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Climate change law and law of the sea through the lens of regime interaction

A regime interaction study

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Master's thesis in Joint Nordic Master in International Environmental Law 2024



ABSTRACT

The fact climate change and the ocean are interrelated in a physical sense opens up the question whether the same can be said for the regimes governing them. While it appears obvious that they should interact, it is not clear that they do. At the first glance it seems that the climate change regime and the law of the sea regime do not take account of each other. The core instruments of the law of the sea regime do not mention climate change directly, and neither do the instruments of the UN climate change regime refer to the ocean, apart from its role as a sink. Through the lens of regime interaction further interactions may be discovered, be it normative overlaps or institutional interactions. This thesis seeks to analyze both regimes through the lens of regime interaction in order to assess whether they support one another in addressing climate change and the adverse effects to the marine environment.

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1 Introduction

1.1 Factual Background: Climate Change and the Adverse Effects thereof on the Ocean

The climate regulation and the ocean are highly interconnected and interdependent. Due to increased human induced greenhouse gas (GHG) emissions, the ocean is becoming more acidic and due to climate change the ocean is warming and the changes in the ocean further lead to loss of oxygen.¹ All these factors together lead to deleterious impacts, such as sea-level rise, melting of polar ice and glaciers, degradation of marine biodiversity, migration of fish species, extreme weather occurrences and disruption of currents.² The ocean, covering 71% of the Earth's surface, absorbs heat and anthropogenic carbon dioxide (CO₂).³ The role of the ocean as the largest heat and carbon sink is at risk with business as usual. If climate change is not mitigated and the ocean may even release stored CO₂ and thus further drive climate change.⁴

Impacts and changes of the ocean due to GHG emissions and global warming have been observed by the United Nations (UN) body, the Intergovernmental Panel on Climate Change (IPCC),⁵ in several Reports, including the 2019 IPCC Special Report on the Ocean and Cryosphere in a Changing Climate (IPCC Special Report or SROCC).⁶ The IPCC concluded that it is human activities that are 'unequivocally' responsible for the atmospheric concentrations of GHGs and thus the changes of the climate, which then again adversely affects and damages nature.⁷ Not only does climate change pose a threat to the marine environment as such, but also to humanity, which is part of the environment, and the continuation of traditional

¹ IPCC, 'Summary for Policymakers' in Hans O Poertner and others (eds) *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate* (Cambridge University Press 2019) <<https://doi.org/10.1017/9781009157964.001>>, 9 – 12.

² *ibid* 6 – 25.

³ *ibid* 5.

⁴ *ibid* 5.

⁵ The Intergovernmental Panel on Climate Change (hereinafter IPCC) is an independent scientific body of the United Nations (thereafter UN), established by the UN Environment Programme ('UNEP') and the World Meteorological Organization (the 'WMO') in 1988 and is assessing climate change and its impacts and offering possible adaptation and mitigation measures. More information can be found on the Homepage of the IPCC: <<https://www.ipcc.ch/about/>>.

⁶ IPCC, 'Summary for Policymakers' (n 1).

⁷ IPCC, 'Summary for Policymakers' in Core Writing Team, Hoesung Lee and José Romero (eds), *Climate Change 2023: Synthesis Report: Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (2023) <[doi: 10.59327/IPCC/AR6-9789291691647.001](https://doi.org/10.59327/IPCC/AR6-9789291691647.001)> 4.

uses of the sea. Moreover it has been demonstrated that vulnerable populations are affected the most by climate change, although they have contributed proportionally the least to it.⁸

After outlining the deep physical interconnection of the climate and the ocean, it becomes quite clear, that the impacts climate change has on the oceans are a global problem. As such, they do not fall within a single ‘regime’ comprised of laws and institutions.⁹ Instead, they are tackled by more regimes, whereby the two regimes, namely, the law of the sea regime and the climate change regime will be subject of this study. The law of the sea on the one hand does not address climate change directly but is according to the Preamble of the United Nations Convention on the Law of the Sea (LOSC) the ‘legal order for the seas and oceans’ and is ‘conscious that the problems of ocean space are closely interrelated and need to be considered as a whole’. Therefore when interpreting it as a ‘living treaty’, climate change can be seen one of the problems of ocean space.¹⁰ On the other hand there is the UN climate regime barely refers to the ocean. Their relationship with one another does not come clearly forward and therefore needs to be assessed in order to further understand whether the two regimes support each other in addressing climate change. These two regimes may reinforce each other or even overlap in mitigating climate change and help the ocean to adapt to the adverse impacts it is facing.

1.2 Objective and Research Question:

The aim of this research is to give a clear picture on the dynamics of the law of the sea and the climate change regime in relation to addressing climate change and the impacts it has on the ocean by unfolding their normative overlaps and forms of regime interaction and how those are managed. This will be done by identifying gaps within each regime and detecting how synergies of the two regimes may be developed in addressing the adverse effects of climate change to the marine environment by way of analyzing and interpreting the legal instruments and looking at the different actors relevant to the two regimes.

By conducting this research, this thesis attempts to look at the two regimes through the lens of regime interaction, which will be further described in Chapter 2, and thereby seeks to make an

⁸ *ibid* 5.

⁹ Margaret A Young, *Trading Fish, Saving Fish: The Interaction between Regimes in International Law* (Cambridge University Press 2011) 3.

¹⁰ See Jill Barret ‘The United Nations Convention on the Law of the Sea: A “Living” Treaty?’ in Jill Barrett and Richard Barnes (eds) *Law of the Sea: UNCLOS as a Living Treaty* (British Institute of International and Comparative Law 2016) 3 ff.

addition to the body of literature by offering a substantive contribution to the current state of research. In doing so the legal system will be looked at from the internal perspective, meaning that it will take the viewpoint of a decision-maker to draw the consequences of the results of the research for further specific cases in order to interpret the UN law of the sea regime in a dynamic way and assess further climate-ocean action in light of regime interaction.

Based on this objective, the following research question will be answered: How might the law of the sea regime and the climate change regime support one another in addressing climate change wearing the lens of regime interaction?

In order to answer the main research question, the following sub-questions will be answered:

- 1.) What are the normative overlaps between the law of the sea regime and the climate change regime?
- 2.) What mechanisms do the core instruments of both regimes offer to deal with interaction themselves?
- 3.) How may interpretation tools manage regime interaction of the two regimes?
- 4.) Are there any forms institutional interactions, such as forms of cooperation and coordination within and beyond the ocean regime?

1.3 Scope of Research and Limitations

This regime interaction study will in its first part examine core legal instruments relevant to the climate change regime and the law of the sea regime in order to determine potential normative conflicts or synergies and more in general whether they take each other into account, may it be directly or indirectly. Only norms deemed relevant and to have implications on any interaction thereof will form part of this analysis. Throughout the study a stronger focus will be on the law of the sea side and Part XII of the LOSC. This is due to the fact that the normative overlaps on the climate change regime side are rather limited, as will be shown, apart from the inclusion of ocean-action in formal meetings of the treaty bodies. The potential of the Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction (BBNJ Agreement) in

addressing climate change will be left out, since it would require a whole study on its own, while still highlighting its relevance.¹¹

As for further delimitations of the scope it is important to highlight that this thesis will not encompass every single aspect of the normative and institutional relations or interactions between the two regimes at hand, while still including various points of interaction at the stages of law-making, implementation and adjudication. This is not only due to the length of this thesis, but also considered impossible, when taking into account the many actors that are relevant for ocean governance and may in one way or another contribute to the interaction.

Moreover, while sea-level rise and the impacts thereof on marine boundaries and entitlements is an important topic in light of the climate-ocean nexus, it will not be further discussed in this research, since the focus will be on the protection and preservation of the marine environment but also the role of the ocean in contributing to and combatting climate change.

1.4 Thesis Structure:

After Chapter 1, which besides giving some background on the deleterious impacts of climate change on the ocean, introduced the objective of this thesis and the research question, the structure will be the following:

Chapter 2 comprises of the methodology used for this research. A separate chapter was deemed necessary due to need to introduce the theory of regime interaction and introducing the analytical framework used for this study. Further an overview of the phenomenon of the fragmentation of international law will be provided which underlines the use of the analytical framework. Moreover some key terms and concepts will be explained. This include ‘regime’, which is of importance in order to understand what ‘regime interaction’ is about and where this notion is coming from. This whole chapter seeks to explain the methods used in a structured manner.

Chapter 3 is to then assess the core legal instruments of each regime in order to find any mention of each other and identifying their normative overlaps. First it will be looked at whether the ‘ocean’ is included in text of the UNFCCC , the Kyoto Protocol and the Paris Agreement, and

¹¹ Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction (adopted 19 June 2023, opened for signature on 20 September 2023) (hereinafter BBNJ Agreement).

then whether climate change can be found in the law of the sea. In doing so, key provisions will be introduced that will have further relevance throughout the study.

Chapter 4 then applies the analytical framework for identifying and managing regime interaction of the law of the sea regime and the climate change regime. Section 1 identifies the built-in mechanisms that the LOSC offers to regulate the relationship with other instruments, such as conflict clauses contained and rules of reference. Section 2 then goes on to highlight the relevance of interpretation of key obligations, such as 192, 193, 194, 207, and 212 of the LOSC. Moreover the mechanism of dispute settlement and the ITLOS Advisory Opinion on Climate Change will be introduced in order to help understanding the responsibilities that States have in protecting the marine environment in light of meeting the goals of the Paris Agreement. Section 3 seeks to detect instances of institutional interaction within and across the two regimes, that may enhance ocean-climate action. Since a comprehensive picture of the fora of interaction cannot be offered, a few examples will be used.

Chapter 6 then sums up the regime interaction study by giving some concluding remarks and answering the research question by drawing on the assessments made throughout the study.

2 Method of Research:

The thesis will follow the doctrinal legal research methodology by analyzing legal materials. The *lex lata*, the positive law, will be described, interpreted and systematized. Instruments of the UN climate change law and the law of the sea regime will be looked at in light of regime theory and thus academic legal literature on regime interaction will be taken into account. It will be assessed how the current state of the two legal regimes address climate change wearing the lens of regime interaction, which will be outlined in Section 2.2. in more detail. Additionally to jurisprudence and legislative documents, for the purpose of this thesis scientific reports, such as the IPCC reports mentioned in Chapter 1 Section 1 will be relied upon to describe and outline the problem and for grounding legal argumentation.

The following sections set out what the sources of law are, and further the regime theory will be explained, since the research question will be answered through the lens of regime interaction. This needs further clarification on what this means for the method of this study. Moreover some definitions of some key terms and concepts and some background where this theory is coming from will be offered.

2.1 Sources of International Law

In order to answer the research question and answer how different sources of law may support one another in addressing climate change by identifying normative overlaps of the two regimes, first it is needed to see what the law is.

Following Article 38 of the Statute of the International Court of Justice (ICJ Statute),¹² the selected formal sources for the interaction study will be based on the following international treaties:¹³ the United Nations Convention on the Law of the Sea (LOSC)¹⁴ and its subsequent

¹² Statute of the International Court of Justice (adopted 26 June 1945, entered into force 24 October 1945) XV UNCTAD 355 (hereinafter ICJ Statute).

¹³ ICJ Statute, art 38 (1) lit a; Vienna Convention on the Law of Treaties (adopted 23 May 1969, entered into force 27 January 1980) 1155 UNTS 331 (hereafter VCLT), art 2 (1) (a): The Vienna Convention on the Law of Treaties defines a 'treaty' as 'an international agreement concluded between states in written form and governed by international law, whether embodied in a single instrument or in two or more related instruments and whatever its particular designation'.

¹⁴ United Nations Convention on the Law of the Sea (adopted 10 December 1982, entered into force 16 November 1994) 1833 UNTS 3 (hereinafter LOSC).

Agreements,¹⁵ the United Nations Framework Convention on Climate Change (UNFCCC),¹⁶ the Kyoto Protocol,¹⁷ and the Paris Agreement.¹⁸ Further instruments that are deemed to be relevant to the two regimes will be relied upon during the study, such as selected regional treaties regulating specific aspects of ocean use. Subsidiary sources, such as judicial decisions in accordance with Article 38 (1) lit d of the ICJ Statute will be used, to not only to outline the development of the legal instruments, but also to highlight the argumentation in light of interpretation of treaty provisions. References to scholars will be made, including the ones that have been made in this part in order to set the analytical framework of this study.

Additionally while the formal sources of law in accordance with Article 38 of the ICJ Statute, will be the starting point, this study includes informal sources of international law. Natalie Klein characterizes informal agreements as not having legally binding effect, lacking review and monitor mechanisms, augmenting cooperation at international level and possibly reflecting aspirations or goals but still being of normative value.¹⁹ The fact that the LOSC uses reference rules arguably shows the relevance of informal lawmaking in interpreting and applying the LOSC to keep it flexible.²⁰ Such informal sources encompass a variety of instruments, such as resolutions, declarations, voluntary codes of conduct, statements and other legal documents, including guidelines and recommendations adopted by the International Maritime Organization (IMO).²¹ It will be acknowledged that while States are key actors in the law of the sea and have key role in international law-making,²² many different actors influence ocean governance and

¹⁵ Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 (adopted 28 July 1994, entered into force 28 July 1996) 1836 UNTS 3 (hereinafter First Implementation Agreement); The United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (adopted 4 August 1995, entered into force 11 December 2001) 2167 UNTS 88, 34 ILM 1542 (hereinafter UNFSA); BBNJ Agreement.

¹⁶ United Nations Framework Convention on Climate Change (adopted 9 May 1992, entered into force 21 March 1994) 1771 UNTS 107 (hereinafter UNFCCC).

¹⁷ Kyoto Protocol to the United Nations Framework Convention on Climate Change (adopted 11 December 1997, entered into force 16 February 2005) 2303 UNTS 162 (hereinafter Kyoto Protocol).

¹⁸ Paris Agreement to the United Nations Framework Convention on Climate Change (adopted 12 December 2015, entered into force 4 November 2016) 828 UNTS 305 (hereinafter Paris Agreement).

¹⁹ See Natalie Klein, 'Meaning, Scope, and Significance of Informal Lawmaking in the Law of the Sea' in Natalie Klein (ed) *Unconventional Lawmaking in the Law of the Sea* (Oxford University Press 2022) 6 – 7 and 12 – 13.

²⁰ Natalie Klein, 'Meaning, Scope, and Significance' (n 19) 5.

²¹ Natalie Klein, 'Meaning, Scope, and Significance' (n 19) 4.

²² Concept of state consent versus concept of legitimacy in international law: see Hilary Charlesworth, 'Law-Making and Sources' in James Crawford and Martti Koskenniemi (eds) *International Law* (2012) 187 – 200.

also law-making in regulating the uses of the ocean.²³ Additionally, international organizations, be it global institutions or a regional organizations may act within their mandate. Other non-state actors may have a role in law-making or monitoring, implementation or enforcement and thus play an increased role in international law.²⁴

2.2 Analytical Framework

To see how the law of the sea regime and the climate change regime may support one another, regime theory will be used. In applying theory to the law, this thesis will look at how interactive these regimes are at the time of writing.²⁵

This thesis is using regime interaction as a lens and will take the following analytical approaches from legal scholars into account: Similarly to Margaret A. Young's move beyond an analysis of conflicting norms in 'Trading Fish, Saving Fish', this thesis will take into account her legal framework for regime interaction in understanding the whole process from law-making stage to implementation and adjudication by looking at the different actors and relevant legal frameworks to understand the normative and institutional relations.²⁶

Moreover in Chapter 1 'Introduction: Regime Interaction in Ocean Governance' in 'Regime Interaction in Ocean Governance: Problems, Theories and Methods', the editors define regime interaction as a 'situation where rules, institutions and the operation of one legal regime is affected by another legal regime' after referring to Margaret Young's definition of regimes and acknowledge, that while 'interactions can take the form of normative conflicts' they may also 'result in situations of mutual supportiveness and cooperation between institutions belonging to different regimes' and thereby 'common interests' may be 'functioning as a catalyst for synergistic interactions among different regimes'.²⁷ This follows the understanding of regime

²³ Natalie Klein, 'Meaning, Scope, and Significance' (n 19) 3-5; see for further discussions on informal law making: Alan Boyle, 'Some Reflections on the Relationship of Treaties and Soft Law' (1999) 48 (4) ICLQ 901; Alan Boyle and Christine Chinkin, *The Making of International Law* (Oxford University Press 2007).

²⁴ Nele Matz-Lück, 'Norm Interpretation Across International Regimes: Competences and Legitimacy' in Margaret A Young (ed) *Regime Interaction in International Law: Facing Fragmentation* (Cambridge University Press 2012) 203 – 204.

²⁵ See Chapter 4

²⁶ Margaret A Young, *Trading Fish, Saving Fish: The Interaction between Regimes in International Law* (Cambridge University Press 2011) ch 1, 17 – 22.

²⁷ Seline Trevisanut, Nikolaos Giannopoulos and Rozemarijn Roland Holst, 'Introduction: Regime Interaction in Ocean Governance' in Seline Trevisanut, Nikolaos Giannopoulos and Rozemarijn Roland Holst (eds) *Regime Interaction in Ocean Governance: Problems, Theories and Methods* (Brill Nijhoff 2020) 3 – 4.

interaction in Margaret A. Young's research. In conceptualizing regime interaction, the editors distinguish between the two interlinked dimensions, namely normative and institutional interactions and methodologically a division of formal/treaty-based methods of regime interaction and interpretation/judicial-based interactions is proposed.²⁸

In the concluding chapter of the book 'Regime Interaction in Ocean Governance: Problems, Theories and Methods', the editors Seline Trevisanut, Nikolaos Giannopoulos and Rozemarijn Roland Holst propose a 'three-fold approach to regime interaction in ocean governance' that acts as an 'overarching analytical framework that captures the means through which interactions occur in – and have an impact on – both the (partly overlapping) spheres of law making and law application, including interpretation'.²⁹ Three different analytical dimensions are set out: First, the 'interactive process', describes the interrelation between international institutions involved in ocean governance, while the second, 'interactive form' assesses the relationship of instruments with in-built formal legal tools, such as conflict clauses, rules of reference or obligation of due regard, and the last assessing the relationship between individual rights and obligations with a focus on normative interaction relying on interpretation tools, such as Article 31 of the Vienna Convention on the Law of Treaties (VCLT).³⁰

This analytical framework will be relied upon in order to understand the normative and institutional interaction of the two regimes relevant for this thesis, while noticing that it was designed in order to unfold regime interaction within ocean governance. The LOSC as a framework convention is argued to be 'called to interact with a variety of other regimes, which regulate specific economic activities or address particular environmental issues',³¹ making this framework a useful tool for the assessment of regime interaction between two regimes that on first glance may not have too much in common. With the outlined methods, the thesis attempts to give a clearer picture on regime interaction in general concerning the law of the sea regime and the UN climate regime and thereby contribute to the legal literature proposing responses to climate change impacts on the ocean.

²⁸ Seline Trevisanut, Nikolaos Giannopoulos and Rozemarijn Roland Holst, 'Introduction: Regime Interaction in Ocean Governance' (n 27) 6 – 16.

²⁹ Seline Trevisanut, Nikolaos Giannopoulos and Rozemarijn Roland Holst, 'Conclusion: Proposing a Three-Fold Approach to Regime Interaction in Ocean Governance' in Seline Trevisanut, Nikolaos Giannopoulos and Rozemarijn Roland Holst (eds) *Regime Interaction in Ocean Governance: Problems, Theories and Methods* (Brill Nijhoff 2020) 222 – 233.

³⁰ Seline Trevisanut, Nikolaos Giannopoulos and Rozemarijn Roland Holst, 'Conclusion: Proposing a Three-Fold Approach' (n 29) 223 – 232.

³¹ Seline Trevisanut, Nikolaos Giannopoulos and Rozemarijn Roland Holst, 'Introduction: Regime Interaction in Ocean Governance' (n 27) 1 – 2.

2.3 Key Definitions and Concepts:

To set the stage for identifying the normative overlaps in Chapter 3 and applying the analytical framework to the two regimes in Chapter 4, a determination of some assumptions and key terms is necessary. Since they are key for the analytical scope and to answer the research question, they will be dealt with in this Section, which seeks to clarify important terms and concepts, such as ‘regime’ and ‘regime interaction’ and ‘governance’.

