UiT The Arctic University of Norway

Faculty of Law

# The regulations protecting and preserving the marine environment under the law of the sea from acts of sabotage or terrorism against offshore oil and gas installations in the event of transboundary environmental pollution

Anne Strohmeyer

Master's thesis in law of the sea JUR 3910, September 2023

# Table of Contents

# 1 Introduction

"There's been no lack of warnings that they're mostly unprotected and easy to attack", were the words of Hedda Langmyr about Norway's offshore critical infrastructure following the damage of the Nord Stream 1 and 2 pipelines.[1] Previously, the devastating transboundary effects of accidents from installations have been underlined by, for example, the Montara oil spill in 2009 or the Deepwater Horizon oil spill in 2010. These have led to hundreds of thousands of barrels of oil being spilled into the oceans.[2] In September 2022, the damage to the Nord Stream 1 and 2 pipelines in the Baltic Sea was a reminder that these devastating environmental effects do not necessarily have to be accidental. Instead, acts of terrorism and sabotage can harm installations as well. Whereas previously, the risk of sabotage or terrorist attacks has not been at the focus of attention,[3] the events in September were a wake-up call for (especially Western) states, raising security concerns. This is evident, for example by the Norwegian Prime Minister Jonar Gahr Støre calling for security enhancement of oil and gas installations.[4]

The direct environmental harm from damaged oil and gas installations can be immense. With the acoustic pollution – which usually accompanies an explosion - causing massive shockwaves[5], the killing of marine animals by suffocation from oil[6] and the winds leading the leakage substances to have a transboundary reach[7], the impact can be devastating. Under the

---

[1] Nina Berglund, 'Norway's Pipelines Now Branded as a "Prime Target for Sabotage"' (*Norway's News in English - www.newsinenglish.no*, 30 September 2022) <https://www.newsinenglish.no/2022/09/28/norways-pipelines-now-branded-as-a-prime-target-for-sabotage/> accessed 30 March 2023.

[2] Sergei Vinogradov, 'The Impact of the Deepwater Horizon: The Evolving International Legal Regime for Offshore Accidental Pollution Prevention, Preparedness, and Response' (2013) 44 Ocean Development & International Law 335, 335.

[3] Magne Tørhaug, 'Petroleum Supply Vulnerability Due to Terrorism at North Sea Oil and Gas Infrastructures' Protection of Civilian Infrastructure from Acts of Terrorism 73, 75-76.

[4] Berglund (n 1).

[5] Hans Sanderson and others, 'Environmental impact of sabotage of the Nord Stream Pipelines' [2023] 1, 8.

[6] 'This Is How Oil Spills Damage Our Environment' (*World Economic Forum,* 12 October 2021) <https://www.weforum.org/agenda/2021/10/oil-spill-environment-ocean/> accessed 28 May 2023.

[7] 'Oil Spills at the Water Surface' (*Office of Response and Restoration,* 10 July 2012) <https://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/oil-spills-water-surface.html>

law of the sea coastal states have an obligation to protect and preserve the marine environment from activities under their jurisdiction and control. [8] However, the obligations under the law of the sea to protect and preserve the marine environment in cases of sabotage or terrorism might not be as clear. Responsibility and liability in this area can influence the environmental consequences immensely, and thus is important to address in order to mitigate the environmental impacts.

Since the introduction of the 1982 United Nations Convention on the Law of the Sea (UNCLOS), new issues have emerged.[9] With technologies developing, accessibility through for example threats to offshore installations increases.[10] Advances in technology are also expected to see the gas and oil sector move into previously unexplored areas further offshore.[11] With the melting of the sea-ice areas – such as in the Arctic – harsh environmental conditions are also becoming more attractive for oil and gas exploitation.[12] This comes at a risk, as oil and gas leakages in the Arctic are a major problem as reaching the side to mitigate the environmental harm is difficult due to the Arctics limited access and low temperatures .[13] Thus, it needs to be assessed whether the law of the sea affords a coastal state sufficient legal certainty to take measures in response to sabotage or terrorism against offshore oil or gas installations located in its maritime area in the face of its direct environmental impacts.

## 1.1 Research Objective and Research Question

The objective of the thesis is to establish the legal basis regarding the coastal state's measures against transboundary environmental pollution following an act of terrorism or sabotage against offshore oil and gas installations. Whereas states have an obligation under the law of the sea to

accessed 12 April 2023.

[8] United Nations Convention on the Law of the Sea (UNCLOS) (1982) Arts. 192, 194.

[9] Hua Zhang, 'The Development of International Law of the Sea by International Courts and Tribunals' (2021) 9 The Korean Journal of International and Comparative Law 132, 133.

[10] Bernd Radowitz, 'Naval Expert Warns on "increasingly Probable" Offshore Wind Farm Terror Drone Strikes' (*Recharge*, 29 November 2022) <https://www.rechargenews.com/wind/naval-expert-warns-on-increasingly-probable-offshore-wind-farm-terror-drone-strikes/2-1-1362956> accessed 21 June 2023.

[11] Vinogradov (n 2) 336.

[12] Amos Necci and others, 'Lessons Learned from Offshore Oil and Gas Incidents in the Arctic and Other Ice-Prone Seas' (2019) 185 Ocean Engineering 12, 12.

[13] Necci (n 12) 23.

protect and preserve the marine environment from activities under their jurisdiction and activities from their vessels, the regulations might not be so clear regarding acts of sabotage and terrorism. The polluter pays principle (PPP)[14] is often referred to in cases of oil spills.[15] However, in the event of sabotage or terrorism, the perpetrators need to be identified and, if identified, may not have the means to pay for the environmental damage. Hence, issues of liability and responsibility arise.

Considering the immense harm such an attack can have, it is vital for (coastal) states to respond adequately and quickly. This requires legal certainty about the rights and duties of the relevant actors in responding to incidents involving the unlawful use of force against offshore critical infrastructure. Therefore, it is crucial to increase the legal resilience of the current international law system to address environmental pollution caused by acts of sabotage or terrorism. Considering the devastating environmental consequences, the response to such incidents must be fast to mitigate the damage to the marine environment. The thesis will focus on the direct impact on the marine environment derived from the pollution (including oil, gas, mud and chemicals[16]) caused by sabotage or a terrorist act against an offshore oil and gas installation.

To address the research objective, the following research question is asked: To what extent does the law of the sea regulate the protection and preservation of the marine environment from acts of sabotage and terrorism against offshore oil installations in the event of transboundary environmental pollution? To do so some sub-questions need to be addressed which are:

- What are the obligations and rights of coastal states under the UNCLOS to protect offshore oil and gas installations?
- To what extent can a coastal state be held responsible for transboundary environmental harm in the event of sabotage or acts of terrorism against offshore installations located in their maritime area?
- To what extent does the polluter pays principle apply in the allocation of liability in the event of sabotage or terrorism towards an offshore installation?

[14] Rio Declaration on Environment and Development (1992) Principle 16; The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention) Art. 2 (2b).

[15] Ayobami Olaniyan, 'Imposing Liability for Oil Spill Clean-Ups in Nigeria: An Examination of the Role of the Polluter-Pays Principle' (2015) 40 Journal of Law, Policy and Globalization 73, 78.

[16] Vinogradov (n 2) 337.

- What are the current gaps in the law of the sea to address transboundary harm from the sabotage of offshore oil and gas installations?
- To what extent does the current legal bases provide legal resilience to address the environmental impact following an attack against an offshore oil and gas installation due to sabotage or terrorism?

## 1.2 Methodology and Materials Used

The thesis is based on qualitative research using a doctrinal approach with interdisciplinary methods, specifically the law in context approach. The doctrinal approach allows the systemization of principles, concepts, and rules in a specific legal field[17]. The law of the sea will be analyzed with a focus on its gaps and uncertainties. For this thesis, the legal certainty of the law of the sea regulating offshore oil and gas installations is established to see to what extent they protect and preserve the marine environment following the act of sabotage or terrorism towards an offshore oil and gas installation. This will be done by using legal literature, state practice, case law, and relevant treaties. The legal literature involves the UNCLOS, 2005 SUA Convention[18], International Maritime Organization's (IMO) countervailing measures, and others.

For the doctrinal approach, it is firstly important to establish the existing laws in place regarding the above-mentioned issue, to then be able to inquire to see which solutions are most relevant and whether forms of justification are used in the current system.[19] The purpose of this will be to identify the existing applicable legal mechanisms to hold actors responsible and liable for environmental impacts, and also to identify gaps and uncertainties in the law of the sea. The interdisciplinary method of law in context will be used to link the doctrinal analysis to gain insight into the practical application.[20] This will then allow the exploration/suggestion of policies that the law ought to pursue or in which direction it can be advised to develop.[21] As it becomes evident in this thesis, legal changes are often not as fast as social changes. Therefore,

[17] Terry Hutchinson and Nigel Duncan, 'Defining and Describing What We Do: Doctrinal Legal Research' (2012) 17 Deakin Law Review 83, 101.

[18] Convention on the Suppression of Unlawful Acts against the Safety of Maritime Navigation (SUA Convention) (2005).

[19] Hutchinson and Duncan (n 17) 113.

[20] William Twining, *Law in Context: Enlarging a Discipline* (1st edn, Clarendon 1997) 46.

[21] Twining (n 20) 46.

using the law in context approach will allow the thesis to be more sensitive to the environment in which the law takes place.[22]

## 1.3 Scope Delimitation

The scope of the thesis will focus on offshore oil and gas installations and not pipelines. There are different legal implications as installations are set in one location, and pipelines often cross maritime boundaries. Depending on factors such as the coastal state, the owner of the company, or the state under which the installation is registered, the legal role regarding liability and responsibility may differ. In the context of transboundary oil and gas pollution, this is especially relevant, as those states that may be negatively affected by pollution are not necessarily the actors who are liable and responsible. In addition, transboundary pollution makes the issues regarding liability and responsibility more complicated as multiple states are affected. The thesis will not focus on the safety of people or crew on board the oil or gas platform.

The focus is not on technical knowledge and understanding, as much of the literature focuses on preventative measures. Rather, the focus is on the legal mechanisms for addressing the environmental damage deriving from offshore installations and whether there is enough legal certainty to hold perpetrators of an attack against oil or gas installations liable and responsible. An act of sabotage implies the involvement of a state actor, which may have the means to pay for the damage caused by the attack. However, to prove that a state is responsible for the sabotage is complicated. Considering that the impact on the marine environment may be evident years later, the focus of the thesis will be on the direct impact on the marine environment. The thesis focuses on the legal certainty and resilience to mitigate the direct marine environmental impact. It may also be worth noting that the focus is on the legal mechanisms under the law of the sea. Therefore, the thesis will not address measures which may stem from other fields of law, such as counter-terrorism legal regulations.

## 1.4 Structure

This thesis will be structured in the following manner: The first Chapter focuses on the protection and preservation of the marine environment from transboundary harm. This is done by briefly addressing cases of transboundary harm in the past, to then discuss the due diligence obligation of states by referring to case law. The concept of transboundary harm is then brought

[22] ibid 47.

forward by referring to various conventions, such as the UNCLOS, and discussing the rights and obligations of coastal states. The concepts of sabotage and terrorism are then brought forward, and the relevance of sabotage and terrorism for the protection of offshore oil and gas installations is discussed. Finally, the Chapter will introduce the debate of whether an installation is legally classified as a ship or an installation. The second Chapter focuses on the regulations to address offshore oil and gas damage from installations, by focusing on the UNCLOS to establish the general provisions. Then, the PPP is discussed in relation to acts of sabotage and terrorism, to consider its relevance to address pollution from offshore oil and gas installation. Lastly, the second Chapter discusses the law of the sea's maritime security regulations – for example, the SUA Conventions - and its relevance towards an act of terrorism or sabotage regarding an offshore oil and gas installation. The third Chapter then focuses on the liability, gaps in the transboundary harm regime and suggestions to improve the legal certainty of coastal states. Finally, some concluding remarks are presented regarding the regulation to protect and preserve the marine environment from acts of sabotage and terrorism against offshore oil and gas installations that cause transboundary pollution.

# 2 Transboundary harm and the relevance of Protecting Offshore oil and gas installations from acts of Sabotage and Terrorism

## 2.1 Protecting and preserving the marine environment from transboundary harm

The consequences of pollution from offshore oil and gas installations on the marine environment can be severe.[23] Pollution from offshore oil and gas installations has become a concern for entire communities as it severely impacts the environment, damages the livelihood of many living creatures, and can spread across maritime borders.[24] This issue has been recognized by states who have worked to address it through international law.[25] To examine the rights and obligations of states in this matter, this section will first explore past spillages to provide context and then focus on the concept of due diligence. The obligation of due diligence will then be further examined in relation to transboundary harm by referencing relevant provisions in the UNCLOS.

The current system of international treaties to address the prevention of marine pollution can be attributed to past disasters and accidents, which prompted the development of compensation and prevention regulations for oil and gas pollution damages.[26] The 1967 Torrey Canyon disaster on the south-west coast of the United Kingdom (UK)[27] was one of the first major disasters, triggering concern for pollution from ships and land, resulting in several treaties and conventions to be put into place.[28] The accident caused 119,000 tons of crude oil to spill into

[23] Elly Purwendah EK, Dewa Mangku and Aniek Periani, 'Dispute Settlements of Oil Spills in the Sea towards Sea Environment Pollution' (2019) 317 Advances in Social Science, Education and Humanities Research 245, 245.

[24] Purwendah, Mangku and Periani (n 23) 248.

[25] Marissa Smith, 'The Deepwater Horizon Disaster: An Examination of the Spill's Impact on the Gap in International Regulation of Oil Pollution from Fixed Platforms' (2011) 25 Emory International Law Review 1477, 1478.

[26] Doris König, 'Marine Environment, International Protection' Max Planck Encyclopedia of Public International Law [2013] para. 1.

[27] Angela Carpenter, 'Oil Pollution in the North Sea: The Impact of Governance Measures on Oil Pollution over Several Decades' (2018) 845 Hydrobiologia 111.

