The Urgency Littoral States in Melacca Strait to Eradicate The Marine Pollution

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Abstract

The Strait of Malacca is one of the strategic and potential straits in the world. On the other hand, this strait can be classified as one of the busiest straits in the world, this is indicated by the existence of 60,000 vessels that pass through this strait each year. This is because the volume of vessels continues to increase every year and this has a significant impact on the marine environment. To overcome this, it is necessary to have harmonization and cooperation between littoral countries in overcoming environmental issues around the Malacca Strait. This situation raises the essentiality and urgency of the littoral state to be pro-active in taking a preventive attitude and overcoming the issue of marine pollution.

Keywords: the urgency, littoral states, marine pollution, Malacca Strait.

A. Introduction

The Strait of Malacca is one of the busiest straits in the world with more than 60,000 vessels through the strait per year. This strait is located in strategic location to connect west part and east part of the world (Pulung Widhi Hari Hananto, 2019). Tracing back the historical background of Strait of Malacca in the 16th century, it has more than for hundreds years benefiting people around the world. It serves as sea route and facilitates the travels of people. As it provides economic links with the outside world, the world had witnessed a succession of kingdoms along the Straits of Malacca. From the Srivijaya Empire and the Malacca Sultanate to European colonialists, all these power became outstanding maritime empires due to its strategic ports alongside the Strait of Malacca. The Straits of Malacca was the major contributors to prosperity during that time. (S Jayakumar, 1998).

In the present day Strait of Malacca is one of the busiest straits in the world used for international trade and transportation. This strait becomes the most strategic and important shipping lanes as it shortened the ship's course navigates from the east continent to the west continent of the world and vice versa. It is recorded that in a year more than 60,000 vessels passing through the straits. Half of the world's oil flows and one-third world's sea-borne trade is actually carried through this strait. Countries like China, Japan and Korea that have to

imports most of their raw materials and energy are very much dependent on the Straits of Malacca as much of their trade and energy imports are transported through this straits from the Middle East. (H.M Ibrahim & Nazery Khalid, 2007). Thus, it is expected from these countries to give great interest in keeping the straits secure and safe. Japan for example provides funding for the Straits of Malacca from Nippon Foundation through the Malacca Straits Council. This foundation had spent more than US$ 125.5 million navigation safety and marine environment protection in the straits. (Wan Siti Adibah et. al., 2012).

Apart from being strategic and important shipping lanes, Straits of Malacca located at the center of Southeast Asia and became important home and habitat of various type of marine biodiversity. Some researches that have been conducted recorded that almost 29 species of marine mammals in Malaysian waters and more than 13 species of whales, dolphins, porpoises and dugongs in Malaysian waters. A further 16 species of cetaceans such as Orcinus orca, Phuster catodon, Kogia breviceps occasionally stray or pass through the Straits of Malacca. (A G Mazlan et al., 2005). There is least information found regarding number of species of marine mammals in Indonesian and Singapore waters. However, some of marine mammals have been the main fishing for Indonesia fishermen in the east coast of Sumatera, e.g. demersal fish, shrimp, small pelagic and large pelagic. (Adirini Pujayanti, 2011).

Basically there are four states bordering the Straits of Malacca namely Thailand, Indonesia, Malaysia and Singapore. However, the navigational channel only involves seas of Indonesia, Malaysia and Singapore which makes these three states the main littoral states of the Straits of Malacca. Measurement of the Straits of Malacca is differed where it narrowing gradually from 220 nautical miles at the northern-end to 8 nautical miles at the southern-end. The depth of the water is irregular, from 17 miles to 55 miles. (Chua Thia-Eng et al., 2000). As the UNCLOS allows coastal states to claim 12 nautical miles for its territorial sea, most of the transit passage in the Straits of Malacca is actually within the territorial sea of the littoral states.

B. Result And Discussion

1. Littoral States National Legal Regime To Prevent, Reduce And Control Of Marine Pollution

Nationally, each littoral state has its own regulatory and institutional framework. These regulatory and institutional frameworks specializing in marine pollution, however, are not

stand alone. They are mutually connected to other regulatory and institutional sectors. At least, the sectors of marine, security and environment are sectors involved in regards of marine pollution. Other sectors may be involved depending to case-by-case situations.

