

INTERNATIONAL TRIBUNAL FOR THE LAW OF THE SEA

Case No. 31

**REQUEST FOR AN ADVISORY OPINION SUBMITTED BY THE
COMMISSION OF SMALL ISLAND STATES ON CLIMATE CHANGE
AND INTERNATIONAL LAW (REQUEST FOR ADVISORY OPINION
SUBMITTED TO THE TRIBUNAL)**



WRITTEN STATEMENT OF THE REPUBLIC OF MOZAMBIQUE

16 June 2023

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CHAPTER 1 INTRODUCTION

1.1 In accordance with Orders of 16 December 2022 and 15 February 2023 of the International Tribunal for the Law of the Sea (“**ITLOS**” or “**Tribunal**”), the Republic of Mozambique (“**Mozambique**”), hereby presents its Written Statement on the questions submitted to the Tribunal in the *Request for an Advisory Opinion Submitted by the Commission of Small Island States on Climate Change and International Law* (“**Request**”).

1.2 As a committed State Party to the 1982 United Nations Convention on the Law of the Sea (“**UNCLOS**” or “**Convention**”), Mozambique strongly supports efforts to enhance the Convention’s effectiveness as the governing framework for the world’s oceans, including through the mechanism of obtaining Advisory Opinions from the Tribunal.

1.3 Mozambique accordingly welcomes the request for an Advisory Opinion by the Commission of Small Island States (“**COSIS**”),¹ which poses the following interrelated questions:

What are the specific obligations of State Parties to [UNCLOS], including under Part XII:

- a. 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?
- b. to protect and preserve the marine environment in relation to climate change impacts, including ocean warming and sea level rise, and ocean acidification?

1.4 Mozambique observes that these questions provide the Tribunal with its first opportunity to set out in concrete terms the rights and obligations of States Parties to UNCLOS in regard to the deleterious impacts of climate change on the marine environment. The Tribunal’s Advisory Opinion on these matters will be especially helpful in view of the advances in the state of scientific knowledge concerning climate change that have occurred since the Convention’s adoption in 1982

¹ The request for an advisory opinion was referred to the International Tribunal for the Law of the Sea by COSIS on 12 December 2022. See *Commission of Small Island States on Climate Change and International Law (COSIS), Request for Advisory Opinion* (12 December 2022) (“**Request**”), p. 2. By Order 2022/4 of 16 December 2022, the Tribunal invited “States Parties to the Convention, the [COSIS] and [other organizations] to present written statements on the questions submitted to the Tribunal for an advisory opinion,” by 16 May 2023. See *Request for Advisory Opinion submitted by the Commission of Small Island States on Climate Change and International Law, Order of 16 December 2022*, p. 2. By Order 2023/1, the Tribunal extended the date for submissions of Written Statements to 16 June 2023. *Request for Advisory Opinion submitted by the Commission of Small Island States on Climate Change and International Law, Order of 15 February 2023*, p. 2.

and in light of equally important developments in international environmental law that have also occurred since that time.

1.5 In submitting this Written Statement, Mozambique is cognizant of the fact that African States are among those that have contributed the least to the emission of greenhouse gases (“GHG”).² Yet, African States are among the most affected by the resulting impacts to the marine environment, including ocean warming, acidification, stratification, and deoxygenation.³

1.6 Indeed, States like Mozambique that are heavily dependent on fisheries and other marine resources are acutely vulnerable to the harmful marine impacts of climate change.⁴ This vulnerability is accentuated by Mozambique’s low-lying coastal geography and high frequency of climate-related disasters, including irregular weather patterns. In recent years Mozambique has experienced numerous devastating extreme weather events, including Tropical Cyclones Kenneth, Ana, and Freddy, the effects of which have been exacerbated by sea level rise.⁵

1.7 Mozambique’s Written Statement is also informed by its strongly held view that a clarification of the obligations of States under UNCLOS and, by extension, customary international law, in light of the scientific consensus on the effects of climate change, should provide clear benchmarks for the actions that States must undertake to discharge their obligations to protect and preserve the marine environment against the deleterious effects of GHG emissions. Mozambique hopes that the Tribunal will provide such guidance by delineating the precise nature of the obligations in actionable terms.

1.8 The Written Statement is structured as follows. **Chapter 2**, which follows this Introduction, demonstrates that the Tribunal has jurisdiction to address the Request and that there are no compelling reasons for the Tribunal to decline to exercise that jurisdiction. **Chapter 3** addresses Question (a) by outlining the deleterious effects of GHG emissions on the marine environment and on Mozambique, specifically. It then describes the obligations and corresponding rights of States

² Intergovernmental Panel on Climate Change (“IPCC”), *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) (“IPCC, *Climate Change 2022: Impacts, Adaptation, and Vulnerability*”), p. 1294.

³ IPCC, “Summary for Policymakers” in Hans-Otto Pörtner *et al.* (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) (“IPCC 2022, Summary for Policymakers”), p. 9. See also UN Secretary General, *The impacts of climate change on the human rights of people in vulnerable situations*, UN Doc. A/HRC/50/57 (6 May 2022), para. 4 (noting that “[p]eople who are disproportionately at risk from the adverse impacts of climate change may include indigenous peoples, local communities, peasants, migrants, children, women, persons with disabilities, people living in small island developing States and least developed countries, persons living in conditions of water scarcity, desertification, land degradation and drought, and others in vulnerable situations who are at risk of being left behind”).

⁴ Eva Maire *et al.*, “Micronutrient supply from global marine fisheries under climate change and overfishing” (2021) 31(18) in *Current Biology*, p. 4132.

⁵ See, e.g., Daneeja Mawren *et al.*, “Exceptional Tropical Cyclone Kenneth in the Far Northern Mozambique Channel and Ocean Eddy Influences” (2020) 47(16) *Geophysical Research Letters*, available at <https://doi.org/10.1029/2020GL088715>.

to prevent, control and reduce these effects in view of Article 194 and other provisions of the Convention concerning marine pollution. **Chapter 4** addresses Question (b) by describing the obligations and corresponding rights of States to protect and preserve the marine environment in relation to the impacts of climate change, including under Article 192 of the Convention. Finally, **Chapter 5** summarizes Mozambique's views concerning the two questions.

CHAPTER 2
**THE TRIBUNAL HAS JURISDICTION TO ADDRESS THE QUESTIONS ASKED IN
THE REQUEST AND THE TRIBUNAL SHOULD EXERCISE THAT JURISDICTION**

2.1 The Tribunal's advisory jurisdiction is derived from the Statute of the International Tribunal for the Law of the Sea ("**Statute**") and the Rules of the Tribunal ("**Rules**"), when read together with an authorizing instrument such as Article 2(2) of the COSIS Statute. Article 21 of the Statute provides that the Tribunal has jurisdiction over "all disputes and all applications submitted to it in accordance with this Convention and all matters specifically provided for in any other agreement which confers jurisdiction on the Tribunal."⁶ While the Statute does not expressly refer to advisory jurisdiction, Article 138 of the Rules provides that ITLOS may "give an advisory opinion on a legal question if an international agreement related to the purposes of [UNCLOS] specifically provides for the submission to [ITLOS] of a request for such an opinion."⁷ Article 138(2) of the Rules further provides that "[a] request for an advisory opinion shall be transmitted to the Tribunal by whatever body is authorized by or in accordance with the agreement to make the request to the Tribunal."⁸

2.2 The authority of ITLOS to issue advisory opinions was recognized in the Tribunal's advisory opinion in the *Request for an advisory opinion submitted by the Sub-Regional Fisheries Commission (SRFC)* ("**SRFC Advisory Opinion**"). In regard to Article 21 of the Statute, the Tribunal held:

The words all "matters" ("*toutes les fois que cela*" in French) should not be interpreted as covering only "disputes", for, if that were to be the case, article 21 of the Statute would simply have used the word "disputes". Consequently, it must mean something more than only "disputes". That something more must include advisory opinions, if specifically provided for in "any other agreement which confers jurisdiction on the Tribunal."⁹

2.3 Consequently, it is the existence and specific provisions of such an agreement which, together with Article 21 of the Statute and Article 138 of the Rules, "constitute the substantive legal basis of the advisory jurisdiction of the Tribunal."¹⁰

⁶ United Nations Convention on the Law of the Sea (adopted 10 December 1982, entered into force 16 November 1994), Annex VI: Statute of the International Tribunal for the Law of the Sea (10 December 1982) ("**Statute**"), art. 21.

⁷ International Tribunal for the Law of the Sea, Rules of the Tribunal (28 October 1997) ("**Rules**"), art. 138.

⁸ Rules, art. 138(2).

⁹ *Request for Advisory Opinion submitted by the Sub-Regional Fisheries Commission (SRFC), Advisory Opinion, 2 April 2015, ITLOS Reports 2015*, p. 4 ("**SRFC Advisory Opinion**"), para. 56.

¹⁰ *Ibid.*, para. 58.

2.4 In the *SRFC Advisory Opinion*, the Tribunal articulated three elements that must be satisfied to establish jurisdiction to render an advisory opinion on the basis of an “other agreement” of the sort referred to in Article 138 of the Rules. Those elements are that:

- (i) there must be an international agreement related to the purposes of the Convention that specifically provides for the submission to the Tribunal of a request for an advisory opinion;
- (ii) the request must be transmitted to the Tribunal by a body authorized by or in accordance with the agreement mentioned above; and
- (iii) the requested opinion must concern “a legal question.”¹¹

2.5 The Request satisfies all three prerequisites.

2.6 *First*, there is “an international agreement related to the purposes of the Convention that specifically provides for the submission to the Tribunal of a request for an advisory opinion.”¹² The Agreement for the Establishment of the Commission of Small Island States on Climate Change and International Law (“**COSIS Agreement**”) is an international agreement concluded between Tuvalu and Antigua & Barbuda on 31 October 2021,¹³ and subsequently acceded to by Palau, Vanuatu, Saint Lucia, and Niue. Like the agreement that served as the basis for the Tribunal’s jurisdiction in the *SRFC Advisory Opinion*,¹⁴ the purpose of the COSIS Agreement is “closely related to the purposes of the Convention.”¹⁵ One of the purposes of UNCLOS, as set out in its preamble, is the “protection and preservation of the marine environment.”¹⁶ This broad purpose is given effect throughout the Convention, including in Part XII.¹⁷ As set out in Article 2(1) of the COSIS Agreement, the organization was formed “to promote and contribute to the definition, implementation and progressive development of rules and principles of international

¹¹ *Ibid.*, para. 60.

¹² *Ibid.*

¹³ See Agreement for the Establishment of the Commission of Small Island States on Climate Change and International Law (31 October 2021) (“**COSIS Agreement**”), p. 5.

¹⁴ In that case, the relevant agreement was the Convention on the Determination of the Minimal Conditions for Access and Exploitation of Marine Resources within the Maritime Areas under Jurisdiction of the Member States of the Sub-Regional Fisheries Commission (adopted 8 June 2012, entered into force 16 September 2012) (“**MCA Convention**”). In assessing the first requirement, the Tribunal noted that the MCA Convention was of international character and had been concluded by seven States. *SRFC Advisory Opinion*, para. 62.

¹⁵ The Tribunal noted that MCA Convention’s objectives to “implement the Convention” and “ensure that the policies and legislation of its Member States ‘are more effectively harmonized with a view to a better exploitation of fisheries resources in the maritime zones under their respective jurisdictions’” confirmed that the MCA Convention was “closely related to the purposes of the Convention.” *Ibid.*, para. 63.

¹⁶ UNCLOS, Preamble, para. 4.

¹⁷ Part XII of the Convention concerns the “Protection and Preservation of the Marine Environment” and includes provisions on, *inter alia*, global and regional cooperation, monitoring and environmental assessment, international rules and national legislation to prevent, reduce and control pollution of the marine environment, enforcement, safeguards, and responsibility and liability.

law concerning climate change, *in particular the preservation of the marine environment, including through the jurisprudence of international courts and tribunals.*¹⁸

2.7 *Second*, the Request “was transmitted to the Tribunal by a body authorized by ... the agreement mentioned above,” that is, COSIS.¹⁹ By unanimous decision of the COSIS Members at the Third Meeting of COSIS on 26 August 2022 (then comprising of Antigua & Barbuda, Tuvalu, and Palau), COSIS requested that the Tribunal issue an advisory opinion on two questions relating to the obligations of States in regard to the effects of climate change on the marine environment.²⁰ COSIS referred these questions to ITLOS on 12 December 2022,²¹ in accordance with Article 2(2) of the COSIS Agreement, which expressly authorizes the body to request an advisory opinion from ITLOS.²²

2.8 *Third*, the advisory opinion sought from the Tribunal raises legal questions.²³ In particular, the Request seeks the Tribunal’s advisory opinion on the following questions:

What are the specific obligations of State Parties to the United Nations Convention on the Law of the Sea (“UNCLOS”), including under Part XII:

¹⁸ COSIS Agreement, art. 2(1) (emphasis added).

¹⁹ *SRFC Advisory Opinion*, para. 60. COSIS constitutes an intergovernmental organizations, as (i) its formal basis is an international treaty (*i.e.*, the COSIS Agreement); (ii) its members are States; (iii) it has its own structure and organs (specifically, the Committee on Strategy, Management and Outreach and the Committee on Legal Experts, comprised by five Subcommittees; *see* COSIS Agreement, art. 4(3)-(4); COSIS 2022 Annual Report, October 2022, p. 10); and (iv) it enjoys independent legal personality (as established by Article 1(2) and (4) of the COSIS Agreement and as demonstrated, *inter alia*, by its capacity to approve, transmit and process the present request to the Tribunal).

²⁰ *See* Request, p. 2. The Decision is based on an approval of Recommendation CLE. 1/2022/Rec of the Committee of Legal Experts (18 June 2022), which was assisted by the work of the Sub-Committee on Protection and Preservation of the Marine Environment, consistent with the mandates of the Commission (COSIS Agreement, art. 1(3)). The request in the *SRFC Advisory Opinion* was transmitted to the Tribunal by the Permanent Secretary of the SRFC pursuant to a resolution adopted by the Conference of Ministers of the SRFC.

²¹ *See* Request, p. 1.

²² COSIS Agreement, art. 2(2) (“Having regard to the fundamental importance of oceans as sinks and reservoirs of greenhouse gases and the direct relevance of the marine environment to the adverse effects of climate change on Small Island States, *the Commission shall be authorized to request advisory opinions from the International Tribunal for the Law of the Sea (“ITLOS”) on any legal question within the scope of the 1982 United Nations Convention on the Law of the Sea, consistent with Article 21 of the ITLOS Statute and Article 138 of its Rules*”) (emphasis added).

