Regulatory Framework on Ocean Threats –Transportation Law Analysis to Multiple Oil-Spill Cases in Indonesia

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This research aims to analyse the legislation pertaining to the environment and transportation as outlined in Article 1 point 1 of Law No. 22 of 2001, which deals with oil and natural gas. The Minister of Energy and Mineral Resources' Regulation No. 7 of 2019 Article 1.2 relates to the management and use of oil and gas. Articles 316, 318-322, 324-329, and 332 govern criminal offenses committed in the maritime domain. This study employs a doctrinal legal research methodology, using both conceptual approach and statutory approach. The agreement for the maritime transportation of commodities establishes rights and duties that the involved parties are required to fulfil. One of the duties and liabilities of the carrier is to maintain the security of the vessel and the merchandise it transports. The legal framework governing the transportation of commodities is established under Articles 466 to 520 of the Criminal Code. This concept is founded upon two additional ideas, i.e. strict liability and the absence of the necessity to establish the party responsible for environmental damage prior to attributing blame. The principle of strict responsibility in Indonesian national law is governed by Article 88 of Law No. 32 of 2009, which pertains to environmental protection and management. This article only focuses on the environmental degradation and marine contamination resulting from oil spills. The obligation for transportation in maritime agreements and the legal repercussions for causing marine pollution must be followed by all the sea transportations company especially carrying dangerous material.

KEY WORDS
~ Marine pollution
~ Environment protection
~ Sea transportation
~ Oil spill

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1. INTRODUCTION

Indonesia lies in a tectonic region that is geologically very complex, where the interaction and collision of three major tectonic plates occur: the Indo-Australian Plate, the Philippine-Pacific Plate, and the Eurasian Plate (Daly *et al*., 1991). The convergence of several tectonic plates results in our archipelago having a beautiful landscape, rich geological structures that harbour numerous geothermal resources, sedimentary basins rich in oil production, a combination of deep-sea and shallow marine basins, perennial exchanges of water flow from the Pacific Ocean to the Indian Ocean, warm surface currents contrasting with nearly frozen depths, and many more geophysical, geological, and oceanographic blessings (Goltenboth *et al*., 2006; Talley, 2011; Hall *et al*., 2012; Bee, 2013; Suarez-Arriaga et al., 2014; Baldacchino, 2018). This unique geographic position also results in Indonesia possessing abundant natural resources (Nugraha *et al.*, 2023;*Husaini et al.*, 2024). The relatively active tectonic events, besides causing earthquakes and tsunamis, also bring blessings through the formation of many sedimentary basins (Sidle *et al.*, 2004; Prothero, 2011; Mitra & Zaman, 2016). These basins accommodate sediments that later become source rocks and hydrocarbon reservoir rocks. It is these reserves of oil and natural gas that are now extensively exploited and form the backbone of our economy since the 1990s (Satyana, 2017; Alexander, 2018).

In Indonesia, new oil reserves are explored in 38 basins (Peters *et al.*, 1999; Doust & Noble, 2008; Widodo *et al*., 2010; Bee, 2013; Rice-Oxley & Abu-Bakar, 2022). Oil and gas are newly produced/exploited from 14 basins out of approximately 60 sedimentary basins identified throughout Indonesia (H. Ginanjar & Zulkhifly, 2014; A. R. Ginanjar *et al.*, 2020; Luan *et al.*, 2024). More than 20 basins, which are mostly in frontier areas, are located in marine regions (Fitnawan *et al*., 2021). Some recent significant discoveries are in deep-sea basins in the Makassar Strait (Luan & Lunt, 2021; Baillie & Decker, 2022). This means that, similar to the future of the global oil industry, the future of Indonesia's oil exploration and production industry will also be at sea. Technology has enabled us to produce oil from depths of 1,000 to 2,500 meters underwater, as it is currently the case in the Makassar Strait.

The ocean is a rich domain of natural resources, including a diversity of biological resources, all of which can be utilized for the prosperity and welfare of society. As it is well known, 70% of the Earth's surface is covered by water/oceans, and more than 90% of biomass life on the planet lives in the ocean (Hawthorne, 2019; El-Regal & Satheesh, 2023). Therefore, the ocean is an important part of human survival. We can imagine the consequences if our ocean becomes polluted/damaged, thus affecting a portion of the above-mentioned biomass. Meanwhile, 60% of the Earth's human population lives within 60 kilometres from the coast, heavily relying on marine resources (Jackson, 2001; Palumbi, 2004; Bennett, 2019). Hence, all components of a nation are responsible and obligated to preserve the condition and existence of the ocean in its natural state, including preventing its pollution. Marine pollution is defined as the presence of waste or by-products from living organisms' activities entering the marine environment. Sources of marine pollution include oil spills, remnants of war ammunition, ship activities and processes, industrial discharge into the sea, offshore drilling for oil, land-based waste disposal through rivers, emissions from maritime transport, and pesticide-runoff from agriculture. However, the main source of marine pollution comes from oil spills, whether from ship processes, offshore drilling, or ship accidents (Ozguc, 2021). Pollution from oil spills in the sea is a major concern for the wider community as its effects are quickly felt by coastal communities and significantly damage marine life in those areas (Asan, 2024). The World Body Group of Experts on Scientific Aspects of Marine Pollution (GESAMP) records about 6.44 million tons per year of hydrocarbon content entering the world marine waters (Kekki, 2021; Imasha & Babel, 2021; Boyd, 2023; Kumayon, 2023). These sources include: maritime transport at 4.63 million tons/year, offshore drilling installations at 0.18 million tons/year, and other sources including industry and settlements at 1.38 million tons/year (Shixiong, 2012).

Referring to Article 1 Point 1 of Law No. 22 of 2001 on Oil and Natural Gas, in conjunction with Article 1 Point 2 of the Minister of Energy and Mineral Resources Regulation No. 7 of 2019 on the Management and

Utilization of Oil and Gas Data, petroleum is a substance formed by natural processes that include hydrocarbons at atmospheric pressure and temperature. It may exist in either liquid or solid phases. The substances included in this context are asphalt, mineral wax or ozokerite, and bitumen, which are obtained via mining procedures. However, it is important to note that this does not include coal or other solid hydrocarbon deposits that are obtained from activities unrelated to the oil and gas business activities (RL Elder, 1984).

Natural resources may be categorized into two types depending on their nature or formation: renewable natural resources and non-renewable natural resources (Arshad *et al*., 2020). Petroleum is classified as a non-renewable natural resource in this particular scenario (Hanley *et al.*, 1997). The non-renewable nature of petroleum is substantiated by the Duplex Theory, which posits that petroleum is derived from diverse marine creatures, including both animal and plant species (Abbas, 1996). The organic remnants of these species gradually accumulate at the Earth's surface, either on land or in the sea, and then get buried under layers of sediment for millions of years. The mud undergoes lithification as a result of the compression exerted by the overlying stratum. The dynamic fluctuations in pressure and temperature lead to the transformation of sedimentary rock into petroleum (Berry, 2003).