First, as already set out for the purpose of this thesis the following two regimes, namely the climate change regime and the law of the sea regime, will be looked at and their interaction will be assessed. Regarding the law of the sea and the climate change law as two distinct regimes, calls for a need to clarify what a regime is, whereby various definitions can be found in international relations and international law literature.³² This thesis will be based on Margaret A. Young’s understanding of regime: She introduces a hybrid definition and describes it as ‘sets of norms, decision-making procedures and organizations coalescing around functional issue-areas and dominated by particular modes of behavior, assumptions and biases’.³³ Thus treaties alone do not form a whole regime, but may be the starting point for the development of a regime that then may be comprised of framework agreements, specialized instruments and institutions, including their outcomes.³⁴ Following this definition, a regime encompasses not only norms but also institutions. Therefore the UNFCCC, and its Kyoto Protocol and Paris Agreement and other related instruments and outcomes produced by their institutions form part of the climate change regime. The law of the sea regime on the other hand comprises the LOSC, which has the intent to establish a legal order for the ocean according to its Preamble and other related instruments and outcomes produced by their institutions.

Secondly, due to the fact that climate change impacts, such as ocean warming, ocean acidification and deoxygenation and sea-level rise, are global problems, they are relevant for more than just one regime and therefore do not fit neatly in one single regime.³⁵ Thus it is

³² UN Doc A/CN.4/L.682 (n 11) ch 1, 10 ff, 11 – 12.

³³ Margaret A Young, ‘Introduction: The Productive Friction Between Regimes’ in Margaret A Young (ed) *Regime Interaction in International Law: Facing Fragmentation* (Cambridge University Press 2012) 11.

³⁴ Seline Trevisanut, Nikolaos Giannopoulos and Rozemarijn Roland Holst, ‘Introduction: Regime Interaction in Ocean Governance’ (n 27) 1 – 2.

³⁵ Margaret A Young, ‘Regime Interaction in Creating, Implementing and Enforcing International Law’ in Margaret A Young (ed) *Regime Interaction in International Law: Facing Fragmentation* (Cambridge University Press 2012) 85.

relevant to understand how regimes coexist and to what extent they may support each other. ‘Interaction’, as the main research topic of this thesis, has no general definition either, it can be understood in different ways. Moreover it was realized that defining it in a specific way, may even be contra productive and ‘restrict the discussions to affirmative or negative answers that would not do justice to the complexity and variability of regime interactions’.³⁶ According to Margaret A. Young, interaction is ‘a productive friction’,³⁷ meaning a way to a ‘more responsive and effective international legal system than the sum of the constituent regimes’.³⁸ For the purpose of this thesis, her way of looking at regime interaction will lead in order to understand how the two regimes are interacting in a way that they may even support each other in response to the adverse effects of climate change.

Thirdly, the terminology that is of relevance, especially for understanding the institutional side of regime interaction and thus the third dimension of the analytical framework, is ‘global governance’. The definition will be based on the one of the Commission on Global Governance that describes it to be ‘a continuing process through which conflicting or diverse interests may be accommodated and co-operative action may be taken. It includes formal institutions and regimes empowered to enforce compliance, as well as informal arrangements ...there is no single model or form of global governance, nor is there a single structure or set of structures. It is a broad, dynamic, complex, process of interactive decision-making’.³⁹ Intergovernmental organizations, such as the United Nations⁴⁰ and various specialized agencies,⁴¹ such as the Food

³⁶ Nele Matz-Lück and Øystein Jensen, ‘From Fragmentation to Interaction? A Law of the Sea Perspective on Regime Interaction and Interdisciplinary Interfaces’ in Elise Johansen, Nele Matz-Lück and Øystein Jensen (eds) *The Law of the Sea: Normative Context and Interactions with other Legal Regimes* (Routledge 2022) 3.

³⁷ Skepticism is expressed towards the productive outcomes by Martti Koskeniemi in the concept of ‘hegemonic regimes’ see Martti Koskeniemi, ‘Hegemonic Regimes’ in Margaret A Young (ed) *Regime Interaction in International Law: Facing Fragmentation* (Cambridge University Press 2012).

³⁸ Margaret A Young, ‘Introduction: The Productive Friction (n 33) 11.

³⁹ Commission on Global Governance, *Our Global Neighbourhood. Report of the Commission on Global Governance* (Oxford University Press 1995) 2 – 4; see also Alan Boyle and Catherine Redgwell, *Birnie, Boyle and Redgwell’s International Law and the Environment* (Fourth Edition, Oxford University Press 2021) ch 2, 45 – 106.

⁴⁰ See on the role of the UN in environmental governance: Alan Boyle and Catherine Redgwell, *Birnie, Boyle and Redgwell’s International Law* (n 39) ch 2, 62 – 71.

⁴¹ UN Specialized Agencies are of importance for negotiation and adoption of multilateral treaties and setting internationally agreed standards that are often technical in nature. Their work is crucial for the implementation of the LOSC. See Alan Boyle and Catherine Redgwell, *Birnie, Boyle and Redgwell’s International Law* (n 39) ch 2, 72.

and Agriculture Organizations (FAO)⁴² and the International Maritime Organization (IMO)⁴³ play an important role for development of international environmental policy and regulation and act as a forum for dialogue between states and non-state actors.⁴⁴ Global governance is of importance for tackling global problems, since mitigating and adopting to the impacts from climate change on the ocean and followingly on human life, does not just happen under the umbrella of the climate change regime, but rather coordination between States, and international and regional institutions is needed.⁴⁵ In line with the above, the concept of ocean governance⁴⁶ will thus be understood as the forum that operationalizes the ‘normative content agreed in instruments’ at the regional and international level with their different objectives and different actors and institutions within and outside of the UN system.⁴⁷

2.4 From a Negative Notion of a Fragmented Legal Landscape to a Positive Notion of Regime Interaction:

This section will, give a short background to the literature in international relations (IR) and international law of the past centuries and how the emergence of different regimes has been perceived in the past and partly changed. Thus the background of the phenomenon of fragmentation of international law refers to the vast literature on fragmentation of international law, writing on specialized regimes and proliferation of norms and institutions.⁴⁸ This is

⁴² The FAO has relevant competences in ocean governance, namely for fisheries and marine products. Additionally the FAO is the UN body that establishes regional fisheries agreements, develops fisheries law and promotes implementation of fisheries rules in the LOSC and the 1995 UN Fish Stocks Agreement. There are also regional fisheries agreements concluded outside of the FAO. See Alan Boyle and Catherine Redgwell, *Birnie, Boyle and Redgwell's International Law* (n 39) ch 2, 73 – 76.

⁴³ The IMO is a specialized agency that has relevant competences in ocean governance, namely regulating maritime safety, navigation efficiency and marine pollution from vessels. See 1948 Convention on the International Maritime Organization (previously International Maritime Consultative Organization) 289 UNTS 3, 9 UST 621, TIAS 4044 (adopted 06 March 1948, entry into force 17 March 1958), art 1; Provisions of MARPOL and Annexes (treaty law) may be ‘generally accepted international rules and standards’ (see Section 4.1.2).

⁴⁴ Alan Boyle and Catherine Redgwell, *Birnie, Boyle and Redgwell's International Law* (n 39) ch 2, 47 – 48.

⁴⁵ See also Alan Boyle, ‘Climate Change, Ocean Governance and UNCLOS’ in Jill Barrett and Richard Barnes (eds) *Law of the Sea: UNCLOS as a Living Treaty* (British Institute of International and Comparative Law 2016) 211 – 214.

⁴⁶ See for further discussion on ocean governance: Yoshinobu Takei, ‘Demystifying Ocean Governance’ in Seline Trevisanut, Nikolaos Giannopoulos and Rozemarijn Roland Holst (eds) *Regime Interaction in Ocean Governance: Problems, Theories and Methods* (Brill Nijhoff 2020) 23 – 26; Yoshinobu Takei, ‘A Sketch of the Concept of Ocean Governance and Its Relationship with the Law of the Sea’ in Cedric Ryngaert, Erik J Molenaar and Sarah M H Nouwen (eds) *What's Wrong with International Law? Liber Amicorum A.H.A Soons* (Brill Nijhoff 2015) 48 – 62.

⁴⁷ Seline Trevisanut, Nikolaos Giannopoulos and Rozemarijn Roland Holst, ‘Introduction: Regime Interaction in Ocean Governance’ (n 27) 27.

⁴⁸ Martti Koskeniemi and Paivi Leino, ‘Fragmentation of International Law? Postmodern Anxieties’ (2002) 15 *Leiden Journal of International Law* 553; Harro Van Asselt, Francesco Sindico and Michael

deemed necessary to understand the need for a theoretical framework of regime interaction, since in the past possible conflicts of norms were at the focus. Regime interaction argues to find synergies between different regimes rather than seeing the potential of a fragmented legal and institutional landscape with conflicting potential.⁴⁹

The topic of fragmentation in legal literature arose due to states increasingly agreeing on laws and establishing organizations as response to specific problems or issues, which led to diversifying and expanding international law and institutions with no hierarchy and thus a higher likelihood of conflicting norms and diverge institutional practice.⁵⁰ Noticing this shift from ‘general international law’ to special fields, including ‘environmental law’ and the ‘law of the sea’, legal scholars called for coherence and unity since they feared disorder and loss of overall perspective within international legal system.⁵¹ A strong focus hereby was potential conflicting norms. The question then was how to deal with the fragmentation and associated uncertainties, which led the International Law Commission (ILC), with its mandate of contributing to progressive development of international law and the codification thereof,⁵² to direct a Study Group to issue a report on fragmentation.⁵³ Following, a report was published in 2006 which included recommendations on the resolution of conflicting norms in order to achieve coherence of different fields of international law by offering different tools dealing with conflicts, such as the *lex specialis derogat legi generali* (primacy specific rule to general rule) and the *lex posterior derogat legi priori* (primacy of later rule to older) and the systemic interpretation of norms by referring to Article 31 (3) (c) of the Vienna Convention on the Law of Treaties (VCLT).⁵⁴ By reference to Article 103 of the United Nations Charter, that shows prevalence of Charter obligations over other international law obligations, the Report also

A Mehling, ‘Global Climate Change and Fragmentation of International Law’ (2008) 30(4) Law and Policy 423, 423 – 449; Anne Peters, ‘The Refinement of International Law: From Fragmentation to Regime Interaction and Politicization’ (2017) 15 (3) ICON 671; Margaret A Young, *Trading Fish, Saving Fish* (n 26) ch 1, 8 – 16.

⁴⁹ See also: Margaret A Young, ‘Climate Change Law and Regime Interaction’ (2011) 5 (2) Carbon & Climate Law Review 136, 147 – 151; Karen N Scott, ‘Chapter 4 Climate Change and the Oceans: Navigating Legal Orders’ in Myron H Nordquist, John Norton Moore and Ronán Long (eds) *Legal Order in the World’s Oceans* (Brill Nijhoff 2017) 130.

⁵⁰ Margaret A Young, ‘Introduction: The Productive Friction (n 33) 1 – 20; UN Doc A/CN.4/L.682 (n 11) 11.

⁵¹ See the discussion in Martti Koskenniemi and Paivi Leino, ‘Fragmentation of International Law?’ (n 46).

⁵² Charter of the United Nations (adopted 26 June 1945, entered into force 24 October 1945) XV UNCTAD 355 (hereinafter Charter of the United Nations), art 13 (1) (a).

⁵³ UN Doc A/CN.4/L.682 (n 11). 20 - 21

⁵⁴ VCLT, art 54; Margaret A Young, ‘Introduction: The Productive Friction (n 33) 3 – 5; UN Doc A/CN.4/L.682 (n 11).

mentions special treaty clauses on the hierarchy of norms.⁵⁵ What was left out in the recommendations is the institutional side of fragmentation, although the ILC did note in the ‘Background’ of the Report that apart from substantive overlaps there are also institutional overlaps, but subsequently decided not to face the hierarchical questions that would have arisen.⁵⁶

Summing up it can be noticed that in the past century there is a noticeable shift in legal literature away from the negative notion of fragmentation of international law, focusing on conflict and the fear of loss of legal certainty and a more positive notion can be discovered, namely the opportunities and mutual supportiveness that arise from the specialization of international law.⁵⁷

Rather than emphasizing the potential of norms being in conflict with each other, regime interaction thus is argued to be more than that, namely finding overlaps and distinctions and situations where one can learn from information-exchange or consultation, helping for example with compliance of obligations that overlap.⁵⁸ The existence of different norms and obligations for states in the ocean and climate regimes does not automatically make them conflicting norms, they can overlap or even have a supporting function in each other’s objectives.⁵⁹ And as outlined in the Chapter 2, this interaction, according to Margaret A. Young, is to be assessed not only as occurring at the stage of dispute settlement, whereby here extensive literature exists, but also during law-making or implementing of existing norms.⁶⁰ This understanding allows the identification of new actors and new forms of conflict and intersection of regimes.⁶¹ The satisfaction of the various interests of stakeholders is a difficulty in ocean governance and climate change governance, especially those of member states. Due to the fact that interaction can shape and also develop norms beyond state consent, the legitimacy needs an additional basis, whereby it has been suggested that it is possibly moving from consent to participation

⁵⁵ UN Doc A/CN.4/L.682 (n 11) Annex, 104 ff, para 36 on the ‘Recognized hierarchical relations’.

⁵⁶ The reads as ‘Commission decided to leave this question aside. The issue of institutional competencies is best dealt with by institutions themselves.’ See UN Doc A/CN.4/L.682 (n 11) ch 1, 10 ff para 13.

⁵⁷ Elise Johansen, ‘The Legal Interactions Between the Climate Change and the Law of the Sea Regimes’ in Elise Johansen, Nele Matz-Lück and Øystein Jensen (eds) *The Law of the Sea: Normative Context and Interactions with other Legal Regimes* (Routledge 2022) 69 – 70 and 75; Anne Peters, ‘The Refinement of International Law’ (n 48) 679.

⁵⁸ Margaret A Young, ‘Regime Interaction in Creating’ (n 35) 89.

⁵⁹ Karen N Scott, ‘Chapter 4 Climate Change’ (n 49) 130.

⁶⁰ Jeffrey L Dunoff, ‘A new approach to regime interaction’ in Margaret A Young (ed) *Regime Interaction in International Law: Facing Fragmentation* (Cambridge University Press 2012) 137-140.

⁶¹ Jeffrey L Dunoff, ‘A new approach’ (n 60) 158.

granted by states to experts or other stakeholders.⁶² Therefore in order to understand the interaction between institutions, Margaret A. Young proposes to look into studies addressing ‘law-making power of international organizations’ by emphasizing Intergovernmental Organizations (IGOs) and their secretariats and expert bodies and in general to take a look at non-state actors and ‘non-traditional conceptions of law-making’.⁶³

After this short explanation on the development of the analytical concept of regime interaction and why it matters in international law, the legal instruments of the two regimes that are subject to this study, will be described in the subsequent chapter.

⁶² Margaret A Young, *Trading Fish, Saving Fish* (n 26) ch 6, 255 – 256 and ch 7, 279 – 280.

⁶³ Margaret A Young, *Trading Fish, Saving Fish* (n 26) ch 1, 15; further literature see Alan Boyle and Christine Chinkin, *The Making of International Law* (n 23) ch 2, 41 – 93.

3 Overview of the Core Instruments of the Two Regimes and their Normative Overlaps

As already set out in the previous chapters, albeit the physical interconnectedness of the ocean and the climate, thus the important role of the ocean in climate regulation and the adverse effects climate change poses on the ocean, climate change law and the law of the sea developed two separate legal regimes. Thus before looking at the two regimes through the lens of regime interaction, first a small overview of the core treaties of the two regimes is deemed necessary and their overlap in normative terms will be assessed: the LOSC, the UNFCCC, the Kyoto Protocol and the Paris Agreement. In doing so the sub-question 1 will be answered: What are the normative overlaps between the law of the sea regime and the climate change regime? Answering this question allows for an assessment of their objectives and whether they directly or indirectly refer to each other's regimes— thus already noting some form of interaction in this chapter.

3.1 Instruments at the Core of the UN Climate Change Regime and the Ocean

In this section it will be identified how the core treaties of the UN climate regime address the ocean.

3.1.1 The UNFCCC and the ocean

The UNFCCC, the cornerstone of the UN climate regime, has almost universal ratification and is, central for addressing climate change mitigation,⁶⁴ adaptation,⁶⁵ finance,⁶⁶ technology transfer,⁶⁷ compliance⁶⁸ and transparency.⁶⁹ Climate change and its impacts are described as a 'common concern of mankind'.⁷⁰ The framework conventions' objective is for all states to stabilize GHG⁷¹ concentrations in the atmosphere 'at a level that would prevent dangerous

⁶⁴ UNFCCC, arts 4.1 (b) – (d) and 4.2.

⁶⁵ UNFCCC, arts 4.1 (b) and (e), 4.8. and 4.9.

⁶⁶ UNFCCC, arts 4.3 and 4.4.

⁶⁷ UNFCCC, art 4.5.

⁶⁸ UNFCCC, arts 13, 14.

⁶⁹ UNFCCC, arts 4.1 (a) and 12; Daniel Bodansky, Jutta Brunnée and Lavanya Rajamani *International Climate Change Law* (Oxford University Press 2017) 118 – 155.

⁷⁰ UNFCCC, preamble.

⁷¹ The three GHG's, chemical substances, relevant for climate change due to its greenhouse effect are carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O): see IPCC, 'Summary for Policymakers' (2023) (n 7) 4.

anthropogenic interference with the climate system.[...] within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner'.⁷² Thus it does not include any mandatory quantified emission reduction targets. The 'climate system' is defined as 'the totality of the atmosphere, hydrosphere, biosphere and geosphere and their interactions', and thus includes the ocean through the mention of 'hydrosphere'.⁷³ Yet, the UNFCCC focuses on the atmosphere as can be seen from reading the objective relating to GHG concentrations in the atmosphere. This can be understood in light of the fact that at the time of the negotiations the impacts of climate change on the ocean and the marine environment were not well understood and for that matter are still not fully understood until today. Hence it does not come straightforward whether the UNFCCC applies to impacts to the ocean, such as ocean warming or ocean acidification or more specific the impacts it has on marine food production (fisheries).

Moving over to the obligations of the UNFCCC, a distinguishment between Annex I, Annex II parties as a subset of Annex I parties and non-Annex I parties is noticeable: While non-Annex I parties are subject to general commitments,⁷⁴ Annex I and Annex II parties have additional commitments.⁷⁵ In these provisions, the ocean can be found in one specific provision that applies to all parties: Article 4.1 (d) of the UNFCCC refers to the ocean by recognizing the importance of the ocean for the purpose of climate change mitigation, due to the role as a carbon sink and a reservoir.⁷⁶ Apart from this, the ocean is not mentioned in the text of the Convention and thus its scope is very limited in applying to the ocean and the focus stays terrestrial and atmospheric.

3.1.2 The Kyoto Protocol and the ocean

The climate change regime developed a focus for legally binding emission reduction targets for the reduction of GHGs with its adoption of the 1997 Kyoto Protocol. The Protocol, adopted under the auspices of the UNFCCC, establishes legally binding targets to reduce GHG

⁷² UNFCCC, art 2 (emphasis added).

⁷³ UNFCCC, art 1.3; Subsidiary Body for Scientific and Technological Advice (SBSTA), 'Ocean and Climate Change Dialogue to Consider How to Strengthen Adaptation and Mitigation Action' (9 November 2020) available at <https://unfccc.int/sites/default/files/resource/OD_InformationNote.pdf>, 6.

⁷⁴ UNFCCC, arts 4.1, 5, 6 and 12.1.

⁷⁵ Daniel Bodansky, Jutta Brunnée and Lavanya Rajamani *International Climate Change* (n 69) 122.

⁷⁶ UNFCCC, art 4.1 (d).

emissions for Annex I parties based on 1990 levels,⁷⁷ following a top-down approach.⁷⁸ GHG mitigation targets and timetables do not apply to non-Annex I parties. The focus is on strengthening the mitigation commitments, while adaptation commitments of Article 4.1 (b) of the UNFCCC are echoed. With relation to sinks, its only mentions forestry and does not include the ocean in its text.

