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The Prospect of Particularly Sensitive Sea Area (PSSA) Designation in Lombok Strait

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Abstract

International Law, specifically UNCLOS 1982, MARPOL 73/78, and SOLAS 1974 give mandates to every State to carry out protection and prevention of marine pollution. As one form of protection and prevention pollution is establishing a Particularly Sensitive Sea Area (PSSA). Since 2016, the Indonesian Government has submitted a proposal to designate the Lombok Strait as one of the PSSA. This study aims to analyze and provide an understanding of the prospects for the establishment of PSSA in the Lombok Strait including the Gili Islands and Nusa Penida Island after the approval of the Traffic Separation Scheme (TSS) in 2019 based on International Law. This study uses a juridical-normative approach with descriptive analytical research to describe and analyze the international legal instruments used. The research data were obtained from the results of library research and interviews with related institutions such as the Ministry of Foreign Affairs and the Ministry of Transportation of the Republic of Indonesia. Data processing conducted by qualitative analysis methods. This study concludes that the specific PSSA arrangements are governed by the IMO Resolution A.982 (24) related to the PSSA Guidelines as PSSA is not explicitly regulated in UNCLOS 1982. The Lombok Strait is highly prospective to be established as a PSSA as the Lombok Strait has fulfilled the criteria of the IMO accompanied by the mandate of protection and prevention of the marine environment from UNCLOS 1982, MARPOL 73/78 and SOLAS 1974. In 2019, the designation of TSS in Lombok Strait was approved so that discussions related to PSSA can continue. However, The PSSA discussed at the IMO session requires the approval of other countries that enjoy the rights of passage through the Lombok Strait. Accordingly, the attribute section of the PSSA determination proposal in the Lombok Strait needs to be improved to convince that the Lombok Strait does have the urgency to be established as a PSSA.

Keywords: Particularly Sensitive Sea Area, Lombok Strait, International Maritime Organization

Prospek Penetapan *Particularly Sensitive Sea Area* (PSSA) di Selat Lombok

Abstrak

Hukum Internasional, khususnya UNCLOS 1982, MARPOL 73/78, dan SOLAS 1974 memberikan mandate kepada setiap negara untuk melakukan perlindungan dan pencegahan pencemaran di laut. Salah satu perwujudannya yaitu dengan membentuk Kawasan Perairan Sensitif/Particularly Sensitive Sea Area (PSSA). Sejak tahun 2016, pemerintah Indonesia telah mengajukan proposal penunjukan Selat Lombok sebagai PSSA. Penelitian ini bertujuan untuk menganalisa dan memberi pemahaman terkait prospek penetapan Kawasan Perairan Sensitif (PSSA) di Selat Lombok termasuk Pulau Gili dan Pulau Nusa Penida pasca ditetapkannya Skema Pemisah Lalu Lintas (TSS) pada tahun 2019 berdasarkan Hukum Internasional. Penelitian ini menggunakan pendekatan yuridis-normatif dengan jenis riset deskriptif analitis untuk

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menggambarkan dan menganalisis instrumen-instrumen hukum internasional yang digunakan. Data penelitian diperoleh dari hasil penelitian kepustakaan dan wawancara dengan lembaga terkait seperti Kementerian Luar Negeri dan Kementerian Perhubungan Republik Indonesia. Pengolahan data dilakukan dengan metode analisis kualitatif. Penelitian ini menyimpulkan bahwa pengaturan PSSA secara spesifik dimuat di dalam Resolusi IMO A.982 (24) terkait Pedoman Identifikasi dan Penetapan PSSA. Hal ini merupakan aturan lanjutan dikarenakan PSSA tidak diatur secara eksplisit di dalam UNCLOS 1982. Tahun 2019 penetapan Skema Pemisah Lalu Lintas TSS sebagai salah satu syarat pembentukan PSSA di Selat Lombok telah disetujui sehingga pembahasan terkait PSSA dapat terus dilanjutkan. Namun masih diperlukan persetujuan negara-negara lain yang memiliki hak melewati Selat Lombok. Oleh karenanya, perlu penguatan proposal khususnya terkait bagian atribusi untuk lebih meyakinkan urgensi penetapan Selat Lombok sebagai PSSA.

Kata Kunci: Kawasan Perairan Sensitif, Selat Lombok, Organisasi Maritim Internasional

A. INTRODUCTION

Along with times, technology in navigation and shipping activities continues to sophisticatedly develop. Nonetheless, shipping activity is one of the contributors to pollution. Pollution can be defined as “the introduction by man into the environment of substances or energy liable to cause hazards to human health, harm to living resources and ecological systems, damage to structure or amenity, or interference with legitimate uses of the environment”.¹

This issue took the States' attention to protect the marine environment from pollution. Numbers of international instruments regulate shipping activities on a global level by addressing different environmental hazards that may result by shipping.² Such hazards include accidental and intentional pollution (e.g. operational discharge) including physical damage to marine habitats or organisms.³

The world has experienced several incidents of marine environmental pollution that give enormous impacts, such as the Amoco Cadiz incident. Amoco Cadiz contains 1,604,500 barrels (219,797 tonnes) of crude oil.⁴ Bad weather caused the destruction of all parts of the ship before the oil could be

pumped out of the wreck, resulting in the entire cargo of crude oil (belonging to Shell Company) and 4,000 tons of fuel oil spilled into the sea. After the Amoco Cadiz incident, there was also the “Gulf War Oil Spill” tragedy, which was one of the worst oil spill incidents in history. Oil spills during the Gulf War spewed 240 million gallons of oil with volume of approximately 1,300,000 m³ into the Persian Gulf after Iraqi troops opened oil well valves and pipelines when they withdrew from Kuwait in 1991. The thickness of the oil that pollutes the oceans reached 13 cm.⁵

Indonesia had also experienced a similar case in January 1975. The Showa Maru tanker carrying crude oil from the Persian Gulf with final destination Japan, spilled 1 million barrels of oil in the Malacca Strait.⁶ As a result, local fishermen are struggling to acquire fish in the area. Other than that, residents who rely on firewood for their livelihoods are also affected because the oil spill from Showa Maru tanker caused damage and drought to the mangroves, their source of woods.