Crude oil provides significant advantages to the overall well-being of the broader population (Soedomo, 2019). Petroleum is used as a component in the production of electrical gadgets, building materials, and power plants (J. G. Speight, 2011). Petroleum's primary advantage in daily life is in its position as the principal component of motor vehicle fuel or diesel engines (Mueller *et al*., 2014). Indonesia's natural resources, particularly petroleum, serve as significant commodities for both export and import (Purnomo *et al*., 2020). Exports and imports are crucial components of a country's economic operations (Mohamed, 2017). The presence of petroleum product exports, particularly crude oil, has a significant influence on a country's income creation and overall economic expansion (Mlaabdal *et al*., 2020). According to data from the national statistics office, Thailand is the top destination country for petroleum exports from Indonesia, as reported by BPS (2021) and supported by previous studies (Rifin, 2010; Pratama *et al*., 2020; Wulandari & Inayah, 2021). Following Thailand, Singapore has the second position in terms of ranking. Additionally, Malaysia is the third largest recipient of Indonesia's petroleum exports (Ulfah *et al*., 2019; Ramadhani & Santoso, 2019). In Indonesia itself, there are several incidents that cause pollution of the marine environment. Among them is the MV Ever Judger incident that occurred on March 30, 2018 in Balikpapan waters. And the events began with the ship entering the bay at Balikpapan. It happened when the ship was anchored in a confined area underneath which there were underwater pipelines belonging to PT Firstamina. Due to a lack of understanding of the Nakhoda and communication between the ship and the regulatory standards, and the lack of maximum or minimum guidance in the exchange of information between the pilot and the ship (pilot exchange), the ship entered the red zone where the anchor of the MV *Ever Judger* concerning on the underwater oil pipes. This caused a spill of crude oil in the waters of the Bay of Balikpapan. As a result of the incident, there was a spill of more than 5,000 litres of oil, which caused pollution and even the fire that broke out in the Gulf of Balikpapan. Although it can be categorized as small ocean pollution, the incidents resulted in a chain of other incidents, such as fires at sea caused by oil spills and even deaths.

Indonesia's advantageous geographical location, situated between major oil-producing nations in the Middle East to the west and oil-consuming nations like Japan, Korea, China, and the United States to the east, presents both benefits and possible drawbacks. The economic benefit stems from its use as a global shipping route for the transportation of oil. Nevertheless, the potential drawbacks of offshore drilling should not be overlooked, particularly the significant risk of oil spills in the ocean, leading to environmental contamination and harm. Given the previously provided background information, it is necessary to conduct a more in-depth analysis of the carrier's responsibility in a sea transportation agreement regarding an oil spill and its subsequent pollution of the sea. Additionally, it is important to examine the legal repercussions for the transporting ship in the event of an oil spill at sea that leads to marine pollution.

2. RESULTS AND DISCUSSION

2.1. Oil Spill in Marine Environment: Impact, Process, and Ecosystem Vulnerabilities

The Marine and Fisheries Resources Supervision defines marine pollution as the presence of waste materials from living things that enter the sea region, such as excrement (Gjerde *et al*., 2013). Oil spills, (Spezio, 2018) unexploded military ordinance, industrial waste dumped into the ocean, offshore oil-drilling operations, riverine waste disposal, maritime traffic emissions, and pesticide discharge into the water are all sources of marine pollution (Walker *et al*., 2019). However, oil spills brought on by ship operations, offshore drilling, or maritime accidents are the main cause of marine pollution (Nisrina & Narwati, 2021). Given that these seas are used as commerce routes, traffic routes, and shipping routes for goods and oil, the potential for contamination in the border seas is a prevalent issue. Oil spills from ordinary ship operations and ship accidents frequently occur in the sea, a conduit for ship traffic and the shipping of products, pipelines for oil transportation, offshore exploration and exploitation, smoke-carried oil, runoff oil from land (down the drain), and tanks (Ozguc, 2021).

Natural seeps for cleansing, wrapping oil from land is the main cause of oil pollution in the water (down to the drain) (Tri Ambarsari *et al*., 2023). Shipping, ocean dumping, mining, oil exploration and exploitation are other human activities that have the potential to contaminate the coastal and marine environment (sea-based pollution). Marine cultivation (marine culture) and fisheries are further examples. These practices have the potential to pollute the nation negatively. Oil contamination is the main issue for the marine environment because of oil components that are difficult to dissolve, hazardous to human activities in fisheries, and capable of destroying marine ecosystems (Camelia & Elmilla, 2022). As a result of some of these changes, some oil fractions are lost from the sea surface, while other changes continue with some oil material still present on the ocean surface. The amount of time needed for the spilt oil to degrade or integrate into the marine environment will depend on its initial physical and chemical make-up as well as the natural weathering process. Some of the primary elements that affect changes in oil properties (Baker & Allmaras, 1990) are:

1. Oil physics features, such as specific gravity, viscosity, and boiling trajectory;
2. Oil chemical characteristics;
3. Meteorological conditions, including air temperature, oceanic conditions, and sunshine (photo-oxidation);
4. Seawater characteristics (pH, specific gravity, currents, temperature, presence of bacteria, nutrients, dissolved oxygen, and suspended solids).

Petroleum hydrocarbons are transformed through a variety of physicochemical processes, including spreading, evaporation, dispersion, emulsification, dissolution, sedimentation, and oxidation (Ossai *et al.,* 2020) The following is a representation of the interrelated mechanisms that affect how oil behaves. Crude, oil pollution from the type of waters it occurs in frequently causes environmental problems, making it a regional danger to the investment climate (Ivshina *et al*., 2015). An oil spill in particular has a significant negative influence on the coastal ecosystem and marine waters, mostly due to direct interaction with aquatic animals, direct effects on fishing operations, including marine tourism, and indirect effects, through environmental disruption (Zhang *et al*., 2019; Saadoun, 2015; Mendelssohn *et al*., 2012).

Oil spills into the sea will have a very bad impact on the marine ecosystem. Fish and other marine creatures will contain toxic chemicals in their bodies, causing deaths that will reduce the population of marine life. Humans cannot consume dead fish because they contain toxins produced from the oil. In addition, the spill of oil can also cause irritation to the eyes, skin, and human respiratory tract, which can be fatal. In addition, oil is difficult to remove from seawater because it is heavy and does not evaporate easily. This will clearly lead to a

decline in the quality of the seawater. From the above exposure, it can be concluded that oil spill can also be considered a form of water pollution. It is in line with the definition of environmental pollution under Act No. 32 of 2009 on the protection and management of the environment, Section 1, Paragraph 14, which states that "environmental pollution is the entry or introduction of living creatures, substances, energy, and/or other components into the environment by human activity so that it exceeds the established environmental quality standards." It is also supported by the definition of water contamination under Government Regulation No. 82 of 2011 on the management of water quality and control of water pollution, Article 1 Paragraph 11, which stated that "Emergence of water is the introduction or injection of life, substance, energy, or other component into the water by human activities so that the quality of water decreases to a certain degree that causes the water not to function as intended." This oil spill also affects the economic activities of coastal communities. It will be difficult for the fishermen to find fish because there are many dead fish. Moreover, the fish that are not dead will be poisonous and not to be eaten. The fishermen can also be exposed to irritation that can be fatal to their lives. The fishermen are the economic backbone of their families and the people around them. Other coastal communities, the majority of which come from the sea, will also die. It can also affect communities that do not live on the coast as the people cannot eat the fish that the fishermen have caught. This causes e.g. a restaurant located in the city to lose one of its menus, which can cause a decline in the revenue. Thus, the spill has an impact not only on the marine ecosystem, but also on the lives of the surrounding communities.

