INTERNATIONAL COURT OF JUSTICE

OBLIGATIONS OF STATES IN RESPECT OF CLIMATE CHANGE
(REQUEST FOR ADVISORY OPINION)

WRITTEN STATEMENT OF THE COMMISSION OF SMALL ISLAND STATES ON CLIMATE CHANGE AND INTERNATIONAL LAW

VOLUME I

22 MARCH 2024

TABLE OF CONTENTS

I. Introduction

1. The Commission of Small Island States on Climate Change and International Law ("COSIS" or "Commission") is an international organization created to promote the development and implementation of international law concerning climate change[1]. Pursuant to that mandate, COSIS submits this Written Statement on the request of the United Nations General Assembly for an advisory opinion from the International Court of Justice ("Court") on the obligations of States in respect of climate change ("Request"). COSIS participates in these historic proceedings in accordance with the Court's authorization, given in light of the likelihood that the Commission would be able to furnish information relevant to the Request[2].

2. The Request is set out in resolution 77/276, adopted by consensus on 29 March 2023[3]. The Republic of Vanuatu introduced Resolution 77/276 with the support of 131 other co-sponsoring States, including COSIS Member States[4]. The Request poses the following legal questions:

> Having particular regard to the Charter of the United Nations, the International Covenant on Civil and Political Rights, the International Covenant on Economic, Social and Cultural Rights, the United Nations Framework Convention on Climate Change, the Paris Agreement, the United Nations Convention on the Law of the Sea, the duty of due diligence, the rights recognized in the Universal Declaration of Human Rights, the principle of prevention of significant harm to the environment and the duty to protect and preserve the marine environment,
>
> (a) What are the obligations of States under international law to ensure the protection of the climate system and other parts of the environment from anthropogenic

---

1 The Commission's mandate is, in relevant part, to "promote and contribute to the definition, implementation, and progressive development of rules and principles of international law concerning climate change, including, but not limited to, the obligations of States relating to the protection and preservation of the marine environment and their responsibility for injuries arising from internationally wrongful acts in respect of the breach of such obligations". Agreement for the Establishment of the Commission of Small Island States on Climate Change and International Law, *United Nations Treaty Series*, Vol. 3447 (No. 56940) (31 October 2021) ("COSIS Agreement"), Art. 1(3). To ensure that its written statement is "as concise as possible" in accordance with the Court's Practice Direction II, the Commission has annexed only those documents it refers to which are not readily available online. *Cf.* Rules of Court, Art. 50(2).

2 Letter from the Registrar of the Court to Counsel to the Commission of 19 June 2023. Referencing that authorization in its Order of 4 August 2023, the Court set 22 January 2024 as the extended time-limit within which all written statements on the questions may be presented to the Court. *Obligations of States in Respect of Climate Change (Request for an Advisory Opinion)*, Order of 4 August 2023, p. 3. On 15 December 2023, the Court further extended the time-limit for written statements to 22 March 2024. *Obligations of States in Respect of Climate Change (Request for an Advisory Opinion)*, Order of 15 December 2023, p. 4.

3 General Assembly, resolution 77/276, Request for an Advisory Opinion of the International Court of Justice on the Obligations of States in Respect of Climate Change, document A/RES/77/276 (29 March 2023) (Dossier No. 2) ("Request").

4 *See* General Assembly, Verbatim Record of the 77th Session, 64th Plenary Meeting, document A/77/PV.64 (29 March 2023) (Dossier No. 3), p. 3. Every COSIS Member that is also a Member State of the United Nations supported the resolution; Niue is a Member State of COSIS but not of the United Nations.

emissions of greenhouse gases for States and for present and future generations;

(b) What are the legal consequences under these obligations for States where they, by their acts and omissions, have caused significant harm to the climate system and other parts of the environment, with respect to:

(i) States, including, in particular, small island developing States, which due to their geographical circumstances and level of development, are injured or specially affected by or are particularly vulnerable to the adverse effects of climate change?

(ii) Peoples and individuals of the present and future generations affected by the adverse effects of climate change?

3. The Commission provides a vehicle through which small island States cooperate on a global basis to contribute to the rules and principles of international law concerning climate change. The Commission was established by Antigua and Barbuda and Tuvalu on 31 October 2021 in Edinburgh during the 26th Meeting of the Conference of the Parties of the United Nations Climate Change Conference ("COP26") in Glasgow. Antigua and Barbuda and Tuvalu were elected as the first Co-Chairs of the Commission in 2021, and their mandates were renewed in 2023[5]. COSIS currently has nine members: Antigua and Barbuda, Tuvalu, the Republic of Palau, Niue, the Republic of Vanuatu, Saint Lucia, Saint Vincent and the Grenadines, Saint Christopher (Saint Kitts) and Nevis, and The Bahamas[6].

4. In furtherance of its mandate, the Commission also is participating in other legal proceedings to clarify States' obligations under international law in respect of climate change. On 12 December 2022, the Commission submitted a request for an advisory opinion from the International Tribunal for the Law of the Sea ("ITLOS") regarding States' specific obligations under the United Nations Convention on the Law of the Sea ("UNCLOS") to prevent, reduce, and control pollution of the marine environment by greenhouse gas ("GHG") emissions, and to protect and preserve the marine environment from climate change and its effects[7]. In addition, in December 2023, COSIS submitted a written opinion to the Inter-American Court

---

5 Pursuant to Article 3(1) of the COSIS Agreement, membership in the Commission is open to all members of AOSIS. Article 3 establishes that the Commission is represented by its Co-Chairs, elected every two years. Antigua and Barbuda and Tuvalu were elected as Co-Chairs of the Commission during its first meeting on 31 October 2021, and their mandates were renewed in October 2023.

6 Following Antigua and Barbuda and Tuvalu, the Republic of Palau acceded to the COSIS Agreement on 4 November 2021, Niue on 13 September 2022, the Republic of Vanuatu on 2 December 2022, Saint Lucia on 7 December 2022, Saint Vincent and the Grenadines on 9 June 2023, Saint Christopher (Saint Kitts) and Nevis on 13 June 2023, and The Bahamas on 15 June 2023.

7 ITLOS, *Request for an Advisory Opinion Submitted by the Commission of Small Island States on Climate Change and International Law*, Case No. 31, Request for an Advisory Opinion (12 December 2023). Following written statements in June 2023 and a hearing in September 2023, the request remains pending before ITLOS.

of Human Rights in response to the request for an advisory opinion related to climate change submitted by the Republic of Chile and the Republic of Colombia on 9 January 2023[8].

5. The participation of COSIS before the Court comes amid the reality that the "alarm bells are deafening and the evidence is irrefutable" that climate change is a "code red for humanity"[9], which will render many small island States uninhabitable. Since as early as 1990, the Alliance of Small Island States ("AOSIS") has warned about the risks of inaction and the disproportionate harm that climate change will lead to for vulnerable small island States despite their *de minimis* contributions to GHG emissions. Diplomatic efforts under the auspices of the 1992 United Nations Framework Convention on Climate Change ("UNFCCC") and the 2015 Paris Agreement have achieved some progress since then, but this has been grossly inadequate for addressing the urgency and magnitude of Earth's perilous situation.

6. The questions presented in the Request and the unequivocal science of climate change manifest in the conclusions of the Intergovernmental Panel on Climate Change ("IPCC") are of paramount importance to COSIS Member States. As among the most vulnerable, small island States *will suffer the first and the worst* from the catastrophic harm that climate change will cause the world over. The international scientific consensus on climate change and its effects—reflected principally in the reports of the IPCC—constitutes the factual basis underpinning the Request before the Court. The current body of generally accepted scientific evidence clearly demonstrates that staying below the global average temperature of 1.5°C above pre-industrial levels is necessary to avoid the most devastating global effects of climate change, but even that will not be enough to prevent some serious threats to humanity and the environment[10]. Relying on these findings, the States Parties to the Paris Agreement have repeatedly emphasized "the need for urgent action" to, at a minimum, keep average global temperatures below 1.5ºC[11], and the IPCC has concluded that some fragile ecosystems, such as coral reefs, will suffer catastrophic harm even at that level of warming[12].

7. And yet, GHG emissions have reached all-time highs. The year 2023 was the hottest in recorded history, with an average temperature of 1.45ºC above pre-industrial levels[13]. Absent immediate and far-reaching action, sustained temperature rise will be significantly more than 1.5°C above pre-industrial levels by 2030, a mere six years away. The IPCC has confirmed that the majority of States are not on track to meet their pledged contributions under the Paris Agreement, *but even if they did*, the world is projected to reach average warming of 2.8ºC by 2100[14]. The scientific consensus is also clear that effective mitigation

---

8 Inter-American Court of Human Rights, *Request for Advisory Opinion OC-32 on Climate Emergency and Human Rights*, Order of 22 February 2024, ¶ 6.

9 United Nations Secretary-General, Statement on the IPCC Working Group I Report on the Physical Science Basis of the Sixth Assessment (9 August 2021).

10 *See generally* IPCC, "Chapter 3: Impacts of 1.5°C Global Warming on Natural and Human Systems" *Special Report: Global Warming of 1.5ºC* (2018).

11 COP28, Outcome of the First Global Stocktake, decision -/CMA.5 (Advance Unedited Version) (13 December 2023), ¶ 5.

12 *See* IPCC, "Chapter 3: Impacts of 1.5ºC of Global Warming on Natural and Human Systems", *Special Report: Global Warming of 1.5°C* (2018), pp. 253–254.

13 Copernicus Climate Change Service, The 2023 Annual Climate Summary: Global Climate Highlights 2023 (9 January 2024); World Meteorological Organization, WMO Confirms that 2023 Smashes Global Temperature Record (12 January 2024).

14 IPCC, "Summary for Policymakers", *Sixth Assessment Synthesis Report* (2023) (Dossier No. 78), p. 11.

makes it necessary for States to "transition[] away" from the burning of fossil fuels and other activities that emit significant quantities of GHGs, consistent with the commitment made at the United Nations Climate Change Conference in December 2023 ("COP28")[15].

8. COSIS is of the view that international law can and must play a critical role in ensuring the collective survival of humankind. The Request provides a critical opportunity for the Court to clarify the content of the legally binding obligations in relation to climate change, in light of the best available science. COSIS thus makes its submission before the Court based on a central premise: the consensus around the best available science not only defines with precision the specific content of the obligations of States under international law, but it is also the critical yardstick against which compliance with such obligations must be assessed and the resulting legal consequences determined.

9. The Request before the Court, like the questions before ITLOS and the Inter-American Court, underscores the urgent need for clarity on what international law requires of States in addressing the threats of climate change to the natural world and collective survival of humankind. These proceedings also underscore that the legal norms implicated in the context of climate change draw from various sources of law, including but not limited to general international law, international environmental law, the law of the sea, and human rights law, among others. These sources of law, though different, are nevertheless consistent, as informed by what the best available science demonstrates is necessary to meet the relevant obligations in the context of climate change.

10. As the principal judicial organ of the United Nations, the Court is uniquely placed not only to clarify the full breadth of the sources of international law implicated in the Request, but also to unify the jurisprudence of specialized tribunals like ITLOS and the Inter-American Court, in accordance with the principle of harmonization. The import of ensuring such systemic integration and coherence among these different bodies of norms cannot be overstated: it is essential to providing States clear, consistent, and specific guidance on what international law demands of them at this critical time.

11. The Commission submits this Written Statement to assist the Court's consideration of the specific international obligations of States with respect to climate change. It sets out COSIS's submissions in five chapters:

(a) Chapter I is this introduction.

(b) Chapter II provides a summary of the scientific evidence relevant to the Request based on the most recent findings of the IPCC.

(c) Chapter III addresses part (a) of the Request by discussing States' obligations with regard to climate change.

(d) Chapter IV addresses part (b) of the Request by discussing the legal consequences for States where they, by their acts and omissions, have breached their obligations set out in Chapter III.

(e) Chapter V presents the Commission's conclusions on the Request.

[15] COP28, Outcome of the First Global Stocktake, decision -/CMA.5 (Advance Unedited Version) (13 December 2023), ¶ 28.

12. Some States that are Member States of COSIS are submitting their own written statements in the present proceedings. The respective positions of the Member States are aligned overall with the views expressed by COSIS as an international organization, but for the avoidance of doubt, in case of any differences between the present Written Statement and a written statement submitted by a COSIS Member State, the latter expresses that State's full position with regard to the questions before the Court.

II. The Science of Climate Change

13. The current, best available scientific evidence is irrefutable: GHG emissions from human activities cause significant harm to the climate system, leading to widespread devastation and existential threats to certain small island States. That evidence further shows that average global temperature rise of 1.5ºC above pre-industrial levels will have definite and catastrophic effects on the environment and all States on Earth—and that such catastrophic effects for specific ecosystems occur even well below that threshold. The evidence underpinning these conclusions represents the agreed, global consensus of the scientific community with respect to the drivers of climate change and its effects. COSIS relies upon the findings of the IPCC, the United Nations body widely recognized as the source of the best available science on climate change.

