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**An analysis of MARPOL Regulation 43A through the principle of
prevention**

by

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² Research output, in this context, is defined as a mini-dissertation, dissertation or thesis.

List of Abbreviations

CDEM: Construction, Design, Equipment, and Manning standards

EIA: Environmental Impact Assessment

HFO: Heavy Fuel Oil

ICCT: International Council for Clean Transportation

ICJ: International Court of Justice

IEL: International Environmental Law

ILC: International Law Commission

ITOPFL: The International Tanker Owners Pollution Federation Limited

IMO: International Maritime Organisation

ITLOS: International Tribunal on the Law of the Sea

MARPOL: The International Convention for the Prevention of Pollution from Ships as modified by the 1978 and 1997 Protocols relating thereto

MEPC: Marine Environment Protection Committee

MR43A: MARPOL Regulation 43A

NGO: Non-Governmental Organisation

PAME: Protection of the Arctic Marine Environment

PCA: Permanent Court of Arbitration

UNCLOS: United Nations Convention on the Law of the Sea

WWF: World Wild Fund for Nature

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Summary

This dissertation analyses the heavy fuel oil prohibition in Arctic waters that recently took effect after being implemented through the introduction of Regulation 43A to Annex 1 of MARPOL (hereafter MR43A). Due to the aim and purpose of MARPOL succinctly being described as the prevention of vessel-source marine pollution, as well as the status of the principle of prevention in IEL, this dissertation aims to analyse MR43A through the principle of prevention to determine the adequacy of MR43A as an international pollution prevention rule. In doing so, this dissertation provides a comprehensive examination of MR43A in Chapter 2. It accomplishes this by situating MR43A into its place in the international framework regulating pollution prevention before turning to a discussion surrounding the contours of MR43A. In this discussion, this dissertation sets out a basic drafting history of MR43A, the final version of MR43A as it was incorporated into MARPOL and determines the effect of MR43A on the obligations of flag and coastal States. As Chapter 2 establishes the contours of MR43A, Chapter 3 then determines how MR43A can be analysed through the principle of prevention – which is done through the establishment of a general standard of prevention. Chapter 3 discusses how the principle of prevention is multifaceted in nature and is thus expressed and manifests in various ways throughout IEL treaties – which makes establishing a general standard a complex but not an impossible task. Despite this complexity, Chapter 3 establishes a general standard of prevention by exploring the history and evolution of the principle of prevention to determine prevention’s current objective in IEL. Chapter 3 then supplements this discussion by determining the content of the principle of prevention in IEL by discussing interpretations of prevention in jurisprudence and literature. Chapter 3 then concludes by setting out the general standard of prevention established in this dissertation which is: the reflection of prevention’s objective and spirit, proactivity, and a proportional response to the environmental risks posed by HFO use and carriage in Arctic waters. In light of this standard, Chapter 4 then utilises this standard to determine the adequacy of MR43A as a pollution prevention rule. Chapter 4 utilises the content of MR43A as well as its drafting history to determine if MR43A meets the standard of prevention. In doing so, this dissertation establishes that the majority of MR43A meets the general standard of prevention. However, Chapter 4 discusses how the right to issue waivers can affect the adequacy of MR43A as a pollution prevention rule as it seems to leave a significant area of Arctic waters unprotected in light of the risk posed by HFO use and carriage. However, as the issuing of these waivers is subject to the consideration of guidelines that have not been released yet, the impact of the right to issue waivers on the adequacy of MR43A could not be determined.

Chapter 1: Introduction

1 The significance of regulating HFO use and carriage in Arctic waters¹

“Polar regions are probably the last great wilderness area of this planet but today that is beginning to change, and we are seeing increased maritime traffic. More and more ships coming into these regions. In the North, it is driven by commercial imperatives. You can debate whether or not such vessels should be allowed to come into these areas. But one thing everyone agrees on – if they are going to come the ships should be safe, the people aboard them should be protected and their impact on the environment should be as small as possible”.²

History has seen numerous oil spills cause lasting and devastating consequences to the marine environment, such as the *Exxon Valdez* oil spill.³ Following the *Exxon Valdez* oil spill in Alaska and other incidents of oil pollution, the Arctic Environmental Protection Strategy identified oil pollution as a priority environmental problem in 1991 due to “the impact of pollution on fragile Arctic ecosystems” that are especially vulnerable to oil pollution.⁴ The Strategy highlighted that the Arctic is particularly vulnerable to oil pollution due to the Arctic’s physical environmental conditions which will prolong the period in which an oil spill poses harm to Arctic wildlife and ecosystems.

¹ This dissertation utilises the geographical definition of the Arctic as laid out in the International Code for Ships Operating in Polar Waters (Polar Code) which is “waters north of latitude 60°N, with deviations to include waters around the southern exposure of Greenland, but excluding those around Iceland, the Norwegian mainland, Russia’s Kola Peninsula, the White Sea, the Sea of Okhotsk and Alaska’s Prince William Sound”.

² IMO ‘IMO in the polar environment: the Polar Code explained’ (16 May 2017) https://www.youtube.com/watch?v=X_x2_RTUiGM accessed 3 July 2023.

³ Mark Harwell and John Gentile, ‘Ecological Significance of Residual Exposures and Effects from the Exxon Valdez Oil Spill’ (2006) 2(3) *Integrated Environmental Assessment and Management* 204; In 2003 *Neftnerudovoz-57* collided with another ship and an estimated 54 tonnes of HFO was released. Only 9 tonnes could be recovered, and the spill affected multiple marine mammal populations. Almost a decade later a study was done, and it established that the spilled HFO impacted every level of the ecosystem. Although the spill did not occur with defined Arctic waters, researched noted that the environmental conditions in the Arctic and near Arctic are similar. (read more at IMO 71/16/4 page 2 para 3-5). However, Russia disputed a lot of these facts in a response to this submission (read more at IMO 71/16/8 page 2 para 10). Read more on oil spills and their effects in Part XII of Merv Fingas (eds), *Handbook of Oil Spill Science and Technology* (John Wiley & Sons Incorporated 2015) 513.

⁴ Arctic Environmental Protection Strategy 14 June 1991 (Rovaniemi, Finland) 3, 14 and 15; DM Filler and others, ‘Arctic and Antarctic spills’ in Merv Fingas (eds), *Handbook of Oil Spill Science and Technology* (John Wiley & Sons Incorporated 2015) 497, 499.

Due to these risks, the Arctic Council identified accidental oil spills as one of the greatest risks posed by Arctic shipping in a report in 2009.⁵ However, this risk is amplified if the oil spilled is a heavy fuel oil (HFO)⁶ as these oils are “viscous and persist in colder waters for long periods of time” and therefore have the potential to “cause widespread contamination of coastlines and damage sensitive environmental and economic resources”, due to the nature of HFO when spilled.⁷ This can affect the Arctic environment in a number of ways which include but are not limited to the negative effect of the presence of oil on Arctic marine species and the negative consequences for Arctic coastal and indigenous communities.⁸

However, since the release of this report, the Arctic region has experienced a shift in commercial interest, economic activity and exploration due to an improvement in technology, and the effects of global warming making the region more accessible.⁹ This has led to an increase in shipping, where over the period of 2013 to 2019 shipping in the Arctic as defined by the Polar Code, has increased by 25%, a number that will continue to rise.¹⁰ These environmental risks have also increased over the last decade due to the increase in HFO use seen within the Arctic region. The International Council for Clean Transportation estimates that between 2015 and 2019 HFO use increased by 75% and that HFO use by oil tankers

⁵ Arctic Council, ‘Arctic Marine Shipping Assessment 2009 Report’ (2009) 152; Jiayu Bai, ‘The IMO Polar Code: The Emerging Rules of Arctic Shipping Governance’ (2015) 30 *International Journal of Marine and Coastal Law* 674, 676.

⁶ Heavy fuel oil is a general term that is used to describe inexpensive fuels with highly pollutant qualities. Although, these fuels are seen to have multiple names, this dissertation will refer to them collectively as HFO as defined in MARPOL Regulation 43 as “crude oils having a density at 15°C higher than 900 kg/m³” and “oils, other than crude oils, having a density at 15°C higher than 900 kg/m³ or a kinematic viscosity at 50°C higher than 180 mm²/s”.

⁷ IMO MEPC, ‘Implementation of the OPRC Convention and the OPRC-HNS Protocol and relevant conference resolutions: The Problems of Dealing with Spills of Heavy Fuel Oils, submitted by the International Tanker Owners Pollution Federation Limited (ITOPF)’ (3 July 2000) MEPC 45/3/6 para 2 page 1; Arctic Council, ‘Navigating the future of Arctic shipping’ (10 May 2021) Arctic Council <https://www.arctic-council.org/news/navigating-the-future-of-arctic-shipping/> accessed 10 April 2022.

⁸ Bai (n 5 above) 676.

⁹ IMO PPR, ‘Report of the Correspondence Group: Development of measures to reduce risks of use and carriage of heavy fuel oil as fuel by ships in Arctic waters, submitted by the Russian Federation’ (18 December 2020) PPR 8/6 Annex 1 page 1; Filler (n 4 above) 508; Timo Koivurova and Sebastien Duyck, ‘A new ocean to govern: Drawing on the lessons learned in marine management to govern the emerging Arctic Ocean’ in David Leary and Balakrishna Pisupati (eds) *The future of international environmental law* (United Nations University Press 2010).

¹⁰ Polar Code (n 1 above); PAME, ‘The increase in Arctic shipping 2013-2019: Arctic shipping status report #1’ (31 March 2020); Bai (n 5 above) 675; Arctic Council, ‘Navigating the future of Arctic shipping’ (10 May 2021) Arctic Council <https://www.arctic-council.org/news/navigating-the-future-of-arctic-shipping/> accessed 10 April 2022.

operating in the Arctic increased by 300%.¹¹ Due to the environmental risks posed by the use of oil, especially HFO, in combination with the vulnerability of the Arctic marine environment and the difficulty of oil spill clean-up in this area, the regulation of the use and carriage of HFO in Arctic waters was arguably inevitable, especially after the International Maritime Organisation (IMO) introduced a prohibition on the use and carriage of HFO in Antarctic waters in 2011.¹²

2 MARPOL Regulation 43A and the principle of prevention

The risks to the Arctic posed by HFO culminated in various parties to the IMO to making numerous proposals on how to best address this risk. A measure to address this risk was proposed by various States and NGOs and suggested that the International Convention for the Prevention of Pollution from Ships (MARPOL)¹³ be amended to include a prohibition on the use and carriage of HFO in Arctic waters.¹⁴ This prohibition was drafted after negotiations between parties of the IMO and resulted in the amendment of MARPOL to include Regulation 43A (MR43A) which outlines the prohibition of HFO use and carriage in Arctic waters.¹⁵ The prohibition officially takes effect in 2024, subject to a five-year adjustment period where vessels can continue utilising and carrying HFO subject to certain exclusions and waivers.¹⁶ As MR43A forms a part of MARPOL, whose purpose can be succinctly described as the

¹¹ Bryan Comer, Liusmila Osipova, Elise Georgeff and Xiaoli Mao, 'The International Maritime Organization's proposed Arctic heavy fuel oil ban: Likely impacts and opportunities for improvement' (2020) International Council on Clean Transportation iv.

¹² International Convention for the Prevention of Pollution from Ships (2 November 1973) 1340 UNTS 184 as amended by the Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships (17 February 1978, entered into force 2 October 1983) 1340 UNTS 61 subsequently amended in 2014 by the Marine Environment Protection Committee's (MEPC) 67th session (13 to 17 October 2014).

¹³ International Convention for the Prevention of Pollution from Ships (2 November 1973) 1340 UNTS 184 as amended by the Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships (17 February 1978, entered into force 2 October 1983) 1340 UNTS 61.

Following the spill of the *Torrey Canyon* tanker in 1967 the IMO convened an international conference in 1973 to adopt a convention aimed at the prevention of pollution from ships as this incident highlighted the inadequacies of the current framework in place at that time. This convention however did not come into effect, and instead a later conference of the IMO adopted a protocol to MARPOL. Therefore, this dissertation refers to MARPOL as the combination of the 1973 Convention and 1978 Protocol.

¹⁴ IMO MEPC, 'Proposal to ban heavy fuel oil use and carriage as fuel by ships in Arctic waters, submitted by Finland, Germany, Iceland, the Netherlands, New Zealand, Norway, Sweden and the United States' (2 February 2018) MEPC 72/11/1; IMO PPR, Comments on document PPR 7/14/4, "Draft language for a ban of use and carriage of heavy fuel oil as fuel by ships in Arctic waters", submitted by FOEI, WWF, Pacific Environment and CSC' (27 December 2019) PPR 7/14/6 page 2 para 4.

¹⁵ IMO PPR, 'Report to the Marine Environment Protection Committee' (24 April 2020) PPR 7/22Add.1.

¹⁶ MARPOL (n 12 above) reg 43A.

prevention of vessel-source pollution, it can therefore be said that MR43A was introduced to protect Arctic waters by preventing vessel-source HFO pollution in this area.¹⁷

The prohibition faced criticism throughout its drafting phase and before its implementation as it did not fulfil the expectations of various environmental organisations, certain States, and indigenous groups in the Arctic.¹⁸ In these concerns, it was emphasised that the ban does not protect Arctic waters and does not sufficiently address the environmental concerns raised which led to the request for the ban. Due to these concerns, and the aim of MARPOL one may wonder if MR43A compares favourably to fundamental international environmental law principles – more specifically the principle of prevention. Therefore, this dissertation aims to explore if MR43A is deemed to be adequate when analysed through the principle of prevention. However, prevention is a principle that is multifaceted in nature because it is used so widely throughout IEL - so questions arise as to how this principle can be analysed through the principle of prevention when it is difficult to describe prevention itself.¹⁹ Therefore, this dissertation will tackle this issue by investigating the meaning and the contours of the principle of prevention in IEL to establish a general standard of prevention. This standard will be used to determine the adequacy of MR43A.

¹⁷ The aim of MARPOL was determined by viewing the title and preamble of MARPOL against each other. This is supported by the Vienna Convention on the Law of Treaties (entered into force 27 January 1980) 1155 UNTS 331 art 31 which sets out the general rule of interpretation which is that a “treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in light of its object and purpose” where the “context for the purpose of the interpretation of a treaty” includes its preamble.

¹⁸ Bryan Comer, ‘IMO’s draft HFO “ban” is nothing of the sort’ (27 February 2020) <https://theicct.org/imos-draft-hfo-ban-is-nothing-of-the-sort/> accessed 5 June 2022; M Humpert, ‘IMO and Arctic States Face Criticism Over Weak HFO Ban’ (23 November 2020) High North News <https://www.highnorthnews.com/en/imo-and-arctic-states-face-criticism-over-weak-hfo-ban>; Anna Barford and James Gamble, ‘Ban on heavy fuel oil in the Arctic is too weak’ (13 April 2021) Policy Options Politiques <https://policyoptions.irpp.org/magazines/april-2021/ban-on-heavy-fuel-oil-in-the-arctic-is-too-weak/#:~:text=A%20decade%20after%20the%20Arctic,the%20IMO%20in%20June%202022> accessed 9 October 2023; Unknown, ‘NGOs urge IMO to rethink weak HFO ban, demand stronger Arctic protection’ (16 November 2020) Seas at Risk <https://seas-at-risk.org/press-releases/ngos-urge-imo-to-rethink-weak-hfo-ban-demand-stronger-arctic-protection/> accessed 9 October 2023; Unknown, ‘Inuit Call for Stronger Protections for Safe Arctic Shipping Considering Weak HFO Ban Passed at IMO’ (24 November 2020) <https://www.inuitcircumpolar.com/news/inuit-call-for-stronger-protections-for-safe-arctic-shipping-considering-weak-hfo-ban-passed-at-imo/> accessed 9 October 2023.

¹⁹ Philippe Sands and Jacqueline Peel with Adriana Fabra and Ruth MacKenzie, *Principles of International Environmental Law* (4th edition, Cambridge University Press, 2018) 21; Nicolas de Sadeleer, ‘The principles of prevention and precaution in international law: two heads of the same coin?’ in Malgosia Fitzmaurice (ed) *Research Handbook on International Environmental Law* (Edward Elgar Publishing 2010) 152, 167; Alexandre Kiss and Dinah Shelton, *Guide to International Environmental Law* (Martinus Nijhoff Publishers 2007) 91.