In regards to Indonesia national instruments, Indonesia has ratified UNCLOS III 1982 through Law No. 3/1985. This ratification has made Indonesia commitment to protect and preserve marine environment. Although without further regulation, ratification through Law No. 3/1985 is enough to make UNCLOS III 1982 apply in this country. However, to strengthen this provision, Indonesia has enacted several additional regulations as follows:

1. Law No. 5/1983 on Indonesia Exclusive Economic Zone (EEZ);
2. Law No. 6/1996 on Indonesian Territorial Water;
3. Law No. 32/2009 on Protection and Preservation of Living Environment;
4. Law No. 41/1999 on Forestry;
5. Law No. 27/2007 on Administration of Coastal Areas and Smaller and Outer Islands as amended with Law No. 1/2014;
6. Law No. 31/2004 on Fisheries as amended with Law No. 45/2009; and
7. Law No. 17/2008 on Shipping.

All those Indonesia national regulations have their own speciality regarding sources-based pollution and its legal enforcer related to marine pollution in strait area. To know more detail about this, please see Table 1.1 below.

Table 1.1: Indonesia Regulation and Institutional Agency on Marine Pollution

Regulation	Pollution Sources	Sanction	Institution
Law No. 5/1983 on Indonesia EEZ	Pollution from activities in area	Criminal sanction, fine, civil remedies	Indonesia Navy
Law No. 6/1996 on Indonesian Territorial Water	Sea-bed activities, activities in area, dumping and vessel-based sources	-	Central government, municipal government and the Police.
Law No. 32/2009 on Protection and Preservation of Living Environment	Land-based pollution	Administrative sanction, criminal sanction, fine sanction and civil remedies	Central government, municipal government and the Police.
Law No. 41/1999 on Forestry	Land-based pollution and atmospheric pollution	Administrative sanction, criminal sanction, fine sanction and civil remedies	Central government, municipal government and the Police.

Law No. 27/2007 on Administration of Coastal Areas and Smaller and Outer Islands as amended with Law No. 1/2014	Land-based pollution, Sea-bed activities and Activities in area	Administrative sanction, criminal sanction, fine sanction and civil remedies	Central government, municipal government and the Police.
Law No. 31/2004 on Fisheries as amended with Law No. 45/2009	Dumping and vessel-based sources	Administrative and criminal sanction	Indonesia Navy, Indonesia Territorial Water Police, Civil Servant Investigator under the Ministry of Sea and Fishery.
Law No. 17/2008 on Shipping.	Dumping and vessel-based sources	Administrative sanction, criminal sanction, fine sanction and civil remedies	Indonesia Navy, Indonesia Territorial Water Police, Civil Servant Investigator under the Ministry of Sea and Fishery.

From those regulations, only Law No. 17/2008 on Shipping that has direct provision on preventing, reducing and controlling of marine pollution especially from shipping. Article 169 requires ship owners and operators to fulfil the requirement of management of safety and pollution prevention. This requirement further is regulated by subsidiary legislation subject to international and national legal regimes that apply. Certificate of that management will be issued by the authority in the form of Document of Compliance (DOC) for ship company and Safety Management Certificate for the ship.

Similar to Indonesia, Malaysia has also legislative frameworks for regulation on marine pollution as mentioned in Table 1.2. The most favor regulation used by this country against marine pollution is Environmental Quality Act 1974. It is because this Act covers all sources of pollution (a one-size-fits-all regulation). Although Environmental Quality Act 1974 is the main regulation for pollution, other acts or regulations are still also applied.

Besides Environmental Quality Act 1974, there are also other acts that have specific provisions on preventions, reduction and control of marine pollution. They are Merchant Shipping Ordinance 1952 and Exclusive Economic Zone Act 1984 (EEZ Act). Section 306L – 306Q of the Merchant Shipping Ordinance 1952 regulates the issuance of certificate and obligation to hold certificate for all ship as compliance on marine pollution control and management. Meanwhile, EEZ Act adopts definition of dumping from UNCLOS 1982 and civil liability and burden sharing in its provisions.