Those conditions are very detrimental, especially for communities around the coast, because they have a major impact on the damage of ecosystems and marine life, which

¹ National Oceanic and Atmospheric Administration, Ocean Pollution, 2018, [online] <https://www.noaa.gov/education/resource-collections/ocean-coasts-education-resources/ocean-pollution>, accessed on 11th of Desember 2019.

² Thomas Dux, *Specially Protected Marine Areas in the Exclusive Economic Zone (EEZ)*, Hamburg: LIT Verlag, 2011, p. 262.

³ *Ibid.*

⁴ Keyuan Zou (Ed.), *The Belt and Road Initiative and the Law of the Sea*, Boston: Brill Nijhoff, 2020, p. 59.

⁵ Helen Abramson, et.al., *Where on Earth: Geography as You've Never Seen It Before*, United States: DK Publishing, 2013, p. 98.

⁶ Sulistyono, “Dampak Tumpahan Minyak (Oil Spill) di Perairan Laut pada Kegiatan Industri Migas dan Metode Penanggulangannya”, *Jurnal Forum Teknologi*, Vol.3, No.1, 2013, p. 51.

have economic value for the community. Hence, environmental regulation, especially the marine environment, is very important to protect the marine environment from the pollution and to improve shipping safety to prevent the accidents. The International Maritime Organization (IMO) as a United Nations (UN) specialized agency with responsibility for the safety, security of shipping activities, and the prevention of marine and atmospheric pollution by ships, has issued various regulations relating to this matter.⁷ One of IMO's breakthroughs in preventing and minimizing pollution at sea is the Particularly Sensitive Sea Area (PSSA) designation. In IMO Resolution A. 982 (24) (hereinafter referred to as "PSSA Guidelines") PSSA is defined as an area that needs special protection through action by IMO because of its significance for recognized ecological, or socio-economic, or scientific reasons, and which may be vulnerable to damage by international maritime activities.⁸ PSSA is expected to be able to prevent and minimize pollution at sea caused by shipping activities, especially international shipping activities.

Today, there are 17 countries that have PSSA. Indonesia, as the largest archipelago in the world with many busy straits, have tried to design PSSA such as Lombok Strait including Gili Islands and Nusa Penida Islands. The designation of this location as PSSA in Indonesia has been discussed and conveyed by Indonesia since the 3rd Regional Meeting of IMO-NORAD Project on the Prevention of Pollution from Ships through the Adoption of Particularly Sensitive Sea Areas (PSSA) within the East Asian Seas Region, which was held in Lombok in July 2016. Until now, the discussions regarding the designation of PSSA in the Lombok Strait are still ongoing at the

IMO's meeting and the Indonesian Government is still trying to convince the IMO, especially the Marine Environment Protection Committee (MEPC) and also the user States to agree to the designation proposal.

Before submitting a proposal for the designation of PSSA in the Lombok Strait, Indonesia already had a national legal instrument regulating the protection of the marine environment, specifically in the Gili Islands and Nusa Penida Islands according to the Decree of the Minister of Marine Affairs and Fisheries of the Republic of Indonesia. Nusa Penida Islands is designated as a conservation area by Decree of the Minister of Marine Affairs and Fisheries Number 24/KEPMEN-KP/2014,⁹ while Gili Islands is designated as a conservation area by Decree of the Minister of Marine Affairs and Fisheries Number 57/KEPMEN-KP/2014.¹⁰ The conservation area defined by the Decree of the Minister of Marine Affairs and Fisheries is commonly known as the Marine Protected Area (MPA). Even though MPA has the purpose of protecting the marine environment, the fact is that MPA is different from PSSA. MPA is an area of tidal areas and beyond, including waters, flora and fauna, history and cultural characteristics of which are officially designated as partially or completely protected areas by the national legislation.¹¹ While, PSSA is an area that needs special protection through action by IMO because of its significance for recognized ecological or socio-economic or scientific reasons and which may be vulnerable to damage by international maritime activities. Basically, MPA and PSSA are two issues that have an important role in protecting the marine environment.

⁷ International Maritime Organization Conventions, List of Convention, [online] <http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/Default.aspx>, accessed on 2nd of Desember 2019.

⁸ International Maritime Organization (IMO) Resolution A. 982 (24), *Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas (PSSAs)*, 1 December 2005, Annex Paragraph 1.2.

⁹ Decree of the Minister of Marine Affairs and Fisheries Number 24/KEPMEN-KP/2014.

Available at: https://peraturan.bkpm.go.id/jdih/userfiles/batang/24_KEPMEN_KP2014.pdf

¹⁰ Decree of the Minister of Marine Affairs and Fisheries Number 57/KEPMEN-KP/2014.

Available at: <http://jdih.kkp.go.id/peraturan/2-1-57-kepmen-kp-2014.pdf>.

¹¹ See *International Union for Conservation of Nature (IUCN)*, "Marine Protected Area – Why Have Them?", <https://www.iucn.org/content/marine-protected-areas-%E2%80%93-why-have-them>, accessed on 9th of Desember 2019.

PSSA is a part of MPA which was developed using tools from IMO. While the MPA determination is based on national legislation (such as Presidential Regulations, Ministerial Regulations, etc.), the PSSA determination is based on the IMO Resolution which is then strengthened by national legislation. Other than that, MPA formation is not accompanied by any Associated Protected Measures (APM), while the PSSA appointment must be accompanied by APM. Accordingly, marine environmental protection measures need to be taken by utilizing international legal instruments supported by national legal instruments to prevent and/or reduce marine environmental damage or pollution. Therefore, this article discusses the prospects that Indonesia has in its efforts to designate a PSSA in the Lombok Strait including Gili Islands and Nusa Penida Islands under international law, especially when the Traffic Separation Scheme (TSS) as one of the APM has been designated in 2019.