3 Objective and Research Questions

This dissertation analyses the prohibition against the use and carriage of HFO in Arctic waters, as laid out in MARPOL Regulation 43A, through the principle of prevention. It first examines the basic regulatory framework that MR43A forms a part of before turning to a comprehensive examination of MR43A to establish the contours of the regulation. Due to the difficulties surrounding the description of prevention, this dissertation aims to establish how MR43A can be analysed through the principle of prevention. To accomplish this, this dissertation establishes a general standard of prevention that is utilised to determine the adequacy of MR43A by discussing the history, development, and content of prevention in IEL. Finally, this dissertation utilises the standard to analyse MR43A and determine its adequacy as a prevention pollution rule.

In doing so this dissertation aims to answer the following research questions:

1. Where does MARPOL fit into the international framework regulating the prevention of vessel-source marine pollution?
2. What are the contours of MR43A and how does this affect the duties and rights of flag and coastal States who have vessels operating within Arctic waters?
3. What is the meaning and objective of the principle of prevention, and how does its status as a multifaceted norm affect the ability to establish a general standard of prevention?
4. What general standard of prevention can be utilised to determine the adequacy of pollution prevention standards and rules?
5. Is MR43A adequate when analysed utilising this general standard?
6. What is the effect of the conclusion drawn after the analysis of Regulation 43A using the principle of prevention?

4 Structure

This dissertation is divided into five chapters. Chapter 2 provides a comprehensive examination of MR43A. To accomplish this Chapter 2 firstly contextualises MR43A in terms of its place in the global portion of the international legal framework that regulates the prevention of vessel-source marine pollution. This chapter then discusses how HFO arose as an environmental

concern to warrant various parties to the International Maritime Organisation to request the prohibition of HFO in Arctic waters. This chapter then discusses the drafting history of the regulation before setting out the finalised version of MR43A. This chapter concludes by discussing the importance of MR43A giving effect to the principle of prevention.

Chapter 3 establishes how MR43A can give effect to the principle of prevention. Chapter 3 acknowledges that the adequacy of a pollution prevention rule can be determined by assessing it against the principle of prevention – a difficult task due to the multifaceted nature of prevention. However, Chapter 3 establishes a general standard of prevention to utilise in this determination. To accomplish this, it first establishes the current meaning of the principle of prevention by tracing the evolution of the principle to establish its current objective and content in an IEL context. It supplements this discussion using interpretations of the principle of prevention found throughout jurisprudence and available literature. Chapter 3 thereby concludes by setting out the general standard of prevention which includes: being reflective of prevention's objective, proactivity and being a proportionate response to the risk in question.

Chapter 4 determines the adequacy of MR43A when assessed against the general standard of prevention established in Chapter 3. To accomplish this, this chapter discusses if MR43A is reflective of prevention's objective. Second, this chapter determines if MR43A is proactive and proportional to the risks posed by HFO use and carriage in Arctic waters. To determine this the chapter utilises the drafting history to assess whether parties to the negotiation of MR43A considered the appropriate factors in its risk analysis. This chapter then concludes by determining whether MR43A is an adequate pollution prevention rule in light of the general standard.

Chapter 5 then offers a concise overview of this dissertation and outlines the main conclusions from Chapters 2, 3, and 4.

Chapter 2: A comprehensive examination of MARPOL Regulation 43A

1 Introduction

The Arctic has remained relatively untouched by human activity, however recent changes have made the region more accessible for a variety of human activities, which has led to an increase in shipping that is expected to continue to increase.¹ Although maritime activity is essential from an economic standpoint, it has the potential to cause long standing environmental damage in the Arctic region if it goes unregulated or it is inadequately regulated.

In a response to these Arctic environmental concerns, various States have cooperated in order to address these environmental concerns in this very fragile area. However, the ways in which States address these concerns need to maintain a certain standard of environmental protection by giving effect to cornerstone environmental principles such as the principle of prevention. MARPOL is no exception.² However, to determine the adequacy of rules introduced to protect the environment, which includes MARPOL Regulation 43A (MR43A), it is essential to firstly situate the regulation in its place in the IEL framework to determine what is to be achieved by its introduction.³ In this determination, this chapter will discuss the agency responsible for the amendment and inclusion of MR43A, the International Maritime Organisation, as well as the international framework to which MR43A is contributing to. To provide context regarding the

¹ IMO PPR, 'Report of the Correspondence Group: Development of measures to reduce risks of use and carriage of heavy fuel oil as fuel by ships in Arctic waters, submitted by the Russian Federation' (18 December 2020) PPR 8/6 Annex 1 page 1; Jiayu Bai, 'The IMO Polar Code: The Emerging Rules of Arctic Shipping Governance' (2015) 30 *International Journal of Marine and Coastal Law* 674, 675; Timo Koivurova and Sebastien Duyck, 'A new ocean to govern: Drawing on the lessons learned in marine management to govern the emerging Arctic Ocean' in David Leary and Balakrishna Pisupati (eds) *The future of international environmental law* (United Nations University Press 2010); Arctic shipping status report #1 (n 10 above); Arctic Council, 'Navigating the future of Arctic shipping' (10 May 2021) Arctic Council <https://www.arctic-council.org/news/navigating-the-future-of-arctic-shipping/> accessed 10 April 2022.

² International Convention for the Prevention of Pollution from Ships (2 November 1973) 1340 UNTS 184 as amended by the Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships (17 February 1978, entered into force 2 October 1983) 1340 UNTS 61.

³ Kal Raustiala and Daniel Bodansky, 'Rules vs. Standards in International Environmental Law' (2004) 98 *American Society of International Law* 275, 276. The difference between rules and standards was framed as follows: standards "set forth more open-ended tests, whose application depends on the exercise of judgment or discretion" whereas rules "define in advance what conduct is permissible and impermissible".

content of MR43A this chapter sets out how HFO developed as an environmental concern before turning to the drafting history of MR43A. Section 2 of this chapter then sets out MR43A as it was incorporated into MARPOL.

Following this, this chapter examines the contours of MR43A to determine its content and the impact of its introduction on the duties of flag and coastal States – as an essential part of determining the adequacy of a rule is firstly determining its contours. To achieve this this chapter delves into M43A, exploring its content, its effect, how it developed and the principles and ideas that guided its final form. This chapter therefore serves as a basis for assessment of the adequacy of MR43A by providing a comprehensive examination of the contours of MR43A.

2 Unveiling MARPOL Regulation 43A

2.1 The IMO, UNCLOS and MARPOL: setting the scene for MARPOL Regulation 43A

The International Maritime Organisation (IMO),⁴ a specialised agency of the United Nations, was established in 1948 to promote maritime safety and is currently considered to be the agency responsible for the prevention of vessel-source marine pollution.⁵ The IMO's purpose includes promoting cooperation among States and although initially the IMO's objectives did not refer to marine pollution, they have since developed to include the protection and preservation of the marine environment, especially with regard to the prevention of vessel-source marine pollution.⁶

To address this objective the IMO is mandated to support the negotiation and conclusion of treaties, amongst other duties, and was therefore the competent body to assist in the negotiation

³ The IMO was initially established as the Intergovernmental Maritime Consultive Organisation before it was changed to the IMO in 1982.

⁵ Convention on the International Maritime Organisation (adopted 6 March 1948, entered into force 17 March 1958) 289 UNTS 3 art 1(a); IMO, 'Brief History of IMO'

<https://www.imo.org/en/About/HistoryOfIMO/Pages/Default.aspx#:~:text=The%20purposes%20of%20the%20Organization,trade%3B%20to%20encourage%20and%20facilitate> accessed 13 October 2023.

⁶ IMO Convention (n 5 above) art 3; Robert Beckham and Zhen Sun, 'The Relationship between UNCLOS and IMO Instruments' (2017) 2 *Asia-Pacific Journal of Ocean Law and Policy* 201, 218-219; Saiful Karim, *Prevention of Pollution of the Marine Environment from Vessels: the Potential and Limits of the International Maritime Organisation* (Springer International Publishing, 2015) 4.

and conclusion of the International Convention for the Prevention of Pollution from Ships (MARPOL), as modified and amended.⁷ MARPOL, which is arguably the most important IMO convention regulating marine shipping pollution, aims to achieve the “complete elimination of intentional pollution of the marine environment by oil and other harmful substances”.⁸ However, although the elimination of intentional pollution is achievable, the complete elimination of accidental discharges of these substances is unlikely.⁹ Therefore, MARPOL instead aims to minimise accidental occurrences of pollution.¹⁰ To achieve these objectives, MARPOL includes six annexes that each regulate a source of pollution.¹¹ Annex 1,¹² which regulates oil as a pollutant, entered into force on 2 October 1983 and is one of MARPOL’s two compulsory annexes.¹³

However, MARPOL is not the only treaty regulating the prevention of pollution for the purposes of protecting the marine environment. It instead contributes to a framework that regulates the prevention of vessel-source pollution, which includes international rules and standards, that find regional and/or global application.¹⁴ The global aspect of this framework, for the purposes of this dissertation, includes the United Nations Convention on the Law of the Sea¹⁵ and MARPOL. These two conventions are the main sources regulating the prevention of pollution of the marine environment by vessels – UNCLOS (described as being the most comprehensive) and MARPOL (described as being the most specific).¹⁶ There is a connection between these two treaties which highlights an important consideration regarding their interaction which is that work done under the auspices of the IMO, including MARPOL, should “operate within the framework of UNCLOS” and thus their interaction should therefore avoid conflict.¹⁷

⁷ IMO Convention (n 5 above) art 1(a) and art 3.

⁸ MARPOL (n 2 above) preamble; Beckham and Sun (n 6 above) 213.

⁹ Dagmar Etkin, ‘Risk Analysis and Prevention’ in Merv Fingas (eds), *Handbook of Oil Spill Science and Technology* (John Wiley & Sons Incorporated, 2015) 2-3.

¹⁰ MARPOL (n 2 above) preamble.

¹¹ These sources include oil, noxious liquid substances in bulk, harmful substances carried by sea in packaged form, sewage from ships, and air pollution.

¹² IMO, ‘Amendments to the Annex of the Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships, 1973 (Revised Annex I of MARPOL 73/78)’ (adopted 15 October 2004) MEPC.117(52).

¹³ MARPOL (n 2 above) arts 14, 15 and 16.

¹⁴ Beckham and Sun (n 6 above) 203.

¹⁵ United Nations Convention on the Law of the Sea (entered into force 16 November 1994) 1833 UNTS 3.

¹⁶ Philippe Sands and Jacqueline Peel with Adriana Fabra and Ruth MacKenzie, *Principles of International Environmental Law* (4th edition, Cambridge University Press, 2018) 461.

¹⁷ Beckham and Sun (n 6 above) 218.

UNCLOS entered into force in 1994 and “addresses the pollution of the marine environment with an aim of establishing rules and standards: that have a global application”.¹⁸ Following its entry into force, UNCLOS is now considered by scholars to have achieved customary status.¹⁹ One of UNCLOS’s main objectives, which we see reflected throughout UNCLOS and specifically in Part XII of UNCLOS, is the prevention of marine pollution as an aspect of the protection and preservation of the marine environment.²⁰ UNCLOS Article 194(3) expands on this objective by emphasising that the prevention of intentional and unintentional discharges of oil form a part of this objective of prevention pollution.²¹ UNCLOS elaborates on the practical means by which States should achieve this objective which includes a responsibility on States to “cooperate directly/through competent international organisations in formulating and establishing international rules and standards for the protection and preservation of the marine environment”.²² This responsibility in light of the above discussion therefore includes the establishment of international rules and standards to prevent vessel-source oil pollution of the marine environment through the IMO as the competent international organisation.²³

UNCLOS elaborated on the duties and jurisdiction of States concerning sources of marine pollution – which included vessel-source pollution.²⁴ Although UNCLOS acts as a framework that regulates vessel-source pollution, it does not undertake the development of vessel-source pollution standards.²⁵ This is because UNCLOS’s provisions concerning the protection of the marine environment are described as being more general in nature with Karim highlighting that these provisions should be “implemented by detailed, specialised legal instruments”.²⁶ As MARPOL is described as being the most specific treaty regulating the prevention of vessel-

¹⁸ Sands and Peel (n 16 above) 461.

¹⁹ Sands and Peel (n 16 above) 462.

²⁰ This objective is reflected in UNCLOS (n 15 above) arts 192 and 194.

²¹ UNCLOS (n 15 above) art 194(3)(b); Oil is considered as a pollutant for the purposes of UNCLOS according to the definition of pollution in UNCLOS (n 15 above) art 1(4).

²² UNCLOS (n 15 above) art 197; this is reflective of the importance of cooperation in the protection of the environment, which was emphasised in Chapter 2.

²³ UNCLOS (n 15 above) arts 197 and 211; Beckham and Sun (n 6 above) 218 and 221; UNCLOS art 211 imposes similar obligations on states to reduce and control pollution, but due to the scope of this article, these will be excluded from this discussion; Daniel Bodansky, ‘Protecting the Marine Environment from Vessel-Source Pollution: UNCLOS III and Beyond’ (1991) 18(4) *Ecology Law Quarterly* 719, 726 and 740.

²⁴ Karim (n 6 above) 9.

²⁵ Bodansky (n 23 above) 740.

²⁶ Karim (n 6 above) 9.

source pollution, the international rules and standards drafted under the auspices of the IMO in accordance with this goal will likely be incorporated into MARPOL.²⁷

Chapter 1 recognised HFO as a significant environmental concern in Arctic waters and the need for regulation in this area, but before this dissertation delves into the content of MR43A it should firstly be established why the IMO and its parties were prompted to incorporate an international pollution prevention rule addressing HFO into MARPOL Annex 1 - as opposed to taking a different approach to addressing this risk.

2.2 HFO pollution: A rising environmental concern

Although there were major discussions and work done regarding shipping and oil pollution in the 1900s, the first instance of HFO spills being expressed as an environmental risk before the IMO occurred in 2000.²⁸ The International Tanker Owners Pollution Federation Limited submitted a paper which outlined the difficulties of HFO spill clean-up, as the heavy nature of the oil plays a significant role in the seriousness of a spill.²⁹ The Federation noted that due to this difficulty HFO spills “have the potential to cause widespread contamination of coastlines and damage sensitive environmental and economic resources”.³⁰ It noted various case studies in its paper, however none of these cases occurred in Arctic waters.³¹ This concern became more regionally focused after numerous studies were done on the effects of HFO in colder waters and the impact oil spills would have on polar environments, and, more specifically, the Arctic.

²⁷ This emphasises how UNCLOS and MARPOL work together as discussed.

²⁸ IMO MEPC, ‘Implementation of the OPRC Convention and the OPRC-HNS Protocol and relevant conference resolutions: The Problems of Dealing with Spills of Heavy Fuel Oils, submitted by the International Tanker Owners Pollution Federation Limited (ITOPF)’ (3 July 2000) MEPC 45/3/6.

²⁹ IMO MEPC 45/3/6 (n 28 above) 1.

³⁰ IMO MEPC 45/3/6 (n 28 above) 1.

³¹ IMO MEPC 45/3/6 (n 28 above) 2.

In 2009, the Protection of the Arctic Marine Environment Working Group, a working group of the Arctic Council³², assessed the risks associated with the marine shipping in the Arctic.³³ It concluded that the release of oil into the Arctic marine environment, through accidental or illegal discharge, “is the most significant threat” posed by vessels.³⁴ Although oil spills pose multiple negative implications on the Arctic environment, the effects of an HFO spill are particularly negative due to the properties of the oil when spilled.³⁵ In 2010 a study was conducted by Det Norske Veritas, following a request from the Arctic Council, to compare the amount of oil present on the surface of a body of water after a spill occurred.³⁶ In this comparative study, Det Norske Veritas compared a spill of distillate fuel to HFO and concluded that while the distillate fuel had “disappeared from the surface after three days”, the HFO was nearly all present after a period of 20 days.³⁷ From the Det Norske Veritas’ study it was concluded that the consequences of a HFO spill are “likely to be more severe than spills of marine diesels”.³⁸ From this study and the subsequent report it was stated that due to the properties of HFO, a significant reduction in risk can be accomplished if the type of fuel used on board is distillate as opposed to HFO.³⁹ Based on all these factors, and the fact that the Arctic environment is a particularly vulnerable area, especially to oil spills, HFO is thus seen to pose a huge risk to the Arctic especially in light of the continued increase in human activity seen in this region.⁴⁰

³² The Arctic Council is an intergovernmental forum made up of the eight Arctic States and other groups. The Council aims to promote cooperation, coordination and interaction amongst these groups regarding a variety of issues which includes the protection of the Arctic environment; For information on PAME’s relationship to the IMO read: Peter Oppenheimer, ‘Arctic Shipping’ (2021) US Coast Guard Journal of Safety and Security at Sea <https://pame.is/arctic-shipping> accessed 9 October 2023.