14. Given the vast body of science relevant to the Request in these proceedings and likely broad participation by States and international organizations, COSIS seeks to be of assistance in this Chapter II by summarizing the scientific consensus reflected in the work of the IPCC on the negative impacts of GHG emissions on human life and the planet, particularly with respect to small island States. In its submission, COSIS places particular but not exclusive emphasis on the impact of climate change on the marine environment, and especially the ocean[16]. This is because climate change is largely a marine phenomenon; as this chapter describes, the ocean has absorbed the vast majority of the heat energy that GHGs have trapped in the atmosphere as well as a significant proportion of the carbon dioxide that human activities have emitted since 1850. Furthermore, the impacts of climate change on the ocean and marine environment are of special significance to small island States given that they are surrounded by the ocean and depend on it for their subsistence, including through the relationship between marine and terrestrial systems.

15. To set out this evidence, COSIS submits the expert reports of two leading scientists who participated in the IPCC process: Dr. Sarah Cooley, Director of Climate Science at the Ocean Conservancy and Coordinating Lead Author of Chapter 3 (Ocean and Coastal Ecosystems and Their Services) of IPCC Working Group II's 2022 report; and Dr. Shobha Maharaj, Science Director at Terraformation and Lead Author of Chapter 15 (Small Islands) of IPCC Working Group II's 2022 report.

16. This Chapter describes the process by which the IPCC assesses and reports its findings on climate change (Section A); the causes of climate change (Section B); the effects of GHG emissions on the marine environment and beyond (Section C); the uniquely profound harm that climate change causes small island States (Section D); and Earth's remaining carbon budget for limiting global warming to 1.5ºC, which is necessary to prevent even more catastrophic harm, especially to small island States (Section E).

A. IPCC Process and Reports

17. The IPCC is the United Nations body for assessing the science related to climate change. Established in 1988 by the United Nations Environment Programme and the World

[16] The "ocean" not "the oceans" is used throughout this Written Statement, in accordance with its preferred usage by the IPCC as well as all other ocean-focused entities, given the ocean's interconnected and inseparable nature. *See, e.g.*, Expert Report of Sarah R. Cooley, Ph.D., on Impacts of Anthropogenic Greenhouse Gas Emissions on the Marine Environment and Affected Communities (22 March 2024) (Annex 1) ("Cooley Report"), ¶ 1 (citing IPCC, Working Group I, "Summary for Policymakers", *Sixth Assessment Report: The Physical Science Basis* (2021), p. 4).

Meteorological Organization, the IPCC today has 195 Member States[17]. The IPCC plays a unique role in synthesizing scientific knowledge on climate change and its impacts. Specifically, the IPCC relies on hundreds of the world's leading scientists who volunteer their time to conduct regular assessment cycles that "assess the thousands of scientific papers published each year to provide a comprehensive summary of what is known about the drivers of climate change, its impacts and future risks, and how adaptation and mitigation can reduce those risks"[18]. The General Assembly referred to the IPCC's findings in resolution 77/276 setting out the Request to the Court[19].

18. The IPCC assessment cycles culminate every five to seven years in an assessment report describing the causes, impacts, and future risks of climate change. Between 2021 and 2023, the IPCC published the results of its most recent assessment cycle in the Sixth Assessment Report, which includes findings from each of the IPCC's three working groups: Working Group I on the physical science basis of climate change; Working Group II on impacts, adaptation, and vulnerability; and Working Group III on mitigation of climate change[20]. The IPCC makes the first and final drafts of its assessment reports available to the governments of each Member State to review and comment[21]. The IPCC's findings are thus not only the consensus of the global scientific community, but they also incorporate the views of participating States. The IPCC published its complete Sixth Assessment Report in March 2023[22]. Currently, the IPCC is engaging in its seventh assessment cycle, which began in July 2023 and is set to last five to seven years[23].

19. IPCC authors evaluate the type, amount, quality, and consistency of evidence, as well as the degree of agreement within the evidence as they assess a particular subject. The IPCC's conclusions include "calibrated uncertainty language" used to express scientific confidence in the evidence to support a finding or the likelihood of a finding[24]. The IPCC uses two types of calibrated language. *First*, it uses "qualitative expressions of confidence"—"very low", "low", "medium", "high", and "very high"—"based on the robustness of evidence for a finding". *Second*, where possible, the IPCC "uses quantitative expressions to describe the likelihood of a finding", which represent the IPCC's assessment of how likely a given outcome is to occur based on its "evaluation of underlying evidence and agreement". Its seven quantitative expressions are "virtually certain" (99 to 100 percent), "very likely" (90 to 100 percent), "likely" (66 to 100 percent), "as likely as not" (33 to 66 percent), "unlikely" (0 to 33 percent), "very unlikely" (0 to 10 percent), or "exceptionally unlikely" (0 to 1 percent)[25]. The IPCC designs this uncertainty language "to consistently evaluate and

---

17 IPCC, History of the IPCC, https://www.ipcc.ch/about/history; IPCC, Structure of the IPCC, https://www.ipcc.ch/about/structure.

18 IPCC, About the IPCC, https://www.ipcc.ch/about.

19 Request, p. 2.

20 IPCC, Sixth Assessment Report, https://www.ipcc.ch/assessment-report/ar6.

21 *Id*.

22 *Id*.

23 IPCC, Future Work, https://www.ipcc.ch/about/future-work.

24 IPCC, Working Group I, "Technical Summary", *Sixth Assessment Report: The Physical Science Basis* (2023) (Dossier No. 78), p. 39.

25 IPCC, "Technical Summary", *Special Report on the Ocean and Cryosphere in a Changing Climate* (2019), p. 42.

communicate uncertainties that arise from incomplete knowledge due to a lack of information or from disagreement about what is known or even knowable"[26].

B. CAUSES OF ANTHROPOGENIC CLIMATE CHANGE

20. The IPCC has concluded that anthropogenic GHG emissions—that is, those resulting from human activities—are "unequivocally" responsible for the highest atmospheric concentrations of GHGs in millions of years, driving warming of the planet at rates never before seen in human history[27]. The IPCC's 2023 Synthesis Report states plainly:

> Human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850–1900 in 2011–2020. . . .[28]
>
> Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred. Human-caused climate change is already affecting many weather and climate extremes in every region across the globe. This has led to widespread adverse impacts and related losses and damages to nature and people (*high confidence*). Vulnerable communities who have historically contributed the least to current climate change are disproportionately affected (*high confidence*).[29]

21. This Section addresses (*1*) how GHGs interact with the climate system, (*2*) the three main types of GHGs, (*3*) the IPCC's assessments of the worst consequences of climate change, (*4*) Earth's remaining "carbon budget", and (*5*) the risks of overshooting that budget even temporarily.

1. GHGs and Climate

22. GHGs are certain gases that absorb solar radiation coming directly from the sun and reflected off the Earth's surface, trapping heat in the atmosphere[30]. Most GHGs are not inherently harmful and in fact are an important factor in making most of the Earth habitable by trapping heat in the atmosphere: without them, Earth's average temperature would likely be around minus 20ºC, as compared with the pre-industrial average of around 14ºC[31]. But severe harm results from the increased presence of GHGs in the atmosphere and the

---

26 IPCC, "Technical Summary", *Special Report on the Ocean and Cryosphere in a Changing Climate* (2019), p. 42.

27 IPCC, "Longer Report", *Sixth Assessment Synthesis Report* (2023), pp. 6–8.

28 IPCC, "Summary for Policymakers", *Sixth Assessment Synthesis Report* (2023) (Dossier No. 78), p. 4.

29 *Id*., p. 5.

30 IPCC, Working Group I, "Annex VII: Glossary", *Sixth Assessment Report: The Physical Science Basis* (2021), p. 2233; Cooley Report, § II.A. GHGs absorb and emit certain wavelengths of infrared radiation primarily because of the chemical bond between the three or more different atoms that comprise each of their molecules. The major components of the atmosphere—nitrogen (N_2), oxygen (O_2), and argon (Ar)—do not have a greenhouse effect because they comprise only one or two atoms.

31 R. Lindsey & L. Dahlman, "Climate Change: Global Temperature", *Climate.gov* (18 January 2024); *see also* IPCC, Working Group I, "Annex VII: Glossary", *Sixth Assessment Report: The Physical Science Basis* (2021), p. 2232.

associated rise in global temperatures[32]. The IPCC has found that, for every 1,000 gigatonnes of anthropogenic carbon dioxide emissions, "global surface temperature rises by 0.45°C (best estimate, with a *likely* range from 0.27°C to 0.63°C)"[33]. "Excess GHGs" and "excess heat" refer to the additional quantity of GHGs in the atmosphere and the rise in global temperatures since roughly the year 1850. This is the "start" date relied upon by most scientific models measuring temperature change, as it is the approximate date when "permanent surface observing networks emerged that provide sufficiently accurate and continuous measurements on a near-global scale"[34].

2. Types of GHGs

23. The three key GHGs associated with climate change are (*i*) carbon dioxide, (*ii*) methane, and (*iii*) nitrous oxide[35].

24. Carbon dioxide (CO_2) constitutes a relatively small proportion of the gases in Earth's atmosphere—around 0.04 percent as of April 2022. Yet, the dramatic increase of its presence has had a powerful greenhouse effect[36]. During the last measured decade, global average annual emissions of carbon dioxide reached the highest levels in human history, to at least 10 billion tonnes per year[37]. Once emitted, carbon dioxide will break down into its constituent elements only after 300 to 1,000 years[38].

25. Human activities emit carbon dioxide in two principal ways: by burning organic material such as fossil fuels and biomass, and through land-use change and land management[39]. Humans burn fossil fuels—primarily petroleum, coal, and natural gas—to power internal combustion engines for transportation and shipping by motor vehicles, airplanes, ships, and trains; to generate electricity in power plants or generators; for heating and cooking; or to run certain industrial processes[40]. Humans also burn biomass—recently living organic material such as wood, crops, or organic waste—for energy[41]. Together, the burning of fossil fuels and biomass accounts for 81 to 91 percent of anthropogenic carbon dioxide emissions worldwide[42]. Burning fossil fuels also emits black carbon, fine particles of

---

32 *See* Cooley Report, ¶ 22. *See generally id*., §§ III, IV.A.

33 IPCC, "Summary for Policymakers", *Sixth Assessment Synthesis Report* (2023) (Dossier No. 78), p. 19.

34 *See* IPCC, Working Group I, "Chapter 1: Framing, Context and Methods", *Sixth Assessment Report: The Physical Science Basis* (2021), p. 192 (citation omitted).

35 *See* IPCC, Working Group I, "Summary for Policymakers", *Sixth Assessment Report: The Physical Science Basis* (2021) (Dossier No. 75), p. 4.

36 National Oceanic and Atmospheric Administration, Greenhouse Gases Continued to Increase Rapidly in 2022 (5 April 2023).

37 IPCC, Working Group I, "Chapter 5: Global Carbon and Other Biogeochemical Cycles and Feedbacks", *Sixth Assessment Report: The Physical Science Basis* (2021), p. 676. In these submissions, one "billion" is one thousand million (1,000,000,000), and one "trillion" is one million million (1,000,000,000,000).

38 *Id*.

39 *Id*., p. 687; *see also* Cooley Report, § II.A.

40 *See id*.; Cooley Report, ¶ 21.

41 IPCC, Working Group I, "Annex VII: Glossary", *Sixth Assessment Report: The Physical Science Basis* (2021), p. 2219.

42 IPCC, Working Group I, "Chapter 5: Global Carbon and Other Biogeochemical Cycles and Feedbacks", *Sixth Assessment Report: The Physical Science Basis* (2021), p. 676.

pure carbon not fully burned during the combustion process[43]. The IPCC has concluded with high confidence that sectors that emit large amounts of black carbon are "important contributors to warming over short time horizons up to 20 years"[44]. Land-use change and land management also emit carbon dioxide, accounting for up to nine to 19 percent of global anthropogenic carbon dioxide emissions[45].

26. Methane is another key GHG that contributes to climate change. During the last measured decade, global average annual anthropogenic emissions of methane reached the highest levels in human history, to between 335 and 383 million tonnes per year[46]. The IPCC estimates that methane is approximately 80 times more potent than carbon dioxide in its heat-trapping effects, and it takes around 10 years to break down once released into the atmosphere[47]. Methane emissions result from a variety of human activities. These include coal mining, oil and gas extraction, biomass burning, treatment of manure for fertilizer, rice cultivation, waste management, and peatland destruction[48].

27. Lastly, nitrous oxide also contributes to climate change. During the last measured decade, global average annual anthropogenic emissions of nitrous oxide reached the highest levels in human history, to between 4.2 and 11.4 million tonnes per year[49]. Nitrous oxide is up to 300 times more potent than carbon dioxide in its heat-trapping effects[50]. It takes more than 100 years to break down once emitted into the atmosphere[51]. The use of synthetic and natural fertilizers, as well as chemical and wastewater processing and combustion of fossil fuels, release nitrous oxide[52].

---

43 IPCC, Working Group I, "Annex VII: Glossary", *Sixth Assessment Report: The Physical Science Basis* (2021), p. 2220.

44 *See id*., "Chapter 6: Short-Lived Climate Forcers", p. 866; *see also* IPCC, Working Group II, "Cross-Chapter Paper 6: Polar Regions" *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 2339.