B. GENERAL OVERVIEW ON PARTICULARLY SENSITIVE SEA AREA (PSSA)

1. History of Particularly Sensitive Sea Area (PSSA)

PSSA was first introduced on the IMO agenda by the Swedish delegation at the International Conference on Tanker Safety and Pollution Prevention (TSPP) in February 1978.¹² One of the resolutions from the conference is TSPP Resolution 9 which invites all IMO member countries to inventorise seas around the world that require special protection from pollution given the importance of the sea in terms of marine resources or scientific interests.¹³ The concept of PSSA began to be discussed in 1986 to 1991. One of the results of this discussion was the Malmo Declaration in 1990, which influenced IMO's decision especially in

recommending PSSA protection measures.¹⁴

The formulation of the PSSA concept reached its peak when IMO adopted IMO Assembly Resolution A. 720 (17) concerning Guidelines for the Identification and Designation of Particularly Sensitive Sea Area in 1991. Now, Guidelines for the Identification and Designation of PSSA used is IMO Assembly Resolution A. 982 (24) concerning Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Area which was adopted in 2005. The guidelines consist of regulations regarding international shipping activities and the marine environment, process, criteria, vulnerability to the impact of international shipping, protection measures, procedures in designating PSSA, also Associated Protective Measures (APM), as well as the implementation of PSSA and APM.

2. Definition and Criteria of Particularly Sensitive Sea Area (PSSA)

As mentioned previously, according to PSSA Guidelines, PSSA is an area that needs special protection through action by IMO because of its significance in ecological, socio-economic or scientific reasons that may be vulnerable to be damaged by international maritime activities. In the appointment of PSSA, there are two elements that must be fulfilled, namely the attributions and conditions of shipping activities. Attributions are divided into ecological criteria (uniqueness or rarity, critical habitat, dependency, representation, diversity, productivity, spawning or breeding sites, naturalness, integrity, fragility, and bio-

¹² Julian Robert, *Marine Environment Protection and Biodiversity Conservation: The Application and Future Developments of the IMO's Particularly Sensitive Sea Area Concept*, New York: Springer, 2006, p. 88.

¹³ TSPP/CONF/5, Consideration of draft instruments on tanker safety and pollution prevention and related

recommendations and resolutions, January 13rd, 1978, p.1.

¹⁴ Ryan P. Lessmann, "Current Protections on the Galapagos Island are Inadequate: the International Maritime Organization Should Declare the Islands as Particularly Sensitive Sea Area", *Colorado Journal of International Environmental Law and Policy*, 2004, p. 345.

geographical importance); Social, cultural and economic criteria (social or economic dependence, human dependence, and cultural heritage); also scientific and educational criteria (research, baselines for monitoring studies, and education).¹⁵ While shipping activities consist of vessel traffic characteristics (operational factors, vessel types, traffic characteristics, and harmful substances carried); and natural factors (hydrographical, meteorological, and oceanographic).¹⁶

3. Countries that have Particularly Sensitive Sea Areas (PSSAs)

In 1990, the Great Barrier Reef (GBR) was recognized as the first PSSA at the request of Australia to protect the very vulnerable part of the GBR between Mackay and the Capricorn tropics.¹⁷ After the recognition of the GBR as the first PSSA, IMO conducted various discussions from 1990 to 1991 focused on setting the standards to be used and evaluating the conditions needed for the sea area to be established as PSSA.¹⁸

The determined criterias and methods were listed in IMO Assembly Resolution A.720 (17) concerning Guidelines for the Designation of Special Areas and the Identification of Particularly Sensitive Areas, adopted in November 1991. This resolution is intended to offer a new alternative for coastal states to protect areas within their territorial boundaries. It cannot be denied if the development of maritime trade and fleet size growth, the risk for sea pollution increases and becomes the

most important factor in the structure and operation of maritime transportation. Although IMO legitimates and protects the principle of freedom of navigation, with the existence of PSSA, IMO has developed awareness for countries to preserve the marine environment.¹⁹

The IMO resolution is regularly revised to define the PSSA concept and improve the performance of its implementation. The first revision began in 1999 which produced IMO Assembly Resolution A.885 (21).²⁰ Subsequent revisions were made in 2001 by IMO Assembly Resolution A.927 (22). Afterwards, IMO established 3 (three) new PSSA in 2002, namely: Malpelo Island in Colombia, the sea around the Florida Keys, and the Wadden Sea. In 2003, 1 (one) new PSSA was established, namely Paracas National Reserve in Peru. In 2004, Western European Waters was designated a PSSA.

On 1 December 2005, IMO adopted IMO Assembly Resolution A.982 (24), a legal framework agreement exclusively on PSSA. After adopting IMO Assembly Resolution A.982 (24), several new PSSAs were established such as: Canary Islands in Spain;²¹ the Galapagos Islands in Ecuador;²² and the Baltic Sea Area in Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland and Sweden.²³ Until now, there are 17 regions that have been designated as PSSA. The 17th PSSA established in 2017 is located at Tubbataha Reefs Natural Park, Sulu Sea, Philippines.

¹⁵ International Maritime Organization (IMO) Resolution A. 982 (24), *Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas (PSSAs)*, paragraph 4.4.1 – 4.4.17.

¹⁶ *Ibid.*, paragraph 5.1.1 – 5.1.7.

¹⁷ Ryan P. Lessmann, *loc.cit.*

¹⁸ *Ibid.*

¹⁹ Nihan Ünlü, "PARTICULARLY SENSITIVE SEA AREAS: PAST, PRESENT AND FUTURE", [online], http://www.imo.org/includes/blastDataOnly.asp/data_id%3D17988/Particularly, accessed on 9th of December 2019.

²⁰ International Maritime Organization Assembly Resolution A.885 (21), Procedures for the Identification

of Particularly Sensitive Sea Areas and the Adoption of Associated Protective Measures and Amendments to the Guidelines Contained in Resolution A. 720 (17), November 29th, 1999.

²¹ Maritime Environmental Protection Committee Resolution MEPC 134 (53) Designation of the Canary Islands as A Particularly Sensitive Sea Area, July 22, 2005.

²² Maritime Environmental Protection Committee Resolution MEPC 135 (53) Designation of the Galapagos Archipelago as A Particularly Sensitive Sea Area, July 22, 2005.