The only indirect reference to oceans can be seen in the fact that the Kyoto Protocol excludes emissions from international civil aviation and maritime transport.⁷⁹ Thus, the International Maritime Organization (IMO) is designated to deal with GHG emission from bunker fuels not falling under the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol) and therefore may set mandatory emission standards for the international shipping sector.⁸⁰ A difficulty that arose, was that the Kyoto Protocol only addressed Annex I parties, making it unclear how to introduce the principle of common but differentiated responsibilities (CBDR) into IMO's work.⁸¹

The commitment period under the Kyoto Protocol was not extended after the second one ending in 2020 and the Protocol was subsequently amended by the Doha Agreement, which is still in force but has not too much relevance at the time of writing. The Paris Agreement will be looked at in the following section, which was referred to as the highlight for multilateral diplomacy.⁸²

3.1.3 The Paris Agreement and the ocean

The 2015 Paris Agreement, also negotiated under the auspices of the UNFCCC, aims to bolster the global response in combatting climate change.⁸³ It includes a long-term target for states to hold average temperature rise 'well below 2°C above preindustrial levels and pursuing efforts to limited temperature increase to 1,5°C above pre-industrial levels'⁸⁴ and also a collective GHG emissions target of climate neutrality.⁸⁵ To meet this long-term temperature goal, each

⁷⁷ Kyoto Protocol, Art 3.1; Daniel Bodansky, 'The Ocean and Climate Change Law: Exploring the Relationships' in Ronan Long and Richard Barnes (eds) *Frontiers in International Law: Oceans and Climate Challenges: Essays in Honor of David Freestone* (Brill Nijhoff 2021) 6.

⁷⁸ Daniel Bodansky, Jutta Brunnée and Lavanya Rajamani *International Climate Change* (n 69) 160.

⁷⁹ Kyoto Protocol, art 2 (2).

⁸⁰ Kyoto Protocol, art 2 (2).

⁸¹ Henrik Ringbom, 'Regulating Greenhouse Gases from Ships: Some Light at the End of the Funnel?' in Elise Johansen, Signe Veierud Bush and Ingvild Ulrikke Jakobsen (eds) *The Law of the Sea and Climate Change: Solutions and Constraints* (Cambridge University Press 2020) 134-135.

⁸² Daniel Bodansky, Jutta Brunnée and Lavanya Rajamani *International Climate Change* (n 69) 209.

⁸³ Paris Agreement, art 2 (1).

⁸⁴ Paris Agreement, art 2 (1) (a).

⁸⁵ UNFCCC, art 4.

State Party has a binding obligation of conduct to prepare, communicate and maintain nationally determined contributions (NDCs), to pursue taking mitigation measures at national level and are required to communicate a NDC every five years.⁸⁶

Unlike under the Kyoto Protocol, that relied on a strong concept of CBDR, under the Paris Agreement, all Parties need to prepare a contribution, although it is important to highlight that the NDCs still do reflect common but differentiated responsibilities and capabilities.⁸⁷ This bottom-up approach leaves state parties a margin of discretion to determine national mitigation measures.⁸⁸ Top-down elements can be found in the provisions that state that Parties ‘shall reflect its highest possible ambition’,⁸⁹ shall progress over time⁹⁰ and the global stocktake provision.⁹¹ Moreover in its text, the Paris Agreement mentions the ocean directly in its Preamble, noting the ‘importance of ensuring the integrity of all ecosystems, including oceans, and the protection of biodiversity’.⁹² The mere acknowledgment of oceans in the Preamble does not influence the substantive or procedural obligations of the treaty.⁹³

Compared to the Kyoto Protocol, the IMO is not directly referred to and in general the shipping sector is left out in the text. Still it can be argued to be the mandated agency through Article 4 (1) of the UNFCCC that links shipping to the climate regime and the weaker version of the CBDR principle is seen to even speed up the negotiations.⁹⁴ The regulatory developments at the IMO will be looked at in more detail at a later stage.

Summing up, in the text of the agreement, the ocean is not really mentioned and it does not come clearly forward how the temperature goal relates to topics such as ocean warming, ocean acidification and sea-level rise. In turn, a few more provisions will be looked at that may have relevance for the ocean.

⁸⁶ Paris Agreement, arts 4 (2) and (9).

⁸⁷ Paris Agreement, art 4 (3);); see also Daniel Bodansky, Jutta Brunnée and Lavanya Rajamani *International Climate Change* (n 69) 223 – 226.

⁸⁸ Elise Johansen, ‘The Role of the Oceans in Regulating the Earth’s Climate’ in Elise Johansen, Signe Veierud Bush and Ingvild Ulrikke Jakobsen (eds) *The Law of the Sea and Climate Change: Solutions and Constraints* (Cambridge University Press 2020) 7.

⁸⁹ Paris Agreement, art 4 (2).

⁹⁰ Paris Agreement, art 4 (3). There is no definition on what progression means.

⁹¹ Paris Agreement, art 14; In line with Article 14 (3) of the Paris Agreement the first global stocktake was in 2023 to assess the collective progress. See also Daniel Bodansky, Jutta Brunnée and Lavanya Rajamani *International Climate Change* (n 69) 244 – 245.

⁹² Paris Agreement, recital 14.

⁹³ Elise Johansen, ‘The Legal Interactions’ (n 57) 73 – 75.

⁹⁴ Henrik Ringbom, ‘Regulating Greenhouse Gases’ (n 81) 135 - 137.

Article 5 (1) of the Paris Agreement entails a weak obligation ('should') for State Parties to take conservation and enhancement action, as appropriate, related to sinks and reservoirs and refers to Article 4 (1) (d) of the UNFCCC. This could arguably also include oceans, albeit the emphasis being clearly on forests and therefore oceans may only benefit indirectly, such as by forests enhanced capacity to store carbon dioxide. A similar or equivalent provision as Article 5 (2) of the Paris Agreement, that promotes sustainable management of forests, does not exist for the ocean.

The obligation for State Parties to prepare, communicate and maintain NDCs and pursue mitigation measures at national level to fulfil the objectives thereof in Article 4 (2) of the Paris Agreement, may indirectly contribute to limit climate change impacts on the ocean. Although State Parties are not required to include the ocean in their NDCs, an increasing number, especially coastal and island States, does integrate it in one way or another.⁹⁵ While some include initiatives or plans to restore, conserve and finance coastal ecosystems, such as mangroves or other carbon sinks, others include aims to reduce GHG emissions in the maritime sector, enhance coastal resilience, protect of fragile habitats and ecosystems or plans related to renewable energy based on the ocean.⁹⁶

Additionally, Article 7 of the Paris Agreement deals with adaptation specifically in relation to the temperature goal of Article 2 thereof and uses rather weak language, such as 'should' and 'as appropriate'.⁹⁷ Paragraph 9 thereof includes an obligation to 'as appropriate, engage in adaptation planning processes and implementation of actions [...] which may include' for example national adaptation plans, enhancement of ecosystem resilience and action that takes vulnerable ecosystems, places or people into account.⁹⁸ These national adaptation plans (NAPs) or assessments could include impacts on vulnerable ocean ecosystems, or vulnerable

⁹⁵ See also Sarah M Reiter, Laura M Cheng, Angelique Pouponneau, Sophie Taylor and Lisa M Wedding, 'A Framework for Operationalizing Climate-Just Ocean Commitments Under the Paris Agreement' (28 October 2021) 3:724065 *Frontiers in Climate* available at <doi:10.3389/fclim.2021.724065>; Natalya D Gallo, David G Victor and Lisa A Levin, 'Ocean Commitments under the Paris Agreement' (30 October 2017) 7(11) *Nature Climate Change* 833 available at <https://doi.org/10.1038/nclimate3422> 833 – 838.

⁹⁶ Commonwealth Secretariat, "Blueing' the NDCs: An Updated Review of Ocean-Based Nationally Determined Contributions of Commonwealth Countries' (November 2023) available at <https://production-new-commonwealth-files.s3.eu-west-2.amazonaws.com/s3fs-public/2024-01/D19484%20V5%20TONR%20Blueing%20The%20NDCs%20C%20Lawson%20no%20crops.pdf> 4 – 38.

⁹⁷ Daniel Bodansky, Jutta Brunnée and Lavanya Rajamani *International Climate Change* (n 69) 237 – 238.

⁹⁸ Paris Agreement, art 7 (9) (a) – (e) (emphasis added).

populations due to sea level rise. This obligation formulated with ‘shall’ is weakened with the wording ‘engage’ and does not directly require State Parties to take the ocean into account.

Lastly Article 14 of the Paris Agreement, the global stocktake provision, may be of relevance for oceans, namely the assessment of the collective progress in achieving the long-term goals that includes mitigation and adaptation actions. The 2023 Technical Synthesis Report for the first global stocktake, refers to the ocean only as a sink to reach net zero emissions and the possibility to include them in their adaptation processes or NAPs.⁹⁹ Again, this is not surprising due to the fact that the goals that are focused on the atmosphere.

Summing up, it can be seen that the core climate instruments do not really directly mention the ocean apart from its role as a sink and the role of IMO in emission reduction of the shipping sector. This does not mean that the outlined provisions are not of importance for this study. A look will now be taken into the law of the sea.

3.2 The Law of the Sea and Climate Change

In this section, it will be assessed if the core treaties of the law of the sea regime address climate change and if the assessment is positive, then it will be answered how it does so.

At the heart of the law of the sea regime is the UN Convention on the Law of the Sea (LOSC). The LOSC often referred to as the ‘constitution for the ocean’, meant to govern major human activities at sea, such as navigation, marine scientific research (MSR) and exploitation of resources, has the overarching goal to ensure peaceful and cooperative uses of the ocean.¹⁰⁰ This derives from the purpose of the Convention, which can be found in the Preamble. It is thus seeks to establish ‘a legal order for the seas and oceans which will facilitate international communication, and will promote the peaceful uses of the seas and oceans, the equitable and

⁹⁹ SBSTA, ‘Technical Dialogue of the First Global Stocktake: Synthesis Report by the Co-Facilitators on the Technical Dialogue’ (8 September 2023) FCCC/SB/2023/9 available at: <https://unfccc.int/sites/default/files/resource/sb2023_09E.pdf> paras 115 and 145.

¹⁰⁰ Tommy T B Koh, ‘A Constitution of the Oceans: Remarks by Tommy T B Koh of Singapore, President of the Third United Nations Conference on the Law of the Sea’ (10 December 1982) reproduced in *The Law of the Sea. Official Text of the United Nations Convention on the Law of the Sea with Annexes and Index. Final Act of the Third United Nations Conference on the Law of the Sea. Introductory Material on the Convention and the Conference* (United Nations, 1983) xxxiii–xxxvii; see also Karen N Scott, ‘The LOSC: “A Constitution for the Oceans” in the Anthropocene?’ (2023) 41 (1) Australian Year Book of International Law Online 269, 269 – 296; see for critical discussion on the matter: Jonathan Havercroft and Alice Kloker, ‘A Constitution for the Ocean? An Agora on Ocean Governance’ (Cambridge University Press 2023) 13 (1) Global Constitutionalism <<https://doi.org/10.1017/S2045381723000138>>.

efficient utilization of their resources, the conservation of their living resources and the study, protection and preservation of the environment'.¹⁰¹ In its text it follows a zonal and sectoral approach for ocean government and thereby establishes different maritime zones within and beyond national jurisdiction.

The wording climate change is nowhere to be found in the text of the Convention, neither was it mentioned in the negotiations, due to the fact that it was simply not yet on the international agenda.¹⁰² Thus an important question is to what extent the Convention can be described dynamic and responsive for new challenges, namely climate change and its impacts, in order to stay relevant and be flexible while managing the ocean space and thus a 'living treaty'.¹⁰³ Following Article 31 (3) (c) of the Vienna Convention on the Law of Treaties (VCLT), treaties are to be interpreted 'in the context of the rules of international law', which will be relevant later when elaborating some specific obligations of State parties.¹⁰⁴

In previous literature, the adaptability and flexibility of the LOSC to accommodate emerging issues, such as climate change, have taken a look at internal mechanisms in the treaty, such as the formal amendment procedures in Articles 312 and 313, which have been seen of limited relevance, since they have not been relied upon since the adoption of the LOSC and are unlikely to be used in the near future.¹⁰⁵ Further ways for the LOSC to adapt or change include the adoption of an Implementing Agreement, which are only binding upon States that consented.¹⁰⁶ Additionally Article 319 (e) of the LOSC provides for a meeting of the State Parties (SPLOS),¹⁰⁷ whereby there is no conferral of any power to the SPLOS for amendments or

¹⁰¹ LOSC, preamble.

¹⁰² Alan Boyle, 'Law of the Sea Perspectives on Climate Change' in David Freestone (ed) *The 1982 Law of the Sea Convention at 30: Successes, Challenges and New Agendas* (Brill Nijhoff 2013) 157.

¹⁰³ Jill Barret 'The United Nations' (n 10) 3 ff.

¹⁰⁴ Bleuenn Gaëlle Guilloux, 'Ocean and Climate Regime Interactions' (2020) 34 (1) *Ocean Yearbook Online* 45, 53 Footnote 40.

¹⁰⁵ See Alan Boyle, 'Protecting the Marine Environment from Climate Change: The LOSC Part XII Regime' in Elise Johansen, Signe Veierud Bush and Ingvild Ulrikke Jakobsen (eds) *The Law of the Sea and Climate Change: Solutions and Constraints* (Cambridge University Press 2020) 83; Irina Buga, 'Between Stability and Change in the Law of the Sea Convention: Subsequent practice, Treaty Modification, and Regime Interaction' in Donald R Rothwell, Alex G Oude Elferink, Karen N Scott, Tim Stephens (eds) *The Oxford Handbook of the Law of the Sea* (Oxford University Press 2015) 47.

¹⁰⁶ Three such Agreements have been adopted: UNFSA, the BBNJ Agreement and the Agreement Relating to the Implementation of Part XI, see Footnote 16

¹⁰⁷ In contrast, the Conference of the Parties (hereinafter COP) established under the UNFCCC can create obligations for State parties and may adopt Resolutions that interpret individual treaty provisions.

interpretation of the text of the Convention.¹⁰⁸ Therefore these internal mechanisms are of limited value to assess whether the LOSC can accommodate change and further possible mechanisms will be looked in the regime interaction study.

Moreover Part XII of the LOSC does provide for obligations to protect and preserve the marine environment. Although also here climate change is not referred to directly, this does not mean that the LOSC cannot support climate change mitigation and adaptation. After all, the LOSC is supposed ‘conscious that the problems of the ocean space are closely interrelated and need to be considered as a whole’.¹⁰⁹ This will be further looked at when assessing the interaction with the climate regime, whereby some key provisions will be introduced in the following paragraphs.

Hereby Article 192 of the LOSC is worth mentioning, which is the general duty to protect and preserve the marine environment that applies to all areas of the ocean and possibly has relevance for climate change impacts. The obligations set out in Article 194 of the LOSC relate to pollution from any source, including transboundary pollution and also contains a duty for protection of rare or fragile ecosystems and marine life.¹¹⁰ When subsuming climate change under the definition of pollution in Article 1 (1) (4) of the LOSC, it could follow that State Parties do have obligations in relation to it. Moreover, the LOSC also regulates source-specific obligations for land-based sources of pollution, vessel-sourced pollution and pollution from or through the atmosphere.¹¹¹ And lastly Article 197, the duty to cooperate on a global or regional basis could be of interest in light of combatting climate change. These and further provisions relevant to protect the marine environment will be further elaborated in the following Chapter.

The regulation of fishing activities can be found in various instruments, such as the LOSC, the United Nations Agreement for the Implementation of the Provisions on the United Nations Convention of the Law of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Stocks (UNFSA) and in the constitutive instruments of regional fisheries management organizations (RFMOs) and their conservation and management measures. Articles 63, 64, and 117 of the LOSC are the relevant provisions

¹⁰⁸ Alexander Pröls, ‘Fragmentation and Coherence in the Legal Framework for the Protection of the Marine Environment’ in Rosemary Rayfuse, Aline Jaeckel and Natalie Klein (eds) *Research Handbook on International Marine Environmental Law* (Edward Elgar Publishing 2023) 76.

¹⁰⁹ LOSC, preamble.

¹¹⁰ LOSC, art 194 (1), (2), and (5).

¹¹¹ LOSC, art 207, 211 and 212.

that require States to cooperate for conservation on highly migratory and straddling fish stocks and high seas resources.

The binding legal instrument in international fisheries law, aside from the LOSC, is the UNFSA with the objective to ‘ensure the long-term conservation and sustainable use of straddling fish stocks and highly migratory fish stocks’.¹¹² It provides a framework for regional agreements and giving effect to the duty to cooperate.¹¹³ It does so by encouraging the creation of Regional Fishery Management Organizations (RFMOs)¹¹⁴ for the management of highly migratory and straddling fish stocks and the establishment of minimum standards for the conservation and management of these stocks. Consequently, several RFMOs have been established with the aim at conservation and sustainable use of fishery resources that can adopt binding conservation and management measures.¹¹⁵

Due to the fact that the UNFSA does not apply to fish stocks that are not highly migratory or straddling, it does not cover fish stocks that are changing their migratory pattern due to climate change. In promoting the cooperation in fishery conservation and management, the LOSC, through Article 197, arguably reinforces the cooperation in adaptation foreseen in the UN climate change regime.¹¹⁶ Thus the law of the sea regime may help to manage migrating fish populations or fish stocks otherwise affected due to climate-related ocean changes and protect and preserve marine living resources.

The BBNJ Agreement¹¹⁷ adopted by the UN General Assembly under the LOSC is applicable to areas beyond national jurisdiction and thus again relies on the zonal approach. It has the objective to ‘(p)rotect, preserve, restore and maintain biological diversity and ecosystems, including with a view to enhancing their productivity and health, and strengthen resilience to stressors, including those related to climate change, ocean acidification and marine

¹¹² UNFSA, art 2.

¹¹³ UNFSA, arts 2 and 5.

¹¹⁴ UNFSA, arts 8 – 12.

¹¹⁵ While regional fishery management organizations (RFMOs) can adopt legally binding conservation and management measures (CMMs), advisory regional fisheries bodies (RFBs) have no such competence. See Julien Rochette, Raphaël Billé, Erik J Molenaar, Petra Drankier and Lucien Chabason, ‘Regional Oceans Governance Mechanism: A Review’ (October 2015) 60 *Marine Policy* 9, 9 ff.

¹¹⁶ Robin Kundis Craig, ‘Mitigation and Adaptation’ in Elise Johansen, Signe Veierud Bush and Ingvild Ulrikke Jakobsen (eds) *The Law of the Sea and Climate Change: Solutions and Constraints* (Cambridge University Press 2020) 78.

¹¹⁷ BBNJ Agreement.

pollution',¹¹⁸ thus referring directly to climate change and its impacts. The BBNJ Agreement having potential in creating synergies between the law of the sea and the climate change regime will not be further assessed during this thesis, due to the length of the paper.

¹¹⁸ BBNJ Agreement, art 17.

4 Applying the Analytical Framework to the Regime Interaction Study:

The scientific evidence and physical interrelation of the ocean and climate already outlined in the Chapter 1, Section 1, and the core instruments of the two regimes and their normative overlaps introduced, it is time now to look at them wearing the lens of regime interaction. Taking into account the discussion on the fragmentation of international law, the normative overlaps of the ocean and climate change law may lead to situations of either cooperation or conflict.¹¹⁹ This means that the two regimes may create synergies and promote mitigation and adaptation of climate change, be in conflict with one another or just exist next to each other.

In this chapter the analytical framework set out in Chapter 2 Section 4 will be applied. Therefore the three different analytical dimensions will be used: First the interactive form will look at the formal relationship between instruments, the interactive substance at the 'relationships between individual rights and obligations' and the interactive process at the relationship of institutional arrangements.¹²⁰ While this structure follows the analytical framework set out in Section 2.4, it is worthy to recognize, that a complete differentiation is not possible and therefore parts mentioned within one dimension, may also have relevance for another. Still it helps in giving a bigger picture on where interaction is happening and how it may be managed and thus in answering the research question.

4.1 Interactive Form:

This Section will use the first analytical dimension, namely the interactive form. Therefore the formal relationships of the LOSC and the UNFCCC, the Kyoto Protocol and the Paris Agreement will be outlined, by taking into account the normative overlaps of the previous chapter. In doing so the sub-question 2 will be answered: What mechanisms do the core instruments of both regimes offer to deal with interaction themselves? Additionally it is worth mentioning that the stronger focus at the law of the sea side of things derives from the fact, as outlined in the previous Chapter, that the normative recognition of the ocean in the climate regime is rather limited.