2.2. Legal Framework of Transportation Agreements: Carrier Responsibilities, Safety Regulation, and Liability Principle in Sea Transportation

Transport maintenance is initiated by a transport agreement established between the carrier and either the passenger or the owner of the products (Gunarti *et al*., 2018; Darwis, 2014). A transport agreement is a contractual arrangement in which the carrier assumes the responsibility of securely transporting people and/or products from a location to a specified destination, while the passenger or owner of the commodities agrees to bear the expenses associated with the transportation (HSB, 2017). Transportation in a general sense is intricately linked to the liability of the carrier in the case of a circumstance that leads to a loss (Setiawan, 2018). The carrier's obligation begins with the loading of passengers and/or products onto the carrier and continues until the passengers are disembarked and the items are either unloaded or transferred to the intended receiver (Sunyowati *et al.*, 2022). The duty for transporting products pertains to the topic and foundation of obligation for carrying out the transportation. The carrier's obligation with respect to the transportation of products is governed by Articles 466 to 520 of the Indonesian Commercial Code, also known as Criminal Code.

Prior to the departure of the ship from the port, the sea transportation supervisor must take into account many factors in order to ensure the safety of the transportation (Subagyono *et al*., 2022). In this scenario, the carrier is required to thoroughly examine the ship, which includes assessing several aspects such as the ship structure, equipment, crew, and overall seaworthiness. Multiple safeguards are required to ensure the safety of ship operations, particularly for oil-carrying boats. Firstly, they include International Safety Management (ISM), which specifically refers to the management of ship operations and the avoidance of pollution. Furthermore, the shipowner or ship operator business assumes complete accountability for the ship operation as delegated by the ship owner. In addition, the Safety Management System (SMK) is a comprehensive and systematic framework that empowers companies to proactively execute safety management and environmental protection regulations via organisation and documentation. Specifically, a Document of Compliance refers to the official documentation provided to companies that have successfully fulfilled the necessary criteria. The Safety Management Certificate is a document awarded to a vessel that verifies the compliance of the company and the ship's management with the safety management system (Hanchrow, 2017).

In addition to overseeing the safety management of ship operations, there are other rules pertaining to measures aimed at mitigating pollution caused by ships. In accordance with Article 134 of Law No. 17 of 2008 on Shipping (Laksmana, 2022), the outlined measures must be taken to avoid ship pollution. Every ship

operating in the Indonesian waters must comply with: pollution prevention and control requirements; pollution prevention and control found through inspection and testing; ships that are declared to have met the pollution prevention and control requirements shall be granted a pollution prevention and control certificate by the Minister; further provisions regarding the prevention of pollution from ships are regulated by a Ministerial Regulation. The transportation agreement stipulates that if the carrier fulfils its responsibilities in conveying the goods, it becomes liable for any repercussions arising from the transit (Khairandy, 1999). The carrier is responsible for arranging transportation in a manner that holds them accountable for any factors that may compromise the safety of the goods. The carrier is responsible for indemnifying any damages that may arise during the transportation of the goods. When it comes to the transportation of products by water, there are five fundamental rules that govern the carrier's obligation. These principles (Maulinasari, 2022) are as follows:

1. Liability Based on Guilt (Liability Based on Fault) - In this principle, it is explained that each carrier must be responsible for their mistakes in the transportation process. The carrier here must provide compensation, and the injured party must prove the carrier's fault. Here, the burden of proof is given to the aggrieved party and not the carrier (Muhammad, 2013). This principle is contained in Article 1365 BW concerning Unlawful Acts. Currently, the carrier's liability principle based on fault is differentiated according to the type of transportation means, i.e. transportation by train, public transportation, ship, or aeroplane.
2. Responsibility Presumption of Guilt (Presumption of Liability) - Based on this principle, it is emphasised that the sender of the goods will be responsible for all losses arising from the transportation they organise. The party causing the loss is required to prove that the loss suffered was not the carrier's fault, so the carrier can be released from the responsibility of paying the compensation. The burden of proof in this principle is on the carrier, based on the transport agreement because the goods they are transporting are under the control of the carrier (Sembiring, 2019). In this case, if the shipping company can prove that the losses incurred were not caused by their mistakes, then the carrier can be released from some or all of their responsibilities, as regulated in Article 41 of the Shipping Law.
3. Absolute Carrier's Responsibility (Absolute Liability) - This principle obliges the provision of compensation due to an accident during the transportation process. In this principle, neither party has to prove a loss; the carrier cannot escape responsibility for any reason. The principle of absolute liability is not regulated in several laws relating to transportation. However, this does not mean that the parties cannot use this principle in the transportation agreement. The parties can use this principle in the transportation agreement if it is expressly stated in the transport document.
4. Limitation of Liability - Based on this principle, the responsibility of the carrier to provide compensation is limited to a certain amount to users of transportation services. The limitation of the carrier can make compensation with the existence of a clause in the transportation agreement. With the limitation of the carrier's liability, the carrier's liability is also limited. The limitation of the carrier's responsibility in water transportation is regulated in Article 181 Paragraph (4) of the Shipping Law.
5. The presumption of not having to be responsible (Presumption of Non-Liability) - According to this concept, the carrier is absolved of obligation; however, this does not imply that the carrier is exempt from liability for the products being transported. This notion might be described as a kind of conditional accountability. Law No. 22 of 2009 on Road Traffic and Transportation incorporates this idea in Article 192 Paragraph (4), which states that the carrier is exempt from liability for any damages or losses to passengers' baggage, unless the passenger can provide evidence that the carrier's negligence directly caused the loss. According to Article 194 Paragraph (1) of the legislation, public transportation corporations are exempt from liability for any damages incurred by third parties, unless the third party can provide evidence of such losses.

Concerning the carrier's liability, the Shipping Law stipulates in Article 40 Paragraph (1) that the carrier corporation has the duty of ensuring the safety and security of all the goods transported. According to Article 40 Paragraph (2) of the Shipping Law, the carrier is legally obligated to assume responsibility for the cargo aboard the ship, taking into account the specific kind and quantity stated in the transportation agreement.

Moreover, Article 41 Paragraph (1) of the legislation governs the liability of the carrier that may emerge from the ship's operation in the following manner:

1. Death or injury to passengers being transported;
2. Destroyed, lost, or damaged goods transported;
3. Delays in transporting passengers and/or goods being transported; or
4. Third-party loss.

Legal rules at both national and international levels govern liability arrangements for the harm caused to the marine environment as a result of oil spills. Article 3 of the 1969 Civil Liability Convention (CLC), sometimes referred to as the International Convention on Civil Liability for Oil Pollution Damage, delineates the following stipulation:

1. The ship is accountable for the following repercussions arising from the damage or pollution caused by the ship;
2. Ship owners have no liability for pollution. This article stipulates that in the event of an accident caused by war, civil strife, or natural catastrophe, the third party assumes the role of a peacekeeping mission.

Presidential Decree No. 18 of 1978 in the Indonesian law specifies the provisions pertaining to liability for marine pollution. This decree officially approves the *International Convention on Civil Liability for Oil Pollution Damage*, which was endorsed by the delegation of the Government of the Republic of Indonesia. The signing occurred during the International Legal Conference on Marine Pollution Damage, according to the basis of the carrier's total obligation, sometimes known as absolute or strict liability.

