposed the enforcement *Traffic Separation Scheme* (TSS) in the Lombok Strait which then IMO approved through the 101st IMO MSC Session in London in 2019.

A year after IMO was approved, TSS Lombok Strait and Sunda Strait officially enforced on July 1, 2020, through a Decree of the Minister of Transportation Number 129 of 2020. Implementation of this TSS at a time demands consequences for the Indonesian government, namely: (1) guarantees safety cruise on the congested TSS Then cross voyage; (2) ensure that the waters in Indonesia are safe; and (3) ensure safety, protection environment maritime, security, growth economy, and provision goods international. The steps that are implemented government among other things to complete means infrastructure safety navigation in the form of *Vessel Traffic Services* (VTS), Coastal Radio Stations (SROP), and Navigational Aids Shipping (SBNP), as well as *most updated* TSS map. The Indonesian government is also preparing regulations as well as Standard Operational Procedure (SOP) for the implementation of patrol and operations security maritime use support safety sailing on the TSS Lombok Strait.

Several institutions enforce the law at sea including the Indonesian Navy, Maritime Security Agency (Bakamla), Water and Air Police (Polairud), Ministry of Maritime Affairs and Fisheries (KKP), Directorate General Maritime Transportation (Directorate General of Transportation) through Unity Coast Guard (KPLP), National Search and Rescue Agency (Basarnas), Directorate General of Customs and Excise (DJBC), Directorate General Immigration (Directorate General of Immigration), as well as The local regional government (Pemda) has obligations and authorities in guard security maritime in TSS Lombok Strait. TNI AL as driving motor organization defense and security maritime, on duty plays a core role that is realized through the implementation of Operation Maritime Security. The Indonesian Navy has mobilized unit task operational through Operation Security of ALKI II (OPS PAM ALKI II) involving Indonesian Navy KRI and Aircraft. The existence of Denpasar Navy Base (DPS Navy Base) and Mataram Navy Base (MTR Navy Base) where the working areas intersect directly with the Lombok Strait also share in support implementation operations. With the Lombok Strait TSS coming into force, then patrol maritime must be capable reach the waters of the Lombok Strait routinely and continuously. Ops PAM ALKI II has wide patrol area coverage with composition element limited patrol so that seldom some areas along ALKI II are not covered in a way comprehensive. Anticipate the occurrence of emptiness elements of the Indonesian Navy's KRI and Pesud in the Lombok Strait TSS, then needed role of Indonesian Navy Base DPS and MTR in mobilize the power that is possessed in the form of KAL, Posal, and Posmat. Apart from being a component Supporter unit Operation, the Indonesian Navy Base functions carry out security and

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control sea in its working area in the form of Operation Limited Maritime Security. The width of the Lombok Strait with dynamics unpredictable weather seldom extreme and crowded cruise international ships size giant become challenges that must be faced by element patrol Indonesian Navy Base DPS and MTR. Recorded moment the Indonesian Navy DPS Base only has 1 (one) KAL unit made from *fiberglass* long 28 meters and the MTR TNI AL Base has 2 (two) KALs made of aluminum and 1 (one) KAL from *fiberglass* with 28 meters long. Condition This makes strength The Indonesian Navy DPS and MTR bases are far away from the word ideal. Limited *surveillance* radar and systems detection early accident ship at Posal participate become lack in maximize title Traffic security operations at the Lombok Strait TSS.

Following the problems that exist at the Indonesian Navy Base DPS and MTR, the researcher offers development strategies capability Indonesian Navy Base to carry out Traffic Operations use realize security maritime in the Lombok Strait TSS. Development strategy capability Indonesian Navy Base DPS and MTR started with analyzing the conditions Indonesian Navy Base, identifying potential threat maritime in the Lombok Strait TSS, and simulating it in the system model dynamic. System method dynamic is used Because own excellent ability to give a description simulation to the impact that appears from implementation development strategy scenario capability The Indonesian Navy base is faced with a high level of security maritime in the Lombok Strait TSS. Modeling this also has flexibility in the application and does not bother the system with the real thing observed.

The formulation problem in the study namely "How is the Development Strategy Capability Indonesian Navy Base in Realizing Maritime Security in the Lombok Strait TSS". Next from the formulation problem mentioned above, can arrange several question studies as follows:

How identify influential variables to the capability of Indonesian Navy Base DPS and MTR in carrying out Traffic Operations use realize security maritime in the Lombok Strait TSS?

How to build a model structure with an approach system dynamic to variables, value capability Indonesian Navy Base, and scenario development capability Indonesian Navy Base in realizing security maritime in the Lombok Strait TSS?

How to formulate development strategies for the capability of Indonesian Navy Base DPS and MTR to realize security maritime in the Lombok Strait TSS?

