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INTERNATIONAL COOPERATION ON MARINE ENVIRONMENT PROTECTION OF OIL POLLUTION FROM VESSEL (A STUDY OF STRAITS MALACCA AND SINGAPORE)

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INTERNATIONAL COOPERATION ON MARINE ENVIRONMENT PROTECTION OF OIL POLLUTION FROM VESSEL (A STUDY OF STRAITS MALACCA AND SINGAPORE)

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Abstract

This research is proposed to answer three problem. First, the rules of international law in the protection of the marine environment from oil pollution originating from vessel. Second, efforts were made by the three littoral countries cooperation in preventing, reducing and controlling oil pollution originating from vessel in the Straits of Malacca and Singapore. Third, the role of the government of Indonesia in prevention, reduce and control oil pollution originating from vessel in the Straits of Malacca and Singapore. This research is normative research using qualitative research methods. The research approach using statute approach and case approach. The results of this research shows that international law has been comprehensively regulate the protection of the marine environment from pollution by oil originating ships: the United Nations Convention on the Law of the Sea (UNCLOS) 1982, The International Convention for the Prevention of Pollution from Ship (MARPOL) 73/78, International Convention on Oil Pollution Preparedness 1980, the Civil Liability Convention for Oil Damage (CLC) 1992 and the Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (FUND) 1992. Second, Indonesia, Malaysia and Singapore as states bordering the straits cooperate with other stakeholders (user states, user industries, IMO, NGOs) have established a cooperation mechanism in the form of cooperative forums, project coordination committee and the Aids to Navigation Fund. Third, Indonesia through its laws and regulations have ensured the prevention, reduction and control of oil pollution originating from vessel through Act No. 17 of 2008 on Shipping, Government Regulation No. 21 of 2010 on the Protection of Maritime Environment, and Presidential Decree No. 109 in 2006 on Disaster Emergency Due to Oil Spill in the ocean.

***Keywords**: Marine environment, Malacca-Singapore Strait, oil pollution, MARPOL 73/78, CLC 1992, FUND 1992*

I. INTRODUCTION

Malacca-Singapore Strait, lies between the eastern island of Sumatra (Indonesia), the Western Peninsula (Malaysia) and Singapore Island[1]. While the Singapore Strait, lies in the east of the Straits of Malacca and Singapore, west of the South China Sea, south of the is-

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[1] International Hydrographic Organization, 1953*, Limits of Ocean and Seas*, Montecarlo, page. 123.

land of Singapore and Johor, Riau archipelago north[2]. In addition, a very strategic location, linking the Indian Ocean with the South China Sea and the Pacific Ocean, where the Straits of Malacca and Singapore also shorten the trade route from the Persian Gulf toward East Asia. Several studies have shown the Straits of Malacca and Singapore silt rate of one to two kilometers a year[3]. Both strait issued by the U.S. Defence Mapping Agency as the most difficult navigational passage in the world due to shifting of bottom sand, tidal ranges and strong tidal currents[4].

Although those straits are not included in the category of international straits, the Straits of Malacca and Singapore straits are recognized as straits used for international navigation) stipulated in the United Nations Convention Law Of the Sea (UNCLOS) 1982. Some experts claim that the Straits of Malacca and Singapore are the most important straits in the world because through by most of the world trading commodities. It is estimated more than 50,000 ships cross the Straits of Malacca and Singapore each year with one third of world trade commodities[5], a quarter of trade in goods and a half[6] of the world's oil distribution. In 2006, an estimated 15 million barrels of oil per day passing through the Straits of Malacca and Singapore[7].

Historically and legally, the Straits of Malacca and Singapore are straits used for international navigation. Status of the Straits of Malacca and Singapore is reinforced by UNCLOS in Article 37 and Article 35. In UNCLOS, straits used for international navigation are the straits between one part of the high seas or an exclusive economic

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[2] *Ibid.*

[3] Peter Tillman in Craig J. Capon, 1998, "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 & Policy Journal* 7 (1), page. 119.

[4] Tommy H. Purwaka, 1998, "Control of Marine Pollution in The Straits of Malacca and Singapore: Modalities for International Cooperation", *Singapore Journal of International & Comparative Law*, page. 453.

[5] Abd Rahim Bin Hussin, 2005*, "*The Management Of Strait Malacca: Burden Sharing As The Basis For Cooperation"*, Lima International Maritime Conference*, Langkawi, http://community.middlebury.edu/~scs/docs/rahim-present.pdf

[6] Donald B. Freeman. 2005. "The Strait of Malacca:Gateway or Gantllet"*, University of Toronto Quarterly,* 74(1) hlm. 528-530.

[7] *http://www.eia.doe.gov/cabs/World_Oil_Transit_Chokepoints/Full.html*

zone and another part of the high seas or an exclusive economic zone[8]. The provision is excepted for any area of internal waters t within a strait, unless where the establishment of a straight baseline has the effect of enclosing as internal waters areas which had not previously been considered as such[9]. Nonetheless, the regime of passage through straits used for international navigation shall not affect the legal status of waters (strait) or implementation of the sovereignty or jurisdiction of States bordering straits on the waters, air space, bed and subsoil[10]. Rights regimes applicable in straits used for international navigation are transit passage and innocent passage. Transit passage, exercise of freedom of navigation and over flight solely for the purpose of continuous and expeditious transit, between one part of the high seas or an exclusive economic zone and another part of the high seas or an exclusive economic zone.

Straits conditions cause problems for vessels navigating belonging Very Large Crude Carriers (VLCCs). In addition, many rocks, reefs and ocean currents in the opposite increase the potential for shipwrecks, sunken ships, and collisions between ships. Noted shipwreck there a few times (both oil tankers and cargo ships) that resulted in the spilling of charge to the marine environment in the Straits of Malacca and Singapore, which are:

Table 1. Ship accident in the Straits Malacca and Singapore

Year	Accident
1967	Tokyo Maru ship collided with a capacity of 150,000 dwt
1971	Arabian tanker and eugenic S. Niarcos sink
1975	Japanese tanker Showa Maru crashing the rocks and spilling 3400 tons of crude oil
1975	The collision between cargo ships and tankers Vystak Diego spilling 6000 tons of crude oil into the mangrove forest in the Malaka Peninsula
1978	U.S. tanker collision spilling one million gallons of oil
1979	Liberian tanker collision spilling three million gallons of oil

[8] See Article 37 United Nations Convention on the Law of the Sea.
[9] See Article 35 United Nations Convention on the Law of the Sea.
[10] See Article 34 (1) United Nations Convention on the Law of the Sea.

1983	Greek tankers Monemvasia crashing strait base and spilling of 1.2 million gallons of crude oil
1988	Bahamas Century tanker collided with another ship and spilling 3.1 million gallons of crude oil
1992	U.S. destroyer collided with a merchant ship
1992	Greek cruise ship Royal Pacific collided with a fishing vessel that spilling fuel
1992	Japan tanker Nagasaki Spirit collided with the Ocean Blessing spilling 2000 tonnes of crude oil
1993	Collision between tanker Maersk Navigator with Sanko Honour
1997	Super tanker crashing a cargo ship and killed 29 fishermen
2000	MT. Natuna Sea (tanker) grounded in the waters of Sambu Island and spilling 7000 tons heavy crude oil
2010	The collision between the MT Bunga Kelana 3, the St Vincent, The Grenadines-and, MV Waily spilling 2500 tons of crude oil

Sources: J. Capon[11], Kementerian Perhubungan[12], dan Maritime and Port Authority of Singapore (MPA)[13]

Based on Article 43 of UNCLOS, the users states and states bordering the strait should by agreement, cooperate in the establishment and maintenance navigational and safety aids or other improvements in aid of international navigation and cooperate for the prevention, reduction and control of pollution from ships[14]. The three littoral states, Indonesia, Malaysia and Singapore have been coordinating since the 1960's. A few years later the consultation process agreed Joint State-

[11] Craig J. Capon, *Loc.cit*, page. 123-124.