2.3. Legal Framework and Accountability in Marine Pollution Incidents

Oil spills at sea have caused significant economic losses and inflicted harm upon the marine ecosystem (Svendsen, 2023; Robertson, 2011). Transport ships are the primary cause of marine contamination due to oil leaks. This pollution arises from the operations and mishaps involving ships. Oil spills from ships have detrimental effects on the marine environment, leading to pollution and destruction to several ecosystems including coral reefs, mangrove forests, seagrass beds, and estuaries (Fakhrurrozi, 2021). Due to the high concentration of pollutants in seawater, the dissolved oxygen levels fall, leading to disturbances in marine ecological habitats and impeding their growth. An instance of a ship disaster at sea might result in both tangible and intangible damages, therefore necessitating the identification of the guilty party. Carrier ship accidents during navigation are mostly attributed to human mistakes, including ship owners, harbour masters, captains, and other relevant parties that may lead to ship accidents. An occurrence may be classified as a crime if the perpetrator can be held responsible. The regulations pertaining to shipping offenses are stipulated in Articles 284 to 332 of the Shipping Law. The papers provided classify shipping offenses into three distinct parts:

1. Articles 284 to 296, Article 302, Articles 304 to-315, Article 317, Article 323, Article 330, and Article 331 regulate criminal acts in the waters sector.
2. Articles 297 to-301 and Article 303 regulate criminal acts at ports.
3. Article 316, Articles 318 to 322, Article 324 to 329, and Article 332 regulate criminal acts in the marine environment.

Parties that can be held accountable are not only the harbourmaster and skipper, but the carrier corporation can also be held accountable. Article 333 Paragraph (1) of the Shipping Law reads: "Criminal acts in the field of shipping are considered to be committed by a corporation if the crime is committed by a person acting for and/or on behalf of the corporation or for the benefit of the corporation, either based on work relations or others, act within the corporate environment either alone or together".

International Environmental Law encompasses concepts that enable states to hold third parties accountable for pollution and environmental harm. The concept at question is the Polluter Pays concept,

sometimes referred to as the polluter pays principle. The principles outlined in the Rio de Janeiro Declaration state that national authorities should make efforts to incorporate the costs of environmental damage and utilize economic tools. This should be done while considering the idea that those responsible for pollution should generally be responsible for the associated costs. It is important to balance these considerations with the public interest and without negatively impacting international trade and investment. This approach entails the assessment of the costs incurred by individuals responsible for pollution, i.e. via the imposition of financial duties for actions that result in harm. It involves the employment of economic tools and the application of regulations pertaining to corporate competitiveness and subsidies (Sands, 2003). The *Polluter Pays* concept is contingent upon the presence of two interconnected principles in cases of environmental pollution: strict liability principle and responsibility based on fault principle. Additionally, there are principles of strict liability or absolute responsibility. These principles eliminate the need for prior evidence of specific individuals or entities responsible for environmental pollution. Instead, liability is determined based on evidence of the actual damage caused by the pollution incident alone (Sudini *et al*., 2020).

The concept of total responsibility toward the environment in Indonesian national legislation is stipulated in Article 88 of Law No. 32 of 2009 on Environmental Protection and Management (referred to as the PPLH Law). According to Article 15 of the PPLH Law, those who use hazardous substances (referred to as B3), handle B3 trash, or engage in activities that represent a significant environmental risk are liable for any resulting damages, without the need of proving their culpability. The further clarification of Article 88 of the PPLH Law states that *absolute responsibility* or *strict liability* refers to the absence of the necessity for the plaintiff to establish any mistake as a prerequisite for receiving compensation.

2.4. Toward Effective Governance: A Multifaceted Approach to Addressing Marine Pollution Caused by Oil Spill in Indonesia

Due to marine pollution from oil spills, whether intentional or unintentional, conducted by ships transiting it certainly has a significant impact on the marine environment (Zhang *et a*l., 2019), and even on humans (Chen *et al*., 2020). These impacts can damage marine habitats and biota (Michel & Fingas, 2016), as well as disrupt the livelihoods (Andrews *et al*., 2021), and health of affected humans (Ishak *et al*., 2020). The impact of oil spills at sea is adapted from the official website of the Ministry of Marine Affairs and Fisheries of the Republic of Indonesia. Coastal areas affected by oil spills can be disrupted because they become breeding grounds and habitats as well as food sources for adult organisms in the surrounding area (Cleary & Devantier, 2011; Wilhelmsson *et al.*, 2013; Keesing *et al.*, 2018). Therefore, addressing the issue of oil pollution at sea must be done seriously and firmly, both by ship owners, the government, and also by the community that can carry out oversight functions over the actions taken by ship owners. The community's function is mandated by Law No. 32 of 2009. Based on the studies conducted, there are several recommendations to enhance the effectiveness of implementing MARPOL 73/78 in preventing and addressing marine pollution due to oil spills from ships:

1. Government authority is divided into two concepts, namely this government authority can be exercised in various sectors and institutions within one institution (Single-Agency Multi-Task/SAMT) or authority is distributed across many government agencies (Multi-Agency Multi-Task/MAMT). In this case, the Indonesian government can adopt the MAMT model like Australia, which means there are agencies other than the Coast Guard that have authority at sea. Therefore, coordination is needed in handling cases of oil pollution from ships through mechanisms agreed upon by these institutions to avoid overlapping authority.

   A coordination map is needed that translates all regulations in sufficient detail starting from prevention, mitigation, and recovery as well as enforcement of sanctions outlined in an attractive and easily understood coordination map so that all agencies conducting supervision at sea, such as the Indonesian Coast Guard, Navy, Ministry of Environment and Forestry, Ministry of Marine Affairs and Fisheries,

Customs, and Police are clear in carrying out their respective duties. This can be facilitated by the Coordinating Ministry for Maritime Affairs and Investment (Kemenkomarves) in leading as the coordinator and accelerator of the programme to strengthen the Indonesian Maritime Information Centre (IMIC) of the Indonesian Coast Guard to become a Fusion Centre or a centre for providing data and security information at sea.

2. In the case of the MT *Kharisma Selatan* ship accident, Indonesia was able to carry out pollution control efforts quite well, according to the standards set in the MARPOL 73/78 Convention. However, it would be much better if Indonesia prioritized prevention aspects by strengthening management capabilities, i.e. by improving the operation of maritime service authorities in overseeing ships operating in the Indonesian waters. The key to preventing marine environmental pollution is a joint commitment between the government as a regulator, port operators, ship operators, and service users in fulfilling their respective obligations as port administrators, or ship registrars in the ship registration process.
3. The government can carry out extensive ship inspection programmes by visiting ports to ensure compliance with regulations. Thus, the government can impose sanctions on ports and inspect and detain ships to ensure serious deficiencies, including those related to pollution prevention equipment that must be present or repaired.
4. The Indonesian government should build transit locations in the Malacca Strait region that have adequate facilities and technology so that every ship passing through the area can carry out ship cleaning activities or disposal of operational waste. Recommended transit locations are the ports in the strategic areas around the Malacca Strait.
5. The Indonesian government can try to implement the best practices carried out by Japan in implementing prevention and control measures for marine pollution due to oil spills from ships.