²³ *SRFC Advisory Opinion*, para. 60. In determining the substantive legal basis for the Tribunal’s jurisdiction, the Tribunal has indicated that the language in Article 21 of the Statute (*i.e.*, “all matters specifically provided”) should not be interpreted restrictively such that “the questions need not necessarily be limited to the interpretation or application of any specific provision” of the underlying agreement, so long as they have a “sufficient connection” with the agreements’ principles and purposes. *Ibid.*, para. 68. The questions posed by the Request have more than a “sufficient connection” with the COSIS Agreement. They fall strictly within the matters specifically provided for in the COSIS Agreement because they seek “through the jurisprudence of international courts and tribunals” to “contribute to the definition [...] of rules and principles of international law concerning climate change” as it relates to “the protection and preservation of the marine environment.” COSIS Agreement, art. 2(1). The questions, thus, fall squarely within the Tribunal’s jurisdiction pursuant to Article 21 of the Statute.

- a. 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?
- b. to protect and preserve the marine environment in relation to climate change impacts, including ocean warming and sea level rise, and ocean acidification?

2.9 As with the request in the *SRFC Advisory Opinion*, “[t]hese questions have been framed in terms of law.”²⁴ Indeed, the Request seeks the Tribunal’s guidance to determine the obligations concerning the marine environment with which States must comply by virtue of their status as Parties to a legal instrument, *i.e.*, UNCLOS. In particular, it seeks the Tribunal’s advisory opinion as to, *inter alia*, Article 192 of UNCLOS, which provides that “States have the obligation to protect and preserve the marine environment,” and Article 194, which requires that “States shall take . . . all measures consistent with this Convention that are necessary to prevent, reduce and control pollution of the marine environment from any source” and that “States shall 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.” Thus, “[t]o respond to these questions, the Tribunal will be called upon to interpret the relevant provisions of the Convention . . . and to identify other relevant rules of international law bearing on the question of interpretation.”²⁵

2.10 The Request accordingly satisfies all three requirements of Article 138 of the Rules. The Tribunal is therefore competent to exercise jurisdiction pursuant to Article 21 of the Statute with respect to “all matters specifically provided” for in the COSIS Agreement.²⁶

2.11 There are no reasons for the Tribunal to decline to exercise its well-founded advisory jurisdiction.²⁷ As established in the *SRFC Advisory Opinion*, a request for an advisory opinion should only be declined if there are “compelling reasons” to do so.²⁸ The Tribunal’s approach

²⁴ *SRFC Advisory Opinion*, para. 65.

²⁵ *Ibid.*

²⁶ Statute, art. 21.

²⁷ Rules, art. 138(1). The questions posed to the International Court of Justice (“ICJ”) and Inter-American Court of Human Rights (“IACtHR”) differ substantially from those posed by COSIS. The request posed to the IACtHR pertains to the impact of climate change on human rights obligations codified in the American Convention on Human Rights and additional Inter-American agreements. While the questions posed to the ICJ touch upon UNCLOS, the request is framed and focused much more broadly. Moreover, the three advisory opinion processes underscore the critical nature of obtaining guidance as to State’s obligations and rights with respect to combatting climate change.

²⁸ *SRFC Advisory Opinion*, para. 71 (citing *Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, I.C.J. Reports 1996*, p. 226 (“*Nuclear Weapons Advisory Opinion*”), at p. 235, para. 14. For an example of a compelling reason, see *Status of Eastern Carelia, Advisory Opinion, 1923, P.C.I.J., Series B, No. 5*, pp. 28-29, where the PCIJ refused to exercise advisory jurisdiction because the legal question on which it was asked to pronounce concerned “directly the main point of the controversy between Finland and Russia and [could] only be decided by an

mirrors that of the International Court of Justice (“ICJ”). Once advisory jurisdiction is established, there is a strong presumption in favor of exercising it.²⁹

2.12 Here, far from there being any compelling reasons to decline the Request, the urgent threat to the marine environment posed by climate change and the equally urgent need for clarification as to the steps States Parties to UNCLOS must undertake to discharge their obligations in light of that threat, make the Tribunal’s advisory opinion especially necessary.

2.13 In sum, the Tribunal has jurisdiction over the Request and should exercise that jurisdiction.

investigation into the facts underlying the case. Answering the question would be substantially equivalent to deciding the dispute between the parties.”

²⁹ The only instance where the ICJ did not exercise its advisory jurisdiction was in the WHO request on Nuclear Weapons where it found that it did not have jurisdiction in the first place. *See Legality of the Use by a State of Nuclear Weapons in Armed Conflict, Advisory Opinion, I. C. J. Reports 1996*, p. 66, para. 32.

CHAPTER 3

QUESTION (A) REFERRED TO THE TRIBUNAL

3.1 Having described the basis for the Tribunal’s advisory jurisdiction in the preceding Chapter, in the Chapters that follow Mozambique provides its observations on the two questions submitted to the Tribunal, which concern, respectively, obligations under UNCLOS in regard to the prevention, reduction and control of pollution, and the protection and preservation of the marine environment, in connection with anthropogenic GHG emissions and the impacts of climate change. Mozambique addresses marine pollution in **Chapter 3** and protection and preservation of the marine environment in **Chapter 4**.

3.2 As a preliminary matter, Mozambique emphasizes that the Tribunal’s responses to both questions should be based on a holistic interpretation of the Convention. The Convention was negotiated as a package deal with a careful balancing of rights and obligations. Part XII of UNCLOS must therefore be interpreted alongside other parts of the Convention. Those parts include especially the Convention’s provisions concerning the sustainable management of living resources in the Exclusive Economic Zone (“**EEZ**”) and High Seas, as well as those that concern protection of the marine environment from over-exploitation and depletion as well as the promotion of international co-operation and other peaceful uses of the Oceans.³⁰ Such a holistic interpretation accords with accepted canons of treaty interpretation, as reflected in Article 31 of the Vienna Convention on the Law of Treaties (“**Vienna Convention**”) and customary international law.³¹

3.3 In the *Namibia* Advisory Opinion, the ICJ observed that “an international instrument has to be interpreted and applied within the framework of the entire legal system prevailing at the time of the interpretation.”³² Following this approach, Mozambique’s submission advances a good faith interpretation of the Convention, based on the ordinary meaning of the words used in its provisions, read in context and in light of the object and purpose of the Convention, as required by Article

³⁰ UNCLOS, arts. 61-63, and more generally provisions in Parts I-XI.

³¹ See *Application of the International Convention on the Elimination of All Forms of Racial Discrimination (Qatar v. United Arab Emirates)*, Preliminary Objections, Judgment, I.C.J. Reports 2021, p. 71, para. 75, where the Court stated that “it is well established that Articles 31 and 32 of the Vienna Convention reflect rules of customary international law” and cited, for this proposition, *Application of the International Convention for the Suppression of the Financing of Terrorism and of the International Convention on the Elimination of All Forms of Racial Discrimination (Ukraine v. Russian Federation)*, Preliminary Objections, Judgment, I.C.J. Reports 2019 (II), p. 598, para. 106; *Immunities and Criminal Proceedings (Equatorial Guinea v. France)*, Preliminary Objections, Judgment, I.C.J. Reports 2018 (I), pp. 320-321, para. 91; *Question of the Delimitation of the Continental Shelf between Nicaragua and Colombia beyond 200 Nautical Miles from the Nicaraguan Coast (Nicaragua v. Colombia)*, Preliminary Objections, Judgment, I.C.J. Reports 2016 (I), p. 116, para. 33. See also *Responsibilities and obligations of States with respect to activities in the Area*, Advisory Opinion, 1 February 2011, ITLOS Reports 2011, p. 10 (“**Activities in the Area Advisory Opinion**”), para. 58; *The South China Sea Arbitration (The Republic of Philippines v. The People’s Republic of China)*, PCA Case No. 2013-19, Award (12 July 2016) (“**South China Sea Arbitration**”), paras. 216, 247, 274-275.

³² *Legal Consequences for States of the Continued Presence of South Africa in Namibia (South West Africa), notwithstanding Security Council Resolution 276 (1970)*, Advisory Opinion, I.C.J. Reports 1971, p. 16 (“**Namibia Advisory Opinion**”), para. 53.

31(1) of the Vienna Convention. Moreover, the interpretation suggested by Mozambique, in accordance with Article 31(3) of the Vienna Convention, takes into account other relevant rules and principles of international law, and is confirmed by the drafting history of UNCLOS, as provided for in Article 32 of the Vienna Convention.

I. Observations on Question (a): State Obligations to “Prevent, Reduce and Control” Pollution of the Marine Environment in Relation to GHG Emissions

3.4 Part (a) of the Request asks:

What are the specific obligations of State Parties to the United Nations Convention on the Law of the Sea (the “UNCLOS”), including under Part XII:

(a) 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?³³

3.5 The question thus refers to “pollution of the marine environment . . . which is caused by anthropogenic emissions into the atmosphere.” The existence of this causal link between anthropogenic GHG emissions and the actual or potential harm to the marine environment is an issue of fundamental importance, relevant to both questions before the Tribunal. Consequently, **Section 1** shows that the best available scientific evidence establishes that GHG emissions cause deleterious impacts to the marine environment and therefore qualify as “pollution to the marine environment” under Article 1(4) of the Convention.³⁴

3.6 The remaining Sections of the Chapter then address the specific obligations of States under the Convention to take measures to “prevent, reduce and control” pollution, including pollution caused by anthropogenic GHG emissions, as well as their corresponding rights to regulate so as to achieve those objectives. These obligations and rights include: (i) the obligation and corresponding right under Article 194(1) to “take all measures necessary” to prevent, reduce, and control marine pollution caused by climate change in accordance with their capabilities; (ii) the obligation and corresponding right under Article 194(2) to ensure that emitting activities under the jurisdiction of

³³ Request, p. 2.

³⁴ Mozambique notes that in its *Advisory Opinion on the Legal Consequences of the Separation of the Chagos Archipelago from Mauritius*, the ICJ reaffirmed that “to enable [it] to pronounce on legal questions, it [the ICJ] must also be acquainted with, take into account and, if necessary, make findings as to the relevant factual issues.” *Legal Consequences of the Separation of the Chagos Archipelago from Mauritius in 1965, Advisory Opinion, I.C.J. Reports 2019*, p. 95, para. 72 (citing to the *Namibia Advisory Opinion*). No provision in the Statute or Rules depart from the ICJ’s findings in this regard. In the context of climate change, the relevant factual background includes scientific evidence on the role played by the Oceans in the climate cycle and the connection between the atmosphere and the Oceans.

States do not cause damage to other States and their environments; (iii) the fact that under Article 193 the right of States to exploit their natural resources is qualified by a proviso requiring that such exploitation must accord with their duty to protect and preserve the marine environment; (iv) the obligations and corresponding rights under Articles 207, 212, and 213 to adopt laws limiting GHG emissions; and (iv) the obligation and corresponding right under Article 222 to enforce laws and implement international rules and standards limiting GHG emissions.

A. GHG Emissions Constitute “Pollution to the Marine Environment” under Article 1(4) of UNCLOS

1. Article 1(4) of UNCLOS Establishes a Broad Definition of “Pollution to the Marine Environment”

3.7 Article 1(4) of UNCLOS defines “pollution to the marine environment” as:

[T]he 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.

3.8 The ordinary meaning of the words in Article 1(4) sets out a comprehensive definition that is designed “to prevent [all sources of] marine pollution.”³⁵

3.9 *First*, by including the word “indirectly,” UNCLOS expands the definition of “pollution to the marine environment” to encompass not only substances and energy that enter the marine environment directly, but also those sources of pollution that enter the marine environment through indirect means. This is true, for instance, of GHGs that are emitted into the atmosphere and which are eventually deposited into and absorbed by the Oceans, causing a host of harms to the marine environment.³⁶

3.10 *Second*, the definition of pollution includes “energy.” Thus, introducing energy into the marine environment, including via indirect means, can qualify as a form of pollution under Article 1(4). The reference to “energy” in the final text of the provision stems from a note by the Intergovernmental Oceanographic Commission of UNESCO (“IOC”) that was prepared in response to a request from the UN General Assembly.³⁷ The IOC explained that the inclusion of energy as a form of pollution was necessary because “[t]he world ocean is receiving in increasing

³⁵ Alexander Proells (ed.), *The United Nations Convention on the Law of the Sea: A Commentary* (2017), Commentary to Article 1(4) (by Professor Tanaka), pp. 23-24, paras. 12-15.

³⁶ See Section 3.I.A.2 below.

³⁷ Myron Nordquist *et al.* (eds.), *United Nations Convention on the Law of the Sea 1982: A Commentary, Vol. II* (1993), p. 41 (Article 1) (“Virginia Commentary to UNCLOS”).

amounts and variety waste substances and energy from our civilization, but it does not have an unlimited capacity to absorb them.”³⁸

3.11 *Third*, Article 1(4) makes clear that it need not be definitively established that the introduction of a substance or energy into the marine environment would necessarily cause deleterious effects to qualify as pollution. Rather, the introduction need only be “likely to result” in such harms, whether at present or in the future. This was a deliberate choice by the Convention’s drafters. The drafting history of Article 1(4) indicates that the provision’s original formulation only included the word “resulting”; the final version, however, expanded its scope to include substances or energy introduced into the marine environment “which result[] or [are] likely to result” in deleterious effects to it.³⁹

3.12 *Fourth*, the goal to protect, prevent, and control pollution from all sources is established in relation to the all-embracing concept of the “marine environment.”⁴⁰ The Convention does not include any specific explanation as to what constitutes the “marine environment.” This allows the Convention to preserve “an element of flexibility,” and “accommodat[e] the continuously-expanding human knowledge and human activities relating to the marine environment, including its protection and preservation.”⁴¹

3.13 *Fifth*, even though climate change, *as such*, may not have been envisioned by the Convention’s drafters, that pollution from or through the atmosphere is covered by the term “marine pollution” is confirmed by a contextual interpretation of Article 1(4). The connection between the atmosphere and the marine environment is reflected, for example, in the fact that the terms “atmosphere” or “air space” are mentioned in no fewer than nine provisions,⁴² evincing that the drafters considered the atmosphere as being linked to—and an integral part of—the marine environment.

³⁸ Intergovernmental Oceanographic Commission, Technical Series, “Comprehensive Outline of the Scope of the Long-term and Expanded Programme of Oceanic Exploration and Research”, Approved by IOC at its Sixth Session, UNESCO, Paris (2-13 September 1969), available at <https://unesdoc.unesco.org/ark:/48223/pf0000133279>. The Stockholm Conference’s “General Principles for Assessment and Control of Marine Pollution” provides little analysis of the use of the term energy. See United Nations, *Report of the United Nations Conference on the Human Environment, Stockholm*, UN Doc. A/CONF.48/14/Rev.1 (5-16 June 1972) (“**Stockholm Conference Report**”), Annex III: General Principles for Assessment and Control of Marine Pollution, p. 73, available at <https://documents-dds-ny.un.org/doc/UNDOC/GEN/NL7/300/05/PDF/NL730005.pdf?OpenElement>.

³⁹ Virginia Commentary to UNCLOS, Vol. II (1993), p. 33 (Article 1) (emphasis added). This language may also be indicative that general causation suffices to establish that the introduction of a substance or energy into the marine environment, be it directly or indirectly, constitutes a form of pollution under Article 1(4). It is not necessary to establish that a specific substance or energy introduced into the marine environment has in fact caused the observed deleterious impact to it.