[12] Direktorat Kesatuan Penjagaan Laut dan Pantai, 2010, "Strategi Penanganan Pencemaran Laut Sebagai Implementasi UU 17/2008, PP 21/2010 dan Perpres 109/2006", disampaikan pada *Roundtable Discussion Upaya Penanganan Pencemaran Laut Dalam Rangka Penerapan PP 21 Tahun 2010 tentang Perlindungan Lingkungan Maritime*, Kementerian Perhubungan RI, hlm. 2

[13] Collision between MT Bunga Kelana 3 and MV Waily in the Singapore Strait - Update , http://www.mpa.gov.sg/sites/global_navigation/news_center/mpa_news/mpa_news_detail.page?filename=n100 525.xml,

[14] See Article 43 United Nations Convention on the Law of the Sea

ment on 16 November 1971 which stated the importance of tripartite cooperation for the safety of shipping in the Straits of Malacca and Singapore. After Showa Maru sinking, formed the Tripartite Technical Experts Group (TTEG) with the aim to promote safety of shipping and protection of the marine environment in the Straits of Malacca and Singapore. TTEG formulate Traffic Separation Scheme (TSS) and form Under Keel Clearance / UKC (depth of water under the boat needed to pass safely by 3.5 meters). TSS and UKC are product of regional cooperation to prevent and to decrease marine pollution from ships also to prevent collisions and vessel leakage. Implementation of TSS and UKC were effective to reduce the number of accidents in the straits. Regional cooperation is also supported by other stakeholders such as the user's country, shipping companies, as well as the IMO (International Maritime Organization). TSS system management, including navigational aid is managed with the help of Japan (the main user of the Straits of Malacca and Singapore) through the Malacca Straits Council.

II. PROBLEM FORMULATION

1. How does international law govern the protection of the marine environment from pollution from ships?
2. What are the efforts made by the three littoral countries cooperation in preventing, reducing and controlling oil pollution originating from ships in the Straits of Malacca and Singapore?
3. How are the role of the Indonesian government to prevent, reduce and control oil pollution originating from ships in the Straits of Malacca and Singapore?

III. RESEARCH METHODOLOGY

1. Type of Research

This research is normative legal research is research conducted by examining library materials or secondary data consisting of primary legal materials, secondary legal materials and tertiary legal materials. The materials are arranged systematically, examined, and then compared and the conclusions drawn in relation to the matter under research.

2. Sources of Research Data

The type of data used in the writing of this law is a secondary data is data obtained from library materials such as descriptions indirectly obtained through the study of literature, documentary materials, scientific literature and other written sources.

a. Primary legal materials, are binding legal materials, some major, namely: the United Nations Convention on the Law of the Sea (UNCLOS) 1982, The International Convention for the Prevention of Pollution from Ship (MARPOL) 73/78, International Convention on Oil Pollution Preparedness 1980, the Civil Liability Convention (CLC) 1992, Act No. 17 of 2008 on Shipping, Government Regulation No. 21 of 2010 on the Protection of Marine environment, and Presidential Decree No. 109 of 2006 on Disaster Emergency Due to Oil Spill Sea.
b. Secondary legal materials are of legal materials that explain the primary legal materials, ie materials that shed light on the primary legal materials, such as the results of scientific scholars, research, books, newspapers, magazines, related documents, internet and papers relating to the protection of the marine environment in the Straits of Malacca and Singapore against pollution from ships.
c. Materials tertiary law, which describes the primary legal materials and secondary legal materials such as Black's Law Dictionary.

3. Data Analysis Techniques

Analysis of the data is in the form doing the activities in the research study or the study of the data processing that assisted with the theories that have been found previously. Data analysis techniques used in legal research using qualitative methods that are research procedures which produce descriptive data. As in the case study approach, this research approach legislation (statute approach) and approach the case (case approach). The use of statutory approaches used through the collection and analysis of international agreements relating to the marine environment as well as national legislation related. The use of the approach through a case study of some cases of environmental contamination that occurred in the Straits of Malacca and Singapore.

IV. ANALYSIS

A. INTERNATIONAL LAW TO PROTECT THE MARINE ENVIRONMENT FROM OIL POLLUTION FROM SHIPS THE SOURCED

1. Principles for the Protection of the Marine Environment

a. Sovereignty over Natural Resources and Responsibilities Not Cause Damage to the Environment of Other States or to Areas beyond National Jurisdiction

Sovereignty is the main characteristic of a state, become a key principle in international law, including sovereignty over natural resources. Recognition of the sovereignty of natural resources was first set out in the UN General Assembly Resolution No. 1803 of 1962 on Permanent Sovereignty of Natural Resources. Resolution states that the right of every nation and every states on the permanent sovereignty of the natural wealth and natural resources shall be carried out within the framework of development state and welfare of the people. Further stated that the exploration, development, and regulation as well as the import of foreign capital must be in accordance with the rules and conditions of the nation and the state. Sovereignty reflect the inherent right of the main state-owned and to control the exploitation and use of natural resources that, with due regard to the interests of its citizens.

The principle is accommodated in Principle 21on Stockholm Declaration which states that states under the UN Charter and principles of international law, have sovereignity to exploit its natural resources and the responsibility to ensure that activities within its jurisdiction do not cause damage to the environment of other States or of areas in beyond national jurisdiction of a country. The addition of the principle of the responsibility to not cause damage to the environment of other states derived from customary international law, namely the principle *sic tuo ut alienum non utere laedas* contained in the basic range of international judicial decisions such as Trail Smelter Arbitration , Corfu Channel Case, Lake Lanoux Arbitration and the Nuclear Test Case. Based on this principle, the states have sovereignty over its territory and carry out activities in the territory, but the implementation of such sovereignty shall not violate international law. The recognition of the sovereignty also

contained in Article 2 paragraph (3) of UNCLOS which states that sovereignty over the territorial sea is subject to the provisions implemented by this Convention and other rules of international law. Article 193 of UNCLOS requires the implementation of the states sovereignty over the exploitation of natural resources must comply with the environmental policy without forgetting liability protection and preservation of the marine environment.

b. Principles of Prevention

The prevention principle can be found in Principle 21 of the Stockholm Declaration, Principle 2 of the Rio Declaration and the decision of the Arbitration Trail Smelter Case. On transboundary pollution case, each country was asked to implement two obligations, the first to take the necessary steps in good faith; second, to regulate public and private activities that are the subject of its jurisdiction[15]. Prevention means protection and preservation, as provided for in Article 192 UNCLOS that states are obliged to protect and preserve the marine environment. Prevention include planning and managing ecological, including monitoring, notification, exchange of information with the completeness of the rules of procedure and institutions at the national level

c. Precautionary Principle

Precautionary principle emphasizes that the lack of scientific evidence should not be a reason to delay in efforts to prevent damage environmental. Environmental problems are often developed in obscurity conditions. Scientific data is not necessarily sufficient to determine that an activity has the potential to cause environmental damage[16]. Therefore, it is necessary prevention for preparation uncertainty or alleged damages when there is no irrefutable proof that damage will occur[17]. Precautionary principle is applied in the 1992 Rio Declaration requires it to use only for threats of serious or irreversible environmental damage. Thus, this principle cannot be applied to all risk regulation.

d. Cooperation

[15] Alexandre Kiss & Dinah Shelton, 2007, *International Environmental Law*, Martinus Nijhoff Publishers, page.91

[16] Jonathan Remy Nash, 2007, "Standing and The Precautionary Principle",*Chicago Working Paper,* No. 178, hlm. 20 [online] http://ssrn.com/abstract_id=1011937

[17] Alexandre Kiss & Dinah Shelton, *Op.Cit*., page.95.