Table 1.2: Malaysia Regulation and Institutional Agency on Marine Pollution

Regulation	Pollution Sources	Sanction	Institution
The Merchant Shipping Ordinance 1952	Dumping and vessel-based sources	Administrative, fine	Prime Minister Department/Ministry of Natural Resources and Environment, Malaysia Maritime Enforcement Agency (MMEA)
Continental Shelf Act 1966	Sea-bed activities and activities in area	Fine, criminal imprisonment	Ministry of Natural Resources and Environment, Malaysia Maritime Enforcement Agency (MMEA)
Environmental Quality Act 1974	Land-based pollution, sea-bad activities, activities in area, dumping and vessel-based sources	Fine, criminal imprisonment	Ministry of Natural Resources and Environment (Director General of Environment Quality)
Exclusive Economic Zone Act 1984	Dumping, vessel-based sources, sea-bad activities and activities in area	Fine, criminal imprisonment	Ministry of Natural Resources and Environment (Director General of Environment Quality), Malaysia Maritime Enforcement Agency (MMEA) and any authorized officers
Merchant Shipping (Oil Pollution) Act 1994	Dumping, vessel-based sources,	Fine, criminal imprisonment, civil liability	Ministry of Transport, Malaysia Maritime Enforcement Agency (MMEA)
Fisheries Act 1985	Dumping, activities in area	Fine, criminal imprisonment	Ministry of Agricultures and Agro-based Industry, Malaysia Maritime Enforcement Agency (MMEA)

Different to Indonesia and Malaysia, Singapore has least legislative framework on prevention, reduction and control of marine pollution. However, Singapore effectively regulates marine pollution based on internal situation in its sea or water. It ratifies several conventions and then applies them to the country without further making any legislative frameworks. There are only two regulations enacted and has direct effect to prevent, reduce and control marine pollution. They are as mentioned in Table 1.3.

Table 1.3 : Singapore Regulation and Institutional Agency on Marine Pollution

Regulation	Pollution Sources	Sanction	Institution
Prevention of Pollution of the Sea Act 1990	Land-based sources, vessel-based sources, dumping	Fine, criminal imprisonment, civil liability	Maritime and Port Authority of Singapore (MPA)
Merchant Shipping (Civil Liability and	Dumping, vessel-based sources	Fine, criminal imprisonment, civil liability	Maritime and Port Authority of Singapore (MPA)

Compensation for Oil Pollution) Act			

Prevention of Pollution of the Sea Act 1990 is the Act that gives effect to the International Convention for the Prevention of Pollution from Ships 1973 as modified and added to by the Protocol of 1978. Meanwhile Merchant Shipping (Civil Liability and Compensation for Oil Pollution) Act 1998 is the Act to give effect to the International Convention on Civil Liability for Oil Pollution Damage 1992 and to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage 1992. Both Acts are related to the prevention, reduction and control of pollution of the sea and pollution from ships.

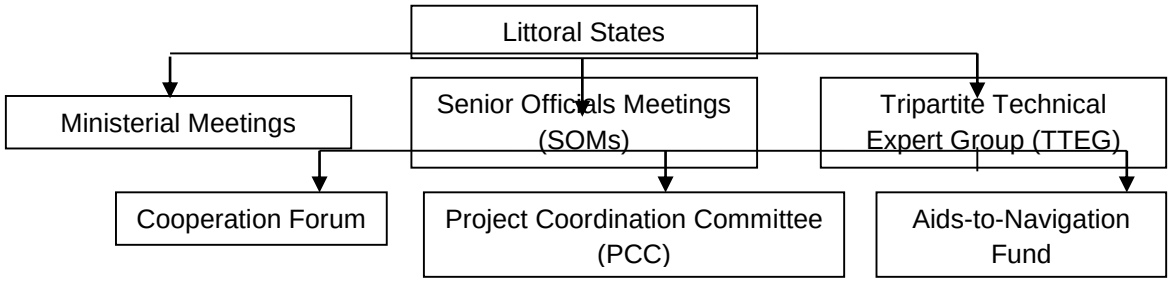
2. Ripartite Technical Expert Group (Tteg): The Cooperative Mechanism (Management Of Pollution In The Strait Of Melacca).

Although number of vessels transiting the Straits of Malacca fluctuates differently every year but the records are still enormous. In addition, from the large numbers of vessels it can be inferred that there is a large demand for shipping services such as navigational safety. This also led to the needs to protect the marine environment in the straits. Navigational safety and marine protection requires high technology equipment and expert workforces which can cause great financial demand to the littoral states. (H.M Ibrahim & Nazery Khalid, 2007). In 2008, Malaysia had spent more than RM 200 million towards maintenance of safety navigation and environmental protection in the Straits of Malacca. (Wan Siti Adibah, 2012).