⁴⁰ *Ibid.*, p. 42 (Article 1).

⁴¹ *Ibid.*

⁴² UNCLOS, arts. 2(2), 34(1), 49(2), 78(1), 135, 155(2), 194(3)(a), 212, 222.

3.14 For example, the following provisions of the Convention provide contextual support for the conclusion that the introduction of substances and energy into the atmosphere qualifies as a form of marine pollution in appropriate circumstances:

(i) Article 194(3)(a), which provides that measures to “deal with all sources of pollution of the marine environment” include measures designed to minimize the “release of toxic, harmful or noxious substances ... from or through the atmosphere.”

(ii) Article 212, which requires that States Parties adopt measures “to prevent, reduce and control pollution of the marine environment from or through the atmosphere ...”

(iii) Article 222, which requires that States Parties take measures to enforce rules “to prevent, reduce and control pollution of the marine environment from or through the atmosphere.”

3.15 These provisions indicate that marine pollution under Article 1(4) should be read as including introduction of GHGs into the atmosphere when their introduction causes harm to the marine environment. As Professor Nordquist has explained, these provisions provide a link between the law relating to the marine environment and the law relating to the atmosphere as such, whether or not over the oceans.⁴³

3.16 *Sixth*, the definition of pollution contained in Article 1(4)—which finds its origins in the work of the UN’s Joint Group of Experts on the Scientific Aspects of Marine Pollution—is “firmly rooted in scientific understandings of pollution.”⁴⁴ Scientific evidence establishes that GHGs, including those absorbed by the oceans, have detrimental effects on the marine environment and its living resources. Excessive emissions of GHGs into the atmosphere thus qualify as pollution of the marine environment under Article 1(4) of UNCLOS.

3.17 *Seventh*, Part XII of the Convention, which concerns the protection and preservation of the marine environment, contains Articles that are drafted in a manner that covers GHG emissions as causes of marine pollution. For instance, Article 207 governs pollution from land-based sources; Article 211 regulates pollution from vessels; and Article 212 addresses pollution from or through the atmosphere. A significant volume of GHGs are emitted by these activities.⁴⁵ As further detailed

⁴³ Virginia Commentary to UNCLOS, Vol. IV (1991), p. 67 (Article 194). *See also* Alan Boyle, “Litigating Climate Change under Part XII of the LOSC” (2019) 34 *The International Journal of Marine and Coastal Law* 458, p. 464 (“A significant proportion of marine pollution already comes from land-based sources that generate airborne deposition of pollutants at sea, and it has never been suggested that this is excluded from the [Convention].”).

⁴⁴ Elizabeth A. Kirk, “Science and the International Regulation of Marine Pollution” in Rothwell *et al.*, *The Oxford Handbook of the Law of the Sea* (Oxford University Press 2015), p. 516.

⁴⁵ *See* IPCC, “Climate Change in Data – Climate Change 2021: The Physical Science Basis”, available at <https://www.ipcc.ch/report/ar6/wg1/resources/climate-change-in-data/> (“It is unequivocal that humans are causing the warming.... Human activities - burning fossil fuels and changes in land use - release greenhouse gases that trap heat in the atmosphere. Carbon dioxide is responsible for most of global warming, although methane and other greenhouse gases also warm the climate”).

below, the resulting pollution from the emissions terminates in the Oceans, polluting the marine environment.⁴⁶

3.18 *Finally*, although the scientific evidence concerning the effects of GHG emissions on the marine environment has developed significantly over the past decades, the scope of their deleterious effects are not yet fully understood. Indeed, the long-term effects of climate change on the marine environment may take decades to become evident.⁴⁷ To the extent that there may be any scientific uncertainty as to those effects, the definition in Article 1(4) covers the introduction of substances or energy that are “likely to result” in harm to the marine environment. Thus, even if (*quod non*), there could be considered to be uncertainty as to whether GHG emissions cause harm to the marine environment, the fact that such emissions unquestionably are likely to cause such harm places them within the scope of Article 1(4).

3.19 In short, the ordinary meaning of Article 1(4) of the Convention, read in context and in light of the Convention’s object and purpose, plainly establishes that GHG emissions constitute “pollution of the marine environment” as that term is defined in UNCLOS.

2. *Emissions of GHGs into the Atmosphere Constitute a Source of “Energy” Resulting in Deleterious Impacts to the Marine Environment’s Living Resources and Marine Life*

3.20 The Oceans and the atmosphere are interconnected systems. As concluded in the Technical Abstract of the First Global Integrated Marine Assessment, facilitated by the United Nations (“**Global Integrated Marine Assessment**”):

The earth’s ocean and atmosphere are fundamentally linked in a complex process. The winds blowing over the surface of the ocean transfer momentum and mechanical energy to the water, generating waves and currents. The ocean gives off energy as heat, which provides one of the main energy sources for atmospheric motions. Heat is also transferred from the atmosphere to the ocean, generating sea temperature increases. Likewise, there are transfers of gases between the ocean and the atmosphere, mainly with carbon dioxide being absorbed by the ocean from the atmosphere and oxygen being released by the ocean into the atmosphere. Consequently, major features of the ocean are changing significantly as a result of

⁴⁶ See IPCC, “Climate Change in Data – Climate Change 2021: The Physical Science Basis, available at <https://www.ipcc.ch/report/ar6/wg1/resources/climate-change-in-data/> (“The consequences of a warming climate are felt across the whole planet. The rising temperatures in the atmosphere, in the ocean and over land cause many changes in Earth’s climate.... During the last decades, around half of our carbon dioxide emissions have been absorbed and stored by plants, soils and the oceans.... Human activities have already damaged our planet, including the frozen regions and the ocean.”).

⁴⁷ See IPCC, *Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC)* (2019), Summary for Policymakers and Technical Summary.

enhanced levels of atmospheric carbon dioxide and related changes in the atmosphere.⁴⁸

3.21 The Oceans play a key role in maintaining the balance of the climate cycle.⁴⁹

3.22 *First*, the Oceans are the Earth's largest carbon dioxide ("CO₂") sink, absorbing about 30% of all the anthropogenically produced CO₂ that is released into the atmosphere.⁵⁰

3.23 *Second*, the Oceans are also the Earth's largest heat sink. Increases in global average air surface temperatures over the last two centuries due to an increase in GHG emissions into the atmosphere have been mostly offset by the Oceans' absorption of the added energy.⁵¹ Warming of the Oceans accounted for 93% of the heating in the climate system between 1971 and 2018.⁵² Of this 93%, the majority of the heat is stored in the upper ocean and at intermediate depths.

3.24 However, the Oceans' performance of this dual function comes at a high cost. In August 2022, the 6th Assessment Report of the Intergovernmental Panel on Climate Change ("IPCC") concluded that:

Anthropogenic climate change has exposed ocean and coastal ecosystems to conditions that are *unprecedented over millennia* (high confidence), and this *has greatly impacted life in the ocean and along its coasts* (very high confidence).⁵³

⁴⁸ United Nations, *The Impacts of Climate Change and Related Changes in the Atmosphere on the Oceans: a Technical Abstract of the First Global Integrated Marine Assessment* (2017) ("Global Integrated Marine Assessment"), p. 3, para. 8. This technical abstract provides a synthesis of the information presented in the First Global Integrated Marine Assessment ("World Ocean Assessment"), whose summary was endorsed by the UN General Assembly Resolution 70/235. See UN General Assembly, *Oceans and the Law of the Sea*, UN Doc. A/RES/70/235 (23 December 2015), para. 256.

⁴⁹ See IPCC, *Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC)* (2019), Summary for Policymakers and Technical Summary. As a complement to it, see also IPCC 2022, Summary for Policymakers.

⁵⁰ See IPCC, "Summary for Policymakers" in Thomas F. Stocker *et al.* (eds.), *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2013), p. 8; Tim Devries *et al.*, "Recent increase in oceanic carbon uptake driven by weaker upper-ocean overturning", (2017) 542 *Nature* 215, p. 215 (ocean sink has absorbed 40 percent of CO₂ emissions since the beginning of industrial era); German Advisory Council on Global Change (WBGU), *The Future Oceans – Warming Up, Rising High, Turning Sour* (WBGU Secretariat, 2006), p. 3; Christian Nelleman *et al.* (eds.), *Blue Carbon: The Role of Healthy Oceans in Binding Carbon, a Rapid Response Assessment* (United Nations Environment Programme 2009), p. 6.

⁵¹ David Freestone, "Climate Change and the Oceans" (2009) 3(4) *Carbon and Climate Law Review* 383, p. 383.

⁵² Global Integrated Marine Assessment, p. 3, para. 9. The dual role that the Oceans play in maintaining the balance of the climate cycle is through two processes: solubility and biological transformation.

⁵³ IPCC, *Climate Change 2022: Impacts, Adaptation, and Vulnerability*, p. 45 (emphasis added).

3.25 Based on multi-decadal observations, laboratory studies, and mesocosms, as well as meta-analyses of published data, the IPCC concluded with “very high confidence”⁵⁴ that GHG emissions result in changes to the physical and chemical composition of the Oceans of every region. It determined:

Fundamental changes in *the physical and chemical characteristics of the ocean* acting individually and together *are changing* the timing of seasonal activities (very high confidence), distribution (very high confidence) and abundance (very high confidence) of oceanic and coastal organisms from microbes to mammals and from individuals to ecosystems *in every region*.⁵⁵

3.26 There are indeed at least four principal types of oceanic impacts caused by anthropogenic GHG emissions.

3.27 The principal impact is *ocean warming*.⁵⁶ As concluded by the IPCC 6th Assessment Report, the average global sea-surface temperature has risen by 0.6°C since 1980.⁵⁷ The exchange of heat between the Oceans and the atmosphere leads to changes in the thermohaline circulation, altering phenomena such as the El Niño-Southern Oscillation, which, in turn, introduce more chaotic currents and ocean waves.⁵⁸ This impact is not homogenous across all Oceans. The surface of the Indian Ocean, along which lies the coast of Mozambique, “has warmed faster than the global

⁵⁴ Each finding of the IPCC is grounded in an evaluation of underlying evidence and agreement. The IPCC expresses a level of confidence using five qualifiers: very low, low, medium, high and very high. In addition, the IPCC uses the following terms to indicate the assessed likelihood of an outcome or result: virtually certain 99–100% probability; very likely 90–100%; likely 66–100%; about as likely as not 33–66%; unlikely 0–33%; very unlikely 0–10%; and exceptionally unlikely 0–1%. Additional terms (extremely likely 95–100%; more likely than not >50–100%; and extremely unlikely 0–5%) are also used. See IPCC, “Summary for Policymakers” in Valérie Masson-Delmotte *et al.* (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), note 4.

⁵⁵ IPCC, *Climate Change 2022: Impacts, Adaptation, and Vulnerability*, Chapter 3: Oceans and Coastal Ecosystems and their Services, p. 381 (emphasis added).

⁵⁶ Lijing Cheng *et al.*, “Record Setting Ocean Warmth Continued in 2019” (2020) 37 *Advanced in Atmospheric Sciences* 137. The 15 researchers from the USA and China who participated in this study also compared the 1987–2019 data recording period to the 1955–1986 period. They found that over the past six decades, the more recent warming was approximately 450% that of the earlier warming, reflecting a major increase in the rate of global climate change. The 2019 ocean temperature is about 0.075 degrees Celsius above the 1981–2010 average. To reach this temperature, the ocean would have taken in 228,000,000,000,000,000,000 (228 Sextillion) Joules of heat. The lead author of the study explained to the media, “That’s a lot of zeros indeed. To make it easier to understand, I did a calculation. The Hiroshima atom bomb exploded with an energy of about 63,000,000,000,000 (63 trillion) joules. The amount of heat we’ve put in the world’s oceans in the past 25 years equals to 3.6 billion Hiroshima atom bomb explosions.’ Comparable to setting one off in the world’s oceans every second.”

⁵⁷ IPCC, *Climate Change 2021: The Physical Science Basis*, Chapter 9: Ocean, Cryosphere and Sea Level Change, Executive Summary, p. 1214 (“At the ocean surface, temperature has, on average, increased by 0.88 [0.68 to 1.01] °C between 1850–1900 and 2011–2020, with 0.60 [0.44 to 0.74] °C of this warming having occurred since 1980.”).

⁵⁸ Global Integrated Marine Assessment, p. 1.

average.”⁵⁹ Among other adverse impacts, ocean warming also leads to thermal expansion, specifically ice melting and sea-level rise, as well as disruption of the marine environment, including fish stock migration and coral bleaching.⁶⁰

3.28 Relatedly, absorption of excess carbon dioxide by the Oceans has led to their *acidification*. The absorption of excess CO₂ alters the chemical composition of the Oceans and has already decreased pH levels. As a result of the uptake of CO₂ by the ocean, since the 1980s the pH in open ocean surface water has decreased by -0.017 to -0.027 pH units per decade.⁶¹ Ocean acidification (hydrogen ion concentration) has increased by a similar proportion to the level of absorption of the carbon dioxide released by human activity. If carbon dioxide emissions continue at present levels, oceanic pH could decline by 0.3 by the year 2100.⁶²

3.29 Ocean acidification results in extremely adverse impacts on marine ecosystems and species, including dissolving the structures of organisms composed of calcium carbonate, which are key components of the global food chain.⁶³ As the Secretariat of the Convention of Biological Diversity concluded, “[m]arine calcifying organisms seem particularly at risk, since additional energy will be required to form shells and skeletons, and in many ocean areas, unprotected shells and skeletons will dissolve.”⁶⁴ Thus, “ocean acidification represents a serious threat to marine biodiversity.”⁶⁵

3.30 *De-oxygenation* is another significant impact of climate change on the Oceans. Warmer water is less capable of retaining oxygen.⁶⁶ This, in turn, forces species to migrate to more oxygen-rich surface levels where they are more vulnerable to practices such as overfishing.⁶⁷ The upper

⁵⁹ IPCC, *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) (“IPCC, *Climate Change 2021: The Physical Science Basis*”), Regional Factsheet – Ocean, p. 2.

⁶⁰ See, e.g., Catherine Redgwell, “UNCLOS and Climate Change” (2012) 106 Proceedings of the Annual Meeting of the American Society of International Law 406, p. 406 (“On the global scale, climate change is expected to lead to changes in the distribution of species, including invasive species but also migratory species (with consequences for fisheries management and marine protected areas), and to the relationships between predator and prey. Loss of Arctic sea ice threatens biodiversity access an entire biome, with the related pressure of ocean acidification resulting from higher concentrations of carbon dioxide into the atmosphere”).

⁶¹ IPCC, *Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC)* (2019), Chapter 5: Changing Ocean, Marine Ecosystems, and Dependent Communities (Cambridge University Press 2022), pp. 450, 469, available at <https://doi.org/10.1017/9781009157964.007>.

⁶² *Id.*, pp. 452, 469.

⁶³ Secretariat of the Convention on Biological Diversity, CBD Technical Series No.75, *An Updated Synthesis of the Impacts of Ocean Acidification on Marine Biodiversity* (2014), p. 7.

