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## **Management for Lombok Strait with Traffic Separation Scheme (TSS) and Particularly Sensitive Sea Area (PSSA) to Implement the IMO Regulations**

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**Abstract.** The growing field of shipping and the changes in the global military strategy of large countries which of course indirectly affect how well a country acts. As an archipelagic nation, Indonesia has the right to conceptualize a Traffic Separation Scheme to improve navigation safety in the Islands Sea Channel, based on Article 53 (6) of the 1982 United Nations Convention on the Law of the Sea (UNCLOS) 1982 and also based on the IMO General Provisions for Adoption, Appointment and Replacement of the Islands Sea Plate. Traffic Separation Scheme (TSS) is a dividing line between the navigation boundaries of trade ships and the territorial waters of national jurisdictions. The Traffic Separation Scheme (TSS) Scheme is a traffic management route system governed by the International Maritime Organization or IMO. Then we can know that Indonesia has the right and obligation to regulate its own sea. Departing from this, the concept of the Traffic Separation Scheme (TSS) and Particularly Sensitive Sea Area (PSSA) was coined, as an effort of embodiment, a derivation of "lex specialis" International provisions adopted by all sea users in the world. This study uses a qualitative method with an explanatory approach. The procedure used to obtain this information is through literature review. Data analysis in this study uses SWOT analysis (strength, weakness, opportunity and threat) and POAC (planning, organizing, actuating and controlling). The result for this case study, must prepare carefully for the implementation of TSS and PSSA in the Lombok Strait, as a country that has declared itself as the first archipelagic state in the world that has a separation in its narrow sea. Given that the implementation is just counting the days. Indonesia does not need to doubt the benefits of TSS and PSSA itself, because TSS and PSSA become a "win-win solution" for both the user and coastal countries.

**Keywords.** Traffic Separation Scheme (TSS), Particularly Sensitive Sea Area (PSSA), Shipping Safety, Maritime Safety and Security.

## 1. Introduction

The signing of the United Nations Convention on the Law of the Sea on December 10, 1982 in Montego Bay, Jamaica, known as the United Nations Convention on the Law of the Sea 1982 (UNCLOS 1982) made it clear to Indonesia that Indonesia was recognized as an archipelagic state. UNCLOS 1982 is a convention that regulates maritime issues as a whole and integrated. This is the first time the conception of an archipelago as a new international law of the sea and gained recognition from the international community. (Indonesia, K. S. N. R. (2015). Regarding the Islands States specifically regulated in Chapter IV UNCLOS 1982 Article 46 - Article 54. In Article 46 the use of the term Islands Island is explained.

- a) "archipelagic State" means a State constituted wholly by one or more archipelagos and may include other islands;
- b) "archipelago" means a group of islands, including parts of islands, interconnecting waters and other natural features which are so closely interrelated that such islands, waters and other natural features form an intrinsic geographical, economic and political entity, or which historically have been regarded as such.

Article 54: Duties of ships and aircraft during their passage, research and survey activities, duties of the archipelagic State and laws and regulations of the archipelagic State relating to archipelagic sea lanes passage. The UN created a special body to be responsible for the safety and security of shipping and prevention of marine pollution by ships called the International Maritime Organization (IMO) (Indonesia, K. S. N. R. (2015).

The main task of IMO has been to develop and maintain comprehensive regulation in the context of international shipping. Initially, the IMO was named IMCO (Inter-governmental Maritime Consultative Organization) mandated limited to safety-related issues. As an archipelagic country, some of the focus of marine issues in Indonesia include the narrow waters that are crowded by ships both domestic and foreign, namely the regulation of traffic in the strait in Indonesia. Therefore, Sea Lanes of Trade (SLOT) and Sea Lanes of Communication (SLOC) were formed. Both systems are designed to regulate the traffic density of shipping lanes which is indeed very high in intensity due to the rise of global trade. Cause archipelago state will not be separated from various threats that come from the sea and affect security maritime, where maritime security as an integral part of security national. Maritime security threat not only related to the issue of threats such as piracy, acts of terrorism, drug smuggling or trans national organized crime other but also included destruction or pollution of the marine environment. (Rachmat, A. N. 2015).

As the mandate stated in UNCLOS that every country that has ratified it is obliged to guarantee the safety of shipping and make efforts to protect the marine environment. Then along with global demands on Indonesia as an actor (littoral state) which has a very important role in maritime affairs, coupled with the emergence of the vision and mission of President-elect Jokowi to make Indonesia the World Maritime Axis with a united maritime power (unity), prosperity (prosperity), and dignity which certainly makes Indonesia must move quickly and precisely in realizing this. So Indonesia, through the Ministry of Transportation, submitted an IMO regarding the ratification of the TSS in the Sunda Strait and Lombok and the PSSA in Lombok Strait.