Article 74 of the Statute of the United Nations is declared the importance of the principles of good neighboorlines in the field of social economy and trade[18], including cooperation in the environmental field. This principle is derived from customary international law *utere tio sic et alienum non laedas*[19]. This principle is reflected in various international treaties, the International Court decisions and state practice. Cooperation in environmental protection written in the non-binding text, starting from Stockholm. In Declaration Principle 27 of the Stockholm Declaration also stated that such cooperation must exist between the State-Country to the community within the framework of good faith. Rio Declaration also stressed the importance of cooperation in Principle 5 and Principle 27 which emphasizes the good faith and the development of international law within the framework of sustainable development. Setting this partnership principle are binding international agreements, in particular the cooperation of marine protected under Article 187 of UNCLOS which states that States should cooperate globally and regionally directly or through competent international organizations in formulating and explaining rules, standards -standard and recommended practices internationally and procedures consistent with this Convention for the purpose of protection and preservation of the marine environment, taking into account regional characteristics typical.

e. Polluter Pay Principle

The polluter pays principle is a model of allocation and reduction of environmental damage and accountability from the polluter (individuals, companies and states) to pay the costs of pollution[20]. OECD (Organization for Economic Cooperation and Development Cooperation) establishes this principle as a principle of economic and effective measure in the allocation of funds for pollu-

[18] *Members of the United Nations also agree that their policy in respect of the territories to which*
this Chapter applies… must be based on the general principle of good-neighborliness, due account being taken of the interests and well-being of the rest of the world, in social, economic, and commercial matters, UN Charter 1945

[19] Philippe Sands, *Op.Cit*., hlm. 249

[20] Boris N.Mamlyuk, 2007, "Analyzing the Polluter Pays Principle Through Law and Economics", *Southeastern Environmental Law Journal*, 18 (1), page. 280.

tion prevention and control measures by states. Implementation of polluter pay principle is allocation of economic obligations in relation to environment harm activities, especially in terms of accountability, the use of the economic instrument of accession, including competition and subsidies[21]. Disincentive such penalties and civil liability can also be seen as part of this principle[22]. In addition to be applied at the regional level, the polluter pays principle is applied at the international level in Principle 16 of the Rio Declaration, the Convention and the OSPAR Convention on the Baltic Sea.

f. Sustainable Development Principle
The term sustainable development is expressed in a Brutland report in 1987 stating present development should consider the needs of future generations. Furthermore, in Principle 4 of the Rio Declaration stated that in order to achieve sustainable development, environmental protection should be an integral unity with the development process. Such an approach requires a long-term strategy, including social impact assessment, risk analysis, cost and benefit analysis, and resource calculation[23]. Some international judicial decisions also use this principle as a consideration in its decision, the ICJ in the case of one-Nagymaros Gabcikkovo[24]. Appeal Body WTO also use this principle in deciding the case of Shrimp / Turtle. ICJ advisory opinion in the case of Legality of Use of Nuclear Weapons, the ICJ found environment is not an abstraction but represents the living space, quality of life, and health of living beings, including unborn generations[25]. The four basic elements in various international agreements that are part of this principle, among others, the principle of intergenerational equity, the principle of sustainable use, the principle of equality within a generation, as well as the principle of unification[26].

g. Principle Common But Different Responsibility
There are two main variables in this principle. First, shared responsibility which describes the distribution of obligations by two or more

[21] Philippe Sands, *Op.Cit*.
[22] Alexandre Kiss & Dinah Shelton, *Op.Cit*., page. 96
[23] *Ibid*, page. 97
[24] ICJ Report 78 Slovakia V Hongaria (1997),Para 140
[25] ICJ Reports,226 (1996)
[26] Philippe Sands, *Op.Cit*.,hlm. 254

states to the protection of environmental resources[27]. Common responsibility applies to both environmental resources under the sovereignty of a country and outside the sovereignty of any country. In the context of law of sea, states obligation to help protection of the environment of other states appear in Article 39 of UNCLOS, which requires ships to comply with international rules and regulations of the states about coast prevention, reduction and control of pollution when the transit passage. Even in Article 19 of UNCLOS, a passage of a foreign ship that resulted pollution can be considered prejudicial to the peace, order and security of the coastal states. In sea area that is not within the jurisdiction of any state remains in effect shared responsibility as stipulated in Article 145 and 192 UNCLOS. The second variable is different responsibilities which explain that the state's obligation to protect the environment in different environmental standards is adjusted to the needs and conditions, the economic development of the country as well as the contribution of the history of environmental problems.

2. International Convention Related to Marine Environment Protection of Oil Pollution from Vessel

a. International Convention for the Prevention of Pollution from Ships (MARPOL) 1973
   International Convention for the Prevention of Pollution from Ship, 1973, and amendments of 1978 (MARPOL 1978) and Annex I (oil pollution prevention) govern about the technical prevention oil spill from the ship which must be adhered by the ship owners, ship operators and state party . Provisions of MARPOL 73/78 more set on preventing oil spills from vessel operations. Nevertheless MARPOL 73/78 also regulates the prevention of pollution from accidents, although not regulate the navigation settings as preventive aspects.
b. Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC)
   This Convention governs the oil pollution emergency plan, report-

[27] Ntale Mustapher, *Rethinking the Application of the Principle of 'Common but Differentiated Responsibilities' in the International Climate Legal Framework*, Faculty of Law, Islamic University In Uganda, page. 2 [online] http://ssrn.com/abstract=1312282

ing procedures, national systems in the preparation and control pollution, as well as international cooperation in pollution response.

c. Convention on the Civil Liability for Oil Damage (CLC) 1969 and its Protocol 1976 and 1992
   CLC 1992 applies the principle of strict liability, in which the owner of the vessel at the time of the accident liable to pay compensation of any losses incurred. However, compensation in the CLC 1992 is limited, unless the pollution is the result of deliberate opator proven or vessel owner or omissions which are clearly unknown consequences.
d. Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (FUND) 1992
   This Convention has two purposes. First, provide additional compensation to victims of pollution damage in cases where compensation CLC 1969 is inadequate or unavailable. Second, it provides assistance to ship owners in relation to additional financial burden imposed on them by the CLC 1969, such assistance to be subject to the compliance requirements for safety at sea and other conventions.

B. TRILATERAL COOPERATION IN THE PREVENTION, REDUCTION AND CONTROL OF OIL POLLUTION SOURCED FROM SHIPS IN THE STRAIT OF MALACCA-SINGAPORE

Cooperative Mechanism among the three littoral countries consists of several programs. First, the cooperative Forum, a mechanism of dialogue, exchange of information, burden sharing between coastal states with stakeholders (user straits). Second, the Project Coordination Committee as the implementation of technical cooperation by involving sponsor in project implementation. Third, the Aids to Navigation Fund / ANF, is the collection and deposit of funds used to prevent and take action if there is contamination. Funding comes from the strait states, ship industry, oil industry, international organizations and NGOs (Non Government Organizations) are concerned about the safety of navigation and environment protection.

1. Cooperation in Pollution Prevention Efforts

a. Sea lanes and the Traffic Separation Schemes (TSS)
   According to the International Hydrographic Organization, TSS is

setting route to separate shipping direction through the construction traffic. Sea lanes and traffic separation schemes provided for in Article 41 of UNCLOS, stated that states bordering straits shall cooperate to designate and to propose sea leans and prescribe traffic separation scheme for navigation. After the IMO approved TSS and the sea lanes, states bordering straits must announce the lanes and scheme to users' straits. Ships that pass in the strait should respect the lanes and separation schemes. TSS formation means that the three littoral countries have a responsibility to ensure that the ship can sail in a predetermined route and guarantees the safety from the dangers of navigation without obstruction and wide enough maneuverability.

b. Vessel Traffic Systems (VTS) and Radar Facilities
   According to the IMO, VTS is a shore-side systems roommates range from the provision of simple information messages to ships, such as position of other traffic or meteorological hazard warnings, to extensive management of traffic within a port or waterway[28]. VTS or TSS are not restriction for transit passage and innocent passage across the Straits of Malacca and Singapore, but efforts to maintain the safety of shipping and environment protection around the strait[29].
c. Mandatory Ship Reporting System
   Provisions regarding the Mandatory Ship Reporting System contained in STRAITREP adopted by the IMO by Resolution MSC 73 (69). Special to the Straits of Malacca and Singapore, are regulate in Resolution IMO NAV 56/3/1. STRAITREP goal is to improve the safety of shipping, ti protect marine environment, to facilitate displacement vessels, to support SAR operations and oil pollution response operations[30]. Ships which are entering the STRAITREP op-

[28] International Maritime Organization, *Vessel Traffic Services*, [online] http://www.imo.org/OurWork/Safety/Navigation/Pages/VesselTrafficServices.aspx

[29] Mohd Hazmi Bin Mohd Rusli, 2011, "The Legal Feasibility of aTraffic Limitation Scheme in Straits Used for International Navigation: a Study of the Straits of Malacca and Singapore", *International Journal of Humanities and Social Science*, 1 (6), page. 127.