Japan has a sufficiently strong fleet with a considerable number of patrol ships and aircraft (Samuels, 2007), which are highly proficient in surveillance and coordination among its agencies. Japan maps out task allocations by dividing its maritime territories into 16 sections, each equipped with naval and aerial fleets (Rose, 2007). Therefore, it is hoped that Indonesia will adopt this method due to its vast maritime territory. Regarding government surveillance in implementing specific zones within certain maritime areas requiring stricter surveillance, such as imposing a red zone on the Malacca Strait to monitor illegal waste disposal by ships or to monitor vessels switching off their VMS (Ja'afar, 2007; Kraska & Pedrozo, 2013; Ikrami & Bernard, 2018; Caligiuri & Pollastrelli, 2021). In the context of law enforcement processes, environmental law itself starts with compliance, enforcement, and dispute resolution. Compliance is a process to motivate the community to voluntarily comply with the law. Regulation is preventive, while enforcement is repressive. In the national environmental legal system, enforcement processes include mitigation, control, application of administrative sanctions, and rehabilitation. In efforts to prevent pollution and/or damage caused by oil spills, economic environmental compliance instruments must be implemented with incentives and disincentives. Incentives need to be provided as a performance reward system in the field of Environmental Management (PPLH), such as a ship equipped with oil spill prevention equipment, which may be granted incentives such as: exemption from obligations; facilitation and/or relaxation of activity implementation requirements; provision of facilities and/or assistance; encouragement and guidance; acknowledgment and/or recognition; and/or positive performance notification to the public (Government Regulation 46/2017). On the other hand, for ships without oil spill prevention equipment, disincentives should be applied, such as: additional obligations; addition and/or tightening of activity implementation requirements; and/or negative performance notification to the public (Government Regulation 46/2017). If the preventive measures that can be implemented in compliance instruments cannot be effectively executed, enforcement of the law in the form of administrative sanctions, civil sanctions, and/or criminal sanctions can be directly applied.

Furthermore, as a punitive instrument, it has been regulated in Law Number 32 of 2009 concerning Environmental Protection and Management. Regarding environmental damage calculation and appropriate

calculation guidelines, these have been more clearly regulated in the Minister of Environment and Forestry Regulation Number 7 of 2014 concerning the Environmental Damage Calculation. In terms of recovery and mitigation, Indonesia has two comprehensive regulations, i.e. Presidential Regulation Number 109 of 2006 concerning Emergency Response to Oil Spills at Sea and the Minister of Transportation of the Republic of Indonesia Decision Number Km 263 of 2020 concerning Emergency Response Procedures for Tier 3 Oil Spills at Sea.

2.4.1. Accountability of Ship Owners to Environmental Pollution Cases due to Oil Spills from Ships in Indonesia

Remote sensing methods, in addition to actively monitoring and communicating with relevant parties, prepare health posts and regularly providing the latest information to affected communities are essential steps for the government. Therefore, in its implementation, the involvement of relevant stakeholders under the government management is necessary to jointly carry out integrated and comprehensive mitigation. The government should consider ratifying the International Convention on Oil-Pollution Preparedness, Response and Co-Operation 1990 (OPRC).

In the regional context, Indonesia also needs to utilize the ASEAN Mechanism for Joint Oil-Spill Preparedness and Response, which is a bilateral agreement and cooperation among the ASEAN countries in addressing oil spills at sea. Based on the description above, the government's efforts can be seen as a form of responsibility towards cases of marine pollution. In reality, marine pollution due to oil spills still frequently occurs up to now, but the handling seems slow and often not resolved well. One of the reasons is the high cost of cleaning up marine pollution, which is also hindered by the human resources involved in the cleaning process (Idris et al., 2013). To protect and assist ship owners from various possible events that can cause losses, especially in handling marine pollution, there needs to be a mechanism or means to transfer the risk of loss or mitigate marine pollution caused by oil spills. One of the risk transfer means is insurance. Insurance is a non-banking financial institution that operates in the field of financial services by directly or indirectly collecting funds from the public by issuing securities. In essence, dealing with the issue of marine pollution by oil is a matter of how to maintain the quality of the marine environment, so the existing legal provisions are still sectoral in the form of regulations, instructions, or policies.

The Indonesian national legal provisions referred to in this case are: 1. Government Regulation No. 19 of 1999, concerning the Control of Marine Pollution and/or Destruction followed by the issuance of the Presidential Regulation No. 83 of 2018, concerning Marine Debris Management. 2. Minister of Transportation Instruction No. IM.4/AL.1003/Phb-82 regarding Ownership Certification of Liability Guarantee Funds for ships carrying oil as bulk cargo of more than 2,000 tons. 3. Director General of Sea Transportation Decision No. DKU.64/7/10-82, regarding Ownership certification of liability guarantee funds for ships carrying oil as bulk cargo of more than 2,000 tons. 4. Circular Letter of the Director General of Sea Transportation No. DKP.49/1/11 of 1982, concerning Ownership certification of liability guarantee funds for ships carrying oil as bulk cargo in quantities of more than 2,000 tons. 5. Minister of Transportation Decree No. 167/HM.207/Phb-86, concerning International Certification for Prevention of Pollution by Oil and International Certification for Prevention of Pollution by Liquid Hazardous Substances. 6. Director General of Sea Transportation Decision No. Py.6/1/11-86, concerning the Implementation of the Minister of Transportation Decision No. 67/HM.207/Phb-86, regarding international certification for prevention of pollution by oil and international certification for prevention of pollution by liquid hazardous substances. 7. Implementation Guidelines of the Director General of Sea Transportation No. Py/69/1/11- 86, No. UM. 48/2/14/DII86, concerning Technical Guidelines for the Implementation of the Director General of Sea Transportation Decision No. Py.69/1/11-86 8. Director of Sea Transportation Instruction No. UM.48/27/20-85, concerning Procedures for Filling the Marine Pollution Forms. 9. Minister of Transportation Decree No. KM 86 of 1990, dated September 8, 1990, concerning Prevention of Marine Pollution by Oil from Ships. 10. Standard Operating Procedures (SOP) for the Makassar Strait and Lombok Strait, No. DKP.49/1 /1

No.27/Kpts/DM/MIGAS/1 981 concerning Standard Operating Procedures (SOP) for Prevention and Control of Marine Pollution by Oil in the Makassar Strait and Lombok Strait. The role of the government in handling oil pollution at sea can be interpreted as the authority to take certain legal actions against an action taken by an individual or certain parties.

This pollution can damage the environment and endanger communities in affected areas (Ajibade *et al.*, 2021). One of the roles and responsibilities of the government is to maintain and ensure the implementation of marine environmental protection. To address the oil spills, a rapid, accurate, and coordinated response system is needed. "The Ministry of Transportation has taken various tangible steps regarding this matter. These steps include the ratification of marine environmental protection regulations, strengthening institutional functions, enhancing domestic and international cooperation, and capacity building,"(Stokke, 2013). In regulatory development, the Ministry of Transportation has issued several regulations aimed at ensuring marine environmental protection. Some of these include regulations related to Prevention of Pollution from Ships, Pollution Control in Waters and Ports, Prevention of Maritime Environmental Pollution, and Emergency Oil-Spill Response Procedures (Tier 3) at Sea. Furthermore, in strengthening institutional functions, the Ministry of Transportation through technical directorates seeks to enhance capabilities to support field tasks and functions. "For example, the Ministry has renewed patrol vessels and oil spill detection software, as well as procured pollution control equipment placed in various Technical Implementing Units of the Directorate General of Sea Transportation," (Stokke, 2013). The Ministry of Transportation has also cooperated with relevant ministries and agencies. The Ministry is actively collaborating with other countries in the Asia-Pacific region, especially in cross-border oil-pollution management. Lastly, in human resource capacity building, particularly through technical directorates, the Ministry of Transportation regularly conducts education and training for the personnel. This is especially aimed at dealing with pollution in domestic and international waters. The Directorate General of Sea Transportation also cooperates with the Philippine Coast Guard and Japan Coast Guard to conduct joint exercises in tackling oil spills in the waters.

"We always remind, as individuals involved in maritime and port activities, it is important to actively participate in ensuring the implementation of marine environmental protection. This is also part of the government's commitment and concrete steps in preserving the environment, especially the seas and waters," said the Minister. Mitigation is an effort undertaken by the government to address issues arising in the society.