¹¹⁹ See Section 2.4.

¹²⁰ Seline Trevisanut, Nikolaos Giannopoulos and Rozemarijn Roland Holst, 'Conclusion: Proposing a Three-Fold Approach (n 29) 222-233.

4.1.1 The LOSC and its built-in mechanisms for managing interaction with other instruments

The LOSC includes built-in conflict clauses and rules of references, which are of relevance for the normative regime interaction:

The LOSC includes built-in conflict rules, compatibility clauses that regulates the relationship of the LOSC with other treaties.¹²¹ First of all Article 311 of the LOSC provides that the ‘Convention shall not alter the rights and obligations of States Parties which arise from other agreements compatible with this Convention and which do not affect the enjoyment by other State Parties of their rights or the performance of their obligations under this Convention’.

Article 237 (1) of the LOSC provides that the provisions in Part XII are without prejudice to special obligations under other treaties that deal with the protection and preservation of the marine environment and thus uses a quite broad and open language.¹²² It regulates how Part XII thereof relates to other treaties that deal with protection and preservation of the marine environment and provides for ‘obligations assumed by States’ being ‘carried out in a manner consistent with the general principles and objectives of this Convention’. It was this provision that in the South China Sea arbitration affirms for the Tribunal that the substance of the obligations in Part XII are informed by the ‘corpus of international law related to the environment’,¹²³ meaning that they are informed ‘by reference to specific obligations set out in other international agreements’.¹²⁴ The Arbitral Tribunal relied hereby on Article 293 of the LOSC to apply standards of external treaties not incompatible with the LOSC, namely CITES and the CBD and found that they inform the content of the articles 192 and 194 of the LOSC.¹²⁵ Following it could be argued, that the instruments of the climate regime may also constitute the corpus of international law and may be relied upon, which will be looked at a later stage in more depth.

¹²¹ Francesca Romanin Jacur, ‘Formalism and Law-Making in Treaty-Based Ocean Governance: Limits and Challenges’ in Seline Trevisanut, Nikolaos Giannopoulos and Rozemarijn Roland Holst (eds) *Regime Interaction in Ocean Governance: Problems, Theories and Methods* (Brill Nijhoff 2020) 171.

¹²² LOSC, art 237 (1).

¹²³ South China Sea Arbitration (the Republic of the Philippines v the People’s Republic of China) Award on the Merits, PCA Case No 2013-19, ICGJ 495 (12 July 2016) (hereinafter SCS Arbitration) para 941.

¹²⁴ SCS Arbitration, Award on Merits, para 942; see also para 945 and 956: In the here cited quotes from the South China Arbitration, the Tribunal looks into the external treaties: CITES and the CBD to inform the content of Articles 192 and 194 of the LOSC.

¹²⁵ SCS Arbitration, Award on Merits, para 945, 956 and 964.

Another mechanism that can be found in the LOSC to regulate the relationship with other instruments are rules of reference. It is doing so by obliging State Parties, acting through the competent international organizations, to adopt regulations in relation to ocean matters, thus deferring ‘law-making to State Parties, to more specialized institutions and to other agreements’.¹²⁶ Through the extensive use of rule of reference to generally applicable international rules and standards (GAIRS), external rules, that are created by other bodies, become an integral part of the LOSC by virtue of referral and thus binding under the LOSC.¹²⁷ Thus, the importation of an obligation into the LOSC treaty text could result into forming new obligations on Parties to the LOSC that are not party to the referred rule contained in a binding instrument. The external rule does not have to be legally binding, but has to be ‘generally accepted’, which has to be assessed on a case-by-case basis.¹²⁸

The reference to GAIRS help the Convention to stay flexible in light of developments and rules applied in a uniform and harmonized manner.¹²⁹ Additionally, on a more general note it is important to highlight that throughout the various provisions, State Parties are required to apply different standard of conduct when enacting laws and regulations, whereby the explicit use of wording in the provisions has to be differentiated from one another.¹³⁰ While some rule of references oblige State Parties to take a rule or standard into account, others form minimum requirements, which by wording is a stronger rule of reference.

GAIRS can especially be found in Part XII of the LOSC. They are of relevance in tackling arising issues of ocean governance and also ensure standards are up-to-date.¹³¹ The reference clauses in Part XII of the LOSC often refer to ‘(the) competent organization(s)’ or ‘diplomatic conference’ or both. Thereby power for implementation and development is conferred to

¹²⁶ Francesca Romanin Jacur, ‘Formalism and Law-Making’ (n 121) 173.

¹²⁷ LOSC, arts 213, 214, 216 (1), 217 (1), 218 (1), 219, 220 (1) – (3), 222, 226 (1) (c), 228 (1) and 230 (1) – (2) refer to applicable international rules and standards; LOSC, arts 207 (1) and 212 (1) refer to internationally agreed rules, standards and recommended practices and procedures; LOSC, arts 211 (2), (5), (6) (c) and 226 (1) (a) refer to generally accepted international rules and standards; LOSC, art 210 (6) refers to global rules and standards; Alexander Pröhl, ‘Fragmentation and Coherence’ (n 108) 61 – 62.

¹²⁸ Francesca Romanin Jacur, ‘Formalism and Law-Making’ (n 121) 175; Alexander Pröhl, ‘Fragmentation and Coherence’ (n 108) 62 – 63, 68; See also for example Lene Korseberg, ‘The Law-Making Effects of the FAO Deep-Sea Fisheries Guidelines’ (2018) 67 (4) ICLQ 801, 801 – 832.

¹²⁹ Francesca Romanin Jacur, ‘Formalism and Law-Making’ (n 121) 174.

¹³⁰ See f.e. LOSC arts 210 (6), 208 (3) and 220 (2) shall be no less effective; LOSC, art 211 (5) give effect to, art 207.

¹³¹ Natalie Klein, ‘Meaning, Scope, and Significance’ (n 19) 16; Francesca Romanin Jacur, ‘Formalism and Law-Making’ (n 121) 173.

international institutions, ranging from the role to cooperate¹³² to acting as a forum for negotiating rules and standards.¹³³ Other provisions require rules and standards to comply with rules, standards and practices adopted by the competent international organization(s),¹³⁴ acting as a minimum requirement, such as the energy efficiency standards set by IMO for limiting GHG emission from shipping.¹³⁵ The following section will take a look at the role of IMO that follow from the rule of reference concerning pollution from ships and other regulatory developments.

4.1.2 IMO – and regulatory developments on GHG emissions from shipping

This section seeks to draw conclusions from the fact that the IMO is mandated by the climate change regime to regulate emissions from international shipping and the fact that the LOSC in various provisions refers to the IMO as the competent international organization in its rules of reference. Therefore some important provisions of the LOSC and regulatory developments within the IMO, that are relevant in relation to climate change, will be looked at.

The LOSC, by virtue of rule of reference, leaves the development of some detailed rules and regulations in relation to maritime safety, navigation efficiency and the control and prevention of vessel-sourced pollution and pollution by dumping to the IMO,¹³⁶ that has competences covering international maritime transport and shipping activities.¹³⁷ Examples of provisions in relation to marine pollution, that have relevance in the context of this study, are vessel-sourced pollution in Article 211, pollution by dumping in Article 210 thereof and pollution from or through the atmosphere in Article 212 thereof. While a detailed assessment of these provisions is not the goal, they are worth mentioning here, as it is because of the rule of reference in them, that rules or standards set by IMO may be incorporated into the Conventions text.

Relevant in the context of marine pollution from ships is the 1973/78 Convention for the Prevention of Marine Pollution from Ships (MARPOL)¹³⁸ with its Annexes, adopted under the

¹³² See eg, LOSC, arts 197, 199, 200 and 201.

¹³³ See eg, LOSC, arts 202, 207 (4), 208 (5), 210 (4), 211 (1) and 212 (3); Alexander Pröls, 'Fragmentation and Coherence' (n 108) 66.

¹³⁴ LOSC, arts 211 (2) and (5).

¹³⁵ Jill Barret 'The United Nations' (n 10).

¹³⁶ Alexander Pröls, 'Fragmentation and Coherence' (n 108) 66 – 67.

¹³⁷ Convention on the International Maritime Organization (adopted 6 March 1948, entered into force 17 March 1958) 289 UNTS 3 (hereinafter IMO Convention), art 1.

¹³⁸ International Convention for the Prevention of Marine Pollution from Ships (adopted 2 November 1973) 1340 UNTS 184, as modified by Protocol Relating to the 1973 International Convention for the

auspices of the IMO.¹³⁹ MARPOL itself reflects almost global acceptance, thus arguably rules and standards often fulfill the requirement of ‘general accepted’, although the status of acceptance is only one factor or indicator and a case-by-case analysis is necessary. Non-binding standards in resolutions could become binding through incorporation, if argued to be ‘generally accepted’.¹⁴⁰ In its Annexes MARPOL includes specific regulations of different types of pollution. Following the IMO Assembly Resolution A.719 (17) on the Prevention of Air Pollution from Ships, MARPOL Annex VI, ‘Regulations for the prevention of air pollution from ships’ was adopted, entering into force in 2005.¹⁴¹ The optional Annex VI is relevant for limiting impacts of air pollution and GHG emissions from international shipping, by way of setting standards, such as ship exhaust limits on sulphur oxide and nitrogen oxide emissions and prohibition of deliberately emitting ozone depleting substances.¹⁴²

In general, regulatory developments on the reduction of GHG emissions of international shipping since the adoption of the Paris Agreement, have been arguably scarce.¹⁴³ They include technical standards on enhancing energy efficiency, that arguably contribute to the climate change mitigation efforts, such as the introduction of the Energy Efficiency Design Index (EEDI) in 2011¹⁴⁴ and the Energy Efficiency Existing Ship Index (EEXI) in 2021.¹⁴⁵ The 2016 roadmap to develop a comprehensive strategy on reducing GHG emissions in international shipping lead to the IMO 2018 Initial Strategy on the reduction of GHG emissions from ships setting out objectives that had no normative implications, since it did not lead to the development of any legally binding obligations.¹⁴⁶

Prevention of Pollution from Ships (adopted 17 February 1978, entered into force 2 October 1983) 1340 UNTS 61 (hereinafter MARPOL).

¹³⁹ Irina Buga, ‘Between Stability and’ (n 105) 66.

¹⁴⁰ Francesca Romanin Jacur, ‘Formalism and Law-Making’ (n 121) 176.

¹⁴¹ IMO Assembly Resolution A.719 (17), ‘Prevention of Air Pollution from Ships’ (adopted 6 November 1991).

¹⁴² IMO, ‘Historic Background’ <<https://www.imo.org/en/OurWork/Environment/Pages/Historic-Background-.aspx>> accessed 6 June 2024.

¹⁴³ Robin Churchill, Vaughan Lowe and Amy Sander, *The Law of The Sea* (Fourth Edition, Manchester University Press 2022) ch 16, 628 ff, 636 – 638.

¹⁴⁴ Resolution MEPC.203(62), ‘Inclusion of Regulations on Energy Efficiency for Ships in MARPOL Annex VI’ (adopted 15 July 2011); Amendments have further strengthened the requirements.

¹⁴⁵ Resolution MEPC.328(76), ‘2021 Revised MARPOL Annex VI’ (17 June 2021) IMO Doc MEPC 76/15/Add.1, Annex 1.

¹⁴⁶ Marine Environment Protection Committee during Seventieth Session (MEPC 70), ‘Roadmap for Developing a Comprehensive IMO Strategy on Reduction of GHG Emissions from Ships’ (October 2016); MEPC Resolution MEPC.304(72), ‘Initial IMO Strategy on Reduction of GHG Emissions from Ships’ (13 April 2018) IMO Doc MEPC 72/17/Add.1, Annex 11; Henrik Ringbom, ‘Regulating Greenhouse Gases’ (n 81) 138-147.

The Marine Environment Protection Committee (MEPC), the specialized committee that addresses environmental matters and was established under the IMO, negotiated a follow-up strategy that resulted in the 2023 IMO Strategy on Reduction of GHG Emissions from Ships (2023 IMO Strategy).¹⁴⁷ The Strategy sets out a timeline, whereby the IMO committed to the adoption of binding rules by the year 2025, whereby the entry in force will be two years after.¹⁴⁸ While Andrew Friedman marks the 2023 IMO Strategy as ‘a promising sign of the direction IMO is taking a catalyst for preparing for shipping’s transition to zero-emissions and a springboard for the negotiations to come’,¹⁴⁹ he indicates that there is still much to be determined until 2025 and assumably measures could be given effect through amending MARPOL and updating Annex VI by adding measures to limit GHG emissions.¹⁵⁰

Moreover, as outlined in the previous chapter, the ocean in the climate change regime is limited to its function as a carbon sink, that removes and sequesters large amounts of CO₂. Ocean fertilization and carbon capture and storage (CCS), that both arguably fall under the definition of dumping in Article 1 (5) of the LOSC, have been relevant in the IMO’s work.¹⁵¹ The IMO acts as a secretariat for the 1972 London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention)¹⁵² and the 1996 London Protocol to the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Protocol)¹⁵³ with its objective to control pollution from dumping.¹⁵⁴ They may contain or develop rules and standards that are relevant for climate change mitigation

¹⁴⁷ MEPC Resolution MEPC.377(80), ‘2023 IMO Strategy on Reduction of GHG Emissions from Ships’ (7 July 2023) IMO Doc MEPC 80/WP.12, Annex 1.

¹⁴⁸ Andrew Friedman, ‘The International Maritime Organization’s Revised Greenhouse Gas Strategy: A Political Signal of Shipping’s Regulatory Future’ (2024) *The International Journal of Marine and Coastal Law* <<https://doi.org/10.1163/15718085-bja10162>> 5; see also: Tristan Smith and others, ‘Implications of the Revised IMO GHG Strategy for National, Regional and Corporate Action’ (UMAS 12 September 2023).

¹⁴⁹ Andrew Friedman, ‘The International Maritime (n 148) 27.

¹⁵⁰ Andrew Friedman, ‘The International Maritime (n 148) 11.

¹⁵¹ Naoki Iwatsuki, ‘Chapter 26 Regime Interaction between the Law of the Sea and Climate Change Law’ in James Kraska, Ronan Long and Myron H Nordquist (eds) *Peaceful Maritime Engagement in East Asia and the Pacific Region* (Brill Nijhoff 2022) 428.

¹⁵² Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (adopted 29 December 1972, entered into force 1975) 1046 UNTS 120 (hereinafter London Dumping Convention/ London Convention).

¹⁵³ 1996 Protocol to the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (adopted 7 November 1996, entered into force 24 March 2006) [2006] ATS 11; including its 2006 Amendment to include CO₂ Sequestration in Sub-Seabed Geological Formations in Annex 1 to the London Protocol, Resolution LP.1(1) (hereinafter London Protocol).

¹⁵⁴ The London Convention uses a list approach, whereby dumping is allowed if not on a black list or requires a permit if on the grey list, while the London Protocol uses the ‘reverse-list’, whereby dumping is prohibited, unless permitted. The definition of dumping can be found in Art III (1) of the London Convention and Art 1 (4) of the London Protocol.

measures that then form minimum standards.¹⁵⁵ Carbon capture and storage, for example can be seen as a mitigation measure, which after an amendment to the LP is subject to a permit.¹⁵⁶ Another mitigation measures, namely ocean fertilization, was on the agenda of IMO and thus the Resolution LC/LP.1 (2008) on the ‘Regulation of Ocean Fertilization’ was adopted.¹⁵⁷ It was followed by an Assessment Framework¹⁵⁸ and an amendment to the London Protocol in 2013 that prohibits ocean fertilization activities, other than legitimate scientific research purposes but is still lacking acceptance and thus not in force.¹⁵⁹

In general, due to its negative effects and risks for the marine environment, ocean fertilization and CCS not being understood and researched enough, this arguably unfolds a conflicting situation between the climate change regime, that encourages the enhancement of sinks and reservoirs, including the ocean, and the law of the sea regime. This is due to the fact that even though these mitigation measures are not prohibited by the LC and LP, they are discouraged, and additionally are still be contrary the law of the sea when applying a precautionary approach.¹⁶⁰

In summary this section shows that, through the use of rules of reference, rules and standards for limiting GHG emissions in the international shipping sector and other forms of climate mitigation measures could form an obligation under the LOSC and thus promoting the fight against climate change. Even if not reaching the status of ‘generally accepted’, these rules and standards are still not void. Mitigation measures, such as ocean fertilization and CCS practices in the sub-seabed even result in a situation of conflict of the two regimes, which may be resolved by further research, coordination and cooperation of the relevant international institutions to solve this conflict.¹⁶¹

¹⁵⁵ LOSC, art 210.

¹⁵⁶ Robin Churchill, Vaughan Lowe and Amy Sander, *The Law of* (n 143) ch 16, 628 ff, 674.

¹⁵⁷ Contracting Parties to the London Convention and the London Protocol Resolution LC/LP.1(2008), ‘Regulation of Ocean Fertilization’ (31 October 2008) IMO Doc LC 30/16, Annex 6.

¹⁵⁸ Contracting Parties to the London Convention and the London Protocol Resolution LC/LP.2(2010), ‘Assessment Framework for Scientific Research Involving Fertilization’ (14 October 2010) IMO Doc LC 32/15, Annex 5.

¹⁵⁹ Contracting Parties to the London Protocol Resolution LP.4(8), ‘On the Amendment to the London Protocol to Regulate the Placement of Matter for Ocean Fertilization and Other Marine Geoengineering Activities’ (18 October 2013) IMO Doc. LC 35/15, Annex 4; Daniel Bodansky, ‘The Ocean and Climate’ (n 77) 16.

¹⁶⁰ Naoki Iwatsuki, ‘Chapter 26 Regime Interaction 429.

¹⁶¹ Naoki Iwatsuki, ‘Chapter 26 Regime Interaction 429; see also Karen N Scott, ‘Ocean Acidification: A Due Diligence Obligation under the LOSC’ (2020) 35(2) *The International Journal of Marine and Coastal Law* 382, 382 – 408.

4.2 Interactive Substance:

In this section, the interactive substance will be assessed. As a way of managing normative interactions, different tools are of help. These cover treaty interpretation techniques, such as Article 31 (3) (c) of the VCLT and evolutionary interpretation but also balancing techniques through duties to cooperate, or take ‘due regard’ of other interests.¹⁶²

In the following sub-sections, the third sub-question will be answered: How may interpretation tools manage regime interaction of the two regimes? Again, a big weigh will be given to the LOSC, by interpreting and applying it in light of legal, technical and scientific developments, recognizing that rules of reference are not the only way to keep it dynamic and updated, by way of regarding the wider ‘corpus of international law relating to the environment’.¹⁶³ Therefore the stage of adjudication is at the focus, whereby first some relevant provisions of Part XII and possible interpretations thereof to include measures to combat climate change, will be looked at, followed by outlining the dispute settlement under Part XV of the LOSC and the climate change dispute settlement and lastly followed by a short discourse on the ITLOS Advisory Opinion on climate change.¹⁶⁴

Before diving into interpreting significant obligations of obligations contained in Part XII of the LOSC, some general notes on interpretation will be given, due to its importance as a legal technique for managing regime interaction. The VCLT offers to be a toolbox full of interpretation tools, such as taking the evolution of the content of provisions of treaties and subsequent normative developments, including interpretation in light of the object and purpose and relevant rules of international law applicable between the parties, into account when interpreting them.¹⁶⁵ International courts and tribunals have been rather careful with relying on the principle of systemic integration, as the substance of it remains rather ‘obscure’.¹⁶⁶ Moreover vague and open language used in the LOSC, and its broad objective found in the

¹⁶² Seline Trevisanut, Nikolaos Giannopoulos and Rozemarijn Roland Holst, ‘Conclusion: Proposing a Three-Fold Approach (n 29) 230 – 231; Joshua Paine, ‘The Judicial Dimension of Regime Interaction Beyond Systemic Integration’ in Seline Trevisanut, Nikolaos Giannopoulos and Rozemarijn Roland Holst (eds) *Regime Interaction in Ocean Governance: Problems, Theories and Methods* (Brill Nijhoff 2020) 184 – 186.