⁶⁴ *Ibid.*

⁶⁵ *Ibid.*, p. 10.

⁶⁶ IPCC, *Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC)* (2019), Chapter 1: Framing and Context of the Report, p. 79, Figure 1 *et seq.*, available at <https://www.ipcc.ch/srocc/>.

⁶⁷ Erin Meyer-Gutbrod *et al.*, “Moving on up: Vertical distribution shifts in rocky reef fish species during climate-driven decline in dissolved oxygen from 1995 to 2009” (2021) 27(23) *Global Change Biology* 6280, available at <https://doi.org/10.1111/gcb.15821>.

1,000 meters of the open ocean has lost between 0.5 to 3.3% of its oxygen between 1970 and 2010. Such loss is not uniform across all regions. It is expected that by 2100, the Oceans will suffer from a generalized decrease of oxygen at intermediate depth.⁶⁸ Deoxygenation occurs not only in the high seas, but also in coastal areas. This affects both biochemical and biological processes as well as the structure of coastal ecosystems, and triggers changes in the distribution or loss of animal species.⁶⁹ In its projections, the Regional Factsheet of the IPCC 6th Assessment Report points to the link between ocean warming and de-oxygenation and its long-lasting impacts, noting that “anthropogenic warming is very likely to further decrease ocean oxygen concentrations, and this deoxygenation is projected to persist for thousands of years.”⁷⁰

3.31 Finally, climate change increases ocean *stratification*. Warmer water tends to form horizontal layers of seawater with limited mixing or exchanges. This decreases the vertical mixing in the ocean water column, reducing the level of nutrient content in the upper surface layers.⁷¹ As concluded by the IPCC, “[t]he upper ocean has become more stably stratified since at least 1970 over the vast majority of the globe (virtually certain), primarily due to surface-intensified warming and high-latitude surface freshening (very high confidence).”⁷² Stratification results in species migration and depletion. Ocean warming in the 20th century and beyond has contributed to an overall decrease in maximum catch potential, compounding the impacts from overfishing for some fish stocks. Ocean warming and ocean acidification have also affected food production from shellfish aquaculture and fisheries in some oceanic regions, by impacting the early life history stages of several marine food species.⁷³

3.32 The best available scientific projections as set out by the IPCC foresee that the deleterious impacts of GHG emissions will become more acute, and therefore, come to constitute a direct threat to the very survival of marine species:

Ocean conditions *are projected to continue diverging from a pre-industrial state* (virtually certain), with the magnitude of warming, acidification, deoxygenation, sea level rise and other climate-induced drivers depending on the emission scenario (very high confidence), *and to increase risk of regional extirpations and global extinctions of marine species* (medium confidence).⁷⁴

⁶⁸ Sunke Schmidt *et al.*, “Decline In Global Oceanic Oxygen Content During the Past Five Decades” (2017) 542 *Nature* 335, available at <https://doi.org/10.1038/nature21399>.

⁶⁹ See IPCC, *Climate Change 2022: Impacts, Adaptation and Vulnerability* (2022), Chapter 3: Oceans and Coastal Ecosystems and Their Services, pp. 381, 401, 406-407.

⁷⁰ IPCC, *Climate Change 2021: The Physical Science Basis*, Regional Factsheet - Ocean, p. 1.

⁷¹ Global Integrated Marine Assessment, p. 4, para. 16.

⁷² IPCC, *Climate Change 2021: The Physical Science Basis*, Chapter 9: Ocean, Cryosphere and Sea Level Change, Executive Summary, p. 1214.

⁷³ IPCC, *AR6 Synthesis Report: Climate Change 2023*, Interlaken (13-19 March 2023), Longer Report (“**AR6 Synthesis Report**”), p. 15.

⁷⁴ IPCC, *Climate Change 2022: Impacts, Adaptation, and Vulnerability*, Chapter 3: Oceans and Coastal Ecosystems and their Services, p. 382 (emphasis added). This projection would not be significantly altered by the creation of

3.33 These scientific findings on the interlinkages between the atmosphere and the Oceans and the deleterious effects of GHG emissions on the marine environment are uniformly accepted by the international scientific community.⁷⁵ It is therefore beyond doubt that anthropogenic GHG emissions cause deleterious effects on the marine environment and thus constitute “pollution to the marine environment” as defined in Article 1(4) of the Convention.

B. Pollution of the marine environment by GHG emissions significantly impacts Mozambique

3.34 Mozambique is experiencing the negative effects of marine pollution caused by GHGs on its communities, ecosystems, fisheries, food security, and economy. These effects are worsening.

3.35 It is well-established that the majority of marine heatwaves (“MHW”) are caused by GHG emissions.⁷⁶ Anthropogenic warming has led to more frequent, intense, and persistent MHWs in recent decades, a trend which is projected to continue even under future scenarios with low emissions. Under high emissions scenarios, MHWs are projected to become eight times more frequent.⁷⁷ The most intense MHW recorded in the Mozambique Channel was caused by a combination of ocean-atmosphere interactions, including the presence of a warm anticyclonic

Marine Protected Areas under the new BBNJ Agreement. *Ibid*, p. 383 (“Marine protected areas (MPAs), as currently implemented, do not confer resilience against warming and heatwaves (medium confidence) and are not expected to provide substantial protection against climate impacts past 2050 (high confidence)”).

⁷⁵ For instance, the World Meteorological Organization (“WMO”) has highlighted the fact that “the ocean’s tight linkage with the atmosphere makes understanding its behavior vital for forecasting weather and climate conditions.” See *UN General Assembly, Oceans and the Law of the Sea*, UN Doc. A/RES/70/235 (23 December 2015), para. 256; World Meteorological Organization, “How the Ocean Shapes Weather and Climate”, available at <https://public.wmo.int/en/our-mandate/focus-areas/oceans/weather-and-climate>. For general explanations and summary reports on the role of the Oceans in weather variability and the connection between climate change and the Oceans, see the WMO webpages dedicated to this issue. “The Ocean and Climate Change”, available at <https://public.wmo.int/en/our-mandate/focus-areas/oceans/climate-change>; “World Meteorological Day 2021 – The Ocean, our Climate and Weather”, available at <https://public.wmo.int/en/resources/world-meteorological-day/wmd-2021-the-ocean-our-climate-and-weather>. The World Climate Research Programme, which is co-sponsored by the WMO, along with other organizations, is coordinating efforts to understand fundamental questions about the Oceans and climate and how their interaction can lead to extreme weather events. Some of these concerted efforts also point to the need of legal developments. Notably, in 2015, Fiji initiated a consultation process within the UNFCCC and launched the Ocean Pathway Initiative within the climate change regime. This was a landmark moment whereby discussion on the linkages between the law of the sea and the climate change regimes started. The keynote memorandum, “The Ocean Pathway, A Strategy for the Ocean into COP.23: towards an Ocean Inclusive UNFCCC Process”, adopted in November 2017, expressly stated that “A COP23 Presidency ocean initiative that will embody the important relationship between the Ocean and Climate Change and launch an Ocean Pathway to ensure the ocean is an integral part of our UNFCCC process by 2020.” See Official Website of the World Climate Research Programme, available at <https://www.wcrp-climate.org>. See also “The Ocean Pathway, A Strategy for the Ocean into COP. 23: towards an Ocean Inclusive UNFCCC Process” (version of 8 November 2017).

⁷⁶ IPCC, *Climate Change 2021: The Physical Science Basis* (2021), Chapter 9: Ocean, Cryosphere and Sea Level Change, p. 1227, Box 9.2 *et seq.*

⁷⁷ *Ibid.*, p. 1214.

eddy, a decrease in wind stress, high surface heat flux, and increased insolation.⁷⁸ Within the Channel, MHWs are most prominent off southeast Madagascar, but impacts can occur in other parts of the Channel as well.

3.36 GHG emission-induced MHWs threaten biodiversity, including coral reefs and fisheries. Coral reefs are among the most vulnerable marine ecosystems. Mass coral bleaching and mortality, triggered by ocean warming and acidification, is perhaps the most conspicuous impact of climate change. In the last twelve months alone, Mozambique has endured no fewer than five tropical storms and cyclones. Cyclone Gombe for instance, which occurred in 2022, had a devastating impact on nearly one million people.⁷⁹

3.37 The latest IPCC assessment warns that “coral bleaching and mortality will increase in frequency and magnitude over the next decades.”⁸⁰ The marine environment of Mozambique and adjacent areas are at particular risk. Coral bleaching has impacted 80% of major reef areas in the western Indian Ocean and Red Sea along Africa’s eastern coast, with bleached coral left more vulnerable to stress and mortality. In Africa, MHWs have triggered mass coral bleaching and mortality over the past 20 years. Mass coral bleaching episodes in the western Indian Ocean occurred in 1998, 2005, 2010, and 2015/2016, with corals covering just 30-40% of their 1998 levels in 2016.⁸¹ The most extensive bleaching in Mozambique was on exposed reefs in the north, with up to 99% mortality on some patch reefs. Reefs affected by bleaching showed little recovery by 2002, although inaccessible reefs (in the north) and those in marine protected areas showed the greatest improvements in coral cover and had the most complex fish populations. Massive floods in southern Mozambique from February to May 2000 caused extensive damage to coral reefs by sedimentation. “Hard and soft corals in the Xai-Xai lagoon suffered declines of 60% and 95% (from 19% and 5% cover respectively), with minimal recovery by December 2001.”⁸²

3.38 Given that GHG emissions are projected to increase significantly, 99% of coral reef locations are predicted to experience at least one severe bleaching event between 2090 and 2099.⁸³ As warming levels increase, so do the risks of species extinction and irreversible loss of biodiversity in coral reefs.⁸⁴ Warm-water coral reef ecosystems house one-quarter of marine biodiversity and provide services in the form of food, income, and shoreline protection to coastal

⁷⁸ Daneeja Mawren *et al.*, “Marine heatwaves in the Mozambique Channel” (2022) 58(1-2) *Climate Dynamics* 305, available at <https://doi.org/10.1007/s00382-021-05909-3>.

⁷⁹ See, e.g., OCHA, “Mozambique: Tropical Cyclone Gombe Flash Update No.6 (As of 25 March 2022)”, available at <https://reliefweb.int/report/mozambique/mozambique-tropical-cyclone-gombe-flash-update-no6-25-march-2022>.

⁸⁰ IPCC, *Climate Change 2022: Impacts, Adaptation, and Vulnerability*, p. 413, table 3.3.

⁸¹ *Ibid.*, p. 1333.

⁸² David Obura, “Status of Coral Reefs in Eastern Africa: Kenya, Tanzania, Mozambique and South Africa” in Clive Wilkinson (ed.), *Status of Coral Reefs of the World: 2002* (Australian Institute of Marine Science 2002), p. 66.

⁸³ IPCC, *Climate Change 2022: Impacts, Adaptation, and Vulnerability*, p. 413, Table 3.3.

⁸⁴ AR6 Synthesis Report, p. 42.

communities. These ecosystems are threatened by climate-induced drivers, especially ocean warming, marine heatwaves, ocean acidification, sea level rise, and tropical cyclones.⁸⁵

3.39 In Mozambique, the fisheries sector plays an important role in the economy, contributing to about 3% of its Gross Domestic Product, and 4% of national exports.⁸⁶ At >4°C sea temperature rise, Mozambique’s fisheries will suffer a 41-50% decrease in maximum catch potential. This is especially concerning given that Mozambique depends on marine foods for 18-23% of its population’s nutrition.⁸⁷

3.40 Mean sea-level rise projections indicate that regional estimates for the Mozambican coast are higher than global estimates (~0.05 m), highlighting that local factors increase the rate of mean sea-level rise along the Mozambican coast. Indeed, with a coastline of 2,470 km, Mozambique is highly exposed to erosion risks and coastal climate hazards. Over 60% of the population lives in low-lying coastal areas, raising serious concerns regarding land use, property rights, and protection against climate-related disasters. Additionally, approximately 70% of the Mozambican population relies on climate-sensitive living conditions, highlighting the socioeconomic impacts of ocean warming for Mozambique.⁸⁸

3.41 If the Oceans continues to warm, “compound extreme events will become more frequent, with a higher likelihood of unprecedented intensities, durations or spatial extent.”⁸⁹ At a 1.5°C increase, the principal hazards to ecosystems include continued sea level rise and increased frequency and magnitude of extreme sea level events. Rising seas will encroach on coastal human settlements, damaging coastal infrastructure, subjecting low-lying coastal ecosystems to submergence and loss, expanding land salinization, and causing cascading risks to livelihoods, health, well-being, cultural values, food, and water security.⁹⁰ MHWs will continue to increase in frequency, with the years 2081 to 2100 predicted to experience a global increase of 2 to 9 times MHW rates in 1995 to 2014. Some of the largest increases are projected to be experienced in tropical oceans,⁹¹ such as those surrounding Mozambique. In fact, the number of MHWs along the southern African coast doubled between 1982 and 2016 as a result of human-induced climate change.⁹²

⁸⁵ IPCC, *Climate Change 2022: Impacts, Adaptation, and Vulnerability*, p. 410.

⁸⁶ Pereira *et al.*, “Mozambique Marine Ecosystems Review” – Final Report submitted to Foundation Ensemble (2014), p. iv.

⁸⁷ IPCC, *Climate Change 2022: Impacts, Adaptation, and Vulnerability*, p. 1358, and see figure 9.25.

⁸⁸ Serafino A. R. Mucova *et al.*, “Approaching Sea-Level Rise (SLR) Change: Strengthening Local Responses to Sea-Level Rise and Coping with Climate Change in Northern Mozambique” (2021) 9 (2) *Journal of Marine Science and Engineering* 205, p. 3, available at <http://dx.doi.org/10.3390/jmse9020205>.

⁸⁹ AR6 Synthesis Report, p. 43.

⁹⁰ AR6 Synthesis Report, p. 63

⁹¹ IPCC, 2022: *Climate Change 2022: Impacts, Adaptation, and Vulnerability*, p. 393.

⁹² *Ibid.*, p. 1329.

3.42 With its extensive coastline, nine international river basins, high dependence on agricultural produce, and fragile infrastructure, Mozambique is extremely sensitive to rising sea levels. Most of its population lives along the low-lying coast. Thus, any changes to these areas would have an immediate and detrimental impact on the communities, which are predominantly dependent on agriculture and fishing for their livelihood.

II. States Have a Positive Obligation to “Take All Measures Necessary” to “Prevent, Reduce and Control Pollution to the Marine Environment” in Accordance with their Capabilities (Articles 194(1))

3.43 Part XII of the Convention opens with Article 192, which sets forth the general obligation of States to “protect and preserve the marine environment.” Article 193 proclaims the sovereign right of States to exploit their natural resources, subject to their duty to protect and preserve the marine environment.