In this case, environmental control is regulated in Law No. 32 of 2009, Article 13, which deals with pollution control and environmental damage for the preservation of environmental functions. This environmental control is the responsibility of the respective local governments, i.e. the role of the government is crucial in both the prevention and the control of environmental issues. While regulated under Law No. 32 of 2009, its implementation is not yet optimal as there are still many pollution incidents in Indonesia. This indicates the government's lack of decisiveness in dealing with polluters or those causing environmental damage. The government's role cannot be effective without support or synergy with the shipowners, communities, private entities, and stakeholders involved in the government policies. The synergy between ship owners and the government, especially in cases of marine pollution due to oil spills, and how to handle such pollution, has not been fully established. Sometimes, various factors prevent shipowners from fulfilling their obligations, one of which is the high cost associated with addressing pollution at sea or compensating affected communities. Therefore, the Directorate General of Sea Transportation has mandated shipowners and operators to have pollution damage guarantee certificates according to applicable regulations. Pollution damage guarantee certificates are ensured by insurance companies, shipowner clubs, or other official financial guarantee institutions to guarantee the shipowners' responsibilities for water pollution caused by oil from their cargo or ship fuel, including coverage for pollution prevention costs resulting from ship accidents. Based on the Circular Letter of the Director-General of Sea Transportation, which is a form of implementation of the Minister of Transportation Regulation No. PM 24 of 2022, concerning Changes to the Liability of Shipowners for Environmental Pollution Cases due to Oil Spills of Ship Cargoes in Indonesia.

The Regulation of the Minister of Transportation No. PM 29 of 2014, concerning Prevention of Maritime Environmental Pollution, and Regulation of the Minister of Transportation No. PM 27 of 2022, concerning the Third Amendment to the Minister of Transportation Regulation No. PM 71 of 2013, concerning Salvage and/or Underwater Works. In these regulations, it is stated that the Indonesian-flagged commercial ships of certain types and sizes that have Pollution Damage Guarantee Fund or insurance for their third-party liability must have certificates for Oil Pollution Damage Guarantee Fund, certificates for fuel oil pollution damage guarantee fund, and certificates for ship frame disposal guarantee fund. Shipping Company data from 2005 to 2022 shows an increase every year. Currently, there are approximately 21,000 fleets, including both general maritime transport and specialized maritime transport. Meanwhile, data on pollution damage guarantee fund services in the Directorate of Shipping and Seamanship during the period from 2019 to 2022 show an increase almost every year for each service. The role and support of insurance as a risk carrier are crucial because it is needed not only during the claims process, but also as a party managing the shipowners' risks. All stakeholders, including brokers as intermediaries between insurance and ship owners, must work together systematically to create a safe marine environment. By constantly reminding the shipowners to insure their vessels, the government, together with all stakeholders, indirectly contributes to preventing and anticipating marine pollution due to oil spills resulting from ship collisions, adverse weather causing shipwrecks, and other factors.

2.5. Legal Regulation on Marine Environment Pollution: International and National Perspectives

The legal regulations regarding marine environmental pollution can be broadly divided into two categories: according to the International Environmental Law instruments, and according to the National Law.

Regulation According to International Environmental Law Instruments:

1. United Nations Convention on the Law of the Sea 1982 (UNCLOS) - UNCLOS requires every country to make efforts to prevent, reduce, and control marine environmental pollution from all sources, such as hazardous and toxic waste discharge from land-based sources, dumping from ships, exploration and exploitation installations (Bergesen et al., 2018c).
2. International Conventions on Civil Liability for Oil Pollution Damage 1969 (Civil Liability Convention) - This convention governs compensation for oil pollution damage caused by accidents involving oil tankers. It applies to the pollution in the territorial seas of the participating countries. The convention imposes absolute liability for the pollution damage caused by oil spills from tanker ships (Healy, 1969).
3. Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (London Dumping Convention) - This convention aims to prevent dumping of hazardous waste from ships, aircraft, or industrial facilities (Bergesen et al., 2018b).
4. The International Convention on Oil Pollution Preparedness Response And Cooperation 1990 (OPRC) - The OPRC is an international-cooperation convention to address marine pollution due to oil spills and hazardous substances (O'Neil, 1993).
5. The International Convention for the Prevention of Pollution from Ships 1973 (Marpol) - Marpol is an international convention aimed at preventing pollution from ships. It includes annexes addressing various aspects of pollution prevention, such as oil pollution, noxious liquid substances, harmful substances in packaged form, sewage, garbage, and air pollution (ARSLAN et al., 2018).

The Basis of National Law on Marine Pollution, national regulations concerning marine pollution are found in various legislative acts, including:

1. Law of the Republic of Indonesia No. 5 of 1983 concerning the Exclusive Economic Zone of Indonesia;
2. Law No. 5 of 1990, concerning the Conservation of Biological Resources and Ecosystems;
3. Law No. 17 of 2008, concerning Shipping;
4. Law No. 32 of 2009, concerning Environmental Protection and Management;
5. Government Regulation No. 20 of 1990, concerning Water Pollution Control, and other related regulations regarding the prevention of marine oil pollution by ships in Indonesia;
6. Government Regulation No. 19 of 1999, concerning the control of marine pollution and/or destruction;
7. Government Regulation No. 21 of 2010, concerning maritime environmental protection;
8. Presidential Regulation No. 109 of 2006, concerning Handling of Emergency Oil Spills at Sea;
9. Ministerial Regulation No. 29 of 2014, concerning Prevention of Marine Environmental Pollution.

2.6. Alternative Dispute Resolution in Indonesian: Emphasising Negotiation and Mediation for Resolving Environmental Conflicts

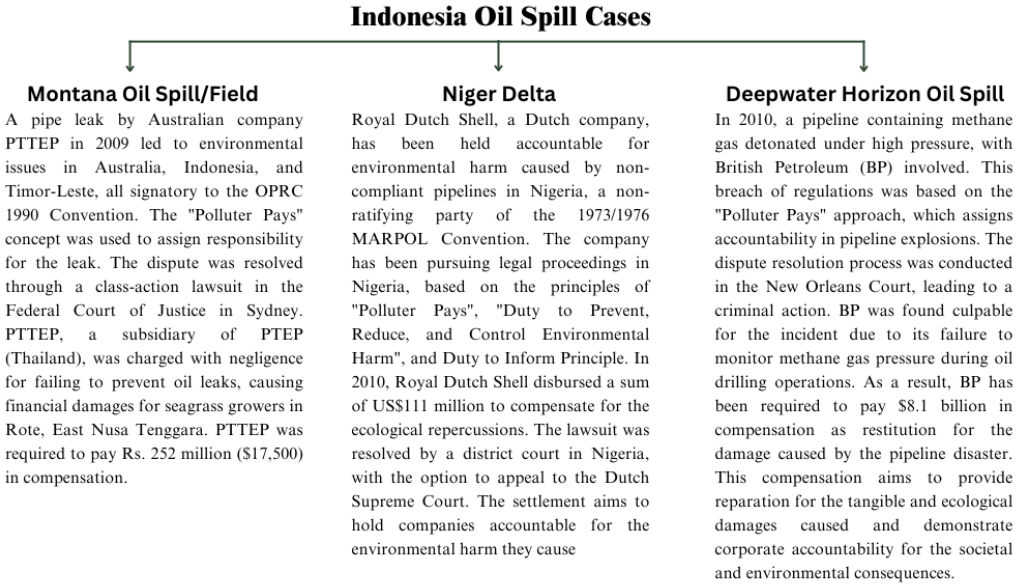

Figure 1. Principle of Polluter Pays on Marine Pollution Due to Oil Leakage: International Environmental Law (Ivandri & Permanasari, 2023)

The settlement of disagreements in many aspects of life has been indirectly fostered and implemented in the Indonesian society via the use of alternative dispute resolution institutions, including negotiation, mediation, conciliation, and arbitration. This legislation should be enhanced to alleviate the strain on the judicial system in efficiently resolving more protracted and complex cases. In the process of resolving disputes outside court, many measures need to be done to achieve an agreement. This includes establishing a mechanism for compensating damages, which is crucial for preventing future instances of environmental contamination that significantly affect the public well-being. Non-litigation refers to the resolution of problems in a manner that is distinct from both peaceful and confrontational methods. A peaceful resolution of a conflict is often known as a settlement facilitated by an impartial third party who is not directly engaged in the issue. Nevertheless, in a peaceful resolution, neither side bears responsibility for the settlement of the issue.