¹⁶³ Joshua Paine, ‘The Judicial Dimension’ (n 162) 189 – 190, 192.

¹⁶⁴ Since the Advisory Opinion was published at a late stage of writing this thesis, only the written and oral proceedings will be taken into account.

¹⁶⁵ VCLT, art 31.

¹⁶⁶ Seline Trevisanut, Nikolaos Giannopoulos and Rozemarijn Roland Holst, ‘Introduction: Regime Interaction in Ocean Governance’ (n 27) 15.

Preamble to be a ‘legal order for the oceans’, welcomes evolutionary interpretation of key environmental provisions in the LOSC in considering relevant developments in international law. To inform States on the content and on what actions their obligations entail them to take, informal instruments may be of help.¹⁶⁷ Through the interpretative consideration of climate change the Convention stays responsive for new challenges and is thus a ‘living treaty’.¹⁶⁸

4.2.1 Part XII of the LOSC in light of climate change

Looking at Part XII of the LOSC, it regulates the protection and preservation of the marine environment in general and the prevention, reduction and control of marine pollution damaging other States and at the first glance it seems rather questionable that it accommodates climate change and ocean acidification and thus forms a holistic framework from protecting and preserving the marine environment from its adverse effects. It containing generic terms backs the intention to keep the protection and preservation of the marine environment flexible and dynamic.

4.2.1.1 Protecting and preserving the marine environment from climate change and its impacts

Article 192 of the LOSC is the general obligation ‘to protect and preserve the marine environment’ with no spatial constraint¹⁶⁹ and thus includes areas beyond national jurisdiction.¹⁷⁰ The substance of this provision is formulated in a very broad way, the language

¹⁶⁷ Natalie Klein uses the FAO Voluntary Guidelines for Flag State Performance as an example that may inform flag states on what measures to take to ‘do the utmost’ in preventing IUU fishing by its vessels and comply with the laws and regulations of a coastal state applying in the Exclusive Economic Zone (LOSC, arts 58 (3) and Art 62 (4) by referring to the SRFC Advisory Opinion (Request for Advisory Opinion submitted by the Sub-Regional Fisheries Commission, Advisory Opinion, 2 April 2015, ITLOS Reports 2015, 4 (hereinafter SRFC Advisory Opinion) para 129, 134) see Natalie Klein, ‘Meaning, Scope, and Significance’ (n 19) 15.

¹⁶⁸ Jill Barret ‘The United Nations’ (n 10).

¹⁶⁹ See SRFC Advisory Opinion, para 120; This was affirmed in the SCS Arbitration, see: SCS Arbitration, on the Merits, para 408, 945 and 940; It also applies to the Area. See: Responsibilities and Obligations of States with Respect to Activities in the Area, Advisory Opinion, 1 February 2011, ITLOS Reports 2011, 10 (hereinafter Area Advisory Opinion) para 180; This is supported by the BBNJ Agreement, which in its Preamble refers to Article 192 of the LOSC and in the substantive text includes obligations for an Environmental Impact Assessment (EIA) to meet the duty to protect and preserve the marine environment in ABNJ; see also BBNJ Agreement, arts 21 – 22, and 24 (1) (a) (ii) – (b); Commission of Small Island States on Climate Change and International law (COSIS), ‘Written Statement of the Commission of Small Island States on Climate Change and International Law with regard to the Request for an Advisory Opinion submitted by the Commission of Small Island States on Climate Change and International Law’ (16 June 2023) vol 1 available at <https://www.itlos.org/fileadmin/itlos/documents/cases/31/written_statements/2/C31-WS-2-4-COSIS.pdf> accessed 15 April 2024, 111 para 387.

¹⁷⁰ Detlef Czybulka, ‘Article 192: General Obligation’ in Alexander Prölß (ed) *United Nations Convention on the Law of the Sea: A Commentary* (C H Beck Hart Nomos 2017) 1278 - 1288; see

is vague and lacking definitions for various terms used, such as ‘protection’ and ‘preservation’, allowing for it to possibly accommodate modern threats to the marine environment, such as climate change impacts.¹⁷¹ The Tribunal in the South China Sea Arbitration (SCS Arbitration) interpreted the general obligation in an evolutionary manner and stated that the obligation does not only include a positive obligation (protect) to take active measures for the protection of oceans from future threats but also a negative obligation (preserve) to maintain its present condition.¹⁷²

Additionally ITLOS clarified that the obligation cannot be interpreted and applied isolated from the subsequent provisions in Part XII of the LOSC and is also informed by other specific duties in international law, which is in line with Art 237 of the LOSC, and by the corpus of international environmental law, which extends the scope to any relevant rule of international law at the time of application.¹⁷³ This understanding in general follows the systematic interpretation in Article 31 (3) (c) of the VCLT, meaning looking at Part XII of the LOSC in the bigger picture namely the whole body of international environmental law and may help with obligations benefitting from the ‘fragmented legal landscape’ to address the ‘problems of ocean space’.¹⁷⁴ It is not clear, whether the obligation goes as far as to entail a duty to take measures to restore degraded marine environment and ecosystems and enhance resilience by relying on legal developments in light of international law.¹⁷⁵

Moreover, the standard of responsibility of the general obligation is one of due diligence,¹⁷⁶ and does require State Parties to adopt rules and measures to prevent harmful acts and additionally to maintain a level of vigilance in enforcement of those rules and measures.¹⁷⁷ The

also Yoshifumi Tanaka, *The International Law of the Sea* (Fourth Edition, Cambridge University Press 2023).

¹⁷¹ James Harrison, *Saving the Oceans Through Law: The International Legal Framework for the Protection of the Marine Environment* (Oxford University Press 2017) 24.

¹⁷² SCS Arbitration, Award on Merits, para. 941.

¹⁷³ SCS Arbitration, Award on Merits, para 941 – 942.

¹⁷⁴ LOSC, preamble; COSIS, ‘Written Statement of’ (n 169) paras 351 – 353.

¹⁷⁵ This was argued by COSIS in its written statement and during the oral proceedings, referring to Article 5 (g) and 14 (c) of the BBNJ Agreement that mention ecosystem resilience and also Principle 7 of the 1992 RIO Declaration on Environment and Development and Article 8 (d) and (f) of the 1992 Convention on Biological Diversity (hereinafter CBD); See Convention on Biological Diversity (opened for signature 5 June 1992, entered into force 29 December 1993) 1760 UNTS 79; COSIS, ‘Written Statement of’ (n 169) paras 390 – 392; ITLOS, ‘Request for an Advisory Opinion Submitted by Small Island States on Climate Change And International Law: Verbatim Record’ (Philippa Webb on behalf of COSIS, 12 September 2023) Doc ITLOS/PV.23/C31/3/Rev.1: 36 – 43, 39 and 40.

¹⁷⁶ Further information on due diligence, see Section 4.2.1.2.

¹⁷⁷ SCS Arbitration, Award on Merits, para 961 and 964.

term ‘marine environment’ was found to include living resources,¹⁷⁸ marine life¹⁷⁹ and non-living resources¹⁸⁰ and legal scholars commented too that it encompasses ‘living and non-living marine nature, its ecosystems and components’.¹⁸¹ The Tribunal, reading Article 192 of the LOSC in the context of Article 194 (5) of the LOSC, held that Article 192 of the LOSC imposes an obligation of due diligence to take measures ‘necessary to protect and preserve rare and fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of life’.¹⁸² Additionally it found that the measures needed to be taken to comply with Article 194 (5) and 192 of the LOSC, are ‘not limited to measures aimed strictly at controlling marine pollution’ and is thus not the only aspect for preserving and protecting the marine environment.¹⁸³ This obligation could apply to habitat and ecosystems affected by climate change impacts, such as ocean acidification or ocean warming, and may be linked to Article 4 (8) (g) of the UNFCCC, that regulates the consideration of fragile ecosystems when implementing climate commitments.¹⁸⁴ Arguably this offers a legal basis to mitigate climate change impacts in the polar regions, such as the Arctic Ocean and or for coral reef.¹⁸⁵ This would be in line with James Harrison’s argument, reading Article 194 (5) of the LOSC in light of the obligation in Article 192 of the LOSC, that this may ‘require States to take steps to prevent ecosystems from becoming rare in the first place’.¹⁸⁶

¹⁷⁸ SRFC Advisory Opinion, para 216; Southern Bluefin Tuna (New Zealand v Japan; Australia v. Japan), Provisional Measures, Order of 27 August 1999, ITLOS Reports 1999, 280 (hereinafter Southern Bluefin Tuna Cases) para 70.

¹⁷⁹ RFC Advisory Opinion, para 216.

¹⁸⁰ Southern Bluefin Tuna Cases, para 70. See also SRFC Advisory Opinion, para 216; SCS Arbitration, Award on Merits, para 945.

¹⁸¹ Detlef Czybulka, ‘Article 192: General Obligation’ (n 170) 1287.

¹⁸² LOSC, art 194 (5); SCS Arbitration, Award on Merits, para 959; The ‘ecosystem’ definition in Article 2 of the CBD was considered as ‘internationally accepted’ and thus informs on what measures are to be taken pursuant to Article 194 (5) of the LOSC (see SCS Arbitration, Award on Merits, para 945.)

¹⁸³ Chagos Marine Protected Area Arbitration (the Republic of Mauritius v the United Kingdom of Great Britain and Northern Island) Award, PCA Case 2011-03, ICGJ 486 (18 March 2015) (hereinafter Chagos Award) para 320, 538.

¹⁸⁴ Bleuenn Gaëlle Guilloux, ‘Ocean and Climate’ (n 104) 54, Footnote 45.

¹⁸⁵ See IPCC, ‘Summary for Policymakers’ in *Global Warming of 1.5°C. An IPCC Special Report on the Impacts of Global Warming of 1.5°C Above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Treat of Climate Change, Sustainable Development and Efforts to Eradicate Poverty* (Cambridge University Press 2018) <<https://doi.org/10.1017/9781009157940.001>> 10; Nathaniel L Bindoff and others, ‘Changing Ocean, Marine Ecosystems, and Dependent Communities’ in Hans O Poertner and others (eds) *Special Report on the Ocean and Cryosphere* (Cambridge University Press 2019) 545 – 546; Ove Hoegh-Guldberg and others, ‘Impacts of 1.5°C Global Warming on Natural and Human Systems’ Valerie Masson-Delmotte and others (eds) in *Global Warming of 1.5°C. An IPCC Special Report on the Impacts of Global Warming of 1.5°C Above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Treat of Climate Change, Sustainable Development and Efforts to Eradicate Poverty* (Cambridge University Press 2018) 221 – 230.

¹⁸⁶ James Harrison, *Saving the Oceans* (n 171) 31.

Due to the fact that even when following the low-emission path, outlined by the IPCC, results in further negative impacts to the marine environment that are irreversible. Thus arguably additional to an obligation to take mitigation measures, one to take adaptation measures may be needed. While the term ‘adaptation’ is not included in the text of the LOSC¹⁸⁷, the IPCC¹⁸⁸ defines it as a ‘response to current climate change in reducing climate risks and vulnerability’.¹⁸⁹ Adaptation measure would enhance the marine environments’ resilience from adverse effects by reducing risks and vulnerability.¹⁹⁰ This is in line with the Paris Agreement that puts adaptation on equal footing to mitigation by including a goal ‘of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change’¹⁹¹ and highlights cooperative action and assistance for developing countries.¹⁹²

Summing up this section highlighted that the content of Article 192 of the LOSC is given substance by other provisions in Part XII (in line with Article 31 (2) of the VCLT) and international rules and standards, (in line with Article 237 of the LOSC and Article 31 (3) of the VCLT). Followingly, Article 192 of the LOSC may be read as to require measures to reduce GHG emissions in line with the temperature goal of the Paris Agreement¹⁹³ and protect the marine environment from adverse effects of climate change, such as ocean acidification, including rare or fragile ecosystems and habitats of depleted, threatened and endangered species.¹⁹⁴ The general obligation supplemented by rules on marine pollution, the next section will outline some relevant to climate change.

¹⁸⁷ The Tribunal in the South China Sea Case referred to other sources in the past when interpreting ‘ecosystem’ and thus looked into the CBD. See SCS Arbitration, Award on Merits, para 945.

¹⁸⁸ Again, used as an authoritative scientific source to set standards for measures addressing climate change, see IPCC, ‘Summary for Policymakers’ in Hans O Poertner and others (eds) *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2022) 20.

¹⁸⁹ IPCC, ‘Annex VII: Glossary’ in Valerie Masson-Delmotte and others (eds) *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2021) 2216.

¹⁹⁰ ITLOS, ‘Request for an Advisory Opinion Submitted by Small Island States on Climate Change And International Law: Verbatim Record’ (Nilüfer Oral on behalf of COSIS, 12 September 2023) Doc ITLOS/PV.23/C31/4/Rev.1: 1 – 9, 2 and 3.

¹⁹¹ Paris Agreement, art 7 (1).

¹⁹² Paris Agreement, art 7 (7) (a) – (d); See also Paris Agreement, art 2 (1) (b) and UNFCCC, art 2.

¹⁹³ Paris Agreement, art 2 (1) (a)

¹⁹⁴ Measures could thus be marine protected areas (MPAs) for the protection of species and vulnerable and fragile ecosystems and other measures that can enhance ecosystem resilience, including the conservation of whales, that can sequester lots of carbon. See COSIS, ‘Written Statement of’ (n 169) paras 357 and 360.

4.2.1.2 Climate change as pollution of the marine environment?

Article 194 of the LOSC obliges State Parties ‘to take all measures necessary to prevent, reduce and control pollution from the marine environment from any sources’¹⁹⁵ and ‘to take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment’.¹⁹⁶ The Tribunal held that Article 194 of the LOSC is not ‘limited to measures aimed strictly at controlling pollution and extends to measures focused primarily on conservation and the preservation of ecosystems’.¹⁹⁷ Moreover it is one of due diligence,¹⁹⁸ requiring States to adopt rules and measures and maintain a ‘certain level of vigilance’ in enforcing those.¹⁹⁹ With the fact in mind, that Article 192 of the LOSC is informed by the subsequent provisions in Part XII,²⁰⁰ read together with Article 194 (2) of the LOSC, State Parties have the obligation to ensure that ‘activities within their jurisdiction and control do not harm the marine environment’.²⁰¹ The ‘marine environment’ is not defined and by taking into account changing scientific knowledge, ‘living resources’ and ‘non-living environment’ form part of the ‘marine environment’.²⁰²

The level of diligence required by State Parties depends on various factors, such as the level of risk,²⁰³ predictability of harm,²⁰⁴ international rules and standards and the capability of a State.²⁰⁵ It’s content ‘may change over time as measures considered sufficiently diligent at a certain moment may become not diligent enough in light, for instance, of new scientific or technological knowledge’.²⁰⁶ It follows that the required diligence increases the riskier an

¹⁹⁵ LOSC, art 194 (1).

¹⁹⁶ LOSC, art 194 (2).

¹⁹⁷ The Tribunal does so by referring to Article 194 (5) of the LOSC. See Chagos Arbitration, para 538.

¹⁹⁸ See on due diligence: International Law Association, Study Group on Due Diligence in International Law, Second Report (2016).

¹⁹⁹ SRFC Advisory Opinion, para 197.

²⁰⁰ SCS Arbitration, Award on Merits, para 942.

²⁰¹ SCS Arbitration, Award on Merits, paras 943 and 944.

²⁰² Southern Bluefin Tuna Cases, para 70; SCS Arbitration, Award on Merits, para 945.

²⁰³ Area Advisory Opinion, para 117.

²⁰⁴ Area Advisory Opinion, para 131.

²⁰⁵ Nele Matz-Lück and Erik van Doorn, ‘Due Diligence Obligations and the Protection of the Marine Environment’ (2017) 42 *L’Observateur des Nations Unies* 177, 194.

²⁰⁶ Area Advisory Opinion, para 117; see also International Law Commission, ‘Report of the International Law Commission on the Work of Its Fifty-Third Session’ (2001) UN Doc. A/56/10, ch V para 11, 154; In the *Gabčíkovo-Nagymaros*, where ‘current standards’ were needed to ‘be taken into consideration’ (emphasis added), see Case concerning *Gabčíkovo-Nagymaros Project*, (Hungary v Slovakia), Merits, ICJ Rep 7 (1997), 37 ILM 162 (1998), (ICJ 25th September 1997) (hereinafter *Gabčíkovo-Nagymaros Case*) para 140; ITLOS, ‘Request for an Advisory Opinion Submitted by Small Island States on Climate Change And International Law: Verbatim Record’ (Jutta Brunnée on behalf of COSIS, 13 September 2023) Doc ITLOS/PV.23/C31/3/Rev.1: 5 – 14, 8 and 9; COSIS, ‘Written Statement of’ (n 169) para 284.

activity is or the more potential impacts to the environment are understood by science.²⁰⁷ The IPCC Reports as such for example give insights into the foreseeability and severity of the impacts of GHG emissions and risks connected.²⁰⁸ Applying the precautionary principle may lead to adopting measures, even when there is no scientific certainty for the prevention of serious threats to the marine environment,²⁰⁹ which was confirmed to apply for activities in the Area.²¹⁰ Relying on the reports of the IPCC and the outlined findings therein as scientific evidence is compelling, due to its status of reflecting consensus of the international community.²¹¹ Thus they shall inform the due diligence obligations under Articles 194 and 192 and other pollution-relevant provisions of the LOSC.²¹²

The question what constitutes marine pollution is determined by the definition in Article 1 (1) (4) of the LOSC, that reads the following: ‘the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities’. The open language of the definition allows for new sources to be covered by the definition.²¹³ The subsumption of anthropogenic GHG emissions and climate change under the definition of ‘marine pollution’ may be possible in order to argue for State Parties having an obligation to take measures, including ‘minimizing to the fullest extent’ pollution. Anthropogenic GHG emissions may not be directly mentioned in the list of sources in Art 194 (3) of the LOSC, but they introduce

²⁰⁷ See also *Gabčíkovo-Nagymaros Case*, para 140; *Area Advisory Opinion*, para 117..

²⁰⁸ See for example: IPCC, ‘Summary for Policymakers’ in Priyadarshi R Shukla and other (eds) *Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2022); Doc ITLOS/PV.23/C31/3/Rev.1: 5–14 (n 206) 9 and 10.

²⁰⁹ The precautionary principle/ approach can be found for example in Article 3 (3) of the UNFCCC, and was also relied upon in the *Area Advisory Opinion*, paras 131 – 132; see also see also International Law Commission, ‘Report of the International Law Commission on the Work of Its Fifty-Third Session’ (2001) UN Doc. A/56/10, ch V para 14, 155; and Principle 15 of the RIO Declaration on Environment and Development.

²¹⁰ The Seabed Chamber stated that ‘the precautionary approach is also an integral part of the general obligation of due diligence’(emphasis added). See *Area Advisory Opinion*, para 131.

²¹¹ The fact that a large number of scientists are working together in conducting these assessments and that Member States have the possibility to review and comment on them is another factor that reflects consensus of the international community. More on the role of the IPCC can be found here: ‘About the IPCC’ <<https://www.ipcc.ch/about>>.

²¹² COSIS, ‘Written Statement of’ (n 169) para 347.

²¹³ Yoshifumi Tanaka, ‘Article 1: Use of Terms and Scope’ in Alexander Prölß (ed) *United Nations Convention on the Law of the Sea: A Commentary* (C H Beck Hart Nomos 2017) 23.

energy into the marine environment (indirectly in the form of heat) and also introduce a substance into the marine environment (directly and indirectly as carbon).²¹⁴

Additionally anthropogenic GHG emissions²¹⁵ have to result or be ‘likely’²¹⁶ to result in ‘deleterious effects’ and they arguably do, when considering the effects already outlined in the Introduction, such as ocean acidification due to the introduction of carbon and ocean warming, sea-level rise, loss of sea ice, ocean deoxygenation and extreme weather events due to the introduction of heat.²¹⁷ It is evidential, referring again to the IPCC Synthesis Report and Special IPCC Report, that the emissions cause or are likely to cause deleterious effects, since they harm marine life, endanger human life (population displacement and territory loss, extreme weather events, salinization of freshwater aquifers), depleted or migrating fish stocks may hinder the use of the ocean and lead to economic loss and endangered food security of coastal communities and lastly loss of marine biodiversity due to ocean acidification and ocean deoxygenation.²¹⁸

As already highlighted in the previous Chapter, State Parties are obliged to ‘adopt laws and regulations to prevent, reduce and control pollution of the marine environment’²¹⁹ from the various sources, whereby some provisions on specific sources have already been introduced, such as Article 207 of the LOSC regulating land-based pollution of the marine environment, Article 211 of the LOSC regulating vessel-sourced pollution and Article 212 of the LOSC regulating pollution from or through the atmosphere.²²⁰ The LOSC calls upon the establishment

²¹⁴ COSIS, ‘Written Statement of’ (n 169) paras 151-157; See also Robin Kundis Craig, ‘Mitigation and Adaptation’ (n 116) 74 – 77.