[28] König 2013 (n 26) para. 3.

the sea, triggering discussions regarding the prevention and compensation of such disasters.[29] There have also been several recent incidents that caused immense transboundary damage to the marine environment. For example, in 2021 a cargo ship off the Sri Lankan coast led to highly dangerous chemicals and plastic pellets leaking into the ocean.[30] The consequence: dead marine life and the toxification of fish affecting both marine environment and communities for decades to come. [31] The Montara oil spill and Deepwater Horizon spill, are two well-known major accidents with transboundary environmental effects, which are also widely discussed in the literature.

The 2009 Montara oil spill, located in the Timor Sea off the northern coast of Australia, was caused by a blowout from the Montara wellhead platform[32] causing an estimated 30,000 to over 200,000 barrels of oil[33] and gas leaking into the ocean. [34] Through currents, the spill spread to the coastal waters of Indonesia and East Timor, causing serious harm to marine living resources.[35] In response, Indonesia raised the question of damages and asked Australia for payment of compensation.[36]

Then in 2010 the Macondo well blowout (the Deepwater Horizon oil spill) occurred, becoming the largest oil spill in history. With this, an estimated 4 million barrels of crude oil were released into the Gulf of Mexico.[37] Although the implications for the marine environment were in the

[29] Carpenter (n 27) 111.

[30] Ranga Sirilal and Andreas Ilmer, 'X-Press Pearl: The "toxic Ship" That Caused an Environmental Disaster' (*BBC News*, 10 June 2021) <https://www.bbc.com/news/world-asia-57395693> accessed 28 July 2023.

[31] Sirilal and Ilmer (n 30).

[32] Vinogradov (n 2) 338.

[33] ibid.

[34] Amanda Battersby, 'PTTEP to Pay $129 Million Compensation for 2009 Montara Oil Spill' (*Upstream Online | Latest oil and gas news*, 22 November 2022) <https://www.upstreamonline.com/safety/pttep-to-pay-129-million-compensation-for-2009-montara-oil-spill/2-1-1358744> accessed 16 June 2023.

[35] Vinogradov (n 2) 338-339.

[36] ibid.

[37] 'The World's Worst Offshore Oil Rig Disasters' (*Offshore Technology*, 1 June 2019) <https://www.offshore-technology.com/features/feature-the-worlds-deadliest-offshore-oil-rig-disasters-4149812/> accessed 12 June 2023.

United States (US) – and therefore discussions on domestic regimes of offshore pollution regarding liability and response took place- it also raised a dialogue among experts regarding the international regimes to handle such environmental disasters.[38] The cleanup operations scale and costs were unmatched by any operations before.[39] The accident was a reminder of the vast environmental impacts such a disaster can have.

### 2.1.1 The Due Diligence Obligation

When discussing the consequences of oil and gas installations and states' responsibilities, the concept of due diligence is brought to the forefront as the obligation to prevent transboundary harm is generally recognized as a due diligence obligation.[40] Due diligence is a fundamental concept in general international law[41] and evolved in international environmental law[42] as the protection of the marine environment was strengthened in the second half of the 20th century. [43] There is no single definition, leading to various interpretations, uses, and applications. [44] Malaihollo believes due diligence includes elements of good faith and reasonableness.[45] It is also seen to contain an element of general accountability, a focus on the state's role to regulate non-state actors and for the state to take responsibility and not harm other states.[46] However, there is no "general principle of due diligence" in international law.[47] It is a notable concept to focus on when it comes to transboundary environmental harm. Several cases[48] further outline

[38] Vinogradov (n 2) 389.

[39] ibid.

[40] Akiko Takano, 'Due Diligence Obligations and Transboundary Environmental Harm: Cybersecurity Applications' (2018) 7 Laws 1, 2.

[41] Zhang (n 9) 140.

[42] Medes Malaihollo, 'Due Diligence in International Environmental Law and International Human Rights Law: A Comparative Legal Study of the Nationally Determined Contributions under the Paris Agreement and Positive Obligations under the European Convention on Human Rights' (2021) 68 Netherlands International Law Review 121, 124.

[43] Zhang (n 9) 132.

[44] Malaihollo (n 42) 124.

[45] ibid 121.

[46] ibid 124.

[47] McDonald N, 'The Role of Due Diligence in International Law' (2019) 68 International and Comparative Law Quarterly 1041, 1041.

[48] *Corfu Channel Case (United Kingdom v. Albania)* [1949] ICJ Rep 4.; *Case concerning Pulp Mills on the River Uruguay (Argentina v. Uruguay),* [2010] ICJ Rep 18, para. 197.

the content and scope of the obligation, two recent cases being the 2011 Advisory Opinion from the Seabed Disputes Chamber of the International Tribunal of the Law of the Sea (ITLOS)[49] and the 2016 Philippines v. China Case.[50]

The 2011 Advisory Opinion clarified: "that "due diligence" is a variable concept. It may change over time … in light, for instance, of new scientific or technological knowledge".[51] In addition, it added that states are required to take measures "reasonably appropriate for securing compliance by persons under its jurisdiction".[52] Hereby, according to the ITLOS Advisory Opinion, it is "an obligation to deploy adequate means, to exercise best efforts, to do the utmost, to obtain the result".[53]

The South China Sea Arbitration (Philippines v. China) for the first time applied due diligence[54]. Here, "the Tribunal thus considers that Article 192 imposes a due diligence obligation … Article 192 extends to the prevention of harms that would affect depleted, threatened, or endangered species indirectly through the destruction of their habitat".[55] In addition, "obligations in Part XII apply to all States with respect to the marine environment."[56] Therefore, for states to fulfil their responsibilities they have a due diligence obligation under which they need to adopt and enforce laws and regulations. These should prevent harmful events or outcomes by taking measures to protect activities or people within their own territory and beyond it.[57] Therefore, states have a duty to prevent transboundary environmental harm.[58]

---

[49] *Responsibilities and obligations of States with respect to activities in the Area* (Advisory Opinion), [2011] ITLOS Reports 2011.

[50] *South China Sea Arbitration (Philippines v China),* [2016] PCA Case No. 2013-19.

[51] *2011 Advisory Opinion* (n 49) para. 117.

[52] ibid para. 168.

[53] ibid para. 110.

[54] Zhang (n 9) 141.

[55] *South China Sea Arbitration* (n 50) para. 959.

[56] ibid para. 940.

[57] Akiko Takano, 'Land-Based Pollution of the Sea and Due Diligence Obligations' (2017) 60 Due Diligence Obligations in International Law 92, 94.

[58] Malaihollo (n 42) 124.

The due diligence obligation is an obligation of conduct.[59] Therefore, as long as a state exercises the best effort to obtain the result, a specific result does not have to be achieved.[60] The requirement that states consistently perform with a standard of due diligence is regardless of whether the activity is by a public or private actor.[61] Thus, this involves substantial damage through both public and private conduct.[62] It follows that this would entail acts of sabotage and terrorism, regardless of whether the acts were state-sponsored or not. The state, which is then concerned, however, according to Zhang, does not have to bear the direct responsibility for private activities occurring under its control or jurisdiction.[63] Instead, a State is to "take necessary measures in its sphere of exclusive control to regulate private activities" and if failing to do so, be held responsible for failing to take necessary measures under those specific circumstances.[64] A state is thereby, liable for its conduct instead of the result of harm.[65]

Therefore, when focusing on sabotage and terrorism, states are expected to apply due diligence to take the necessary measures to prevent transboundary harm. As it is a standard of reasonableness that "seeks to take account of the consequences of wrongful conduct and the extent to which such consequences could feasibly have been avoided by the State or international organisation that either commissioned the relevant act or which omitted to prevent its occurrence".[66] However, focusing on "reasonableness" and consequences which could "feasibly" have been avoided it leaves a lot of room for interpretation. Especially, as the due diligence obligation is assessed on a case-by-case basis, for this several factors are taken into consideration.[67] For example, the vulnerability of the potentially threatened ecosystems, the probability of its occurrence and the state itself taking the measures.[68] Another factor leaving

[59] Doris König, 'The Elaboration of Due Diligence Obligations as a Mechanism to Ensure Compliance with International Legal Obligations by Private Actors' [2018] Brill 83, 84.

[60] Takano 2018 (n 40) 3.

[61] Caroline E. Foster, 'Due Diligence and Compliance with the Protocol on Environmental Protection to the Antarctic Treaty' (2021) 13 The Yearbook of Polar Law Online 154,157.

[62] Zhang (n 9) 140.

[63] ibid.

[64] ibid.

[65] Takano 2018 (n 40) 3.

[66] *ILA Study Group on due Diligence in International Law* (Second Report, 2016) 2.

[67] Philippe Weckel and Raphaelle Didillon, *The obligation of states to protect and preserve the marine environment* (Summary of the general report, 2023), Institut du Droit Economique de la Mer, 5-6.

[68] Weckel and Didillon (n 67) 5-6.

room for interpretation is whether the assessment of reasonableness is influenced by a countries level of development. [69]

It can therefore be assumed that in the case of sabotage and terrorism, it is assessed on a case-by-case basis, where for example prior security information might be taken into consideration. Considering that it is the state itself that authorizes offshore drilling activities in its Exclusive Economic Zone (EEZ)[70], and under the due diligence obligation they are to fulfil their responsibilities through adopting and enforcing laws[71], a reasonable sense of responsibility can be assumed. It follows, that the due diligence obligation is open to interpretation but in the cases of sabotage and terrorism, a state cannot avoid its due diligence responsibilities and can be held responsible not for the harm, but for the measures they did not take. However, to understand this further it is important to focus on due diligence with transboundary harm together, as will be discussed in the following section.

### 2.1.2 Transboundary harm

Transboundary harm can be defined as "harm caused in the territory of or in other places under the jurisdiction or control of a State other than the State of origin, whether or not the States concerned share a common border". [72] With transboundary issues, sovereignty is often considered to be affected. It has even been argued that the state's sovereignty is violated by transboundary environmental problems[73] as transboundary pollution and/or harm may have implications for the traditional idea of non-intervention.[74] States themselves have an obligation not to cause transboundary harm. This follows from the Trail Smelter case where "no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein when the case is of serious

[69] Doris König, 'The Elaboration of Due Diligence Obligations as a Mechanism to Ensure Compliance with International Legal Obligations by Private Actors' [2018] Brill 83, 84.

[70] UNCLOS 1982, Art. 60 (1).

[71] Akiko Takano, 'Land-Based Pollution of the Sea and Due Diligence Obligations' (2017) 60 Due Diligence Obligations in International Law 92, 94.

[72] *Draft articles on Prevention of Transboundary Harm from Hazardous Activities, with commentaries* (ILC, 2001) Art. 2(c).

[73] Karen T. Litfin, 'Sovereignty in World Ecopolitics' (1997) 41 Mershon International Studies Review 167, 168.

[74] Litfin (n 73) 179.

consequence and the injury is established by clear and convincing evidence".[75] Not causing transboundary harm has now become a general principle, which is reflected in several other cases.[76]

In addition to not causing transboundary harm, there is also an obligation to prevent transboundary environmental harm. The principle of prevention is now considered to be a principle of general international law, and respectively customary rule.[77] It involves the obligation to act prior to the occurrence of environmental harm. This can be seen in several conventions such as the UNCLOS, Art. 194 (1) where states shall take "individually or jointly as appropriate, all measures…necessary to prevent", the International Convention for the Prevention of Pollution from Ships (MARPOL) Art. 1 "to prevent the pollution of the marine environment"[78], the 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) Art. 2(1a) "take all possible steps to prevent"[79] and the 1992 United Nations Framework Convention on Climate Change (UNFCCC) Art. 3(3) "precautionary measures to anticipate, prevent or minimize".[80] In addition, the International Law Commission (ILC) Draft Articles on Prevention of Transboundary Harm from Hazardous Activities refers to "all appropriate measures to prevent significant transboundary harm" in Art. 3.[81]

It becomes apparent that the obligation to not only cause but also prevent (transboundary) environmental harm is widely reflected in the law of the sea. There is a duty to cooperate, and the obligation is seen as a general principle. The duty of cooperation is a procedural obligation as it involves procedural measures to facilitate and develop cooperation among states.[82]

---

[75] *Trail Smelter Case (United States, Canada)* [1938] International Arbitral Awards III 1905, 1965.

[76] *Corfu Channel Case* (n 48); *Award in the Arbitration regarding the Iron Rhine ("Ijzeren Rijn") Railway between the Kingdom of Belgium and the Kingdom of the Netherlands* [2005] Reports of International Arbitral Awards XXVII 35.; *Draft articles on Responsibility of States for Internationally Wrongful Acts, with commentaries* (ILC, 2001) 62.; *Legality of the Threat or Use of Nuclear Weapons (*Advisory Opinion) [1996] ICJ Reports 679, [1996] 226, para. 29.

[77] *Iron Rhine Arbitration* (n 76) para. 59.; *Pulp Mills Case* (n 48) para. 101.

[78] International Convention for the Prevention of Pollution from Ships (1973/78) (MARPOL) Art. 1.

[79] OSPAR Convention 1992, Art. 2(1a).

[80] United Nations Framework Convention on Climate Change (UNFCCC) (1992) Art. 3(3).

[81] *ILC Hazardous Activities* (n 72) Art. 3.

[82] Weckel and Didillon (n 67) 8.

However, this needs to be read with the characteristics of the obligation, as this is one of "due diligence" as the provisions include notions such as "as appropriate".[83] Therefore, a sense of reasonability is expected by the states when it comes to adoption. With this, the law of the sea finds a balance between the sovereignty of states and their responsibility to protect the environment.