[30] Captain Mark Heah Eng Siang, 1999, "Implementation of Mandatory Ship Reporting in the Malacca and Singapore", *Singapore Journal of International & Comparative Law*, page. 1-11.

erational area shall report to VTIS (Vessel Traffic Information System) harbor where the vessel is located. The coastal State may detain ships that do not comply with STRAITREP. Violation of this provision will also be reported to the state flag.

2. Cooperation in Preparedness, Responsiveness and Mitigation of Pollution

The three states bordering straits have established an agreement, Standard Operating Procedure for Joint Oil Spill Combat in the Straits of Malacca and Singapore (SOP). SOP aims to set the action to be taken either individually (state) or together in combating oil spills from ships. Besides of that, the preparation and mitigation efforts are also initiated by ASEAN, namely ASEAN Oil Spill Response Plan (ASEAN-OSRAP). OSRAP ASEAN aims to enhance the ability of countries to respond oil spills. This partnership includes[31]:

1) conduct mutual visit by personnel responsible for oil pollution preparedness and response;
2) undertake joint exercises and training for oil pollution combating;
3) Promote research and development of oil pollution combating measures, techniques and equipment;
4) Facilitate expeditious transboundary mobility of personnel, materials and equipment in case of emergency.

Within the framework of ASEAN-OSRAP, national authorities of Member States shall inform the national authorities of other countries if there is an oil spill. National authority of Member States is a government agency designated as parties assigned to respond oil pollution as set forth in the National Emergency Plan for Oil Spill. The national authority may receive information from various sources and need to confirm the information. After confirmation, the national authorities will initiate pollution reporting system to other ASEAN countries.

National authorities who sea area affected by pollution is responsible for taking action based on the area within the national oil spill contingency plan. When the oil spill occurred near the border of the

[31] Rosnani Ibrahim, *International/Regional Cooperation to Oil Spill Response in the Straits of Malacca: an Overview.* page.3, [online] http://www.pcs.gr.jp/doc/esymposium/12169/95_rosnani_ibarahim_e.pdf

two countries, so that the oil could potentially spread to the territorial sea of another country, then these countries should immediately set up an On-Scene Commander (OSC) is responsible for cleanup activities area. When the oil spill occurred near the border of several states, one state should immediately respond by geographic location rather than spread the spill. If necessary, the national authorities can ask for help and assistance to other member states.

3. Funding Cooperation on Marine Environment Protection in the Straits of Malacca and Singapore

The three littoral countries agreed that funding is not only the responsibility of coastal states. Trilateral cooperation between Indonesia, Malaysia and Singapore has resulted in funding mechanisms for funding and control of pollution. The mechanism is called a Navigation Aid (Aids to Navigation Fund / ANF), is the collection and deposit of funds used for the renewal and maintenance of navigational instruments. The funding sourced from the state bordering straits, ship industry, oil industry, international organizations and NGOs (Non Government Organizations) who are concerned about the safety of navigation and environmental protection. ANF Committee is consisting of representatives of littoral states to ensure transparency and accountability in the use of funds. Because it is voluntary, it is often difficult to get a coastal state funding for the sustainability of marine environmental protection activities.

Table 3 and 4 show that the contribution of funding by the users states and stakeholders are not sufficient to cover the financing needs of the care and upkeep of the facility navigation. In such case, the coastal state fund shortfall. Funding contribution from the users states, ship industries, and stakeholders are not in accordance with the value of the strategic Straits of Malacca and Singapore. Shipping in the Straits of Malacca and Singapore represent 36% of world shipping with trade commodities more than 390 billion USD[32]. Straits of Malacca and Singapore are also very valuable strategic for the EU economy, with trade value reached 116 billion USD[33]. Most of the traffic in the Straits of Malacca and Singapore is a cruise stopover (intermediaries) which gives a great advantage to the users and the company ships

[32] European Institute for Asian Studies, 2011 page. 2.
[33] *Ibid*., page. 3.

but less profitable for the state coastal impartial. The actual funding contribution to marine environment protection incompatible with the principle of common but differentiated that explains that the state's obligation to protect the environment in different environmental standards adjusted to the needs and conditions, economic development and contribution history on environmental problems. Whereas in Article 203 of UNCLOS, developing countries are given preferential treatment by the international organizations in the allocation, technical assistance and utilization of specific services organization (IMO).

Table 2. ANF Funding Contributions in 2009

No	Country/Organization	USD
1	United Arab Emirates	100.000
2.	Republik of Korea	83.532
3.	India	774.000
4.	Nippon Foundation	2.500.000
5.	Middle East Navigation Aids Service (MENAS)	1.000.000
6.	Malacca Straits Council	500.000
7.	International Maritime Organization	50.000
	Total	5.007.532

Source: Maritime Institute of Malaysia[34]

Table 3. Comparison of Funding Contributions to Annual Average Cost

Year	Contributions (US$)	Annual Average Cost
2008	1.451.000	1.354.000
2009	5.007.532	5.500.000
2010	3.228.235	5.500.000
2011	2.934.500	5.500.000

Sources: MIMA and TTEG[35]

[34] Mohd Hazmi Bin Mohd Rusli, *Op.Cit*., hlm. 128, see European Institute for Asian Studies, 2011, Report- EIAS Briefing Seminar The Straits of Malacca: Managing Strategic Waters in South-East Asia, Brussels, EIAS, page. 4

[35] Mohd Hazmi Bin Mohd Rusli, *Op.Cit.*, page. 213.

4. The Role of the International Maritime Organization (IMO) in Co-operation IMO have issued several resolutions related to the Straits of Malacca and Singapore. The resolution, among others:

a. Resolution A. 375 (X) November 1977 on the shipping across the Straits of Malacca and Singapore which describes a new routing system including TSS, deep-water routes, and special regulations for ships VLCCs;
b. Resolution A.476 (XII) November 1981 on the shipping across the Straits of Malacca and Singapore and Singapore Straits special rules governing changes to certain ships;
c. Resolution A. 545 (13) November 1993 on prevention of piracy and robbery against ships.

On 23 April 2012, the IMO issued a document about the route the ship, ship reporting applicable in the Straits of Malacca and Singapore. The document contains the procedure the night signals must be obeyed ships crossing the TSS area.

C. ROLE OF INDONESIA IN PREVENTING, REDUCING AND COMBATING SOURCED OIL POLLUTION FROM SHIPS IN THE STRAIT OF MALACCA-SINGAPORE

1. Oil Pollution Prevention and Control of Ships Through the Settings Disposal Operations

Marine environmental protection stipulated in Act No. 17 of 2008 on Shipping, in particular in Chapter XII of the Marine environmental Protection by the government through the prevention and control of pollution from the operation of ships and port activities (Article 226 paragraph 2). Every crew shall prevent and combat environmental pollution originating from ships (Article 227). Ships with a certain type and size shall include materials and equipment to handle oil pollution from ships and also equipped with a pattern of oil pollution response vessels (Article 228). Article 7 of Government Regulation Number 21 of 2010 regulates more about prevention and material handling equipment. For vessels with a size of 100 GT or more and / or size of an engine of 200 HP or at least should have a pollution prevention equipment includes: oil and water separator equipment,

dirty oil storage tank and standard discharge connection (Article 7 paragraph (2)). Prevention equipment and materials for ship pollution prevention with specific types and sizes include: pelokalisir tool oil, oil suction material, absorbent material oil decomposing materials (Article 7, paragraph (3)). While the obligation to complete the pattern of oil pollution prevention, must be prepared by the owner or operator of the ship. Pattern countermeasures include: emergency response pattern of pollution by oil and cargo other than oil. The pattern of response must be approved by the minister. Each ship prohibited waste, ballast water, sewage, garbage and hazardous and toxic chemicals into the water, except for distance, volume and quality of discharges are in compliance with laws and regulations (Article 229 paragraphs 1 and 2 of Law 17 of 2008). Waste shall be stored on board and transferred to a storage facility at the port or terminal specific (Article 5, paragraph 4 of Regulation No 21 of 2010).