The aims of this research are:

To get influential variables to capability Indonesian Navy Base DPS and MTR in carry out Operations use realize security maritime in the Lombok Strait TSS.

Get model structure with approach system dynamic to variable, value capability Indonesian Navy Base, and scenario development capability Denpasar Indonesian Navy Base in realize security maritime in the Lombok Strait TSS.

Get development strategy capability Indonesian Navy Base DPS and MTR in realize security maritime so that obtained mark security maritime in the Lombok Strait TSS according to with what is expected.

Materials and Methods

Development Strategy

Marrus (2002) defines strategy as a process of determining the leaders ' plans goal - focused peak term long-term organization, accompanied by the compilation of a method or effort how to achieve goals that can achieved. Development strategy is business comprehensive, which requires support from a leader top designed To increase effectiveness and health organization through the use of several technique interventions with apply the knowledge that comes from scientific behavior (Wijaya, 1989). According to Gibson (1990), development strategy is a process that improves the effectiveness organization with an

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integrated desire for an individual will grow and develop an objective organization. Specifically this process is business stage change in a way planning that includes a total system throughout a period certain, and efforts stage change This related to mission organization.

Capability Organization

Quoting theory from Willcocks and Feeny (2006), they define capability organization as a bunch of skills based on source Power human, various orientations, attitudes, motivations, and behaviors that are very different or special so that in context certain own potential For contribute and influence performance business. Meanwhile, McKeen (2008) explains that capability organization shows an indication ability of an organization To do something whereas competence organization reflects how well an organization does it.

Sea Power Theory

Terminology *Sea Power* was first introduced by *Rear Admiral* Alfred Thayer Mahan in his book "*The Influence of Sea Power Upon History:1660-1783"*. Mahan explained that 6 (six) elements are required the main thing that will become the main capital in building a country that has strength in the Big Sea namely : (1) location geography (*geographical position*); (2) structure advance earth (*physical conformation*); (3) area and length of territory (*extent of territory*); (4) character population (*character of the people*); (5) number population (*number of population*); and (6) character government (*character of government*). Mahan (1980) also stated that the sea is one unity (*the sea is all one*) and that Sea No can be fenced, occupied, and defended like land. Control the sea that is ensure use sea For interest alone and close opportunity for against For use it. Mastery sea only can achieved by destroying units against or carrying out a blockade.

Maritime Security Concept

Security maritime is often interpreted differently by each individual and organization depending on various interests in it. Security maritime is not sector independent issue (Ikhtiari, 2010). From the perspective of military security maritime in a way traditionally refers to attention security national in the sense of protecting the integrity territorial a country of threat force armed or use strength armed and protected interest national country wherever located (in the ocean area) (Klein, et al., 2010). According to Suryohadiprojo (2013), security maritime is not only about the enforcement of law at sea only. However, in meaning wide, the sea is a safe area used by users as well as free from threat to use or utilization The sea includes : (1) the open sea from threat violence in the form of piracy, piracy, sabotage of vital objects, mining and acts of terror; (2) free seas from threat navigation caused by conditions geography and hydrography so that can threaten safety shipping ; (3) open sea from threat to source Power the sea, namely in the form of pollution and destruction ecosystem sea; and (4) free sea from threat violation general law applicable national and international.

System Dynamic Methods

System dynamic is a methodology for learning problems around the view problem in a way holistic (whole). Methodology This is not like another methodology that examines the problem with sorts it out become more parts with small and mutual limits. The concept of main system dynamic is understanding How all objects in a system each other interact One with another. System dynamic according to public system dynamic (*system dynamics society*) is a methodology for learning and managing system bait complex turning, as usual, found in the world of business and systems social other.

Sterman (2000) defines system dynamics as a method for increasing learning in complex systems. Next, the method This illustrated like A simulation in a cockpit aircraft for management to understand in Study complex dynamics, understand source resistance (obstacle) in policy, and design more policies effective. Understanding the complexity of the system dynamic based on on theory of nonlinear dynamics and control bait developed back in the disciplines knowledge mathematics, physics, and engineering.

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Legal Foundation

A set regulation law or related legislation with substance or the material being studied so that become a solid foundation study This among others:

- Republic of Indonesia Law No. 17 of 1985 concerning Ratification of UNCLOS 82.
- Republic of Indonesia Law No. 6 of 1996 concerning Indonesian waters.
- Regulation Government Regulation No. 37 of 2002 concerning the Rights and Obligations of Foreign Ships and Aircraft in Exercising the Right to Pass through Archipelagic Sea Lanes Through the Designated Archipelagic Sea Lanes
- Republic of Indonesia Law No. 17 of 2008 concerning Sailing.
- Republic of Indonesia Law No. 34 of 2004 concerning the Indonesian national army.
- Minister of Transportation Decree No. 129 of 2020 concerning the Determination Route System in the Lombok Strait.