Even though large numbers of vessels passing through the Strait of Malacca is recorded everyday but the fact that these vessels merely transiting the straits giving no economic gain for the littoral states. This problem has put pressure on the littoral states and the need to share the burden in maintaining the straits is very crucial. Burden sharing is actually an inherent obligation of every member states of UNCLOS as it is provided under article 43 and Part XII. Realising the need to address the navigation safety and pollution in the Straits of Malacca, the littoral states have undertaken several measures to maintain safety navigation as well as to protect the marine environment. Among other are Malaysian Maritime Enforcement Agency, MASLINDO, 'Eyes in the Sky' and increased patrols by the Marine Police of the littoral States. In 1971, littoral states established three-tier structure consists of Ministerial Meetings, Senior Officials Meetings (SOMs) and a Tripartite Technical Expert Group (TTEG). TTEG structures

relies on three pillars namely, Cooperation Forum, Project Coordination Committee and the Aids-to-Navigation Fund. The three main issues identified are security, safety and environment protection. (European Institute for Asian Studies, 2011).

Figure 1.4: Littoral States Three-Tier Structure



The Cooperation Forum is a platform for littoral states to hold meeting and open discussion with other user states, shipping industries and other stakeholder to exchange their views of common interest in the straits. In this forum, more concrete and practical cooperation between the littoral states and user states, shipping industry and other stakeholders can be achieved in the maintenance of safety of navigation and environment protection in the Straits. Certain projects in relation to safety and environment protection in the straits will be identified and agreed upon by the participants through this cooperation forum. This is where the PCC plays its role to co-ordinates the implementation of the straits projects. All financial contributions from international communities to maintain navigational aids in the straits will be conveyed into the Aids-to-Navigation Fund. Below is the amount collected for the Aids-to-Navigation Fund and its contributors. (Malaysia Maritime Department, 2010).

Table 1.5: Aids to Navigation Fund (Malaysia Maritime Department, 2010)

Contributor	Amount	Year
Malacca Strait Council	US$0.5 million	2009
	US$0.5 million	2010
	US$0.5 million	2011
	US$0.5 million	2012
United Arab Emirates	US$100,000	2008
	US$100,000	2009
	US$100,000	2010
	US$100,000	2011
	US$100,000	2012
	US$ 83,531.70 (100 million Korean Won)	2009

Contributor	Amount	Year
Republic of Korea	US$ 88,234.79 (100 million Korean Won)	2010
	US$91,547 (100 million Korean Won)	2011
	US$87,870.33 (100 million Korean Won)	2012
Kingdom of Saudi Arabia	US$100,000	2010
Nippon Foundation	US$1.351 million	2008
	US$2.5 million	2009
	US$ 1.39 million	2010
	US$ 1 million	2011
	US$ 660,000	2012
Middle East Navigation Aids Service	US$ 1 million	2009
	US$ 1 million	2010
	US$ 1 million	2012
IMO Malacca and Singapore Straits Fund	US$50,000	2009
	US$50,000	2010
	US$50,000	2011
	US$50,000	2012
People's Republic of China	US$250,000	Contributed in 2010 for the Project 4 implementation temporarily parked in the Aids to Navigation Fund
	US$210,000	Contributed in 2011
India	US 774,000	Contributed in 2008 for the 1st stage of Project 4 implementation temporarily parked in the Aids to Navigation Fund
Total	US$ 15,087,737.00	

Several efforts had been made by these littoral states to enhance cooperation among them. In 2006 with collaboration from the IMO, Ministerial Conferences were held in Kuala Lumpur. In accordance with the conference theme "Enhancing Safety, Security and Environmental Protection" littoral states have proposed six projects. The main aims of these projects are to maintain navigation safety and protecting the marine environment. Later in March 2007, another meeting was held in Singapore. This meeting witnessed the eagerness of littoral states to call for international communities' cooperation in ensuring clean environment and the safety of vessels transiting through the Strait of Malacca. This meeting had resulted to the agreement

on cooperative mechanism with the aim to enhance safety, security and environmental protection in the strait. Cooperative mechanisms become a platform for the littoral states to communicate with the user states and international communities as a whole to reach cooperative agreements. Cooperative mechanism involves three crucial component namely forum for regular dialogue, establishment of committee to coordinate and manage specific projects and a fund management. (H.M Ibrahim & Nazery Khalid, 2007).