Mediation is the intervention of an impartial third party in the resolution of a conflict with the aim of achieving a mutually acceptable agreement. The peaceful resolution of problems involves discussion, mediation, and consolidation. Hence, in an environmental conflict, the resolution is achieved via negotiation. It is their responsibility to achieve a mutually agreed-upon resolution inside the family, either via discussion or separation. The negotiation process starts with a proposal aimed at achieving a consensus amongst the parties involved in a nonviolent conflict, where the parties engage in direct interaction without the intervention of a third party. The AAPS Act, also known as Act No. 30 of 1999 on Arbitration and Alternative Settlement of Disputes, governs the resolution of disputes through separation and the involved parties. As explicitly stated in Article 1, Paragraph (1) of the Act, alternative dispute settlement refers to an extrajudicial process of resolving a dispute, wherein the parties involved agree to exclude litigation in court as a means of resolving the dispute. Non-litigation may be conducted by consultation, negotiation, mediation, conciliation, or expert arbitration. Based on the aforementioned Article 1, it may be inferred that the alternative dispute resolution refers to resolving a disagreement outside of the judicial system, with the consent of both parties involved. In the absence of an agreement, the only recourse is to seek resolution in court. According to article 6, paragraph (2) of the UUAPS, negotiation is a technique of resolving disputes or disagreements outside court. It does not involve any third parties and is conducted purely between the parties involved. A person who engages in negotiations is referred to as a negotiator. They engage in direct negotiations or proffer to generate a choice that is mutually agreed upon. Prior consultations between the conflicting parties are necessary to ensure the realisation of their respective rights and interests. Essentially, this agreement is the outcome of conversations that have been documented in the written format. This arrangement is founded on a mutually beneficial collaboration.

The resolution of the issue is achieved by direct discussions between the parties involved, with the implementation procedure commencing within 14 days after the conclusion of the negotiations. The process of resolving a disagreement via first discussion will be conducted based on the voluntary consent and mutual agreement of the parties involved in the issue. The resolution of this disagreement hinges on the mutual consent about the procedural framework for conducting talks, including the designated time and location. During a negotiation, each side articulates its intentions and presents proposals on the issues at hand. This offer could only be extended after many rounds of talks or meetings. The speed at which a disagreement is resolved is directly proportional to the level of cooperation shown by the parties involved. Dispute resolution via discussion is confidential and limited to the parties involved, without the involvement of third parties. The mechanism for resolving conflicts via discussions gives the parties the autonomy and consensus to choose the specifics of the negotiation process, including the timing and location. The agreement's conclusion is documented in writing as evidence that the resolution of the disagreement via discussion has been effectively accomplished. The result of discussions is a written agreement that the parties are obligated to carry out in a sincere and honest manner. This agreement has the force of law for those who have entered into it, as expressed by the principle of *pacta sunt servanda*.

2.7. Principle of Accountability in International Environment Law: *Polluter Pays* Principle and Strict Liability

International Convention	Description
Convention on third party Liability in Nuclear Energy, 29 July 1960, Paris	Convention on third party liability in nuclear energy, 29 July 1960, Paris. This convention was made within the framework of the OECD. Organization for Economic Cooperation and Development, concerning the responsibility for risks from using nuclear energy for the benefit of peace (the peaceful use of nuclear energy). This convention regulates the principle of absolute liability (strict liability) as stated in Article 9: "The operator shall not be liable for damage caused by a nuclear incident directly due to an act of armed conflict, hostilities, civil war insurrection or except insofar as the legislation of the contracting party in whose territory his nuclear installation is situated may provide to the contrary a grave natural disaster of an exceptional character." In this convention, there is no obligation for the plaintiff to prove the element of fault (fault or negligence) if the object of liability/defendant has incurred a loss (nuclear installation operator, guarantor, or financial guarantor is immediately liable for losses with the maximum amount specified in this convention) (Johnston, 2004).
International Convention on Civil Liability for Oil Pollution, 29 November 1969, Brussels	Article 3 of this convention regulates aspects of liability based on strict liability (Seyfang & Jordan, 2013)
International Convention on Oil-Pollution Preparedness, Response and Co-operation (OPRC) 30 November 1990, Paris	International Convention on Oil-Pollution Preparedness, Response and Co-operation (OPRC) requires signatories to adopt protocols for addressing pollution events, either within their own countries or in collaboration with other nations. Vessels must have an on-board oil pollution emergency plan, while off-shore unit operators must have emergency plans coordinated with the national systems. Vessels must notify coastal authorities of pollution incidents, and the agreement specifies further procedures. It also mandates the creation of equipment reserves, training exercises, and comprehensive strategies to address pollution disasters. Parties must provide aid to others in case of a pollution emergency, with compensation mechanisms in place (Nicoll & Charlebois, 2021)
Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment, 21 June 1993, Lugano	Accountability is regulated in Chapter II (Articles 5, 6, 7 and 8). The types of liability adopted are: strict liability with excuses (defences) termed exemptions (Khalatbari & Poorhashemi, 2019)
Draft Biosafety Protocol as the Implementation of the Convention on Biodiversity	Regarding strict liability arrangements, the primary basis that prompted China to propose strict liability is the alignment of these principles with essential principles in sustainable development, i.e. the precautionary principle (principle 15 of the Rio Declaration). The principle emphasises that if there is a threat of severe or irreversible damage. The absence of certainty of scientific evidence cannot be used as an excuse for postponing prevention efforts. If accountability uses an element of error (fault) on the defendant, as desired by advanced industrial countries, then the defendant can always take refuge behind the uncertainty of scientific evidence (Morgera & Tsioumani, 2010)
Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, 22 March 1989	A special follow-up commission was formed based on the Conference of the Parties on the convention. This particular team proposed a form of accountability that would become part of the protocol. The proposed form of liability includes absolute liability and strict liability. Insurance is one of the parties involved, therefore determining the form of liability. According to Barboza, choices tend to be accountable without fault (Bergesen et al., 2018a).