Research Methods

Research methods describe design research that includes data sources, procedures, and steps to be taken in carrying out research. Research This started with stage identification problem, and data collection through studies literature and studies field. Then identify influential and modeled variables with a *Causal Loop Diagram*. Next, compile a *Stock Flow Diagram* that can tested its validity. After That can formulate scenarios and analyze the results of simulation scenarios on the model so that obtain results research and conclusion.

Results and Discussion

Research Data Analysis

The implementation of the TSS in the Lombok Strait brings consequences for Indonesia to ensure security maritime in the region. The Indonesian Navy as the driving force organization defense and security maritime, have not quite enough responsibility and authority to realize security maritime in the sea area including in the Lombok Strait. In addition to deploying KRI elements that carry out PAM ALKI II Ops title for securing the Lombok Strait TSS, the Indonesian Navy is also involved The DPS Indonesian Navy Base and the MTR Indonesian Navy Base are active in deploying all the strength and abilities possessed by both This Indonesian Navy Base. Through title operations carried out by the Indonesian Navy Base, namely Opskamlatas, it is expected The Indonesian Navy base can carry out TSS supervision and security, implement support SAR assistance to ships that experience an emergency, carry out detection, identification, and action beginning for ships that violate TSS rules, as well as Keep going coordinate with other *stakeholders* in optimize the security of the Lombok Strait TSS.

Since enforced Indonesian government on July 1, 2020, VTS Benoa has taken note of several violations of navigation carried out by ships passing through the Lombok Strait TSS. Form violations diverse start from boat cross and cross No by the path that has been determined, and violation procedure Where passing ship No can to weave communication with VTS so that No can known type the load being transported.

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Table 1. Shipping Traffic in the Lombok Strait TSS

PERIOD	*CROSSING*	*PASSING*	TOTAL	NAVIGATION
JUL 2020	1095	1189	**2284**	78
AGS 2020	1368	1110	**2478**	51
SEP 2020	1260	1213	**2473**	51
OCT 2020	1309	1173	**2482**	33
NOV 2020	1274	1187	**2461**	39
DEC 2020	1319	1220	**2539**	26
JAN 2021	1383	1310	**2693**	29
FEB 2021	1224	1077	**2301**	17
TOTAL	**10232**	**9479**	**19711**	**324**

Variables Analysis

In the research with method system dynamic, primary and secondary data that has been collected will analyzed and identified To determine variables That are only influential to the capability of Indonesian Navy Base, Threat maritime, as well as related matters with mark security maritime in the Lombok Strait TSS.

Variables Identification

Do identification variable is a step beginning in the conceptualization of development strategy capability The DPS Indonesian Navy Base and the MTR Indonesian Navy Base face threat maritime in the Lombok Strait TSS. The purpose of this identification variable is to know the elements that influence and impact to clarify the perception of the system being studied. The identification process variable was implemented with an understanding system through studies literature, interviews, and *brainstorming* with the speaker's expert. *The* variables that influence the system, are then grouped into the Main Model and 2 (two) Sub models namely: (1) Sub model Capability of Indonesian Navy Base, and (2) Sub model Maritime Threats of Lombok Strait TSS.

Causal Loop Diagram Structure

Development strategy implementation model capability Indonesian Navy Base in face threat maritime in the Lombok Strait TSS was created in the structure *Causal Loop Diagram* (CLD). Show connection because consequences and mutual relationship between each variable in the system that already exists pass stage identification.