45 IPCC, Working Group I, "Chapter 5: Global Carbon and Other Biogeochemical Cycles and Feedbacks", *Sixth Assessment Report: The Physical Science Basis* (2021), p. 676.

46 *Id*.

47 IPCC, Working Group I, "Chapter 7: The Earth's Energy Budget, Climate Feedbacks, and Climate Sensitivity", *Sixth Assessment Report: The Physical Science Basis* (2021), p. 1017; *see also* IPCC, Working Group I, "Chapter 5: Global Carbon and Other Biogeochemical Cycles and Feedbacks", *Sixth Assessment Report: The Physical Science Basis* (2021), pp. 700–701.

48 *See* IPCC, Working Group I, "Chapter 5: Global Carbon and Other Biogeochemical Cycles and Feedbacks", *Sixth Assessment Report: The Physical Science Basis* (2021), pp. 676, 700–702.

49 *Id*., p. 676.

50 IPCC, Working Group I, "Chapter 7: The Earth's Energy Budget, Climate Feedbacks, and Climate Sensitivity", *Sixth Assessment Report: The Physical Science Basis* (2021), p. 1017.

51 *Id*.; *see also* IPCC, Working Group I, "Chapter 5: Global Carbon and Other Biogeochemical Cycles and Feedbacks", *Sixth Assessment Report: The Physical Science Basis* (2021), p. 708.

52 IPCC, Working Group I, "Chapter 5: Global Carbon and Other Biogeochemical Cycles and Feedbacks", *Sixth Assessment Report: The Physical Science Basis* (2021), pp. 676, 708.

3. Catastrophic Adverse Impacts Associated with Climate Change

28. The IPCC concluded with very high confidence in 2022 that "[r]isks and projected adverse impacts and related losses and damages from climate change escalate with every increment of global warming"[53].

29. Importantly, adverse impacts from climate change can and do occur even below the 1.5ºC threshold; the critical point for these purposes is that, according to the IPCC's findings and projections, the risks of debilitating harm to fundamental human and natural systems beyond that threshold become much higher and more widespread. Specifically, the IPCC has, with medium to high confidence, identified global average temperature rise of 1.5ºC above pre-industrial levels as a threshold over which the risk of catastrophic effects of climate change moves from moderate to high[54].

30. The IPCC has identified five "Reasons for Concern", and the risk associated with each increases substantially with average global temperatures of 1.5ºC above pre-industrial levels:

(a) Unique and threatened systems—ecological and human systems that have restricted geographic ranges constrained by climate-related conditions—such as coral reefs, the Arctic and its Indigenous people, mountain glaciers, and biodiversity hotspots[55];

(b) Extreme weather events, including risks or impacts to human health, livelihoods, assets, and ecosystems from extreme weather events such as heatwaves, heavy rain, drought and associated wildfires, and coastal flooding;

(c) Distribution of impacts, *i.e.*, risks or impacts that disproportionately affect particular groups due to uneven distribution of physical climate change hazards, exposure, or vulnerability;

(d) Global aggregate impacts, such as global monetary damage, global scale degradation, and loss of ecosystems and biodiversity; and

(e) Large-scale singular events including relatively large, abrupt, and sometimes irreversible changes in systems that are caused by global warming, such as disintegration of the Greenland and Antarctic ice sheets[56].

31. The chart below shows the risks or impacts associated with each Reason for Concern at increments of global average temperature rise from 0 to +2ºC[57]. Even below the 1.5ºC, negative impacts with respect to each Reason for Concern are detectable and attributable to

---

53 IPCC, "Summary for Policymakers", *Sixth Assessment Synthesis Report* (2023) (Dossier No. 78), p. 15.

54 *See id*., p. 15; IPCC, "Chapter 3: Impacts of 1.5°C Global Warming on Natural and Human Systems", *Special Report: Global Warming of 1.5ºC* (2018), p. 254, figure 3.21.

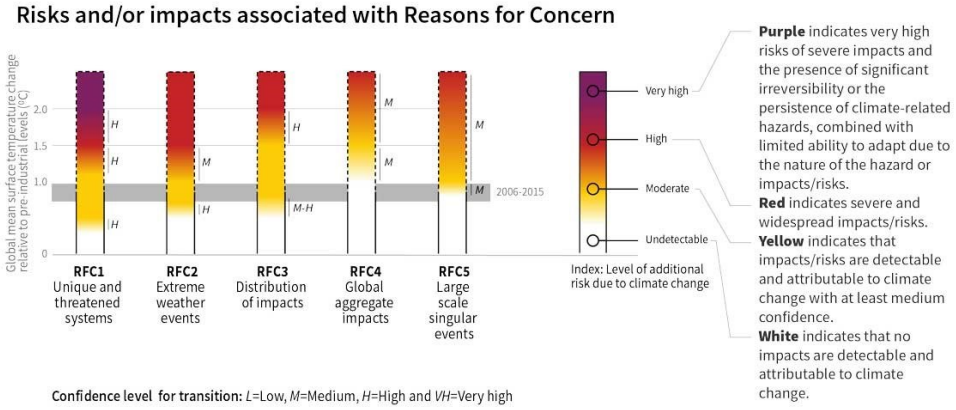
55 Some "unique and threatened systems" in particular, such as coral reefs, are at "risk from climate change at current temperatures, with increasing numbers of systems at potential risk of severe consequences at global warming of 1.6°C above pre-industrial levels". IPCC, "Chapter 3: Impacts of 1.5°C Global Warming on Natural and Human Systems" *Special Report: Global Warming of 1.5ºC*, p. 253; *see also* Cooley Report, ¶ 64.

56 IPCC, "Chapter 3: Impacts of 1.5°C Global Warming on Natural and Human Systems" *Special Report: Global Warming of 1.5ºC* (2018), p. 254, figure 3.21 and associated text.

57 *Id*.

climate change with at least medium confidence. Temperature rise above 1.5ºC represents a dramatic increase in the risk for each, moving from moderate to high. Temperatures at or above 2°C create a very high risk of severe impacts coupled with irreversible or persistent climate-related hazards, alongside limited ability to adapt for many unique and threatened ecological and human systems, including many Indigenous peoples[58].

IPCC Assessment of Risks or Impacts Associated with Five Reasons for Concern[59]



32. The effect on coral reefs and the ecosystems they support would be especially devastating. In a world above 1.5°C, 70 to 90 percent of tropical corals would disappear as a result of mass bleaching and mortality[60]. This will have catastrophic effects on marine biodiversity, given that these coral reefs provide habitats for over *one million* species[61]. Framework organisms—that is, those that provide habitats for a large number of marine species—such as kelp forests, seagrass meadows, corals, and mangroves will also be at a higher risk of dying off with warming above 1.5°C due to increasingly frequent and severe marine heatwaves[62].

33. The IPCC has concluded with high confidence that the current warming level of 1.1ºC has already "led to widespread adverse impacts on food and water security, human health and on economies and society and related losses and damages to nature and people"[63]. The IPCC continues that "[v]ulnerable communities who have historically contributed the least to current climate change", such as small islands, are "disproportionately affected"[64].

34. Even low levels of warming are "expected to disrupt the livelihoods of tens to hundreds of millions of additional people globally—especially in regions such as small islands, which suffer from high exposure, climate-sensitivity and vulnerability combined with

---

58 IPCC, "Summary for Policymakers", *Sixth Assessment Synthesis Report* (2023) (Dossier No. 78), p. 15.

59 IPCC, "Chapter 3: Impacts of 1.5°C Global Warming on Natural and Human Systems" *Special Report: Global Warming of 1.5ºC* (2018), p. 254 (figure 3.21).

60 *Id*., pp. 179, 229–230 (box 3.4).

61 *Id*., pp. 229–230 (box 3.4).

62 *Id*., pp. 225–226.

63 IPCC, "Longer Report", *Sixth Assessment Synthesis Report* (2023), p. 6.

64 *Id*.

low adaptation capabilities"[65]. Even at global warming of 1.5ºC, "limited freshwater resources will generate hard adaptation limits" for small island States, and "ecosystems found on small islands, such as warm-water coral reefs, rainforests, coastal wetlands and mountain ecosystems, are expected to reach or surpass hard adaptation limits"[66].

35. The IPCC has made clear that States must pursue mitigation and adaptation related to climate change simultaneously to maintain any hope of avoiding the worst consequences of climate change to the environment. The IPCC has found that "[a]daptation options that are feasible and effective today will become constrained and less effective with increasing global warming", and that the "effectiveness of adaptation, including ecosystem-based and most water-related options, will decrease with increasing warming"[67]. The IPCC concluded with high confidence that, with any additional global warming above today's levels, "limits to adaptation and losses and damages, strongly concentrated among vulnerable populations, will become increasingly difficult to avoid", and that above 1.5ºC, "ecosystems such as some warm-water coral reefs [and] coastal wetlands . . . will have reached or surpassed hard adaptation limits"[68].

4. The Closing Window on Earth's Remaining Carbon Budget

36. Earth's remaining carbon budget refers to the total net amount of carbon dioxide that human activities can still release into the atmosphere while keeping global warming to a specified level above pre-industrial levels, after accounting for the warming effects of other GHGs[69]. The IPCC found:

> [T]o limit global warming to 1.5°C above pre-industrial levels with either a one-in-two (50%) or two-in-three (67%) chance, the remaining carbon budgets amount to 500 and 400 billion tonnes of CO_2, respectively, from 1 January 2020 onward. Currently, human activities are emitting around 40 billion tonnes of CO_2 into the atmosphere in a single year.[70]

37. The IPCC has concluded that we are close to exhausting Earth's estimated "remaining carbon budget" above which global average temperatures will rise 1.5°C or 2°C above pre-industrial levels. As reflected in the chart below, the remaining carbon budget needed to keep

---

65 Expert Report of Shobha Maharaj, D.Phil. (Oxon.), on Impacts of Climate Change on Small Island States (22 March 2024) (Annex 2) ("Maharaj Report"), ¶ 108 (citing IPCC, Working Group II, "Technical Summary", Sixth Assessment Report: Impacts, Adaptation, and Vulnerability (2022), p. 67).

66 Maharaj Report, ¶ 111 (citing IPCC, "Summary for Policymakers", *Sixth Assessment Synthesis Report* (2023) (Dossier No. 78), p. 20)).

67 IPCC, "Summary for Policymakers", *Sixth Assessment Synthesis Report* (2023) (Dossier No. 78), p. 19.

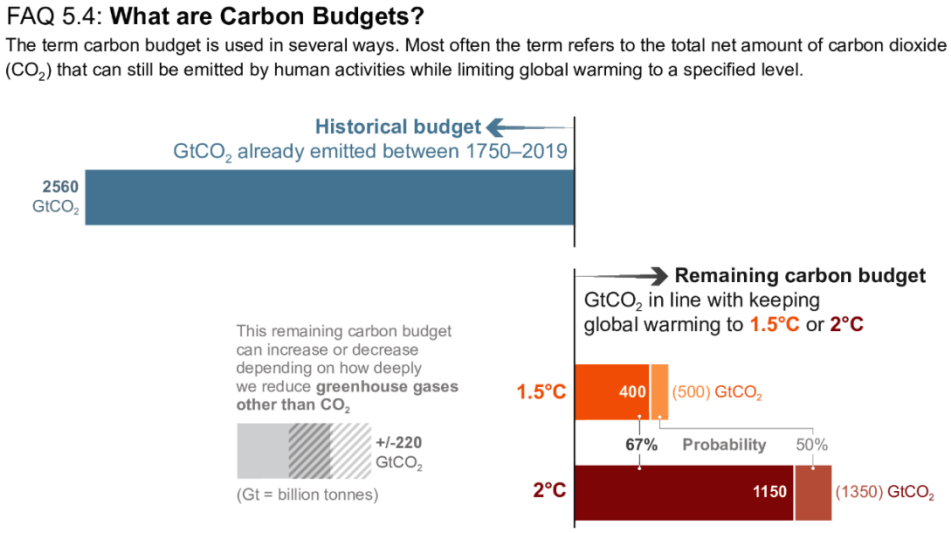
68 *Id*.; *see also* Maharaj Report, § IV.B.

69 IPCC, Working Group I, "Chapter 5: Global Carbon and Other Biogeochemical Cycles and Feedbacks", *Sixth Assessment Report: The Physical Science Basis* (2021), p. 777.

70 *Id*., p. 777 (citation omitted).

below the 1.5ºC threshold is only 500 billion tonnes, meaning that "the remaining carbon budget . . . is much smaller than the total CO_2 emissions released to date"[71].

IPCC Assessment of the Remaining Carbon Budget as of 2022[72]



38. The timetable for action to mitigate climate change demonstrates that Earth is dangerously close to exceeding the 1.5ºC threshold. The average global temperature in 2023 was already 1.45ºC above pre-industrial levels, with temperatures during nearly half the year exceeding 1.5ºC and all days exceeding 1ºC[73]. As shown in the graphic below, the IPCC assesses that, to achieve at least a 50 percent chance of limiting warming to 1.5ºC, States must reduce GHG emissions, as measured against 2019 levels, by at least 43 percent by 2030, 60 percent by 2035, 69 percent by 2040, and 84 percent by 2050[74].