³³ Arctic Council, ‘Arctic Marine Shipping Assessment 2009 Report’ (2009).

³⁴ Arctic Marine Shipping Assessment 2009 Report (n 33 above) 152.

³⁵ Det Norske Veritas, ‘Heavy Fuel in the Arctic (Phase 1) 2011 Report No./DNV Reg No.: 2011-0053/12RJ71W-4 Rev 00 page 38.

³⁶ Det Norske Veritas (n 35 above) 38.

³⁷ Det Norske Veritas (n 35 above) 38.

³⁸ Det Norske Veritas (n 35 above) 38.

³⁹ IMO MEPC, ‘Heavy fuel oil use by vessels in Arctic waters, submitted by FOEI, WWF, Pacific Environment and CSC’ (22 July 2016) MEPC 70/17/4 page 3 para 7; Det Norske Veritas (n 35 above).

⁴⁰ IMO MEPC, ‘Proposal to ban heavy fuel oil use and carriage as fuel by ships in Arctic waters, submitted by Finland, Germany, Iceland, the Netherlands, New Zealand, Norway, Sweden and the United States’ (2 February 2018) MEPC 72/11/1 page 2 para 3; Arctic Council, ‘Using data to improve oil spill response in the Arctic’ (25 August 2020) <https://www.arctic-council.org/news/data-improve-oil-spill-response-in-arctic/> accessed 3 April 2021.

Due to this risk, the IMO was mandated to consider these issues as the competent international organisation to promote cooperation among States with regard to the prevention of vessel-source oil pollution.⁴¹

2.3 The subsequent drafting process for MARPOL Regulation 43A

In 2016, several environmental groups submitted a document to the IMO detailing concerns regarding the use of HFO by vessels in Arctic waters.⁴² In this document, the organisations highlighted the IMO's Strategic Plan which recognised the need to identify, address and review measures that reduce adverse impacts on the marine environment.⁴³ These groups highlighted the adverse impacts that an HFO oil spill would have on the Arctic environment and also highlighted that the clean-up of such a spill would be costly and difficult due to the nature of the Arctic environment.⁴⁴ Following this document, various parties to the discussion agreed that the use and carriage of HFO should be addressed, however there was disagreement as to how the risks posed by HFO in the Arctic should be addressed.

On the one side, a group of States (Finland, Germany, Iceland, the Netherlands, New Zealand, Norway, Sweden and the United States) proposed a mandatory ban on the use and carriage of HFO in Arctic waters.⁴⁵ In this proposal, the proposing States recommended that the HFO ban should be implemented no later than the end of 2021, but that certain vessels could be eligible for a "brief delay in the implementation of the ban" if, for example, they have fuel tank protections in place.⁴⁶ The proposing States defined a 'brief delay' as being a period no longer than five years.⁴⁷ However, various environmental groups took a different approach. These groups agreed that a mandatory ban was necessary but did not support the idea of a five-year delay as they were of the opinion that delays and exemptions would "prolong the threat of an HFO spill in the Arctic".⁴⁸ On the other side, Russia was proposing measures such as the

⁴¹ IMO Convention (n 5 above) art 3; Beckham and Sun (n 6 above) 219.

⁴² MEPC 70/17/4 (n 39 above).

⁴³ MEPC 70/17/4 (n 39 above) para 1 page 1.

⁴⁴ MEPC 70/17/4 (n 39 above) para 3 page 2.

⁴⁵ IMO 72/11/1 (n 40 above).

⁴⁶ IMO 72/11/1 (n 40 above) page 1 para 2 and page 2 para 5.

⁴⁷ IMO 72/11/1 (n 40 above) page 2 para 5.

⁴⁸ IMO PPR, Comments on document PPR 7/14/4, "Draft language for a ban of use and carriage of heavy fuel oil as fuel by ships in Arctic waters", submitted by FOEI, WWF, Pacific Environment and CSC' (27 December 2019) PPR 7/14/6 page 2 para 4.

drafting of emergency plans that account for navigating ice conditions as alternatives to a prohibition of HFO in Arctic waters, as early as 2016, as it argued that prohibiting the use and carriage of HFO was premature.⁴⁹ A large portion of the reasoning behind this disagreement comes down to the weight afforded to the economic implications of a mandatory ban, as well as how a prohibition without an adjustment period would impact indigenous populations and Arctic communities.⁵⁰

Despite the disagreement, continuous work was done under the auspices of the IMO on drafting MR43A which introduced the mandatory prohibition of the use and carriage of HFO in Arctic waters. MR43A was incorporated into Annex 1 of MARPOL through an amendment and subsequently entered into force on 1 November 2022.⁵¹

2.4 MARPOL Regulation 43A: Final form

MARPOL Regulation 43A states the following:⁵²

“1 With the exception of ships engaged in securing the safety of ships or in search and rescue operations, and ships dedicated to oil spill preparedness and response, the use and carriage of oils listed in regulation 43.1.2 of this Annex as fuel by ships shall be prohibited in Arctic waters, as defined in regulation 46.2 of this Annex, on or after 1 July 2024.

2 Notwithstanding the provisions of paragraph 1 of this regulation, for ships to which regulation 12A of this Annex or regulation 1.2.1 of chapter 1 of part II-A of the Polar

⁴⁹ IMO MEPC, ‘Comments on the document on use of heavy fuel oil in Arctic waters, submitted by the Russian Federation’ (19 August 2016) MEPC 70/17/9 page 4 para 11.

⁵⁰ IMO MEPC, ‘Comments on the document on the use of heavy in the Arctic (MEPC 71/16/4), submitted by the Russian Federation’ (12 May 2017) MEPC 71/16/8 page 3 para 12; IMO MEPC, ‘Proposal for possible measures to reduce risks of use and carriage of HFO as fuel by ships in Arctic waters, submitted by the Russian Federation’ (2 February 2018) MEPC 72/11 page 2 para 7; IMO MEPC, ‘Comments on document MEPC 70/17/4 – Heavy fuel oil use by vessels in Arctic waters, submitted by Canada and the United States’ (2 September 2016) MEPC 70/17/11 page 2 para 5.

⁵¹ IMO PPR, ‘Report to the Marine Environment Protection Committee’ (24 April 2020) PPR 7/22Add.1; Beckham and Sun (n 6 above) 215 and 216; MARPOL is amended through a tacit acceptance process. This procedure entails an amendment to an Annex entering into force on an agreed upon date during its adoption unless the amendment is objected by States. Read more about tacit amendment in MARPOL here: Karim (n 6 above) 36.

⁵² IMO MEPC, ‘Report of the Marine Environment Protection Committee on its Seventy-sixth session’ (12 July 2021) MEPC 76/15/Add.2 page 1 -2.

Code applies, the use and carriage of oils listed in regulation 43.1.2 of this Annex as fuel by those ships shall be prohibited in Arctic waters, as defined in regulation 46.2 of this Annex, on or after 1 July 2029.

3 When prior operations have included the use and carriage of oils listed in regulation 43.1.2 of this Annex as fuel, the cleaning or flushing of tanks or pipelines is not required.

4 Notwithstanding the provisions of paragraphs 1 and 2 of this regulation, the Administration of a Party to the present Convention the coastline of which borders on Arctic waters may temporarily waive the requirements of paragraph 1 of this regulation for ships flying the flag of that Party while operating in waters subject to the sovereignty or jurisdiction of that Party, taking into account the guidelines to be developed by the Organization. No waivers issued under this paragraph shall apply on or after 1 July 2029.

5 The Administration of a Party to the present Convention which allows application of paragraph 4 of this regulation shall communicate to the Organization for circulation to the Parties particulars of the waiver thereof, for their information and appropriate action, if any."

Now that the finalised version of MR43A, an international pollution prevention rule, has been set out, the implications and content of this regulation should be explored to establish the effect of this regulation on vessels operating within Arctic waters.⁵³

3 A new pollution prevention rule in Arctic waters: The contours of MARPOL Regulation 43A

It was established that UNCLOS and work completed under the auspices of the IMO are supposed to work well together.⁵⁴ Therefore, it is expected that when determining the contours of MR43A that an intersection between UNCLOS and MARPOL will occur. Therefore, in

⁵³ MR43A is labelled a rule in accordance with Bodansky's distinction between rules and standards discussed in footnote 3 above due to MR43A defining permissible and impermissible conduct in Arctic waters. Although MR43A is referred to as a rule the standard of prevention established throughout this dissertation will find application to both standards and rules.

⁵⁴ Beckham and Sun (n 6 above) 218.

order to determine the contours of MR43A we must view MR43A in light of MARPOL and UNCLOS to determine how States and vessels are impacted by the introduction of MR43A.

Under UNCLOS, three categories of States are recognised as being competent to exercise jurisdiction over incidents and matters concerning marine pollution: flag States, port States and coastal States.⁵⁵ This jurisdiction includes the authority to mandate vessels to comply with pollution prevention rules.⁵⁶ This is why the “sole tools available for the enforcement of international rules and standards relating to the marine environment” depends on this recognition – as without it vessels could not be mandated to follow these rules and standards.⁵⁷

Due to the compulsory status of Annex 1 of MARPOL, as well as the general duty on all three categories of States to enforce internationally accepted rules and standards established through the IMO, all States are obligated to enforce MR43A.⁵⁸ However, the way in which these standards are enforced will depend on the category of State as they all have various obligations under UNCLOS and MARPOL. In accordance with this, the effect of MR43A will be discussed and divided based on the categories of States recognised under UNCLOS.

3.1 The Impact of MR43A on Flag States

As discussed above, flag States are obligated to enforce MR43A. A part of this obligation involves flag States adopting laws and regulations that, at a minimum, have the same effect as international rules and standards.⁵⁹ Therefore, States who are party to MARPOL must adopt laws and regulations in their domestic frameworks that, at a minimum, have the same effect as MR43A. In accordance with this, this next part will establish what MR43A says and, therefore, what flag States should reflect in their domestic frameworks.

⁵⁵ UNCLOS (n 15 above) recognises two forms of jurisdiction over vessel-source pollution: prescriptive and enforcement where UNCLOS arts 207-211 set out the rules relating to prescriptive and UNCLOS art 213-222 relate to enforcement jurisdiction.

⁵⁶ Karim (n 6 above) 7.

⁵⁷ Daniel Bodansky, Jutta Brunnee and Ellen Hey (eds), *The Oxford Handbook of International Environmental Law* (Oxford University Press 2008) 343.

⁵⁸ MARPOL (n 2 above) art 3; UNCLOS (n 15 above) arts 213, 214, 216, 217, 218, 219, 220 and 222.

⁵⁹ UNCLOS (n 15 above) art 211(2); This position is also reflected in MARPOL (n 2 above) art 3 which states that parties to MARPOL should adopt measures to ensure that ships act in a manner consistent with MARPOL. This means that States should ensure that the standards set in MARPOL are integrated into domestic law to ensure that these standards are extended to all vessels.

In accordance with the discussion above flag States are primarily impacted by the introduction of MR43A sub-paragraph (1) and (2) as these sub-paragraphs limit the type of vessel that is allowed to continue utilising and carrying HFO in Arctic waters from 1 July 2024 until the complete prohibition takes effect on 1 July 2029.⁶⁰ Vessels are only allowed to continue utilising or carrying HFO during this five-year adjustment period if the vessel complies with Regulation 43A sub-paragraph (2). In order for a vessel to comply with this sub-paragraph, MARPOL Regulation 12A or regulation 1.2.1 of chapter 1 of part ii-a of the International Code for Ships Operating in Polar Waters (Polar Code) should be applicable to the vessel in question.⁶¹ In this case, the vessel is allowed to continue using or carrying HFO in Arctic waters until 1 July 2029. Thereafter, these vessels are prohibited from utilising or carrying HFO in Arctic waters, unless they are exempted by MR43A sub-paragraph (1).

3.1.1 Regulation 12A

MARPOL Regulation 12A establishes design requirements for ships which have an aggregate oil fuel capacity of 600 m³ and were delivered on or after 1 August 2010.⁶² In these requirements, a ship must have its fuel tank in a protective location which is determined by multiple factors beyond the scope of this this dissertation.⁶³

3.1.2 Regulation 1.2.1 of chapter 1 of part II-A of the Polar Code

Regulation 1.2.1 of chapter 1 of part II-A of the Polar Code states that “for category A and B ships constructed on or after 1 January 2017 with an aggregate oil fuel capacity of less than 600 m³, all oil fuel tanks shall be separated from the outer shell by a distance of not less than 0.76 m. This provision does not apply to small oil fuel tanks with a maximum individual capacity not greater than 30 m³.”⁶⁴

⁶⁰ MARPOL (n 2 above) regulation 43A.

⁶¹ International Code for Ships Operating in Polar Waters (entered into force 1 January 2017) <<https://www.imo.org/en/ourwork/safety/pages/polar-code.aspx#:~:text=The%20Polar%20Code%20covers%20the,waters%20surrounding%20the%20two%20poles>> accessed 9 October 2023.

⁶² Meaning of “delivered on or after 1 August 2010” is defined in MARPOL (n 2 above) annex 1 regulation 1.28.9 of MARPOL.

⁶³ MARPOL (n 2 above) regulation 12A.

⁶⁴ Polar Code (n 61 above).

3.1.3 Conclusion

The introduction of these two sub-paragraphs will affect the duties of all flag States who have or will have vessels operating within Arctic waters from 1 July 2024 as flag States need to ensure that these international rules and standards are complied with by vessels flying their flag.⁶⁵ To accomplish this, States should adopt regulations on a domestic level that reflect MR43A's sub-paragraphs (1) and (2). Once this is done, vessels who fly their flag are also mandated to follow MR43A due to a flag State's prescriptive jurisdiction.⁶⁶ However, this is not the only duty flag States are required to meet in light of UNCLOS and MARPOL as a part of enforcing MR43A.

Flag States must also ensure that vessels are inspected and certified all with the aim of ensuring that all vessels flying their flag adhere to MR43A when operating in Arctic waters, no matter the location within Arctic waters.⁶⁷ However, vessels that have an aggregate fuel tank not larger than 30 m³ can continue utilising and carrying HFO until 1 July 2029, as there is no regulation in place that establishes design requirements for these vessels.⁶⁸ Therefore, until the complete prohibition takes effect in July 2029, States are not required to take any further steps in accordance with MR43A regarding these types of ships.

However, if vessels are found to be utilising HFO in Arctic waters and are not in compliance, with the exception or waivers or continue to use and carry it after 2029 then the flag State is obligated to take action.⁶⁹ The flag State shall act against this delinquent vessel regardless of the location of the violation within Arctic waters if there is sufficient evidence to enable proceedings.⁷⁰ In addition to this, flag States shall take appropriate measures to ensure that ships they register or that fly their flag are prohibited from sailing unless they comply with the regulations in MARPOL, which will include MARPOL Reg 43A from 2024.⁷¹

⁶⁵ UNCLOS (n 15 above) art 217(1).

⁶⁶ Karim (n 6 above) 7.

⁶⁷ UNCLOS (n 15 above) art 211 and 217.

⁶⁸ Polar Code (n 61 above) regulation 1.2.1 of chapter 1 of part II-A.

⁶⁹ UNCLOS (n 15 above) art 217.

⁷⁰ MARPOL (n 2 above) art 3 and art 4(1); UNCLOS (n 15 above) art 217(4).

⁷¹ UNCLOS (n 15 above) art 217(2).

3.2 The Impact of MR43A on Coastal States

Coastal States that border Arctic waters do not gain obligations under MR43A to the same extent as flag States. However, coastal States who are a party to MARPOL, and border Arctic waters, gain a right from MR43A.

These coastal States, that border Arctic waters, are therefore mainly impacted by MR43A sub-paragraphs (1), (2) and (4). Although these States have the same obligations as flag States with regard to vessels operating in Arctic waters, which are laid out above, these States in their capacity as coastal States gain a right to issue temporary waivers for vessels who fly their flag and are operating within their territory through MR43A sub-paragraph (4). This waiver allows the vessel in question to continue operating in Arctic waters without adhering to MR43A sub-paragraphs (1) and (2). However, if a coastal State exercises this right to issue a waiver, this waiver should be issued in accordance with sub-paragraph (5). This sub-paragraph creates an obligation on these coastal States to take into account the IMO's guidelines as well as communicate with the IMO regarding the particulars of waivers that are granted.⁷²

Therefore, coastal States, that border Arctic waters, have the option available to issue waivers to vessels that fly their flag and are operating within their jurisdiction for a period of five years. If this waiver is granted, the vessel in question does not have to comply with MR43A sub-paragraphs (1) and (2). However, this does not exempt these coastal States from their duty to adopt laws and regulations that, at a minimum, have the same effect as MR43A.⁷³

4 Conclusion

To determine the contours of MR43A this chapter firstly established the obligations of flag and coastal States with regard to international rules and standards. The obligations of these two categories of States were found in the international framework established in section 2, which included UNCLOS and MARPOL. From this framework, and due to the customary status of UNCLOS and the compulsory status of Annex 1 of MARPOL, it is seen that all States are

⁷² MARPOL (n 12 above) regulation 43A; The guidelines are currently in their draft phase and can be read at IMO NCSR, 'Draft guidelines on mitigation measures to reduce risks of use and carriage for use of heavy fuel oil (HFO) as fuel by ships in Arctic waters' (21 March 2022) NCSR 9/23.