2. Prevention of Oil Pollution from Ships Through Navigation Settings

Based on Article 42 paragraph (1) of UNCLOS, countries bordering the straits may make regulations relating to the safety of shipping and traffic arrangements. Navigate by Act No. 17 of 2008 is the process of directing the motion of the ship from one point to another safely and smoothly and to avoid the dangers and / or obstacles shipping. To set the navigation takes some devices, such as navigational aids-cruise, cruise telecommunication, hydrographic and meteorological, path crossings, dredging and reclamation pilotage, boat handling framework, Salvage and water for the benefit of the work that the safety of the ship.

Means-shipping navigational aids are devices or systems that are outside the ship designed or operated to improve efficiency safety and navigate the vessel and / or vessel traffic. Provision and maintenance of these facilities is the responsibility of the port authority (Article 83 paragraph 1 of Law 17 of 2008). The government sets safety and security zone around the plant navigational aids (Article 119, paragraph 2 of Act 17 of 2008). The owner or operator of a vessel sailing in Indonesia's water beneficiary cost-Microscopy navigational aids that are non-tax state revenue, except for certain vessels and vessel state (Article 176 of Act 17 of 2008).

The second instrument in navigating the telecommunications cruise, a special telecommunications services for shipping purposes. The provisions on the imposition of costs and responsibilities for damages against the owner and/or operator of the ship is also true in this case (Article 181 and 182 of Law No. 17 of 2008). In addition to the imposition, the imposition of fees for services is also applicable in the integration of services (Article 198 paragraph 4).

3. Oil Spill Emergency Responses at Sea

Oil Spill Emergency Responses at Sea stipulated in President Regulation No. 109 in 2006. Disaster emergency oil spill in the sea is the action quickly, accurately, and coordinated to prevent and address the spread of the oil spill in the sea as well as tackling the environmental impact of oil spills at sea to minimize the loss and damage to the marine environment. Coverage of the oil spill set out in this regulation is the oil derived from shipping activities, oil husbandry and other activities.

Emergency responders were divided into three categorizations. First, the Tier 1 oil spill emergency response occurring within or outside DLKP and DLKR Port, or unit of oil and gas or other activities unit, which can be handled by the facilities, infrastructure and personnel are available at the port or exploitation unit oil and gas or other activities unit. Second, the Tier 2 oil spill response emergencies occurring within or outside DLKP and DLKR Port, or unit of oil and gas properties or units of other activities, which are not able to be handled by the facilities, infrastructure and personnel are available at the port or unit exploitation of oil and gas or other activities unit by level tier 1. Third, emergency oil spill response that occurs within or outside DLKP and DLKR Port or unit oil and gas or other activities units are not able to be handled by the infrastructure, facilities, and personnel available in a given area based on the level or tier 2 spread across borders of the Republic of Indonesia.

V. CONCLUSION

International legal instrument govern the marine environment protection of oil pollution from ship (vessel). Those international legal

instruments are the most comprehensive and complete than the regulation of marine pollution from other sources. Sources of marine environmental protection laws can be found on the hard laws (conventions or international agreements) and soft laws (principles and customary law in the context of international environmental law). United Nations Convention Law of the Sea (UNCLOS) is the main legal protection of the marine environment. Settings on the prevention, reduction and control, even the oil pollution liability of the vessel shall be regulated by the International Maritime Organization (IMO). International Convention for the Prevention of Pollution from Ship, 1973, together with amendments of 1978 (MARPOL 1978) and Annex I (oil pollution prevention) regulations concerning the prevention of technical oil spill from the ship which must be adhered to by both the ship owners, ship operators and state party . Provisions of MARPOL 73/78 more set on preventing oil spills from vessel operations. Nevertheless MARPOL 73/78 also regulates the prevention of pollution from accidents, although not regulate the navigation settings as preventive aspects. Settings on the prevention and mitigation of pollution in the form of an oil spill are set in the Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC). This Convention governs the emergency plan by oil pollution, reporting procedures, national systems in the preparation and control of pollution, as well as international cooperation in pollution response. Arrangements regarding liability set forth in the Convention on Civil Liability for Oil Damage and its 1969 Protocol 1992 (CLC 1992) and the Convention on the Establishment of an International Fund For Compensation for Oil Pollution Damage 1992 (FUND 1992). CLC 1992 applies the principle of strict liability (strict liability), in which the owner of the vessel at the time of the accident liable to replace any losses incurred. However, compensation in the CLC 1992 is limited, unless the pollution is the result of deliberate opator proven or vessel owner or omissions which are clearly unknown consequences.

Under UNCLOS Article 43 paragraph b, the users and the states bordering straits used for international navigation are required to cooperate in the prevention, reduction and control of pollution from ships. As a strait used for international navigation, Indonesia, Malaysia and Singapore are bounded by those provisions. Through a cooperative

mechanism that also involves other stakeholders (user states, the oil industries, ship industries, and NGOs IMO) have agreed to a variety of cooperation mechanisms. There are three forms of cooperation mechanisms are cooperative forum, project coordination committee, and aids to navigation Fund (ANF). For prevention, the arrangement agreed as Traffic Separation Scheme navigation (TSS), Vessel Traffic Systems (VTS), radar facilities, under keel clearance and mandatory ship reporting system. However, less attention trilateral cooperation prevention of pollution from ship operations (disposal, deballasting, and leaching tenaker). Pollution prevention aspects of the agreement with the Standard Operating Procedure for Joint Oil Spill Combat in the Straits of Malacca and Singapore (SOP). SOP aims to set the action to be taken either individually (state) or together in tackling oil spills from ships. Besides the preparation and mitigation efforts are also initiated by ASEAN, namely ASEAN Oil Spill Response Plan (ASEAN-OSRAP). OSRAP ASEAN aims to improve the ability of countries to respond to oil spills. This plan provides a plan of cooperation to jointly assistance from member countries and organizations in response to the oil spill. Regarding project funding agreement ANF mechanisms through the collection and deposit of funds in the form used for the renewal and maintenance of navigational instruments. Bailout funds for pollution prevention activities supported by the MSC in the form of The Malacca Straits Revolving Fund (Fund bailout for the Straits of Malacca and Singapore). Japan will provide funds amounting to 400 million yen. Funds are used for a specific purpose in facilitating the cleanup operation so there is an oil spill incident by ship either by accident or routine. Funds may be lent to third countries in case of coastal oil spills in the sea and their oil spill impacts to the coastal state waters. This mechanism is a mechanism bailout fund, because the responsibility is on the pollutant contamination based on the principle of polluter pays principle and strict liability set out in Jo CLC 1969 CLC 1992. If the beach has received compensation from the polluters, the state institution shall refund to the MSC. However, the value of user contributions and industry users of the strait is not worth the value of the vital Straits of Malacca and Singapore for their economic sustainability.

Indonesia as a coastal state has sovereignty and sovereign rights in

the Straits of Malacca and Singapore is authorized by the UNCLOS (Article 42) to make regulations in terms of prevention, reduction and control of pollution impacts. The main legal protection of the marine environment Indonesia, Act No. 17 of 2008 on Shipping. Prevention and control of marine pollution originating from ships set out in the law. Act No. 17 of 2008 regulate the prevention sourced from operational vessel with set provisions on the conditions and restrictions ship seaworthy disposal at sea. Besides this law implicitly regulate pollution from prevention of accidents through navigation settings. Further provisions on the prevention and control of pollution regulated in Government Regulation No. 21 of 2010 on the Protection of Marine Environment. The Indonesian government has enacted President Regulation No. 109 of 2006 on Disaster Emergency Due to Oil Spill in the Sea is set in. This regulation governs the institutional and emergency response information flow of oil spills at sea.

Considering there are several international conventions govern to the protection of the marine environment that has not been ratified by one or all of the coastal states (eg OPRC ratified by Malaysia and Singapore), the need for harmonization of ratification, accession and implementation of such conventions. Further, the special rules in the area of MARPOL 73/78, should the effort to establish the Straits of Malacca-Singapore as a special region, Particularly Sensitive Sea Area (PSSA) in IMO resolution. Such determination will bring positive implications in the protection of the marine environment Straits of Malacca and Singapore. If it has been designated as PSSA, coastal states may have a strong argument to set rates for the purposes of supervision and protection of the straits.