IPCC Reduction Timetable Consistent with the Remaining Carbon Budget[75]

Table SPM.1: Greenhouse gas and CO_2 emission reductions from 2019, median and 5-95 percentiles. *{3.3.1, 4.1, Table 3.1, Figure 2.5, Box SPM.1}*

		Reductions from 2019 emission levels (%)			
		2030	2035	2040	2050
Limit warming to1.5°C (>50%) with no or limited overshoot	GHG	43 [34-60]	60 [49-77]	69 [58-90]	84 [73-98]
	CO_2	48 [36-69]	65 [50-96]	80 [61-109]	99 [79-119]
Limit warming to 2°C (>67%)	GHG	21 [1-42]	35 [22-55]	46 [34-63]	64 [53-77]
	CO_2	22 [1-44]	37 [21-59]	51 [36-70]	73 [55-90]

---

71 IPCC, Working Group I, "Chapter 5: Global Carbon and Other Biogeochemical Cycles and Feedbacks", *Sixth Assessment Report: The Physical Science Basis* (2021), p. 778.

72 *Id*., p. 778 (figure FAQ 5.4); *see also* COP28, Outcome of the First Global Stocktake, decision -/CMA.5 (Advance Unedited Version) (13 December 2023), ¶¶ 25–27 (reaffirming this finding).

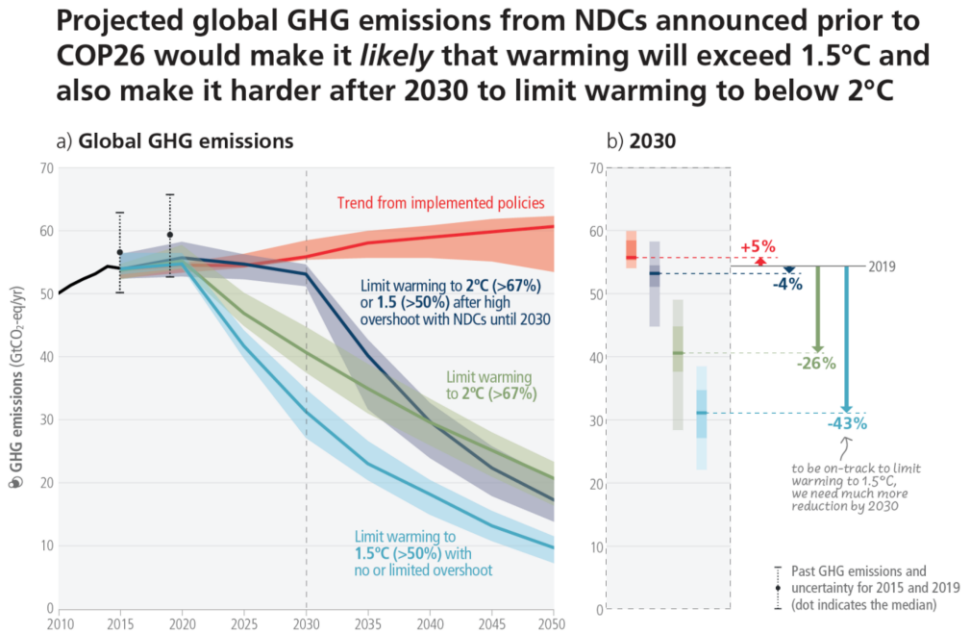
73 Copernicus Climate Change Service, The 2023 Annual Climate Summary: Global Climate Highlights 2023 (9 January 2024); World Meteorological Organization, WMO Confirms that 2023 Smashes Global Temperature Record (12 January 2024).

74 IPCC, "Summary for Policymakers", *Sixth Assessment Synthesis Report* (2023) (Dossier No. 78), p. 21 (Table SPM.1).

75 *Id*.

39. Contributions to climate change are highly concentrated in a few States. In 2022, only *four* countries contributed over *half* of global GHG emissions[76]. Small island States have contributed less than one percent of historical GHG emissions[77] and yet bear the brunt of their effects. Tragically, even if the reduced GHG levels reflected under States' nationally determined contributions ("NDCs") under the Paris Agreement are fully implemented, that would not suffice to keep the Earth within the remaining carbon budget necessary to keep below the 1.5ºC threshold. As shown in the chart below, the IPCC has calculated that published NDCs will achieve only a four percent reduction by 2030 as compared to the 43 percent that is needed, and the trend from *implemented* NDCs shows that emissions are on track to *increase* by 5 percent[78].

IPCC Assessment of NDCs Relative to 1.5ºC Temperature Limit[79]



40. It is unsurprising, therefore, that Earth is already close to exceeding the 1.5ºC threshold. The technical dialogue on the first global stocktake of progress toward meeting the goals of the Paris Agreement, published by the UNFCCC Secretariat in September 2023, estimated that the remaining carbon budget to limit warming to 1.5ºC by 2030 is now between 20.3 and 23.9 gigatonnes of CO_2 equivalents[80]. The Secretariat warned that "the window to

---

76 European Commission, Joint Research Centre Science for Policy Report: GHG Emissions of all World Countries 2023, p. 5 (figure 1).

77 *See* United Nations Development Programme, The State of Climate Ambition: Snapshot for Small Island Developing States (SIDS) (December 2022), p. 3.

78 *See* United Nations Environment Programme, Emissions Gap Report (2002); CAT Emissions Gap, "Climate Action Tracker", https://climateactiontracker.org/global/cat-emissions-gaps; IPCC, "Longer Report", *Sixth Assessment Synthesis Report* (2023), p. 25, figure 2.5; *see also* COP28, Outcome of the First Global Stocktake, decision -/CMA.5 (Advance Unedited Version) (13 December 2023), ¶ 21 (endorsing the IPCC's finding that fully implemented NDCs would only reduce emissions "on average 2 per cent compared with the 2019 level by 2030" and "that significantly greater emissions reductions are required to align . . . with the temperature goal of the Paris Agreement").

79 IPCC, "Longer Report", *Sixth Assessment Synthesis Report* (2023), p. 25 (Figure 2.5).

80 UNFCCC Secretariat, Technical Dialogue of the First Global Stocktake: Synthesis Report by the Co-Facilitators on the Technical Dialogue, document FCCC/SB/2023/9 (8 September 2023), ¶ 10.

keep limiting warming to 1.5 degrees Celsius within reach is closing rapidly, and progress is still inadequate based on the best available science"[81], concluding that "much more is needed now on all fronts" to stay within the 1.5ºC threshold[82]. At their most recent COP28 in November 2023, the States Parties to the Paris Agreement endorsed the UNFCCC Secretariat's global stocktake report, urging "that, despite progress, global greenhouse gas emissions trajectories are not yet in line with the temperature goal of the Paris Agreement, and that there is a rapidly narrowing window for raising ambition and implementing existing commitments in order to achieve it"[83].

5. Irreversible and Devastating Harm of Overshooting the Carbon Budget, Even Temporarily

41. The IPCC's calculations show that some pathways to an average increase of no more than 1.5ºC around the end of the century still involve temporary increases above 1.5ºC, which the IPCC calls "overshoot". The IPCC has found that such overshoot will have devastating effects on the environment, especially in vulnerable areas such as small islands, because it may be impossible for some ecosystems to recover from exceeding the 1.5°C threshold, even temporarily[84]. This is the case even if technology like carbon capture—which does not currently exist—brings the Earth back below the 1.5ºC threshold sometime in the future.

42. The IPCC thus has concluded with high confidence:

> Overshoot of a warming level results in more adverse impacts, some irreversible, and additional risks for human and natural systems compared to staying below that warming level, with risks growing with the *magnitude* and *duration* of overshoot.[85]

The IPCC singles out coral reefs as particularly vulnerable to even low and short overshoot[86].

43. Small islands are particularly vulnerable to overshoot. Dr. Maharaj explains that, in overshoot scenarios, people and the environment are "exposed to greater and more widespread climate impact-drivers such as extreme precipitation and heat—which would increase risks to low lying coastal settlements (such as on many small islands) and associated infrastructure and livelihoods"[87]. She explains that irreversible changes "include the extinction of species and/or the irreversible loss of ecosystems such as coral reefs (*very high confidence*) and forests (*medium confidence*)"[88].

---

81 UNFCCC Secretariat, Technical Dialogue of the First Global Stocktake: Synthesis Report by the Co-Facilitators on the Technical Dialogue, document FCCC/SB/2023/9 (8 September 2023), ¶ 80.

82 *Id*., ¶ 75.

83 COP28, Outcome of the First Global Stocktake, decision -/CMA.5 (Advance Unedited Version) (13 December 2023), ¶ 24; UNFCCC Secretariat, Technical Dialogue of the First Global Stocktake: Synthesis Report by the Co-Facilitators on the Technical Dialogue, document FCCC/SB/2023/9 (8 September 2023), ¶ 9 (same).

84 IPCC, "Summary for Policymakers", *Sixth Assessment Synthesis Report* (2023) (Dossier No. 78), p. 23.

85 IPCC, "Longer Report", *Sixth Assessment Synthesis Report* (2023), p. 53 (emphasis added).

86 *See, e.g.*, *id*., p. 42; IPCC, Working Group III, "Chapter 3: Mitigation Pathways Compatible with Long-Term Goals", *Sixth Assessment Report: Mitigation of Climate Change* (2022), p. 377.

87 Maharaj Report, ¶ 118.

88 *Id*., ¶ 119 (citing IPCC, "Longer Report", *Sixth Assessment Synthesis Report* (2023), p. 53).

C. THE CRITICAL AND CENTRAL ROLE OF THE OCEAN AND MARINE ENVIRONMENT IN THE GLOBAL CLIMATE SYSTEM

44. The ocean is by far Earth's largest heat and carbon sink. The marine environment absorbs so much heat and carbon dioxide that doing so changes the physics and chemistry of the ocean.

1. Absorption of Heat

45. The ocean and marine cryosphere have absorbed more than 90 percent of the excess heat accumulated in the climate system since the 19th century[89]. That has amounted to 345 zettajoules of heat energy from 1955 through 2022; in that same period, all of the world's nuclear power plants *combined* produced only around *one quarter* of *one* zettajoule[90]. In 2021 alone, the ocean warmed by 14 zettajoules (14 × 1021) according to one report, roughly equivalent to seven Hiroshima bombs exploding every second[91]. If the ocean were not absorbing this heat, average global temperatures would likely be around 50ºC[92].

46. The ocean's extremely high rate of heat absorption is due to its physical characteristics. Heat transfers from warmer to cooler zones, and because water and ice are cooler than air and land, heat trapped in the atmosphere tends to transfer to the ocean and marine cryosphere[93]. In addition, the ocean covers over 70 percent of Earth's surface, offering a broad surface area on which that heat transfer can occur[94]. Finally, water has a higher heat capacity—a greater ability to absorb heat energy before its temperature rises—than land-based solids like earth, vegetation, or the built environment[95].

47. The ocean's absorption of excess heat leads to interrelated physical and chemical changes, including ocean warming, melting of the marine cryosphere, sea-level rise, changes to ocean and air currents, and ocean stratification and deoxygenation.

(a) *Ocean warming*. The IPCC has concluded that it is "*virtually certain*" that the upper 700 metres of the ocean globally has warmed since the 1970s and

---

89 *See* IPCC, "Summary for Policymakers", *Special Report on the Ocean and Cryosphere in a Changing Climate* (2019) (Dossier No. 74), p. 9.

90 WolframAlpha, "zettajoule"; *Vital Signs: Ocean Warming*, NASA: GLOBAL CLIMATE CHANGE (December 2022).

91 "We Study Ocean Temperatures. The Earth Just Broke a Heat Increase Record", *The Guardian* (11 January 2022)*; see also* National Centers for Environmental Information, Global Ocean Heat and Salt Content: Seasonal, Yearly, and Pentadal Fields.

92 "If Oceans Stopped Absorbing Heat from Climate Change, Life on Land Would Average 122°F", *Quartz* (29 November 2017).

93 Cooley Report, §§ II.A–C.

94 IPCC, Working Group I, "Chapter 3: Oceans and Coastal Ecosystems and Their Services", *Sixth Assessment Report: The Physical Science Basis* (2021), p. 385.

95 *See* Cooley Report, § II.B; IPCC, Working Group I, "Chapter 3: Observations: Oceans", *Fifth Assessment Report: The Physical Science Basis* (2013), pp. 260, 266; U.S. Environmental Protection Agency, Ocean Heat (August 2016), p. 1.

"*extremely likely*" that human influence is the main driver[96]. Recent data show that global sea surface hit a new temperature record of 21.1ºC in April 2023[97].

(b) *Loss of sea ice*. The IPCC has concluded that "global warming has led to widespread shrinking of the cryosphere with mass loss from ice sheets and glaciers (*very high confidence*), reductions in snow cover (*high confidence*) and Arctic sea ice extent and thickness (*very high confidence*), and increased permafrost temperature (*very high confidence*)"[98]. Loss of marine cryosphere reinforces the adverse effects of climate change, creating a vicious cycle. Reduction of sea ice and ice shelves diminishes the ice-albedo effect, by which the whiteness of sea ice reflects light from the sun back out of Earth's atmosphere, thus cooling the Earth[99].