In addition to the obligation to prevent transboundary harm, there is also an obligation to "ensure" that other states are not harmed. This entails ensuring that activities carried out under their jurisdiction or control are conducted in a manner that does not cause pollution or damage to other states´ environment. Furthermore, it requires that pollution resulting from incidents or activities under their jurisdiction or control be contained within the areas where they exercise sovereign rights in accordance with this Convention.[84] This obligation is reflected in the South China Sea Arbitration ruling, which states that "Articles 192 and 194 establish obligations not only with regard to activities directly undertaken by states and their organs but also with regard to ensuring that activities within their jurisdiction and control do not cause harm to the marine environment.".[85]

The first part of the provision refers to the "no harm" principle, whereas states are not to cause damage outside their territory[86], which has been discussed above and is evident in the above-mentioned cases. The second part of Art. 194 of the UNCLOS (and in Art. 192[87]) sets an obligation to ensure, which is an obligation of conduct.[88] This thereby refers not only to the activities directly taken by states but also that activities in general under their jurisdiction do not harm the environment. [89] In addition, pollution is referred to in general in the second part of Art. 192 of the UNCLOS and does not explicitly mention damage. Therefore, the spread alone is enough for a state's obligation under Art. 192 of the UNCLOS to be triggered.[90] Notably, the provision mentions "activities" and not only the areas under a state's control or

[83] UNCLOS 1982, Arts. 197, 199

[84] UNCLOS 1982, Art. 194 (2).

[85] *South China Sea Arbitration* (n 50) para. 944.

[86] Detlef Czybulka, 'Article 194' in Alexander Proelss, *A Commentary* (1st edn, CH Beck 2017) 1295, 1305.

[87] UNCLOS 1982, Arts. 192, 194.

[88] Czybulka (n 86) 1306

[89] *South China Sea Arbitration* (n 50) para. 944.; Czybulka (n 86) 1306.

[90] Czybulka (n 86) 1306.

jurisdiction.[91] This would thus imply that offshore oil and gas activities if under a state's control and jurisdiction, are included.

Accidents or emergencies are also addressed in the UNCLOS. This can be seen in Arts. 198 and 199 of the UNCLOS.[92] When a state becomes aware of pollution, Art. 198 of the UNCLOS obliges states to "immediately notify other states" that are likely affected by the damage and notify competent international organizations. If Art. 198 of the UNCLOS applies, states are obligated to cooperate to eliminate the effects of pollution and prevent or minimize the damage. Although cooperation is required, this obligation is relaxed as states are only required to do so "in accordance with their capability" and "to the extent possible".[93] It becomes evident, despite being a contingency plan to address pollution[94], that there is room for interpretation by states.

Therefore, when it comes to the rights and obligations of coastal states regarding transboundary pollution from offshore oil and gas installations, coastal states have a responsibility to not only prevent but also ensure that such transboundary harm does not occur. With the responsibility to prevent, states must meet two subcomponents procedural and substantive obligations.[95] The procedural obligations involve risk management before activities start[96], as the International Court of Justice (ICJ) observed: "(T)o fulfil its obligation to exercise due diligence in preventing significant transboundary environmental harm, a State must, before embarking on an activity having the potential adversely to affect the environment of another State, ascertain if there is a risk of significant transboundary harm, which would trigger the requirement to carry out an environmental impact assessment."[97] Damage containment measures are included in the environmental impact assessment, which is then implemented under the substantive obligation.

---

[91] ibid.

[92] UNCLOS 1982, Arts. 198-199.

[93] ibid Art. 199.

[94] Vinogradov (n 2) 341.

[95] Kirsten Schmalenbach, 'States Responsibility and Liability for Transboundary Environmental Harm', *Corporate liability for transboundary environmental harm: An international and transnational perspective* (Springer 2023) 57.

[96] Schmalenbach (n 95) 57.

[97] *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v Nicaragua) and Construction of a Road in Costa Rica along the San Juan River (Nicaragua v Costa Rica)* [2015] ICJ Rep 665, para. 104.

The substantive obligation involves measures which prevent and contain harm; this may take the form of regulatory and administrative steps.[98] The measures that are considered appropriate for meeting the substantive obligation vary depending on the situation, but, when exercised correctly they can free a state from its international responsibility even if harm occurred.[99] Procedural obligations are more specific and may include an environmental impact assessment (EIA) or consultation with other states on an international level if a risk has been detected.[100] So, when it comes to ensuring no transboundary harm a state can meet this responsibility if a state can demonstrate that they have met the due-diligence obligations when authorizing an activity.[101]

Therefore, if a state authorizes offshore activities under its EEZ it has to meet the due-diligence obligations. These are based on a case-to-case basis, and the methods used to assess the situation vary, as the due-diligence standard is not a one-size-fits-all.[102] Therefore, this depends on the level of risk the case of sabotage or terrorism may pose, and what is deemed for the specific case as reasonable. Due to the amount of discretion involved, it may be quite simple for a state to escape its responsibility in the case of transboundary harm from cases of sabotage and terrorism. The relevance of focusing on cases of sabotage and terrorism at sea and the relevance for protecting offshore oil and gas installations from these acts is further explored in the following section.

## 2.2 Sabotage and Terrorism

As a general observation the attacks and interferences with offshore petroleum installations have increased over the past years, with the majority occurring since 2004.[103] Regions all over the world are affected, and countries with higher economic and political instability appear to have a higher vulnerability.[104] The perpetrators have varied from terrorists, insurgents, activists, pirates, and others, many of whom remain unknown.[105]

---

[98] Schmalenbach (n 95) 57.

[99] ibid.

[100] ibid.

[101] ibid 56.

[102] ibid 57.

[103] Mikhail Kashubsky, 'A Chronology of Attacks on and Unlawful Interferences with, Offshore Oil and Gas Installations, 1975 – 2010' (2011) 5 Terrorism Research Initiative 139, 139.

[104] Kashubsky (n 103) 140.

[105] ibid.

### 2.2.1 The concepts of sabotage and terrorism

For both the terms terrorism and sabotage, there is no clear universal or common legal definition. The term terrorism comes with several connotations, whether ideological or political. The United Nations (UN) has made attempts for a rather universal definition; however, states have not agreed on a single legal definition.[106] These attempts are evident in the International Convention for the Suppression of the Financing of Terrorism[107], UN Security Council[108], and in the UN General Assembly. In 2006, the UN General Assembly defined a terrorist act as "criminal acts intended or calculated to provoke a state of terror in the general public, a group of persons or particular persons for political purposes."[109] The high-level panel on threats, Challenges, and Change set up by the UN in 2004 also added "*non-combatants*" as potential targets to the definition.[110] In the adoption of the Convention on the Prevention of Terrorism in 2005, the Council of Europe defined terrorism as: "acts of terrorism have the purpose by their nature or context to seriously intimidate a population or unduly compel a government or an international organization to perform or abstain from performing any act or seriously destabilize or destroy the fundamental political, constitutional, economic or social structures of a country or an international organization", which excludes the official military.[111] What becomes evident is that the destruction of infrastructure is included, which then undermines the government or an organization.[112] In addition, the threat is sufficient, as per the definition of the Council of Europe.

When it comes to sabotage, neither the existing literature or US military doctrine provide a common definition.[113] The definition proposed by the Center for Naval Analyses in their 2021

---

[106] 'The Practical Guide to Humanitarian Law' (*Doctors without borders*) <https://guide-humanitarian-law.org/content/article/3/terrorism/> accessed 26 July 2023.

[107] International Convention for the Suppression of the Financing of Terrorism (1999) Art. 2(1b).

[108] United Nations Security Council (UNSC) Res 1566 (8 October 2004) UN Doc S/Res/1566.

[109] United Nations General Assembly (UNGA) Res 68/43 (6 January 2006) UN Doc A/Res/60/43, para. 2.

[110] United Nations General Assembly (UNGA) Agenda 55 (2 December 2004) UN Doc A/58/565, para. 164(d).

[111] Council of Europe Convention on the Prevention of Terrorism [2005] OJ 196/1, Introduction.

[112] The practical guide (n 106).

[113] Alexander Powell and others, *Maritime Sabotage: Lessons Learned and Implications for Strategic Competition* (CNA 2021) i.

report is: "sabotage is a mission (conducted via individual act or as part of a campaign) to secretly disarm, obstruct, or destroy enemy war materiel or infrastructure for military advantage".[114] It involves secrecy, or an attempt at secrecy, from the saboteur, where secrecy is used as a leverage in the execution.[115] In addition, it does not involve terrorist acts like, for example, suicide bombings.[116] The definition also sees sabotage as a mission and not a tactic, whereas the purpose of the act is the focus.[117] Sabotages are often utilized by state actors of warring sides and are undertaken by the Special Operations Forces, their predecessors, or intelligence agencies.[118]

### 2.2.2 The relevance of sabotage and terrorism for the protection of offshore oil and gas installations

When it comes to terrorism against installations, Joyner already noted in 1983 that "offshore maritime terrorism is a crime waiting to happen".[119] Joyner argued, as the sea´s resources gain increasing importance for the world economy, they become attractive for terrorist activities that hope to have psychological and symbolic effects through their acts.[120] The frequency of these terrorist attacks has not reached the extent originally anticipated, yet they still occur.[121] Early on, it became clear that port facilities such as oil terminals were tempting targets for maritime terrorism, as could be seen in the Port of Singapore, where a terrorist commando tried storming a shell oil refinery complex to disrupt oil supply in 1974. [122]

An example involving an offshore installation is the suicide boat attack against the offshore Al-Basra Oil Terminal (ABOT) in the Persian Gulf in April 2004.[123] Suicide bombers piloted a speedboat aimed towards the platform, but it was shot at before it reached the platform. The

[114] Powell (n 113) 5.

[115] ibid 5-6.

[116] ibid 6.

[117] ibid 5.

[118] ibid i.

[119] Christopher C. Joyner, 'Offshore Maritime Terrorism: International Implications and the Legal Response' (1983) 36 Naval War College Review 16, 16.

[120] Joyner (n 119) 17, 19.

[121] Peter Lehr, 'Maritime Terrorism: Locations, Actors, and Capabilities', *Lloyd's Miu Handbook of Maritime Security* (CRC Press 2009) 55.

[122] Lehr (n 121) 59.

[123] Kashubsky (n 103) 147.

second speed boat was also fired upon but still hit an oil tanker, which failed to explode.[124] The result was the shutting down of the Al-Basra terminal for two days, leading to a loss of revenue and a spike in worldwide oil prices. The security zone around ABOT was adjusted, involving a warning as well as an exclusion zone.[125] When focusing on the types of terrorist offshore attacks, seaborne suicide attacks against ships appear to be the most common, followed by scuba diving attacks and improvised explosive devices.[126] All three, especially the last two, are easily adjustable tactics that can be implemented against offshore oil and gas installations.

When focusing on sabotage, it becomes apparent that publicly available information appears to be limited after the 1990s.[127] However, the apparent lack of public data does not necessarily indicate a scarcity of incidents, especially with regards to sabotage.[128] For example, since approximately 2019 Iran and Israel have been involved in a covert conflict where among other things ships carrying oil have been attacked.[129] Neither side is making public claims of responsibility, but it is argued that attacks against ships at this level cannot take place without the involvement of a state.[130] In sabotage secrecy plays a key role, as the discovery of an act of maritime sabotage in times of deterrence or limited contingency can be considered very provocative.[131] It becomes apparent that third-party collateral damage may be linked to negative political consequences.[132] More recently, although not against an offshore oil and gas installation, two subsea pipelines, Nord Stream 1 and 2, were attacked.[133] The perpetrators remain unclear, which is in line with the above-discussed definition of secrecy, and environmental damage is evident.

---

[124] ibid.

[125] ibid.

[126] Lehr (n 121) 68.

[127] Powell (n 113) 17.

[128] ibid 17.

[129] Patrick Kingsley and others, 'Israel's Shadow War with Iran Moves out to Sea' (*The New York Times*, 26 March 2021) <https://www.nytimes.com/2021/03/26/world/middleeast/israel-iran-shadow-war.html> accessed 13 August 2023.

[130] Kingsley (n 129).

[131] Powell (n 113) 19.

[132] ibid 24.

[133] Xialong Chen and Tianjun Zhou, 'Negligible Warming Caused by Nord Stream Methane Leaks' (2022) 40 Advances in Atmospheric Sciences 549, 549.

The types of offshore installations which have become subject to attacks or interferences – also those of other perpetrators apart from terrorist and sabotage – involve; "fixed offshore production platforms, mobile offshore drilling rigs, floating production storage and offloading units (FPSOs), floating storage and offloading units (FSOs), offshore oil export terminals, and other types of offshore installations such as oil derricks, wellhead platforms, and flow stations".[134] Offshore drilling rigs appear to be the most common subjects of such incidents.[135]

What becomes apparent with the recent incidents regarding offshore infrastructure, is that offshore installations are an ideal target for "grey zone" warfare.[136] Grey zone warfare can be defined as "the ambiguous, intermediate conflict spectrum between peaceful competition and armed conflict".[137] Thus, there is no clear military attack but instead, the strategic objective is reached by creating enough ambiguity without an open offense.[138] On the government´s behalf, military, economic, or social instruments might be deployed by state-sponsored groups, military units, or intelligence agencies. This makes the attribution of an incident complicated to one state and thus creates confusion and uncertainties while demonstrating vulnerability and causing uncertainties.[139] According to Bueger and Liebetrau, this was the situation with the Nord Stream 1 and 2 pipelines.[140]

## 2.3 The legal classification of oil and gas installations

The legal status of offshore installations is a much-debated topic in international law.[141] A major question is whether an offshore installation should be legally classified as a ship or an

[134] Kashubsky (n 103) 140.

[135] ibid.

[136] Christopher Bueger and Tobias Liebetrau, 'Nord Stream Sabotage: The Dangers of Ignoring Subsea Politics' (*The Loop*, 7 October 2022) <https://theloop.ecpr.eu/nord-stream-sabotage-the-dangers-of-ignoring-subsea-politics/> accessed 28 June 2023.

[137] Bueger and Liebetrau (n 136).

[138] Alexander Lott, *Hybrid Threats and the Law of the Sea: Use of Force and Discriminatory Navigational Restrictions in Straits* (Brill Nijhoff 2022), 3, 28.

[139] Bueger and Liebetrau (n 136).

[140] ibid.