Need to increase the participation and contribution of other stakeholders (besides the littoral States) in cooperative forum, project coordination, and the Aids to Navigation Fund and engagement more in control of oil pollution emergency plan as stipulated in the OPRC. One is the NGO. NGOs play an important role in ensuring the fulfillment of obligations in full to industry involved and assist in the enforcement of the law to the breaking ships. Besides NGOs, the involvement of the state and users industries of the strait also be increased from the aspect of participation in the discussion forums and contribute funding.

Apart from the aspect of contribution, cooperation mechanisms also need to regulate prohibition of deliberate oil dumping. Article 194 paragraph (3) letter b UNCLOS 1982 confirms that the measures to be taken in the protection and preservation of the marine environment, not only related to the safety of navigation, but also the prevention of the intentional disposal. Most of the results of cooperative mechanism focus on safety of navigation so it does not give more attention to the discussion on the prevention, prohibition and control of illegal dumping. Though the activities of oil waste disposal and cleaning of ships is the most dominant of oil pollution in the Straits of Malacca and Singapore. Therefore we need special arrangements, including increasing the capacity of the port state control in the investigation and prosecution ship responsible for the illegal disposal of oil. Need for regional assessment to assess the condition of the marine environment in the Straits of Malacca and Singapore. The existence of the data obtained as a result of this assessment is used for materials management strategy and policy formulation Malacca and Singapore Straits.

REFERENCES

A. Books

Asshiddiqie Jimly, 2007, Pokok-*Pokok Hukum Tata Negara Indonesia Pasca Reformasi*, BIP, Jakarta.

B Clark R., 2003*, Marine Pollution*, Oxford University Press, New York.

Black Henry Campbell, 1990, *Black's Law Dictionary*, Edisi Keenam, West Publishing, St. Pail.

Churchill Robin Rolf dan Alan Vaughan Lowe, 1988, *Law of the Sea*, Manchester University Press, Manchester.

GEF/UNDP/IMO regional Programme, 1997, *Malacca Straits; Special Area? The Need and Feasibility of Designating the Malacca Straits as aSpecial Area under MARPOL 73/78*.

Hornby A.S., dkk, 1974, *Oxford Advanced Learner's Dictionary of Current English*, Oxford University Press, Oxford.

International Maritime Organization, 1988, *Manual on Oil Pollution*, Section II Contingency Planning, London, IMO.

__, 1993, *Report of IMO Working Group on The Malacca Strait Area*, International Maritime Organization, London.

International Hydrographic Organization, 1953*, Limits of Ocean and Seas*, Montecarlo

Juajir Sumardi, 1996, *Hukum Pencemaran Laut Transnasional*, Citra Aditya Bakti, Bandung.

Kantaatmadja Komar, 1981, *Ganti Rugi Internasional Pencemaran Minyak di Laut*, Alumni, Bandung.

Kiss Alexandre dan Dinah Shelton, 2007, *Guide To International Environmental Law*, Martinus Nijhoff Publishers, Leiden.

Kusumaatmadja Mochtar, 1978, *Bunga Rampai Hukum Laut*, Cetakan Pertama, Jakarta.

_, 1986, *Hukum Laut Internasional*, Badan Pembinaan Hukum Nasional Departemen Kehakiman, Jakarta.

ND Mukti Fajar & Yulianto Achmad, 2010, *Dualisme Penelitian Hukum Normatif & Emprisi*, Pustaka Pelajar, Yogyakarta.

Ndiaye Tafsir Malick, 2007, *Law of The Sea, Environment Law and Settlement of Dispute*, Martinus Nijhoff Publishers, Leiden/Boston.

O'Brien John, 2001, *International Law*, Routledge Cavendish, New York.

Sands Philippe, 2003, *Principle of International Environmental Law*, Second Edition, Cambridge University Press, Cambridge.

Shaw Malcolm N., 2004, *International Law*, Edisi Kelima, Cambridge University Press, Cambridge.

Silalahi M. Daud, 1992, *Pengantar Hukum Lingkungan Laut Indonesia dan Implementasinya Secara Regional*, Pustaka Sinar Harapan, Jakarta.

Sodik Dikdik Mohamad, 2011, *Hukum Laut Internasional dan Pengaturannya di Indonesia,* Refika Aditama, Bandung.

Soehino, 2010, *Hukum Tata Negara: Perkembangan Pengaturan Pelaksanaan Pemilihan Umum di Indonesia,* BPFE,Yogyakarta.

Soekanto Soerjono, 1986, *Pengantar Penelitian Hukum*, UI Press, Jakarta.

Soekanto Soerjono dan Sri Mamudji, 2006, *Penelitian Hukum Normatif Suatu Tinjauan Singkat*, Raja Grafindo Persada, Jakarta.

Thia-Eng Chua dkk*,* 1997*, Malacca Straits Environmental Profile*, GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas.

B. Journal, Dissertation, Thesis, Paper

Agoes Etty. R., 2005, *Pengelolaan Keamanan di Selat Malaka-Singapura Secara Terpadu*, Badan Pengkajian dan Pengembangan Departemen Luar Negeri, Jakarta.

__, 2010, "Perspektif Hukum Internasional Terhadap Pencemaran Lintas Batas Lingkungan Laut oleh Minyak", *Jurnal Opinio Juris*, Volume 04, Oktober-Desember 2010, Kementerian Luar Negeri RI.

Ahmad Mohammad Razif bin, 1997, "The Financial Cost of Risk Management in the Straits of Malacca" in Hamzah Ahmad (ed), *The Straits of Malacca: International Cooperation in Trade, Funding, & Navigation Safety*, Pelanduk, Kuala Lumpur.

Amel A. Nimer dkk, 2009, "Nile Blend Crude Oil: Wax Separation Using Mek-Toluene Mixtures", *The Arabian Journal for Science and Engineering,* 35 (2B).

Anom Surya, 2009, *Perlindungan Negara Terhadap Pencemaran Minyak di Pelabuhan Akibat Operasi Kapal Tanker Berdasarkan UNCLOS 1982,* Thesis, Fakultass Hukum Universitas Gadjah Mada, Yogyakarta.

Arief Usman, 1995, *Kerjasama Tiga Negara Indonesia-Malaysia-Singapura mengenai Selat Malaka-Singapura dan Ketahanan Nasional*, Thesis, Program Pasca Sarjana Universitas Indonesia, Jakarta.

Basnur Al Busyra, 2009, "Towards a Better Management of Malacca and Singapore Straits",

Jurnal Diplomasi 1 (2), September 2009, Kementerian Luar Negeri Republik Indonesia.

Bateman Sam, dkk, 2006, "Safety and Security in the Malacca and Singapore Straits An Agenda for Action"*, Institute of Defence and Strategic Studies Policy Paper.*

Beckman Robert, 2008, "International Cooperation to Enhance Environmental Protection in the Straits of Malacca and Singapore Developments and Prospects"*,* disampaikan pada *The 8 th Science Council of Asia Conference*, China, [online] www.scj.go.jp/en/sca/activities/...8.../o3.pdf, (diakses pada 23 April 2012).

Capon Craig J., 1998, "The Threat of Oil Pollution in the Malacca Strait: Arguing for Abroad Interoretation of the United Nations Convention on the Law of the Sea", *Pacific Rim & Policy Journal*, 7 (1).

Cherlebois Patricia, *Preparedness, Response and Cooperation to Maritime Oil Spills*, International Maritime Organization.

Chris Richards, *Natuna Sea Incidents and The Response to the Spill Case History*, [online]http://www.pcs.gr.jp/doc/esymposium/2001/2001_chris_richards_e.pdf, (diakses pada 27 Agustus 2012).

Direktorat Kesatuan Penjagaan Laut dan Pantai, 2010, "Strategi Penanganan Pencemaran Laut Sebagai Implementasi UU 17/2008, PP 21/2010 dan Perpres 109/2006", disampaikan pada *Roundtable Discussion Upaya Penanganan Pencemaran Laut Dalam Rangka Penerapan PP 21 Tahun 2010 tentang Perlindungan Lingkungan Maritime*, Kementerian Perhubungan RI.