(c) *Sea-level rise*. The IPCC is *virtually certain* that absorption of excess heat into the ocean and marine cryosphere causes sea-level rise. Three main factors contribute to sea-level rise: thermal expansion of water, which accounted for 50 percent of mean sea-level rise from 1971 to 2018; melting of ice, including ice sheets (floating ice), which added 20 percent of mean sea-level rise in the same period, and glaciers (land-based ice), which added 22 percent; and fluctuations in land-water storage, which contributed 8 percent[100]. The IPCC has found that the global mean sea level increased by approximately 0.20 metres between 1901 and 2018, with projections going up substantially from there[101]. The IPCC has called sea-level rise "unavoidable" and concluded with high confidence that, as a result, "risks for coastal ecosystems, people and infrastructure will continue to increase beyond 2100 (*high confidence*)"[102].

(d) *Changes to ocean and air currents, and increasing frequency of severe tropical cyclones*. Excess heat in the ocean changes ocean and air currents, contributing to extreme weather events[103]. The IPCC has concluded with high confidence that "[m]any ocean currents will change in the 21st century as a response to changes in wind stress associated with anthropogenic warming"[104].

---

96 IPCC, Working Group I, "Summary for Policymakers", *Sixth Assessment Report: The Physical Science Basis* (2021) (Dossier No. 75), p. 5; *see* Cooley Report, § III.A.

97 National Oceanic and Atmospheric Administration, Daily Sea Surface Temperature; *see* "The Ocean Is Hotter Than Ever: What Happens Next?", *Nature* (10 May 2023).

98 IPCC, "Summary for Policymakers", *Special Report on the Ocean and Cryosphere in a Changing Climate* (2019) (Dossier No. 74), p. 6; *see also* IPCC, Working Group II, "Cross-Chapter Paper 6: Polar Regions", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 2321. Glaciers are large blocks of frozen water on top of land. *See* IPCC, "Annex II: Glossary", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 2910; Cooley Report, ¶ 27, fn. 51.

99 Cooley Report, ¶ 34; *see also* IPCC, "Chapter 3: Polar Regions", *Special Report on the Ocean and Cryosphere* (2019), p. 203.

100 IPCC, Working Group I, "Chapter 9: Ocean, Cryosphere and Sea Level Change", *Sixth Assessment Report: The Physical Science Basis* (2021), p. 1318.

101 IPCC, Working Group I, "Summary for Policymakers", *Sixth Assessment Report: The Physical Science Basis* (2021) (Dossier No. 75), pp. 5, 12–13; *see* Cooley Report, § III.A.

102 IPCC, "Summary for Policymakers", *Sixth Assessment Synthesis Report* (2023) (Dossier No. 78), p. 15.

103 *See* Cooley Report, § III.A(1)(iii).

104 IPCC, Working Group I, "Chapter 9: Ocean, Cryosphere and Sea Level Change", *Sixth Assessment Report: The Physical Science Basis* (2021), p. 1214.

The IPCC has already concluded that it is "*likely* that the global proportion of major (Category 3–5) tropical cyclone occurrence has increased over the last four decades" due to climate change[105].

(e) *Ocean stratification and deoxygenation*. Ocean warming exacerbates ocean stratification—the separation of ocean water by density[106]. The IPCC has concluded that it is "*virtually certain*" that stratification of the upper 200 metres of the ocean globally "has increased since 1970", and that "[s]tratification (*virtually certain*) . . . will continue to increase in the 21st century"[107]. The IPCC has concluded with high confidence that the mean stratification of the upper 200 metres has increased by over two percent since 1971[108].

2. Absorption of Carbon Dioxide

48. The ocean has absorbed around one quarter of the 2400±240 gigatonnes of excess carbon dioxide that human activities have emitted into the atmosphere since 1850, or about 640 gigatonnes[109]. That is about 200 *billion* times the weight of the jasper vase in the lobby of the Peace Palace[110].

49. The atmosphere and ocean naturally interact at the air-sea interface where air dissolves into the water. As the concentration of carbon dioxide in the atmosphere increases, so will the amount of carbon dioxide that dissolves into the water. When carbon dioxide (CO_2) dissolves in the ocean, it reacts with water (H_2O) to produce carbonic acid (H_2CO_3), thus making the ocean more acidic. According to the IPCC, "[s]ince the beginning of the industrial era, oceanic uptake of CO_2 has resulted in acidification of the ocean; the pH of ocean surface water has decreased by 0.1 (*high confidence*), corresponding to a 26% increase in acidity"[111]. The IPCC concluded in 2022 that it "is *virtually certain* that the uptake of anthropogenic CO_2 was the main driver of the observed acidification of the global surface open ocean"[112]. Even with GHG emission reductions consistent with keeping within the 1.5ºC threshold, the IPCC

---

105 IPCC, Working Group I, "Summary for Policymakers", *Sixth Assessment Report: The Physical Science Basis* (2021) (Dossier No. 75), p. 9.

106 *See* Cooley Report, § III.A.1.v.

107 IPCC, Working Group I, "Technical Summary", *Sixth Assessment Report: The Physical Science Basis* (2021), p. 74.

108 *Id*.; *see also id*., "Regional Fact Sheet—Ocean"; IPCC, Working Group I, "Chapter 9: Ocean, Crysophere and Sea Level Change", *Sixth Assessment Report: The Physical Science Basis* (2021), pp. 1214, 1225–1227.

109 IPCC, Working Group I, "Chapter 5: Global Carbon and Other Biogeochemical Cycles and Feedbacks", *Sixth Assessment Report: The Physical Science Basis* (2021), pp. 714, 777–778; IPCC, Working Group III, "Summary for Policymakers", *Sixth Assessment Report: Mitigation of Climate Change* (2022) (Dossier No. 77), p. 10; *see also* Cooley Report, § III.A.1.vii. This figure includes absorption by marine flora such as plankton and seagrasses that consume carbon dioxide during photosynthesis. IPCC, Working Group II, "Chapter 3: Oceans and Coastal Ecosystems and Their Services", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), pp. 400–401.

110 *Cf*. T. Aalberts & S. Stolk, "Building (of) the International Community: A History of the Peace Palace Through Transnational Gifts and Local Bureaucracy", *London Review of International* Law, Vol. 10, 2022, p. 192.

111 IPCC, "Summary for Policymakers", *Fifth Assessment Synthesis Report* (2014), p. 4.

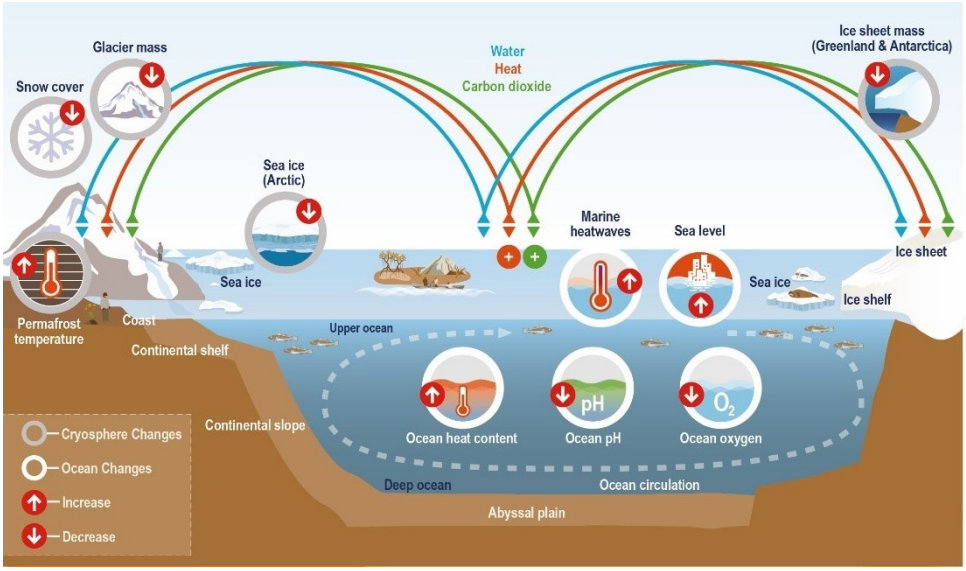
112 IPCC, Working Group I, "Chapter 3: Human Influence on the Climate", *Sixth Assessment Report: The Physical Science Basis* (2021), p. 427; *see also* Cooley Report, § III.A.1.vii.

projects that increased ocean acidification is "*virtually certain*" due to the anthropogenically emitted GHGs *already* in the atmosphere[113].

3. "Runaway" Climate Change

50. Despite the ocean's tremendous capacity to store heat and carbon, the IPCC has high confidence that, if carbon dioxide emissions continue to increase, ocean carbon sinks will "take up a decreasing proportion of these emissions"[114]. This is principally because, due to temperature effects on dissolution chemistry, less carbon dioxide will dissolve in seawater and the transport of dissolved carbon dioxide into the deep ocean will slow[115]. As depicted in the chart below from the IPCC, this will have profound effects in each of the ways in which GHG emissions change the physics and chemistry of the marine environment. The net result is that some parts of the ocean may soon begin to radiate heat back into the atmosphere, or at least absorb heat at a slower rate, making the ocean less effective as a heat sink. This is an example of what climate scientists refer to as a "positive feedback loop" or "runaway climate change", whereby one consequence of global warming is the acceleration of the rate of global warming beyond any capacity of human control[116].

Summary of Physical and Chemical Effects of GHG Emissions on the Marine Environment[117]



---

113 IPCC, "Summary for Policymakers", *Sixth Assessment Synthesis Report* (2023), pp. 12–13; *see also* Cooley Report, § III.A.1.vii.

114 IPCC, Working Group I, "Summary for Policymakers", *Sixth Assessment Synthesis Report* (2023) (Dossier No. 78), p. 12.

115 *See generally* M. Chikamoto et al., "Long-Term Slowdown of Ocean Carbon Uptake by Alkalinity Dynamics", *American Geophysical Union: Geophysical Research Letters*, Vol. 50, 2023; IPCC, Working Group I, "Chapter 5: Global Carbon and Other Biogeochemical Cycles and Feedbacks", *Sixth Assessment Report: The Physical Science Basis* (2021), pp. 720–721.

116 *See* L. Billings, "Fact or Fiction? We Can Push the Planet into a Runaway Greenhouse Apocalypse", *Scientific American* (31 July 2013).

117 IPCC, "Technical Summary", *Special Report on the Ocean and Cryosphere in a Changing Climate* (2019), p. 43 (figure TS.2).

D. CLIMATE CHANGE IMPACTS ON SMALL ISLAND STATES

51. Despite having contributed less than one percent of historical GHG emissions, small island States bear the brunt of climate change impacts like those summarized above—many of which are already causing them acute, irreparable damage. Dr. Maharaj writes:

> The IPCC has *very high confidence* in the growing impacts of multiple stressors in the forms of physical phenomena, such as sea-level rise, tropical cyclones, storm surges, droughts, and other changes in precipitation patterns that are already detectable across both natural and human systems.[118]

52. Although small islands are vastly diverse in their physical, socioeconomic, and cultural characteristics, they share important similarities that make them especially susceptible to the impacts of climate change[119]. For example, small islands are characterized by their physical boundedness and geographic remoteness and isolation[120]. As a result, small islands typically possess a narrow resource base, including limited surface water and land availability[121]. In addition, large proportions of settlements, infrastructure, and other economic assets on small islands are often located close to the coast, making island populations extremely vulnerable to the impacts of sea-level rise, flooding, and extreme weather events[122]. The consequence to the economies of small islands is that these nations are especially vulnerable to economic volatility and exogenous economic shocks, which constrains their ability to mitigate, adapt to, and recover from climate-induced harm[123]. Finally, human and natural systems in small islands are highly interconnected, as island populations rely heavily on marine and terrestrial ecosystems for their nutrition, culture, and development[124]. This interdependence and pronounced reliance on natural resources further amplifies the harmful impacts of climate change on small island communities[125].

53. Small island States are already suffering, and will continue to suffer, from the compounding and systematic effects of sea-level rise, ocean and atmospheric warming, extreme weather events, ocean acidification, and other changes in precipitation patterns. These effects include:

(a) *Declines in species biodiversity and abundance*. Climate change presents a significant threat to critical biodiversity hotspots on and around small islands. Dr. Maharaj explains that, even though they constitute only two percent of the world's total land area, "they host a quarter of all existing land species on this planet" and, accordingly, "the conservation of terrestrial biodiversity on small islands is critical to preventing further decreases in global biodiversity

---

118 Maharaj Report, ¶ 21; IPCC, Working Group II, "Chapter 15: Small Islands", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), pp. 2045, 2052.

119 Maharaj Report, § III.B.

120 IPCC, Working Group II, "Chapter 15: Small Islands", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), pp. 2048, 2050.

121 *Id*., p. 2050.

122 *Id*., pp. 2063–2064.

123 *Id*., p. 2048.