⁷³ MARPOL (n 2 above) art 3; UNCLOS (n 15 above) arts 213, 214, 216, 217, 218, 219, 220 and 222.

required to establish rules and standards within their domestic framework that are reflective of MR43A's content.

In light of the duties of flag States, outlined above, all States who have vessels that are flying the State's flag in question are required to ensure that these vessels that are operating within Arctic waters do not utilise or carry HFO from 1 July 2024, unless they comply with MR43A sub-paragraph (2) during the five-year adjustment period. However, after 1 July 2029 this duty shifts and requires flag States to ensure that vessels flying its flag and operating within Arctic waters are not utilising or carrying HFO, unless the vessel is exempted by MR43 sub-paragraph (1). The last contour of MR43A established under this chapter is that coastal States have the right to issue waivers subject to the consideration of guidelines that will be released by the IMO. Therefore, the contours of MR43A and its basic impact on States and vessels have been established.

However, since MR43A's release it has been criticised for its weak environmental protection due to the time frame and the exemptions and waivers available to vessels.⁷⁴ One of the organisations to critique the prohibition was the International Council for Clean Transportation (ICCT), which released a study that determined how effective the "HFO ban would be in reducing the use and carriage of HFO, and black carbon emissions".⁷⁵ The ICCT found that because of the exemptions and waivers in place the HFO ban would have had the following effect if it was implemented in 2019: 74% of the HFO-fuelled fleet would be able to continue using HFO in Arctic waters.⁷⁶ Therefore, although the risk of an accidental HFO spill would be reduced due to a fewer number of ships utilising HFO, the ban also does not completely reduce the risk of an HFO oil spill nor does it reduce the use and carriage of HFO in Arctic waters to the extent that certain organisations, like the ICCT, believe is necessary to protect the Arctic environment.

⁷⁴ Environmental Investigation Agency, 'IMO and Arctic States Slammed for Endorsed Continued Arctic Pollution' (20 November 2020) <https://us.eia.org/press-releases/20201120-ngos-protest-continued-pollution-of-arctic/> accessed 9 October 2023; refer to Chapter 1 page 9 footnote 18 above.

⁷⁵ Bryan Comer, Liusmila Osipova, Elise Georgeff and Xiaoli Mao, 'The International Maritime Organization's proposed Arctic heavy fuel oil ban: Likely impacts and opportunities for improvement' (2020) International Council on Clean Transportation.

⁷⁶ Comer (n 75 above) 11.

The aim of MARPOL is the prevention of vessel-source pollution. In light of this aim, it should be expected that the international pollution prevention rules incorporated within MARPOL, which now includes MR43A, give effect to this aim as well as to the aim of prevention. This is also important due to the status of prevention in IEL as a customary norm as well as its status as a principle of general international law.⁷⁷ Therefore, the criticisms lodged against MR43A bring up questions regarding the adequacy of MR43A as an international pollution prevention rule. To determine if MR43A gives effect to prevention and is an adequate pollution prevention rule, several questions arise. First, what does prevention mean in an IEL context; second, what contours of the principle are applicable when determining the adequacy of a pollution prevention rule; and third, can the meaning and contours of prevention be utilised to establish a general standard that can be utilised to determine the adequacy of pollution prevention standards and rules.

Therefore, a key element in determining MR43A's adequacy as a pollution prevention rule, that works under UNCLOS and MARPOL, is analysing the regulation through the principle of prevention. This is achieved by establishing a general standard of prevention which MR43A can be compared and analysed against. To establish this standard, the next chapter will outline the history of prevention, the current objective of prevention and how jurisprudence has offered clarification on the content of prevention which will collectively be utilised in establishing a general standard of prevention.

⁷⁷ *Case Concerning Pulp Mills on the River Uruguay (Argentina v Uruguay)* (Merits) [2010] ICJ Rep 210 para 101; Leslie-Anne Duvic-Paoli, *The Prevention Principle in International Environmental Law* (Cambridge University Press 2018) 91; Nicolas de Sadeleer, 'The principles of prevention and precaution in international law: two heads of the same coin?' in Malgosia Fitzmaurice (ed) *Research Handbook on International Environmental Law* (Edward Elgar Publishing 2010) 152, 167; Sands and Peel (n 16 above) 203 and 211; Yoshifumi Tanaka, 'Principles of international marine environmental law' in Rosemary Rayfuse (ed), *Research Handbook on International Marine Environmental Law* (Edward Elgar Publishing 2015) 33.

Chapter 3: Establishing a general standard of prevention in IEL

1 Introduction

The importance of analysing MARPOL Regulation 43A (MR43A) through the principle of prevention was established in Chapters 1 and 2, due to the status of prevention in IEL, as well as MARPOL's main objective being the prevention of vessel-source pollution. However, before an analysis of MR43A can occur a general standard of prevention in IEL needs to be established due to the difficulties in describing prevention. This is achieved through the determination of the content and contours of the principle of prevention. Therefore, this chapter provides an analysis of the principle of prevention in IEL with a view to its application in the analysis of MR43A.

To determine the content and contours of the principle of prevention in a present day IEL context, this chapter traces the origin of the principle and its subsequent evolution. Tracing the evolution is important as, according to Sands and Peel, a proper understanding of modern principles, such as prevention, requires a historical overview of legal developments made in IEL.¹ Although the evolution of the principle of prevention can be traced back through multiple areas of international law, it is argued by multiple sources that the principle originated in IEL from the rule of 'no harm'.² This early understanding of prevention then gained its depth from other areas of international law such as the stronger environmental perspective seen in resource management.³ The discussion on the historical evolution will conclude by setting out prevention's current basic objective; the protection of the environment as opposed to territorial sovereignty - the main objective in previous understandings of the preventative rationale.⁴

¹ Philippe Sands and Jacqueline Peel with Adriana Fabra and Ruth MacKenzie, *Principles of International Environmental Law* (4th edition, Cambridge University Press, 2018) 21.

² Leslie-Anne Duvic-Paoli, *The Prevention Principle in International Environmental Law* (Cambridge University Press 2018) 15-23. Although, there is a deviation in available literature as to whether 'no-harm' is labelled as a principle or rule this author will refer to it as the 'no-harm' rule in the context of IEL, due to the distinction drawn by Sands and Peel regarding the definitions of a rule and principle in Sands and Peel (n 1 above) 199 – 201.

³ Paoli (n 2 above) 15 – 61.

⁴ Paoli (n 2 above) 25-26.

This chapter draws on how the extensive history and the plethora of international instruments in which we see prevention manifest has led to the multifaceted nature of the principle of prevention. This variation in manifestation makes establishing a general standard of prevention a complex task, but not an impossible one. To establish this general standard, this chapter draws on the objective of prevention to extract certain elements that highlight the spirit of prevention in IEL that should be reflected in manifestations of prevention in treaties. This general standard also includes characteristics extracted from the discussion regarding the content of prevention. The content of prevention will discuss interpretations of various scholars, the ILC and selected jurisprudence in order to establish that prevention's content is made up of both substantive and procedural obligations. This substantive side is characterised by due diligence and the procedural side is established to include the duty to cooperate and undertake an EIA amongst other duties.

This chapter thereafter concludes by setting out a general standard of prevention that will be utilised in Chapter 4 as a foundation to test MR43A against to determine the adequacy of MR43A as an international pollution prevention rule.

2 The narrative history of the principle of prevention

2.1 'No harm', no foul: Setting the scene for prevention

Prevention's origin is in the rule of 'no-harm' where the main objective of this rule, according to Paoli, is the avoidance of a "tortious act" that would infringe upon a State's territorial sovereignty.⁵ This main objective can be traced back to the idea that a State should not be allowed to use its territory in a manner that would damage the environment of another State, which, according to Stephens, is a logical extension of a State's sovereignty.⁶

⁵ Sands and Peel (n 1 above) 55-56 and 197; Paoli (n 2 above) 17; *Corfu Channel Case (United Kingdom v Albania)* (Merits) [1949] ICJ Rep 4. According to Paoli this conclusion is seen in the Corfu Channel case where the 'no-harm rule' was "consecrated" in a dispute that did not pertain to the environment. Various authors also highlight that this case is frequently referred to as being the "source of the environmental 'no-harm' rule.

⁶ Tim Stephens, *International Courts and Environmental Protection* (Cambridge University Press 2009) 122.

The practical application of ‘no-harm’, which exemplifies the objective noted by Paoli, is seen in the *Train Smelter* arbitration.⁷ *Train Smelter* concerned a dispute over transboundary atmospheric emissions where the tribunal used ‘no-harm’ to determine if there was a wrongful act, but also used the rule to guide State action going forward to avoid the continuation of the harm in question.⁸ Although pollutants were crossing State borders, which had broader environmental consequences, this issue, and ones like it, reached adjudication platforms more so because of the implications on a State’s sovereignty.⁹ In these types of decisions it is seen that ‘no-harm’, as a component of a very early understanding of prevention, was “envisioned from solely a State-sovereignty perspective”.¹⁰ This statement is supported by the understanding that although ‘no-harm’ protects a State’s environment from the actions of other States, it does not prohibit States from taking full advantage of its sovereignty to the detriment of its own environment.¹¹ Therefore, there is a lack of an environmental focus in ‘no harm’; so when, and how, did prevention gain its environmental focus – the answer lies in resource management.

2.2 The environment and the emergence of prevention

An early consideration of the environmental impact of State action emerged following concerns that arose surrounding resource depletion.¹² Following these concerns, States began taking measures to avoid the extinction of certain species after being “encouraged to act in anticipation of harm in a proactive manner”.¹³ According to Paoli, this approach created “an alternative outlook on the objective of harm avoidance” which focused on natural resources as opposed to territorial sovereignty.¹⁴ However, although this approach had more of an environmental focus than what is seen in ‘no-harm’, it also developed to allow States to continue to exploit their

⁷ *Train Smelter* (United States, Canada) [16 April 1938 and 11 March 1941] 3 Reports of International Arbitral Awards 1905.

⁸ *Train Smelter* (n 7 above) 1911, 1913 -1919; Paoli (n 2 above) 20-21.

⁹ *Train Smelter* (n 7 above) 1911; Stephens (n 6 above) 133-136.

¹⁰ Nicolas de Sadeleer, ‘The principles of prevention and precaution in international law: two heads of the same coin?’ in Malgosia Fitzmaurice (ed) *Research Handbook on International Environmental Law* (Edward Elgar Publishing 2010) 152, 167.

¹¹ Christopher Stone, ‘Defending the Global Commons’ in Philippe Sands (eds) *Greening International Law* (Earthscan Publications 1993) 35, 35.

¹² Paoli (n 2 above) 21.

¹³ Paoli (n 2 above) 22.

¹⁴ Paoli (n 2 above) 21-22.

natural resources.¹⁵ As a result, this alternative outlook still lacked the environmental objective that is seen in IEL today, but nonetheless aided in the evolution of prevention as environmental harm appeared in conversations as a distinct threat separate from issues related to territorial sovereignty.¹⁶ Therefore, although ‘no harm’ developed parallel to issues relating to resource depletion, these two previously distinct frameworks intersect and converge into an early understanding of the principle of prevention in IEL – but how did prevention’s environmental objective develop?

Prevention gained its environmental objective in the late 1900s when a shift occurred which changed the way the environment was considered by international law.¹⁷ The various factors that explain this shift were summarised by Paoli as being: a global rise in environmental risks, growing public awareness regarding the scarcity of natural resources, and the need to protect the environment.¹⁸ A significant milestone that highlighted this shift is seen at the Stockholm Conference. According to Robin Churchill, the protection of the environment, which includes the marine environment, explicitly appeared on the international community’s legal agenda for the first time at the Stockholm Conference.¹⁹ At this conference it was said that a need exists to “take all possible steps to prevent pollution of the seas by substances that are liable to [...] harm marine life”.²⁰ One of the most important outcomes, which had broader implications on IEL, was the inclusion of Principle 21 in the Stockholm Declaration; a principle which took a clear preventative approach.

Principle 21 of the Stockholm Declaration is seen as a combination of three norms which all have varying rationales.²¹ The first norm is the component of Principle 21 that prohibits harm in areas beyond national jurisdiction; viewed as being what led to prevention gaining an

¹⁵ Paoli (n 2 above) 23.

¹⁶ *Ibid.*

¹⁷ Paoli (n 2 above) 27-36; Sands and Peel (n 1 above) 21-41.

¹⁸ Paoli (n 2 above) 29.

¹⁹ Robin Churchill, ‘The LOSC regime doe protection of the marine environment – fit for the twenty-first century?’ in Rosemary Rayfuse (ed), *Research Handbook on International Marine Environmental Law* (Edward Elgar Publishing 2015) 3, 3.

²⁰ Stockholm Declaration on the Human Environment, 16 June 1972, UN Doc A/CONF.48/14/REV.1 principle 7.

²¹ De Sadeleer (n 10 above) 154; Paoli (n 2 above) 27; Principle 21 of the 1972 Stockholm Declaration (n 20 above) states: “States have the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.”

environmental focus as the protection of these areas had minimal implications on the territorial sovereignty of States.²² The other two norms, one being the right of States to exploit their resources and the other being the prohibition against transboundary harm, are two components of this early understanding of the principle of prevention which can be traced back to *Train Smelter*, which is considered one of the main early sources of prevention.²³

Another milestone achieved at the Conference was bringing the term prevention into the mainstream language of IEL.²⁴ Although the risks of pollution and resource degradation had become a cause for concern and encouraged the “crystallisation of the preventative rationale”, as discussed in sub-sections 1 and 2, the term ‘prevention’ was limited until Principle 21 “marked the adoption of the principle of prevention” as a core element of IEL.²⁵ The impact of the Stockholm Conference, and specifically the adoption of Principle 21, is seen in the establishment and implementation of various treaties - such as MARPOL which addresses the prevention of pollution from ships.²⁶

2.3 Prevention’s current objective in IEL

Although the principle of prevention has origins in ‘no harm’, the core rationales of prevention and the ‘no harm’ rule differ drastically and cannot be equated.²⁷ This is because the principal objective of the principle of prevention is environmentally focused, unlike the ‘no harm’ rule.²⁸ While the origins of the principle of prevention were not rooted in a desire to protect the environment, prevention is also “no longer envisioned from solely a State-sovereignty perspective”.²⁹ Instead, the convergence of various lines of thinking contributed to prevention’s present objective, which can be concisely described as the avoidance of harm to the environment, irrespective of its location.³⁰ This conclusion is supported by multiple scholars who interpret prevention’s objective to be the minimisation of environmental damage which

²² Paoli (n 2 above) 48.

²³ Paoli (n 2 above) 20.

²⁴ Paoli (n 2 above) 23-24.

²⁵ Paoli (n 2 above) 26-27.

²⁶ Sands and Peel (n 1 above) 33.

²⁷ Paoli (n 2 above) 17.

²⁸ Paoli (n 2 above) 17; Alexandre Kiss and Dinah Shelton, *Guide to International Environmental Law* (Martinus Nijhoff Publishers 2007) 90-91.

²⁹ De Sadeleer (n 10 above) 167.

³⁰ Paoli (n 2 above) 26.

includes, if warranted, an obligation to prevent transboundary harm.³¹ From these objectives, we see how the main objective of the principle of prevention differs to its predecessors as there is increased concern afforded to environmental harm regardless of its transboundary impact.³²

From this discussion we see certain characteristics that define the principle of prevention emerge: the avoidance of environmental harm, and that this avoidance occurs irrespective of location or transboundary impact. These characteristics therefore are the first addition to the general standard of prevention being established. However, to truly describe prevention and supplement this general standard there needs to be a greater understanding of the content of the principle of prevention as certain questions remain unanswered: how harm is avoided in the context of IEL, when this avoidance should take place, etc. Therefore, although the outlined evolution set a foundation for the principle of prevention, prevention is still not in its most advanced form.³³ Therefore, the content and general standard of prevention being developed needs to be supplemented by more recent and advanced interpretations of the principle of prevention. To fully establish a general standard of prevention this chapter investigates the content of the principle of prevention in IEL.