Convention on the Dumping of Wastes at Sea, November 1972, London	The regulation and mitigation of maritime pollution by the prohibition of certain hazardous materials dumping; furthermore, the disposal of some specified items necessitates obtaining a specific authorisation, whereas a generic permit is needed for other types of trash or substances (Birchenough & Haag, 2020)
Protection and Preservation of the Marine Environment, Section V, International Rules and National Legislation to Prevent, Reduce and Control Pollution of the Marine Environment, Article 211	States are required to create international regulations and standards to prevent, decrease, and manage marine pollution caused by vessels. They should also encourage the implementation of routeing systems to minimize accidents and harm coastal States' interests. These regulations should be periodically reviewed. The States must enact legislation and rules to prevent, decrease, and manage contamination of the marine environment caused by boats under their flag or registration, providing the same outcome as universally recognised international norms and standards set by competent international organizations or diplomatic conferences. Coastal States have the authority to enact rules and restrictions within their territorial seas to avoid, decrease, and manage marine pollution caused by foreign boats, including those passing through innocently. They can also establish laws and regulations within their exclusive economic zones to prevent, reduce, and control pollution from vessels. If international rules and standards are insufficient, coastal States can communicate with a competent international organisation, providing scientific and technical evidence and information about necessary reception facilities. Coastal States must publicly disclose the boundaries of any specific and well-defined region and inform the organization of any plans to implement further laws and regulations in the same region. Additional laws and regulations may apply to foreign vessels 15 months after the communication is submitted to the organisation (Moynihan & Magsig, 2020)

Table 1. List of International Conventions

In International Environmental Law, countries can use several principles to hold parties accountable in terms of environmental damage caused by the parties' actions. One of these principles is *Polluter Pays* Principle. This principle is found in the declaration of Rio de Janeiro, which reads: "National authorities should endeavour to promote the internalisation of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment" (Rahmadi, 2011). This principle simply requires the calculation of losses to the party causing the pollution, i.e. in the form of payment obligations from activities that cause damage, using economic instruments and the application of rules related to business competition and subsidies (Sands & Peel, 2012). The *polluter pays* principle must then be based on the existence of two other principles that are related in the event of environmental pollution, i.e. the strict-liability principle

The principle of strict liability or direct responsibility is where responsibility for environmental pollution no longer needs to rely on prior evidence of who played a role or caused pollution or elements in pollution, but is based on real evidence of the damage that occurred on an event of contamination itself. The principle of direct responsibility developed in England, where a lot of harmful pollution occurred and was considered out of the ordinary (Andriansah, 2017). The imposition of strict liability in an activity that is considered dangerous, in this case, several qualifications (Posner, 2014) can determine its application, i.e.: (Posner, 2014)

1. The activity contains a high level of danger to humans, land, or other people's moving objects (the activity involves some harm to the person, land or chattels of others);
2. The harm which may result from it is likely to be great;
3. The risk cannot be eliminated, even though reasonable care has been taken (the exercise of reasonable care cannot eliminate the risk);
4. The activity is not included in the usual activities (the activity is not a matter of common usage).

Several international conventions governing the principle of direct responsibility include:

1. Convention on third-party liability in nuclear energy, 29 July 1960, Paris. This convention was made within the framework of the OECD, Organization for Economic Cooperation and Development, concerning responsibility for risks from using nuclear energy for the benefit of peace (the peaceful use of nuclear energy). This convention regulates the principle of absolute liability (strict liability) as stated in Article 9: "The operator shall not be liable for damage caused by a nuclear incident directly due to an act of armed conflict, hostilities, civil-war insurrection or except insofar as the legislation of the contracting party in whose territory his nuclear installation is situated may provide to the contrary a grave natural disaster of an exceptional character." In this convention, there is no obligation for the plaintiff to prove the element of fault (fault or negligence) if the object of liability/defendant has incurred a loss (nuclear installation operator, guarantor, or financial guarantor is immediately liable for losses with the maximum amount specified in this convention) (Johnston, 2004).
2. International convention on civil liability for oil pollution damage (29 November 1969, Brussels). Article 3 of this convention regulates aspects of liability based on strict liability (Seyfang & Jordan, 2013).
3. Convention on civil liability for losses caused by activities that endanger the environment (convention on civil liability for damage resulting from activities dangerous to the environment, Lugano, 21 June 1993). Accountability is regulated in Chapter II (Articles 5, 6, 7 and 8). The types of liability adopted are: strict liability with excuses (defences) termed exemptions.(Khalatbari & Poorhashemi, 2019)
4. The draft biosafety protocol as the implementation of the convention on biodiversity (Morgera & Tsioumani, 2010). Regarding strict liability arrangements, the primary basis that prompted China to propose strict liability is the alignment of these principles with essential principles in sustainable development, i.e. the precautionary principle (principle 15 of the Rio Declaration). The principle emphasises that if there is a threat of severe or irreversible damage, the absence of certainty of scientific evidence cannot be used as an excuse for postponing prevention efforts. If accountability uses an element of error (fault) on the defendant, as desired by advanced industrial countries, then the defendant can always take refuge behind the uncertainty of scientific evidence.
5. Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, 22 March 1989. A special follow-up commission was formed based on the Conference of the Parties on the convention. The particular team proposed a form of accountability that would become part of the protocol. The proposed form of liability includes absolute liability and strict liability. Insurance is one of the parties involved, therefore determining the form of liability. According to Barboza, choices tend to be accountable without fault (Bergesen *et al.*, 2018a).
6. Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment, 21 June 1993, Lugano. This convention adheres to liability without fault with reasons of forgiveness (defences /exemptions) (Arsic, 2014).

3. CONCLUSION

The maritime transportation agreement serves as a comprehensive framework delineating the rights and obligations of all the parties involved, particularly emphasising the responsibilities incumbent upon carriers in ensuring the security and safety of both the vessel and the cargo being transported. Specifically, Articles 466 to 520 of the Criminal Code are instrumental in regulating the transportation of commodities, establishing a legal foundation where carriers are held accountable for any consequences arising from their fulfilment of transportation duties. Prior to departure from port, it is imperative for sea transportation supervisors to meticulously assess various factors to guarantee the seamless and secure operation of the ship, with heightened attention placed on vessels carrying potentially hazardous cargo such as oil. To this end, adherence to safety protocols such as the International Safety Management (ISM) code, the implementation of a Safety Management System (SMK), obtaining a Document of Compliance, and securing a Safety Management Certificate (SMC) are indispensable components in ensuring maritime safety. Moreover, Law No. 17 of 2008, concerning Shipping underscores the pivotal role of carriers in mitigating pollution emanating from maritime activities. This legal

framework mandates carriers to actively participate in efforts aimed at reducing environmental degradation caused by ships, thereby underscoring their shared responsibility in safeguarding marine ecosystems. On an international scale, environmental law principles, including the *Polluter Pays* principle, are pivotal in quantifying the financial liabilities of entities responsible for environmental harm. This principle not only imposes economic repercussions on polluters, but it also plays a pivotal role in shaping regulatory frameworks governing commerce and financial support in the maritime sector. However, despite the existence of comprehensive legal frameworks such as Law No. 32 of 2009, concerning Environmental Protection and Management, and Government Regulation No. 19 of 1999, concerning Control of Marine Pollution and/or Destruction, which provide clear legal avenues for governmental intervention in addressing marine pollution, strict enforcement of these regulations remains elusive in Indonesia. Consequently, the effective implementation of responsibility principles, such as the *Polluter Pays* principle and the principle of absolute responsibility, has been hindered, leading to prolonged delays in compensating affected communities and addressing the adverse environmental impacts of marine pollution incidents, particularly those stemming from oil spills. In essence, while legal frameworks exist to hold shipowners and ship operators accountable for marine pollution, the lack of stringent enforcement mechanisms and complexities in implementation have impeded effective pollution-control measures, thereby exacerbating environmental damage and necessitating a re-evaluation of enforcement strategies to uphold marine ecosystem integrity and community well-being.

CONFLICT OF INTEREST

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