²¹⁵ Relating to ‘energy: According to the IPCC Special Report on the Ocean and Cryosphere in a Changing Climate from 2019, ocean waters are getting warmer, ice is melting and damages to marine biodiversity and ecosystems (f.e. coral reefs) and sea-levels are rising, due to absorption of heat due to climate change.

²¹⁶ The wording ‘likely’ according to the Oxford English Dictionary means ‘probable’ or ‘having a high chance of occurring.’ see Oxford English Dictionary, ‘likely’ (December 2023) <<https://doi.org/10.1093/OED/5802715034>>; The IPCC introduces a scale and describes ‘likely’ as 66 to 100 per cent probability of occurrence: see Michael D Mastrandrea and others, ‘Guidance Note for Lead Authors of the IPCC Fifth Assessment Report on Consistent Treatment of Uncertainties’ (IPCC 2010) 3; The IPCC uses ‘very likely’ and high confidence’ in relation to anthropogenic greenhouse gas emissions: see IPCC, ‘Summary for Policymakers’ (2023) (n 7) 4.

²¹⁷ Various scholars have argued for GHG emissions and climate change constitute ‘pollution’. See Alan Boyle, ‘Law of the Sea Perspectives on Climate Change’ (2012) 27 *The International Journal of Maritime and Coastal Law* 831, 832; Alan Boyle and Navraj Singh Ghaleigh, ‘Climate Change and International Law Beyond the UNFCCC’ in Kevin R Gray, Richard Tarasofsky and Cinnamon P Carlarne (eds) *The Oxford Handbook of International Climate Change Law* (Oxford University Press 2016) 26ff, 46; Meinhard Doelle, ‘Climate Change and the Use of the Dispute Settlement Regime of the Law of the Sea Convention’ (2006) 37 *Ocean Development & International Law* 319, 319 – 337.

²¹⁸ This is an exemplary list, and more impacts can be found in the reports of the IPCC. see COSIS, ‘Written Statement of’ (n 169) paras 128 and 158 – 169.

²¹⁹ LOSC, arts 207 (1), 211 (2), (4) – (5) and 212 (1).

²²⁰ James Harrison, *Saving the Oceans* (n 171).

of global and regional rules and standards by international organizations or diplomatic conferences for the prevention, reduction and control of pollution from these three sources²²¹ and requires State Parties to adopt laws and regulations and take measures that are necessary implementing those international rules and standards.²²²

Article 207 of the LOSC regulating pollution ‘from land based-sources, including rivers, estuaries, pipelines and outfall structures’ requires State Parties to take ‘into account internationally agreed rules, standards and recommended practices and procedures’ when adopting laws and regulations’ (emphasis added)²²³ and to take other measures deemed necessary.²²⁴ It is important to note that there is no global agreement regulating this source of pollution.²²⁵ The regulation of vessel-sourced pollution in Article 211 of the LOSC, is complemented by other relevant rules and standards, such as the MARPOL, as already set out in the previous Chapter. Moreover in Article 212 of the LOSC, the wording ‘through’ could arguably point to pollution that comes from the atmosphere itself, such as GHG emissions, although the scope is limited to the air space under States’ sovereignty and pollution produced by vessels and aircrafts.²²⁶

Neither Article 207 nor Article 212 of the LOSC establish a minimum standard for the adoption of national rules,²²⁷ but merely require State parties to ‘take account of’ internationally agreed rules and standards and recommended practices and procedures, which is a weak rule of reference and therefore weakens the obligation.²²⁸ Alan Boyle argues that even if the Paris Agreement is argued to constitute such a ‘standard’, the wording leaves States with a large margin of discretion when taking measures and balancing different interests, albeit this not having any minimizing effect for states that are already Party to the Paris Agreement.²²⁹

²²¹ LOSC, arts 207 (4), 211 (1) and 212 (3).

²²² LOSC, arts 213, 217, 218, 220 and 222.

²²³ LOSC, art 207 (1).

²²⁴ LOSC, art 207 (2).

²²⁵ Yoshifumi Tanaka, ‘Regulation of Land-based Marine Pollution in International Law: A Comparative Analysis Between Global and Regional Legal Frameworks (2006) 66 *Zeitschrift für Ausländisches Öffentliches Recht und Völkerrecht* 535, 556.

²²⁶ For a broad interpretation of the scope see: Karen N Scott, ‘Ocean Acidification’ in Elise Johansen, Signe Veierud Bush and Ingvild Ulrikke Jakobsen (eds) *The Law of the Sea and Climate Change: Solutions and Constraints* (Cambridge University Press 2020)

²²⁷ In comparison Article 211 (2) of the LOSC on vessel-sourced pollution creates a minimum requirement.

²²⁸ LOSC, arts 207 (1) and 212 (1).

²²⁹ Alan Boyle, ‘Protecting the Marine’ (n 105) 89 – 90.

Taking the above said into account, in relation to climate change it can be concluded that State Parties, under the due diligence obligation, are required to enact and enforce binding rules and other measures to prevent, reduce and control anthropogenic GHG emissions that pollute the marine environment bearing in mind current scientific understandings and international rules and standards.²³⁰ This can thus be described as an interpretative interaction of the two regimes. Moreover the due diligence obligation in Article 192 (2) of the LOSC is reflected in the Articles 204 to 206, which oblige States Parties to conduct environmental impact assessments for activities that are likely to cause harm from GHG emissions.²³¹ These and more provisions relevant for climate change and ocean acidification will be discovered at in the subsequent Section.

4.2.1.3 Other relevant obligations in light of climate change

Further obligations include the requirement of State Parties to monitor and conduct an environmental impact assessment on the risks or impacts of GHGs on the marine environment²³² and to assess the potential impacts of planned activities at sea or on land, that may pollute the marine environment substantially, while taking into account best available science.²³³ While this requirement of monitoring activities requires periodic reports on the results, a similar monitoring obligation cannot be found in the Paris Agreement, only one on global stocktaking in Article 14 thereof.

Moreover Article 202 of the LOSC obliges States Parties offer ‘scientific, educational, technical and other assistance’ to developing states, which arguably includes financial assistance for adaptation measures,²³⁴ assistance in preparing environmental assessments,²³⁵ and is supplemented by Article 203 of the LOSC.²³⁶ While no hierarchy can be discovered, the one on financial assistance²³⁷ arguably plays a central role in mitigating and adaptation of climate

²³⁰ COSIS, ‘Written Statement of’ (n 169) paras 291 – 293.

²³¹ Additionally the no harm rule reflects customary international law and requires an environmental impact assessment for transboundary harm, as observed in the Pulp Mills Case; see Pulp Mills on the River Uruguay (Argentina v Uruguay), Judgment 2010 ICJ REP 14 (20 April), paras 204 – 206.

²³² LOSC, art 204.

²³³ LOSC, art 206.

²³⁴ LOSC, art 202 (b).

²³⁵ LOSC, art 202 (c).

²³⁶ See further James Harrison, ‘Article 202: Scientific and Technical Assistance to Developing States’ in Alexander Pröbß (ed) *United Nations Convention on the Law of the Sea: A Commentary* (C H Beck Hart Nomos 2017) 1349 – 1350; The relevant provision for the Area can be found in Articles 266, 267 and 277 of the LOSC.

²³⁷ Can be expressly found in: The LOSC, art 203; and indirectly when requiring ‘other assistance’ in: LOSC, art 202.

change, especially for Small Island States that do not have the means to research and face the impacts that are already present, such as severe weather events.²³⁸

The obligations to cooperate will be discussed in turn.²³⁹ The general obligation on cooperation in Article 197 of the LOSC requires State Parties to ‘cooperate on a global basis and, as appropriate, on a regional basis, directly or through the competent international organizations, in formulating and elaborating international rules, standards and recommended practices and procedures consistent with this Convention, for the protection and preservation of the marine environment, taking into account characteristic regional features’. ITLOS held that this duty is a ‘fundamental principle in the prevention of pollution of the marine environment under Part XII of the Convention and general international law’²⁴⁰ and therefore arguably promotes cooperating in climate change mitigation and adaptation under the UN climate change regime.²⁴¹ Additionally apart from having these obligations to cooperate to achieve the environmental objectives in the LOSC, Part XII, they do not relieve the individual State Parties themselves to individually adopt measures to prevent, reduce and limit the adverse impacts of climate change.

The IPCC assessment reports arguably mirror the obligation of State Parties’ enshrined in Article 200 of the LOSC, the obligation to cooperate through international organizations in undertaking programmes of scientific research and encouraging the exchange of information and data acquired about pollution of the marine environment.²⁴² Moreover the role of IMO in regulating marine pollution from international shipping and as a Secretariat for the LC and LP on CCS and geoengineering, such as ocean fertilization.²⁴³

After having set out that the obligations in the LOSC have the potential to mutually support the climate change regime, while still relying on coordination and cooperation within and beyond

²³⁸ COSIS, ‘Written Statement of’ (n 169) para 335.

²³⁹ LOSC, arts 197, 198, 199, 200 and 201.

²⁴⁰ MOX Plant (Ireland v United Kingdom), Provisional Measures, Order of 3 December 2001, ITLOS Reports 2001, 95 (hereinafter ‘MOX Plant Order’) para 82.

²⁴¹ Robin Kundis Craig, ‘Mitigation and Adaptation’ (n 116) 78 – 79; An example mentioned hereby is Article 63 (1) and (2) and 66 and 67 of the LOSC for the duty to cooperate with respect fisheries conservation; see also Articles 8 - 12 of the UNFSA that contains a duty to cooperate concerning highly migratory fish and straddling stocks.

²⁴² COSIS, ‘Written Statement of’ (n 169) para 343.

²⁴³ As outlined before, reference to the IMO is made in Article 2 (2) of the Kyoto Protocol – GHG emissions from marine bunker fuels; see further information on ‘Carbon Capture and Sequestration’ <<https://www.imo.org/en/OurWork/Environment/Pages/CCS-Default.aspx>>.

the law of the sea regime to guarantee harmonized action, the next part will turn to the role of dispute settlement in managing interaction of the two regimes.

4.2.2 Dispute settlement and the ITLOS Advisory Opinion on climate change

At the stage of adjudication, the two regimes have separate dispute settlement procedures: The UN Climate regime includes in Art 14 of the UNFCCC a compulsory conciliation of a dispute under the UNFCCC, the Kyoto Protocol and the Paris Agreement.²⁴⁴ The compulsory dispute settlement by ITLOS, the ICJ or arbitration set out in Part XV of the LOSC may be relevant to any disputes in relation to climate change.²⁴⁵ The interpretation and application of Articles 192, 194, 207, 212 of the LOSC are not excluded in Article 297 or 298 thereof. While a case on climate change under the LOSC covers the interpretation and application of the LOSC, possibly in light of the UNFCCC or the Paris Agreement, a case under Article 14 of the UNFCCC conciliation may only apply the UNFCCC.²⁴⁶

Article 293 of the LOSC sets for courts and tribunals to consider ‘other rules of international law not incompatible with this Convention’,²⁴⁷ which is consistent with the interpretation rule of systematic integration but does not establish jurisdiction of the court.²⁴⁸ For example the Seabed Disputes Chambers applied various instruments on environmental protection in order to interpret the obligations of sponsoring States in the Area by referring to Article 293 of the LOSC as applicable law.²⁴⁹ In the SCS Arbitration the Tribunal referred to Article 31 (3) of the VCLT and Article 293 (1) of the LOSC when interpreting the term ecosystem in Article 194 (5) of the thereof.²⁵⁰ It allows thus other rules of international law to be relied upon by the court or tribunal when determining the precise content of the obligations under the LOSC in relation to the climate change.²⁵¹

A few additional notes will be made concerning Part XII of the LOSC in light of the ITLOS Advisory Opinion on Climate Change. During the 26th COP of the UNFCCC in Glasgow, the Commission of Small Island States on Climate Change and International Law (COSIS), an

²⁴⁴ Paris Agreement, art 24.

²⁴⁵ Elise Johansen, ‘The Legal Interactions’ (n 57) 82 – 84.

²⁴⁶ See further discussion on the matter: Alan Boyle, ‘Protecting the Marine’ (n 105) 97 – 98.

²⁴⁷ LOSC, art 293; Natalie Klein, ‘Meaning, Scope, and Significance’ (n 19) 14.

²⁴⁸ VCLT, art 31 (3) (c).

²⁴⁹ LOSC, art 293 (1); Area Advisory Opinion, paras 51 – 52, paras 80 – 84, paras 125 – 130 and 135.

²⁵⁰ South China Sea Arbitration (Philippines v China) Award on Jurisdiction and Admissibility of 29 October 2015, PCA Case NO 2013-19, para 282; SCS Arbitration, Award on Merits, para 945.

²⁵¹ Alexander Pröhl, ‘Fragmentation and Coherence’ (n 108) 77.

intergovernmental organization, was established, consisting of nine Member States at the time of writing.²⁵² Being ‘alarmed by the catastrophic effects of climate change which threaten the survival of Small Island States (SIDS), and in some cases, their very existence’,²⁵³ its mandate is to ‘promote the development and implementation of international law concerning climate change’.²⁵⁴

On the 12 December 2022 COSIS made a request for an Advisory Opinion²⁵⁵ to the International Tribunal for the Law of the Sea (ITLOS) to render an advisory opinion to deliver a clarification on the content of the obligations of the LOSC State Parties ‘to prevent, reduce and control pollution of the marine environment in relation to the deleterious effects that result or are likely to result from climate change, including through ocean warming and sea level rise, and ocean acidification, which are caused by anthropogenic greenhouse gas emissions into the atmosphere’ and to ‘protect and preserve the marine environment in relation to climate change impacts, including ocean warming and sea level rise, and ocean acidification’.²⁵⁶ The first question therefore relates to the obligations under Article 194 of the LOSC and the second one refers to the more general obligations under Article 192 of the LOSC.

In its written statement, COSIS argues that reading Article 293 and Article 237 of the LOSC together invites ITLOS to apply relevant instruments compatible with the LOSC and that the rules of reference in Article 207 and 212 allows for the incorporation of GAIRS.²⁵⁷ Systematic interpretation pursuant to Article 31 (3) (c) of the VCLT suggests that the climate change regime informs the standard of pollution-specific provisions through the system of the rules of reference used in Part XII of LOSC.²⁵⁸

In the oral proceedings, a representative of COSIS highlighted that ‘(t)here is in fact no identifiable normative conflict between competing regimes’ but rather ‘there is a

²⁵² Agreement for the Establishment of the Commission of Small Island States on Climate Change and International Law (signed by the Government of Antigua, Barbuda and the Government of Tuvalu on 31 October 2021) 3447 UNTS (hereinafter COSIS Agreement).

²⁵³ COSIS Agreement, preamble (emphasis added).

²⁵⁴ COSIS Agreement, art 1 (3) (emphasis added).

²⁵⁵ While the LOSC does not contain any express jurisdiction for ITLOS to give advisory opinions, it was confirmed in the SRFC Advisory Opinion that ITLOS is a ‘living institution’ (para 49) and the advisory jurisdiction bases its arguments by referring to Article 21 of its Statute and the requirements set out in Art 138 of the internal Rules of the Tribunal (SRFC Advisory Opinion, paras 11, 58-60).

²⁵⁶ COSIS, ‘Request for Advisory Opinion submitted by the Commission of Small Island States on Climate Change and International Law’ (12 December 2012).

²⁵⁷ COSIS, ‘Written Statement of’ (n 169) para 48 – 50.

²⁵⁸ COSIS, ‘Written Statement of’ (n 169) para 50.

complementary relationship between UNCLOS and the global climate regime – including the implementation of the procedural and reporting obligations under the Paris Agreement’.²⁵⁹ The relationship between the two regimes is described as one of ‘mutual supportiveness’.²⁶⁰ Moreover the LOSC is argued to be the ‘appropriate framework at the international level’²⁶¹ in developing rights and duties of State Parties in protecting the marine environment from the adverse effects of climate change and needs to be informed by the climate change regime.²⁶² Thus Article 2 (1) (a) of the Paris Agreement reflects the global scientific consensus, repeated during the COP27,²⁶³ namely the need to ‘limit the temperature increase to 1.5°C to ‘significantly reduce the risks and impacts of the climate change’²⁶⁴ and therefore constitutes an internationally agreed rule relevant for interpreting the obligations under the LOSC in Part XII.²⁶⁵

The fact that only two written statements negated anthropogenic GHG emissions constituting is seen to reflect a convincing consensus.²⁶⁶ While some countries argued for the LOSC obligations requiring more than the UNFCCC and the Paris Agreement, some countries argued for the climate change regime as *lex specialis* and thus the LOSC not stipulating more

²⁵⁹ ITLOS, ‘Request for an Advisory Opinion Submitted by Small Island States on Climate Change And International Law: Verbatim Record’ (Payam Akhavan on behalf of COSIS, 11 September 2023) Doc ITLOS/PV.23/C31/1/Rev.1: 19 – 28, 25 and 26.

²⁶⁰ ITLOS, ‘Request for an Advisory Opinion Submitted by Small Island States on Climate Change And International Law: Verbatim Record’ (Makane M Mbengue on behalf of COSIS, 11 September 2023) Doc ITLOS/PV.23/C31/2/Rev.1: 29 – 40, 30 – 31.

²⁶¹ Makane M Mbengue, in the oral proceedings of the Advisory Opinion, draws this conclusion of the consensus of the international community with Agenda 21 that includes a whole Chapter, namely ch 17 on the environmental protection of oceans and conservation of marine resources and also refers to the LOSC as ‘the international basis upon which to pursue the protection and sustainable development of the marine and coastal environment and its resources. He refers to Agenda 21 and ch 17 thereof: Protection of the Oceans, All Kinds of Seas, Including Enclosed and Semi-Enclosed Seas, and Coastal Areas and the Protection, Rational Use and Development of Their Living Resources, para 1 (emphasis added). Additionally he highlights that the Brundtland Report of 1987 already emphasized the ratification of the LOSC with regard to its environmental provisions (Brundtland Report, ch 10: Managing the Commons, para 55) and highlighted the impacts of sea-level rise and temperature rise. (Brundtland Report, ch 7: Energy: Choices for Environment and Development) see further: Doc ITLOS/PV.23/C31/2/Rev.1: 29 – 40 (n 260) 32 – 34.

²⁶² Doc ITLOS/PV.23/C31/2/Rev.1: 29 – 40 (n 260) 30 – 34.

²⁶³ COP 27, ‘Report of the Conference of the Parties on its Twenty-Seventh Session, Held in Sharm El-Sheikh from 6 to 20 November 2022’ (17 March 2023) UN Doc. FCCC/CP/2022/10/Add.2, Decision 21/CP.27, para 7 – 10; COP 27, ‘Report of the Conference of the Parties on its Twenty-Seventh Session Held in Sharm El-Sheikh from 6 to 20 November 2022’ (17 March 2023) UN Doc FCCC/CP/2022/10/Add.1, Decision 2/CP.27, Preamble

²⁶⁴ Paris Agreement, Art 2 (1) (a) (emphasis added).

²⁶⁵ ITLOS, ‘Request for an Advisory Opinion Submitted by Small Island States on Climate Change And International Law: Verbatim Record’ (Catherine Amirfar on behalf of COSIS, 12 September 2023) Doc ITLOS/PV.23/C31/3/Rev.1: 24 – 35, 29 – 30; see LOSC, arts 207 (1), 211 (1), 212 (1) and (3).