3 The content of the principle of prevention

Due to the intricacies of determining the content of prevention this dissertation will draw on existing sources of jurisprudence and literature that clarify the content of prevention. As this dissertation is analysing a regulation from MARPOL, a treaty that is a blend of maritime and environmental law, this section will look at jurisprudence from a combined maritime and environmental law perspective, all of which have contributed to the clarification of prevention's content.

There is consensus in the selected jurisprudence that the principle of prevention is characterised by due diligence.³⁴ An advisory opinion issued by the International Tribunal for the Law of the

³¹ Sands and Peel (n 1 above) 212.

³² Paoli (n 2 above) 17.

³³ Paoli (n 2 above) 28.

³⁴ *Case Concerning Pulp Mills on the River Uruguay (Argentina v Uruguay)* (Merits) [2010] ICJ Rep 210; *Request for an Advisory Opinion submitted by the Sub-Regional Fisheries Commission (No 2)* (Advisory Opinion of 2 April 2015) ITLOS Reports 2015, 4.

Sea (ITLOS) supports this conclusion, and in this matter the tribunal clarified the contours of the principle of prevention and discussed the due diligence nature of prevention.³⁵ Although the principle of prevention in this matter was discussed in relation to the obligations of flag States, the tribunal nonetheless referenced various ICJ judgments, such as the *Pulp Mills* case, and in doing so recognised the principle of prevention as a due-diligence obligation.³⁶ Therefore, according to jurisprudence, prevention has origins in and is characterised by due diligence.³⁷ This observation is also supported by the ILC's Draft Articles on the Prevention of Transboundary Harm from Hazardous Activities, as well as authors such as Paoli.³⁸

Another notable observation regarding the content of prevention that has been highlighted in available literature is that prevention has both substantive and procedural obligations.³⁹ The substantive obligations relate to the ultimate objective of prevention, established in section 2 of this chapter, which is the avoidance of environmental harm.⁴⁰ In 2015, the ICJ delivered a judgment on the joined cases of '*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) and clarified the content of this substantive obligation.⁴¹ In a commentary on these combined cases, it was stated that due diligence was labelled as the substantive principle of prevention.⁴² Procedural obligations on the other hand involve the obligations that States are expected to meet to fulfil this objective.⁴³ The impact of these obligations on prevention and its content will be tackled next, in order to extract further factors that add to the general standard of prevention.

³⁵ *Request for an Advisory Opinion submitted by the Sub-Regional Fisheries Commission (No 2)* (Advisory Opinion of 2 April 2015) ITLOS Reports 2015.

³⁶ *Sub Regional Fisheries Commission* (n 35 above) page 39 paras 126, 128, 130, 131 and 132.

³⁷ *Pulp Mills* (n 34 above) para 101.

³⁸ ILC, Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, with commentaries (2001) 11(2) Yearbook of the International Law Commission article 3 para 7; Paoli (n 2 above) 128 and 199.

³⁹ Paoli (n 2 above) 145 and 204.

⁴⁰ Paoli (n 2 above) 204.

⁴¹ *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)* (summary) 2015 <https://www.icj-cij.org/case/150> accessed 10 October 2023.

⁴² Rumiana Yotova, 'The Principles of Due Diligence and Prevention in International Environmental Law' (2016) 75 *Cambridge Law Journal* 445, 447.

⁴³ Paoli (n 2 above) 204.

3.1 Due diligence as a substantive obligation of prevention

Various sources have interpreted that the content of prevention, in a substantive sense, is characterised by due diligence; but to understand how this affects the content of prevention the way due diligence operates in the context of environmental protection needs to be understood first.⁴⁴

Firstly, Paoli outlines that the due-diligence character of prevention emerged in order to balance two competing realities.⁴⁵ The first is that activities that are harmful to the environment are inevitable and often committed by private actors as opposed to the State.⁴⁶ However, it is not feasible to make a State liable for these incidents, nor is it feasible to not control the actions of private actors as this leaves environmental harm unregulated – which contributes to the second reality.⁴⁷ To deal with these competing realities, Paoli noted that due diligence emerged which involves States taking “proactive measures” to avoid incidents of environmental harm committed by public and private actors.⁴⁸ However, this does not mean that due diligence guarantees that no harm will ever occur. To achieve a deeper understanding of what due diligence means this chapter will turn to the ILC’s Draft Articles on the Prevention of Transboundary Harm from Hazardous Activities.⁴⁹

In these Draft Articles the ILC highlighted that due diligence “is not intended to guarantee that significant harm be totally prevented, if it is not possible to do so. In that eventuality, the State of origin is required [...] to exert its best possible efforts to minimise the risk”.⁵⁰ Therefore, it is seen that due diligence does not entail absolute obligations nor does it require a specific result. It instead requires States to “act in proportion to the risks” being addressed.⁵¹ A consequence of this is that due diligence obligations may not be “easily described in precise terms” as the content and concept of these obligations will change depending on time and the

⁴⁴ Paoli (n 2 above) 199-207.

⁴⁵ Paoli (n 2 above) 201.

⁴⁶ *Ibid.*

⁴⁷ *Ibid.*

⁴⁸ *Responsibilities and obligations States sponsoring persons and entities with respect to activities in the Area (No 17) (Advisory Opinion of 1 February 2011)* ITLOS Reports 2011 para 115; *Pulp Mills* (n 34 above) para 197; Paoli (n 2 above) 201.

⁴⁹ ILC’s Draft Articles on Prevention (n 38 above).

⁵⁰ ILC’s Draft Articles on Prevention (n 38 above) art 3 para 7.

⁵¹ De Sadeleer (n 10 above) 165; Paoli (n 2 above) 202.

activity involved.⁵² Therefore, there is an element of variability that is seen in due diligence that will depend on factors such as the nature and magnitude of risk involved.

From the discussion, it is seen that ultimately due diligence requires States to act proactively in proportion to environmental risks, but it is also seen that a core element of due diligence is variability.⁵³ This variability in due diligence offers an explanation as to why we see a variability within manifestations of prevention throughout IEL treaties as well. Therefore, it is seen that due diligence characterises the content of prevention and although a strict or specific result is not expected, States are instead expected to act proportionately and proactively to an environmental risk to give effect to the objective of prevention which is that environmental harm is avoided, or environmental damage minimised.⁵⁴ Therefore, we can extract two key characteristics from this discussion that will supplement the general standard of prevention being established: proactivity and a proportionate response to the risk in question.

However, acting in a proactive and proportionate manner is a vague objective due to the various ways in which this could be achieved. Therefore, this dissertation will move to a discussion surrounding the procedural obligations that States should take as these obligations are reflective of proactive and proportionate action. This discussion will focus on jurisprudence as multiple cases have established how States meet this substantive obligation, and therefore prevention, by setting out the procedural obligations necessary to discharge their preventative obligations. This is important in the determination of the general standard of prevention as it offers insight into how States act proactively and proportionately, despite the variability that characterises due diligence.

⁵² *Sub Regional Fisheries Commission* (n 35 above) page 39 para 132; *Responsibilities and obligations States sponsoring persons and entities with respect to activities in the Area* (n 48 above) para 117; Sands and Peel (n 1 above) 212.

⁵³ *Responsibilities and obligations States sponsoring persons and entities with respect to activities in the Area* (n 48 above) para 117; Paoli (n 2 above) 201.

⁵⁴ *Responsibilities and obligations States sponsoring persons and entities with respect to activities in the Area* (n 48 above) para 117; Paoli (n 2 above) 155.

3.2 Procedural obligations

Due to the variability seen in due diligence and prevention, jurisprudence has clarified the procedural obligations necessary for a State to be considered to discharge their preventative obligations.

The first case relevant to this discussion is the *Pulp Mills* case which concerned a dispute between Uruguay and Argentina regarding the pollution of a shared freshwater river.⁵⁵ In this case, the ICJ ruled that Uruguay did not breach their obligation to prevent pollution because Uruguay had undertaken an EIA and followed international pollution prevention standards.⁵⁶ In addition to clarifying the procedural obligations of States, the court also discussed the content of international pollution prevention standards. *Pulp Mills* highlighted that these standards should reflect the characteristics of the river in question and that these standards “are capable of protecting its waters and its ecosystem”.⁵⁷ The court in *Pulp Mills* states that standards should be adequate and are deemed as such by considering factors like those set out above.⁵⁸

Therefore, we see a clear part of the general standard for international pollution prevention standards and rules arise which links to proportionately – as pollution prevention standards should be capable of protecting the environmental in question and be able to address the risk posed to this environment. In addition to this, the court highlighted that prevention can only be discharged when an EIA and the obligation to cooperate are both met.⁵⁹ Although *the Pulp Mills* case involved a freshwater resource and played an essential role in developing international water law, as opposed to the law of the sea, the case nevertheless gave clarity on the principle of prevention in a broader IEL context.

The procedural obligations of prevention were also addressed in the ‘*Certain activities carried out by Nicaragua in the Border Area*’ (Costa Rica v Nicaragua) and ‘*Construction of a Road*

⁵⁵ *Pulp Mills* (n 34 above).

⁵⁶ *Pulp Mills* (n 34 above) para 210 and 214.

⁵⁷ *Pulp Mills* (n 34 above) para 214.

⁵⁸ *Ibid.*

⁵⁹ *Pulp Mills* (n 34 above) para 102.

in *Costa Rica along the San Juan River*’ (Nicaragua v Costa Rica).⁶⁰ This combined case involved the construction of a canal which had consequences on the environment within Costa Rica’s territory. In the judgment, prevention in IEL was raised in discussion and the obligations resulting from it were key in the ICJ’s judgment of the joined cases.⁶¹ This case elaborated on the various thresholds that trigger various environmental obligations.⁶² These thresholds are assessed on the outcome of a “preliminary assessment” that assesses whether there is a risk of transboundary harm.⁶³ According to the judgement, if this threshold is met the obligation to carry out an EIA is triggered.⁶⁴

The judgment further highlighted that if the EIA confirms this risk, then the duty to notify and consult the “potentially” affected State is triggered.⁶⁵ However, there was disagreement amongst the judges regarding other matters. Some judges in the case interpreted “due diligence as a primary legal obligation” and viewed an EIA and the other duties as possible avenues to fulfil this obligation.⁶⁶ However, Judge Dugard explained that prevention is the “overarching principle and that due diligence is a standard of conduct that flows from it with independent procedural obligations of an EIA, notification and consultation”.⁶⁷ However, these cases reaffirmed that prevention is a duty to exercise due diligence which can be assessed on whether the State in question conducted an EIA.⁶⁸ Therefore, this case addressed the connection between the substantive and procedural aspects of the content of prevention and confirmed that the undertaking of EIA can be reflective of a State acting proactively and thus exercising due diligence. ITLOS came to a similar conclusion as the *Pulp Mills* case regarding the obligation to undertake an EIA when issuing their advisory opinion on *Responsibilities and Obligations*

⁶⁰ *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)* (summary) 2015 <https://www.icj-cij.org/case/150> accessed 10 October 2023.

⁶¹ *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)* (summary) 2015 <https://www.icj-cij.org/case/150> accessed 10 October 2023.

⁶² Yotova (n 42 above) 446; *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)* (Judgment) 2015 <https://www.icj-cij.org/sites/default/files/case-related/152/152-20151216-JUD-01-00-EN.pdf> accessed 9 October 2023 para 168.

⁶³ *Construction of a Road* case (n 62 above) para 154.

⁶⁴ *Construction of a Road* case (n 62 above) para 161-162.

⁶⁵ *Construction of a Road* case (n 62 above) 108 and 168.

⁶⁶ Yotova (n 42 above) 447.

⁶⁷ *Ibid.*

⁶⁸ *Construction of a Road* case (n 62 above) para 104.

of States Sponsoring Persons and Entities with Respect to Activities in the Area.⁶⁹ The tribunal stated that the obligation of prevention is discharged if a State conducts an EIA and adopts “appropriate regulatory measures” and ensures that they are enforced.⁷⁰ Therefore, it can be said that an aspect of the general standard of prevention, which is proactive action, could be met by undertaking an EIA. However, this is not the only way in which States should act to give effect to the due diligence nature of prevention, as jurisprudence has also stated that States are required to cooperate.

An arbitration that emphasised this is the *Chagos Marine Protected Area Arbitration* which was conducted under the aegis of the Permanent Court of Arbitration (PCA).⁷¹ This case challenged a preventative measure which was taken by the UK to fulfil an obligation created by UNCLOS Article 194. This arbitration was not solely focused on prevention, and focused on the ability of the UK to prohibit fishing in an area in which Mauritius claimed it held fishing rights.⁷² However, the arbitration highlighted how a State’s decision can be ruled unlawful if a State negates its duty to cooperate with third party States who could be affected by an initial decision.⁷³ Therefore, although this case does not explicitly refer to the principle of prevention, as pointed out by Paoli, it nonetheless confirmed how important the duty to cooperate is when a State is implementing their duty to take preventative measures.⁷⁴

The importance of the duty to cooperate was also emphasised in matters handled by ITLOS. In the *MOX Plant* case ITLOS looked at the obligation to prevent pollution originating from accidental or intended releases of radioactive material.⁷⁵ The tribunal discussed the importance of procedural obligations when discharging the obligation of prevention. The tribunal also stated that “the duty to cooperate is a fundamental principle in the prevention of pollution of the marine environment under Part XII” of UNCLOS as well as general international law.⁷⁶

⁶⁹ *Responsibilities and obligations States sponsoring persons and entities with respect to activities in the Area* (n 48 above) para 145; *Pulp Mills* (n 34 above) para 197 and 204

⁷⁰ *Responsibilities and obligations States sponsoring persons and entities with respect to activities in the Area* (n 48 above) para 115 and 145; *Pulp Mills* (n 34 above) para 197 and 204; Paoli (n 2 above) 155.

⁷¹ *Chagos Marine Protected Area Case (Mauritius v United Kingdom)* (2015) < <https://pca-cpa.org/en/cases/11/> > accessed 9 October 2023.

⁷² Paoli (n 2 above) 150.

⁷³ *Chagos Marine Protected Area Case* (n 71 above) para 541.

⁷⁴ Paoli (n 2 above) 150.

⁷⁵ *The MOX Plant Case (No 10) (Ireland v United Kingdom)* (Provisional Measures, Order of 3 December 2001) ITLOS Reports 2001, 95.

⁷⁶ *The MOX Plant Case* (n 75 above) para 82.

From this selected jurisprudence, it is seen that following international pollution prevention standards, undertaking an EIA, and the duty to cooperate are essential procedural obligations for a State to be considered as discharging their preventative obligations. It was also established that these international pollution prevention standards should be capable of protecting the environment to which it applies. Therefore, from the discussion of procedural obligations this author can extract more information relevant to the general standard of prevention being established in this chapter. This information is that the pollution prevention standard or rule should be capable of addressing the environmental risk, be proactive and proportionate. To establish whether the pollution prevention rule is proactive and proportional the action of States during the drafting of pollution prevention standards can be analysed to determine if they undertook an impact assessment and cooperated.

From this it is seen that parts of the general standard that can be extracted from the discussion surrounding procedural obligations is that States cooperate, and an impact assessment is completed to figure out what the best way to address a risk to the environment to ensure that the standard or rule is capable of protecting the environment from this risk.

3.3 Conclusion

It is seen by the selected jurisprudence that the ICJ and ITLOS have both recognised the due-diligence nature of prevention as well as clarified that in order to fulfil the obligation of prevention that States have to meet a set of procedural and substantive obligations. These obligations, as recognised by the ICJ, create a set of obligations that States should fulfil in order to discharge the obligation of prevention which includes: cooperation, the fulfilment of an EIA should the circumstances warrant one, and the duty to follow and abide by international pollution prevention standards.⁷⁷ This conclusion is supported by scholars as well as the ILC.⁷⁸

⁷⁷ *Pulp Mills* (n 34 above) para 210 and 214.

⁷⁸ ILC's Draft Articles on Prevention (n 38 above) art 4 and art 7; Sands and Peel (n 1 above) 464; David Dzidzornu, 'Four principles in marine environment protection' A comparative analysis' (1998) 29(2) *Ocean Development and International Law* 91, 97; Patricia Birnie, Alan Boyle and Catherine Redgwell, *International Law and the Environment* (3rd edition, Oxford University Press, 2009).

However, although these are procedural obligations that States should uphold in their day-to-day activities, elements can be taken from this discussion that supplement the general standard of prevention established in this chapter.