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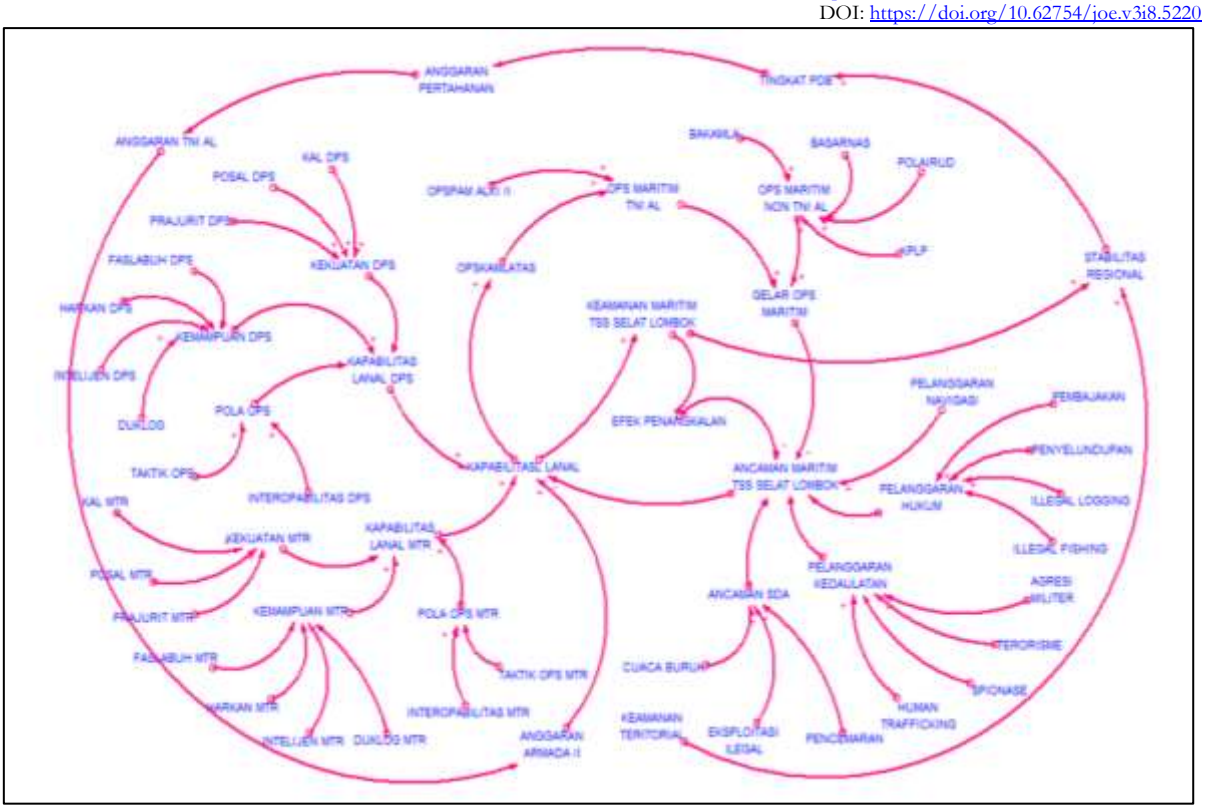

Figure 2. Causal Loop Diagram

Stock Flow Diagram Structure

Stock Flow Diagram (SFD) is a description of more Details from the previous system indicated by CLD. In this diagram influence of time to relatedness between variables is noted, so that every variable is capable show results accumulation For level /*stock* variables and variables that are rate activity system each period time called with *rate/flow*. The structure of the SFD consists of (a) Main Model Structure ; (b) Submodel Capability Indonesian Navy Base; and (c) Submodel Maritime Threats of Lombok Strait TSS.

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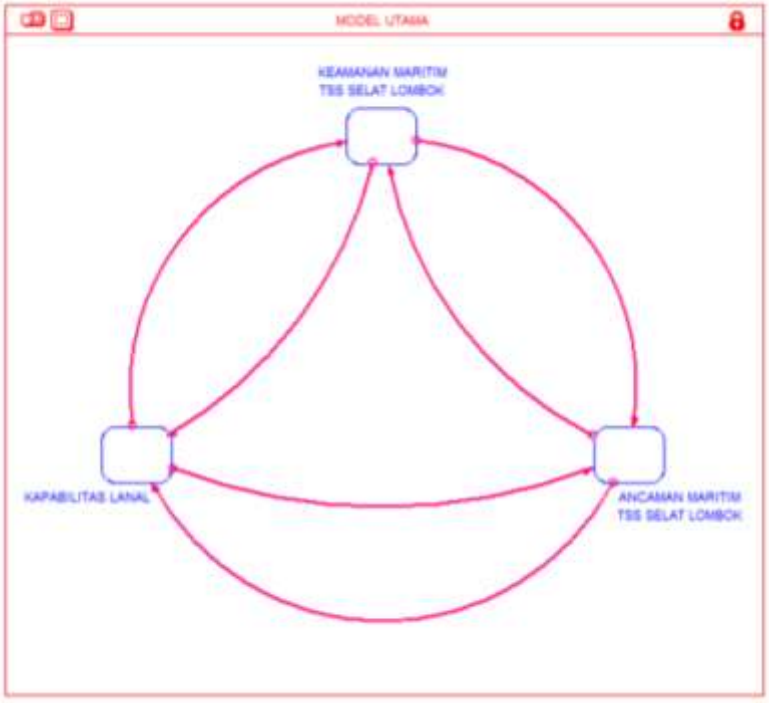