3.44 These overarching obligations are given content by more specific obligations that are also set out in Part XII, including provisions requiring States to take “measures to prevent, reduce and control pollution of the marine environment from any source” under Article 194(1). This was confirmed by the Annex VII Arbitral Tribunal in the *South China Sea Arbitration*, which explained that “[t]he content of the general obligation in Article 192 is further detailed in the subsequent provisions of Part XII, including Article 194, as well as by reference to specific obligations set out in other international agreements, as envisaged in Article 237 of the Convention.”⁹³ The Convention on Biological Diversity is an example of a relevant treaty; it, *inter alia*, requires contracting parties to rehabilitate and restore degraded ecosystems and promote recovery of threatened species, through the development and implementation of plans or other management strategies.⁹⁴

3.45 Correlatively, as noted by the Arbitral Tribunal in the *Chagos Marine Protected Area Arbitration*, the scope of Article 194 and other measures taken in accordance with Part XII “shall include those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life.”⁹⁵ The Arbitral Tribunal thus clarified that the scope of Article 194 “is accordingly not limited to measures aimed strictly at controlling pollution and extends to measures focused primarily on conservation and the preservation of ecosystems.”⁹⁶

⁹³ *South China Sea Arbitration*, para. 942.

⁹⁴ Convention on Biological Diversity, Rio de Janeiro (opened for signature 5 June 1992, entered into force 29 December 1993) (“**Convention on Biological Diversity**”), art. 8(f).

⁹⁵ *Chagos Marine Protected Area Arbitration (Mauritius v. United Kingdom)*, PCA Case No. 2011-03, Award (18 March 2015) (“*Chagos Arbitration*”), para. 538.

⁹⁶ *Ibid.* (emphasis added).

3.46 Paragraph 1 of Article 194 enshrines the first of the specific obligations relevant for the protection of the marine environment from the deleterious impacts of GHG emissions. The provision establishes that:

*States shall take, individually or jointly as appropriate, all measures consistent with this Convention that are necessary to prevent, reduce and control pollution of the marine environment from any source, using for this purpose the best practicable means at their disposal and in accordance with their capabilities, and they shall endeavour to harmonize their policies in this connection.*⁹⁷

3.47 The obligation in Article 194(1) is to “take all measures necessary” to prevent, reduce and control pollution of the marine environment. The ordinary meaning of the words “all measures necessary” indicates that all measures available to States have to be taken. There is, in other words, an absolutism about the obligation. Put differently, the standard of care is particularly strict. The obligation thus is not discharged by merely taking “appropriate” or “reasonable” measures.

3.48 The obligation under Article 194(1) mandates that States use “the best practicable means at their disposal,” qualified only by the phrase “in accordance with their capabilities.” The qualification is a reflection of the common but differentiated responsibilities principle, which is embodied in other instruments, including the Rio Declaration on the Environment and Development.⁹⁸ It reflects the concern of developing States that obligations imposed upon them might hinder their right to economic development. The main implication of the qualifier is that developed States must assume the largest burden for the measures to be adopted and contribute towards enabling developing countries to meet their responsibilities.⁹⁹

3.49 On the basis of the above, Mozambique submits that:

- a. States Parties to the Convention have an obligation – and corresponding right – to take measures 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

⁹⁷ UNCLOS, art. 194(1) (emphasis added).

⁹⁸ See, e.g., UN General Assembly, *Report of the United Nations Conference on Environment and Development*, UN Doc. A/CONF.151/25 (Vol. I) (Rio de Janeiro, 3-14 June 1992), Annex I: Rio Declaration on Environment and Development, Principle 7 (“In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.”). See also Paris Agreement to the United Nations Framework Convention on Climate Change (adopted 12 December 2015, entered into force 4 November 2016) (“Paris Agreement”), arts. 2(2), 9.

⁹⁹ Other relevant provisions of international instruments differentiating between the responsibilities of developed and developing countries include Principle 12 of the Declaration on the Human Environment Adopted by the United Nations Conference (16 June 1972); United Nations Framework Convention on Climate Change (entered into force 21 March 1994) (“UNFCCC”), art. 3(1); Montreal Protocol on Substances that Deplete the Ozone Layer, art. 5; Kyoto Protocol to the UNFCCC (11 December 1997), art. 3(1); Convention on Biological Diversity, arts. 20(4) and 21.

change, including through ocean warming, acidification, de-oxygenation, and stratification caused by GHG emissions into atmosphere; and

- b. Developed States, in accordance with the common but differentiated responsibilities principle, bear the greatest burden for adopting such measures. In this regard, there are differential obligations stemming from Part XII of UNCLOS between developed and developing States in relation to the taking of measures to prevent, reduce and control pollution of the marine environment. A failure of States Parties differently situated to act individually or jointly in that regard entails a higher responsibility on the part of those States with the higher capacity to prevent, reduce or control pollution of the marine environment.

3.50 The first question posed by the request for an Advisory Opinion seeks to identify the “specific obligations” imposed by Article 194. In other words, the Tribunal is requested to identify the *concrete* measures that States are bound to adopt in the fulfillment of their obligation to prevent, reduce and control pollution. The concrete measures are to be identified through the application of the rules of interpretation of treaties in Article 31 of the Vienna Convention.

3.51 In particular, to identify the concrete measures required by Article 194, other rules and principles of international law must be considered, in accordance with Article 31(3)(c) of the Vienna Convention, which provides that in the interpretation of treaties, other relevant rules of international law applicable between the parties must be taken into account.

3.52 Mozambique submits that the rules adopted under the climate change regime are relevant rules for this purpose. Moreover, since all the States Parties to UNCLOS are also parties to the main climate change instruments, including the United Nations Framework Convention on Climate Change (“UNFCCC”) and the Paris Agreement, the rules under those instruments are applicable between the parties within the meaning of Article 31(3)(c) of the Vienna Convention.

3.53 The main objective of the UNFCCC “and any related legal instruments,” such as the Paris Agreement, is “the stabilization of greenhouse gas concentrations ... at a level that would prevent dangerous anthropogenic interference with the climate system.”¹⁰⁰ The Paris Agreement, with a view to contributing to this objective, states, as its objective:

Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change.¹⁰¹

3.54 This objective is the most concrete, relevant legal rule applicable between the States Parties to UNCLOS. It is accordingly the standard that ought to inform the content of the obligation to prevent, reduce and control pollution under Article 194. Indeed, UNCLOS itself recognizes that

¹⁰⁰ UNFCCC, art. 2.

¹⁰¹ Paris Agreement, art. 2(1).

the concrete measures to prevent, reduce and control pollution are to be based on internationally agreed-upon rules and standards. For example, regarding pollution from or through the atmosphere, Article 212 of UNCLOS states that the measures to be adopted are to take “into account internationally agreed rules, standards and recommended practices and procedures.”¹⁰²

3.55 Thus, the concrete obligation on States is to, individually and collectively, adopt measures to limit the increase in the global average temperature to well below 2°C above pre-industrial levels while aiming to limit such increase to 1.5°C above pre-industrial levels. This concrete obligation is, in accordance with the common but differentiated responsibilities principle, to be implemented in such a way that the majority of the burden falls on developed States. In addition to the common but differentiated responsibilities principle, this position is consistent with the Paris Agreement, from which the concrete obligation is drawn.¹⁰³

3.56 Finally, but critically, Article 194(1) codifies an obligation of due diligence, that is, an obligation of conduct “to deploy *adequate means*, to exercise *best possible efforts* and to do the *utmost*” towards the stated goal.¹⁰⁴

III. All States Must Ensure that Emitting Activities under their Jurisdiction or Control Do Not Cause Damage to other States and their Environment (Article 194(2)) – No Harm Principle

3.57 Paragraph 2 of Article 194 establishes that:

States shall 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, and that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the areas where they exercise sovereign rights in accordance with this Convention.

3.58 Paragraph 2 is a specific application of the general prohibition of transboundary harm, according to which a State is under an obligation not to allow its territory, or any territory over which it exercises jurisdiction or control, to be used to the detriment of another State.

3.59 As indicated above, the ordinary meaning of the words “all measures necessary” sets forth a strict burden on States.

¹⁰² UNCLOS, art. 212.

¹⁰³ See Paris Agreement, art. 2(2) (“This Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances[.]”); *Ibid.*, art. 4 (“In order to achieve the long-term temperature goal set out in Article 2, Parties aim to reach global peaking of greenhouse gas emissions as soon as possible, recognizing that peaking will take longer for developing country Parties ...”).

¹⁰⁴ See paras. 3.61-3.62 below.

3.60 Moreover, the obligation to “take all measures necessary *to ensure*” applies not only in relation to activities directly taken by States and their organs, but also extends to activities undertaken by third parties within their jurisdiction and control,” including in a coastal State’s EEZ and continental shelf.¹⁰⁵

3.61 The obligation reflected in Article 94(2) is an obligation under customary international law.¹⁰⁶ Similar to Article 194(1), this is an obligation of conduct, requiring “due diligence” on the part of all States involved. Thus, in cases involving emissions from vessels, this includes both the coastal State and the flag State.¹⁰⁷ In its *Advisory Opinion on the Responsibilities and obligations of States sponsoring persons and entities with respect to activities in the Area*, the Tribunal explained that:

The expression “to ensure” is often used in international legal instruments to refer to obligations in respect of which, while it is not considered reasonable to make a State liable for each and every violation committed by persons under its jurisdiction, it is equally not considered satisfactory to rely on mere application of the principle that the conduct of private persons or entities is not attributable to the State under international law (see ILC Articles on State Responsibility, Commentary to article 8, paragraph 1).¹⁰⁸

3.62 Under Article 194(2), due diligence is not merely an obligation of conduct. States are required to achieve a result that is *grosso modo* the non-pollution of the marine environment. As further noted in *Activities in The Area Advisory Opinion*, the standard of due diligence “has to be *more severe* for the *riskier activities*.”¹⁰⁹ The International Law Commission (“ILC”), in its 2021 guidelines for the protection of the atmosphere, established the linkage between protection of the atmosphere and the integrity of all ecosystems, including the Oceans which must necessarily include the marine environment. After discussing Article 194(1) of UNCLOS, the ILC explained that “[t]he States’ obligation “to ensure” does not require the achievement of a certain result (obligation of result) but only requires the best available good faith efforts so as not to “cause significant adverse effects” (obligation of conduct).¹¹⁰

¹⁰⁵ *South China Sea Arbitration*, para. 944.

¹⁰⁶ *Nuclear Weapons Advisory Opinion*, para. 29. (“[T]he existence of the general obligation of States to ensure that activities within their jurisdiction and control do not cause damage to the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment.”).

¹⁰⁷ *South China Sea Arbitration*, para. 944.

¹⁰⁸ *Activities in the Area Advisory Opinion*, para. 112.

¹⁰⁹ *Ibid.*, para. 117 (emphasis added).

¹¹⁰ See paragraphs 6 and 7 of the commentary to guideline 3 (obligation to protect the atmosphere), Guidelines on the Protection of the Atmosphere, adopted by the International Law Commission at its seventy-second session, in 2021, and submitted to the General Assembly. International Law Commission, Draft Guidelines on the Protection of the Atmosphere (2021), reproduced in *Yearbook of the International Law Commission, 2021*, Vol. II(2), Commentary to Guideline 3, paras. 6-7.

3.63 The precautionary principle is also a relevant principle applicable between the States Parties to UNCLOS in the context of Article 31(3)(c) of the Vienna Convention that must be taken into account in the interpretation of their obligations. The precautionary principle is “an integral part” of the obligation of due diligence under international environmental law,¹¹¹ whereby due diligence must be observed even “where scientific evidence concerning the scope and potential negative impact of [activities or projects are] insufficient but where there [is] plausible indication[] of potential risks.”¹¹²

3.64 Given the serious deleterious effects of climate change on the marine environment, these obligations apply to all activities emitting GHGs or that otherwise contribute to climate change.¹¹³ Thus, Article 194(2) of the UNCLOS additionally requires that States impose “more severe” regulation on activities that emit substantive amounts of GHGs. In light of the precautionary approach, even for activities where the scientific evidence is not as developed or where the deleterious effects are not fully clear, States are obligated to adopt regulations limiting their GHG emissions or other activities contributing to climate change.¹¹⁴

3.65 The Paris Agreement provides that, while the immediate objective is to hold the increase in global average temperatures to well below 2°C, the higher standard of limiting such temperature increase to 1.5°C above pre-industrial levels should be pursued. It is this higher standard that should be used to give content to the measures to be adopted by States Parties under Part XII of the Convention, including Article 194. Mozambique therefore submits that, to comply with their obligations, States Parties to the Convention have a due diligence obligation to collectively take measures to ensure that the increase in global average temperatures is limited to 1.5°C above pre-industrial levels. The best available science on climate change confirms that failure to adhere to this objective will result in marine pollution with attendant consequences including an increase of tropical storms and cyclones, drought, flooding, MHWs, loss of marine biodiversity and habitats, rising sea levels, and consequential effects on the lives and livelihood of the people who depend on these factors.

3.66 Mozambique further submits that this collective obligation of States Parties must be complied with by taking into account the common but differentiated responsibilities principle, which is reflected in both the UNFCCC and the Paris Agreement.¹¹⁵ In accordance with Article 31(3)(c) of the Vienna Convention, the principle of common but differentiated responsibilities is also relevant in giving content to the measures to be adopted. This is particularly the case since the Convention itself recognizes the principle. For example, the preamble of the Convention bears in mind that the “achievement of these goals ... takes into account the interests and needs of mankind

¹¹¹ *Activities in the Area Advisory Opinion*, para. 131

¹¹² *Ibid.*

¹¹³ See Section 3.I.A.2 above.

¹¹⁴ Relatedly, as the Human Rights Committee has noted, States have a “due diligence obligation to take reasonable, positive measure that do not impose disproportionate burdens on States in response to reasonably foreseeable threats to life originating from private persons and entities whose conduct is not attributable to the State.” UN Human Rights Committee, General Comment No. 36, UN Doc. CCPR/C/GC/36 (3 September 2019), para. 21.

¹¹⁵ See UNFCCC, arts. 3(1), 3(2); Paris Agreement, arts. 2(2), 4(3), 4(19)

as a whole and, in particular, the special interests and needs of developing countries, whether coastal or landlocked.”¹¹⁶ Article 207 recognizes that measures to prevent, reduce, and control land-based pollution shall “tak[e] into account characteristic regional features, the economic capacity of developing States and their need for economic development.”¹¹⁷ Further, Article 203, which addresses “Preferential treatment for developing States,” provides that “Developing States shall, for the purposes of prevention, reduction and control of pollution of the marine environment or minimization of its effects, be granted preference by international organizations in: (a) the allocation of appropriate funds and technical assistance; and (b) the utilization of their specialized services.”¹¹⁸

3.67 Thus, in determining individual contributions necessary for the achievement of the objective of limiting the temperature to 1.5°C above pre-industrial levels, developed States should assume a greater share of the burden. In particular, developed States should undertake economy-wide absolute emission reduction targets and provide support to developing country Parties for the implementation of their obligations.¹¹⁹ Developing States should continue to enhance their mitigation efforts and move over time towards economy-wide emission reduction or limitation targets.¹²⁰ Finally, least developed States and small-island developing States may prepare and communicate strategies, plans, and actions for low GHG emissions development reflecting their special circumstances.¹²¹

IV. States Have an Obligation – and Corresponding Right – to Adopt Laws Limiting their GHG Emissions to Prevent, Reduce and Control Pollution of the Marine Environment (Articles 207, 211 and 212)

3.68 Section 5 of Part XII of UNCLOS sets out specific measures concerning international rules and national legislation that must be taken to prevent, reduce, and control pollution of the marine environment. In this regard, Articles 207 through 212 supplement the general obligations under Article 194 by requiring States to adopt specific laws and regulations to prevent, reduce and control pollution of the marine environment from land and ocean-based sources *and from or through the atmosphere*.¹²²

3.69 Since the obligations under these articles are generally addressed to “States” rather than “coastal States,” they apply with equal force to coastal and landlocked States that may generate

¹¹⁶ UNCLOS, Preamble, para. 5.