²³ Maritime Environmental Protection Committee Resolution MEPC 136 (53) Designation of the Baltic Sea as A Particularly Sensitive Sea Area, July 22, 2005.

C. THE CORRELATION BETWEEN PARTICULARLY SENSITIVE SEA AREA AND ASSOCIATED PROTECTED MEASURE (APM)

The real consequence of the appointment of PSSA is the completion of APM. In PSSA Guidelines, the definition of Associated Protective Measures (APM) is an international rules or standards that falls within the purview of IMO and regulates international maritime activities for the protection of the area at risk.²⁴ PSSA designation proposals must be accompanied by APM or related actions aimed at preventing, reducing, or eliminating threats or identified vulnerabilities.²⁵ Protection measures related to PSSA are limited to actions that will, or have been approved and adopted by IMO,²⁶ for example routing systems such as area to be avoided and *Traffic Separation Schemes* (TSS). This APM must have a legal basis from international instruments, accepted and adopted by the IMO. IMO conventions that can be used as a legal basis for APM include MARPOL and SOLAS.

D. TRAFFIC SEPARATION SCHEME (TSS) AS THE ASSOCIATED PROTECTED MEASURE (APM)

To determine the archipelagic sea lanes (ASL), Indonesia as an archipelagic State also has the right to designate the TSS which is one part of routing measures in order to maintain the security of crossing ships that sail through narrow sea waters within the ASL.²⁷ The definition of TSS in the

Hydrographic Dictionary is a routing measure aimed at the separation of opposing streams of traffic by appropriate means and by the establishment of traffic lanes.²⁸ TSS is used to manage traffic in busy areas, limited waterways, or around the headland.

Traffic Separation Scheme (TSS) is one of the APM chosen by the Indonesian Government. Since 2017, Indonesia Government has submitted an application to the Maritime Safety Committee (MSC), specifically the Sub-Committee on Navigation, Communications, and Search and Rescue (NCSR) to establish TSS in the Sunda Strait and the Lombok Strait.²⁹

At the 6th IMO Sub-Committee on NCSR session held at IMO Headquarters in London on 16-25 January 2019, NCSR agreed to establish a new TSS in the Sunda Strait (NCSR 6/3 / 3) aligned with archipelagic sea lane 1 (ASL 1) and in the Lombok Strait (NCSR 6/3/4) aligned with archipelagic sea lane 2 (ASL 2).³⁰ The TSS in Sunda Strait and Lombok Strait have an associated precautionary area to accommodate existing crossing traffic patterns and inshore traffic zone (ITZ) between the between the western limit TSS and Sumatra Island (for the TSS in Sunda Strait) or Lombok Island (for the TSS in Lombok Strait).³¹ With the designation of TSS in the Lombok Strait, it is a sign that one of the PSSA designation requirements has been fulfilled.

²⁴ International Maritime Organization (IMO) Resolution A. 982 (24), *Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas* (PSSAs), paragraph 6.

²⁵ International Maritime Organization, *Particularly Sensitive Sea Areas*, [online], <http://www.imo.org/en/OurWork/Environment/PSSAs/Pages/Default.aspx>, accessed on 9th of December 2019.

²⁶ International Maritime Organization (IMO) Resolution A. 982 (24), *Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas* (PSSAs), paragraph 7.5.3.

²⁷ United Nations Convention on the Law of the Sea (UNCLOS) 1982, Article 53 (6).

²⁸ International Hydrographic Organization (IHO), *Hydrographic Dictionary – Part 1, Volume 1, Fifth Edition* 5585, Monaco, 1994, p. 254.

²⁹ Information on Routing Measures and Mandatory Ship Reporting Systems in Lombok Strait, NCSR 5/INF.23, 2017, <http://hubla.dephub.go.id/berita/Documents/NCSR%205%20INF%2023.pdf>, accessed on 9th of December 2019.

³⁰ Report on the Outcome of the Sixth Session of the IMO Sub-Committee on Navigation, Communications and Search and Rescue (NCSR), 2019, <http://eba.eu.com/site-documents/regulatory-docs/imo-isaf/NCSR6.pdf>, accessed on 9th of December 2019.

³¹ *Ibid.*

E. THE PROSPECT OF DESIGNATION OF PSSA IN LOMBOK STRAIT AFTER TSS HAS BEEN DESIGNATED

1. Overview of the Urgency of Designating PSSA in Lombok Strait

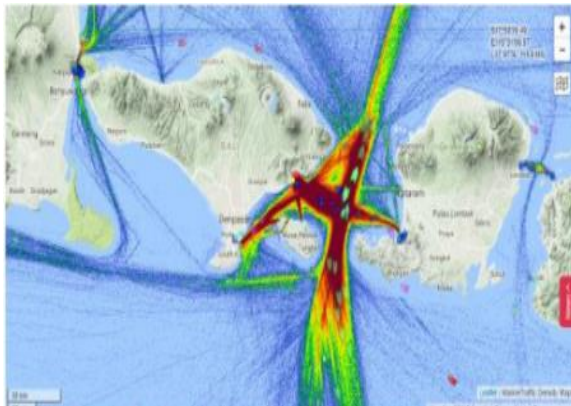


Figure SEQ Figure * ARABIC 1. Traffic Density in Lombok Strait

The Lombok Strait is located at 115 ° 37 " - 116 ° 02" BT and 8 ° 20 " - 8 ° 50" LS between the island of Bali and the island of Lombok.³² The Lombok Strait is one of the trajectories of the Indonesian Throughflow (ITF) that carries water masses from the Pacific Ocean to the Indian Ocean in addition to going through the Ombai Strait and the Timor Sea. The Lombok Strait which is traversed by Indonesian Archipelagic Sea Lane (IASL) makes these waters fertile and rich in nutrients. The Lombok Strait is a strait that connects the Java Sea and Indian Ocean. The Lombok Strait is a deep strait

that reaches 250 meters,³³ deeper than the Malacca Strait which only has a depth of 200 meters, making it suitable for use in crossing large ships.³⁴ Large ships crossing the Lombok Strait can carry cargo up to 500,000 tons.³⁵ This makes the Lombok Strait one of the busiest straits in Indonesia. It can be summarized that on average twenty-nine thousand eight hundred forty-one / 29,841 unique voyages were made annually.³⁶