Figure 3. Main Model

Figure 4. Main Model SFD Structure

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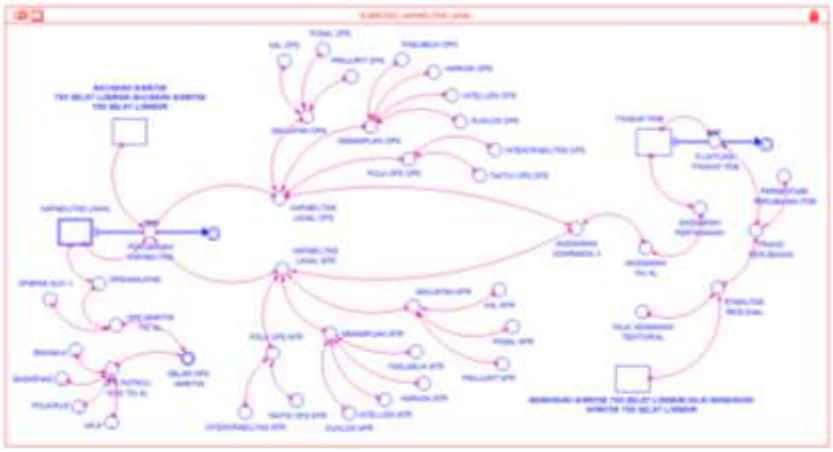

Figure 5. SFD Submodel Structure Capability Indonesian Navy Base

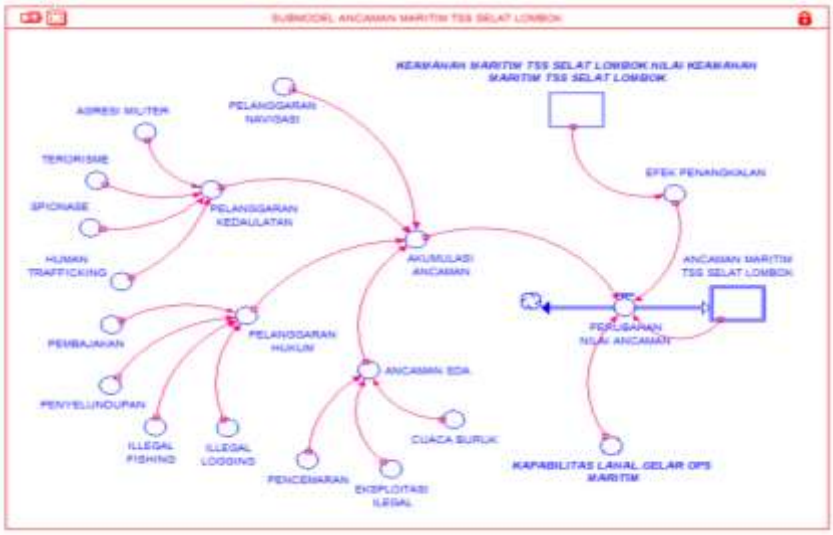

Figure 6. SFD Submodel Structure Maritime Threats of Lombok Strait TSS

Verification and Validation

Model verification is stage testing conformity from a model structure with inspection simulation model program error in *the software*. This is done by inspecting the formulation, equations, and parameters used in the model. Model validation is performed to convince that the model is made in a way comprehensive and has fulfilled objective modeling. The structure and behavior of the model will compared to with structure and behavior system in the state actually, so can known that the model is capable of representing the system. In research This validation was implemented with several methods namely : (a) Structural Model Test; (b) Limitation Adequacy Test ; (c) Model Parameter Test; (d) Condition Extreme Test; and (e) Model Behavior Test.

Index Evaluation of Variables

In research, this arranged index evaluation through studies literature, observation field, and *brainstorming* with source person experts for measure Capability of the Indonesian Navy Base, level Maritime Security, as well as level Maritime Threats in the Lombok Strait TSS.

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Table 2. Index of Capability Indonesian Navy Base

NO	CAPABILITY CONDITION	INDEX	DEGREES
1	UNABLE	**0 – 2.50**	*NOT CAPABLE*
2	LESS FORTUNATE	**2.51 – 5.00**	*DISABLE*
3	CAPABLE	**5.01 – 7.50**	*ABLE*
4	VERY CAPABLE	**7.51 – 10.0**	*EXCELLENT*

Table 3. Index of Maritime Security

NO	WATER CONDITIONS	INDEX	DEGREES
1	DANGER	**0 – 2.50**	*DANGER*
2	LESS SECURE	**2.51 – 5.00**	*WARNING*
3	SAFE	**5.01 – 7.50**	*SAFE*
4	CONDUCIVE	**7.51 – 10.0**	*CONDUCIVE*

Table 4. Index of Maritime Threats

NO	CAPABILITY CONDITION	INDEX	DEGREES
1	LOW	**0 – 2.50**	*LOW*
2	CURRENTLY	**2.51 – 5.00**	*MODERATE*
3	HIGH	**5.01 – 7.50**	*HIGH*
4	VERY HIGH	**7.51 – 10.0**	*DANGER*

Basic Value of Simulation

The assumption score base is used as a mark beginning For running the simulation model. The model is run starting July 2020 which is the period beginning implementation of the Lombok Strait TSS, up to 24 months to front. This is based on the time IMO uses for monitor development from implementation of the Lombok Strait TSS by the Indonesian government for 2 years.