¹¹⁷ *Ibid.*, art. 207(4).

¹¹⁸ *Ibid.*, art. 203.

¹¹⁹ Paris Agreement, arts. 4(4), 4(5).

¹²⁰ *Ibid.*, art. 4(4).

¹²¹ *Ibid.*, art. 4(6).

¹²² Virginia Commentary to UNCLOS, Vol. IV (1991), p. 127, para. 207.1 (Article 207).

pollution.¹²³ Moreover, because States have the obligation to adopt such laws limiting GHG emissions, they also have the corresponding right to regulate in this interest.

3.70 Among the sources of marine pollution covered under UNCLOS, land-based pollution is the most significant and difficult to regulate. It is estimated to account for more than 80% of marine pollution.¹²⁴ In relation to pollution from land-based sources, Article 207 provides that:

1. States shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment from land-based sources, including rivers, estuaries, pipelines and outfall structures, taking into account internationally agreed rules, standards and recommended practices and procedures.
2. States shall take other measures as may be necessary to prevent, reduce and control such pollution.
3. States shall endeavour to harmonize their policies in this connection at the appropriate regional level.
4. States, acting especially through competent international organizations or diplomatic conference, shall endeavour to establish global and regional rules, standards and recommended practices and procedures to prevent, reduce and control pollution of the marine environment from land-based sources, taking into account characteristic regional features, the economic capacity of developing States and their need for economic development. Such rules, standards and recommended practices and procedures shall be re-examined from time to time as necessary.
5. Laws, regulations, measures, rules, standards and recommended practices and procedures referred to in paragraphs 1, 2 and 4 shall include those designed to minimize, to the fullest extent possible, the release of toxic, harmful or noxious substances, especially those which are persistent, into the marine environment.

3.71 The Convention does not explicitly define “land-based sources.”¹²⁵ Although Article 207(1) requires the adoption of laws and regulations to prevent, reduce and control pollution of the marine environment “*including* [through] rivers, estuaries, pipelines and outfall structures” as

¹²³ See James Harrison, *Saving the Oceans through Law: The International Legal Framework for the Protection of the Marine Environment* (Oxford University Press 2017), p. 66.

¹²⁴ *Ibid.*, p. 64.

¹²⁵ Alexander Proells (ed.), *The United Nations Convention on the Law of the Sea: A Commentary* (2017), Commentary to Article 207 (by Professor Wacht), p. 1383.

the *rationale loci* description of land-based pollution,¹²⁶ the list is non-exhaustive given that such pollutants can reach the sea through different pathways,¹²⁷ including by airborne deposition.

3.72 Indeed, following the adoption of Agenda 21 at the United Nations Conference on Environment and Development in Rio de Janeiro in 1992, regional treaties have recognized that land-based pollution covers “point or diffuse inputs from all sources on land whether these are waterborne, airborne or come directly from the coast.”¹²⁸ Accordingly, Article 207 must be interpreted to encompass “all airborne and land-based sources of marine pollution,” including inland activities that generate GHG emissions which, as discussed above, are harmful to the marine environment.¹²⁹ In relation to atmospheric pollution to the marine environment, Article 212 provides that:

1. States shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment from or through the atmosphere, applicable to the air space under their sovereignty and to vessels flying their flag or vessels or aircraft of their registry, taking into account internationally agreed rules, standards and recommended practices and procedures and the safety of air navigation.
2. States shall take other measures as may be necessary to prevent, reduce and control such pollution.
3. States, acting especially through competent international organizations or diplomatic conference, shall endeavour to establish global and regional rules, standards and recommended practices and procedures to prevent, reduce and control such pollution.

3.73 The Convention does not define “pollution from or through the atmosphere.” It is clear, however, that the phrase is broad, covering instances of pollution in which the atmosphere itself is the pollutant (for example, GHGs) as well as those in which it is only a vehicle of a pollutant (for example, acid rain).¹³⁰ As such, “pollution from or through the atmosphere” encompasses all possible sources, including “emissions from vessels and aircraft, incineration at sea ... persistent organic pollutants ... and human-caused green-house gases.”¹³¹

¹²⁶ Virginia Commentary to UNCLOS, Vol. IV (1991), p. 127, para. 207.7(a) (Article 207).

¹²⁷ Alexander Proells (ed.), *The United Nations Convention on the Law of the Sea: A Commentary* (2017), Commentary to Article 207 (by Professor Wacht), p. 1383.

¹²⁸ Alan Boyle, “The LOSC Part XII Regime” in Elise Johansen *et al.* (eds.), *Protecting the Marine Environment from Climate Change* (CUP 2021), p. 87.

¹²⁹ *Ibid.*

¹³⁰ Alexander Proells (ed.), *The United Nations Convention on the Law of the Sea: A Commentary* (2017), Commentary to Article 212 (by Professor Wacht), p. 1447, para. 7.

¹³¹ *Ibid.*, p. 1444, para. 1.

3.74 Therefore, taken together, Articles 207 through 212 comprehensively regulate all types of activities that generate CO₂ emissions and other GHGs. These provisions set out, in similar and complementary terms, the obligations of States with respect to GHG emissions, whether from land-based sources or from or through the atmosphere.

3.75 In particular, States have four main obligations.

3.76 *First*, they must adopt laws and regulations at the national level to reduce, prevent and control GHG emissions which cause or are likely to cause pollution to the marine environment.¹³² In doing so, States are required to “tak[e] into account internationally agreed rules, standards and recommended practices and procedures,” even if they have not consented thereto.¹³³ Such international rules and standards include the UNFCCC and the Paris Agreement, both of which set out a framework to regulate and reduce GHG emissions and have been widely endorsed by the international community.¹³⁴ In other words, compliance with the UNFCCC regime and the Paris Agreement serves as an indicator of compliance with obligations under Articles 207 and 212. While the phrase “taking into account” does not require States to adopt the same international standards and practice,¹³⁵ pursuant to Article 300 of UNCLOS, they must act in good faith when carrying out their obligations in relation to GHG emissions.¹³⁶

3.77 *Second*, States are obligated to take such other measures as may be necessary to protect the marine environment from the impact of GHG emissions.¹³⁷ These measures may include not just national laws and regulations but also “non-binding national measures such as recommendations, guidelines, scientific and technical advice, capacity-building programs, cooperation programs, certification schemes, [and] codes of conduct.”¹³⁸ This is a duty of due diligence.

3.78 *Third*, States must endeavor to establish global and regional rules, standards, and recommended practices and procedures specific to the prevention, control, and reduction of GHG emissions and to periodically review and adapt them to new developments.¹³⁹ In carrying out this obligation, States have wide discretion to consider both binding and non-binding instruments and “various individual aspects such as [characteristic regional features], economic circumstances,

¹³² UNCLOS, arts. 207(1), 212(1).

¹³³ *Ibid.*

¹³⁴ Alan Boyle, “The LOSC Part XII Regime” in Elise Johansen *et al.* (eds.), *Protecting the Marine Environment from Climate Change* (Columbia University Press 2021), pp. 88-89.

¹³⁵ By affording States wide discretion to adopt national laws and regulations with regard to land-based pollution, Article 207 gives expression to the sovereign rights of States in regulating environmental matters.

¹³⁶ UNCLOS, art. 300 (“States Parties shall fulfil in good faith the obligations assumed under this Convention and shall exercise the rights, jurisdiction and freedoms recognized in this Convention in a manner which would not constitute an abuse of right.”).

¹³⁷ UNCLOS, arts. 207(2), 212(2).

¹³⁸ Alexander Proells (ed.), *The United Nations Convention on the Law of the Sea: A Commentary* (2017), Commentary to Article 212 (by Professor Wacht), p. 1385, para. 10.

¹³⁹ UNCLOS, arts. 207(4), 212(3).

[and] special needs or the respective level of development.”¹⁴⁰ States must carry out this obligation in good faith.¹⁴¹

3.79 In relation to GHGs from land-based activities, States are required to ensure that all national laws, regulations, and measures adopted, as well as any international rules and standards established, are “designed to minimize to the fullest extent possible” the deposition of GHGs into the marine environment as it is “harmful” and will be “persistent.”¹⁴²

3.80 *Finally*, States have the obligation to endeavor to harmonize their policies concerning land-based GHG emissions at the appropriate regional levels.¹⁴³ This obligation involves regional cooperation in respect of both “the substantive rules of law as well as [] the enforcement of national laws.”¹⁴⁴ In order to fulfil this obligation, States must use their best efforts.¹⁴⁵

V. States Have an Obligation – and Corresponding Right – to Enforce Laws and Implement International Rules and Standards Limiting GHG Emissions to Prevent, Reduce, and Control Pollution to the Marine Environment (Articles 213 and 222)

3.81 States not only have the obligation to adopt laws and regulations and to establish international rules and standards to limit GHG emissions (Article 207), they also must enforce and implement them. Several provisions of the Convention, specifically Articles 213 through 222, address a wide variety of enforcement actions. Article 213 obligates States to:

[E]nforce their laws and regulations adopted in accordance with Article 207 and [] adopt laws and regulations and take other measures necessary to implement applicable international rules and standards established through competent international organizations or diplomatic conference to prevent, reduce and control pollution of the marine environment from land-based sources.

3.82 Similarly, the obligation of States to prescribe laws and regulations and to establish international rules and standards with respect to pollution from and through the atmosphere under Article 212 is complemented by the obligation under Article 222 to:

¹⁴⁰ *Ibid.*, art. 207(4).

¹⁴¹ *Ibid.*, art. 300.

¹⁴² *Ibid.*, art. 207(5).

¹⁴³ *Ibid.*, art. 207(3).

¹⁴⁴ A. Proells (ed.), *The United Nations Convention on the Law of the Sea: A Commentary* (2017), Commentary to Article 207 (Professor Wacht), p. 1386.

¹⁴⁵ *Chagos Arbitration*, para. 539 (interpreting and applying a similar obligation under Article 194(1) to “endeavor to harmonize ... policies”).

[E]nforce, within the air space under their sovereignty or with regard to vessels flying their flag or vessels or aircraft of their registry, their laws and regulations adopted in accordance with article 212, paragraph 1, and with other provisions of this Convention and [] adopt laws and regulations and take other measures necessary to implement applicable international rules and standards established through competent international organizations or diplomatic conference to prevent, reduce and control pollution of the marine environment from or through the atmosphere.

3.83 Articles 213 and 222 thus create two distinct obligations for States in relation to GHG emissions that cause or are likely to cause harm to the marine environment.

3.84 The first obligation is to enforce the national laws and regulations that they have adopted concerning GHG emissions. In this regard, the word “shall enforce” in both articles indicates that States not only have a right but also a duty to ensure compliance by private natural or juridical persons with legal obligations to limit GHG emissions.¹⁴⁶ This can be achieved through each State’s enforcement mechanisms, such as regulatory and judicial proceedings and other forms of sanctions.¹⁴⁷ Under the combined effect of Articles 213 and 222, the duty of enforcement of laws and regulations limiting GHG emissions extends to the land territory and air space under a State’s sovereignty, which includes airspace over its internal waters and territorial sea,¹⁴⁸ as well as vessels flying its flag and vessels and aircraft of its registry.

3.85 The second obligation is for States to implement applicable international rules and standards through the adoption of national laws and regulations as well as other measures, whether binding or non-binding. The scope of this obligation is confined to international rules and standards by which States are bound, thus including treaties to which they are party as well as customary international law.¹⁴⁹ As all States Parties to UNCLOS are also parties to the UNFCCC regime and the Paris Agreement, these instruments inform the content of the national laws, regulations, and measures that States Parties must adopt with respect to marine pollution caused by GHG emissions. “[T]he temperature targets, the process of settling nationally determined contributions, and the stocktaking process” under the Paris Agreement can all serve as useful reference points.¹⁵⁰ In addition, a number of well-established principles of environmental law such as the “no-harm”

¹⁴⁶ Alexander Proells (ed.), *The United Nations Convention on the Law of the Sea: A Commentary* (2017), Commentary to Article 213 (by Professor König), p. 1454.

¹⁴⁷ *Ibid.*, pp. 1454-1455.

¹⁴⁸ UNCLOS, art. 2(1) (“The sovereignty of a coastal State extends, beyond its land territory and internal waters and, in the case of an archipelagic State, its archipelagic waters, to an adjacent belt of sea, described as the territorial sea.”); art. 2(2) (“This sovereignty extends to the air space over the territorial sea as well as to its bed and subsoil.”).

¹⁴⁹ Judith Schäli, *The Mitigation of Marine Plastic Pollution in International Law: Facts, Policy and Legal Implications* (Brill-Nijhoff 2022), p. 189.

¹⁵⁰ James Harrison, *Saving the Oceans Through Law: The International Legal Framework for the Protection of the Marine Environment* (Oxford University Press 2017), p. 256.

rule¹⁵¹ and the precautionary principle¹⁵² can be regarded as forming part of the applicable customary international rules, compelling States to take all measures at their disposal to limit GHG emissions, even in the absence of clear scientific evidence of their impact on the marine environment.

3.86 It bears emphasizing that, unlike Articles 207(1) and 212(1), which only oblige States to “*take into consideration*” international rules and standards, Articles 213 and 222 require States to actually *give effect* to them. Therefore, any State that adopts a weaker standard in respect of GHG emissions at the national level is in breach of its obligations under the relevant international rules and under Articles 213 and 222.

VI. Conclusion

3.87 On the basis of the above, Mozambique makes the following submissions:

- a. States Parties have both an obligation and a right to take measures 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 caused by emissions of GHGs into atmosphere;
- b. The obligation and right to prevent, reduce and control pollution entails the duty to, individually and collectively, maintain the global average increase in temperature to well below 2°C above pre-industrial levels and aim to limit such increase to 1.5°C above pre-industrial levels;
- c. Developed States bear the largest share of the burden to meet the obligations under the Convention;
- d. States have an obligation and right to exercise due diligence and apply the precautionary principle in order to ensure that their emissions do not cause harm to the marine environment;
- e. In compliance with these obligations, States have the obligation and right to adopt laws, consistent with the standards described, to limit their GHG emissions; and
- f. States have the obligation and right to enforce the internationally agreed standards to reduce GHG emissions.