Traffic Separation Scheme (TSS) is a scheme of separation of shipping lanes of shipping vessels in opposite directions in a busy and narrow shipping lane. While Particularly

Sensitive Sea Areas (PSSA) are management tools in overcoming and preventing the impact of shipping activities on the marine environment. The establishment of TSS in the two straits is a form of Indonesia's commitment in shipping safety and maritime environmental protection, as well as to improve supervision of ships passing through ALKI I and II, where the two straits are vital and strategic sea transportation routes for international shipping. The TSS in the Lombok Strait will also function as Associated Protective Measures (APMs) to support PSSA in these waters. While the Sunda Strait TSS is more on the regulation of ship traffic to improve shipping safety, especially ship collisions.

Two years Indonesia fought for the Traffic Separation Scheme (TSS) to produce results, the decision of the 6th Plenary International Maritime Organization (IMO) Navigation Communication and Search and Rescue (NCSR) Subcommittee on January 25, 2019 which then scheduled the receipt and approval of the Traffic Traffic Separation Scheme (TSS) in Indonesia and subsequently will be adopted in the 101st IMO Maritime Safety Committee (MSC) meeting in June 2019, in which the system will be implemented and broadcast throughout the world in June 2020. Meanwhile, for PSSA, the discussion began in 2008 and was hampered by internal problems. It started seriously again as of 2016 and is still in the process of being approved. With the approval of TSS and PSSA which will follow later, in addition to the various benefits to be gained, it is not impossible that there will be consequences and challenges that must be faced by Indonesia. Although Indonesia has the right to guarantee safety and protect its territory from various threats that come, this is certainly without harming the rights of international users. Therefore this study will describe the consequences and challenges as well as management strategies for the implementation of TSS and PSSA and the impact of TSS and PSSA implementation, both for Indonesia as a coastal country and for international users. (Haras, Y. M, 2017).

## **2. Research Methods**

This study uses a qualitative method with an explanatory approach. The procedure used to obtain this information is through literature review. Data analysis in this study uses SWOT analysis (strength, weakness, opportunity and threat) and POAC (planning, organizing, actuating and controlling). Sutawidjaya, A. H. Rosalendro Eddy Nugroho, dan Masyhudzulhak.(2015).

## **3. Discussion**

Management is the process of planning, organizing, leading and controlling the use of resources to accomplish performance goals (Schermerhorn, 2005). Fayol, who is recognized as the "Father of Modern Management" classified the study of management into several functional areas. There are planning, organizing, directing, coordinating and controlling. Planning, helping an organization define and meet its objectives by outlining what an organization must do to be successful. Organizing, turning plans into action through leadership and motivation. Commanding (Directing), providing the leadership direction and guidance for accomplishment of a mission or task. Coordinating, managing independent effort and resources for a timely accomplishment the task of product. Controlling, making sure the actual performance of the organization conforms with the performance planned for the organization. (Kaehler, B. and J. Grundei. 2019)

To manage is to forecast and plan, to organize, to command, to co-ordinate and to control. To foresee and plan means examining the future and drawing up the plan of action. To organize means building up the dual structure, material and human, of the undertaking. To command means maintaining activity among the personnel. To co-ordinate means binding together,

unifying and harmonizing all activity and effort. To control means seeing that everything occurs in conformity with established rule and expressed command. (Moroi, Takahashi, 2002) Failure of management will have a systemic impact on the various sequences of implementation in it, both the internalization process and the quality impact, which will certainly hamper the quality of the country. As the first country with TSS, management to carry out perfectly is very urgent in line with world demands. In implementing TSS, management must really be able to function and operate in order to facilitate the achievement of objectives. Therefore through the strategic management of SWOT analysis and the development of POAC principles (Planning, Organizing, Actuating, and Controlling) it is hoped that management can be achieved. George R. Terry (1958) in his book *Principles of Management* divides four basic functions of management namely POAC and David (2006) in his book dividing three important stages in the management process (formulation, implementation and evaluation of strategies) where researchers compare with the object of research (Sukarna, 2012):

**a). Planning (Strategy Formulation)**

Planning is a very important element and is a fundamental function of management, because organizing, actuating and controlling must first be planned. The definition of planning is the activity of selecting and linking facts and making, and using assumptions about the future in terms of visualizing and formulating proposed activities that are deemed necessary to achieve the desired results. (Sondang, 2012). (Sutawidjaya, A. H., & Nawangsari, L. C. (2018, December).