The Lombok Strait is the narrowest strait located in the Indonesian Archipelagic Sea Lane (IASL) II. The Lombok Strait is located at the southern end of IASL II. The entrance to the Lombok Strait as part of IASL II passes through Gili Trawangan, Gili Meno and the Gili Ayer Islands on the northwest coast of the island of Lombok. While the southern entrance to the Lombok Strait passes through Nusa Penida Island, a conservation area on the southeastern coast of Bali. The Gili Islands and Nusa Penida Islands are Marine Protected Areas (MPA) in the Lombok Strait.³⁷

There are about eighty-two ships per day. The traffic was contributed by 34.17% of fast boat, 29.28% of ferry, 10.31% of merchant ships, 9.81% of fishing vessel, 5.4% passenger ship and other types of vessel for about 13.27% which are tug boats, pleasure vessels, offshore supporting vessels and military.³⁸

³² Allan R. Robinson and Kenneth H. Brink, *The Global Coastal Ocean: Multiscale Interdisciplinary Processes*, London: Harvard Study Press, 2005, p. 516.

³³ R. Dwi Susanto, et.al., "Ocean Internal Waves Observed in the Lombok Strait", *Oceanography Journal*, Vol. 18 No. 4, 2005, p. 83.

³⁴ Kresno Buntoro, "Burden Sharing: An Alternative Solution in Order to Secure Choke Points within Indonesian Waters", *Australian Journal of Maritime and Ocean Affairs* 13, 2009, p. 122.

³⁵ Michael Leifer, *International Straits of the World: Malacca, Singapore, and Indonesia*, Netherlands: Sitjthoff and Noordhoff International Publishers BV Aphen aan den Rijn, 1978, p. 77.

³⁶ IMO Doc. NCSR 5/INF.23, 15 December 2017.

³⁷ A.A.B. Dinariyana, (et.al), "Technical Assessment on Designation of Ship's Routeing System in Indonesian Waters", dipresentasikan pada 10th Cooperation Forum under the Cooperative Mechanism between the Littoral States and User of the Straits on Safety of Navigation and Environmental Protection in the Straits of Malacca and Singapore, Malaysia, 2 - 3 October 2017. Available at: <http://202.129.173.62/uploads/2/59/CF%2010-5-2-1%20Technical%20Assessment%20on%20Designation%20of%20Ships%20Routeing%20System%20in%20Indonesian%20Waters.pdf>

³⁸ IMO Doc. NCSR 5/INF.23, *op.cit.*

From 2003 to 2017 there were 14 incidents in the Lombok Strait, such as groundings, collisions, sinking, and fire.

Year	Type of ship	Type of accident	Location
2003	Ferry Ro-Ro KMP. Wimala Dharma	Sinking	Padangbai
2011	Ferry Ro-Ro KMP. Perdana Nusantara	Striking the wharf	Lembar
	Passenger ship KM. Sri Murah Rejeki	Sinking, 11 casualties	Nusa penida, Bali
2012	Cargo ship KM.Lintas Timur	Fire	Anchorage area, Lembar Port
2013	Cargo ship MV. Agnes	Grounding	Lombok Lembar
	Cargo ship KM. Ombak Biru	Drifting	North of Gili Trawangan
	Passenger ship KMP Mulyadi	Grounding	Padangbai, Bali
	Passenger ship KMP. PBK Muryati	Grounding	Access channel of Padangbai Port
	Cargo ship KM. Ocean Star Expres I	Fire	Access channel of Padangbai Port
2014	Passenger ship KMP Munawar	Sinking, 3 casualties	Lombok
	KM Gelis Rauh	Fire	Nusa Penida
2015	Cargo ship KM Wahana IV	Fire	10 nm from Senggigi Port
2016	Passenger ship KMP Wihan Bahari	Grounding	Gili Nanggu Area Lombok
2017	LPG Tanker KMP Sita Giri Nusa	Grounding	Gili Layar, Sekotong, Lombok

Table SEQ Table 1 ARABIC 1. Incidents in Lombok Strait since 2003-2017*

Details of events can be seen in the Table 1 above.

The Lombok Strait becomes urgent to be designated as PSSA because the Lombok Strait is one of the active straits for international shipping. Tankers, passenger ships, and cargo ships pass the Lombok Strait every day, thereby the possibility of pollution, especially from oil-carrying tankers increase. Oil spill incidents caused by tankers can be very dangerous for the marine and socio-economic environment around the Lombok Strait. This is not without reason considering

the Lombok Strait is a Strait that is rich in resources. The Lombok Strait is included in the Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security (CTI-CFF),³⁹ accordingly the Lombok Strait is among the regions that have the largest number of corals in the world.⁴⁰ The Lombok Strait is also a habitat for rare and endangered species. Besides having abundant resources, Lombok Strait, especially the Gili islands and Nusa Penida islands also contribute to the economy, such as fishing activities, seaweed cultivation, and tourism.⁴¹

³⁹ The objectives of the CTI are effective management of sea scapes, fisheries management through an ecosystem approach, effective management of Marine Protected Areas (MPAs), adaptation measures to climate change, and an increase in the status of threatened species experiencing extinction. See Memorandum of Understanding (MOU) between The Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security and Coral Triangle Center, August 27, 2015.

⁴⁰ Coral Triangle Initiative, CTI-CFF Regional Map, <http://www.coraltriangleinitiative.org/cti-cff-regional-map>, accessed on 9th of Desember 2019.

⁴¹ World Wildlife Fund, Coral Triangle Maps: The World's Centre of Marine Biodiversity, https://wwf.panda.org/knowledge_hub/where_we_work/coraltriangle/publications/coraltrianglemaps/, accessed on 11th of December 2019.