¹⁵¹ The ICJ considered that the “no-harm” rule forms “part of the corpus of international law.” *Nuclear Weapons Advisory Opinion*, p. 241, para. 29.

¹⁵² ITLOS has recognized that the principle “initiated a trend towards [becoming] part of customary international law.” *Activities in the Area Advisory Opinion*, p. 47, para. 135.

CHAPTER 4

QUESTION (B) REFERRED TO THE TRIBUNAL

4.1 Question (b) of the Request asks:

What are the specific obligations of State Parties to [UNCLOS], including under Part XII ...

(b) to protect and preserve the marine environment in relation to climate change impacts, including ocean warming and sea level rise, and ocean acidification?¹⁵³

4.2 **Section A** discusses the general duty to protect and preserve the marine environment in Article 192 of UNCLOS. **Section B** then describes the specific obligations of States under UNCLOS to protect and preserve the marine environment in relation to the impacts of climate change.

I. States Have a General Obligation and a Corresponding Right under Article 192 of UNCLOS to “Protect and Preserve the Marine Environment”

4.3 The obligation to protect and preserve the marine environment is established principally in Part XII of the Convention, which was drafted “in line with the language and spirit” of the Principles of the 1972 Stockholm Declaration, an instrument that articulated the “duty to protect and preserve the marine environment.”¹⁵⁴ This “duty” is codified in the first provision of Part XII, Article 192, which establishes the obligation “to protect and preserve the marine environment.”¹⁵⁵ Article 192 represents “the first explicit statement, in a global treaty, of the general obligation to protect and preserve the marine environment.”¹⁵⁶ The obligation set out in Article 192 was endorsed without qualification in the recently finalized text of the Biodiversity Beyond National Jurisdiction Agreement, the preamble of which anchors the parties’ obligations to UNCLOS and specifically the obligation “to protect and preserve” the marine environment.¹⁵⁷

4.4 Article 192 must be read in tandem with Article 193. That provision, while preserving a State’s right to exploit the natural resources of the marine environment, makes the right subject to

¹⁵³ Request, p. 2.

¹⁵⁴ Stockholm Conference Report, Annex III: General Principles for Assessment and Control of Marine Pollution, Principle 1 (“Every state has a duty to protect and preserve the marine environment and, in particular, to prevent pollution that may affect areas where an internationally shared resource is located.”).

¹⁵⁵ UNCLOS, art. 192.

¹⁵⁶ Virginia Commentary on UNCLOS, Vol. IV (1991), p. 36, para. 192.2 (Article 192).

¹⁵⁷ UN General Assembly, *Draft 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* (4 March 2023).

the requirement that such exploitation must be consistent with the obligation to protect and preserve the marine environment.

4.5 As Article 192 precedes Article 194, it should be viewed as outlining a general obligation that is given specific content in subsequent articles and other applicable rules of international environmental law. Read in light of these provisions and rules, Article 192 has the following scope:

- a. **Ratione materiae:** States have both (i) a positive obligation to “protect and preserve the marine environment” and (ii) a negative obligation “not to degrade” it.¹⁵⁸
- b. **Ratione temporis:** Article 192 applies not only to past or current damage, but “extends to ‘protection’ of the marine environment from future damage and ‘preservation’ in the sense of maintaining or improving its present condition.”¹⁵⁹
- c. **Ratione loci:** As acknowledged by the Tribunal in the *SFRC Advisory Opinion*, “article 192 applies to *all maritime areas*, including those encompassed by exclusive economic zones.”¹⁶⁰ International case law has reinforced this interpretation.¹⁶¹ Thus, “questions of sovereignty” over a particular maritime area “are irrelevant to the application of Part XII of the Convention.”¹⁶²
- d. **Ratione personae:** Article 192 applies to all “*living resources of the sea*,”¹⁶³ including (i) “rare or fragile ecosystems,” which have been defined as “a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit,”¹⁶⁴ and to (ii) “habitats of depleted, threatened or endangered species.”¹⁶⁵

4.6 As with the obligations addressed in Question (a), inherent in the scope of the obligation to protect and preserve the marine environment, and thus of Question (b), are the rights of States to protect and preserve the marine environment. Indeed, the obligation of protecting and preserving the marine environment would be ineffective *but for* the right to actually carry out and regulate activities that may compromise such protection and prevention.¹⁶⁶

¹⁵⁸ *South China Sea Arbitration*, para. 941.

¹⁵⁹ *Ibid.*

¹⁶⁰ *SFRC Advisory Opinion*, p. 4, para. 120 (emphasis added). See also *South China Sea Arbitration*, para. 940 (“the obligations in Part XII apply to all States with respect to the marine environment in all maritime areas, both inside the national jurisdiction of States and beyond it”).

¹⁶¹ *SFRC Advisory Opinion*, para. 120; *Chagos Arbitration*, para 538; *South China Sea*, paras. 941, 956–966.

¹⁶² *South China Sea Arbitration*, para. 940.

¹⁶³ *Southern Bluefin Tuna Cases (New Zealand v. Japan; Australia v. Japan)*, *Provisional Measures, Order of 27 August 1999*, *ITLOS Reports 1999*, p. 280, para 70.

¹⁶⁴ Convention on Biological Diversity, art. 2.

¹⁶⁵ UNCLOS, art. 194(5). See also *South China Sea Arbitration*, para. 945; *Chagos Arbitration*, paras. 320, 538.

¹⁶⁶ See, e.g., Judith Schäli, *The Mitigation of Marine Plastic Pollution in International Law: Facts, Policy and Legal Implications* (Brill-Nijhoff, 2022), Chapter 2: The Protection of the Marine Environment from Land-based Sources of Plastic Pollution in International Law. This reasoning also finds support in Article 204(2) which, by establishing a

4.7 Furthermore, Article 193 makes clear that the “sovereign right” of States “to exploit their natural resources pursuant to their environmental policies” is subject to “their duty to protect and preserve the marine environment.” This is confirmed by the 1974 Declaration of the Organization of African Unity on the Issues of the Law of the Sea,¹⁶⁷ which formed the basis for Article 192 and reaffirmed that “every State has a right to manage its resources pursuant to its environmental policies.”¹⁶⁸ As a result, States must comply with the obligation to protect and preserve the marine environment in their exploitation and management of resources, including through contractual arrangements with third parties to carry out exploitation activities.

4.8 Finally, as the Annex VII tribunal in the *South China Sea Arbitration* observed, Article 192 is “informed by the other provisions of Part XII” of UNCLOS as a whole, as well as by “other applicable rules of international law.”¹⁶⁹ This approach is consistent with customary and conventional rules of treaty interpretation.¹⁷⁰ The other obligations to protect and preserve the environment, stemming from other UNCLOS provisions and international law rules, are set out below.

A. States Have Specific Obligations of Conduct under UNCLOS to Protect and Preserve the Marine Environment from Impacts of Climate Change

1. States Have an Obligation and Corresponding Right to Reduce GHG Emissions

4.9 Part XII of the Convention establishes the specific obligations of States in relation to the prevention, reduction and control of marine pollution caused by GHG emissions. Thus, all these obligations form part of the State’s duty to protect and preserve the marine environment *vis-à-vis* climate change. They must also actively refrain from degrading the marine environment even if the activities causing degradation cannot be characterized as pollution. Moreover, Part XII must of necessity encompass a positive obligation to restore the marine environment in those situations where degradation has occurred.

duty of surveillance of effects of activities, acknowledges the right of States to “permit” or “engage” in such activities. Likewise, Article 56(1)(b)(iii) of UNCLOS establishes that coastal States have jurisdiction in their EEZ with respect to “the protection and preservation of the marine environment.” UNCLOS, art. 56(1)(b)(iii).

¹⁶⁷ Virginia Commentary on UNCLOS, Vol. IV (1991), p. 47, para. 193.2 (Article 193).

¹⁶⁸ Organization of African Unity, *Declaration of the Organization of African Unity on the issues of the Law of the Sea*, UN Doc. A/CONF.62/33 (19 July 1974), para. 15.

¹⁶⁹ *South China Sea Arbitration*, para. 941.

¹⁷⁰ See Vienna Convention, arts. 31(1), 31(2), 31.3(c) (a “treaty shall be interpreted [*inter alia*] in accordance with the ordinary meaning to be given to the terms of the treaty in their context” which is comprised by, among other elements, the “text” of the treaty (*i.e.* other provisions of the Treaty). Together with this context, it must also be taken into account “any relevant rules of international law applicable in the relations between the parties”). As the ICJ recently affirmed, “it is well established that these Articles reflect rules of customary international law.” See *Arbitral Award of 3 October 1899 (Guyana v. Venezuela)*, *Preliminary Objection, Judgment*, I.C.J. Reports 2023, para. 87 (citing *Question of the Delimitation of the Continental Shelf between Nicaragua and Colombia beyond 200 Nautical Miles from the Nicaraguan Coast (Nicaragua v. Colombia)*, *Preliminary Objections, Judgment*, I.C.J. Reports 2016 (I), p. 100, at p. 116, para. 33).

4.10 Such obligations include taking all necessary measures to reduce GHG emissions. The degree of this obligation depends on the development of the relevant State. Developed nations ought to adopt comprehensive targets for reducing emissions across their entire economies and must offer assistance to developing countries in fulfilling their commitments.¹⁷¹ Developing nations should persistently intensify their efforts to mitigate emissions and are urged to gradually transition towards economy-wide targets for emission reduction or containment.¹⁷² Lastly, the least developed nations, like Mozambique, have the option to formulate and share strategies, plans, and actions aimed at promoting low GHG emissions development, taking into account their unique circumstances.

4.11 In this regard, Mozambique has adopted its National Strategy for Climate Change Adaptation and Mitigation 2023-2025 (“NSCCAM”), which has as its objective to identify and implement opportunities to reduce GHG emissions that contribute to the sustainable use of natural resources and access to financial resources, affordable technology, and the reduction of pollution and environmental degradation, promoting low carbon development.¹⁷³

4.12 In the negotiations of the Paris Agreement, Mozambique formulated and submitted to the Convention its Intended Nationally Determined Contribution, covering the period 2020 to 2030. In 2018, Mozambique formulated its Nationally Determined Contribution 2020 to 2025, which in 2021 was revised to produce the First Updated Mozambique Nationally Determined Contribution 2020 to 2025 (“FUNDC”).¹⁷⁴

4.13 The mitigation component of Mozambique’s FUNDC 2020 to 2025 represents the efforts that Mozambique will make to participate in achieving the goals of the Paris Agreement. With its implementation, Mozambique expects to reduce about 40 million tCO₂eq in the period between 2020 and 2025. The emission reductions proposed in the mitigation contribution of Mozambique represent a mitigation effort of about 1.2 tCO₂eq per capita by 2025; a significant figure when compared to the total GHG emissions per capita of Mozambique, which were respectively 0.6 tCO₂eq in 1990 and approximately 2 tCO₂eq today (total emissions with LULUCF).¹⁷⁵

4.14 Mozambique also made a commitment under the Paris Agreement to formulate and submit a Long-Term Development Strategy for Low Greenhouse Gas Emissions, a document in the process of being finalized, which is aligned with the mitigation components of the NSCCAM and the Mozambique FUNDC 2020-2025.¹⁷⁶

¹⁷¹ Paris Agreement, arts. 4(4), 4(5).

¹⁷² *Ibid.*, art. 4(4).

¹⁷³ Republic of Mozambique, Ministry of Land and Environment, *First Biennial Update Report (BUR)-The United Nations Framework Convention on Climate Change* (November 2022), p. 21, available at <https://unfccc.int/documents/624696>.

¹⁷⁴ *Ibid.*

¹⁷⁵ *Ibid.*

¹⁷⁶ *Ibid.*, pp. 21-22.

2. *States Have an Obligation and Corresponding Right to Establish Measures of Adaptation and Mitigation of Climate Change*

4.15 In addition to reducing GHG emissions, States have the following additional obligations in relation to all activities that contribute to climate change and thus cause harm generally to the marine environment, whether or not such activities result in marine pollution within the meaning of Article 1(4) of the Convention.

4.16 Similar to Article 194 discussed *supra*, the duty to protect and preserve the marine environment set out in Article 192 establishes a duty of due diligence.¹⁷⁷ Protection and preservation of the marine environment with due diligence entails a duty and corresponding right of implementing measures of mitigation and adaptation to climate change.

4.17 The 6th IPCC Assessment Report described a number of measures in that regard, including processes to remove carbon dioxide from the atmosphere and store it in geological, terrestrial, or ocean reservoirs or products, as well as strategies to enhance biological or geochemical carbon dioxide sinks. They envisage also measures of direct air carbon dioxide capture and storage and may also involve reduction of acidification of the ocean through enhancement of its alkalization.¹⁷⁸ By bolstering biodiversity and ecosystem functions,¹⁷⁹ these measures protect and preserve the marine environment.

4.18 Another measure that enhances protection and preservation of the marine environment is the protection and restoration of coastal “blue carbon” ecosystems, such as mangroves—which are critical to Mozambique—and tidal marshes. These measures increase the uptake and storage of carbon, reducing the effects of ocean warming and ocean acidification. Similarly, as noted also by the 6th IPCC Assessment Report, “rebuilding overexploited or depleted fisheries,” as well as responding to “existing fisheries management strategies reduces negative climate change impacts on fisheries,”¹⁸⁰ which is also critical for Mozambique.

4.19 All the above requires a high degree of international cooperation, and the provision of international assistance and funding to developing States, like Mozambique. Such international cooperation and funding constitutes another obligation related to the overall mandate to protect and preserve the marine environment.

¹⁷⁷ See *Activities in the Area Advisory Opinion*, para. 117; *South China Sea Arbitration*, para. 944; *SFRC Advisory Opinion*, paras. 120, 136. See also Lan Ngoc Nguyen, *The Development of the Law of the Sea by UNCLOS Dispute Settlement Bodies* (Cambridge University Press, 2023), Chapter 5: Protection of the Marine Environment, p. 163.

¹⁷⁸ For the definition of carbon dioxide removal, see AR6 Synthesis Report, Annex I: Glossary, p. 4.

¹⁷⁹ *Ibid.*, p. 54.

¹⁸⁰ *Ibid.*, p. 74.