Table 5. Basic Value Input for Model Simulation

NO	VARIABLES	MARK	WEIGHT
1	KAL Denpasar Indonesian Navy Base	(1,2,1)	60%
2	Posal Denpasar Navy Base	(3,5,1)	15%
3	Soldier Denpasar Navy Base	(3,5,1)	25%
4	Ability Faslabuh Denpasar Navy Base	(4,6,1)	15%
5	Ability Harkan Denpasar Navy Base	(3,4,1)	40%
6	Denpasar Navy Base Intelligence Capabilities	(6,8,1)	20%
7	Ability Duklog Denpasar Navy Base	(4,6,1)	25%
8	Tactics Operation Denpasar Navy Base	(6,7,1)	35 %

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9	Interoperability Denpasar Navy Base	(5,7,1)	65%
10	KAL Mataram Indonesian Navy Base	(2,4,1)	65%
11	Postal Mataram Navy Base	(2,4,1)	10%
12	Soldier Mataram Navy Base	(4,6,1)	25%
13	Ability Faslabuh Mataram Navy Base	(4,6,1)	15%
14	Ability Harkan Mataram Navy Base	(3,5,1)	45%
15	Intelligence Capabilities of Mataram Navy Base	(6,8,1)	15%
16	Ability Duklog Mataram Navy Base	(4,6,1)	25%
17	Tactics Operation Mataram Navy Base	(6,8,1)	40%
18	Interoperability Mataram Navy Base	(5,7,1)	60%
19	Violation Navigation	(2,7,1)	35 %
20	Aggression Military	(2,3,1)	10%
21	Terrorism	(3,5,1)	15%
22	Espionage	(5,7,1)	45%
23	*Human Trafficking*	(6,8,1)	30%
24	Piracy	(2,4,1)	15%
25	Smuggling	(7,8,1)	45%
26	*Illegal Fishing*	(5,7,1)	15%
27	*Illegal Logging*	(5,8,1)	25%
28	Marine Pollution	(5,7,1)	35 %
29	Exploitation Illegal	(6,8,1)	25%
30	Bad weather	(7,9,1)	40%

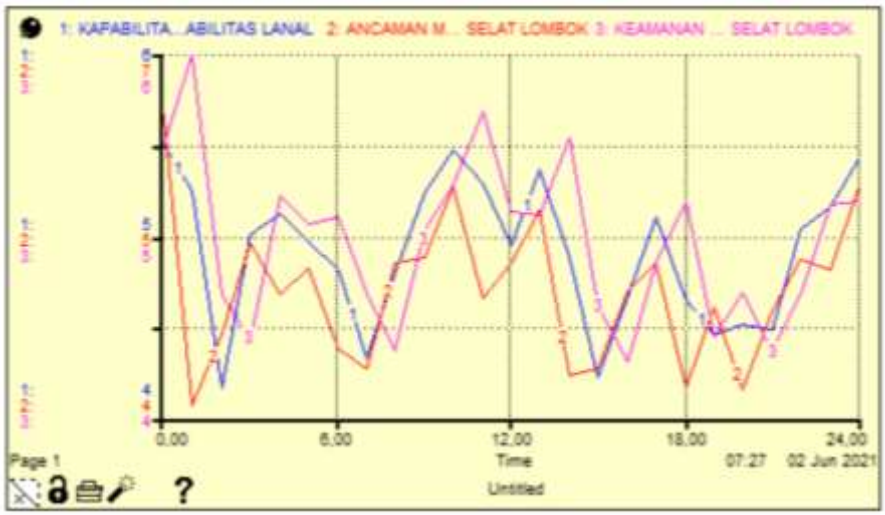

Figure 7. Graph Basic Value Simulation

Change mark Maritime Security up to 24th month (June 2022) revolves around the number **4.70**. including in the "Less Safe" category. While mark Capability The Indonesian Navy base in the 24th month was at the number **4.93** which can categorized as " Underprivileged". Index evaluation Capability Indonesian Navy Base.

Scenario of Indonesia Navy Base Development

After passing the stages of research, the stage furthermore is to determine the development strategy capability Indonesian Navy Base via scenarios constructed and simulated with modeling system dynamics.

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Scenario alternative done with improvement on the variables that influence strengths, abilities, and patterns operations on Capabilities Indonesian Navy DPS Base and Capabilities MTR Indonesian Navy Base with still notice condition reality that makes it possible For performed on the system real in the period the time that has passed set.

Scenario 1 (DPS Navy Base): Done improvement mark variables that have weight influence highest in Capability the Indonesian Navy DPS base includes variables KAL Power Ability Harkan and Interoperability. While that, Capability MTR TNI AL Base does not experience improvement.