4 A general standard of prevention

Although prevention manifests in treaties in different ways and the description of prevention being complex due to the “number and diversity of legal instruments in which it recurs” it is possible to establish a general standard of prevention.⁷⁹ Therefore, it is possible to establish a general standard of prevention despite its multifaceted nature after an analysis of the evolution of the principle of prevention and how the content of prevention has impacted the obligations of States.

From the discussion of the evolution of the principle of prevention two defining characteristics have emerged. Firstly, the objective of prevention, which is rooted in the avoidance of environmental harm, is seen. The rationale to avoid harm, regardless of its transboundary impact, according to Kiss and Shelton, is due to the intercedence of the environment and that it is often impossible to “remedy environmental injury”. Kiss and Shelton further explain that even if “harm is remediable, the costs of rehabilitation are often prohibitive”.⁸⁰ This rationale explains why the principle of prevention requires “action to be taken at an early stage”, and if the circumstances warrant it, before the damage has occurred.⁸¹ Therefore, prevention now seeks to minimise environmental damage, as early as possible, and requires States to not only prevent transboundary harm but damage to the environment whether there are transboundary impacts or not.⁸² Secondly, we see the geographical application of prevention arise from the objective – which is its application to all areas. Therefore, prevention aims to avoid environmental harm irrespective of location, which includes areas beyond a national jurisdiction.

⁷⁹ De Sadeleer (n 10 above) 167; Kiss and Shelton (n 28 above) 91.

⁸⁰ Kiss and Shelton (n 28 above) 91.

⁸¹ Sands and Peel (n 1 above) 212.

⁸² Kiss and Shelton (n 28 above) 91; Sands and Peel (n 1 above) 198 and 212.

This chapter outlined prevention's objective, which is the avoidance of environmental harm regardless of location, before moving to a discussion surrounding the content of prevention which is characterised by due diligence. It was seen that the content of prevention is not focused on specific results but more so on the steps taken by States to avoid environmental harm. In order to avoid environmental harm States must take proactive steps, and therefore this proactivity will form part of the general standard of prevention. The selected jurisprudence clarified how States can act to discharge their preventative obligations which is done is through the undertaking of an EIA, and the duty of cooperation. Although the procedural side of the discussion applies to State action, a few elements were extracted that can supplement the general standard of prevention. First, that cooperation occurs between States during the drafting of international pollution prevention standards and rules, and second, an assessment of impacts is conducted to best determine how to address environmental risks within these standards and rules. This assessment and the integration of its results will enable a standard to adequately protect an environment in light of its unique regional factors.

Therefore, the general standard of prevention must be supplemented by the understanding that the adequacy of a standard or rule will depend on a unique interplay of factors that is specific to the risk involved and environment being protected. Therefore, Chapter 4 will determine the adequacy of MR43A utilising the general standard established in this chapter. In this analysis it must be determined if the unique interplay of factors were paid due consideration by the IMO during the drafting process, how this affected the manifestation of prevention seen in MR43A, and if MR43A is thus deemed adequate.

Chapter 4: The adequacy of MARPOL Regulation 43

1 Introduction

Throughout this dissertation, it has been discussed that the principle of prevention can be described as being multifaceted as there is “no one size fits all” when it comes to the expression or manifestation of the principle of prevention.¹ Kiss even regards prevention as “an overarching aim that gives rise to a multitude of legal mechanisms”.² From this understanding, it can be said that although prevention manifests in various ways, that the objective of prevention as an overarching aim should be reflected in all manifestations of prevention in treaty law due to the status of prevention. In addition to this, as the aim of MARPOL is the prevention of vessel-source pollution, and due to MARPOL Regulation 43A (MR43A) being labelled as a pollution prevention rule, it should be expected that prevention’s general objective and characteristics are reflected in MR43A.³

The objective of prevention was established in Chapter 3 as the avoidance of harm, irrespective of location. Therefore, the first part of the assessment of MR43A against the general standard of prevention is whether MR43A is reflective of this objective. To establish this, this dissertation explores whether environmental harm is avoided through the choice of techniques employed in MR43A and whether MR43A protects the entirety of the Arctic environment. However, manifestations of prevention vary and give rise to various legal mechanisms. Therefore, expressions of prevention in treaty law are context-based as there are various ways to achieve prevention’s objective depending on the aim of the pollution prevention rule in question. Therefore, an important aspect of determining the adequacy of MR43A is that it is reflective of the context that made it necessary – in this case, the unique challenges and risks faced by the Arctic regarding HFO pollution.

¹ Nicolas de Sadeleer, ‘The principles of prevention and precaution in international law: two heads of the same coin?’ in Malgosia Fitzmaurice (ed) *Research Handbook on International Environmental Law* (Edward Elgar Publishing 2010) 152, 183; Philippe Sands and Jacqueline Peel with Adriana Fabra and Ruth MacKenzie, *Principles of International Environmental Law* (4th edition, Cambridge University Press, 2018) 200.

² Alexandre Kiss and Dinah Shelton, *Guide to International Environmental Law* (Martinus Nijhoff Publishers 2007) 91.

³ Refer to Chapter 1 page 12 footnote 3 above for this dissertation’s classification of MR43A as a rule.

To determine the adequacy of MR43A in light of this, this chapter discusses if the drafting process of MR43A considered the unique challenges posed by the Arctic environment and whether the risks posed to the Arctic region by HFO use and carriage were correctly assessed and responded to by MR43A. This discussion is based largely on the drafting history of MR43A and includes a basic overview of risk analysis to determine whether the risks posed by HFO use and carriage were sufficiently addressed in an Arctic context. This discussion therefore assesses the adequacy of MR43A in light of the second part of the general standard of prevention as it determines whether MR43A is proactive and is proportional to the risks posed by HFO in Arctic waters.

To finalise the discussion regarding the adequacy of MR43A, this chapter will explore whether the environmental protection that is deemed necessary in light of a risk analysis can be diluted due to the balancing of other interests. In this determination, this chapter draws on the impact assessments submitted to the IMO by States which outline how they, alongside Arctic communities, are affected by the techniques employed in MR43A from an environmental, economic, and social perspective. This chapter thereafter concludes by determining the adequacy of MR43A in light of its assessment against the general standard of prevention throughout this chapter.

2 An analysis of MR43A using the objective of prevention

Chapter 3 established that the current objective of the principle of prevention is the avoidance of environmental harm, irrespective of its location.⁴ Although prevention manifests in various ways in IEL treaties, which gives rise to various legal mechanisms, prevention is still the overarching aim and all manifestations of prevention, including pollution prevention standards and rules, should give effect to the spirit and objective of the principle of prevention.⁵ Therefore, the objective of prevention makes up the first part of the general standard used to determine the adequacy of MR43A.

⁴ Leslie-Anne Duvic-Paoli, *The Prevention Principle in International Environmental Law* (Cambridge University Press 2018) 26.

⁵ Kiss and Shelton (n 2 above) 91.

2.1 Avoidance of environmental harm

The first aspect of the general standard of prevention is that international pollution prevention rules should give effect to the first part of prevention's objective – the avoidance of environmental harm.

The risks posed by the use and carriage of HFO in Arctic waters are not disputed and are why States and other parties proposed various measures to address these risks.⁶ As this section determines if MR43A gives effect to the objective of prevention, the question of determining if HFO use and carriage poses a risk of environmental harm that should be avoided in Arctic waters is not addressed as it has already been established by the parties to the negotiation of MR43A and this dissertation. Instead, this section determines whether the techniques employed in MR43A are capable of avoiding environmental harm. Techniques for the purposes of this dissertation mean practical measures that are incorporated into pollution prevention rules to give effect to a certain goal related to pollution prevention.

As previously discussed in Chapter 3, environmental harm can be avoided in two ways: first, by avoiding an incident that could cause environmental harm, and second, through the minimisation of environmental damage should an incident occur.⁷ This is seen in the discussion of prevention's content and due diligence as defined by the ILC.⁸ The implementation of techniques that are capable of achieving either of these goals should be seen in MR43A as this contributed to the first part of the general standard that determines adequacy. Some of these techniques, as noted by Paoli, are the implementation of emissions standards, the prohibition of specific substances or activities and pollution control methods.⁹ The complete prohibition of a substance is a technique capable of avoiding environmental harm as it significantly reduces the chance of an incident by theoretically removing the pollutant from the environment in

⁶ IMO MEPC, 'Proposal to ban heavy fuel oil use and carriage as fuel by ships in Arctic waters, submitted by CSC, FOEI, Greenpeace, Pacific Environment and WWF' (16 February 2018) MEPC 72/11/5; IMO 72/11(n 14 above); IMO MEPC, 'Proposal to ban heavy fuel oil use and carriage as fuel by ships in Arctic waters, submitted by Finland, Germany, Iceland, the Netherlands, New Zealand, Norway, Sweden and the United States' (2 February 2018) MEPC 72/11/1; IMO MEPC, 'Proposal for possible measures to reduce risks of use and carriage of HFO as fuel by ships in Arctic waters, submitted by the Russian Federation' (2 February 2018) MEPC 72/11.

⁷ Sands and Peel (n 1 above) 212.

⁸ ILC, Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, with commentaries (2001) 11(2) Yearbook of the International Law Commission art 3 para 7.

⁹ Paoli (n 4 above) 65.

question. Bodansky expands on this list of techniques, highlighting that in the case of vessel-source pollution improving or imposing construction, design, equipment, and manning (CDEM) standards is a general type of vessel-source pollution standard.¹⁰ CDEM standards are capable of preventing pollution as they reduce the likelihood of a maritime accident.¹¹ The effect of implementing or improving CDEM standards is twofold as CDEM standards can also minimise the consequences of an accident that results in pollution, as construction and design improvements can “contain the dispersal of pollutants in the event a structure fails”.¹²

This dissertation has identified and discussed the impact and meaning of two preventative techniques in MR43A. First, the prohibition of HFO use and carriage in Arctic waters from 2024 unless regulation 12A of MARPOL Annex 1 or regulation 1.2.1 of chapter 1 of part II-A of the Polar Code applies to vessels.¹³ In the case that either of these apply to a vessel, we see the presence of the second preventative technique which are CDEM standards. These are CDEM standards as both regulations set out certain construction and design requirements that determine the protective placement of a vessel’s fuel tank and therefore the vessel in question is only prohibited from using and carrying HFO in Arctic waters after 1 July 2029.

MR43A employs the complete prohibition of the use and carriage of HFO as a substance, as well as CDEM standards as preventative techniques, and therefore has employed two techniques known to be capable of avoiding environmental harm. As a result, MR43A is reflective of the first part of prevention’s objective. However, to determine if MR43A meets the general standard of prevention, this dissertation must also explore the second component of prevention’s objective.

2.2 It is (not) all about location

The second component of prevention’s objective is that environmental harm is avoided irrespective of location. From the discussion on the evolution of the principle of prevention, it

¹⁰ Daniel Bodansky, ‘Protecting the Marine Environment from Vessel-Source Pollution: UNCLOS III and Beyond’ (1991) 18(4) *Ecology Law Quarterly* 729.

¹¹ Bodansky (n 10 above) 730.

¹² *Ibid.*

¹³ International Convention for the Prevention of Pollution from Ships (2 November 1973) 1340 UNTS 184 as amended by the Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships (17 February 1978, entered into force 2 October 1983) 1340 UNTS 61 reg 43A sub-para 1 and 2.

was seen that the environmental objective we see in present day understandings of prevention can partly be attributed to how prevention aims to avoid environmental harm in all areas, including those beyond a national jurisdiction. Therefore, the presence of this element is essential to the adequacy of a pollution prevention rule.

MR43A aims to protect, and applies to, Arctic waters which are defined in the Polar Code.¹⁴ The definition of Arctic waters includes all maritime zones, including the high seas, within this defined area.¹⁵ Therefore, this regulation protects Arctic areas that are beyond the national jurisdiction of Arctic States. In fact, due to the drafting of MR43A, the high seas are subject to the strongest form of environmental protection that we see in MR43A during the five-year adjustment period, as no State can issue waivers to vessels operating within this maritime zone during this five-year period.¹⁶ Therefore, due to the techniques employed in MR43A, it is seen that MR43A protects all maritime zones which include areas beyond a national jurisdiction, but also the sovereign marine territory of Arctic states within Arctic waters.¹⁷ Therefore, we see that MR43A applies to and protects the entirety of Arctic waters and therefore applies regardless of maritime zone and thus irrespective of location.¹⁸

However, there is a potential spanner in the works when the objective of prevention is considered during an analysis of the right coastal States who border Arctic waters gain to issue waivers.¹⁹ This waiver, if granted, allows for vessels to operate and continue utilising and carrying HFO without being required to follow the CDEM standards until 1 July 2029. This could affect the adequacy of MR43A because it potentially leaves a large area of Arctic waters unprotected by the preventative techniques identified above. This is especially troublesome when it is estimated that the majority of the fleet that utilises and carries HFO in Arctic waters

¹⁴ Refer to Chapter 1 page 6 footnote 1.

¹⁵ International Code for Ships Operating in Polar Waters (entered into force 1 January 2017) <<https://www.imo.org/en/ourwork/safety/pages/polar-code.aspx#:~:text=The%20Polar%20Code%20covers%20the,waters%20surrounding%20the%20two%20poles>> accessed 9 October 2023.

¹⁶ MARPOL (n 13 above) reg 43A sub-para 4.

¹⁷ *Request for an Advisory Opinion submitted by the Sub-Regional Fisheries Commission (No 2)* (Advisory Opinion of 2 April 2015) ITLOS Reports 2015, 4 para 120. The obligation to protect and preserve the marine environment under UNCLOS has been interpreted to apply to all maritime zones. Therefore, when preventative techniques are taken to protect and preserve the Arctic marine environment, we should expect that they find application to all maritime zones within this defined area.

¹⁸ Paoli (n 4 above) 234.

¹⁹ MARPOL (n 13 above) reg 43A sub-para 4.

flies the flag of the five coastal States eligible to issue this waiver.²⁰ Therefore, it could be argued that due to the inclusion of this right to issue waivers for a period of five years the adequacy of MR43A is thus called into question. However, this will be addressed in section 4 of this chapter to allow for a deeper analysis of this waiver.

The concerns regarding the five-year adjustment period aside, it is seen that based on this discussion prevention's objective is reflected in MR43A. In light of this, this dissertation will move to the next portion of the general standard of prevention which will determine if the techniques employed in MR43A are appropriate in light of the situation that MR43A aims to address. This includes if MARPOL's aim is reflected in MR43A and if the techniques consider the environment and region to which MR43A finds application to. This is all in the aim evaluating if MR43A acts proactively and proportionally to the risk posed by HFO use and carriage to the Arctic environment. This dissertation refers to this part of the analysis of MR43A as the subjective analysis of the adequacy of MR43A.

3 A subjective analysis of the adequacy of MR43A

Section 2 of this chapter established that MR43A gives effect to the objective and spirit of prevention. However, the general standard of prevention is more complex than this as MR43A should not only be reflective of the spirit of prevention but should be capable of protecting the Arctic region in light of its unique environmental characteristics and challenges.

This part of the general standard was supported by the discussion surrounding the content of prevention. In this discussion, the procedural obligations of prevention identified by the ICJ and ITLOS were laid out where it was seen that the *Pulp Mills* case gave some insight on the meaning of adequacy when it comes to pollution prevention standards. The ICJ in this case stated that for a standard to be considered adequate it should reflect the characteristics of the environment in question and be capable of protecting the environment in light of these

²⁰ Bryan Comer, Liusmila Osipova, Elise Georgeff and Xiaoli Mao, 'The International Maritime Organization's proposed Arctic heavy fuel oil ban: Likely impacts and opportunities for improvement' (2020) International Council on Clean Transportation.

characteristics.²¹ This determination of this aspect of the general standard involves setting out the factors that should have been considered during the drafting of MR43A, discussing to what extent these considerations played a role in the design of MR43A, and thus if MR43A is adequate in light of this discussion.²²

3.1 The reflection of MARPOL's aim in MR43A

The aim of MARPOL has been concisely described as the prevention of vessel-source marine pollution. This aim is narrowed down for the purpose of this discussion by MARPOL's preamble, which states that MARPOL aims to minimise accidental discharges of oil into the marine environment. Therefore, the risk that MR43A aims to address is accidental discharges of HFO in Arctic waters in order to protect the Arctic marine environment from oil pollution.²³

As discussed in section 2 of this chapter, there are multiple techniques capable of preventing or minimising an accidental HFO spill. This author has categorised these techniques, for the purposes of this dissertation, into two groups. First, techniques that reduce the chances of an HFO spill occurring. The prohibition of the use of HFO and the implementation of CDEM standards that regulate the design and placement of the oil fuel tank are both examples of this.²⁴ Second, techniques that minimise the amount of oil, such as HFO, from entering the environment should an accidental spill occur. An example of this technique is again CDEM standards.²⁵ As stated above, both of these techniques are integrated into MR43A, but the question in this section is whether these techniques are appropriate and capable of adequately protecting the Arctic marine environment - which has been labelled as fragile and at risk of severe environmental damage should an HFO spill occur in Arctic waters.