B. States Must Cooperate by Different Means to Protect and Preserve the Marine Environment from Climate Change Impacts (Article 197)

4.20 Article 197 of the Convention establishes a specific but broad obligation for States to cooperate in the protection and preservation of the marine environment. The Tribunal has repeatedly underscored the importance of such cooperation.¹⁸¹ In the *MOX Plant* case, the Tribunal emphasized that “the duty to cooperate is a *fundamental* principle in the prevention of pollution of the marine environment under Part XII of the Convention and general international law.”¹⁸² One of the benefits of cooperation noted by the ICJ in *Pulp Mills* is that it allows States to “jointly manage the risks of damage to the environment.”¹⁸³

4.21 The duty of cooperation can be conducted on a global or regional basis,¹⁸⁴ and “directly or through competent international organizations.”¹⁸⁵ A more specific manifestation of this general duty of cooperation to protect and preserve the marine environment is found in Article 123(b), which calls on “States bordering an enclosed or semi-enclosed sea” to “cooperate with each other” by co-ordinating “the implementation of their rights and duties with respect to the protection and preservation of the marine environment.”¹⁸⁶

4.22 A key element of the obligation to cooperate in Article 197 is that it must be conducted by “formulating and elaborating international rules, standards and recommended practices and procedures” to protect and preserve the marine environment.¹⁸⁷ These include the standards agreed upon in the Paris Agreement to achieve the goals set out therein. In this regard, States Parties to UNCLOS, all of which are also parties to the Paris Agreement, must ensure not only that they cooperate to comply with their reporting duties under the Agreement, but that such reports integrate “ambitious” and “progressive” plans to reduce GHG emissions.

4.23 To date, it has been difficult for Mozambique to obtain international support in its efforts to reduce GHG emissions and adopt mitigation measures. For example, in the implementation of its NCSSAM, Mozambique explored international funding opportunities in the area of mitigation;

¹⁸¹ *Case concerning Land Reclamation by Singapore in and around the Straits of Johor (Malaysia v. Singapore), Provisional Measures, Order of 8 October 2003, ITLOS Reports 2003*, p. 10, para. 92; *SRFC Advisory Opinion*, para. 140. See also *Southern Bluefin Tuna (New Zealand v. Japan; Australia v. Japan), Provisional Measures, Order of 27 August 1999, ITLOS Reports 1999*, p. 280, para 78 (noting that “parties should intensify their efforts to cooperate with other participants in the fishery for southern bluefin tuna with a view to ensuring conservation and promoting the objective of optimum utilization of the stock”).

¹⁸² *South China Sea Arbitration*, para. 946 (citing *MOX Plant (Ireland v. United Kingdom) Provisional Measures, Order of 3 December 2001, ITLOS Reports 2001*, p. 95, para. 82).

¹⁸³ *Pulp Mills on the River Uruguay (Argentina v. Uruguay), Judgment, I.C.J. Reports 2010*, p.14, at p. 49, para. 77.

¹⁸⁴ See in this respect UNCLOS, art. 277, establishing that the functions of “regional marine scientific and technological research centres” contemplated by Article 276, “shall include *inter alia* ... study programmes related to the protection and preservation of the marine environment and the prevention, reduction and control of pollution.”

¹⁸⁵ UNCLOS, art. 197.

¹⁸⁶ *Ibid*, art. 123(b); Virginia Commentary on UNCLOS, Vol. III (1995), p. 367, para. 123.12(b), (e) (art. 123).

¹⁸⁷ UNCLOS, art. 197.

however, such efforts yielded few results.¹⁸⁸ The information collection mechanisms of Mozambique are still deficient and the weak technical capacity of its national institutions contributes to the poor uptake of the opportunities established in the UNFCCC, including access to financial and technological resources and training.¹⁸⁹ One of the main aims of the NCSSAM is to identify and implement opportunities to reduce GHG emissions by access to financial and technological resources.¹⁹⁰ Climate change strategies have been implemented in other African States which, like Mozambique, have found it particularly difficult to obtain international support.¹⁹¹ Thus, one way for developed States to comply with their obligations to cooperate under Part XII of the Convention is to assist countries like Mozambique to effectively implement their national climate change strategies through the provision of financial and technological resources and know-how. This type of knowledge- and resource-sharing would significantly contribute to the protection and preservation not only of the marine environments of the coastal States most affected by sea level rise and the effects of climate change, but likely also to the marine environment as a whole.

4.24 Finally, Part XIV of the Convention is also relevant to States' duty to cooperate. It establishes an obligation to promote the technological capacity of developing States in need of assistance to protect and preserve the marine environment.¹⁹² Indeed, the 6th IPCC Report provides that effective mitigation and adaptation of climate change impacts requires accelerated financial support for developing countries from developed countries, since the former typically lack the necessary data and resources to adapt and reduce economic and non-economic damages and losses resulting from climate change,¹⁹³ including its impacts on the marine environment.

C. States Have a Duty of Vigilance, Assessment and Reporting Concerning Climate Change Impacts to the Marine Environment (Articles 204, 205 and 206)

4.25 Articles 204, 205, and 206 of the Convention further establish obligations of vigilance, assessment, and reporting. These obligations are directly related to the obligations of conduct in Article 194(2), as discussed above, and the duties of due diligence and precaution derived therefrom.

4.26 In particular, under Article 204, States must "as far as practicable" endeavor to "observe, measure, evaluate and analyse ... the risks or effects of pollution of the marine environment", and thus of climate change.¹⁹⁴ Also, they must "keep under surveillance the effects of any activities

¹⁸⁸ Republic of Mozambique, Ministry for the Coordination of Environmental Action, *National Climate Change Strategy 2013-2015* (2010), p. 11 [Portuguese], available at https://www.climate-laws.org/documents/2013-2025-national-strategy-for-climate-change-enmc_5297.

¹⁸⁹ *Ibid.*, pp. 12, 28.

¹⁹⁰ *Ibid.*, p. 14.

¹⁹¹ *Ibid.*, p. 11.

¹⁹² UNCLOS, arts. 266(1)-(2). See also UNCLOS, arts. 275-276.

¹⁹³ AR6 Synthesis Report, pp. 28-29.

¹⁹⁴ UNCLOS, art. 204(1).

which they permit or in which they engage in order to determine whether these activities are likely to pollute the marine environment.”¹⁹⁵ States are under a further obligation to publish or provide reports with the results of these activities.¹⁹⁶

4.27 Consistent with the duty of due diligence, Article 204 obliges States to employ the *best available* resources, methods, and/or tools to conduct the measures of vigilance prescribed by the Article. Moreover, taking into consideration the UNFCCC and the Paris Agreement, States must “gather and share” information on “both [their] GHG emissions” and their plans to mitigate them, under the same provision.¹⁹⁷

4.28 For its part, Article 206 requires States to conduct and report results of Environmental Impact Assessments (“EIA”) for activities which may cause significant and harmful changes to the marine environment.¹⁹⁸ The EIA must “assess the potential effects” of the contemplated activity or project¹⁹⁹ and States must conduct such assessments “as far as practicable” when they “have reasonable grounds for believing” that activities “may cause substantial pollution” or “significant harmful changes to the marine environment.”²⁰⁰ These obligations with respect to EIAs apply with full force in regard to activities that may harm the marine environment through the emission of GHGs.

4.29 The content of the EIA must take account of States’ best available (i) resources, (ii) methods, and (iii) tools, to achieve the best possible understanding of the contribution of such activity to climate change and, thus, to the pollution of the marine environment. The results of such assessments must be communicated to the “competent international organizations.”²⁰¹

II. The Obligations in Connection with Sea Level Rise

4.30 In relation to the element of the question relating to sea level rise, the duty of States to protect and preserve the marine environment entails that they take proactive measures to combat such climate change impacts. While UNCLOS itself does not specifically address the issue of sea

¹⁹⁵ *Ibid.*, art. 204(2).

¹⁹⁶ *Ibid.*, art. 205.

¹⁹⁷ Benoît Mayer, *International Law Obligations on Climate Change Mitigation* (Oxford University Press, 2022), p. 299; UNFCCC, art. 12(1)(b) (requiring States to “communicate ... A general description of steps taken or envisaged by the Party to implement the Convention”); Paris Agreement, art. 13(7) (“Each Party shall regularly provide the following information: (a) A national inventory report of anthropogenic emissions by sources and removals by sinks of greenhouse gases; and (b) Information necessary to track progress made in implementing and achieving its nationally determined contribution[.]”).

¹⁹⁸ UNCLOS, art. 206.

¹⁹⁹ *Ibid.*

²⁰⁰ UNCLOS, art. 206. ITLOS has established that States are obliged to conduct an EIA under both UNCLOS and customary international law. *See Activities in the Area Advisory Opinion*, p. 50, para. 145. Likewise, “the obligation to communicate reports of the results of the assessments is absolute.” *See South China Sea Arbitration*, para. 948.

²⁰¹ UNCLOS, art. 205; *see ibid.*, art. 206.

level rise, it is clear that the obligations of States to prevent, reduce and control pollution set out in Part XII will have implications for ocean warming which in turn affects sea level rise.

4.31 Based on the above discussions, and in light of the scientific knowledge available as confirmed by the IPCC report, the phenomenon of sea level rise will continue for decades and centuries to come. Indeed, it is reported that global sea levels have risen faster in the past century than at any time in the past three thousand years. The rate of sea level rise has accelerated in recent decades largely due to increased ice sheet and glacier melt. 38% of the observed sea level rise from 1901 to 2018 is due to ocean warming leading to thermal expansion.²⁰² The IPCC points out that a “rising mean and increasingly extreme sea level threaten[s] coastal zones through a range of coastal hazards, including (i) the permanent submergence of land by higher mean sea levels or mean high tides; (ii) more frequent or intense coastal flooding; (iii) enhanced coastal erosion; (iv) loss and change of coastal eco-systems; (v) salinization of soils, ground and surface water; and (vi) impeded drainage.”²⁰³

4.32 As part of the response to sea level rise, it is vital that States undertake adaptive measures. Otherwise, low-lying islands and coasts, and the communities that inhabit them, face substantial risks. The challenge is that the geographic impacts of sea level rise will vary from region to region. States that are projected to bear the brunt of the burden of sea level rise have both contributed the least to climate change and also are the least capable of carrying the burden of the rising seas. Indeed, for African States generally and Mozambique in particular, which are among the lowest contributors to GHG emissions that have been linked to ocean warming and climate change, rising seas have already partially submerged or inundated islands. For adaptation measures to be put in place, it is vital that the common but differentiated responsibilities principle discussed above is respected, including through the provision of technical assistance.

4.33 In relation to Part XII of UNCLOS, Article 202 provides for scientific and technical assistance to developing States. It provides that States shall, directly or through competent international organizations, promote scientific, educational, technical, and other assistance to developing States for the protection and preservation of the marine environment generally and the prevention, reduction and control of marine pollution. Examples of the types of assistance which should be provided include, but are not limited to, providing training for personnel; supplying necessary equipment and facilities; enhancing manufacturing capacity; providing appropriate assistance to minimize the effects of major incidents which may cause serious pollution of the marine environment; and providing support to enable the preparation of environmental assessments. Under Article 203, developing States are to be granted preferential treatment in the context of international organizations, for the purposes of prevention, reduction and control of pollution of the marine environment or minimization of its effects including through the allocation of appropriate funds and technical assistance and utilization of their specialized services.

²⁰² IPCC, *Climate Change 2021: The Physical Science Basis*, Chapter 9: Ocean, Cryosphere and Sea Level Change, pp. 1211–1362.

²⁰³ IPCC, *Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC)* (2019), Chapter 4: Sea Level Rise and Implications for Low-Lying Islands, Coasts and Communities, p. 328, available at <https://www.ipcc.ch/srocc/>.

CHAPTER 5 CONCLUSION

5.1 In conclusion, States Parties to UNCLOS have the following specific obligations to prevent, reduce and control pollution of the marine environment in relation to the deleterious effects that result or are likely to result from GHG emissions:

- a. ***To take all measures necessary to prevent, reduce and control pollution from any source, including GHG emissions.*** This obligation relates not only to eradicating pollution existing at present, but also to preventing further pollution in the future.
- b. ***To cause no pollution to other States and their environment.*** States must ensure that activities that emit GHG emissions or otherwise contribute to climate change do not pollute the marine environment. This obligation further entails:
 - Deploying adequate means, exercising best possible efforts, and doing the utmost to achieve the above;
 - Reporting plans to progressively reduce GHG emissions;
 - Employing more severe regulation to activities that emit substantive amounts of GHGs;
 - Given the inevitability of climate change, and in light of the increase in global temperatures, taking steps to implement the resilience and adaptation measures necessary to protect and preserve the marine environment, especially marine ecosystems that may suffer from the deleterious effects of wider climate change impacts; and
 - Interpreting UNCLOS in an evolutionary manner having regard to contemporary threats to the marine environment and evolving scientific evidence, and taking into account the Paris Agreement, which provides the necessary standards and yardstick to be employed in the preservation and protection of the marine environment from climate change impacts.
- c. ***To adopt laws limiting GHG emissions.*** This obligation entails adopting laws and regulations at the national level to reduce, prevent, and control GHG emissions. It further entails:
 - Taking other measures, in addition to national laws and regulations, as may be necessary to protect the marine environment from the impact of GHG emissions; and
 - Endeavoring to establish global and regional rules, standards, and recommended practices and procedures specific to the prevention, control and reduction of GHG emissions and to periodically review and adapt them to new developments.
- d. ***To enforce laws and implement international rules and standards limiting GHG emissions.*** This obligation entails:

- Enforcing the national laws and regulations that they have adopted concerning GHG emissions. In this regard, States not only have a right but also a duty to ensure compliance by private natural or juridical persons with legal obligations to limit GHG emissions; and
- Implementing applicable international rules and standards through the adoption of national laws and regulations as well as other measures, whether binding or non-binding. These include the rules and standards contained in the UNFCCC and the Paris Agreement.

5.2 UNCLOS also establishes specific obligations to protect and preserve the marine environment in relation to climate change impacts. These specific obligations include:

- a. **To reduce.** The obligation to protect and preserve the marine environment requires States to implement effective measures that reduce GHG emissions and prevent an increase in global temperatures of more than 1.5°C above pre-industrial levels.
- b. **To adapt and mitigate.** States must adopt measures that bolster the capability of ecosystems to contravene the impacts of climate change, through for instance the reduction and storage of GHG emissions, and protection and restoration of coastal “blue carbon” ecosystems.
- c. **To cooperate.** States must cooperate to protect and preserve the environment from climate change (Articles 197 and 1(4)), which includes cooperation to:
 - Formulate and elaborate rules, standards, practices, and procedures, including “ambitious” and “progressive” plans to reduce GHG emissions;
 - Eliminate the impacts of climate change;
 - Promote studies, undertake programs of scientific research, and encourage the exchange of information and data on the impacts of climate change in the marine environment; and
 - Allow circulation of scientific information and promote its understanding, depending on the State’s resources.
- d. **To monitor.** States have a duty of vigilance which entails an obligation to employ their best available resources to at least:
 - Observe, measure, evaluate, and analyze, as far as practicable, the risks that climate change causes to the marine environment; and
 - Keep under surveillance the climate change effects of activities they permit or conduct.
- e. **To assess.** Before permitting or engaging in an activity that would contribute to climate change—even in the absence of scientific certainty thereof—States must conduct an EIA that:
 - Assesses impacts on the marine environment; and

- Reflects in its content the employment of the States' best available resources to conduct such assessment and understand the impacts of climate change involved.
- f. ***To publish.*** States must publish the results of this vigilance, which must include information on their GHG emissions and their plans to mitigate them.

Respectfully submitted,



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Permanent Representative
Republic of Mozambique to the United Nations
15 June 2023