[141] Kishore Vaangal, 'Legal Status of Offshore (Deep-Water) Oil Rigs: Coastal State Jurisdiction and Countering Oil Spills Threats' (2021) 7 Lex Portus 42, 43.

installation under domestic and international law.[142] International law itself failed to define what constitutes as an oil and gas installation.[143] The legal status of an offshore oil and gas installation influences and impacts issues regarding jurisdiction as well as the state's legal powers over the offshore rig.[144] Therefore, there are legal and practical consequences depending on the status.[145]

To understand the debate further, it is important to briefly address some general types and features of offshore oil and gas installations. Jack-up drilling rigs are towed to the location and have lattice legs that can be lifted or lowered.[146] Platform drilling rigs are immobile once they are built and are sometimes tender assisted. A semi-submersible drilling rig uses anchors and/or positioners and thrusters to position the rig.[147] These can be towed or self-propelled to the locations.[148] Lastly, there are drill ships which are self-propelled floating offshore drill units.[149] It becomes apparent that not all oil and gas installations are fixed to the seabed, and the mode of transport varies depending on the type. This distinction is relevant – as will become evident throughout the thesis - in the classification of an oil and gas rig being legally classified as an installation or ship.

Focusing on the UNCLOS, if an offshore rig is under the EEZ of a coastal state – that is, up to 200 nautical miles from the baseline[150] - it is legally classified as a ship, the flag state has exclusive jurisdiction. However, if it is in the EEZ and legally classified as an installation, the

[142] Vaangal (n 141) 43.

[143] ibid 53.

[144] ibid 47.

[145] ibid 43.

[146] Mohamed El-Reedy, '1 Introduction to Offshore Structures', *Offshore structures: Design, construction and maintenance* (Gulf Professional Publishing 2012) 1, 3-4.; Chiemela Victor Amaechi and others, 'Review on Fixed and Floating Offshore Structures. Part I: Types of Platforms with Some Applications' (2022) 10 Journal of Marine Science and Engineering 1074, 1083.

[147] Amaechi (n 146) 1085-1086.

[148] Drilling Manual, 'Types of Drilling Rigs in Oil & Gas' (*Drilling Manual*, 3 March 2022) <https://www.drillingmanual.com/oil-drilling-rig-types/?utm_content=cmp-true> accessed 6 August 2023.

[149] Amaechi (n 146) 1087.

[150] UNCLOS 1982, Art. 57.

coastal state would have exclusive jurisdiction.[151] Therefore, the right, duties, and obligations of states are affected by the legal status/classification of the oil and gas rigs.[152] An example is the British Petroleum leased oil rig in the US´ EEZ, which was registered in the Marshall Islands. The US court system had treated deep-water oil rigs as vessels, and as such they were treated as vessels which were thereby subject to the Marshall Islands exclusive jurisdiction.[153]

The UNCLOS itself does not define the words ships or vessels, and the two terms are used interchangeably in the convention. With no single rule for the legal treatment of an installation in international law, the term "ship" has a different meaning depending on the convention. Generally, fixed platforms are not seen as ships in international law – however, in limited instances, they are.[154] The "dual status approach" also becomes apparent, whereas mobile offshore installations are seen as an installation when operating or engaging at a certain location, but when in transit or moving to new locations, they are seen as a ship.[155] The details of the conventions and the classifications will be elaborated on in the next Chapter. Therefore, domestic laws or treaties which may apply to the specific rig or even the use of the rig are often used as indicators.[156] With such disasters as the Deepwater Horizon oil spill being likely to occur again and which might be accelerated by terrorist groups; the discussion of assessing the international conventions that may apply in the event of transboundary pollution from an act of terrorism or sabotage is highly relevant.[157] How the different conventions classify an installation, is addressed in the following chapter.

[151] Vaangal (n 141) 43.

[152] ibid.

[153] Ibid 53.

[154] Mikhail Kashubsky, 'Protecting Offshore Oil and Gas Installations: Security Threats and Countervailing Measures' (*Journal of Energy Security*, 11 December 2013) <http://www.ensec.org/index.php?option=com_content&view=article&id=476%3Aprotecting-offshore-oil-and-gas-installations-security-threats-and-countervailing-measures&catid=140%3Aenergysecuritycontent&Itemid=429> accessed 12 July 2023.

[155] Kashubsky 2013 (n 154).

[156] Vaangal (n 141) 58-59.

[157] ibid 44.

# 3 Regulations to address offshore oil and gas damage from installations

## 3.1 UNCLOS

To address the legal basis for coastal state measures against transboundary environmental pollution in the case of an act of terrorism or sabotage against an offshore oil and gas installation, the focus will first be on some general provisions in the UNCLOS regarding installations. For offshore oil and gas installations, Art. 60, Part 12, and Part 5 of the UNCLOS addressing the EEZ are relevant. The convention does not mention the terms 'terrorism' or 'sabotage,' and the terms 'installations' and 'structures' are used interchangeably.

Arts. 56 (1a-b(i)) of the UNCLOS address the rights, jurisdiction, and duties of the coastal states in the EEZ, where the coastal state has "sovereign rights for the purpose of exploring and exploiting the natural resources and with regard to other activities for the economic exploitation and exploration of the zone" and jurisdiction concerning the "establishment and use of installations and structures".

Art. 60 of the UNCLOS addresses (among other things) installations and structures in the EEZ explicitly. A coastal state has the exclusive right to construct, authorize and regulate the construction, operation and use of installations.[158] A coastal state also has exclusive jurisdiction regarding safety[159], which involves the establishment of safety zones and employing appropriate measures to ensure the safety of the installations and navigation.[160] While a coastal state can decide the breadth of the safety zones– while taking international standards into account- the safety zone itself cannot exceed 500 meters.[161] It becomes evident that the coastal state has "sovereign rights, jurisdiction and exclusive rights" in one way or another regarding the installations based on Art. 60 of the UNCLOS and its complementary provisions. It can be assumed that unauthorized activities are a reason for a coastal state to legally intervene.[162] This would thus involve acts of terrorism or sabotage.

[158] UNCLOS 1982, Art. 60 (1).

[159] ibid Art. 60 (2).

[160] Ibid Art. 60 (4).

[161] Ibid Art. 60 (4-5).

[162] Joyner (n 119) 22.

The understanding of how far these safety zones can then go to address acts of sabotage or terrorism can either be argued narrowly or broadly. For example, can a coastal state apply its domestic environmental laws within this zone if established rightfully under the UNCLOS? Argued narrowly it has been suggested that domestic environmental protection standards can be applied by the coastal state in the safety zone, however that this may not involve all areas of jurisdiction of the coastal state.[163] A broad understanding is evident in the argumentation by Judges Wolfrum and Kelly in the Arctic Sunrise case.[164] Here, they argued that the "coastal State according to article 60, paragraph 2, of the Convention enjoys exclusive jurisdiction and in the safety zones around such artificial islands or installations. This includes legislative jurisdiction as well as the corresponding enforcement jurisdiction.".[165] Judge Golitsyn added in a dissenting opinion that under Art. 60 (4) of the UNCLOS coastal states can ensure compliance with their regulations governing activities within safety zones, meaning they can take the necessary enforcement measures.[166] The dissenting opinion of Judge Golitsyn further elaborated that Art. 60 (2) of the UNCLOS also includes enforcement jurisdiction.[167] Both forms of argumentation appear to involve domestic environmental protection standards. Considering that the employment of environmental protection standards without an enforcement mechanism may limit its effectiveness, it can be assumed that coastal states would be allowed to enforce their environmental standards within their safety zones.

It follows that a coastal state can enforce their domestic measures – which may involve measures to combat or address sabotage or terrorism - and would have jurisdiction to employ those over its installations and in the safety zones. Joyner considers this to be further substantiated as the coastal states authorize the license for the installations in the first place.[168] Therefore, whether peaceful or through force, coastal states would be able to take appropriate

[163] Alexander Proelss, 'Article 60' in Alexander Proelss, *A Commentary* (1st edn, CH Beck 2017) 476, 476.

[164] Proelss (n 163) 476.

[165] *The Arctic Sunrise Case (Netherlands v. Russia)* [2013] (Joint Separate Opinion of Judge Wolfrum and Judge Kelly) ITLOS 256, para. 12.

[166] *The Arctic Sunrise Case (Netherlands v. Russia)* [2013] (Dissenting Opinion of Judge Golitsyn) ITLOS 278 para. 25.

[167] *The Arctic Sunrise Case* (Dissenting Opinion of Judge Golitsyn) (n 166) para. 23.

[168] Joyner (n 119) 23.

measures for the safety of their installations.[169] Thus, domestic measures can be applied, including the use of force to combat sabotage or terrorist acts to prevent transboundary harm within the safety zones by coastal states.

The terms referred to in Arts. 56 (1a-b(i)) of the UNCLOS – notably artificial islands, installations and structures – are not distinguished explicitly.[170] However, Proelss argues that these must share a common feature in some form, and as islands are previously referred to as being "naturally formed" in Art. 121 (1) of the UNCLOS it can be suggested that all terms of Art. 60 (1) of the UNCLOS have to be man-made.[171] The immobility is also seen as a common shared feature, raising the question – as previously addressed in Chapter 2 – whether this involves drilling vessels such as the Deepwater Horizon.

When looking at international treaty law, legal doctrine and national legislation, a ship is classified as a "ship" when it is self-propelled.[172] However, Proelss suggests the assessment of Art. 60 of the UNCLOS refers to the use of the device, whereas if used for economic purposes (e.g., drilling) and only moved to locations to continue this activity it ought to be regarded as an installation according to Art. 60 (1) of the UNCLOS.[173] The economic purposes are echoed not only in Art. 60 (1b) of the UNCLOS but also provided for in Art. 56 of the UNCLOS.[174] With this, it is suggested that devices for economic activities – such as drilling – not used for navigation ought to be considered installations under the UNCLOS and thus are subject to Art. 60 of the UNCLOS and to the coastal states' rights mentioned above.

Whereas Part 5 of the UNCLOS deals with the rights of coastal states surrounding installations, the UNCLOS also addresses the rights and obligations of coastal states surrounding installations regarding protecting and preserving the marine environment. Part 12 of the UNCLOS in general, specifically Arts. 194 (3c), 208 and 214 of the UNCLOS are relevant for this. Part 12 of the UNCLOS was also briefly addressed in Chapter 2. Art. 194 of the UNCLOS addresses the measures to prevent, reduce and control pollution. It is crucial to bear in mind

[169] ibid.

[170] UNCLOS 1982, Art. 56.

[171] Proelss (n 163) 470.

[172] ibid.

[173] ibid.

[174] UNCLOS 1982, Arts. 56, 60.

that the objective of the provision is to "minimize to the fullest possible extent" the pollution rather than to eliminate it. The sources of pollution listed include pollution from installations used for the exploration or exploitation of natural resources, precise measures to prevent accidents and – among other things - dealing with emergencies and ensuring the safety of operations at sea.[175] Here, the focus is "from" installations and not on the cause. According to the provision, it can be assumed that acts of sabotage or terrorism are encompassed in Art. 194 of the UNCLOS. As noted in Art. 194 (3) of the UNCLOS the measures against pollution "shall deal with all sources of pollution".[176] Thus, it should not leave any gaps which are provided through the inclusion of a wide variety of sources.[177] Considering that the jurisdiction of coastal states over installations – laid out in Arts. 56 and 60 of the UNCLOS– align with the jurisdiction regarding the protection and preservation of the marine environment. The different wording of using "installations and structures" vs. "installations and devices" should not be of significance.[178] Art. 194 (3c) of the UNCLOS is then read with Arts. 208 and 214 of the UNCLOS.

Art. 208 of the UNCLOS addresses pollution from seabed activities subject to national jurisdiction. Again, it addresses an obligation "shall" for coastal states to combat marine pollution from seabed activities subject to national jurisdiction.[179] In addition, it includes and distinguishes between pollution "from" seabed activities and pollution "in connection with" seabed activities.[180] Thus, it can be understood that any pollution related to offshore oil and gas installations, whether directly or indirectly related to acts of sabotage or terrorism ought to be included. However, in addition to the laws and regulations states are obliged to adopt, the other measures are less strict as the requirement only extends to how far these "may be necessary".[181] Moreover, the laws the coastal state adopts and enforces as well as the regulations regarding marine pollution in connection with seabed activities, have to be "no less effective than

[175] ibid Art. 194 (3c).

[176] ibid Art. 194 (3).

[177] Czybulka (n 86) 1304.

[178] ibid 1308.

[179] Frank Wacht, 'Article 208' in Alexander Proelss, *A Commentary* (1st edn, CH Beck 2017) 1391, 1395.

[180] UNCLOS 1982, Art. 208 (1).; Wacht (n 179) 1395.

[181] Wacht (n 179) 1396.

international rules, standards and recommended practices and procedures."[182] Furthermore, states are to adopt "global and regional rules, standards and recommended practices and procedures" and should harmonize policies at the regional level where appropriate.[183] With this, the UNCLOS addresses the regulation of seabed activities. These further regulations, therefore, are dependent on international rules and standards as well as what is deemed necessary, leaving a lot of room for discretion. Therefore, it follows that Art. 208 of the UNCLOS itself does not provide specific practices or procedures to protect and preserve the marine environment following an act of sabotage or terrorism beyond what international standards provide.

Regarding the enforcement measures, Art. 214 of the UNCLOS is relevant and is read with Art. 208 of the UNCLOS and is closely linked with Art. 194 (3c) of the UNCLOS. Here "States shall enforce their laws and regulations adopted in accordance with article 208".[184] This is more focused on the coastal state rather than the flag state.[185] These laws and regulations, when looking at Art. 208 of the UNCLOS, cannot be less effective than international rules and standards. And these need to be "applicable rules and standards established through competent international organizations or diplomatic conference".[186] However, currently, there are no global legally binding agreements that address specifically offshore oil and gas exploration and exploitations.[187] The ones in place include, for example, MARPOL and regional cooperation agreements, which however often only focus on specific forms of pollution.[188] Many, also, focus on accidental pollution and the measures a coastal coast can or is obligated to take.[189] Considering that the act of terrorism or sabotage implies intention, the applicability of accidental pollution measures is limited.

Regarding marine environmental pollution, Art. 214 of the UNCLOS enforcement measures involve any "arising from or in connection with seabed activities subject to their jurisdiction"

[182] UNCLOS 1982, Art. 208.