From this definition the writer draws a planning conclusion is an activity to make sequences about the actions to be carried out so that the objectives can be achieved.

One way to assess various planning activities according to Terry is to review is the time dimension, i.e. a.) Long-term planning. b.) Medium-term planning c.) Short-term planning. Whereas in terms of the substance of the planning viz. a) objective. b) policy. c) procedure d) method. e) standard f). budget. (Hunter, D. R., 2004). The planning according to the time dimension is long-term planning, medium-term planning, and short-term planning.

SWOT analysis of the object of this study are:

- a. Strength, is a positive internal condition that provides benefits. The strength of Indonesia in guaranteeing the safety of shipping and protection of the marine environment in the form of TSS legalization which will be followed by the ratification of PSSA, Indonesia has the right to determine the mechanism and form of protection of its territory without overriding obligations in guaranteeing and protecting the marine environment, there are conservation areas that have been nationally recognized, The Lombok Strait is included in the world coral triangle area (Coral Triangle / CT), visionary leader, maritime paradigm changes in various lines,
- b. Weakness, is a negative internal condition that can be in the form of regulations that are not binding most of the implementation of existing laws that are not running, the quality and quantity of human resources and infrastructure are not optimal, public awareness is low,
- c. Opportunity, is the current and future external conditions that benefit Indonesia's progress such as changes in the international world view of Indonesia with the echoing of the world's maritime axis, Indonesia's election as a member of the IMO board category C and IMO's external auditor,
- d. Threats (threats / challenges) are external conditions that are current and future that are unfavourable. This challenge can be in the form of international shipping activities

(waste disposal, ballast water, boat accidents), illegal fishing, less environmentally friendly tourism activities,

In the view of researchers by looking at the functions of each Ministry / Institution and based on the previous explanation. The party responsible for implementing this stage is the Maritime Coordinating Ministry.

**b). Organizing (Strategy Implementation)**

Organizing is a series of jobs that involve many people to occupy certain units, such as managerial, technical and so on. (Djati Juliatriasa dan Jhon Suprihanto, 1998). Actors who will be involved in the implementation of TSS and PSSA later are:

- a. Directorate General of Sea Transportation through the Directorate of Sea and Coast Guard Units (KPLP).
- b. Coordinating Ministry for Maritime Affairs
- c. The Centre for Naval Hydrography and Oceanography
- d. Marine Security Agency
- e. Indonesian Navy
- f. Ministry of Foreign Affairs
- g. Marine and Fisheries Ministry
- h. Ministry of Environment and Forestry

Fulfilment of supporting facilities and infrastructure for shipping safety in TSS areas that have been determined, including Vessel Traffic System (VTS), Coastal Radio Stations (SROP), Sailing Navigation Supporting Facilities (SBNP), as well as up-to-date electronic maps and guarantee the operation of equipment the cruise safety supporting device for 24 hours 7 days.

**c). Actuating (Strategy Implementation)**

The mobilization function is an effort to create a climate of cooperation among program implementing staff so that organizational goals can be achieved effectively and efficiently (Ibnu Syamsi, 1989). The mobilization function is inseparable from other management functions. The function of driving and implementing in other terms is motivating (directing motivation), directing (giving direction), influencing (influencing) and commanding (giving command or order).(Sondang, 2012)

Based on the elaboration, those who play a role in this stage are the Director General of Hubla supported by the Navy and Bakamla in an effort to ensure maritime safety and maritime security, especially through the application of the Lombok Strait and the Sunda Strait. While in order to increase efforts to protect the marine environment through the establishment of the Lombok Straits PSSA, the parties involved in this stage are the KKP as the manager of the conservation area in Nusa Penida, supported by the Ministry of Environment and Forestry. In carrying out their duties, the actors involved in implementing TSS and PSSA must collaborate and coordinate with each other to create synergy. Not only that, even in the division of tasks must be divided according to their respective roles, so that overlapping does not occur. Therefore, Indonesia must have a clear and up-to-date legal formulation, which regulates the division of tasks of each actor. The Indonesian government is also obliged to prepare regulations, both local and national relating to operational and technical matters to support the safety of shipping at the TSS that have been determined. Then, also coordinating and consolidating with agencies and stakeholders for the determination of TSS.