2. The Regulation in International Law

a. United Nations Convention on the Law of the Sea (UNCLOS 1982)

United Nations Convention on the Law of the Sea 1982 or commonly known as UNCLOS 1982 is the culmination of the work of the United Nations (UN) in the field of the law of the sea. UNCLOS 1982 completely regulates the protection and preservation of the marine environment in a special part, precisely in Article 192-237. Protection and preservation of the marine environment are contained in Chapter XII of UNCLOS 1982 on the Protection and Preservation of the Marine Environment. Article 192 UNCLOS 1982 confirms that every State has an obligation to protect and preserve the marine environment. To be able to carry out these obligations, there is also the granting of rights to the State for the management of its natural resources at sea in accordance with Article 193 UNCLOS 1982, stated:

"States have the sovereign right to exploit their natural resources pursuant to their environmental policies and in accordance with their duty to protect and preserve the marine environment."

UNCLOS 1982 requires every State to prevent, reduce and control the pollution of the marine environment that occurs in its territory that can be carried out individually or together with the State. Hence, States should harmonize their policies in this regard by using "the best practical means at their disposal and in accordance with their capability, individuality, or jointly appropriate"⁴²

Activities or matters that cross national boundaries are regulated in Article 194 paragraph 2 which stipulates that:

"States shall take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment, and that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the areas where they exercise sovereign rights in accordance with this Convention."

The actions mentioned in the above paragraph must deal with all sources of pollution. However, in taking the steps referred above, States must refrain from interfering in unjustified manner within activities carried out by other States in the exercise of their rights.

States are obliged to take all necessary measures to ensure or control the activities carried out under their jurisdiction do not cause pollution and damage to other States nor their own State. Article 194 UNCLOS 1982 also explains the steps that must be taken in accordance with the sources of pollution of the marine environment, such as:

- a. Release of toxic substances, or hazardous substances, especially those that are persistent, originating from the mainland, or through the atmosphere, or from dumping;
- b. Pollution from ships, especially measures to prevent accidents, ensure safe operation at sea,

⁴² Article 194 paragraph 1 UNCLOS 1982.

- prevent accidental or unintentional disposal of waste;
- c. Pollution from installations and devices used in the exploration and exploitation of seabed and underground natural resources; dan
- d. Pollution from installations and other devices operating in the marine environment. Exploitation of seabed and underground natural resources.

UNCLOS 1982 also states that the protection of the marine environment includes measures to protect rare and fragile ecosystems as well as the habitats of endangered species. At the global level, the implementation of these provisions is carried out by IMO by designating PSSA.⁴³

The Lombok Strait, which is in IASL II, makes it under the auspices of the regulation of Archipelagic Sea Lane (ASL) in the UNCLOS 1982. Article 53 paragraphs (1-12) regulates the existence of archipelagic sea lanes passage. In addition to establishing ASL, Archipelagic States have the right to establish Traffic Separation Schemes (TSS). Article 53 paragraph 9 emphasizes that in the determination of TSS in archipelagic waters, the Archipelagic State concerned is required to submit proposals to competent international organizations regarding sea lanes and TSS to be reviewed. Finally an agreement between the two parties is accepted and approved by the international organization. It is on this basis a state determines the

ASL and TSS in its archipelago waters.

Article 53 paragraph (11) stated that this regulation applies to all ships sailing through the archipelagic sea passages and TSS, which means that all ships passing through must comply with this regulation. Hence, the designation of PSSA with APM in the form of TSS will not obstruct or reduce the rights of other States to pass through the Lombok Strait. Other than that, the designation of the PSSA in Lombok Strait will not interfere with the rights of user States to enjoy the right of passage through the Lombok Strait.

b. International Convention for the Prevention of Pollution from Ships 1973 as Modified by the Protocol of 1978 (MARPOL 73/78)

Regulation 1 (10) Annex 1 MARPOL 73/78 defines special areas as follows:

"Special area means a sea area where for recognized technical reasons in relation to its oceanographical and ecological condition and to the particular character of its traffic the adoption of special mandatory methods for the prevention of sea pollution by oil is required."

Special Area is a special marine area based on MARPOL 73/78 with special mandatory methods to prevent marine pollution.⁴⁴ Special Areas are discussed in several Annexes in MARPOL 73/78, such as Annex 1 on Prevention of Oil Pollution, Annex II on Prevention of Pollution by Toxic Liquid, Annex IV

⁴³ Karen N. Scott, "International Regulation of Undersea Noise", *International and Comparative Law Quarterly*, Vol. 53, No. 2, 2004, p. 297.

⁴⁴ International Maritime Organization Assembly, Resolution A. 927 (22), 2001, Guidelines for the

Designation of Special Areas Under MARPOL 73/78 and Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas.

on Prevention of Pollution from Dirt and Annex V on Prevention of Pollution by Waste from Ships. However, considering that there are many tankers crossing the Lombok Strait, the most relevant is the special area in annex 1 regarding the prevention of oil pollution. In the special area of annex 1, there are various regulations governing the disposal of oil and oils mixtures.⁴⁵ With this ban, as a consequence, special area coastal countries must provide adequate facilities at ports along the special area beaches.⁴⁶ With tighter oil disposal arrangements, naturally the level of pollution from ships can be reduced. So that in the end can improve the quality of the marine environment such as increasing the productivity of marine life and the health of coral reefs.