[183] ibid Art. 208 (5).

[184] ibid Art. 214.

[185] Doris König, 'Article 214' in Alexander Proelss, *A Commentary* (1st edn, CH Beck 2017) 1458, 1460-1461.

[186] UNCLOS 1982, Art. 214.

[187] König 2017 (n 185) 1461.

[188] ibid.

[189] Ibid.

and from "…installations and structures under their jurisdiction pursuant to Art 60…".[190] This, thus, encompasses any activities under national jurisdiction, and the enforcement jurisdiction is drawn from territorial sovereignty or sovereign rights.[191] An argument is that this includes foreign natural or juridical persons involved in the activities and not only their own citizens or companies.[192] In sum, Art. 214 of the UNCLOS serves to apply and enforce the legal provisions and oblige states to use their jurisdictions.

It becomes evident that under the UNCLOS coastal states have a responsibility to protect and preserve the marine environment from any pollution which may be transboundary, including pollution as a result of sabotage and terrorism. In addition, coastal states are to adhere to a minimum standard under the UNCLOS. However, a lot of focus is on the coastal state's responsibility or on situations that are accidental – which do not necessarily encompass acts of sabotage or terrorism. Thus, it can be understood that a coastal state can be held responsible for the transboundary pollution from offshore oil and gas installation following an act of sabotage or terrorism, however, the measures, minimum rules and standards are set by international organizations and not the UNCLOS. Therefore, the coastal state may bear the responsibility for the transboundary pollution under its general obligation to protect and preserve the marine environment[193] and to the extent additional measures are provided for. This, however, does not mean that they can be held liable under the UNCLOS. Thus, the coastal state – it appears – does not have to bear the costs necessarily under the UNCLOS. Therefore, holding those accountable for the pollution under the UNCLOS might prove to be difficult. Instead, international environmental law often refers to the PPP for liability regarding environmental pollution.

## 3.2 The accountability of actors - the Polluter Pays Principle

The PPP is one of the core principles governing international environmental law and policies. The principle allows a state to allocate the costs associated with the environment to the polluters themselves if they can be identified; imposing liability on the polluter.[194] The principle was first formally introduced by the Organization for Economic Cooperation and Development (OECD)

[190] UNCLOS 1982, Art. 214.

[191] König 2017 (n 185) 1462.

[192] ibid 1462.

[193] UNCLOS 1982, Part 12.

[194] Olaniyan (n 15) 78.

in 1972.[195] Since its introduction it has been implemented in several international environmental instruments and the PPP is used as a compensation and liability mechanism.

In 1974, the Recommendation on the Implementation of the Polluter-Pays Principle was adopted by the OECD Council. It reaffirms that the PPP for the adherents is the "fundamental principle for allocating costs of pollution prevention and control measures introduced by the public authorities in Member countries" to those states that adhere.[196] In addition, it recommends that the polluter should not be assisted in bearing the cost, in other words, the costs should not fall on the taxpayer.[197] This allows for internalizing negative environmental externalities (in economic terms).[198] Thus, potential polluters should have an economic incentive to avoid risks to the legal interests – transnational pollution from offshore oil and gas installations.[199] Over the years, the scope of the PPP has increased to include environmental liability.[200] With environmental liability, the "polluters should pay for the environmental damage they caused, irrespective of whether the pollution giving rise to the damage was below legal limits (termed "allowable residual pollution") or accidental".[201] In the case of sabotage or terrorism, it would then be implied that it is either the terrorist/s or the state which conducted/authorized the act has to pay.

The 1992 Rio Declaration on Environment and Development, Principle 16, reflects the PPP: "The polluter should, in principle, bear the cost of pollution".[202] The Convention on the Transboundary Effects of Industrial Accidents states in the preamble that "the polluter-pays

---

[195] Delia Trancon and Xavier Leflaive, *Background note: The Implementation of the Polluter Pays Principle* (OECD 2022) 5.

[196] *Recommendation of the Council on OECD Legal Instruments the Implementation of the Polluter-Pays Principle* (OECD Legal 0132, 2022) 3.

[197] *Recommendation of the Council* (n 196) Part III (1).

[198] *The Polluter Pays Principle: Inconsistent application across EU environmental policies and actions* (European Court of Auditors Special Report, 2021) 6.

[199] Peter Gailhofer, 'Functions and Objectives of Corporate Liability for Transboundary Environmental Harm', *Corporate liability for transboundary environmental harm: An international and transnational perspective* (Springer 2023) 38.

[200] European Court of Auditors Special Report (n 198) 7.

[201] ibid.

[202] Rio Declaration 1992, Principle 16.

principle as a general principle of international environmental law" should be considered.[203] The Agenda 21 and The International Convention on Oil Pollution Preparedness, Response and Co-operation 1990 (OPRC 90) also reflect the PPP.[204] On a regional level, the OSPAR Convention states that "the polluter pays principle, by virtue of which the costs of pollution prevention, control and reduction measures are to be borne by the polluter." [205]

So, a state can only charge the costs to rectify the environmental damage if the polluter can be identified.[206] Therefore, a coastal state has to identify the saboteur or terrorist. If the polluter is not identified, the PPP is rather difficult to implement, bringing with it some theoretical and practical issues.[207] The implementation of the PPP is often limited by the inability to identify the source of pollution as well as the difficulty in finding and proving causation.[208] The issue of proofing became evident, for example, in the Oil Platforms Case where evidence for a state's responsibility was provided, but deemed as inconclusive by the ICJ.[209] By contrast, the Exxon Valdez oil spill in 1989 is an example of when the polluter and damages were identifiable.[210] Through civil litigation, Exxon had to pay millions in damage between the state of Alaska and the US federal government.[211] In 2006, the US federal government and the state of Alaska could seek more money for restoration and damages through a reopener provision.[212] However, the situation may sometimes be less clear with acts of sabotage and terrorism, making it difficult to track the individual contributors to the environmental harm.[213]

---

[203] The Convention on the Transboundary Effects of Industrial Accidents (1992) Preamble.

[204] United Nations Conference on Environment & Development (Agenda 21) (1992) para. 17.22 (d), 17.134.; The International Convention on Oil Pollution Preparedness, Response and Co-operation (1990) (OPRC 90).

[205] OSPAR 1992, Art. 2 (2b).

[206] Olanyian (n 15) 78.

[207] J.B. Ruhl and Robin Craig, 'New Sustainable Governance Institutions for Estuaries and Coasts' [2009] Treatise on Estuarine and Coastal Science 239, 248.

[208] Ruhl and Craig (n 207) 249.

[209] *Case Concerning Oil Platforms (Islamic Republic of Iran v. United States of America)* [2003] ICJ Rep 161, Para. 67, 72.

[210] Ruhl and Craig (n 207) 249.

[211] ibid.

[212] ibid.

[213] ibid.

Sabotage is successful if it involves secrecy.[214] In the case of sabotage, finding the polluter might prove to be difficult for the coastal state, as that was one of the main objectives in the process. If found, the time frame it takes to internalize the cost might not be sufficient for acting in a timely manner to mitigate the damage.[215] In the case of terrorism, a terrorist group might make a public claim for a terrorist act, however, holding the group or person then responsible following the act is difficult. Therefore, on a practical basis, finding a mechanism that allows the internalization of costs is difficult.[216] Without being able to hold the polluters accountable the incentive to not cause risk to the legal interests is limited as the costs are not internalized.[217] Thus, in the cases of sabotage or terrorism there is limited economic incentive to avoid risks to the legal interests – transnational pollution from offshore oil and gas installations.[218]

In other cases, an issue raised with the PPP is the excess of potential sources (for example, air pollution), which makes an attribution to one polluter difficult. In this case, the actors are likely limited, thus, this problem should not arise; however, enforcing the PPP might prove to be more challenging. Although good as a liability default rule, the reality makes it often not as easy and effective when it comes to more complicated cases.[219] Therefore, this raises the question of who is to take responsibility for the pollution as the PPP might not be as efficient in addressing sabotage or terrorism. States themselves are still obliged under the UNCLOS to prevent and reduce transboundary pollution, so if read in broad terms, the costs are likely to lie with them. As damage from sabotage and terrorism towards offshore oil and gas installations and maritime security are linked, it is worth focusing on some of the more maritime security-oriented treaties within the wider framework of the law of the sea that address this matter.

## 3.3 1988 Suppression of Unlawful Acts (SUA) Framework

The 1988 Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation (1988 SUA Convention) is a multilateral treaty that aims to protect ships, their passengers, and cargo from international crime. States are to punish behaviour which threatens

[214] Powell (n 113) 9.

[215] Ruhl and Craig (n 207) 250.

[216] ibid 249.

[217] European Court of Auditors Special Report (n 198) 16.

[218] Gailhofer (n 199) 38.

[219] Ruhl and Craig (n 207) 250.

the safety of maritime navigation. In the 1988 SUA Convention, a ship is anything "not permanently attached to the seabed, including dynamically supported craft, submersibles, or any other floating craft".[220] Warships and ships are excluded from the definition if they are state-owned and used for naval auxiliary or customs and police purposes.[221]

Therefore, based on the explanations provided in Chapter 2, it can be argued that fixed and mobile offshore installations that are navigating or going to be navigated, as well as those in transit, can be categorized under the 1988 SUA Convention[222] as a ship. The 1988 SUA Convention does not, however, include mobile offshore installations engaged in production or drilling.

Several crimes fall under the 1988 SUA Conventions scope. These involve if a person has unlawfully and intentionally seized or exercised control over a ship by force or threat, destroyed a ship or caused damage to a ship, placed a substance on a ship to destroy the ship or seriously interfered with maritime navigational operations.[223] In addition, an attempt to commit one of the offenses in para. 1 is considered a crime.[224] Considering that acts of sabotage and terrorism can contain the offences listed in Art. 1, these can fall under the 1988 SUA Convention. For example, destroying or seriously damaging the facility is a likely approach. In addition, placing a substance to destroy a ship – for example, through a scuba diving attack[225] – is a common approach used by terrorists or saboteurs. This can be seen in recent limpet mine attacks - allegedly carried out by Iran and Israel - near the Strait of Hormuz and the Bab el-Mandeb Strait.[226]

[220] Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation (SUA Convention) (1988), Art. 1.

[221] SUA Convention 1988, Art. 2.

[222] ibid Art. 1.

[223] ibid Art. 1(1a, c, d, e).

[224] ibid Art. 1 (2a).

[225] Vijah Sakhuja, 'Terrorist's Underwater Strategy' (*IPCS*, 22 March 2005) <http://www.ipcs.org/comm_select.php?articleNo=1679> accessed 6 August 2023.

[226] Lott (n 138) 133.

Regarding jurisdiction and enforcement, state parties must take the necessary measures to establish jurisdiction over the offense in Art. 3.[227] While the facts of the crime are being established the convention refers to the national laws of the offender or alleged offender.[228] It becomes apparent that this occurs following an act listed in Art. 3. However, the 1988 SUA Convention does not give coastal states additional rights to exercise enforcement jurisdiction, such as the right to visit.[229] This limits a state's rights and ability to address the offense listed in the Convention to either suppress or prevent them.[230] Thus, a state's powers to intervene and board a foreign ship that may commit crimes against offshore oil and gas installations to arrest offenders on board is limited.[231] Mellor argues that states – under customary law - in fact owe "a duty to each other to prevent acts, but this duty only extends as far as a state means practically allow".[232] The 1988 SUA Convention does not reflect this preventative approach but instead has a rather reactive approach.[233] There may be major environmental consequences with a reactive approach, as the lack of sovereignty for states to prevent acts of terrorism or sabotage of an offshore oil and gas installation can cause immense transboundary harm.

## 3.4 2005 SUA Framework

The 2005 SUA Convention and the 2005 SUA Protocols[234] are amendments to the 1988 SUA framework. It intends to enhance maritime security and counter-terrorism efforts.[235] The 2005 framework expands the list of offenses, as seen in Art. 3bis (1) of the SUA Convention. An act

[227] SUA Convention 1988, Arts. 3, 6.

[228] Reto Düler, '13 The Suppression of Unlawful Acts Against the Safety of Maritime Navigation', *The IMLI Manual on International Maritime Law*, vol 3 (2016) 428, 431.

[229] Natalie Klein, '4 Terrorism and Proliferation of Weapons of Mass Destruction', *Maritime Security and the Law of the Sea* (Oxford Monographs 2011) 147, 153.

[230] Klein (n 229) 153.

[231] Kashubsky 2013 (n 154).

[232] Justin S.C. Mellor, 'Missing the Boat: The Legal and Practical Problems of the Prevention of Maritime Terrorism' (2002) 18 American University International Law Review 341, 373.

[233] Mellor (n 232) 384.

[234] SUA Convention 2005 (n 18).; Protocol to the Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation (SUA Protocol) (2005).; Protocol for the Suppression of Unlawful Acts against the Safety of Fixed Platforms Located on the Continental Shelf (SUA Fixed Platform Protocol) (2005).

[235] Natalie Klein, 'Protocol of 2005 to the Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation' (2007) 35 Denver Journal of International Law & Policy 287, 290.

aimed at "intimidating a population" (Art. 3bis (1a)) is an offense. In addition, using the ship in a manner that "is likely to cause death or serious injury or damage" (Art. 3bis (1a(i)) is an offense under the 2005 SUA Convention. Discharges are specifically mentioned as an offense in Art. 3bis (1a(iii)). In addition, using the ship to transport any material "knowing that it is intended" (Art. 3bis (1b(i)) to cause damage is an offense, like a terrorist attack. The 2005 SUA Fixed Platforms Protocol further expands the scope and criminalizes such offenses from ships and fixed platforms.[236]

When it comes to inspecting or boarding, Art. 8bis lays out the process under which state parties ("the requesting party") may request another state ("the first Party" / "flag state") that is located seaward of any states territorial sea to board the ship.[237] However, the requesting Party "shall not board the ship or take measures set out in subparagraph (b) without the express authorization of the flag State."[238] The measures in Art. 8bis (5b) "may include stopping, boarding and searching the ship, its cargo and persons on board, and questioning the persons on board to determine if an offence set forth in article 3, 3bis, 3ter or 3quater has been, is being or is about to be committed".[239] With this, there is no difference between maritime zones, the only note being in Art. 10 (c(i)) that the rights and obligations of coastal states to exercise jurisdiction should not be interfered with under the law of the sea.[240] Without the 2005 SUA Protocol, the UNCLOS regulates enforcement activities in the EEZ[241] of foreign vessels in Art. 73 whereas a coastal state may board, inspect, arrest, and rake judicial proceedings to ensure compliance with laws and regulations.[242]

It becomes apparent that although the scope has been expanded in the 2005 SUA framework, some limitations regarding the enforcement and arrest powers remain, concerning foreign-flagged ships.[243] However, with the expanded scope, a wide range of acts against offshore oil and gas installations are criminalized. With this, the attempt of an attack is enough to

[236] SUA Fixed Platforms Protocol 2005, Art. 2.