²⁶⁶ Doc ITLOS/PV.23/C31/1/Rev.1: 19 – 28 (n 259) 24 and 25.

demanding obligations than the climate regime.²⁶⁷ The standard of the due diligence obligations in Part XII is argued to be an objective one and has to be appropriate and proportional to the risk level and severity no matter the national circumstances.²⁶⁸ Therefore individual States cannot freely determine what is appropriate, while still taken into account the different capacities of States.²⁶⁹

With this advisory opinion ITLOS has the chance to clarify the relationship between the UN climate change regime and the law of the sea by way of clarifying on what is required by States to be in line with their obligations under Part XII. Additionally to the request for an advisory opinion to the ITLOS, the UN General Assembly adopted the Resolution 77/276, to request an advisory opinion from the International Court of Justice (the 'ICJ) on the obligations of States with respect to climate change. The questions asked relate to the obligations under international law, which includes the LOSC, to protect the marine environment.²⁷⁰ The initiative is also supported by COSIS and in addition COSIS also submitted a written opinion to the Inter-American Court of Human Rights, whereby the Republic of Chile and the Republic of Colombia have requested an advisory opinion on the scope of obligations.²⁷¹

²⁶⁷ Doc ITLOS/PV.23/C31/1/Rev.1: 19 – 28 (n 259) 25 and 26; Portugal for example in its Written Statement (para 93) argued that the Paris Agreement 'lowers the threshold and the level of discretion that State Parties have under Part XII of UNCLOS', and Canada in its Written Statement (paras 62 (viii)) found the implementation of the Paris Agreement 'an important indicator' in meeting the obligations in Article 192 of the LOSC.

²⁶⁸ Doc ITLOS/PV.23/C31/3/Rev.1: 5–14 (n 206) 9 – 13; International Law Commission, 'Report of the International Law Commission on the Work of Its Fifty-Third Session' (2001) UN Doc. A/56/10, ch V para 11, 154.

²⁶⁹ Doc ITLOS/PV.23/C31/3/Rev.1: 5–14 (n 206) 11 – 13; see also SCS Arbitration, paras 941 and 959; International Law Association, 'Study Group on Due Diligence in International Law: Second Report' (July 2016) available at: <<http://www.ila-hq.org/index.php/study-groups?study-groupsID=63>> 8 – 10; International Law Commission, 'Report of the International Law Commission on the Work of Its Fifty-Third Session' (2001) UN Doc. A/56/10, ch V para 17, 155.

²⁷⁰ UNGA Resolution 77/276, 'Request for an Advisory Opinion of the International Court of Justice on the Obligations of States in Respect of Climate Change' (adopted 29 March 2023) UN Doc A/RES/77/276; see also Maria Antonia Tigre and Jorge Alejandro Carrillo Bañuelos, 'The ICJ's Advisory Opinion on Climate Change: What Happens Now?' (29 March 2023), Climate Law A Sabin Center Blog available at <<https://blogs.law.columbia.edu/climatechange/2023/03/29/the-icjs-advisory-opinion-on-climate-change-what-happens-now/>> accessed 25 April 2024.

²⁷¹ See Republic of Colombia and the Republic of Chile, 'Request for an Advisory Opinion on the Climate Emergency and Human Rights submitted to the Inter-American Court of Human Rights' (9 January 2023).

4.3 Interactive Process:

This analytical dimension of regime interaction relates to the relationship between treaty bodies, international organizations and other institutions within one or both regimes.²⁷² Due to the high complexity of the institutional landscape in ocean governance alone and various institutions address the linkages between climate change and the ocean, a few examples at the global and regional level will be shown. In this assessment, formal and informal sources of lawmaking will be included that may offer a forum for cooperation in addressing the pressing effects of climate change while also accommodating diverse interests. Within the ocean regime, it was highlighted in literature, that the inclusion of non-state actors in discussions on the uses of the oceans, may help with generating and sharing data and knowledge.²⁷³

The following sections seek to answer the fourth and last sub-question by assessing whether any form of institutional interaction can be found, especially forms of cooperation and coordination within and beyond the ocean regime. To answer this question, first the ocean-climate agenda under the UNFCCC will be outlined followed by different cases of the institutional interlinkages within the ocean regime, by looking at global fora of cooperation and giving examples of institutions at the regional level, such as regional fisheries organizations those created by regional sea agreements within or outside of the UNEP.²⁷⁴

4.3.1 Ocean-Climate Agenda under the UNFCCC

Climate change action in relation to the ocean has been addressed in a range of UN bodies, initiatives and processes. While emissions from the shipping sector, namely from international maritime transport, have been tackled since the first Conference of the Parties of the UNFCCC (COP 1) in 1995, that already called upon the Subsidiary Body for Scientific and Technological Advice (SBSTA) to take the work of the IMO into account.²⁷⁵ Thus expert meetings between the SBSTA and IMO secretariats can be seen as some form of cooperation in the reporting of GHG emissions from international shipping.²⁷⁶

²⁷² Seline Trevisanut, Nikolaos Giannopoulos and Rozemarijn Roland Holst, 'Conclusion: Proposing a Three-Fold Approach' (n 29) 224.

²⁷³ Natalie Klein, 'Meaning, Scope, and Significance' (n 19) 10 – 11.

²⁷⁴ Seline Trevisanut, Nikolaos Giannopoulos and Rozemarijn Roland Holst, 'Introduction: Regime Interaction in Ocean Governance' (n 27) 10.

²⁷⁵ UNFCCC Conference of the Parties (COP), 'Decisions Adopted By The Conference of the Parties' Decision 4/CP (6 June 1995) UN Doc FCCC/CP/1995/7/Add.1, 15ff.

²⁷⁶ See 'Emissions from Fuels Used for International Aviation and Maritime Transport' available at <<https://unfccc.int/topics/mitigation/workstreams/emissions-from-international-transport-bunker-fuels>>

COP 15 in 2009 introduced the Ocean Day to the climate change agenda, enhancing knowledge and underpinning the focus on the ocean.²⁷⁷ A process for supporting the least developed countries (LDC) in the formulation and implementation of National Adaptation Plans (NAPs) was established that includes possibilities for funding in order to enhance resilience and include adaptation measures into policies and plans.²⁷⁸ Additionally to the Ocean Days after the COP 21, an Strategic Action Roadmap on the Oceans and Climate: 2016-2021 was prepared, whereby the annual reports of the ROCA Initiative on assessing the progress on ocean and climate action are important to highlight.²⁷⁹

Arguably from 2019 onwards, the interrelation of climate change and ocean under UNFCCC was better highlighted, namely when the COP 25, designated as the ‘Blue COP’, directed the Chair of the Subsidiary Body for Scientific and Technological Advice (SBSTA) to gather a dialogue on the ocean and climate change and mitigation and adaptation measures, drawing upon the scientific knowledge from the IPCC 2019 Special Report.²⁸⁰ After the dialogue, where stakeholders, NGOs and academia were invited, it was summarized that the ‘divide between ocean and climate, ocean and biodiversity, and ocean and sustainable development is completely artificial: climate action equals ocean action, and vice versa’²⁸¹ and that emphasized that cooperation, be it technical cooperation or knowledge sharing, across the international level (such as the LOSC, BBNJ Process, IMO Strategy and the London Protocol), and the regional

accessed 10 June 2024; SBSTA, ‘Ocean and Climate Change Dialogue to Consider How to Strengthen Adaptation and Mitigation Action’ (9 November 2020) available at <https://unfccc.int/sites/default/files/resource/OD_InformationNote.pdf> 9.

²⁷⁷ UNFCCC COP 15, ‘Ocean Day at Copenhagen: The Importance of Oceans, Coasts, and Small Island Developing States in the Climate Regime’ (14 December 2009) <<https://roca-initiative.com/oceans-day-at-cop-15/>>.

²⁷⁸ UNFCCC LDC Expert Group, ‘National Adaptation Plans 2023: Progress in the Formulation and Implementation of NAPs, (UNFCCC 2023) <<https://unfccc.int/sites/default/files/resource/NAP-progress-publication-2023.pdf>> 7 - 9; SBSTA, ‘Ocean and Climate Change Dialogue to Consider How to Strengthen Adaptation and Mitigation Action’ (9 November 2020) available at <https://unfccc.int/sites/default/files/resource/OD_InformationNote.pdf> 7 – 8; UNFCCC Conference of the Parties, ‘Decisions adopted by the Conference of the Parties’ Decision 1/CP.16 (The Cancun Agreements: Outcomes of the Work of the Ad Hoc Working Group on Long-Term Cooperative Action under the Convention) UN Doc FCCC/CP/2010/7/Add1; See more general on NAP process <<http://www.unfccc.int/node/698>>.

²⁷⁹ Global Ocean Forum, ‘Report on Assessing Progress on Ocean and Climate Action: 2022-2023’ (prepared for UNFCCC COP 28, Dubai 30 November 2023 – 12 December 2023) available at <<https://roca-initiative.com/>> 83.

²⁸⁰ IPCC, *Special Report on the Ocean and Cryosphere in a Changing Climate* (Hans O Poertner and others eds, Cambridge University Press 2019) < <https://doi.org/10.1017/9781009157964>>.

²⁸¹ SBSTA, ‘Ocean and Climate Change Dialogue to Consider How to Strengthen Adaptation and Mitigation Action: Informal Summary Report’ (29 April 2021) available at <https://unfccc.int/sites/default/files/resource/SBSTA_Ocean_Dialogue_SummaryReport.pdf> 1.

level (such as regional seas conventions and regional fisheries management organizations).²⁸² At the dialogue it was also stressed that at national level, governments need to include ocean and its biodiversity in their climate change policies and climate change and biodiversity in their ocean policies.²⁸³ Further at COP 26, based on the outcomes of the first dialogue, work programmes and constituted bodies under the UNFCCC were invited to include and underpin action on oceans in their mandates and work and the SBSTA was asked to hold the annual Ocean and Climate Change Dialogue.²⁸⁴

In 2022, at COP 27, ocean-based action was further encouraged and Parties were invited to integrate them in their NDCs, but also other action plans and long-term strategies.²⁸⁵ Future Dialogues from 2023 onwards, were decided to be facilitated by two co-facilitators, selected biennially by the Parties, that are then also responsible for the selection of topics and the preparation of the informal report.²⁸⁶ The ‘Informal Summary report of the ocean and climate change dialogue 2023’²⁸⁷ was focused on the two chosen topics: firstly coastal ecosystem restoration and secondly fisheries and food security.

Another development that is relevant, especially in light of the pressing need for adaptation measures for vulnerable communities (such as SIDS), is the Sharm-El-Sheikh Adaptation Agenda, that was launched at COP 27 and updated by COP 28,²⁸⁸ with 30 adaptation targets by

²⁸² SBSTA, ‘Ocean and Climate Change Dialogue to Consider How to Strengthen Adaptation and Mitigation Action: Informal Summary Report’ (29 April 2021) available at <https://unfccc.int/sites/default/files/resource/SBSTA_Ocean_Dialogue_SummaryReport.pdf> 6, 23 and 24.

²⁸³ *ibid* 25.

²⁸⁴ UNFCCC COP 26, ‘Report of the Conference of the Parties on its Twenty-Sixth Session, Held in Glasgow from 31 October to 13 November 2021’ (8 March 2022), UN Doc FCCC/CP/2021/12/Add.1, Decision 1/CP.26, paras 60 – 61.

²⁸⁵ For the Sharm El-Sheikh Implementation Plan, see: UNFCCC COP 27, ‘Report of the Conference of the Parties on Its Twenty-Seventh Session, Held in Sharm-El-Sheikh from 6 to 20 November 2022’ (17 March 2023) UN Doc FCCC/CP/2022/10/Add.1, Decision 1/CP.27, para 50; Since the UNFCCC COP is also serving as Meeting of the Parties to the Paris Agreement (CMA), see also CMA4, ‘Report of the Conference of the Parties serving as the Meeting of the Parties to the Paris Agreement on its Fourth Session, Held in Sharm El-Sheikh from 6 to 20 November 2022’ (17 March 2023) UN Doc FCCC/PA/CMA/2022/10/Add.1, Decision 1CMA.4, para 79; See <<https://unfccc.int/documents/624444>> for more information on the Sharm el Sheikh Implementation Plan (20 November 2022).

²⁸⁶ Global Ocean Forum, ‘Report on Assessing Progress on Ocean and Climate Action: 2022-2023’ (prepared for UNFCCC COP 28, Dubai 30 November 2023 – 12 December 2023) available at <<https://roca-initiative.com/>>.

²⁸⁷ SBSTA, ‘Ocean and Climate Dialogue 2023: Informal Summary Report by the Co-Facilitators of the Ocean and Climate Change Dialogue 2023-2024’ (15 September 2023) available at <<https://unfccc.int/documents/631689>>.

²⁸⁸ UNFCCC COP28, ‘Sharm-El Sheikh Adaptation Agenda: Implementation Report 2023’ (launched at COP28), available at <<https://climatechampions.unfccc.int/wp-content/uploads/2024/01/Sharm-El-Sheikh-Adaptation-Agenda-2023-Implementation-Report.pdf>>.

2030 to highlight the importance of long-term adaptation to climate change impacts and enhance climate resilience by way of guiding stakeholders, both States and non-States, on the formation of science-backed adaptation measures.²⁸⁹ Some of the targets relate to ocean and coastal resilience,²⁹⁰ whereby the protection and restoration of ecosystems is highlighted, such as protecting and restoring mangroves (due to its role in acting as a natural barrier for climate weather events),²⁹¹ coral reefs, seagrass (mitigation and adaptation – important for carbon sequestration and storage, pollution mitigation and barrier for floodings) , marshes and kelp forests.²⁹²

In sum it can be said that while the UN climate change regime barely includes the ocean in their core instruments, apart from the ocean as a sink and thus clearly focusing on the terrestrial side of climate change, forms of interactions arguably occur through the meetings of the treaty bodies of the UNFCCC. Whether the inclusion of the ocean into the COPs is fruitful in a sense that it may lead to a higher degree of normative overlap, is questionable and something that only the future developments may show.

4.3.2 The role of UNGA and inter-agency coordination mechanisms:

First the United Nation General Assembly's (UNGA) role as a coordinating body for legal and policy agendas at global level that oversees the implementation of numerous treaties, such as the LOSC, will be looked at. UNGA, an organ of the UN,²⁹³ has no law-making powers, but may act as a vehicle for law-making and the development of international policy and law through the adoption of resolutions, convening conferences and initiating codification.²⁹⁴

²⁸⁹ UNFCCC COP27, 'Sharm-El-Sheikh Adaptation Agenda: The Global Transformations Towards Adaptive and Resilient Development' (November 2022) 3; UNFCCC COP28, 'Sharm-El Sheikh Adaptation Agenda: Implementation Report 2023' (launched at COP28), available at <<https://climatechampions.unfccc.int/wp-content/uploads/2024/01/Sharm-El-Sheikh-Adaptation-Agenda-2023-Implementation-Report.pdf>> 17.

²⁹⁰ The other targets relate to: food and agriculture, water and nature, human settlements, infrastructure and cross-cutting targets for finance and planning & policy.

²⁹¹ UNFCCC COP28, 'Sharm-El Sheikh Adaptation Agenda: Implementation Report 2023' (launched at COP28), available at <<https://climatechampions.unfccc.int/wp-content/uploads/2024/01/Sharm-El-Sheikh-Adaptation-Agenda-2023-Implementation-Report.pdf>> 66.

²⁹² UNFCCC COP27, 'Sharm-El-Sheikh Adaptation Agenda: The Global Transformations Towards Adaptive and Resilient Development' (November 2022) 21.

²⁹³ UN Charter, art 7.

²⁹⁴ UN Charter, art 13; Alan Boyle and Catherine Redgwell, *Birnie, Boyle and Redgwell's International Law* (n 39) ch 2, 63 – 66.

UNGA, in its annual Resolutions on Oceans Affairs and the Law of the Sea, gives a forum to address the protection and preservation of the marine environment²⁹⁵ and to link oceans and climate change in its resolutions.²⁹⁶ In its Resolution 61/222 in 2006 it already mentioned the adverse effects of climate change²⁹⁷ and ever since outlined them in more detail.²⁹⁸ Additionally the impacts of climate change and ocean acidification on sustainable fisheries and food security were expressed in the annual sustainable fisheries resolutions.²⁹⁹ In its World Ocean Assessments³⁰⁰ on the state of the ocean it highlights the need for cooperation and coordination through joint research, sharing of information, data and technology.³⁰¹ The Second World Ocean Assessment included a chapter on the pressures from climate change and ocean acidification. Moreover it recognizes that the climate change impacts are not the same for every region and the Arctic Ocean is thus warming at higher rates.³⁰²

Moreover the UNGA with its Resolution 57/141³⁰³ called for establishing an inter-agency coordination mechanism on ocean and coastal matters within the UN system. Following this the Ocean and Coastal Areas Network (OCAN) was established, which was later on changed to 'UN-Oceans'. The work of UN-Oceans was approved and a revised mandate was set out in Resolution 68/70.³⁰⁴ The aim of this inter-agency collaborative mechanism is to reinforce and stimulate further coordination among the international organizations and bodies within the UN system and the ISA in relation with oceans and coastal issues, by recognizing possibilities to collaborate and find synergies and acting as a fora for exchanging information, sharing

²⁹⁵ See, e.g., UNGA Resolution 77/248, 'Oceans and the law of the sea' (adopted 30 December 2022) UN Doc A/RES/77/248.

²⁹⁶ See for example: UNGA Resolution 74/219, 'Protection of Global Climate For Present and Future Generations and Humankind' (adopted 19 December 2019) UN Doc A/RES/74/219.

²⁹⁷ UNGA Resolution 61/222, 'Oceans and the Law of the Sea' (adopted 20 December 2006) UN Doc A/RES/61/222, Preamble.

²⁹⁸ UN Doc A/RES/77/248 (n 295) Preamble.

²⁹⁹ See for example: UNGA Resolution 63/112, 'Sustainable Fisheries, Including Through the 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, and related Instruments of 5 December 2008' (adopted 5 December 2008) UN Doc A/RES/63/112, Preamble.

³⁰⁰ UNGA Resolution 72/73, 'Oceans and the Law of the Sea' (adopted 5 December 2017) UN Doc A/RES/72/73.

³⁰¹ Bleuenn Gaëlle Guilloux, 'Ocean and Climate' (n 104) 58.

³⁰² United Nations, 'The Second World Ocean Assessment: Volume I' (2021) 7.

³⁰³ UNGA Resolution 57/141, 'Oceans and the Law of the Sea' (adopted 12 December 2002) UN Doc A/RES/57/141.

³⁰⁴ UNGA Resolution 68/70, 'Oceans and the Law of the Sea' (adopted 9 December 2013), UN Doc A/RES/68/70, para 279 and Annex.

experiences, best practices and joint action.³⁰⁵ The secretariat of the UNFCCC secretariat is a member of the UN-Oceans and it holds side events at the UNFCCC Climate Change Conference, such as at COP 28.³⁰⁶ Although UN-Oceans is not mandated in developing binding rules, it may be an important forum to bring together instruments and actors for tackling climate change and ocean acidification in ocean governance and thus in shaping institutional interactions.³⁰⁷

In sum, it can be seen that at the global level there are calls for cooperation and coordination on climate-ocean action. UNGAs work and the establishment of UN-Oceans itself reflects institutional interaction, keeping it at the international Agenda and may thus enhance further interactions in the future.

4.3.3 Institutional interaction through RFMOs and the UNEP Regional Seas Program

Due to the impacts of climate change on fisheries, RFMOs could potentially play a role in addressing these, whereby the interaction the climate change regime may be rather limited to gathering scientific knowledge. Moreover RFMOs may be reluctant to include climate change into their decision-making process, especially since there is no obligation to take climate change impacts into account in the management of fisheries.³⁰⁸ Further challenges that can be identified with RFMOs are budgeting limitations and the limited mandates that do not allow regulation of other human activities that do impact the fisheries sector and may thus be reason to not take climate change mitigation and adaptation into account.³⁰⁹

As an example, the Commission for Conservation of Antarctic Marine Living Resources (CCAMLR),³¹⁰ an intergovernmental organization, that is arguably more than just an RFMO,

³⁰⁵ UNGA Resolution 68/70, 'Oceans and the Law of the Sea' (adopted 9 December 2013), UN Doc A/RES/68/70, Annex; More info at <www.unoceans.org/About.htm>; and Annual Reports may be found here: <https://www.un.org/depts/los/general_assembly/general_assembly_reports.htm>.