The Lombok Strait is a strait that is being prepared for transit ships that cannot transit in the Malacca Strait and Singapore or ALKI I. The Axis Line closes the island of Nusapenida, and to the northwest, the 10% rule makes the road narrowing used by small fishing boats in

Bali. East of Nusapenida, the width of the navigation channel that can be used for ships headed south has been reduced to less than 3 million. Ships with limited manoeuvrability, because of their size and design, if needed, the area from the west will meet ships heading south, which can facilitate misinterpretations regarding ax planning and previously cancelled routes that can be overcome. (Halliwell Adrian J, 2018)

#### **d). Controlling (Strategy Evaluation)**

Supervision is defined as an effort to determine what is being done by assessing the results or achievements achieved and if there are deviations from the predetermined standards, then efforts are made immediately to improve, so that all results or achievements are achieved in accordance with the plan. (Soewarno, 2007) From this definition there is a possibility that an oversight will arise that is negative and is a barrier, because supervision is seen as an activity to find and correct deviations that are or have occurred. Considering that basically in any activity there are often errors, weakening of business, ineffectiveness of the instructions, resulting in unwanted deviations, the function of supervision is absolutely necessary. Supervision is a positive activity, because it directs the activity in such a way as to achieve its goals, or directs the activities towards the standards that have been determined in accordance with the plans made (Sarwoto, 1991).

Supervision is the most important point in the implementation of TSS and PSSA, because with the supervision we can evaluate any deficiencies and predict losses that can arise now or in the future. The results of this evaluation will determine whether the management of the TSS and PSSA implementation is running properly.

In preparation for the fulfilment of facilities and infrastructure to support shipping safety in TSS areas such as Vessel Traffic Systems (VTS), Coastal Radio Stations (SRQP), Sailing Navigation Supporting Facilities (SBNP), electronic maps and regulations related to operational and technical Indonesia are fully prepared, it's just that the availability of the amount that is felt is still lacking to maximize the course of the TSS. For example Vessel Traffic System (VTS) which should be added at several points in order to maximize surveillance in water. Directorate of Sea and Coast Guard Units (KPLP) of the Directorate General of Sea Transportation which is tasked with formulating and implementing policies in the field of patrol and security, law enforcement and advocacy, orderly sailing, as well as disaster management and underwater works, for the safety of shipping and security of the Sunda Strait and Lombok Strait TSS, are fully prepared for their duties. But because it is true that the TSS itself will only be implemented and broadcast in June 2020, the policy itself has not yet been disseminated or is still being approved.

KPLP has also prepared its staff to oversee the implementation of the TSS by conducting patrols and preparing a quick response team related to shipping accidents / accidents including areas close to the Particularly Sensitive Sea Area (PSSA) in the Nusa Penida area, the Lombok Strait and surrounding areas. Indonesia must be prepared to strengthen shipping and traffic control infrastructure through vessel traffic services (VTS) stations in both straits, strengthen shipping telecommunications services and marine safety information (MSI) through coastal radio stations, coastal use of ship identification devices or automatic identification system (AIS) class B on non-Solas vessels, socialization, and public education. The division of tasks in supervising the implementation of the Traffic Separation Scheme (TSS) itself is: The Ministry of Maritime Affairs and the Center for Hydrographics and Oceanography will also produce sea maps, both paper maps and electronic maps, to support the implementation of the TSS.

Passing the TSS ratification, making Indonesia the first archipelagic state in the world to have this separation. TSS is important for Indonesia because it has a strategic and significant function to ensure economic growth in the maritime sector. Not only that, TSS and PSSA ensure the safety of shipping and environmental sustainability in the Lombok Strait itself.

In the beginning, many countries felt that the existence of TSS in the Sunda Strait and the distribution of lines through ships diverted to the Lombok Strait would increase the cost of boat trips, but once again the user countries thought if indeed the Lombok Strait had provided a path that was so safe and free from threats any danger, it is worth it, because if an accident occurs, the user state will suffer a far greater loss. Not only that, coastal countries will also feel the consequences of the accident, of course this will affect the good relations between the two countries.

#### **4. Conclusion**

Based on discussion, it can be concluded that Indonesia must prepare carefully for the implementation of TSS and PSSA in the Lombok Strait, as a country that has declared itself as the first archipelagic state in the world that has a separation in its narrow sea. Given that the implementation is just counting the days.

Indonesia does not need to doubt the benefits of TSS and PSSA itself, because TSS and PSSA become a "win-win solution" for both the user and coastal countries. Currently, Indonesia only needs to maximize the obligations that have been carried out, by providing maximum service for the user country as well as for the country of Indonesia itself.

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