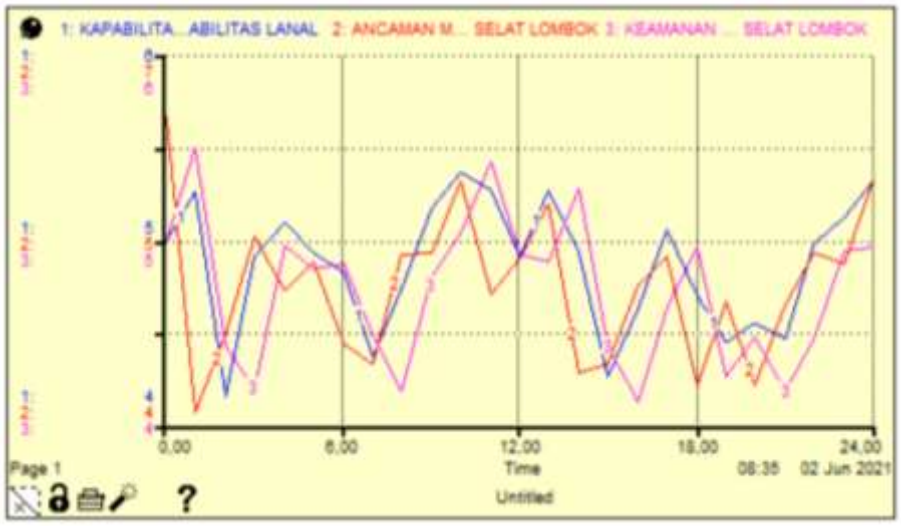

Figure 8. Graph Scenario Development of DPS Navy Base

Obtained results simulation change mark Capability TNI AL Base 24th month on scale **5.32** (Capable) and value Maritime Security on a global scale **4.96 (** Less Safe).

Scenario 2 (MTR Navy Base): Increase mark variables that have weight influence highest in Capability MTR TNI AL Base among other variables KAL Power Ability Harkan, and Interoperability. The Indonesian Navy DPS Base does not experience improvement.

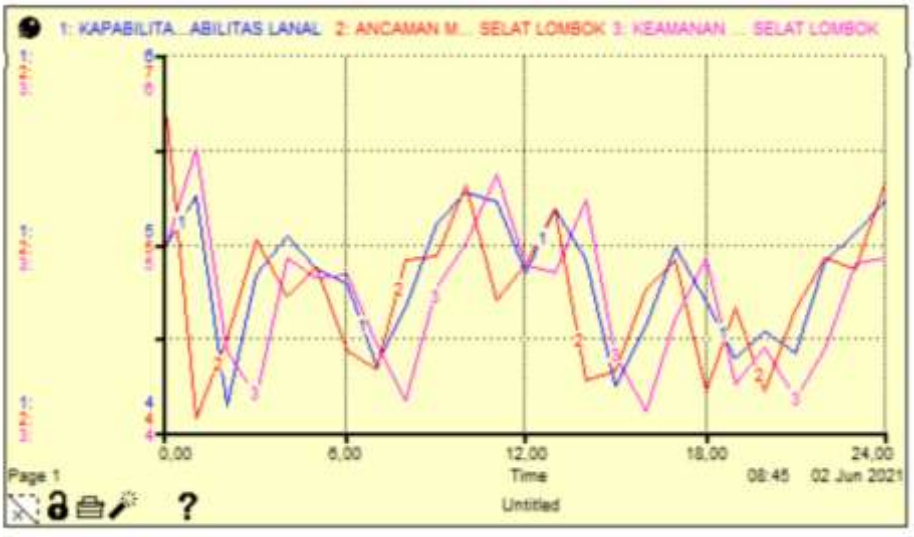

Figure 9. Graph Scenario Development of MTR Indonesian Navy Base

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From the results simulation obtained a change mark Capability TNI AL Base 24th month on a scale **of 5.22** which includes in "Capable" category. While mark Maritime Security in the 24th month on a scale **of 4.92** which falls into the "Less Safe" category.

Scenario 3 (Denpasar Navy Base and Mataram Navy Base): It is a scenario combination between Scenario 1 and Scenario 2 where improvement mark variables that have weight influence The highest is in Capability Indonesian Navy DPS Base and Capabilities MTR Indonesian Navy Base.