To determine if MR43A addresses the risk outlined above and gives effect to the aim of MARPOL this section draws on the portion of the general standard of prevention established

²¹ *Case Concerning Pulp Mills on the River Uruguay (Argentina v Uruguay)* (Merits) [2010] ICJ Rep 210 para 214.

²² Paoli (n 4 above) 65.

²³ Any discharge of oil into Arctic waters is prohibited by the Polar Code (n 15 above) Part IIA: Chapter 1 section 1.1.1. Therefore, the focus of this discussion is on accidental oil spills, as the elimination of accidental oil spills is unlikely.

²⁴ MARPOL (n 13 above) reg 43A sub-para 1 and 2.

²⁵ Bodansky (n 10 above) 730.

during the discussion surrounding the content of prevention. The relevant extraction from this discussion is that for MR43A to be adequate it must regulate HFO in Arctic waters in a way that is proportionate to the risk posed by the use and carriage of HFO, and this regulation must be proactive in nature. This is because prevention requires that “States exercise proactivity in the face of risks” due to the due diligence nature of prevention.²⁶

3.2 Proactivity

A proactive approach to environmental concerns, at least regarding prevention, can be described as taking action once a potential concern has been discovered, where the potential effects of this concern are well-known, and there is no suitable regulation in place that adequately addresses this risk.²⁷ Therefore, what is considered to be a proactive approach to environmental risk will vary depending on the identified concern and necessary regulation.²⁸ Therefore, we see that like in the discussion surrounding due diligence, that the meaning of proactivity will vary based on the circumstance. Therefore, the determination of proactivity in this context will be more subjective.

As discussed throughout Chapter 1 and 2, the threat of oil pollution to the Arctic environment has been identified and described as a significant threat to the Arctic since the 1990s. However, HFO poses a greater threat to the Arctic and was described as such in front of the IMO around 2016. Shortly after this it was pointed out that the risk posed by the use and carriage of HFO is also problematic because no adequate industry standard existed to address this issue.²⁹ Following this, States noted that they should work proactively to address this risk before the occurrence of an incident as this would “achieve the IMO’s objective to reduce and eliminate adverse impacts from shipping on the environment”.³⁰

²⁶ Paoli (n 4 above) 22 and 87.

²⁷ De Sadeleer (n 1 above); Subhas Sikdar, ‘Environmental protection: reactive and proactive approaches’ (2019) 21 *Clean Technologies and Environmental Policy*, 1-2.

²⁸ An example of this variation can be seen in the IMO phasing out single hull oil tankers following numerous incidents of oil pollution. In this case, we see that a proactive approach can be responding to multiple incidents of pollution once a threat has been identified. Another case is the introduction of MARPOL Regulation 43 which prohibits the use and carriage of HFO in Antarctic waters. In this case, no string of major incidents occurred that prompted the IMO to address the risk, instead the IMO recognised the threat that HFO pollution posed to the Antarctic.

²⁹ IMO MEPC, ‘Measures to reduce risks of use and carriage of heavy fuel oil as fuel by ships in Arctic waters, submitted by Canada, Finland, Germany, Iceland, Netherlands, Norway and the United States’ (31 March 2017) MEPC 71/14/4 page 4 para 16.

³⁰ IMO 71/14/4 (n 29 above) page 5 para 19.

Since the 1990s, the risks posed to the Arctic have increased due to the increase in maritime traffic and HFO use in the region. This risk is further amplified by the difficulties of the clean-up of an HFO spill in Arctic waters. Therefore, although HFO pollution has been a cause for concern for decades, it previously did not warrant immediate regulation as it was not considered by States to be a significant threat until recently. Therefore, the prohibition against HFO use and carriage in Arctic waters can be seen as coming into effect at the appropriate time as it has, at least at this stage, come into effect before the occurrence of a significant pollution incident in Arctic waters. As a result, this ban could be described as proactive, however adequacy also requires action that is proportional to the risk in question. Therefore, this discussion will turn to a more in-depth discussion of risk to assist in establishing MR43A's adequacy against the general standard of prevention.

3.3 Risk and proportionality

MR43A aims to address the risk of an accidental HFO spill in Arctic waters. Therefore, to determine the magnitude of this risk this section will employ the factors considered during an oil spill risk analysis. Oil spill risk analysis involves a study of all applicable factors that “affect risk in terms of probability and consequences” and is labelled the best way to determine what prevention measures will be most effective.³¹ In addition to this, as oil spills have varied environmental consequences based on the unique circumstances of each incident, it is necessary to consider the type of oil, the volume of oil that could be spilt, the type of vessel, the season during which a spill occurs, and the impact of a potential spill on Arctic waters.³²

For MR43A to adequately address the risks posed by HFO to Arctic waters, the most effective way to determine and respond to this risk would therefore be the consideration of these factors during the drafting of the regulation. The occurrence of these considerations can be determined if the parties to the negotiations submitted proposals that took these factors into account when proposing suitable measures to address this risk.

³¹ Dagmar Etkin, ‘Risk Analysis and Prevention’ in Merv Fingas (eds), *Handbook of Oil Spill Science and Technology* (John Wiley & Sons Incorporated, 2015) 2.

³² Etkin (n 31 above) 2.

3.3.1 The consideration of risk during the drafting of MARPOL Regulation 43A

In a document submitted by various environmental organisations it is seen that some of the characteristic factors listed above were considered and brought to the attention of other parties to the negotiation.³³ This is because these groups discussed the number of vessels operating in Arctic waters, how many of these vessels utilise HFO, and the increasing amount of maritime activity in the Arctic region.³⁴ However, environmental groups were not the only parties contributing to this discussion.

Russia also acknowledged the importance of estimating the level of risk posed by HFO and taking adequate and effective measures to mitigate the risks.³⁵ In addition to this, various other States proposed that certain elements be considered when developing measures that would reduce the risk of HFO use and carriage in Arctic waters in 2017.³⁶ These elements included the type and size of ships operating in Arctic waters, the duration of Arctic voyages, the proximity of pollution response resources amongst other elements.³⁷ The possible measures to address this risk that considered these elements included CDEM standards, and restricting or phasing out types of fuels in Arctic waters.³⁸ By considering various methods to address the risks posed by HFO it shows that these States and groups considered multiple factors relevant to risk analysis – and the parties involved in the negotiations noted the importance of considering factors like the particulars of the Arctic region.

Therefore, the drafting history of MR43A clearly shows that the parties to the negotiation of MR43A considered the risks posed by HFO use and carriage while taking into consideration the features of the Arctic region that increase this risk. However, questions arise as to whether this risk analysis conducted was adequate.

³³ IMO MEPC, ‘Heavy fuel oil use by vessels in Arctic waters, submitted by FOEI, WWF, Pacific Environment and CSC’ (12 February 2016) MEPC 69/20/1 page 2 para 2, 3, 4 and 7.

³⁴ IMO 69/20/1 (n 33 above) page 3 and 4 paras 8-13.

³⁵ IMO 72/11 (n 6 above) page 4 para 16.

³⁶ IMO 71/14/4 (n 29 above) page 4 para 12.

³⁷ *Ibid.*

³⁸ *Ibid.*

3.3.2 An adequate risk analysis

The prohibition of the use and carriage of HFO was proposed and considered in order to protect the Arctic, a fragile environment, from the risks posed by an HFO spill. In Chapters 1 and 2 it was highlighted how any incident of HFO spillage could have devastating and long-standing effects on the Arctic environment as unlike other environments, which can tolerate certain levels of pollutants, this region has been explicitly stated to be unable to cope with this threat.

This is worrisome as the complete elimination of oil spill impacts has been labelled as a “near impossibility” due to the behaviour of oil and the challenges faced during spill response.³⁹ However, this is an even bigger issue in the Arctic as oil behaves differently in “ice-infested waters”, which makes clean-up even more complicated, especially as there is still a lot to learn about how to manage spills in polar regions.⁴⁰ Arctic environments therefore face challenges when it comes to oil spill mitigation.⁴¹ Therefore, the consideration of these factors are important as rules should take into account the environment being protected as well as the intricacies involved in its protection in order to be considered as adequate.⁴² Therefore, due to high risk posed by HFO in the Arctic the prevention of a pollution incident, as opposed to the minimisation of the effects of an incident, should be the preferred choice”.⁴³ Based on this, this author would argue that the most appropriate technique in this specific instance is the complete prohibition of HFO use and carriage in Arctic waters. All of the factors discussed in this section were a consideration in the drafting process of MR43A, and due to the potential impact of an incident on the Arctic environment being so high, the prohibition of HFO was deemed the

³⁹ Etkin (n 31 above) 2.

⁴⁰ DM Filler and others, ‘Arctic and Antarctic spills’ in Merv Fingas (eds), *Handbook of Oil Spill Science and Technology* (John Wiley & Sons Incorporated 2015) 497, 499. Read on oil behaviour in ice-infested waters in Merv Fingas and Bruce Hollebone ‘Oil behaviour in ice-infested waters’ in Merv Fingas (eds), *Handbook of Oil Spill Science and Technology* (John Wiley & Sons Incorporated, 2015) 271.

⁴¹ Filler (n 40 above) 499.

⁴² In the *Pulp Mills* case para 214 the court stated that neither party in the case argued that the water quality standards did not “adequately” take into consideration certain characteristics of the river and the “capacity of [the river’s] waters to disperse and dilute different types of discharged”. The ICJ further stated that if inadequacy is detected during this evaluation that the parties should review the standards and “ensure that such standards clearly reflect the characteristics of the river and are capable of protecting its waters and its ecosystem.”

⁴³ Filler (n 41 above) 510.

correct choice following the analysis of this risk. Due to this conclusion, this author therefore argues that this part of MR43A is therefore adequate in light of these considerations.

However, the five-year adjustment period casts doubt on the adequacy of MR43A as a whole.⁴⁴ This is because an argument could be made that if the risks were considered serious enough to effectively prohibit the use of HFO in Arctic waters, that this adjustment period cannot be justified considering the potential environmental impact of HFO during this five-year adjustment period. However, before this determination can be made the reasoning behind the inclusion of the five-year adjustment period must be established from the drafting history which will be utilised to provide insight on this matter in order to evaluate its effect on the adequacy of MR43A.

3.4 The adjustment period

The reasoning behind the inclusion of the five-year adjustment period is vast and can be found throughout the documents submitted to the IMO during the negotiation phase of MR43A.

A prominent consideration throughout the documentation submitted was the recognition of the IMO's global sulphur cap that would be implemented in 2020. As a result of this cap, it was anticipated that vessels would utilise HFO as fuel in Arctic waters to ensure that they comply with the IMO's global sulphur cap.⁴⁵ To provide the international community with flexibility following this cap, various proposing States suggested that the implementation of the prohibition should be delayed for vessels with fuel tank protection.⁴⁶ However, environmental groups proposed an alternative to the delay that would assist States in adjusting to this cap while also not utilising HFO. To avoid the use of HFO after the implementation of this cap various environmental groups proposed alternative fuels that could be used in Arctic waters instead of HFO.⁴⁷ However, it was noted that this would have an economic impact on Arctic communities as the alternative fuels would cause an increase in fleet-wide fuel costs.⁴⁸

⁴⁴ MARPOL (n 13 above) reg 43A sub-para 2 and 4.

⁴⁵ IMO 71/14/4 (n 29 above) page 4 para 13.

⁴⁶ IMO 72/11/1 (n 14 above) page 2 para 5.

⁴⁷ IMO MEPC, 'Alternatives to heavy fuel oil use in the Arctic: Economic and environmental tradeoffs, submitted by CSC, FOEI, Pacific Environment and WWF' (28 April 2017) MEPC 71/INF.36 page 2 paras 3-5.

⁴⁸ IMO 71/INF.36 (n 47 above) page 2 para 3-5.

Therefore, the economic impacts of switching to an alternative fuel were also a consideration that led to this adjustment period as the adjustment period would allow Arctic communities and industries time to adjust to these changes. This was also the reasoning behind MR43A taking effect in 2024 as Canada explained that the implementation date should not be earlier than 2024 as an earlier date would not provide Arctic states with sufficient time to mitigate any negative impacts on Arctic communities and economies.⁴⁹ However, despite these economic concerns environmental groups argued that even if the switch to alternative fuels is costly, this switch would still be cheaper than cleaning up an HFO spill.⁵⁰

In addition to this, environmental groups also expressed concerns regarding the delayed implementation of the prohibition as they were of the opinion that it “may not sufficiently reduce the risks of use and carriage of HFO in Arctic waters” and that the delays and exemptions would “prolong the threat of an HFO spill in the Arctic”.⁵¹ Due to these delays and exemptions the environmental groups also argued that because the Arctic supports indigenous and coastal communities that are “dependent on marine resources for sustenance, livelihoods and culture”, the prolonged threat would have negative implications on Arctic communities as well.⁵²

However, although these environmental concerns were valid the economic and social impacts of the prohibition could not be ignored. To give consideration to all these competing interests fully various States submitted assessments of how they would be impacted by the regulation of HFO in Arctic waters. These assessments included how individual States believe these impacts should be assessed and balanced against each other in order to propose appropriate

⁴⁹ IMO PPR, ‘Canada’s considerations and position on the ban on the use and carriage of heavy fuel oil by ships operating in the Arctic at PPR 7’ (17 to 21 February 2020) PPR 7/J/6.

⁵⁰ IMO 71/INF.36 (n 47 above) page 2 para 4.

⁵¹ IMO 72/11/5 (n 6 above) page 2 para 5; IMO 7/14/6 (n 14 above) page 2 para 4; IMO 71/INF.36 (n 47 above) page 2 para 5.

⁵² IMO 72/11/5 (n 6 above) page 2 para 3.

measures to address the risk posed by HFO.⁵³ These impact assessments were drafted by viewing a variety of impacts: environmental, economic, and social.⁵⁴

From the discussion on the risk analysis of HFO use and carriage in Arctic waters as well as how this risk was considered during the drafting phase of MR43A it was seen that a variety of impacts were considered. These impacts were submitted by all affected States and due to this it is seen that the drafting of MR43A is reflective of States cooperating through the submission and balancing of impact assessments. However, due to these impact assessments and the feedback from States it is clear that the design of MR43A was influenced by environmental, economic and social factors. This balance of interests is therefore the reasoning for the

⁵³ IMO MEPC, 'Report of the informal Correspondence Group on the determination of an appropriate impact assessment methodology, submitted by Canada and the Russian Federation' (17 August 2018) MEPC 73/9; IMO MEPC, Proposed methodology to analyse effects to Arctic communities and industries of a ban on heavy fuel oil use and carriage as fuel by ships in Arctic waters, submitted by the United States' (17 August 2018) MEPC 73/9/1; IMO MEPC, 'Comments submitted to the informal correspondence group on the determination of an appropriate impact assessment methodology, submitted by Canada and the Russian Federation' (17 August 2018) MEPC 73/INF.19; IMO MEPC, 'Comments on document MEPC 73/9 on "Report of the informal correspondence group on the determination of an appropriate impact assessment methodology, submitted by Finland' (17 August 2018) MEPC 73/9/2; IMO PPR, 'Impact assessment of a ban on the use and carriage of heavy fuel oil as fuel by ships operating in the Arctic, submitted by FOEI, Greenpeace, WWF, Pacific Environment and Clean Shipping Coalition' (16 November 2018) PPR 6/12; IMO PPR, 'Time frame for completion of the output and consideration of the assessment of impacts for the Arctic littoral States, submitted by the Russian Federation' (14 December 2018) PPR 6/12/2; IMO PPR, 'Considerations of the impacts on Canadian Arctic communities from a ban of heavy fuel oil use, submitted by Canada' (14 December 2018) PPR 6/12/4; IMO PPR, 'Combined methodology to analyse impacts of a ban on heavy fuel oil use and carriage as fuel by ships in Arctic waters, submitted by Finland, France, Germany, Iceland, Netherlands, Norway, Sweden, Spain and United States' (14 December 2018) PPR 6/12/3; IMO PPR, 'Phasing out the use and carriage for use of heavy fuel oil in the Canadian Arctic: impacts to northern communities, submitted by WWF' (14 December 2018) PPR 6/INF.8; IMO PPR, 'An overview of Canada's Arctic and the role of maritime shipping in Arctic communities, submitted by Canada' (14 December 2018) PPR 6/INF.24; IMO PPR, 'Impact assessment on a ban on heavy fuel oil use in Greenland, submitted by Denmark' (14 December 2018) PPR6/INF.21; IMO PPR, 'Residuals bunker fuel ban in the IMO Arctic waters – an assessment of costs and benefits, submitted by FOEI, WWF, Pacific Environment and Clean Shipping Coalition' (14 December 2018) PPR 6/INF.25; IMO PPR, 'Comments on document PPR 6/12/3, submitted by the Russian Federation' (28 December 2018) PPR 6/12/5; IMO PPR, 'Arctic Indigenous Support for the Ban of Heavy Fuel Oil in the Arctic, submitted by FOEI, WWF and Pacific Environment' (12 December 2019) PPR 7/14/1; IMO PPR, 'Results of the impact assessment carried out by the Russian Federation and proposed factors, submitted by the Russian Federation' (13 December 2019) PPR 7/14/2; IMO PPR, 'Impact assessment for a ban on heavy fuel oil use and carriage as fuel by ships in the United States Arctic, submitted by the United States' (19 December 2019) PPR 7/14/3; IMO PPR, 'Impact assessment for a ban on heavy fuel oil use and carriage as fuel by ships in the Norwegian Arctic waters, submitted by Norway' (13 December 2019) PPR 7/INF.14; IMO PPR, 'Assessment of the benefits and impacts associated with a ban on the use and carriage of heavy fuel oil as fuel by ships operating in the Arctic, submitted by Canada' (13 December 2019) PPR 7/INF.16; IMO PPR, 'Impact assessment on a ban on heavy fuel oil use in Greenland, submitted by Denmark' (6 January 2020) PPR 7/INF.11; IMO PPR, 'Impacts of a heavy fuel oil ban on shipping costs for Canadian Arctic mining operations, submitted by FOEI, WWF, Pacific Environment and CSC' (13 December 2019) PPR 7/INF.24; IMO PPR, 'Impact Assessment Report, submitted by the Russian Federation' (13 December 2019) PPR 7/INF.13.