124 Maharaj Report, § III.

125 *Id*., § III.

levels"[126]. She cites evidence suggesting that "a 3°C in global temperature rise could expose 100% of endemic island species to a risk of extinction—leading to disproportionate losses in global biodiversity"[127]. Offshore, ocean warming makes it impossible for certain marine flora and fauna to live at such elevated temperatures, causing many marine species to migrate to cooler waters toward Earth's poles[128]. Palau's Coral Reef Research Foundation—the world's most comprehensive network for monitoring ocean temperature—has documented how water temperatures at or above 30ºC causes polyps to expel their symbiotic algae, leading to bleaching and death of the coral colony[129]. Ocean stratification also threatens biodiversity as it diminishes vertical mixing—whereby ocean currents naturally push some cooler water closer to the surface—which is essential to life throughout the ocean because it distributes life-sustaining nutrients and oxygen to the surface. Ocean acidification also inhibits the survival of molluscs and crustaceans, such as oysters, clams, mussels, lobsters, and crabs[130].

(b) *Whole-scale destruction of key habitats*. Sea-level rise inundates coastlines, including mangroves and sandy beaches. These are important ecosystems for seabirds, turtles, and other coastal animals[131]. In addition, the melting of the marine cryosphere as a result of excess heat has also destroyed polar habitats, making it impossible to survive for animals like polar bears and penguins that make their habitats on sea ice and ice shelves[132]. Furthermore, the IPCC has found that "[m]ass coral bleaching and mortality are projected to increase because of interactions between rising ocean temperatures, ocean acidification, and destructive waves from intensifying storms"[133]. States like The Bahamas, Vanuatu, Fiji, the Maldives, and Palau have documented severe coral bleaching and death, driven by elevated ocean temperatures[134]. In fact, coral reefs are projected to decline by 70 to 90 percent at just 1.5ºC of global warming[135]. The destruction of coral reefs is devastating, as these ecosystems offer key habitats for marine flora and fauna.

---

126 Maharaj Report, ¶ 47 (citing IPCC, Working Group II, "Chapter 15: Small Islands", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 2045).

127 *Id*., ¶ 50 (citing IPCC, Working Group II, "Chapter 15: Small Islands", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 2060–2061).

128 IPCC, Working Group II, "Cross-Chapter 6: Polar Regions", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), pp. 2325, 2333; *see also* Maharaj Report, § III.C.4.2.

129 Patrick L. Colin, "Ocean Warming and the Reefs of Palau", *Oceanography*, Vol. 32, 2018, pp. 127, 129.

130 IPCC, Working Group II, "Chapter 3: Oceans and Coastal Ecosystems and Their Services", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 460.

131 IPCC, Working Group II, "Chapter 15: Small Islands", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 2057; Maharaj Report, § III.C.4.ii.

132 IPCC, Working Group II, "Cross-Chapter 6: Polar Regions", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 2321.

133 IPCC, "Chapter 3: Impacts of 1.5 ºC of Global Warming on Natural and Human Systems", *Special Report: Global Warming of 1.5ºC* (2018), p. 235.

134 IPCC, Working Group II, "Chapter 15: Small Islands", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), pp. 2056, 2071.

135 *Id*., p. 2048.

(c) *Destruction and submergence of coastal and island communities and amenities*. Intensifying tropical cyclones, storm surges, and sea-level rise threaten low-lying communities around the world[136]. Sea-level rise threatens the complete submergence of low-lying islands such as Tuvalu, which has an average elevation of two metres. Tropical cyclones have already caused massive destructions of infrastructure, such as Tropical Cyclone Maria in Dominica, which led to losses amounting to more than 225 percent of the nation's annual gross domestic product[137]. Similarly, in Antigua and Barbuda, Hurricane Irma caused vast devastation in 2017, destroying or damaging 95 percent of the housing stock in Barbuda and forcing the evacuation of its entire population to Antigua[138]. At current rates of GHG emissions, some small island States such as Tuvalu will be uninhabitable, if not fully submerged, by 2100 without dramatic reduction in GHG emissions and accompanying adaptation efforts[139]. Sea-level rise and extreme weather events also shrink amenities, such as beaches and piers, that promote desirable or useful human enjoyment of the sea and coastline[140].

(d) *Food insecurity*. Loss of marine biodiversity and abundance contributes to food insecurity and malnutrition[141]. Globally, about 17 percent of humans' average per capita intake of animal protein in 2017 came from wild and farmed marine and freshwater aquatic animals; for small island States, that number jumps to 50 percent or more[142]. In Niue, for example, over 70 percent of households eat fish caught in local waters every day[143]. The IPCC has concluded that "[o]cean warming has decreased sustainable yields of some wild fish populations (*high confidence*) by 4.1% between 1930 and 2010", and that ocean warming and acidification have already affected fish farming[144]. This effect is especially pronounced among Pacific island States, where the IPCC estimates that a 20 percent decline in fish production from coral reefs by 2050 could threaten food security[145]. Seawater intrusion into aquifers, soils,

---

136 *See* Maharaj Report, § III.C.5.

137 IPCC, Working Group II, "Chapter 15: Small Islands", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 2045.

138 Government of Antigua and Barbuda, Updated Nationally Determined Contribution (2 September 2021), p. 27.

139 IPCC, Working Group II, "Chapter 15: Small Islands", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 2046; Government of Tuvalu, Statement of the Prime Minister to the 77th Session of the General Assembly (23 September 2022), p. 4; *see also* Maharaj Report, ¶ 83.

140 *See, e.g.*, IPCC, Working Group II, "Cross-Chapter 4: Mediterranean Region", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 2245 (citations omitted); *id*., "Chapter 15: Small Islands", p. 2067; Maharaj Report, § III.C.4; *see also* Cooley Report § III.A.

141 *See* Cooley Report, § III.B; Maharaj Report, § III.C.8.

142 IPCC, Working Group II, "Chapter 3: Oceans and Coastal Ecosystems and Their Services", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 456.

143 *See* Government of Niue, Second National Communication to the UNFCCC (2014), p. 64; Maharaj Report, § III.C.8.

144 IPCC, Working Group II, "Technical Summary", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 48.

145 IPCC, Working Group II, "Chapter 15: Small Islands", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 2065.

estuaries, and deltas around the world have also contributed to food insecurity[146].

(e) *Water insecurity*. The combined effects of increasing tropical storm intensity and sea-level rise threaten water security in small islands by saline intrusion into aquifers[147]. The IPCC has already confirmed that domestic freshwater resources on small islands may be unable to recover from increased drought, sea-level rise, and decreased precipitation by 2030, 2040, or 2060—under mid and high future warming scenarios[148]. In fact, some islands are already water insecure. For example, in Barbados, water consumption has reached 100 percent of the island's capacity, and in Saint Lucia, there is a water-supply *deficit* of close to 35 percent[149]. Similarly, in Saint Vincent and the Grenadines, 55 percent of the population is facing water shortages[150].

(f) *Declines in health outcomes*. The reduction of marine biodiversity and abundance also threatens the health of island populations who rely on fish for protein and nutrition[151]. In addition, tropical cyclones can damage water and sanitation services causing infectious disease outbreaks (especially water-borne diseases), as was the case with a cholera outbreak that occurred in Haiti during the aftermath of Tropical Cyclone Matthew[152]. Healthcare facilities such as hospitals, community care centers, and clinics—many of which already suffer from resource constraints—are also vulnerable to climate impacts such as tropical cyclones, associated flooding, and outbreaks of infectious diseases that overwhelm their capacity to provide critical services when such catastrophes occur[153]. For example, in Vanuatu, Tropical Cyclone Pam severely damaged two hospitals, 19 healthcare centres, and 50 healthcare dispensaries across 22 islands in 2015[154].

(g) *Loss of cultural heritage*. The IPCC found that "[c]limate-change impacts on ocean and coastal cultural ecosystem services have already disrupted people's place-based emotional attachments and cultural activities (*limited evidence, high agreement*)"[155]. Furthermore, "[s]ea level rise and storm-driven coastal

---

146 IPCC, Working Group II, "Chapter 4: Water", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 461; *see also* Maharaj Report § III.C.7; Cooley Report § III.B.

147 IPCC, Working Group II, "Chapter 15: Small Islands", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 2065.

148 Maharaj Report, ¶ 80 (citing IPCC, Working Group II, "Chapter 16: Key Risks Across Sectors and Regions", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 2449).

149 IPCC, Working Group II, "Chapter 15: Small Islands", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 2065.

150 Government of Saint Vincent and the Grenadines, National Adaptation Plan (2019), p. 36.

151 IPCC, Working Group II, "Chapter 15: Small Islands", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 2065; *see also* Maharaj Report, § III.C.9.

152 IPCC, Working Group II, "Chapter 15: Small Islands", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 2065.

153 IPCC, Working Group II, "Chapter 15: Small Islands", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 2088.

154 *Id*.

155 IPCC, Working Group II, "Chapter 3: Oceans and Coastal Ecosystems and Their Services", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 467; Maharaj Report, § III.C.10.

erosion endanger coastal archaeological and heritage sites around the world (*very high confidence*)"[156]. In the Grenadian island of Carriacou, for example, sea-level rise is threatening culturally and historically significant archaeological sites[157]. The prolonged displacement of the entire population of the Ragged Island, in the Bahamas, after Hurricane Irma in 2017 led to significant cultural losses[158]. Other tangible cultural and heritage losses on small islands include buildings and UNESCO World Heritage sites, which may also impact the tourism sectors on these islands and therefore have significant impacts on some small islands with relatively narrow economies[159].

(h) *Decline in fishing and ecotourism*. Sea-level rise and extreme weather events threaten economic activity tied to the coasts and coastal infrastructure, such as fishing and ecotourism, that are important industries in climate-affected states. The IPCC has high confidence that climate-change impacts "will continue to denude coastal and marine ecosystem services in many small islands with serious consequences for vulnerable communities"[160]. Regional models in Saint Kitts and Nevis, for example, project that coastal erosion, and loss of beaches and coastal lands will harm tourism, a critical contributor to the nation's economy[161].

(i) *Population displacement*. Sea-level rise and extreme weather events could displace millions of people living in coastal and island communities around the world. There is high agreement among IPCC experts that, in the absence of appropriate adaptive responses, even moderate sea-level rise will severely amplify displacement and levels of forced migration on small islands[162].

54. The marine environment around some small islands is approaching critical tipping points beyond which recovery will be impossible even if temperatures decrease. Tipping points occur when an ecosystem undergoes abrupt or rapid changes that make it fundamentally different, and thus it is extremely difficult and unlikely for the ecosystem to return to the earlier stable state[163]. The IPCC assessed that "ocean tipping points are being surpassed more frequently as the climate changes; scientists have estimated that abrupt shifts in communities of marine species occurred over 14% of the ocean in 2015, up from 0.25% of

---

156 IPCC, Working Group II, "Chapter 3: Oceans and Coastal Ecosystems and Their Services", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 467 (citations omitted); *see also* IPCC, Working Group II, "Chapter 15: Small Islands", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 2069.

157 IPCC, Working Group II, "Chapter 15: Small Islands", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 2069.

158 *Id*.

159 *Id*.

160 *Id*., p. 2058; *see also* IPCC, Working Group II, "Chapter 3: Oceans and Coastal Ecosystems and Their Services", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 480; Cooley Report, § III.A.

161 Government of Saint Christion (Saint Kitts) and Nevis, Updated Nationally Determined Contribution (October 2021), p. 15.

162 IPCC, Working Group II, "Chapter 16: Key Risks Across Sectors and Regions", *Sixth Assessment Report: Impacts, Adaptation and Vulnerability* (2022), p. 2468.

163 *See* Cooley Report, ¶ 75.

the ocean in the 1980s"[164]. Examples of ocean tipping points under study include the melting of the Greenland Ice Sheet or West Antarctic Ice Sheet, the loss of Arctic permafrost and Arctic summer sea ice, widespread coastal and open ocean deoxygenation, severe coastal ocean acidification, large-scale ocean circulation changes, frequent and severe marine heat waves, changes in atmosphere-ocean connections like El Niño and monsoons, and the replacement of warm-water coral reefs with macroalgae[165].

55. In light of the extreme risk of serious harm that small islands face as a result of climate change, adaptation to the new climate reality is critical to sustain life on small islands[166]. Tragically, many small islands are far from where they need to be to adapt to even current warming. The IPCC found with high confidence that "[t]he vulnerability of small communities in small islands, especially those relying on coral reef systems for livelihoods, may exceed adaptation limits well before 2100 even for a low greenhouse gas emissions pathway"[167]. Furthermore, due to the chronic lack of available robust, downscaled, island-specific data, small islands are unable to develop effective adaptation strategies to enhance their resilience capacities in response to changing climate conditions[168]. The lack of technical and financial aid available to small island nations compounds these challenges[169]. Small islands often lack the economic capacity of larger countries and require global support to adopt the necessary but expensive mitigation and adaptation measures to combat climate change[170].

E. Reduction of the Risk of Catastrophic Harm Associated with Keeping Global Warming Within the 1.5°C Threshold, Including by Transitioning Away from Fossil Fuels

56. The IPCC has concluded with high confidence that limiting global warming in line with the 1.5°C threshold will reduce the risks of harm associated with increases in average global temperature affecting the ocean and marine cryosphere.