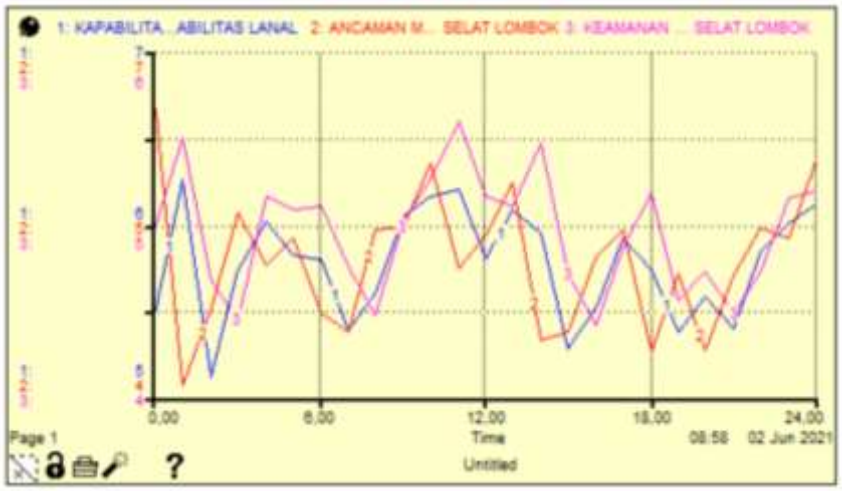

Figure 10. Graph Scenario Development of DPS Navy Base and MTR Navy Base

Obtained results simulation change mark Capability Indonesian Navy base on a scale **5.61 (** Capable) and value Maritime Safety **5.19** (Safe).

Following comparison mark Capability Indonesian Navy base in normal condition, condition simulation with scenario development Capability Indonesian Navy Base DPS, scenario development Capability MTR TNI AL Base, and scenario development combination .:

Table 6. Comparison of Scenario Results

VARIABLES	NORMAL	SCENARIO 1	SCENARIO 2	SCENARIO 3
NAVAL CAPABILITIES	4.93	5.32	5.22	5.61
TSS MARITIME SECURITY	4.70	4.96	4.92	5.19

Conclusion

Based on the development strategy research capability Indonesian Navy Base faces a threat maritime which has implications for value security maritime in the Lombok Strait TSS, can withdraw several conclusions among others:

Identification variables that influence the analysis development strategy formulation Capability Indonesian Navy Base in realize Maritime Security in the Lombok Strait TSS against level capability The DPS Indonesian Navy Base and the MTR Indonesian Navy Base are Power, Ability, and Operation Pattern. Variables Strength formed from sub variables KAL, Posal, and soldier. Variables Ability formed from sub variable Faslabuh, Maintenance and Repair, Intelligence, and Support Logistics. While Operation Pattern Variable arranged on sub variable Tactics Operations and Interoperability Indonesian Navy Base.

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Model structure can built with method modeling system dynamic through analysis evaluation Maritime Security of the Lombok Strait TSS is influenced by the level of Capability The Indonesian Navy bases around TSS are The DPS Indonesian Navy Base and the MTR Indonesian Navy Base as well as the magnitude level Maritime Threats that occur in TSS. Through model simulation, several scenario development Capabilities The Indonesian Navy base that influences mark Maritime Security in the Lombok Strait TSS as follows:

Evaluation condition initial by *an expert*, Capability The Indonesian Navy base is valuable at **4.93** (Underprivileged) with condition Maritime Security on the index **4.70** (Less Safe).

Scenario development Capability of the Indonesian Navy DPS Base focuses on improving variables that have degrees interest highest at the Indonesian Navy Base DPS has an impact on increasing mark Capability The Indonesian Navy base becomes **5.32** (Capable) and value Maritime Security on the index **4.96** (Less Safe).

Scenario development Capability of the MTR Indonesian Navy Base Variable with weight interest highest at the Indonesian Navy Base MTR upgraded his ability so that impact on change mark Capability The Indonesian Navy base becomes **5.22** (Capable) and value Maritime Security on the index **4.92** (Less Safe).

Scenario development combination merges improvement variables in the sub model Capability Indonesian Navy DPS Base and Capabilities MTR Indonesian Navy Base so that obtained change mark Capability The Indonesian Navy base becomes **5.61** (Capable) and value Maritime Security on the index **5.19** (Safe).

Development strategy Capability The Indonesian Navy base can applied to face Maritime Threats in the Lombok Strait TSS are with adding quantity and quality of KAL, increasing ability maintenance and repair to support KAL in patrol, and increasing interoperability operation so that implementation operation can walk in a way effective and efficient.

Future Work

This Study has formulated development strategies Capability Indonesian Navy Base in realizing Maritime Security in the Lombok Strait TSS where the main strategies and simulations modeling can developed in accordance development dynamics system that occurs. Some suggestions can be given For study furthermore that is :

Next Study can compile *a road map* implementation of the development strategy Capability Indonesian Navy base faces a plan term long-term development of defense equipment by the Indonesian Ministry of Defense.

The study furthermore can research about impact development object tour maritime around the Lombok Strait TSS towards Maritime Security and Security Territorial in the area of Bali Island and Lombok Island.

The study furthermore can describe the impact existence of pandemics like COVID-19 on stability security around the Lombok Strait TSS.

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