Direktur Jenderal Transportasi Laut, 2011, *Oil Spills Response*, [online] http://i- eec.com/indoqhsse2011/Proceeding/PD4%20%20Capt.%20Jhony%20R.%20Silalahi.pdf, (diakses pada 27 Agustus 2012).

Djalal Hasjim, 2008, The Development on the Straits Malacca and Singapore, [online] www.nippon-foundation.or.jp/.../malacca.../6.... - (diakses pada 23 Desember 2012).

Dyke Jon M. Van, 2007, *Allocating Fish Accros Jurisdiction dalam Law of The Sea, Environmental Law and Settelement of Disputes*, Martinus Nijhoff Publishers, Leiden/Boston.

___, 2008, *Transit Passage Through International Straits*, Manoa, University of Hawai'i, [online] law.hawaii.edu/sites/.../Straits100308.pdf, (dikases pada 10 Agustus 2012).

Emran Amelia, 2007, *The regulation of vessel-source pollution in the Straits of Malacca and Singapore*, Thesis, University of Wollongong.

Holmila Erkki, 2005, "Common Heritage of Mankind: in the Law of the Sea", *Acta Societatis Martensis*, [online], core.kmi.open.ac.uk/download/pdf/.../143, (diakses pada 21 Maret 2012).

Hussin Abd Rahim Bin, 2005*, "*The Management Of Strait Malacca: Burden Sharing As The Basis For Cooperation"*, Lima International Maritime Conference*, Langkawi, [online] http://community.middlebury.edu/~scs/docs/rahim-present.pdf , (diakses pada 12 Januari 2012).

Ibrahim Rosnani, *International/Regional Cooperation to Oil Spill Response in the Straits of Malacca:an Overview*, [online] http://www.pcs.gr.jp/doc/esymposium/12169/95_rosnani_ibarahim_e.pdf,(diakses pada 23 Agustus 2012).

International Maritime Organization, 1998, *Safety of Navigation*, MSC 70/11/3, [online]http://docs.imo.org/Search.aspx?mode=advanced&originator=Indonesia&symbo l=&session=&titles=&datetype=last&datelast=&documentlang=en&cid=1&keywords= Vessel+Traffic+Systems, (diakses pada 23 Juni 2012).

__, 2003, *Ship Seporting and Related Matters, NAV 49/3/9,* [online] <http://docs.imo.org/Search.aspx?mode=advanced&originator=Indonesia&symbol=&sess ion=&titles=&datetype=last&datelast=&documentlang=en&cid=1&keywords=Traffic+Separation+Scheme>, (diakses pada 15 Agustus 2012).

__, *Vessel Traffic Services*, [online] http://www.imo.org/OurWork/Safety/Navigation/Pages/VesselTrafficServices.aspx, (diakses pada 15 Agustus 2012).

Jakarta Statement on Enhacement of Safety, Sucurity, and Environmental Protection in the Straits of Malacca and Singapore, Jakarta, Indonesia, 8 September 2005, IMO Doc IMO/JKT ½.

Kotani Tetsuo, 2009, "Antipiracy Measures: Japan's Experience in the Malacca Strait and Its Implications for the Horn of Africa", disampaikan pada *Legal Expert's Workshop on Maritime Piracy in the Horn of Africa*, 7 April 2009 [online] www.usnwc.edu/getattachment/.../Kotani, (diakses pada 21 Desember 2012).

Kuala Lumpur Statement on Enhacement of Safety, Security and Environmental Protection in the Straits of Malacca and Singapore, Kuala Lumpur, Malaysia 20 September 2006, IMO Doc IMO/KUL 1/4.

Luppi Barbara, dkk, "Environmental Protection for Developing Countries: The Polluter- Does-Not-Pay Principle", *Legal Studies Research Paper Series, Research Paper* No. 09-08, University of Minnesota Law School, [online] http://ssrn.com/abstract=1339063 (diakses pada 12 April 2012)

Malacca Straits Council, *Towards Enhancing the Navigational Safety and Preserving the Marine Environment in the Straits*, [online] www.nmc.com.sg/MSC.pdf, (diakses pada 20 April 2012).

Mamlyuk Boris N., 2007, "Analyzing the Polluter Pays Principle Through Law and Economics", *Southeastern Environmental Law Journal*, 18(1)

Mandryk Wally, 2008, "Lloyd's Marine Intelligence Unit; Strategic Importance of Trade and Shipping in the Straits of Malacca and Singapore", disampaikan dalam *Symposium on Safety and Protection of the Marine Environment in the Straits of Malacca and Singapore*, Kuala Lumpur.

Muhdar Muhammad, 2010, *Pengaturan Polluter Pays Principle dalam Penyelesaian Pencemaran Laut yang Bersumber dari Eksploitasi Minyak dan Gas Bumi*, Disertasi, Fakultas Hukum Universitas Gadjah Mada, Yogyakarta.

Mukherjee Proshanto K., 2007, "The Penal Law of Ship-Source Marine Pollution: Selested Issues in Perspective", *Law of the Sea, Environmental Law and Settelement of Disputes*, Martinus Nijhoff Publishers, Leiden/Boston.

Mukhtasor, *Penanggulangan Pencemaran Laut Akibat Aktivitas Migas di Indonesia*, [online] himatekla.files.wordpress.com, (diakses pada 27 Agustus 2012).

Mustapher Ntale, *Rethinking the Application of the Principle of 'Common but Differentiated Responsibilities' in the International Climate Legal Framework*, Faculty of Law, Islamic University In Uganda [online] http://ssrn.com/abstract=1312282, (diakses pada 22 Februari 2012).

Nash Jonathan Remy, 2007, "Standing and The Precautionary Principle", *Chicago Working Paper* No. 178, [online] http://ssrn.com/abstract_id=1011937, (diakses pada 20 April 2012).

Nengye Liu, *International Legal Framework on the Prevention of Vessel-Source Pollution*, [online] http://ssrn.com/abstract=1942700, (diakses pada 20 April 2012).

OECD, 1992, *The Polluter-Pays Principle OECD Analyses and Recommendations*, Environment Directorate Organisation For Economic Co-operation And Development.

Pasaribu Imran Robert, 2005, "Penanganan Masalah Lingkungan Hidup di Perairan Selat Malaka", disampaikan dalam *Pertemuan Kelompok Ahli tentang Kebijakan Terpadu Pengelolaan Keamanan Selat Malaka*, Badan Pengkajian dan Pengembangan Kebijakan, Departemen Luar Negeri.

Pedersen Ole W., 2010, *Environmental Principles and Environmental Justice*, [online] http://ssrn.com/abstract=1592850, (diakses pada 24 April 2012).

Peters Anne, 2009, "Humanity as the A and Ω of Sovereignty", *The European Journal of International Law*, 20 (3) .

Purwaka Tomy H., 1998, "Control of Marine Pollution in The Straits of Malacca and Singapore: Modalities for International Cooperation", *Singapore Journal of International & Comparative Law* [online] law.nus.edu.sg/sybil/.../SJICL-1998-452.pdf, (diakses pada 22 Februari 2012).

Pyburn Brent, *Contingency Planning for Oil Spill*, [online] http://www.pcs.gr.jp/doc/esymposium/12169/95_brent_pyburn_e.pdf, (diakses pada 24 Agustus 2012).

Ramesh S., 2007, Malaysia, "Indonesia and Singapore Set Up to Cooperative Mechanism", *Channel News Asia,* [online] http://www.channelnewsasia.com/stories/singaporelocalnews/view/297801/1/.htm, (diakses pada 21 Juni 2012).

Roosa John, 2005, "The Strait of Malacca:Gateway or Gantllet",*University of Toronto Quarterly*, 74 (1).

Rusli Mohd Hazmi Bin Mohd, 2011, "The Legal Feasibility of aTraffic Limitation Scheme in Straits Used for International Navigation: a Study of the Straits of Malacca and Singapore", *International Journal of Humanities and Social Science*, 1 (6).

__, 2012, *Balancing Shipping and the Protection of the Marine Environment of Straits Used for International Navigation: A Study of the Straits Malacca and Singapore*, Thesis, University of Wolongong.