In 2008, the first meeting of the PCC under the Cooperative Mechanism on the Straits of Malacca and Singapore between the littoral states and user states was held in Kuala Lumpur to discuss on the implementation of six projects in relation to safety of navigation and environmental protection in the Straits of Malacca and Singapore. The subsequent year, second meeting was held in Singapore with new projects proposed by Malaysia called as "Study on the Establishment of an Emergency Towing Vessels (ETV) Capability in the Straits". The other littoral states and user states agreed on this proposal as it would encourage more views and feedback. (2nd Project Coordination Committee Meeting, 2009). Another project on "Concept Study on Real-time Monitoring of Under-Keel Clearance in the Straits of Malacca and Singapore" was introduced in 2012 make the total of 8 projects. (5th Project Coordination Committee Meeting, 2012).

In the first meeting, only 8 participants involves including the littoral states namely Australia, China, USA, Japan, Republic of Korea and the littoral states. However, up to 2012 there are 9 other user states that involves in this meeting. (5th Project Coordination Committee Meeting, 2012).

Table 1.6: Projects under Co-operative Mechanism (Malaysia Maritime Department, 2010)

Group 1 (Malaysia)	Project 1	Removal of wrecks in the Traffic Separation Scheme in the Straits of Malacca and Singapore	India and Germany
	Project 2	Co-operation and capacity building on Hazardous and Noxious Substance (HNS) Preparedness and Response in the Straits of Malacca and Singapore	Australia, China and United States of America and European Commission

Group 2 (Singapore)	Project 3	Demonstration project of Class B Automatic Identification System (AIS) Transponder On Small Ships	Australia, Japan, Republic of Korea and IMO
	Project 4	Setting up a tide, current and wind measurement system for TSS in the Straits of Malacca and Singapore to enhance navigation safety and marine environment protection.	China
Group 3 (Indonesia)	Project 5	Replacement and maintenance of aids to navigation in the Malacca and Singapore Straits	Japan and Republic of Korea
	Project 6	Replacement of aids to navigation damaged by the tsunami incident of 2004	China
Singapore	Project 7	Study on the Establishment of an Emergency Towing Vessels (ETV) Capability in the Straits	IMO
Singapore	Project 8	Concept study on Real-time Monitoring of Under-Keel Clearance in the Straits of malacca	IMO

Table 1.7: Projects under Co-operative Mechanism and Countries Involved

1st Project Coordination Committee (PCC) Meeting under the Co-operative Mechanism in the Straits of Malacca and Singapore, Kuala Lumpur, 29 May 2008

Projects	Countries involved	Contributions
Project 1	India	Sponsored a training course in Goa, India
	Germany	Consultation towards developing a pilot project on wreck management information system
Project 2	Australia	assist on the establishment of the HNS Databank and the methodology to develop a computer-based risk assessment
	China	Capacity building and proposed to organise a 'Train the Trainers' course
	USA	Capacity building and explore the possibility of contribution towards formulation of Joint SOP
Project 3	Australia	Providing technical expertise
	Japan	Contribute Equipment
	Republic of Korea	
Project 4	China	Providing technical expertise and on-site Survey
	Japan	

Project 5	Republic of Korea	Contribute in replacing and maintaining the aids to navigation
Project 6	China	Undertake the entire projects and implement it in phases

During the 2nd Cooperation forum in 2009, IMO together with the littoral states entered into Joint Technical Agreement (JTA) as part of IMO's commitment to the Cooperative Mechanism. Under this agreement the IMO Malacca and Singapore Straits Trust Fund has been established to provide assistance and attracting other sponsor to fund the projects identified by the littoral states or any future projects that will be implemented. To date the total amount of the trust fund is USD 1,238,193.00. **(Malaysia Maritime Department, 2010)**

Table 1.7: IMO Malacca and Singapore Straits Trust Fund

Contributor	Amount	Status
Greece	US$1 million	Contributed (2007)
Germany	US$50,000	Contributed (2009)
	US$38,193	Contributed (2010)
People's Republic of China	US$100,000	Contributed (2009)
Norway	US$50,000	Contributed (2010)
European Commission	Euro 315,000	Grant awarded (2010)