[237] SUA Convention 2005, Art. 8bis.

[238] SUA Protocol 2005, Art. 8bis (5c).

[239] ibid Art. 8bis.

[240] Klein 2007 (n 235) 318-319.

[241] UNCLOS 1982, Art. 56.

[242] ibid Art. 73(1).

[243] Kashubsky 2013 (n 154).

criminalize an act, but the coastal states' powers remain limited if the flag state may not cooperate and correspond with the visiting of vessels adequately.

## 3.5 International ship and port security (ISPS) Code, Seafarers identity documents (SID), International Maritime Organization's (IMO) countervailing measures

Some other maritime security initiatives may influence the protection of offshore oil and gas installations, which are worth briefly mentioning. The International Ship and Port Facility Security Code (ISPS Code)[244] entered into force under the Safety of Life at Sea (SOLAS) Convention[245] chapter XI-2 in 2004. It is a comprehensive security regime for international shipping, and its definition of ship[246] includes mobile offshore drilling units when engaged in international voyages.[247] The ISPS Code is there to allow the identification of any suspicious act or circumstance threatening the security of a ship, to allow preventative measures.[248] Whereas Part A is mandatory, Part B is recommendatory.[249] Part B addresses fixed and floating platforms and mobile offshore drilling units on location, recommending that "Contracting Governments should consider establishing appropriate security measures for fixed and floating platforms and mobile offshore drilling units on location".[250] Considering that the drafters did not set out the Code for offshore oil and gas installations, the limitation makes sense.[251] However, the Code also does not provide guidelines or suggestions on how states could implement or fulfil this recommendation by the ISPS.[252]

The Seafarer Identity documents (SID), in force since 2005[253], indirectly relates to offshore oil and gas installations and will only briefly be addressed. Designed to address the security of the

[244] International Ship and Port Facility Security (ISPS) Code (2003)

[245] International Convention for the Safety of Life at Sea (SOLAS) (1974)

[246] ISPS Code 2003, para. 2.2.

[247] ibid para. 3.1.1.3

[248] Klein 2011 (n 229) 158.

[249] 'Solas XI-2 and the ISPS Code' (*International Maritime Organization*) <https://www.imo.org/en/OurWork/Security/Pages/SOLAS-XI-2%20ISPS%20Code.aspx> accessed 24 July 2023.

[250] ISPS Code 2003, para. 4.19.

[251] Kashubsky 2013 (n 154).

[252] ibid.

[253] 'Seafarers' Identity Documents' (*Seafarers' Identity Documents*, 2 September 2011)

maritime workforce, it only applies to ships and not to offshore oil and gas installation workforce.[254] Therefore, indirectly influencing the security of offshore oil and gas installations as ships may be less likely hijacked to then be used in an operation to attack offshore installations.[255] Nevertheless, the effect this may have is questionable, considering that the SID has yet to succeed in widespread ratification.[256]

The IMO has, over the years, addressed the security of offshore oil and gas installations in their measures. For example, Resolution A.671(16) involves recommendations for protecting offshore oil and gas installations by enhancing the safety zones around the installations.[257] This, however, is only a recommendation and does not give the coastal state any further power regarding enforcement actions regarding the infringement of safety zones.[258] Here, the "due notice" requirement under Art. 60 (1) of the UNCLOS is substantiated in the Annex.[259] Resolution A. 672(16) of the IMO discusses the removal of installation[260] and that appropriate publicity is provided for those that are not removed and that if non-removal occurs the IMO is to be notified.[261] The extension of a safety zone was also discussed in 2008-2010 but these discussions ended with the decision that it had been demonstrated that an extension is unnecessary.[262] As there is no international regulatory body concerned with offshore oil and gas installations, the IMO can be considered the competent international organization under UNCLOS for these measures.[263]

---

<https://www.ilo.org/global/standards/maritime-labour-convention/text/WCMS_162321/lang--en/index.htm> accessed 22 July 2023.

[254] Seafarers' Identity Documents Convention (Revised) (No. 185, 2003), Art. 1.

[255] Kashubsky 2013 (n 154).

[256] Moira McConnell, '11 The ILO's Seafarers' Identity Documents Convention (Revised), 2003 (N° 185) after More than a Decade: Ahead of Its Time or Case of Good Intentions Gone Wrong?' (2016), 16.

[257] *Safety Zones and Safety of Navigation around Offshore Installations and Structures* (IMO Res. A.671(16), 1989).

[258] Kashubsky 2013 (n 154).

[259] Proelss (n 163) 474.

[260] *Guidelines and Standards for the Removal of Offshore Installations and Standards on the Continental Shelf and in the Exclusive Economic Zone* (IMO Res. A.672(16), 1989) Annex.

[261] IMO Res. A.672(16) (n 261) para 1.3.

[262] Kashubsky 2013 (n 154).

[263] ibid.

Indirectly, the General provision on Ships Routing[264], which includes areas to be avoided, can also be seen to protect offshore oil and gas installations from accidents.[265] But this is focused on the safety of navigation and protecting the environment.[266] However, it becomes evident that the IMO has yet to have any direct provision. Considering that it has the competencies of an international organization– see shipping requirements- the safety of oil and gas installations can be included. Especially considering that the security of offshore oil and gas installations also influences the environment and the navigation of ships depending on the damage which is caused because of an accident.

Therefore, when looking at the general provisions under the UNCLOS and the inclusion of competent international organizations, the IMO does not provide adequate guidelines for addressing pollution from offshore oil and gas installations in relation to an act of terrorism or sabotage. A lot of the focus is on the navigation around offshore oil and gas installations, which may take the form of focusing on the removal of installations or notifications. This can be explained by the fact that IMO itself focuses on the safety and security of shipping and the prevention of pollution by ships.[267] Thus, the regulations of offshore oil and gas installations to prevent pollution are not the focus. The IMO measures for shipping "cover all aspects of international shipping – including ship design, construction, equipment, manning, operation and disposal – to ensure that this vital sector for remains safe, environmentally sound, energy-efficient and secure".[268] Considering the immense harm damage from an offshore oil and gas installation in the event of a disaster, similar requirements would be reasonable to ensure the safety of these installations. However, the IMO, as it stands today, mainly focuses on navigations thus raising the question of whether it has the competencies to provide and maintain an adequate regulatory framework. The current measures can be seen as add-ons to the safety of navigation rather than the installation itself. Therefore, an expansion of the IMOs scope might be reasonable or for a different regulatory organization to take on the safety of offshore oil and gas installations. Following a disaster, the coastal state is likely – given the

[264] *General provision on ships routeing* (IMO Res. A.572(14), 1985).

[265] Kashubsky 2013 (n 154).

[266] ibid.

[267] 'Introduction to IMO' (*International Maritime Organization*) <https://www.imo.org/en/About/Pages/Default.aspx> accessed 20 July 2023.

[268] ibid.

circumstances of an act of terrorism or sabotage – to bear the harm and costs. In addition, seeing that the pollution may become transboundary – see previous Chapter – the coastal state is also obligated to prevent transboundary harm.

However, despite these responsibilities, the coastal states' competencies to engage actively in the operations surrounding the installations[269] – for example, security – are somewhat limited. The law of the sea has not provided a unilateral definition for what constitutes an oil and gas installation which mirrors the lack of plenary jurisdiction of the coastal state.[270] Although the coastal states are the ones to authorize such drilling activities[271], other rights are limited, especially if another state owns the oil and gas installations. It becomes clear that more legal certainty is required regarding the jurisdiction of coastal states over the oil and gas installation. [272] Considering that the UNCLOS provides provisions which allow the implementation of regulations, this can be in cooperation with the law of the sea. For this, the current regime must be placed into perspective by focusing on liability, gaps and suggestions for strengthening legal certainty and resilience, as discussed in the following Chapter.

[269] Vaangal (n 141) 53.

[270] ibid.

[271] UNCLOS 1982, Art. 60.

[272] Vaangal (n 141) 53.

# 4 The current regime in perspective

To put the current regime in perspective, this chapter will focus on liability, gaps in transboundary harm and suggestions to improve the legal certainty of coastal states. The question of liability is raised with offshore oil and gas disasters, such as the Deepwater Horizon. Liability in the legal sense is "the obligation of a legal entity, such as a natural person, company or State, to provide compensation for damage caused by an action or which that legal entity is responsible".[273] As a legal governance tool, liability is well-suited as it allows the governance of environmental issues even if the problem is complex.[274] As discussed previously, liability in the current regime addressing transboundary harm from offshore oil and gas installations following an act of terrorism or sabotage is unclear.

The ILC has introduced a conceptual distinction between state responsibility and state liability.[275] Broadly put, liability comes from the primary rule of international law where a state that creates the risk also must bear the cost.[276] The state's responsibility comes from secondary rules of international law where the environmental duty to prevent significant transboundary harm is concerned (see previous Chapters).[277] State responsibility is the accountability for the violation of international law which can be attributed to a state through a wrongful act or breach of the law.[278] Thus, the state responsible for the internationally wrongful act is under an obligation: to cease that act if it is continuing or to offer appropriate assurances and guarantees of non-repetition.[279] The state then responsible needs to make full reparation for the injury – which involves any damage – caused by the wrongful act.[280] Whereas the rules are to prevent

[273] Gailhofer (n 199) 22.

[274] ibid 31.

[275] Schmalenbach (n 95) 47.

[276] ibid.; *ILC Responsibility of States 2001* (n 76).

[277] Schmalenbach (n 95) 47.

[278] Christina Voigt, 'International Environmental Responsibility and Liability' in Lavanya Rajamani, and Jacqueline Pee, *The Oxford Handbook of International Environmental Law* (2nd edn, Oxford University Press 2021) 1.

[279] *ILC Responsibility of States 2001* (n 76) Art. 30.

[280] ibid Art. 31.

pollution, the liability rules are to provide compensation when damage occurs despite the implementation of these rules.[281] Liability is so to say the "backstop" to allow compensation.[282]

There is no general treaty on state liability regarding environmental damage, so customary international law is often referred to.[283] Although the Trail Smelter case can guide the liability rule, it becomes evident that the focus was on the responsibility for transboundary harm rather than liability.[284] States have not set up extensive liability frameworks for environmental damage, and the regimes that may impose compensation schemes on states are limited.[285] To achieve liability, the PPP might appear suitable as it concerns the "polluter" who is to pay the damage - compensation. However, as discussed previously, there are key concerns in regard to the effectiveness of the PPP in complex settings and how realistic its implementation to achieve liability is.[286]

Schmalenbach argues that the PPP "does not support a primary rule of State liability for transboundary environmental damage".[287] If PPP supports any form of liability, it is operator liability. However, state liability is triggered independently of the actor to whom the damage can be attributed, in the case of transboundary environmental damage.[288] With regards to sabotage or terrorism, state liability independent of who may have caused the damage is crucial for mitigating the damage promptly. Although there are mechanisms to allocate state responsibility under international environmental law – for example, due diligence obligations, no-harm rules, or prevention – this does not lead to state liability per se.[289]

Evidently, state responsibility is a broader legal obligation of a state under international law[290] providing rules and guidelines as to the responsibility states have under international law – thus

[281] Voigt (n 278) 2.

[282] ibid.

[283] Schmalenbach (n 95) 79.

[284] ibid.

[285] Voigt (n 278) 2.

[286] Ruhl and Craig (n 207) 250.

[287] Schmalenbach (n 95) 80.

[288] ibid.

[289] ibid.

[290] *ILC Responsibility of States 2001* (n 76) Art. 31.

also to oil and gas installations – and outlines the consequences for the damage. State liability is the legal responsibility of a state to compensate for damages and is often used when states have failed under their responsibilities. The PPP assigns costs and is directed to the polluting party. Hence, compensation without clear rules and guidelines becomes difficult under the state's responsibility. State liability provides compensation for the damage under the state's control. Considering that the polluter is difficult to locate in acts of sabotage or terrorism, holding an actor liable under the PPP is unworkable.

An explanation brought forward by Rishabh, argues that economic and sovereign interests may take precedence and, therefore there are no standardised rules for environmental harm.[291] This is a common observation, that due diligence standards and efforts do not necessarily work to create strict liability regimes[292] to address environmental damage. Considering the immense damage caused by an offshore oil and gas installation attack by sabotage or terrorism, state liability, however, is crucial.

Some gaps in the international regulatory framework become apparent when focusing on transboundary harm. The UNCLOS does address laws for offshore installations but does not codify the laws.[293] Instead, states must pass domestic laws to monitor pollution from fixed offshore oil and gas installations. [294] Therefore, the UNCLOS "lacks definitive procedures for determining liability, guaranteeing compensation, and enforcing the adoption of international rules in this area.".[295] This shortcoming was noted by Cates shortly after the convention was agreed.[296]

The regulation of pollution from platforms thus relies on individual states and independent regulatory regimes.[297] The UNCLOS does not have a punishment or international regulations

[291] Rishika Rishabh, 'Responsibility V. Sovereignty: Transboundary Environmental Harm' (2021) 4 International Journal of Law Management & Humanities 598, 599.

[292] Rishabh (n 291) 599.