⁵⁴ IMO PPR, 'Considerations of the impacts on Canadian Arctic communities from a ban of heavy fuel oil use, submitted by Canada' (14 December 2018) PPR 6/12/4; IMO PPR, 'An overview of Canada's Arctic and the role of maritime shipping in Arctic communities, submitted by Canada' (14 December 2018) PPR 6/INF.24.

adjustment period seen in MR43A. However, it has been established that prevention is a principle with an environmental focus – so one may wonder if this balance of interests seen in MR43A affects its adequacy as a pollution prevention rule.

3.5 A balance of interests

The reasoning behind the five-year adjustment period seen in MR43A came down to numerous social and economic factors that were submitted to the IMO through multiple impact assessments. Therefore, it is seen that MR43A was drafted by balancing environmental, economic, and social factors. However due to prevention's objective being environmentally focused this raises questions as to whether a balance of a variety of interests is in the spirit of prevention and how this balance of interests could impact the adequacy of MR43A,

This dissertation has established that prevention is multifaceted and thus manifests in a variety of ways. After a general overview of MARPOL and UNCLOS, this author can say that prevention manifests or is expressed in various ways due to the interplay of multiple factors which require a unique result that reflected in IEL treaties. These factors include: the environment that is to be protected, how susceptible the environment is to human activity, the risks posed to the environment by human activity and the impact of these risks on the environment in question.⁵⁵ Paoli supports this conclusion and highlights that the timing of the preventative action and the “spatial applicability of the norm and the balance States wish to achieve between preserving their sovereign rights and acting for the common good” are also factors that will affect expressions of prevention in treaties.⁵⁶

Therefore, the balancing of interests is not disallowed under the principle of prevention - in fact, it is necessary. If a pollution prevention rule is dubbed as inadequate based on it considering a variety of interests, this would mean that prevention is solely environmentally focused. However, this is not the case. In fact, manifestations of prevention, especially in maritime law, are a blend of interests. This blend of navigational, economic, and environmental interests is seen throughout UNCLOS and MARPOL. Therefore, we expect a balance of these interests to affect manifestation of preventions in IEL, as prevention cannot exist in an

⁵⁵ Paoli (n 4 above) 65-67.

⁵⁶ Paoli (n 4 above) 66.

environmental vacuum. If it did no human activity that poses a threat could occur, which is unrealistic. Therefore, if the dilution of prevention through other interests is fair, proportionate and serves a purpose – MR43A can still be adequate as a pollution prevention rule. As MR43A’s adjustment period allows for the use and carriage of HFO for a period of five years as long as certain construction requirements are met which has been established as being an effective preventative technique capable of avoiding environmental harm – MR43A is thus a balance of economic, social and environmental factors.

From this section, it has been established that MR43A’s complete prohibition of HFO use and carriage in Arctic waters as is adequate. It also established that the five-year adjustment period where certain vessels are allowed to continue using and carrying HFO is also adequate. The reasoning behind this conclusion was that although a balance of interests was observed it also ensures a level of environmental protection as vessels are required to abide by CDEM standards should they wish to continue using HFO in Arctic waters. However, it is still unclear if the five-year adjustment period in which coastal States can issue waivers affects MR43A’s adequacy when evaluated using the general standard of prevention. Therefore, the next section discusses the impact of the right to issue waivers on the adequacy of MR43A.

4 The adequacy of MR43A in light of the right to issue waivers

The right of coastal States that border Arctic waters to issue waivers under MR43A is the most controversial aspect of MR43A and has led to MR43A being criticised for its “lack of environmental protection”.⁵⁷ The reasoning behind the inclusion of this right to issue waivers can be attributed to the fact that coastal Arctic States will be significantly affected by the

⁵⁷ Bryan Comer, ‘IMO’s draft HFO “ban” is nothing of the sort’ (27 February 2020) <https://theicct.org/imos-draft-hfo-ban-is-nothing-of-the-sort/> accessed 5 June 2022; M Humpert, ‘IMO and Arctic States Face Criticism Over Weak HFO Ban’ (23 November 2020) High North News <https://www.highnorthnews.com/en/imo-and-arctic-states-face-criticism-over-weak-hfo-ban>; Anna Barford and James Gamble, ‘Ban on heavy fuel oil in the Arctic is too weak’ (13 April 2021) Policy Options Politiques <https://policyoptions.irpp.org/magazines/april-2021/ban-on-heavy-fuel-oil-in-the-arctic-is-too-weak/#:~:text=A%20decade%20after%20the%20Arctic,the%20IMO%20in%20June%202020> accessed 9 October 2023; Unknown, ‘NGOs urge IMO to rethink weak HFO ban, demand stronger Arctic protection’ (16 November 2020) Seas at Risk <https://seas-at-risk.org/press-releases/ngos-urge-imo-to-rethink-weak-hfo-ban-demand-stronger-arctic-protection/> accessed 9 October 2023; Unknown, ‘Inuit Call for Stronger Protections for Safe Arctic Shipping Considering Weak HFO Ban Passed at IMO (24 November 2020) <https://www.inuitcircumpolar.com/news/inuit-call-for-stronger-protections-for-safe-arctic-shipping-considering-weak-hfo-ban-passed-at-imo/> accessed 9 October 2023.

introduction of MR43A in an economic and social way as the vessels operating and flying the flag of these States are some of the bigger consumers of HFO in Arctic waters.⁵⁸ Therefore, it is logical to assume that these States and vessels should be given sufficient time to allow for the adaption to these changes.

However, this author has concerns that the ability to issue waivers has an impact on the adequacy of MR43A as this could have negative environmental implications and transboundary implications on the Arctic that outweigh the consideration of economic and social interests. This is supported by the study of the ICCT which highlights that due to the exemptions and waivers in place in MR43A the majority of the Arctic fleet will still be able to use and carry HFO in Arctic waters.⁵⁹ This creates a situation where it seems that the risks posed by HFO are not being adequately and proportionally addressed. In addition to this, due to the presence of the waivers it was argued that MR43A does not apply equally to all States – as the five Arctic States eligible to issue waivers are held to a different standard when compared to other vessels operating in Arctic waters.⁶⁰ According to environmental groups, this is not in line with the IMO’s Strategic Plan for 2018-2023 which highlights the need for “a level playing field for all States involved in international shipping”.⁶¹

However, the greatest concern posed by the right to issue waivers is that issuing waivers could leave multiple areas of Arctic waters unregulated when it comes to HFO use and carriage, which puts a large portion of Arctic waters at risk. However, two things should be noted in this discussion. First, the existence of MR43A does not exempt States from being required to follow the procedural obligations outlined in Chapter 3, which include the undertaking of an EIA and the duty to cooperate, amongst other duties, in their day-to-day activities. Instead, States are required to fulfil these procedural obligations while also include following international pollution prevention standards and rules.⁶² Second, it cannot be ignored that States who elect to issue waivers under MR43A are obligated to take the guidelines drafted by the IMO into

⁵⁸ Comer (n 75 above) 14.

⁵⁹ Comer (n 75 above) 15-17.

⁶⁰ IMO MEPC, ‘Comments on document MEPC 75/10/Add. 1, paragraph 3.5 on draft amendments to MARPOL Annex 1 to incorporate a prohibition on the use and carriage for use as fuel of heavy fuel oil by ships in Arctic waters, submitted by FOEI, Greenpeace International, WWF, Pacific Environment and CSC’ (25 September 2020) MEPC 75/10/7 page 3 para 7.

⁶¹ IMO 75/10/7 (n 60 above) page 3 para 7.

⁶² *Case Concerning Pulp Mills on the River Uruguay (Argentina v Uruguay)* (Merits) [2010] ICJ Rep 210 para 210 and 214.

account.⁶³ Therefore, a huge implication of the impact of the right to issue waivers on the adequacy of MR43A will depend on the content of the guidelines and if they are adequate. However, this part of the assessment is limited because the guidelines are currently in their draft form.⁶⁴

In these draft guidelines the IMO sets out various mitigation measures that it has deemed capable of reducing the risks posed by HFO use and carriage in Arctic waters and that should be taken in account.⁶⁵ These include an emphasis on the fact that Arctic coastal States should assess the risks of HFO by utilising an operational risk assessment before issuing any waivers and multiple other measures such as the importance of cooperation, communication, the consideration of Arctic regional features and climatic conditions, safe navigation, and risk mitigation utilising technology to map out areas that have navigational hazards.⁶⁶ The draft guidelines have therefore put forward numerous measures that are preventative in nature. This is because the measures employ techniques that are capable of reducing the likelihood of an incident while considering factors deemed necessary in oil spill risk analysis, such as the proximity of the voyage to emergency response systems. Based on this, it can be said that these draft guidelines put forth measures that are capable of adequately preventing the risks associated with HFO use and carriage when balanced against the economic and social interests of Arctic States and their communities. Throughout the guidelines, not only is the importance of the consideration of mitigation measures and preventative techniques emphasised, but these draft guidelines also make reference to the duty of States to fulfil their procedural obligations of risk assessment and cooperation.⁶⁷

Therefore, initially the issuing of waivers brought up concerns of transboundary and environmental harm which led this author to believe that the MR43A could be inadequate as it failed to appropriately address the risks posed by HFO in the sovereign marine territory of these Arctic States. However, when the right to issue waivers is viewed against the IMO's draft guidelines, it can be said that they could meet the general standard of prevention. However, the

⁶³ MARPOL (n 13 above) reg 43A sub-para 4 and 5.

⁶⁴ IMO NCSR, 'Draft guidelines on mitigation measures to reduce risks of use and carriage for use of heavy fuel oil (HFO) as fuel by ships in Arctic waters' (21 March 2022) NCSR 9/23.

⁶⁵ IMO 9/23 (n 64 above).

⁶⁶ *Ibid.*

⁶⁷ *Ibid.*

adequacy of these guidelines will ultimately come down to the finalised version of the guidelines, which have not yet been released. Therefore, this dissertation is unable to determine whether the right to issue waivers affects the adequacy of MR43A in light of the general standard of prevention at this stage.

5 The adequacy of MR43A as a pollution prevention rule

It is easy to say that from a purely environmental perspective that a complete prohibition of HFO in the Arctic is the only adequate manifestation of prevention that is capable of addressing the risks posed by HFO use and carriage in Arctic waters. This is a natural conclusion in light of the fragility of the Arctic region, how susceptible it is to instances of oil pollution and due to the complications of addressing an oil spill in this region. However, determining the adequacy of a pollution prevention rule was proven to be more complex due to the contours of prevention established in Chapter 3 which assisted in the creation of the general standard of prevention that was established to assess the adequacy of MR43A.

For MR43A to be considered adequate in light of the general standard it should reflect the spirit of prevention seen in prevention's current objective. MR43A was proven to have employed preventative techniques that are capable of avoiding environmental harm irrespective of location. Therefore, MR43A was established to have met the first part of the general standard of prevention. In addition to this, the prohibition against HFO use and carriage in MR43A was shown to have met the second part of the general standard as MR43A seeks to proactively and adequately address the risks posed by HFO use and carriage in Arctic waters. However, the five-year adjustment period and the right of States to issue waivers created doubt as to whether MR43A could be considered an adequate pollution prevention rule. The understanding that manifestations of prevention in MARPOL are a balance of interests but should still aim to protect the environment led to the conclusion that this five-year adjustment period, although controversial, does not affect the adequacy of MR43A. However, this author was unable to determine if the right to issue waivers impacts the adequacy of MR43A. This is because this determination relies on the adequacy of the guidelines States should take into account when issuing waivers, and these guidelines are still in their draft phase and cannot undergo a complete analysis in light of the general standard of prevention.

In light of these findings, it is evident that according to the analysis of MR43A using the general standard of prevention established in Chapter 3, that MR43A, apart from the right to issue waivers seen in MR43A sub-paragraph (4), is an adequate pollution prevention rule, despite the criticisms lodged against it.

Chapter 5: Conclusion

The Arctic has remained relatively untouched by maritime activity; however, recent changes have made the region more accessible for vessels and maritime activity in this region has increased and will likely continue to increase. Although maritime activity is essential from an economic standpoint, it has the potential to cause long-standing environmental damage to the Arctic environment if it is inadequately regulated. In light of MARPOL introducing a prohibition on the use and carriage of HFO in Arctic waters and the criticism that MR43A received, this dissertation therefore aimed to determine the adequacy of MR43A as a pollution prevention rule.

To achieve this, this dissertation first explored the contours of MARPOL Regulation 43A by evaluating its content as a pollution prevention rule and the effect of this regulation on how vessels should operate in Arctic waters after it takes effect. Chapter 2 then established that MR43A should inherently give effect to the fundamental principle of prevention, which is a cornerstone of international environmental law due to the status of prevention in IEL as well as the aim of MARPOL being concisely described as the prevention of vessel-source pollution.

To determine how and if MR43A gives effect to the principle of prevention Chapter 3 examined the historical evolution of the principle as well as how the content of prevention was interpreted by jurisprudence and literature. This determination was made in order to establish a general standard of prevention that could be utilised to determine the adequacy of MR43A as a pollution prevention rule. The current objective of prevention, which was outlined as being the avoidance of environmental harm irrespective of location, therefore made up the first part of this general standard as it reflects the spirit of prevention today. This general standard of prevention was then supplemented by an understanding of the content of prevention which is characterised by due diligence. This discussion allowed further elements, which include proactivity and acting in proportion to the risks posed by HFO use and carriage in Arctic waters, to be added to this general standard. Chapter 3 then concluded by setting forth the general standard of prevention that can be employed to evaluate the adequacy of pollution prevention rules.

Chapter 4 then turned to an analysis of MR43A utilising the general standard established in Chapter 3 to determine the adequacy of MR43A. In light of the analysis, it was seen that MR43A is reflective of the objective of prevention, is proactive, and is a proportional response to the risks posed by HFO, and thus the risk MR43A aims to address. Although the five-year adjustment period created doubt as to the adequacy of MR43A, Chapter 4 ultimately determined that the majority of MR43A aligns harmoniously with the general standard of prevention and thus the principle of prevention. However, this dissertation was unable to conclude whether the right of coastal States to issue waivers under MR43A affects the adequacy of the ban, as this determination relies on the guidelines that States should take into account when issuing waivers. As these guidelines are currently in their draft phase, this dissertation could not conclusively determine that they will assess the risks posed by HFO adequately in their final form.

Therefore, the majority of MR43A therefore embodies the spirit of prevention and gives effect to the principle of prevention. Hence, drawing from the assessment of MR43A through the principle of prevention, it is clear that MR43A stands as an adequate pollution prevention rule that is capable of addressing the environmental risks posed by HFO use and carriage in Arctic waters, in light of the delicate balance of interests that had to occur.

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