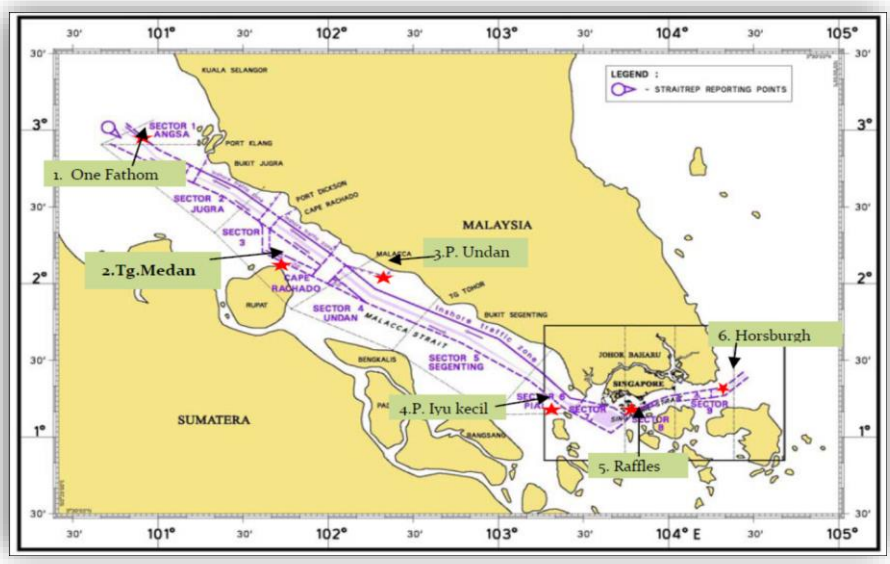
While all the projects are still under progress, only two projects under Group 2 that has been formally completed namely the third and fourth project. (5th Project Coordination Committee Meeting, 2012). These projects are under the responsibility of Singapore's government. It was agreed that the second project has been formally completed during the 3rd Project Coordination Committee Meeting. Objectives of the second projects are to enhance the safety navigation in the straits by preventing collisions especially between small vessels and bigger ocean-going vessels and to protect safety of sea life. This project is significant with the Marine Electronic Highway (MEH) demonstration project whereby it would provide more complete traffic situation in the straits. Each littoral state has been supplied with 10 AIS Class B transponder. This transponder can monitor and track the movements of small ships installed with the Class B AIS transponder. The overall cost in completion of this project is more or less US$ 400,000. (Malaysia Marine Department, 2010).

Before 2012, the cost of installation of AIS Class B transponder on Singapore-flagged vessels and several Indonesian and Malaysian-flagged vessels which had frequently entered Singapore port waters were bore by the Singapore. To show the Singapore commitment on this project, it imposed mandatory requirement for all vessels entering Singapore port waters to install the transponder in their vessels. This mandatory requirement took effect at 1 January 2012. (3rd Project Coordination Committee Meeting, 2010).

Another completed project is the fourth project of Setting up a tide, current and wind measurement system for TSS in the Straits of Malacca and Singapore to enhance navigation safety and marine environment protection. This project carried same objective as the third project i.e. to enhance the navigational safety and marine environment protection in the straits through continuous collection and processing of tides, current and wind data in the straits. System under this project includes 6 Acoustic Doppler Current Profilers (ADCP), 6 tide stations, 6 wind stations and the application of an information delivery system (IDS).

The overall cost in completion of this project is more or less US$ 627,000. Data could be collected and processed through the installation of tide, current and wind measurement equipment at selected locations along the Straits. From the data, passage through the straits could be planned and the trajectory of oil, chemical or other hazardous and noxious substances spill could be predicted. This project also considered as an extension or complement for the MEH project. Data collected from this projects and AIS Class B transponder would establish clear picture of the situation in the Straits of Malacca. (Malaysia Marine Department, 2010).

Picture 1.8: Location of 6 Stations



B. Conclusion

As conclusion, the littoral states have realized the importance of the Strait of Malacca for their economic interests. The strategic location of the Strait of Malacca cannot be denied for the purpose of international navigation. Indonesia, Malaysia and Singapore, so far, have entered many agreements regarding the boundary of territorial sea and continental shelf in the Strait of Malacca and also the Strait of Singapore. What the littoral states have been done on the Strait of Malacca should be appreciated. They have gone thorough meetings and several agreements have been made since 1970s. They realized the importance of the Strait of Malacca including in economic, geo-politic, security and environmental matters.

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