57. The IPCC has expressed its high confidence that limiting global warming to within 1.5°C compared to 2°C will

> reduce increases in ocean temperature as well as associated . . . decreases in ocean oxygen levels. . . . Consequently, limiting global warming to 1.5°C is projected to reduce risks to marine biodiversity, fisheries, and ecosystems, and their functions and services to humans, as illustrated by recent changes to Arctic

---

164 IPCC, Working Group II, "Chapter 3: Oceans and Coastal Ecosystems and Their Services", *Sixth Assessment Report: Impacts, Adaptation, and Vulnerability* (2022), p. 448.

165 IPCC, Working Group I, "Technical Summary", *Sixth Assessment Report: The Physical Science Basis* (2021), pp. 42, 65, 113–114; IPCC, Working Group II, "Chapter 15: Small Islands", *Sixth Assessment Report: Impacts, Adaptation, and Vulnerability* (2022), p. 2071.

166 Maharaj Report, § IV.

167 IPCC, Working Group II, "Chapter 15: Small Islands", *Sixth Assessment Report: Impacts, Adaptation, and Vulnerability* (2022), p. 2046.

168 *Id*., pp. 2093–2095; Maharaj Report, § IV.C.

169 IPCC, Working Group II, "Chapter 15: Small Islands", *Sixth Assessment Report: Impacts, Adaptation, and Vulnerability* (2022), pp. 2047, 2088–2089.

170 *Id*., pp. 2088–2089; Maharaj Report, § V.

> sea ice and warm-water coral reef ecosystems (*high confidence*)[171].

The IPCC also concluded with high confidence that the risks to small islands and low-lying coastal areas associated with sea-level rise—including saltwater intrusion, flooding, and damage to infrastructure—are higher at 2°C compared to 1.5°C[172].

58. As regards ocean acidification, the IPCC has high confidence that the

> level of ocean acidification due to increasing CO_2 concentrations associated with global warming of 1.5°C is projected to amplify the adverse effects of warming, and even further at 2°C, impacting the growth, development, calcification, survival, and thus abundance of a broad range of species, for example, from algae to fish[173].

Conversely, the IPCC is confident that limiting global warming consistent with the global standard of 1.5°C above pre-industrial levels will reduce the risks of harm caused by ocean acidification. The IPCC has concluded with high confidence that "[l]imiting global warming to 1.5°C compared to 2°C is projected to reduce . . . increases in ocean acidity" and, as a consequence, the "risks to marine biodiversity, fisheries, and ecosystems" associated with ocean acidification"[174].

59. Dr. Cooley confirms that, although planetary global average temperatures of even 1.5°C above pre-industrial levels will raise average ocean temperatures with harmful effects, warming above that threshold will significantly increase the risk of severe harm to fragile ecosystems[175]. Specifically, she writes that warming above 1.5°C will place

> warm water corals at very high risk; kelp forests at moderate to high risk; salt marshes, seagrass meadows, sandy beaches, rocky shores, epipelagic systems, and seamount, canyon, and slope deep systems at moderate risk; and estuaries, eastern boundary upwelling systems, at undetectable to moderate risk[176].

60. In its Technical Dialogue for the first Global Stocktake, the UNFCCC Secretariat confirmed that "[e]very fraction of a degree of temperature increase *closer to and beyond* 1.5 ºC will cause increases in multiple climate hazards and present greater risks to human systems and ecosystems"[177]. At COP28, States Parties to the Paris Agreement endorsed these findings, stressing that "the impacts of climate change will be *much lower* at the temperature

---

171 IPCC, "Summary for Policymakers", *Special Report: Global Warming of 1.5ºC* (2018) (Dossier No. 72), p. 8.

172 *Id*.

173 *Id*., p. 9.

174 *Id*., p. 8.

175 Cooley Report, § IV.A.

176 *Id*.

177 UNFCCC, *Technical Dialogue of the First Global Stocktake*, document FCCC/SB/2023/9 (8 September 2023), ¶ 139 (emphasis added).

increase of 1.5ºC compared with 2 ºC" and so "resolve[d] to pursue efforts to limit the temperature increase to 1.5ºC"[178].

61. The IPCC concluded with high confidence that "[e]stimates of future CO_2 emissions from existing fossil fuel infrastructures without additional abatement *already exceed the remaining carbon budget* for limiting warming to 1.5°C"[179]. States Parties to the Paris Agreement, too, have prioritized the need to move away from fossil fuels, recognizing that "the need for deep, rapid and sustained reductions in greenhouse gas emissions in line with 1.5°C pathways" requires States Parties to, among other efforts, "[t]ransition[] away from fossil fuels in energy systems, in a just, orderly and equitable manner, accelerating action in this critical decade, so as to achieve net zero by 2050 *in keeping with the science*"[180].

62. Small island States have been at the vanguard of calling for phasing out the use of fossil fuels. All COSIS Member States have endorsed phasing out fossil fuels, and Tuvalu and Vanuatu are among a group of States supporting a fossil-fuel nonproliferation treaty. Small island States are also leading by example, pledging to reduce their emissions to zero as soon as 2030[181]. In doing so, however, they are aware that their efforts are insufficient without significant action by high-emitting States. As AOSIS made clear at COP28: "The developed countries which contribute 80% of the world's carbon emissions . . . must lead on fossil fuel phaseout. Phasing out fossil fuel subsidies and making deep, drastic cuts to ensure we reach net zero by 2050 is of the essence."[182]

* * *

63. The science is indisputable: anthropogenic GHG emissions cause climate change; the ocean has absorbed 90 percent of the excess heat that GHGs trap in the atmosphere and one quarter of the carbon dioxide contained in GHG emissions since the pre-industrial era; the conduct that has caused climate change results in significant and widespread harm to the environment, including the climate system, especially affecting small island States; and the severity of the harm caused by GHG emissions increases substantially with every increment of global warming, especially with average global temperature rise beyond 1.5ºC above pre-industrial levels.

---

178 COP28, Outcome of the First Global Stocktake, decision -/CMA.5 (Advance Unedited Version) (13 December 2023), ¶ 4 (emphasis added); *see also* UNFCCC Secretariat, Technical Dialogue of the First Global Stocktake: Synthesis Report by the Co-Facilitators on the Technical Dialogue, document FCCC/SB/2023/9 (8 September 2023), ¶ 17 ("[A]chieving net zero CO_2 and GHG emissions requires systems transformations across all sectors and contexts, including scaling up renewable energy while phasing out all unabated fossil fuels, ending deforestation, reducing non-CO_2 emissions and implementing both supply- and demand-side measures.").

179 IPCC, "Summary for Policymakers", *Sixth Assessment Synthesis Report* (2023) (Dossier No. 78), p. 21. Fossil fuel infrastructures are the "designed and built set of physical systems" that burn fossil fuels, including power, transportation, heating, industrial, agricultural, and other systems. *See* IPCC, Working Group II, "Glossary", *Sixth Assessment Report: Impacts, Adaptation, and Vulnerability* (2022), p. 2912.

180 COP28, Outcome of the First Global Stocktake, decision -/CMA.5 (Advance Unedited Version) (13 December 2023), ¶ 28(d) (emphasis added).

181 *See* Net Zero Tracker, https://zerotracker.net (showing net zero pledges by all COSIS Member States, among other AOSIS Member States).

182 AOSIS, Chair Statement on SIDS Priorities at COP28 (27 November 2023).

III. Obligations of States Under International Law in Respect of Climate Change

64. States have robust obligations under international law to protect the climate system—that is, "the totality of the atmosphere, hydrosphere, biosphere and geosphere and their interactions"[183]—and other parts of the environment from the significant harms caused by anthropogenic GHG emissions. The conduct of States underpinning cumulative anthropogenic GHG emissions consists of both acts and omissions "over time in relation to activities that contribute to climate change and its adverse effects"[184]. The sheer breadth of the Request makes clear that international conventions and customary international law from a broad range of sources are implicated. In light of its mandate and expertise, COSIS focuses its submission on three key categories of obligations: respect for States' sovereignty and right to survival, and for the right to self-determination (Section A); mitigation of GHG emissions responsible for climate change under international environmental law and the law of the sea (Section B); and cooperation to prevent the worst effects of climate change, consistent with the principle of the common but differentiated responsibilities (Section C)[185].

65. In addressing these obligations consistent with its advisory jurisdiction, and in keeping with its prior jurisprudence, the Court may consider the applicability of both the customary and conventional formulations of these obligations, as well as potential breaches of these obligations by States through their acts and omissions[186]. As the Court observed in *Legal Consequences of the Separation of the Chagos Archipelago from Mauritius in 1965*, it is the function of the Court to "state the law applicable"[187]. That principle is equally relevant in the context of climate change for this Request as in past advisory contexts[188].

A. Respect for the Sovereignty of States and the Rights of Survival and Self-Determination

66. State sovereignty is foundational to the international legal order. The Court has referred to State sovereignty as a "fundamental principle" on which the "whole of international law rests"[189]. The right of every sovereign State to conduct its affairs on its territory without outside interference "is part and parcel of customary international law"[190].

---

183 UNFCCC, Art. 1.

184 Request, Preamble.

185 COSIS expects to address additional international obligations in due course at later stages of these proceedings.

186 *See, e.g.*, *Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory*, *Advisory Opinion*, *I.C.J. Reports 2004*, p. 198 ("*Wall* Advisory Opinion"), ¶¶ 123–137 (considering the content and breach of international conventions on human rights and humanitarian law); *Legality of the Threat or Use of Nuclear Weapons*, *Advisory Opinion*, *I.C.J. Reports* 1996, p. 226 ("*Nuclear Weapons* Advisory Opinion"), ¶¶ 53–63 (considering the content of multiple conventions addressing the acquisition and testing of nuclear weapons).

187 *See Legal Consequences of the Separation of the Chagos Archipelago from Mauritius in 1965*, *Advisory Opinion*, *I.C.J. Reports 2019*, p. 129 ("*Chagos* Advisory Opinion"), ¶ 137.

188 *Nuclear Weapons* Advisory Opinion, ¶¶ 23, 34.

189 *Military and Paramilitary Activities in and Against Nicaragua (Nicaragua* v. *United States)*, *Judgment*, *I.C.J. Reports 1986*, p. 14 ("*Nicaragua* v. *United States* Judgment"), ¶ 263

190 *Nicaragua* v. *United States* Judgment, ¶ 202; *see also* United Nations General Assembly, resolution 2131 (XX), Declaration on the Inadmissibility of Intervention in the Domestic Affairs of States and the Protection of their Independence and Sovereignty, document A/RES/2131(XX) (21 December 1965), Art. 1 ("No State

Specifically, the General Assembly's Declaration on Principles of International Law Concerning Friendly Relations and Co-Operation Among States ("Friendly Relations Declaration") provides that "[e]very State has an inalienable right to choose its political, economic, social and cultural systems, without interference in any form by another State"[191]. States have a correlative customary duty to respect the sovereignty of other States, including as an expression of the principle of sovereign equality reflected in Article 2(1) of the United Nations Charter[192]. These principles are reflected in customary international law[193].

67. Also foundational to the international legal order is the right of peoples to self-determination. The Friendly Relations Declaration provides that, "[b]y virtue of the principle of equal rights and self-determination of peoples enshrined in the Charter of the United Nations, all peoples have the right freely to determine, without external interference, their political status and to pursue their economic, social and cultural development"[194]. Furthermore, "every State has the duty to respect this right in accordance with the provisions of the Charter", as well as the "duty to promote, through joint and separate action, realization of the principle of equal rights and self-determination of peoples, in accordance with the provisions of the Charter"[195]. The Court has held that "[s]ince respect for the right to self-determination is an obligation *erga omnes*, all States have a legal interest in protecting that right"[196]. The ILC furthermore has recognized the right to self-determination as a peremptory norm of general international law in the Annex to the 2022 Draft Conclusions on Identification and Legal Consequences of Peremptory Norms of General International Law (*Jus Cogens*), and COSIS urges the Court in these proceedings to confirm this position[197].

68. Climate change threatens three fundamental aspects of these foundational principles for vulnerable States, especially small island States, by implicating: *first*, States' right to

---

has the right to intervene, directly or indirectly, for any reason whatever, in the internal or external affairs of any other State.").

191 United Nations General Assembly, resolution 2625 (XXV), Declaration on Principles of International Law concerning Friendly Relations and Cooperation among States in accordance with the Charter of the United Nations, document A/RES/2625(XXV) (24 October 1970) ("Friendly Relations Declaration"), p. 123.

192 *See e.g.*, *Nicaragua* v. *United States* Judgment, ¶ 292(6) (finding that the United States acted "in breach of its obligations under customary international law . . . not to violate . . . . [another state's] sovereignty"); Friendly Relations Declaration, p. 124.