³⁰⁶ UNFCCC COP28, 'UN-Oceans Side Event: Coordinating for greater ocean-based climate change ambition A UN-Oceans perspective' (held on 4 December 2023), Programme available at <https://unctad.org/system/files/information-document/COP28UN-OceansSideEventProgramme_FinalDraft.pdf>.

³⁰⁷ Karen N Scott, 'Ocean Acidification' in Elise Johansen, Signe Veierud Bush and Ingvild Ulrikke Jakobsen (eds) *The Law of the Sea and Climate Change: Solutions and Constraints* (Cambridge University Press 2020) 127 – 128.

³⁰⁸ Elise Johansen, 'The Role of' (n 88) 19; Bleuenn Gaëlle Guilloux, 'Ocean and Climate' (n 104) 58.

³⁰⁹ Elise Johansen, 'The Role of' (n 88) 19. See also See Julien Rochette, Raphaël Billé, Erik J Molenaar, Petra Drankier and Lucien Chabason, 'Regional Oceans Governance' (n 115) 9 ff.

³¹⁰ The Commission for Conservation of Antarctic Marine Living Resources (CCAMLR) was established under the CAMLR Convention, which is Part of the Antarctic Treaty System; Convention on the Conservation of Antarctic Marine Living Resources (adopted 20 May 1980, entered into force 7 April 1982) 1328 UNTS 47 (hereinafter CAMLR Convention)

since it has a broad objective, that includes the conservation of marine living resources of the Antarctic and is not limited to fisheries conservation.³¹¹ CCAMLR recognized impacts of climate change and ocean acidification in its decision-making.³¹² In its Resolution 36/41, the Commission stresses the need for research in the Antarctic area and to take mitigation and adaptation measures.³¹³ The MPA network of CCAMLR, such as the Ross Sea Region MPA,³¹⁴ lists better understanding of effects of climate change and fishing on ecosystems as one of the objectives of the MPA, in line with Article II of the CAMLR Convention. Thus it seems likely that more MPAs may include climate change mitigation or adaptation as an aim in order to preserve maintain resilience or referred to as adaptation measures of climate change impacts.³¹⁵ In general it must be concluded for MPAs as a measures designated to enhance resilience, has its limitations in addressing GHG emissions, especially since land-based pollution is outside of its scope, but still may serve as a tool to adapt to climate change, by helping marine ecosystems becoming more resilient in facing climate change.³¹⁶

Additionally the role of UNEP³¹⁷ in administering multilateral environmental agreements (MEAs) including the CBD and a number of Regional Seas Conventions and Action Plans (RSCAPs) needs to be mentioned.³¹⁸ The UNEP Regional Seas Programmes,³¹⁹ initiated in 1974 after the Stockholm Conference, are another inter-agency coordination mechanism at the regional level, that may be of relevance for acting as a forum relevant to regime interaction by taking ocean-based adaptation measures through enhancing resilience.³²⁰ They have a cross-

³¹¹ CAMLR Convention, art II para 1.

³¹² CCAMLR-XXVIII Resolution 30/XXVIII, 'Climate Change' (2009) Doc R30/XXVIII; Karen N Scott, 'Ocean Acidification' in Elise Johansen, Signe Veierud Bush and Ingvild Ulrikke Jakobsen (eds) *The Law of the Sea and Climate Change: Solutions and Constraints* (Cambridge University Press 2020) 124.

³¹³ CCAMLR-41 Resolution 36/41, 'Climate Change' (2022) Doc R36/41.

³¹⁴ CCAMLR- XXXV, 'Conservation Measure 91-05 (2016) Ross Sea Region Marine Protected Area' (2016) Doc 91-05.

³¹⁵ Robin Churchill, Vaughan Lowe and Amy Sander, *The Law of* (n 143) ch 17, 718 ff, 739.

³¹⁶ Ingvild Ulrikke Jakobsen, 'Marine Protected Areas as a Tool to Ensure Environmental Protection of Marine Arctic: Legal Aspects in Elizabeth Tedsen, Sandra Cavalieri and R Andreas Kraemer (eds) *Arctic Marine Governance: Opportunities for Transatlantic Cooperation* (Springer 2014) 215 ff.

³¹⁷ United Nation Environment Programme (UNEP) was established by UNGA in 1972 with a general environmental mandate. It promotes treaty implementation and coordinate treaty bodies and also arguably contributes to international law-making. See Alan Boyle and Catherine Redgwell, *Birnie, Boyle and Redgwell's International Law* (n 39) ch 2, 68 – 71.

³¹⁸ Not all RSCAPs are administered by the UNEP, but it still serves as a forum of cooperation, see for more information on 'UNEP Regional Seas Programme' <<https://www.unep.org/topics/ocean-seas-and-coasts/regional-seas-programme>>.

³¹⁹ There are Regional Seas Programmes that are administered by UNEP, others are associated and some have been established independent from the UNEP.

³²⁰ Regions covered by the Regional Seas Programme include: Mediterranean, Kuwait Action Plan Region, Black Sea, West and Central Africa, Wider Caribbean, East Asian Seas, South Asian Seas,

sectoral mandate, and in their Action Plans, formulated to accommodate regional needs, are addressing the protection and management of regional marine environment, including marine biodiversity.³²¹ As anticipated by Article 194 (5) of the LOSC, some regional sea agreements do combine the protection of marine ecosystem and pollution control.³²² To give a clearer understanding in how they may be relevant in light of addressing the ocean-climate interrelation, an example will be offered.

The OSPAR Convention,³²³ a regional arrangement outside of the UNEP's Regional Seas Programmes, for example, requires its Contracting Parties to take all possible steps³²⁴ to prevent and eliminate pollution³²⁵ and also address the protection and conservation of marine biological diversity, including rare or fragile ecosystems and threatened species.³²⁶ In the OSPAR Convention, Contracting Parties are required to apply the precautionary principle when there are 'reasonable grounds for concern' or 'reasons to assume' that pollution may pose threats to human health and ecosystems, thus including the purpose of marine ecosystems and to safeguard human health.³²⁷ The OSPAR Commission, the executive body of the Convention, while not dealing with fishing or shipping, has addressed climate change mitigation and adaptation.³²⁸

In its 2030 North-East Atlantic Environmental Strategy (NEAES 2030),³²⁹ the OSPAR Commission highlighted the importance of institutional cooperation and set out various objectives in relation to the impacts due to ocean acidification and climate change. As an

South-East Pacific, South-West Pacific, North-West Pacific, Red Sea and Gulf of Aden, East Africa and South-West Atlantic.

³²¹ UNEP, 'Regional Seas Strategic Directions 2022 – 2025' (Fifth Edition, May 2021).

³²² Alan Boyle and Catherine Redgwell, *Birnie, Boyle and Redgwell's International Law* (n 39) ch 2, 90.

³²³ Convention for the Protection of the Marine Environment of the North-East Atlantic (opened for signature 22 September 1992, entered into force 25 March 1998) 2354 UNTS 67 (hereinafter OSPAR Convention); The OSPAR Convention has 16 Contracting Parties: Belgium, Denmark, the EU, Finland, France, Germany, Iceland, Ireland, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom; see <<https://www.ospar.org/organisation/contracting-parties>> accessed 19 April 2024.

³²⁴ OSPAR Convention, arts 2 (1) (a) and 3.

³²⁵ OSPAR Convention, art 2 (1) (a).

³²⁶ OSPAR Convention, art 2 (1) (a).

³²⁷ OSPAR Convention, arts 2 (2) (a) and Annex V, art 1.

³²⁸ Jon M Van Dyke, 'Whither the UNEP Regional Seas Programmes?' in Harry N Scheiber and Jin-Hyun Paik (eds) *Regions, Institutions, and Law of the Sea: Studies in Ocean Governance* (Martinus Nijhoff Publishers 2013) 87, 93; see also Meagan S Wong, 'Chapter V.17: The Convention for the Protection of the Marine Environment of the North-East Atlantic (the 'OSPAR Convention') (and Annexes I, II, III, IV)' in Michael Faure (ed) *Elgar Encyclopedia of Environmental Law* (Edward Elgar Publishing 2017) 189 – 198.

³²⁹ OSPAR Commission, 'Strategy of the OSPAR Commission for the Protection of the marine Environment of the North-East Atlantic 2030, (2021) OSPAR 21/13/1, Annex 22.

example can be seen the development of a network of marine protected areas (MPAs) to enhance resilience to climate change impacts and carbon storage solutions.³³⁰ In 2023, a Working Group on Changing Ocean Climate and Ocean Acidification (WG COCOA) was established to implement the objectives of the NEAES 2030. In order to assess the environmental status of the North-East Atlantic in light of the objectives of the NEAES 2020, the 2023 Quality Status Report includes an assessment of climate change by a climate change expert group (CCEG) and an assessment on ocean acidification by the Intersessional Correspondence Group on ocean acidification (ICG-OA).³³¹ This may also guide Contracting Parties on taking further mitigation measures, that include the decrease of GHG emissions, carbon capture and storage, decarbonization of fleets and adaptation measures, such as Strategic Marine Spatial planning, sustainable fisheries management and coastal protection.³³²

Additionally to this in order to cooperate on knowledge gathering and sharing, the OSPAR Commission works together with the International Council for Exploration of the Sea (ICES), a scientific intergovernmental advisory organization with the aim to promote and share scientific research on marine ecosystems with a geographical limited scope to the Atlantic Ocean, and thus the Joint OSPAR/ICES Study Group on Ocean Acidification (SGOA) was established in 2012.³³³ This collaboration lead to the publishing of the Joint Assessment and Monitoring Programme (JAMP) Technical Guidelines to guide the monitoring of ocean acidification.³³⁴

In conclusion, these examples of this section has shown that also at the regional level the institutional interactions are rather limited to data and knowledge collection in understanding the impacts that climate change has on the ocean and data sharing. This obviously is of great importance to keep these issues on the national and regional Agenda for further action. Still this arguably adds little to the ocean adapting to climate change impacts and climate change mitigation.

³³⁰ Ibid, 13 – 14.

³³¹ See Homepage of OSPAR on 'Work Areas Climate Change and Ocean Acidification' <<https://www.ospar.org/work-areas/cross-cutting-issues/cocoa>>.

³³² OSPAR Commission, 'Synthesis Report of 2023' available at <<https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/synthesis-report/>> accessed on 12 April 2024, ch 9.

³³³ Alan Boyle and Catherine Redgwell, *Birnie, Boyle and Redgwell's International Law* (n 39) ch 2, 100 – 101.

³³⁴ see OSPAR Commission, 'JAMP Guidelines for Monitoring Chemical Aspects of Ocean Acidification : Agreement 2014-03) (2014), Doc HASEC 14/14/1, Annex 6, 1 – 8 ; Marine environmental monitoring is now coordinated through the Coordinated Environmental Monitoring Programme (CEMP).

5 Concluding Remarks

The theory of regime interaction at the core of this study offered me a lens through which the two regimes at different stages were looked at in order to answer the question on how the climate change regime and the law of the sea regime may support one another in addressing climate change and the adverse effects thereof on the marine environment. With Chapter 3 offering an overview of the core instruments of the two regimes, normative overlaps are identified and further elaborated through the lens of regime interaction in Chapter 4, that assesses the dimensions of the interactive form, the interactive substance and the interactive process. The division of these three dimensions have offered a structured way to look at the two regimes, assess their interactions and manage them, while also recognizing that they cannot be looked at in isolation, since parts mentioned in one dimension are of relevance in another.

These concluding remarks seek to not only conclude the above said, but also draw it together in light of the posed research question:

As a starting point, it is important to note again that the two regimes at the first glance seem to have no mention of one another and through regime interaction synergies of the two regimes in addressing climate change and its impacts on the marine environment are detected. A deliberate form of interaction unfold possible synergies and cooperation in the efforts to reduce GHG emissions from shipping. This has been seen with the example of IMO that links shipping to the climate change regime. Its regulatory developments are so far slow with the EEDI becoming mandatory through amending Annex VI of the MARPOL. The 2023 IMO Strategy could lead to further amendments that are arguably needed to further limit GHG emissions from ships. A possible conflict has been detected in measures taken to mitigate climate change, such as the practice of CCS and ocean fertilization: Whereby under the climate change regime these would have a positive effect for combatting climate change, they may harm the marine environment and thus are not compatible with the LOSC and the London Dumping Convention and Protocol. Further coordination will be needed here to manage this conflict in the future. These two examples show that it can go both ways, that the two regimes may not always be synergetic in addressing climate change. Moreover not all forms of interactions of the two regimes can be put in the two boxes of synergetic or conflicting. This thesis tried to also unfold forms of interactions that cannot be detected immediately, but that require tools, such as interpretation.

After taking a look at instruments and institutions that are relevant to the law of the sea regime and the UN climate change regime, it appears that there are more situations of interaction of the two regimes at various stages and they in one way or another do address climate change:

It comes apparent that the UNFCCC, the Kyoto Protocol and the Paris Agreement seeks to combat climate change through mitigation and adaptation, mentioning the ocean only for its role as a sink. The focus on terrestrial sources of emissions and sinks arguably neglects the high potential of ocean and coastal regions. The lack of regulation thereof is rather problematic in light of the important role of the ocean and the marine cryosphere in absorbing excess heat of the atmosphere caused by anthropogenic GHG emissions and in absorbing excess anthropogenic carbon dioxide emissions, which has been highlighted by the IPCC.³³⁵ Interaction mainly happens between the SBSTA and the IMO secretariats on GHG emissions in the shipping sector and through the UNFCCC Climate Change Conferences that highlights climate-ocean action. This may in the future enhance normative and institutional interactions of the two regimes but may require legal changes that has to take a wide range of interests into account, which is why it most likely so far has not happened.

In the law of the sea regime, the LOSC does not mention climate change either. A large part of this thesis assessed the capability of the LOSC to be interpreted and developed to address and support climate change. The inclusion of climate change relies largely on the interpretation of legal obligations that initially did not take the adverse impacts of the climate change on the ocean into account, neither the role of the ocean as a carbon sink. Thus it can be concluded that the LOSC's capacity and adaptability to regulate 'all issues relating to the law of the sea' is put to a test with regard to the impacts that climate change had on the oceans.³³⁶ One reason is the zonal and sectoral approach, whereby rights and obligations of coastal States and thirds States depend on the on the maritime zone (spatial distribution of the jurisdiction of States) and additionally the division between sectors, such as shipping, fisheries, and marine research, which all together makes it difficult to protect and preserve the marine environment as a whole, given the fact that the ocean is one unity, one ecosystem.³³⁷ This makes it more difficult to take

³³⁵ See Chapter 1, Section 1.

³³⁶ LOSC, preamble.

³³⁷ This has been discussed in various literature: see Elise Johansen and Tore Henriksen, 'Climate Change and the Arctic: Adapting to Threats and Opportunities in Arctic Marine waters' in Jan Mc Donald, Jeffrey McGee and Richard Barnes (eds) *Research Handbook on Climate Change, Oceans and Coasts* (Edward Elgar Publishing 2020) 239, 243; Elise Johansen, 'The Role of' (n 88) 12; James Harrison, *Saving the Oceans* (n 171) ch 10; Yoshifumi Tanaka, 'Principles of International Marine

coordinated measures in mitigating and adapting to effects of climate change. Still, the nature of a framework convention and the inclusion of GAIRS allows it to have a certain degree of flexibility and accommodate new developments and challenges, such as climate change. The LOSC interpreted and applied in the light of subsequent developments in international law and policy, gives room to accommodate climate change mitigation and adaptation and thus supports the climate change regime in addressing climate change and the adverse impacts thereof.³³⁸

The obligations set out in Part XII of the LOSC for State parties to take various measures for the protection and preservation of the marine environment from harmful impacts of climate change can be seen as supporting and reinforcing the mitigation goals of the Paris Agreement, in the sense of mitigating the polluting impacts on the marine environment, while they do not really tackle adaptation³³⁹ of climate change.³⁴⁰ Adaptation measures arguably are promoted through the cooperation obligations in the LOSC, whereby the potential of RFMOs has been mentioned and the work through the RSPs in enhancing resilience of the oceans. Thus arguably the LOSC helps through its cooperative fora to further implement the cooperation on adaptation measures as envisioned in the UNFCCC.

Moreover, Bastiaan Ewoud Klerk argues, that the need for taking measures to reduce GHG emissions and protecting the marine environment from the adverse impacts of climate change are needed to comply with Article 192 and arguably with Part XII of the LOSC altogether, otherwise Article 192 of the LOSC would be ‘void’ and ‘in violation of the principle of good faith as enshrined in Article 300 UNCLOS and Articles 26 and 31 VCLT’.³⁴¹ But whether it is enough to act in accordance with the Paris Agreement to also comply with the due diligence obligation in Part XII of the LOSC, is another question, which may be answered in the Advisory Opinion of the ITLOS.

The obligations in Part XII of the LOSC not asking State Parties to do more than implementing the Paris Agreement,³⁴² seems not convincing and arguably more is needed to be in compliance.

Environmental Law’ in Rosemary Rayfuse (ed) *Research Handbook on International Marine Environmental Law* (Edward Elgar Publishing 2015) 4.

³³⁸ See Alan Boyle, ‘Litigating Climate Change under Part XII of the LOSC’ (2019) 34 (3) *The International Journal of Marine and Coastal Law* 458, 462

³³⁹ Also in the UN climate change regime no specific obligations in relation to adaptation measures can be found: see for example Article 4 (1) of the UNFCCC and Articles 7 – 10 of the Paris Agreement, that merely highlight the importance of adaptation measures.

³⁴⁰ Alan Boyle, ‘Protecting the Marine’ (n 105) 84, 86.

³⁴¹ Bastiaan Ewoud Klerk, ‘Protecting the Marine Environment from the Impacts of Climate Change: A Regime Interaction Study’ (2023) 32 (1) *RECIEL* 44, 44– 56

³⁴² Alan Boyle, ‘Protecting the Marine’ (n 105) 94.

The LOSC does not seem to incorporate the provisions of the Paris Agreement in its treaty text, but rather is informed by it when interpreting the content of the obligations to prevent, reduce and control pollution. Thus it can be concluded that the Paris Agreement and the UNFCCC inform the Parties to the LOSC, that reaching the 1.5°C limit is what is necessary. As argued above, what is necessary are the 'best practicable means available'. What that means changes over time and evolves with scientific and legal development, as does the capabilities of the State parties. While reading the obligations of the LOSC in light climate change may be useful in protecting and preserving the marine environment, it does not automatically make State Parties to the Paris Agreement add ocean-climate mitigation and adaptation measures in their NDCs and NAPs.

After assessing the institutional interactions, mainly through in the last dimension of the analytical framework, it comes quite clear that forms of interaction may happen within one regime and not across regimes. It seems that a large focus is still on understanding the impacts of climate change on the marine environment and the international and regional institutional fora calls for further cooperation. Only the gathering of sufficient scientific evidence at the institutional level of how it all is connected will alone will not save the ocean. Still, information gathering and sharing in the various international and regional fora is a starting point. Measures protecting the marine environment, the ocean as an important sink for climate mitigation, and other services it offers for human life, are needed. And while it may be technology that will offer mitigation and adaptation solutions, policy and law can drive this change in technology that is needed.³⁴³ This being said, the UN-Oceans, as an inter-agency collaboration mechanism with no mandate in developing binding rules, may have a role in a way forward through driving policy and enhancing further coordination and cooperation. Other cooperative mechanisms have been identified in the role of the UNEP RSP, whereby an example was offered for institutional interaction. Together with the role of RFMOs, regional seas bodies seem to have a little role in addressing climate change, which limited to gathering and sharing scientific knowledge and designating MPAs. Thus it has to be repeated that these existing bodies of the law of the sea regime have the potential to help the ocean to adapt to climate change at a regional level by enhancing resilience.

³⁴³ See comparison with 1986 Ozone Convention concerning tackling ozone depletion in Alan Boyle and Catherine Redgwell, *Birnie, Boyle and Redgwell's International Law* (n 39) ch 6, 356 – 357.

Regime interaction trying to manage the fragmented legal and institutional landscape, may thus have not yet achieved to address climate change in a comprehensive way but it does address it. Due to the physical climate-ocean interrelation, I argue that further solutions will be needed in order to not leave it to States to include climate-ocean measures in their NDCs and NAPs. While they are arguably a starting point, global action and further cooperation and coordination will be required to tackle the ocean-climate nexus and in saving our ocean.

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