[293] Smith (n 25) 1483-1484.; UNCLOS 1982, Art. 60.

[294] Smith (n 25) 1483-1484.

[295] Melissa B. Cates, 'Offshore Oil Platforms Which Pollute the Marine Environment: A Proposal for an International Treaty Imposing Strict Liability' (1984) 21 San Diego Law Review 691, 694.

[296] Cates (n 295).

[297] Smith (n 25) 1483-1484.

proposed to adequately cover the transboundary pollution from offshore installation. [298] The UNCLOS effectivity in implementing consistent international liability standards is questioned, [299] which is also prevalent for offshore installations. Smith argues that, consequently, the UNCLOS loses the international cooperation the convention aims to achieve.[300] The objective of collaboration is not the primary concern, rather, the UNCLOS needs to adequately address the transboundary harm from acts of sabotage and terrorism. For this, legal certainty and legal resilience have to be strengthened.

In order to strengthen the legal resilience against such incidents the legal certainty has to be addressed as well. Legal resilience focuses on the "sense to describe the resistance of specific legal rules and regimes to internal or external shocks".[301] Thus, it is "a perspective for thinking about the law's ability to withstand shocks and to deal with pressure for change".[302] Formal legal certainty implies that "laws and, in particular, adjudication must be predictable: laws must satisfy requirements of clarity, stability, and intelligibility so that those concerned can with relative accuracy calculate the legal consequences of their actions as well as the outcome of legal proceedings".[303] The European Convention on Human Rights considers the principle of legal certainty to be inherent[304] and has addressed legal certainty in several judgments. The Sunday Times vs. United Kingdom judgement was a notable case, indicating that the consequences of an action must be foreseeable to the degree reasonable in the circumstances.[305] Thus, an offence must be clearly defined in law.[306] In addition, the law "must be able to keep with changing circumstances".[307]

[298] ibid.

[299] ibid 1479.

[300] ibid 1483-1484.

[301] Aurel Sari, *Hybrid threats and the law: Building legal resilience* (Report 3, Hybrid CoE 2021) 30.

[302] Sari (n 301) 31.

[303] Elina Paunio, 'Beyond Predictability – Reflections on Legal Certainty and the Discourse Theory of Law in the EU Legal Order' (2009) 10 German Law Journal 1469, 1469.

[304] John McGarry, 'Effecting Legal Certainty under the Human Rights Act' (2011) 16 Judicial Review 66, 66.

[305] *Sunday Times v. The United Kingdom Times* [1991] European Court of Human Rights para. 49.

[306] *Case of Kokkinakis v. Greece* [1993] European Court of Human Rights para. 52.

[307] *Sunday Times v. The United Kingdom Times* (n 305) para. 49.

Although it has become evident that states have a responsibility to protect the environment, there is ambiguity[308] regarding the coastal state's rights over offshore oil and gas installations in the event of sabotage or terrorism. One concern is the unclarity regarding the legal classification of offshore oil and gas installations. The UNCLOS does not define offshore installations, ships or vessels. Whilst some treaties define the term "ship" [309], all in all states often rely on domestic laws for the classification between ships and installations.[310] Hence, causing confusion regarding which rights and jurisdiction coastal states have over the installations, as these depend on the classification. Therefore, it is not clear which laws cover certain instances, and this depends on the conventions – see previous Chapters. A universal classification would aid the clarity and considering the vast impact offshore oil and gas installations can have on the environment, it is a concern that should be addressed by the UNCLOS or another universal convention.

The UNCLOS as a framework convention has the potential to include regulations that address the transboundary harm from offshore oil and gas installations stemming from sabotage and terrorism.[311] To do so effectively, a clarification explicitly stating the coastal states' rights, responsibilities and liability towards offshore oil and gas installations – especially regarding safety – would be beneficial. Specific conventions such as MARPOL and COLREGs[312] exist to address offshore damage from ships, with several contracting state parties[313], states should ratify similar efforts for offshore oil and gas installations.

In addition, there is no universal definition for sabotage or terrorism under international law. As discussed in Chapters 2 and 3 the polluter cannot always be identified. Therefore, the PPP may not be an effective and realistic approach for transboundary harm following an act of

[308] Vaangal (n 141) 53.

[309] Convention on the International Regulations for Preventing Collisions at Sea (COLREGs) (1972) Rule 3 (a-b).; MARPOL 1973/78, Art. 2 (4).

[310] Vaangal (n 141) 58.

[311] UNCLOS 1982, Arts. 60, 208, 214.

[312] MARPOL 1973/78.; OPRC 90 1990.; COLREGs 1972.

[313] MARPOL 1973/78 with 161 contracting states.; SUA Protocol 2005 with 53 contracting states see 'Global integrated shipping information system (GISIS)' *(International Maritime Organisations*, 2023) <https://gisis.imo.org/Public/ST/Treaties.aspx> accessed 18 August. 2023.

sabotage or terrorism. Thus, considerations on how to hold coastal and flag states liable are needed. Greater legal certainty on the jurisdiction over oil and gas installations is needed to hold the respective states liable. Although it might not be evident at first, the inclusion of a provision concerning security measures when approving an installation may be an option – for example through procedural obligations mentioned in the previous Chapters. In addition, some current measures are guided by the protection of navigation rights rather than protecting the environment, like the 500 meter safety zone.[314] If a coastal state is expected to "protect" an installation, the question arises of how effective these measures must be and whether the zones must be rethought. As it currently stands, improved legal resilience can be incorporated into the UNCLOS. For this, the UNCLOS could adopt new regulatory measures for offshore oil and gas installations through the provisions of Arts. 60, 208 and 214 of the UNCLOS.

Providing an accountability regime on the international level is another reasonable course of action. Gailhofer suggests creating accountability by utilizing both international and national instruments via integrating "binding obligations for private actors into international public law or by coordinating national laws between states.".[315] For national laws, he suggests laws with extraterritorial effects as an alternative and/or use of national laws to complement international strategies.[316] National laws regulate the liability of private actors, whereas international liability law addresses states; however, indirectly also encompasses private actors as states can be held responsible for damages under their jurisdiction.[317] Legal responsibilities or requirements for private actors or individuals would then apply in the framework of international law, which could promote accountability. Suttenberg suggests a new liability regime where existing private liability conventions with compensation amounts from an international dispute are utilized.[318] As a result setting up a public liability convention.[319] Although the suggestion is based on the liability of nuclear operations, it could also apply to the cases of sabotage and terrorism of offshore oil and gas installations.

---

[314] UNCLOS 1982, Art. 60.; Proelss (n 163) 468.

[315] Gailhofer (n 199) 21.

[316] ibid.

[317] ibid 25.

[318] Jeremy Suttenberg, 'Who Pays? The Consequences of State versus Operator Liability within the Context of Transboundary Environmental Nuclear Damage' (2016) 24 N.Y.U. Environmental Law Journal 201, 253-254.

[319] Suttenberg (n 318) 254.

Private compensation regimes already exist; however, these often do not cover the full amount[320] and would not apply to cases of sabotage or terrorism. Thus, a regime independent of the polluter needs to be set up, where the coastal state is given adequate jurisdiction to prevent and respond. For this, addressing coastal states is crucial as these authorize the offshore oil and gas installations[321], and thus have a credible amount of authorisation power. It is through these authorisations that coastal states could impose a liability mechanism. This may be done by directly binding obligations that involve legal requirements, standards and responsibilities from private actors into public international law, as well as the coordination of international laws, following Gailhofers argument. Private law therefore should be implemented into international law, by having higher requirements – through for example protocols / amendments/ separate treaties that outline regulations as well as compensation requirements – for authorization under the UNCLOS by coastal states. Even though the UNCLOS has Arts. 312 to 316 for amendment this has never been done. Therefore, the use of separate treaties that establish regulations, measures, and standards for installations into the UNCLOS[322] is more realistic to provide liability. Although the polluter may not be found, the damage must be mitigated. Hence, it must become part of international law and to do so, coastal states may utilize cooperation with neighbouring states and implement private law into the international law.

[320] ibid 214.; Smith (n 25) 1480.

[321] UNCLOS 1982, Art. 60.

[322] ibid Arts. 60, 208, 214.

# 5 Conclusion

The thesis examined the legal basis under the law of the sea for coastal states' measures against transboundary environmental pollution following an act of terrorism or sabotage against an offshore oil or gas installation. It explored the extent to which the law of the sea regulates the protection and preservation of the marine environment in such an instance. The law of the sea is ambiguous regarding the rights of coastal states in cases of transboundary pollution due to acts of sabotage or terrorism towards offshore oil and gas installations.

In the event of sabotage or acts of terrorism against offshore installations located in a given coastal state's maritime area, coastal states have an obligation to prevent transboundary environmental harm. However, this obligation is one of due diligence, which is an obligation of conduct and not one of result and is assessed on a case-by-case basis. Therefore, a coastal state can meet their responsibility for preventing transboundary environmental harm as long as it can demonstrate that they have acted with due diligence. Hence, coastal states cannot always be held responsible for transboundary environmental harm in the event of sabotage or acts of terrorism against offshore installations located in their maritime area.

Concerning the coastal states' obligations and rights under the UNCLOS to protect offshore oil and gas installations, it can be understood that under Art. 60 of the UNCLOS, coastal states can enforce their domestic measures and have jurisdiction to employ those within the safety zone and over installations in their EEZ. Focusing on Arts. 194 (3c), 208 and 214 of the UNCLOS, it becomes evident that the measures to prevent, reduce and control pollution under Art. 194 (3c) of the UNCLOS also apply to offshore oil and gas installations. However, Art. 208 of the UNCLOS does not provide specific practices or procedures to protect and preserve the marine environment from offshore oil and gas installations.

The PPP may serve as a good liability default rule. However, when it comes to instances of sabotage or terrorism its implementation is unsuitable. A key assumption of the PPP is the identification of the polluter as well as having to prove the causation. However, sabotage involves secrecy and holding a terrorist actor responsible is often implausible. In addition, finding an enforcement mechanism for the PPP to allow a timely response is difficult. Thus, the PPP is not as appropriate in allocating liability in the event of sabotage or terrorism towards an offshore installation.

Some gaps become evident regarding transboundary harm resulting from sabotage or terrorism of oil and gas installations in the law of the sea. Although offshore installations are addressed

by the UNCLOS, they are not codified which leads to debates whether an installation is legally classified as a ship or an installation. In addition, domestic laws are relied on *inter alia* for the monitoring of pollution from offshore oil and gas installations. As the international regulations do not have an adequate punishment mechanism, the effectiveness of international liability standards is limited. Maritime security measures addressing installations provide some regulations for their protection, however, the lack of a universal definition of installations and ships leads to a variety regarding their applicability to offshore oil and gas platforms. Some measures may only address installations in transit, or the regulations are merely recommendations and thus are not binding for a state.

It becomes apparent that the law of the sea is ambiguous regarding the environmental impact following an attack against an offshore oil and gas installation due to sabotage or terrorism, and thus provides only limited legal resilience. To strengthen legal resilience, legal certainty has to be strengthened under the law of the sea regarding the environmental consequences from sabotage or terrorism towards offshore installations. Higher regulatory standards can be set in motion to address the environmental impact resulting from a sabotage or terrorist attack against an offshore installation through separate treaties, protocols or amendments. To do so, the integration of binding obligations for private actors into international public law, along with cooperation between states, is an option to achieve this. Given that coastal states authorize the installation of offshore oil and gas platforms they have a considerable role to play under the UNCLOS. The coastal states role can then be used to establish regulatory measures and standards for the installation and use of offshore oil and gas platforms under the UNCLOS. It is important to take the implications of environmental harm into consideration as the implications of an inadequate response to the need to fill the legal gaps identified in this thesis are immense.

# Works cited

**Table of Authorities**

**Cases**

*Award in the Arbitration regarding the Iron Rhine ("Ijzeren Rijn") Railway between the Kingdom of Belgium and the Kingdom of the Netherlands* [2005] International Arbitral Awards XXVII 35

*Case Concerning Oil Platforms (Islamic Republic of Iran v. United States of America)* [2003] ICJ Rep 161

*Case Concerning Pulp Mills on the River Uruguay (Argentina v. Uruguay)* [2010] ICJ Rep 18

*Case of Kokkinakis v. Greece* [1993] European Court of Human Rights

*Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v Nicaragua) and Construction of a Road in Costa Rica along the San Juan River (Nicaragua v Costa Rica)* [2015] ICJ Rep 665

*Corfu Channel Case (United Kingdom v. Albania)* [1949] ICJ Rep 4

*Legality of the Threat or Use of Nuclear Weapons (*Advisory Opinion) [1996] ICJ Rep 679, [1996] 226

*Responsibilities and obligations of States with respect to activities in the Area* (Advisory Opinion) [2011] ITLOS Rep

*South China Sea Arbitration (Philippines v China),* [2016] PCA Case No. 2013-19

*Sunday Times v. The United Kingdom Times* [1991] Council of Europe. European Court of Human Rights

*The Arctic Sunrise Case (Netherlands v. Russia)* [2013] (Dissenting Opinion of Judge Golitsyn) ITLOS 278

*The Arctic Sunrise Case (Netherlands v. Russia)* [2013] (Joint Separate Opinion of Judge Wolfrum and Judge Kelly) ITLOS 256

*Trail Smelter Case (United States, Canada)* [1938] International Arbitral Awards III 1905

**International Conventions**

Council of Europe Convention on the Prevention of Terrorism [2005] OJ 196/1

Convention on the International Regulations for Preventing Collisions at Sea (COLREGs) (1972)

Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation (SUA Convention) (1988)

Convention on the Suppression of Unlawful Acts against the Safety of Maritime Navigation

(SUA Convention) (2005)

International Convention for the Prevention of Pollution from Ships (1973/78) (MARPOL)

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

International Convention for the Suppression of the Financing of Terrorism (1999)

International Ship and Port Facility Security (ISPS) Code (2003)

Protocol for the Suppression of Unlawful Acts against the Safety of Fixed Platforms Located on the Continental Shelf (SUA Fixed Platform Protocol) (2005)

Protocol to the Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation (SUA Protocol) (2005)