Although the special area in MARPOL 73/78 has the same goal as the PSSA to protect the marine environment from the pollution, there are differences in principles between them. In Annex I of MARPOL 73/78, one of the efforts offered by MARPOL 73/78 in dealing with marine environmental pollution is by establishing a special area. Special area is a special water area based on MARPOL 73/78 which is designated through special steps (special mandatory methods) to prevent pollution in the sea.⁴⁷ In designating a special area, the elements that must be fulfilled in accordance with Regulation 1 Paragraph 10 are that the area must meet ecological, oceanographic, or shipping characteristics. Meanwhile, PSSA emphasizes the

protection of the attributes of the area where the attributes are threatened by international shipping activities. In its designation not only the ecology matters, but the socio-economic and scientific-educational elements are also considered. Therefore, it can be said that PSSA is a more complex special area.

c. International Convention for the Safety of Life at Sea (SOLAS) 1974

The 1974 SOLAS Convention also contributed to the protection of the marine environment. Several regulations in the 1974 SOLAS Convention, such as Regulation 10 on Ships' Routeing Systems and Regulation 11 on Ships' Reporting Systems are arrangements that serve as references in the submission of APM in the framework of PSSA determination. Regulation 10 para. (1) said:

"Ships' routeing systems contribute to safety of life at sea, safety and efficiency of navigation and/or protection of the marine environment. Ships' Routeing Systems are recommended for use by, and may be made mandatory for, all ships, certain categories of ships or ships carrying certain cargoes, when adopted and implemented in accordance with the guidelines and criteria developed by the Organization"

Regulation 11 para. (1) said:

"Ship reporting systems contribute to safety of life at sea, safety and efficiency of navigation and/or protection of the

⁴⁵ International Convention for the Prevention of Pollution from Ships 1973 as modified by the Protocol of 1978 (MARPOL 73/78), 1973, Annex 1, Regulation 9 and 10.

⁴⁶ *Ibid.*, Annex 1, Regulation 10 paragraph (7).

⁴⁷ Annex 1 paragraph 2.1 IMO Resolution A. 927 (22).

marine environment. A ship reporting system, when adopted and implemented in accordance with the guidelines and criteria developed by the Organization pursuant to this regulation, shall be used by all ships, or certain categories of ships or ships carrying certain cargoes in accordance with the provisions of each system to adopted."

Regulations in SOLAS 1974 are very relevant to the designation of PSSA in the Lombok Strait, especially when the designation of TSS in the Strait has received approval from IMO.

d. The Prospect under IMO Resolution

Looking in terms of attributes and shipping activities, the Lombok Strait sufficiently meets the criteria. The following are the results of an analysis of the fulfillment of the Lombok Strait criteria for PSSA:

1. Attribute

a. Ecological Criteria

1) Uniqueness or Rarity

The Lombok Strait is part of the Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security (CTI-CFF),⁴⁸ proving that the Lombok

Strait is one of the regions that has the largest number of corals in the world.⁴⁹

2) Critical Habitat

The Lombok Strait is a habitat for rare and endangered species, including sunfish (Mola-Mola),⁵⁰ green turtles, and hawksbill turtles.⁵¹

3) Dependency

The Lombok Strait area consists of mangrove, seaweed and coral⁵² ecosystems that support each other and support the productivity of biological resources as a food source or as a habitat.

4) Representation

Indonesia's coral reefs account for 65% of the total area in the Coral Triangle. This makes the Lombok Straits as part of the CTI CFF and representing area with most coral reefs in the world.

5) Diversity

The Lombok Strait is one of the important points in the territorial waters where it contains many sources of marine wealth (choke point).⁵³ There are various kinds of biodiversity in the Lombok Strait, such as coral reefs, various types of dolphins, and Bryde whales.⁵⁴

⁴⁸ The purposes of the CTI are effective management of sea scapes, management of fisheries through an ecosystem approach, effective management of Marine Protected Areas (MPA), adaptation measures to climate change, and enhancement of the status of threatened species experiencing extinction.

⁴⁹ Coral Triangle Initiative, CTI-CFF Regional Map, 2018, <http://www.coraltriangleinitiative.org/cti-cff-regional-map>, accessed on 10th of December 2019.

⁵⁰ Sunfish or Mola-Mola are threatened with extinction because they often become victims of accidents in marine water traffic such as being caught by a ship's propeller and are often victims of collisions from large ships speeding towards it.

Results of an interview with Mr. Nicolas Manoppo, Head of Sub-Directorate of Maritime Cooperation,

Directorate of Legal Affairs and Territorial Treaties, Ministry of Foreign Affairs on May 4, 2018.

⁵¹ Regional Workshop on PSSA's in Southeast Asia Trends and Prospect, The Centre of International Law (CIL), Singapore, October 11, 2017, unpublished.

⁵² The Proposal of Designation of PSSA in Lombok Strait No. MEPC 71/INF.39, p.2.

⁵³ Yayan Mochamad Yani, *Langit Indonesia Milik Siapa?*, Jakarta, PT. Elex Media Komputindo, 2017, p. 26.

⁵⁴ Proposal NCSR 5/INF.23, *Routeing Measures and Mandatory Ship Reporting Systems: Information on Routing Measures and Mandatory Ship Reporting System in Lombok Strait, Indonesia Submitted by Indonesia*, Number 5.

6) Productivity

The Lombok Strait has high waters productivity due to the upwelling phenomenon that occurs seasonally in the Lombok Strait.⁵⁵

7) Spawning or Breeding Sites

The Lombok Strait is a strait with a large number of coral reefs. The role of coral reefs, especially ecologically, is as a place for spawning, breeding, and raising small fish organisms.

8) Naturalness

The ecosystem and activities in Lombok strait as mentioned above in point 1-7 are exist naturally, not a man-made creation nor design. Furthermore, despite the area of Lombok straits is one of the busiest, but the natural ecosystem in its waters, including in Virgin island are preserved naturally. One of the examples is the existence of Virgin Beach which still has very clear water. The clear water on the Virgin Beach is because this beach has not been touched and changed much from human hands.

9) Integrity

Mangroves, seagrasses and corals are ecosystems support the productivity of biological resources in tropical, marine and coastal environments.

10) Fragility

The Lombok Strait is vulnerable to pollution and

damage due to shipping activities, such as oil spills, sea trash, grounding, and direct physical impacts due to the release of anchors. Coral reefs around the Lombok Strait can suffer damage caused by shipping because of being hit by ship pontoons.