Santoso Wahyu Yun, 2006, "Penerapan Skema Pertangungjawaban Hukum Dan Ganti Kerugian dalam Pencemaran Laut", *Mimbar Hukum,* 18 (1), Februari 2006, Fakultas Hukum Universitas Gadjah Mada.

Shahryari Mansoureh dan Mohd Arshad Atta Mohamed, 2011, "Shipping Points in the Straits Malacca", *MIMA Bulletin*, 18 (1), Maritime Institute of Malaysia.

Siang Captain Mark Heah Eng, 1999, "Implementation of Mandatory Ship Reporting in the Malacca and Singapore", *Singapore Journal of International & Comparative Law*, [online] law.nus.edu.sg/sybil/.../SJICL-1999-345.pdf, (diakses pada 21 Juni 2012).

Sien Chia Lin, 1998, "The Importance of The Straits of Malacca and Singapore", *Singapore Law Journal of International & Comparative Law*, [online] law.nus.edu.sg/sybil/.../SJICL-1998-301.pdf, (diakses pada 21 Desember 2011)

Singhota Gurpreet S, 1998, "The IMO's Role in Promoting Safety of Navigation.and Control of Marine Pollution in the Straits of Malacca and Singapore", *Singapore Journal of International & Comparative La*w, [online] http://law.nus.edu.sg/sybil/downloads/articles/SJICL-1998-2/SJICL-1998-290.pdf, (diakses pada 27 Agustus 2012).

Singapore Statement on Enhacement of Safety, Security, and Environment Protection in the Straits of Malacca and Singapore, 6 September 2007, IMO Doc IMO/SGP 1/WP.1.

Sub-Committee on Safety of Navigation, 2012, *Routeing of Ships, Ships Reporting and Related Matter,* [online] http://docs.imo.org/Search.aspx?keywords=malacca+straits&SortBy=DisplayDate&Sor tDirection=Descending, (diakses pada 27 Agustus 2012).

Suhaidi, 2005, "Penanganan Masalah Lingkungan Hidup di Perairan Selat Malaka-Singapura", *Jurnal Luar Negeri*, 22 (2) Agustus 2005, Departemen Luar Negeri Republik Indonesia.

__, 2005, "Penanganan Masalah Lingkungan Hidup di Perairan Selat Malaka- Singapura", makalah disampaikan pada *Pertemuan Kelompok Ahli tentang Kebijakan Terpadu Pengelolaan Keamanan Selat Malaka-Singapura*, Badan Pengkajian dan Pengembangan Kebijakan Departemen Luar Negeri.

__, 2006, "Perlindungan Lingkungan Laut: Upaya Pencegahan Pencemaran Lingkungan Laut dengan Adanya Hak Pelayaran Internasional di Perairan Indonesia", *pidato pengukuhan Guru Besar Tetap di Hadapan Rapat Terbuka Universitas Sumatera Utara*, disampaikan pada 1 April 2006.

The Batam Joint Statement on the 4th Tripartite Ministerial Meeting of the Littoral States on the Straits of Malacca and Singapore, diakses dari [online] http://www.mfa.gov.sg/content/mfa/media_centre/press_room/if/2005/200508/infocus_20050802_02.html, (diakses pada 14 Agustus 2012).

Triatmodjo Marsudi, 2000, "Anatomi Hukum Lingkungan Internasional: Sistem Generik Penyangga Kehidupan Umat Manusia", *Mimbar Hukum*, 34 (2), Fakultas Hukum Universitas Gadjah Mada, Yogyakarta.

Tripartite Technical Experts Group, 2008, 33rd Tripartite Technical Experts Group (TTEG) Meeting on the Safety of Navigation in the Straits of Malacca And Singapore

Vertzberger Yaacov, 1982, "The Malacca/Singapore Straits", *Asian Survey* XXII (7), The Regents of University of California.

World Trade Organization, 2010, "International Trade Statistic: Trade to Expand by 9,5 Per Cent in 2010 After a Disnal 2009", *WTO Reports* [online] http://www.wto.org/english/news_e/pres10_1/pr598_e_htm, (diakses pada 21 Juni 2012)

C. International Convention and Legislation

Convention Concerning the Protection of the World Cultural and Natural Heritage 1972.

Convention on the Civil Liability for Oil Damage,1969.

Convention on the Establishment of an International Fund For Compensation for Oil Pollution Damage, 1971.

*Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter,*1972.

Convention for the Prevention of Pollution of Sea by Oil, 1954.

International Convention on Oil Pollution Preparadness, Respon and Cooperation, 1990.

International Convention Relating to Intervantion on the High Seas in Cases of Oil Pollution, 1969.

International on Plant Genetic Resource For Food and Agriculture 1983.

The Convention on Biological Diversity, 1992.

The Convention on the Conservation of Migratory Species of Wild Animals, 1971.

The Convention on Wetlands of International Importance especially as Waterfowl Habitat, 1971.

The International Convention For the Prevention of Pollution from Ship, 1992.

The International Undertaking on Plant Genetic Resources, 1983.

The Rio Declaration on Environment and Development, 1992.

The World Heritage Convention, 1972.

Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, 1967.

United Nations Convention on the Law of the Sea (Bahasa Inggris dan Indonesia), Pusat Studi Hukum Internasional dan Perjanjian Internasional.

United Nations General Council Resolution A/RES/45/212 1990 about Protection of global climate for present and future generations of mankind.

D. Internet

BBC News, 2010*, Singapore warns of threat to tankers in Malacca Strait*, [online] http://news.bbc.co.uk/2/hi/asia-pacific/8549053.stm, (diakses pada pada 25 Juli 2012).

Collision between MT Bunga Kelana 3 and MV Waily in the Singapore Strait - Update , [online] http://www.mpa.gov.sg/sites/global_navigation/news_center/mpa_news/mpa_news_deta il.page?filename=n100525.xml, (dikases pada 23 Agustus 2012).

Gesamp, [online] http://www.gesamp.org/about, (diakses pada 14 Agustus 2012). International Convention for The Prevention of Pollution form Ships, [online]

http://cil.nus.edu.sg/1978/1973-international-convention-for-the-prevention-of- pollution-from-ships-as-amended-by-the-protocol-of-1978-marpol-7378/, (diakses pada 21 April 2012).

Legality Of The Threat Or Use Of Nuclear Weapons, Advisory Opinion of 8 July 1996,[online] http://www.icj-cij.org/docket/files/95/7497.pdf, (diakses pada 21 April 2012).

Liputan6, 2000, *Tumpahan Minyak di Batam Membawa Rezeki*, [online] http://musik.liputan6.com/read/2375/single, (diakses pada 27 Agustus 2012).

Petroleum Association of Japan, [online] www.paj.gr.jp/english/, (diakses pada 21 April 2012).

Repots of Advisory Opinion Legality of the Threat or Use of Nuclear Weapons (1996), [online] http://www.icj-cij.org/docket/files/95/7646.pdf, (diakses pada 21 April 2012).

Reports of Judgement, Advisory Opinions and Orders Case Concerning the Gabacko-Nagymaros Projects, (Hungary V Slovakia), 1993, [online] http://www.icj- cij.org/docket/files/92/7375.pdf, (diakses pada 21 April 2012).

Ship Routeing, [online] http://www.imo.org/ourwork/safety/navigation/pages/shipsrouteing.aspx, (diakses pada 15 Agustus 2012).

Tempo Interaktif, 2001, *Kasus Kapal Natuna Sea: Ratusan Nelayan Tanyakan Soal Ganti Rugi,* [online] http://www.tempo.co.id/hg/nasional/2001/02/05/brk,20010205-01,id.html, (diakses pada 27 Agustus 2012)

The MOX Plan Case (Ireland V United Kingdom), 2001, [online] http://www.itlos.org/fileadmin/itlos/documents/cases/case_no_10/2001- 5.13.11.01.E.pdf, (diakses pada 21 April 2012).

World Oil Transit Chokepoints, [online] http://www.eia.doe.gov/cabs/World_Oil_Transit_Chokepoints/Full.html, (diakses pada 10 Desember 2012).