Rio Declaration on Environment and Development (1992)

Seafarers' Identity Documents (SID) Convention (Revised) (No. 185, 2003)

The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) (1992)

The Convention on the Transboundary Effects of Industrial Accidents (1992)

The International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC 90) (1990)

United Nations Conference on Environment & Development (Agenda 21) (1992)

United Nations Framework Convention on Climate Change (UNFCCC) (1992)

**Bibliography**

**Literature (Journal Articles, Books, Book Chapters)**

Amaechi CV and others, ‘Review on Fixed and Floating Offshore Structures. Part I: Types of Platforms with Some Applications’ (2022) 10 Journal of Marine Science and Engineering 1074

Carpenter A, ‘Oil Pollution in the North Sea: The Impact of Governance Measures on Oil Pollution over Several Decades’ (2018) 845 Hydrobiologia 109

Cates MB, ‘Offshore Oil Platforms Which Pollute the Marine Environment: A Proposal for an International Treaty Imposing Strict Liability’ (1984) 21 San Diego Law Review 691

Chen X and Zhou T, ‘Negligible Warming Caused by Nord Stream Methane Leaks’ (2022) 40 Advances in Atmospheric Sciences 549

Czybulka D, ‘Article 194’ in Alexander Proelss, *A Commentary* (1st edn, CH Beck 2017)

Düler R, ’13 The Suppression of Unlawful Acts Against the Safety of Maritime Navigation’, *The IMLI Manual on International Maritime Law*, vol 3 (2016)

El-Reedy M, ‘1 Introduction to Offshore Structures’, *Offshore structures: Design, construction and maintenance* (Gulf Professional Publishing 2012)

Foster CE, ‘Due Diligence and Compliance with the Protocol on Environmental Protection to the Antarctic Treaty’ (2021) 13 The Yearbook of Polar Law Online 154

Gailhofer P, ‘Functions and Objectives of Corporate Liability for Transboundary Environmental Harm’, *Corporate liability for transboundary environmental harm: An international and transnational perspective* (Springer 2023)

Gaur A, Gurjar SK and Chaudhary S, ‘Circular System of Resource Recovery and Reverse Logistics Approach: Key to Zero Waste and Zero Landfill’ [2022] Advanced Organic Waste Management 365

Hutchinson T and Duncan N, ‘Defining and Describing What We Do: Doctrinal Legal Research’ (2012) 17 Deakin Law Review 83

Joyner CC, ‘Offshore Maritime Terrorism: International Implications and the Legal Response’ (1983) 36 Naval War College Review 16

Kashubsky M, ‘A Chronology of Attacks on and Unlawful Interferences with Offshore Oil and Gas Installations, 1975 – 2010’ (2011) 5 Terrorism Research Initiative 139

Klein N, ‘Protocol of 2005 to the Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation’ (2007) 35 Denver Journal of International Law & Policy 287

Klein N, ‘4 Terrorism and Proliferation of Weapons of Mass Destruction’, *Maritime Security and the Law of the Sea* (Oxford Monographs 2011) 147

König D, ‘Article 214’ in Alexander Proelss, *A Commentary* (1st edn, CH Beck 2017) 1458

König D, ‘Marine Environment, International Protection’ [2013] Max Planck Encyclopedia of Public International Law

König D, ‘The Elaboration of Due Diligence Obligations as a Mechanism to Ensure Compliance with International Legal Obligations by Private Actors’ [2018] Brill 83

Lehr P, ‘Maritime Terrorism: Locations, Actors, and Capabilities’, *Lloyd’s Miu Handbook of Maritime Security* (CRC Press 2009)

Litfin KT, ‘Sovereignty in World Ecopolitics’ (1997) 41 Mershon International Studies Review 167

Lott A, *Hybrid Threats and the Law of the Sea: Use of Force and Discriminatory Navigational Restrictions in Straits* (Brill Nijhoff 2022)

Malaihollo M, ‘Due Diligence in International Environmental Law and International Human Rights Law: A Comparative Legal Study of the Nationally Determined Contributions

under the Paris Agreement and Positive Obligations under the European Convention on Human Rights' (2021) 68 Netherlands International Law Review 121

McConnell ML, '11 The ILO's Seafarers' Identity Documents Convention (Revised), 2003 (N° 185) after More than a Decade: Ahead of Its Time or Case of Good Intentions Gone Wrong?' (2016)

McDonald N, 'The Role of Due Diligence in International Law' (2019) 68 International and Comparative Law Quarterly 1041

McGarry J, 'Effecting Legal Certainty under the Human Rights Act' (2011) 16 Judicial Review 66

Mellor J, 'Missing the Boat: The Legal and Practical Problems of the Prevention of Maritime Terrorism' (2002) 18 American University International Law Review 341

Necci A and others, 'Lessons Learned from Offshore Oil and Gas Incidents in the Arctic and Other Ice-Prone Seas' (2019) 185 Ocean Engineering 12

Paunio E, 'Beyond Predictability – Reflections on Legal Certainty and the Discourse Theory of Law in the EU Legal Order' (2009) 10 German Law Journal 1469

Powell A and others, *Maritime Sabotage: Lessons Learned and Implications for Strategic Competition* (CNA 2021)

Proelss A, 'Article 60' in Alexander Proelss, *A Commentary* (1st edn, CH Beck 2017) 476

Purwendah EK, Mangku DG and Periani A, 'Dispute Settlements of Oil Spills in the Sea towards Sea Environment Pollution' (2019) 317 Advances in Social Science, Education and Humanities Research 245

Rishabh R, 'Responsibility V. Sovereignty: Transboundary Environmental Harm' (2021) 4 International Journal of Law Management & Humanities 598

Ruhl JB and Craig R, 'New Sustainable Governance Institutions for Estuaries and Coasts' [2011] Treatise on Estuarine and Coastal Science 239

Sanderson H and others, 'Environmental impact of sabotage of the Nord Stream Pipelines' [2023]

Sari A, *Hybrid threats and the law: Building legal resilience* (Report 3, Hybrid CoE 2021)

Schmalenbach K, 'States Responsibility and Liability for Transboundary Environmental Harm', *Corporate liability for transboundary environmental harm: An international and transnational perspective* (Springer 2023)

Suttenberg J, 'Who Pays? The Consequences of State versus Operator Liability within the Context of Transboundary Environmental Nuclear Damage' (2016) 24 N.Y.U. Environmental Law Journal 201

Takano A, ‘Due Diligence Obligations and Transboundary Environmental Harm: Cybersecurity Applications’ (2018) 7 Laws

Takano A, ‘Land-Based Pollution of the Sea and Due Diligence Obligations’ (2017) 60 Due Diligence Obligations in International Law 92

Tørhaug M, ‘Petroleum Supply Vulnerability Due to Terrorism at North Sea Oil and Gas Infrastructures’ Protection of Civilian Infrastructure from Acts of Terrorism 73-84

Trancon D and Leflaive X, *Background note: The Implementation of the Polluter Pays Principle* (OECD 2022)

Twining W, *Law in Context: Enlarging a Discipline* (Clarendon 1997)

Olaniyan A, ‘Imposing Liability for Oil Spill Clean-Ups in Nigeria: An Examination of the Role of the Polluter-Pays Principle’ (2015) 40 Journal of Law, Policy and Globalization 73-85

Vaangal K, ‘Legal Status of Offshore (Deep-Water) Oil Rigs: Coastal State Jurisdiction and Countering Oil Spills Threats’ (2021) 7 Lex Portus 42

Vinogradov S, ‘The Impact of the Deepwater Horizon: The Evolving International Legal Regime for Offshore Accidental Pollution Prevention, Preparedness, and Response’ (2013) 44 Ocean Development & International Law 335

Voigt C, ‘International Environmental Responsibility and Liability’ in Lavanya Rajamani, and Jacqueline Pee, *The Oxford Handbook of International Environmental Law* (2nd edn, Oxford University Press 2021)

Wacht F, ‘Article 208’ in Alexander Proelss, *A Commentary* (1st edn, CH Beck 2017) 1391

Weckel P. and Didillon R., *The obligation of states to protect and preserve the marine environment* (Summary of the general report, 2023), Institut du Droit Economique de la Mer

Zhang H, ‘The Development of International Law of the Sea by International Courts and Tribunals’ (2021) 9 The Korean Journal of International and Comparative Law 132

**Internet Sources**

Battersby A, ‘PTTEP to Pay $129 Million Compensation for 2009 Montara Oil Spill’ (*Upstream Online | Latest oil and gas news*, 22 November 2022) <https://www.upstreamonline.com/safety/pttep-to-pay-129-million-compensation-for-2009-montara-oil-spill/2-1-1358744> accessed 16 June 2023

Berglund N, ‘Norway’s Pipelines Now Branded as a “Prime Target for Sabotage”’ (*Norway’s News in English - www.newsinenglish.no*, 30 September 2022)

<https://www.newsinenglish.no/2022/09/28/norways-pipelines-now-branded-as-a-prime-target-for-sabotage/> accessed 30 March 2023

Bueger C and Liebetrau T, 'Nord Stream Sabotage: The Dangers of Ignoring Subsea Politics' (*The Loop*, 7 October 2022) <https://theloop.ecpr.eu/nord-stream-sabotage-the-dangers-of-ignoring-subsea-politics/> accessed 28 June 2023

Drilling Manual, 'Types of Drilling Rigs in Oil & Gas' (*Drilling Manual*, 3 March 2022) <https://www.drillingmanual.com/oil-drilling-rig-types/?utm_content=cmp-true> accessed 6 August 2023

'Global integrated shipping information system (GISIS)' *(International Maritime Organisations*, 2023) <https://gisis.imo.org/Public/ST/Treaties.aspx> accessed 18 August 2023

'Introduction to Imo' (*International Maritime Organization*) <https://www.imo.org/en/About/Pages/Default.aspx> accessed 20 July 2023

Kashubsky M, 'Protecting Offshore Oil and Gas Installations: Security Threats and Countervailing Measures' (*Journal of Energy Security*, 11 December 2013) <http://www.ensec.org/index.php?option=com_content&view=article&id=476%3Aprotecting-offshore-oil-and-gas-installations-security-threats-and-countervailing-measures&catid=140%3Aenergysecuritycontent&Itemid=429> accessed 12 July 2023

Kingsley P and others, 'Israel's Shadow War with Iran Moves out to Sea' (*The New York Times*, 26 March 2021) <https://www.nytimes.com/2021/03/26/world/middleeast/israel-iran-shadow-war.html> accessed 13 August 2023

'Oil Spills at the Water Surface' (*Office of Response and Restoration,* 10 July 2012) <https://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/oil-spills-water-surface.html> accessed 28 May 2023

Radowitz B, 'Naval Expert Warns on "increasingly Probable" Offshore Wind Farm Terror Drone Strikes' (*Recharge*, 29 November 2022) <https://www.rechargenews.com/wind/naval-expert-warns-on-increasingly-probable-offshore-wind-farm-terror-drone-strikes/2-1-1362956> accessed 21 June 2023

Sakhuja V, 'Terrorist's Underwater Strategy' (*IPCS*, 22 March 2005) <http://www.ipcs.org/comm_select.php?articleNo=1679> accessed 6 August 2023

'Seafarers' Identity Documents' (*Seafarers' Identity Documents*, 2 September 2011) <https://www.ilo.org/global/standards/maritime-labour-convention/text/WCMS_162321/lang--en/index.htm> accessed 22 July 2023

‘Semi-Submersible’ (*Thrustmaster*, 17 February 2014) <https://www.thrustmaster.net/applications/offshore/semi-submersible/#:~:text=Semi%2Dsubmersibles%20are%20used%20in,azipod%20thrusters%20with%20dynamic%20positioning.> accessed 8 August 2023

Sirilal R and Ilmer A, ‘X-Press Pearl: The “toxic Ship” That Caused an Environmental Disaster’ (*BBC News*, 10 June 2021) <https://www.bbc.com/news/world-asia-57395693> accessed 28 July 2023

‘Solas XI-2 and the ISPS Code’ (*International Maritime Organization*) <https://www.imo.org/en/OurWork/Security/Pages/SOLAS-XI-2%20ISPS%20Code.aspx> accessed 24 July 2023

‘The Practical Guide to Humanitarian Law’ (*Doctors without borders*) <https://guide-humanitarian-law.org/content/article/3/terrorism/> accessed 26 July 2023

‘The World’s Worst Offshore Oil Rig Disasters’ (*Offshore Technology*, 1 June 2019) <https://www.offshore-technology.com/features/feature-the-worlds-deadliest-offshore-oil-rig-disasters-4149812/> accessed 12 June 2023

‘This Is How Oil Spills Damage Our Environment’ (*World Economic Forum,* 12 October 2021) <https://www.weforum.org/agenda/2021/10/oil-spill-environment-ocean/> accessed 13 April 2023

**Official Publications**

*Draft articles on Prevention of Transboundary Harm from Hazardous Activities, with commentaries* (ILC, 2001)

*Draft articles on Responsibility of States for Internationally Wrongful Acts, with commentaries* (ILC, 2001)

*General provision on ships routeing* (IMO Res. A.572(14), 1985)

*Guidelines and Standards for the Removal of Offshore Installations and Standards on the Continental Shelf and in the Exclusive Economic Zone* (IMO Res. A.672(16), 1989)

*ILA Study Group on due Diligence in International Law* (ILC Study Group Second Report, 2016)

*Recommendation of the Council on OECD Legal Instruments the Implementation of the Polluter-Pays Principle* (OECD Legal 0132, 2022)

*Safety Zones and Safety of Navigation around Offshore Installations and Structures* (IMO Res. A.671(16), 1989)

*The Polluter Pays Principle: Inconsistent application across EU environmental policies and*

*actions* (European Court of Auditors Special Report, 2021)

United Nations General Assembly (UNGA) Agenda 55 (2 December 2004) UN Doc A/58/565

United Nations General Assembly (UNGA) Res 68/43 (6 January 2006) UN Doc A/Res/60/43

United Nations Security Council (UNSC) Res 1566 (8 October 2004) UN Doc S/Res/1566