11) Bio-geographical importance

As part of the wallace line or abstract line separating the distribution of fauna in the western part of Indonesia and the eastern part of Indonesia.

b. Social, Cultural and Economic Criteria**1) Social or Economic Dependence**

Naturally, the Lombok Strait connects the Indian Ocean with the Pacific Ocean and vice versa. Relations and interactions between countries in the Indian Ocean and Pacific Ocean regions, as well as between islands in Indonesia have encouraged the use of the sea as a medium of transportation and trade.⁵⁶ In 2016, there were 445,000 tourists who came to Gili Matra and 265,000 tourists who came to Nusa Penida.⁵⁷ The economic value of the ecosystem and biodiversity in the region reaches 310 million US dollars.⁵⁸

2) Human Dependence

The Lombok Strait in the coral triangle is rich in marine biodiversity. Marine biota has an economic contribution, both

⁵⁵ Randy Yuhendrasniko, et.al., "Identifikasi Variabilitas Upwelling Berdasarkan Indikator Suhu dan Klorofil-A di Selat Lombok", *Oceanography Journal*, Vol. 5 No. 4, 2016, p. 530.

⁵⁶ Y. Didik Heru Purnomo, et.al, *Tahun 1511: Lima Ratus Tahun Kemudian*, Jakarta: Gramedia Pustaka Utama, 2012, p. 223.

⁵⁷ The Proposal of Designation of PSSA in Lombok Strait No. MEPC 71/INF.39, *Op.Cit.*

⁵⁸ *Ibid.*

through the activities of fishermen, seaweed cultivation, and tourism

3) Cultural Heritage

The Lombok Strait marks the entrance of the biogeographic divide between fauna in the western part of Indonesia and the eastern part of Indonesia which has very clear differences. Alfred Russel Wallace, a British zoologist discovered this difference in his research and then drew an abstract dividing line called the Wallace Line from the Southern Philippines, the Sulawesi Strait, to the Lombok Strait.⁵⁹

c. Scientific and Educational Criteria

1) Research

The Lombok Strait is a place for research into the utilization of marine resources. In 2006-2010 a study of sea current characteristics was carried out in the Lombok Strait to see the potential of ocean current energy which was to be converted into electricity.⁶⁰

2) Baselines for Monitoring Studies

The Lombok Strait waters are one of the paths that are passed by Arus Lintas Indonesia (ARLINDO). The Lombok Strait traversed by ARLINDO makes the area rich in nutrients that are essential for the life of phytoplankton. Phytoplankton is food for small fish, shrimp, and

squid which is food for larger fish, such as skipjack fish.⁶¹ Therefore, the Lombok Strait has become an area rich in marine life.

3) Education

Gili Trawangan, Gili Meno and Gili Air in the Lombok Strait are famous for their beauty. Therefore, there are many snorkeling, diving, and surfing activities in this area. The high interest of tourists to do diving makes this area a place to learn to dive.

2. Shipping activities

The Lombok Strait is one of the active straits of international shipping. Because the Malacca Strait which experiences siltation along one to two kilometers every year,⁶² causes large ships, especially tankers, to change shipping lines through the Lombok-Makassar Straits. This makes the position of the Lombok Strait important as the main supporting channel of the already overcrowded Malacca Strait. Lombok Strait is much traversed by transporting ships, both goods and people. There are various kinds of ships that sail through the Lombok Strait, such as passenger ships, cargo ships, cruise, military ships, tankers, and others.

Considering the above matters, it is fitting for the Indonesian government to make an effort to designate the Lombok Strait as PSSA. In line with the international law mentioned in the

⁵⁹ P.C. Van Wallen, et.al., "Wallace's Line and Plant Distribution: Two or Three Phytogeographical Areas and Where to Group Java?", *Biological Journal of the Linnean Society*, 2011, p. 540.

⁶⁰ Subaktian Lubis, Road Map Penelitian dan Pengembangan Energi Arus Laut, <http://www.mgi.esdm.go.id/content/road-map-penelitian-dan-pengembangan-energi-arus-laut>, accessed on 19th of December 2019.

⁶¹ Andry Nugroho Setiawan, et.al., "Variasi Sebaran Suhu dan Klorofil-A Akibat Pengaruh ARLINDO terhadap Distribusi Ikan Cakalang di Selat Lombok", *DEPIK Jurnal Ilmu, Ilmu Perairan, Pesisir dan Perikanan*, Universitas Syiah Kuala, 2013, p. 59.

⁶² Peter Tillman, "The Strait of Oil Pollution in the Malacca Strait: Arguing for A Broad Interpretation of the United Nations Convention on the Law of the Sea", *Pacific Rim Law and Policy Journal*, Vol. 7, No. 1, 1998, p. 119.

previous sub-chapter, by designating the PSSA, Indonesia has done what is mandated by international law, such as UNCLOS 1982, MARPOL 73/78, and SOLAS 1974 to maintain and prevent pollution of the marine environment. In addition, the designation of TSS as one of the APM of PSSA in the Lombok Strait opens wide opportunities for the approval of PSSA determination in the Lombok Strait.

F. CONCLUSION

International Law, specifically UNCLOS 1982, MARPOL 73/78, and SOLAS 1974 give mandates to every State to carry out protection and prevention of marine pollution. As one form of protection and prevention of pollution, the Indonesian Government since 2016 has submitted a proposal to designate the Lombok Strait as one of the PSSA. This is not without reason. As described above, the criteria for the formation of PSSA are divided into two, namely the attributes and shipping activities. In this case, according to the results of the analysis, the Lombok Strait has fulfilled these criteria. In addition to these criteria, the submission of PSSA proposals must be carried out in conjunction with the APM. One of the APM chosen by the Indonesian government is the designation of TSS in the Lombok Strait.

In 2019, the TSS in the Lombok Strait received approval from MSC after it was previously approved by the NCSR. This further widens the potential for the Lombok Strait to be accepted as PSSA. However, the actual struggle does not end there. The PSSA discussed at the IMO session requires the approval of other countries that enjoy the rights of passage to the Lombok Strait.

Therefore, the Indonesia Government must strive to believe these States that PSSA is the current priority for maritime State. In addition, the Indonesian Government must also provide an understanding to States that enjoy crossing rights in the Lombok Strait that the

stipulation of the PSSA in the Lombok Strait will not affect their crossing rights as stipulated in UNCLOS. The PSSA determination proposal in the Lombok Strait also needs improvement in the attribute section to make it more convincing that the Lombok Strait does have the urgency to be established as a PSSA.

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