193 *See, e.g.*, Friendly Relations Declaration, p. 124 ("The principles of the Charter which are embodied in this Declaration constitute basic principles of international law . . . ."); *Accordance with International Law of the Unilateral Declaration of Independence in Respect of Kosovo*, *Advisory Opinion*, *I.C.J. Reports 2010,* p. 403, ¶ 80 (finding that the Friendly Relations Declaration "reflects customary international law"); *Armed Activities on the Territory of the Congo (Democratic Republic of the Congo* v. *Uganda)*, *Judgment (Merits)*, *I.C.J. Reports 2005*, p. 168 ("*DRC* v. *Uganda* Merits Judgment"), Declaration of Judge Tomka, ¶ 3 (noting that the provisions of the Friendly Relations Declaration "are declaratory of customary rules").

194 Friendly Relations Declaration, p. 123.

195 *Id*., p. 123–124.

196 *Chagos* Advisory Opinion, ¶ 180.

197 ILC, Draft Conclusions on Identification and Legal Consequences of Peremptory Norms of General International Law (*Jus Cogens*), with Commentaries, document A/77/10 (2022), Conclusions 17, 23, Annex; *see also Chagos* Advisory Opinion, Separate Opinion of Judge Robinson, ¶ 77 ("In light of the analysis of the case law of the Court and Article 53 of the [Vienna Convention on the Law of Treaties], it is concluded that the right to self-determination is a norm of *jus cogens* . . . ."); *Chagos* Advisory Opinion, Separate Opinion of Judge Sebutinde, ¶ 13 ("[T]he inalienable right to self-determination is *jus cogens* (i.e. from which no derogation is permitted) . . . ."); *see also id*., ¶¶ 30–43.

territorial integrity; *second*, States' fundamental right to survival; and *third*, peoples' rights to self-determination.

69. *First*, climate change fundamentally and negatively impacts a State's territorial integrity by submerging major geographic features of coasts or islands on an unprecedented scale due to sea-level rise. Territorial integrity is a basic expression of sovereignty. As the Court has held, "[b]etween independent States, respect for territorial sovereignty is an essential foundation of international relations"[198]. The Court has acknowledged that States must respect other States' territorial integrity in a range of contexts involving both land and maritime boundaries[199].

70. The territorial integrity of States encompasses their permanent sovereignty over their natural resources. The Court has acknowledged that this principle reflects customary international law[200], citing to the repeated resolutions of the General Assembly, which has characterized this principle as covering a State's possession, use and disposal, over all its wealth, natural resources, and economic activities[201]. The principle is grounded in the obligation of States to respect other States' sovereignty: "The free and beneficial exercise of the sovereignty of peoples and nations over their natural resources must be furthered by the mutual respect of States based on their sovereign equality."[202] States have consistently

---

198 *Corfu Channel (United Kingdom* v. *Albania)*, *Judgment*, *I.C.J. Reports 1949* ("*Corfu Channel* Judgment"), p. 35; *see also* Friendly Relations Declaration, p. 124 ("[S]overeign equality includes . . . [t]he territorial integrity and political independence of the State . . . .").

199 *See, e.g.*, *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua)* and *Construction of a Road in Costa Rica along the San Juan River (Nicaragua* v. *Costa Rica)*, *Judgment*, *I.C.J. Reports 2015*, p. 665 ("*Border Area / Road* Judgment"), ¶ 93 (excavation of canals without consent); *Maritime Delimitation in the Caribbean Sea and the Pacific Ocean (Costa Rica* v. *Nicaragua)* and *Land Boundary in the Northern Part of Isla Portillos (Costa Rica* v. *Nicaragua)*, *Judgment*, *I.C.J. Reports 2018*, p. 139 ("*Costa Rica* v. *Nicaragua* Judgment"), ¶ 205(3)(a) (non-consensual placement of a military camp on another State's territory); *Right of Passage over Indian Territory (Merits)*, *Judgment*, *I.C.J. Reports 1960*, p. 6 ("*Right of Passage* Judgment"), p. 45 (right to refuse peaceful passage of another State's vessel over its land); *Nicaragua* v. *United States* Judgment, ¶¶ 250–251 (non-consensual incursions into another State's territorial waters and airspace, and mining operations in another State's ports).

200 *DRC* v. *Uganda* Merits Judgment, ¶ 244 ("[R]ecognizing the importance of this principle, which is a principle of customary international law"); *see also* International Covenant on Civil and Political Rights, *United Nations Treaty Series*, Vol. 999, p. 171 (1966) (Dossier No. 49) ("ICCPR"), Art. 47; International Covenant on Economic, Social, and Cultural Rights, *United Nations Treaty Series*, Vol. 993, p. 3 (1966) (Dossier No. 52) ("ICESCR"), Art. 25; N. Schrijver, *Sovereignty over Natural Resources: Balancing Rights and Duties* (1997) (Annex 3), pp. 20–25 (noting the relationship between State sovereignty and permanent sovereignty over natural resources).

201 United Nations General Assembly, resolution 1803 (XVII), Permanent Sovereignty over Natural Resources, document A/RES/1803 (XVII) (14 December 1962), ¶ 1 (referring to "[t]he right of peoples and nations to sovereignty over their natural wealth and resources"); United Nations General Assembly, resolution 3201 (S.VI), Declaration on the Establishment of a New International Economic Order, document A/RES3201(S.VI) (1 May 1974), ¶ 4(e) ("The new international economic order should be founded on full respect for. . . [f]ull permanent sovereignty of every State over its natural resources and all economic activities . . . ."); United Nations General Assembly, resolution 3281 (XXIX), Charter of Economic Rights and Duties of States, document A/RES/3281(XXIX) (12 December 1974), Art. 2(1) ("Every State has and shall freely exercise full permanent sovereignty, including possession, use and disposal, over all its wealth, natural resources and economic activities.").

202 *See* United Nations General Assembly, resolution 1803 (XVII), Permanent Sovereignty over Natural Resources, document A/RES/1803(XVII) (14 December 1962), ¶ 5.

recognized other States' right to territorial integrity, including through the Friendly Relations Declaration, which provides that the right to territorial integrity is "inviolable"[203].

71. For a State's territorial integrity to be "inviolable" and for it to have "permanent sovereignty" of its natural resources, international law requires that States continue to recognize the continuity of other States' territorial integrity on the basis of existing entitlements[204], particularly in light of conduct outside a State's own control that negatively impacts those entitlements. In the context of global warming, inviolability thus requires the continuity of sovereign entitlements for small island States, including maritime baselines, notwithstanding changes to the physical geography of their territory attributable to climate change. As the Co-Chairs of the ILC's Study Group on Sea-Level Rise in Relation to International Law ("ILC Study Group on Sea-Level Rise") wrote in February 2023: "Many of the States that are or will be adversely impacted by sea-level rise are developing States whose livelihoods and economies rely heavily on marine natural resources."[205] Small island States clearly fall within this group. The ILC further observed:

> If these States were to lose these entitlements outside of their own volition, this could be a violation of their "inalienable rights" inherent in their sovereignty, as recognized by States.[206]

The Co-Chairs also recognized that "[t]he principle of permanent sovereignty over natural resources . . . is also consistent with the solution of legal preservation of maritime zones and the natural resources as way to prevent the loss of existing entitlements"[207].

72. The presumption of the continuation of the State is a well-established principle of international law, requiring "continuity of our States even as their governments, constitutions, territories and populations change"[208]. Already, at least 104 States—representing a strong majority of island and coastal States—acknowledge that maritime baselines remain fixed at their current coordinates notwithstanding physical coastline changes brought about by sea-level rise[209].

---

[203] Friendly Relations Declaration, p. 124; *see also* United Nations Charter, Art. 2(4) ("All Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations.").

[204] *See* ILC, B. Aurescu & N. Oral, Co-Chairs of the Study Group on Sea-Level Rise in Relation to International Law, Additional Paper to the First Issues Paper (2020), document A/CN.4/761 (13 February 2023) (Dossier No. 103), ¶ 193.

[205] *Id*.

[206] *Id*.

[207] *Id*.

[208] J. Crawford, *The Creation of States in International Law* (2007) (Annex 13), pp. 667–668.

[209] *See* African, Caribbean, and Pacific Group of States ("ACP"), 9th Summit of Heads of State and Government, Nairobi Nguvu Ya Pamoja Declaration (11 December 2019), ¶ 24 (stressing "the need to act in solidarity with the concerned countries at the multilateral level, to ensure that the existing maritime boundaries are not affected by the impacts of climate change, and that ACP States are not deprived of rights and access to ocean resources") (representing the views of Angola, Antigua and Barbuda, Belize, Bahamas, Barbados, Benin, Botswana, Burkina Faso, Burundi, Cape Verde, Cameroon, Central African Republic, Chad, Comoros, the Republic of the Congo, Cook Islands, Côte d'Ivoire, Cuba, the Democratic Republic of the Congo, Djibouti, Dominica, the Dominican Republic, Eritrea, Eswatini, Ethiopia, Fiji, Gabon, Gambia, Ghana, Grenada, Republic of Guinea, Guinea-Bissau, Equatorial Guinea, Guyana, Haiti, Jamaica, Kenya, Kiribati, Lesotho, Liberia, Madagascar, Malawi, Maldives, Mali, Marshall Islands, Mauritania, Mauritius,

73. *Second*, climate change threatens the "fundamental right of every State to survival", especially in the case of small island States for whom the threat of vanishing under water is an existential threat[210]. This right, too, is foundational to international law. The "principle of self-preservation"—that is, a State's prerogative to "preserve its own existence"—has appeared in a variety of contexts, including before the Permanent Court of International Justice[211]. The International Law Commission ("ILC") called the right to survival a "postulate that there was no need to state" in its 1949 Draft Declaration on the Rights and Duties of States[212]. And in 2001, the ILC considered that the right to survival underpins peremptory

---

Micronesia, Mozambique, Namibia, Nauru, Niger, Nigeria, Niue, Palau, Papua New Guinea, Rwanda, Saint Christopher (Saint Kitts and Nevis), Saint Lucia, Saint Vincent and the Grenadines, Solomon Islands, Samoa, São Tomé and Príncipe, Senegal, Seychelles, Sierra Leone, Somalia, Sudan, Suriname, Tanzania, Timor-Leste, Togo, Tonga, Trinidad and Tobago, Tuvalu, Uganda, Vanuatu, Zambia, and Zimbabwe); Pacific Islands Forum, Declaration on Preserving Maritime Zones in the Face of Climate Change-Related Sea-Level Rise (6 August 2021) (signed by Australia, the Cook Islands, the Federated States of Micronesia, Fiji, French Polynesia, Kiribati, Nauru, New Caledonia, New Zealand, Niue, Palau, Papua New Guinea, the Marshall Islands, Samoa, the Solomon Islands, Tonga, Tuvalu, and Vanuatu); AOSIS, Leaders Declaration 2021 (22 September 2021) (affirming that there is no obligation under UNCLOS to update baselines and outer limits of maritime zones "notwithstanding any physical changes connected to climate change-related sea-level rise") (representing the views of Antigua and Barbuda, The Bahamas, Barbados, Belize, Cabo Verde, Comoros, Cook Islands, Cuba, Dominica, Dominican Republic, Fiji, Grenada, Guinea-Bissau, Guyana, Haiti, Jamaica, Kiribati, Maldives, Marshall Islands, Mauritius, Federated States of Micronesia, Nauru, Niue, Palau, Papua New Guinea, Saint Kitts (Saint Christopher) and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, São Tome and Principe, Seychelles, Singapore, Solomon Islands, Suriname, Timor-Leste, Tonga, Trinidad and Tobago, Tuvalu, and Vanuatu); Statement of Costa Rica on Item 82, 76th Session of the United Nations General Assembly (2 November 2021); United Nations General Assembly, Sixth Committee, Summary Record of the 19th Meeting, document A/C.6/76/SR.19 (10 December 2021), ¶ 28 (Antigua and Barbuda expressing the same view on behalf of the AOSIS members); United Nations General Assembly, Sixth Committee, Summary Record of the 20th Meeting, document A/C.6/76/SR.20 (10 December 2021), ¶ 58 (Egypt); *id*., ¶ 87 (Italy); United Nations General Assembly, Sixth Committee, Summary Record of the 21st Meeting, document A/C.6/76/SR.21 (10 December 2021), ¶ 55 (Chile); *id*., ¶ 80 (Germany); *id*., ¶ 120 (Estonia); *id*., ¶ 153–154 (Malaysia); United Nations General Assembly, Sixth Committee, Summary Record of the 22nd Meeting, document A/C.6/76/SR.22 (10 December 2021), ¶ 3 (Thailand); *id*., ¶ 32 (Argentina); *id*., ¶ 84 (Indonesia); *id*., ¶¶ 99–100 (Algeria); *id*., ¶¶ 103–104 (Cyprus); *id*., ¶ 118 (Tonga); *id*., ¶ 129 (Greece); ACP, Declaration of the 7th Meeting of OACPS Ministers in Charge of Fisheries and Aquaculture, document ACP/84/093/22 (8 April 2022), p. 8; United Nations General Assembly, Sixth Committee, Summary Record of the 27th Meeting, document A/C.6/77/SR.27 (28 October 2022), ¶ 12 (Romania); United Nations General Assembly, Sixth Committee, Summary Record of the 29th Meeting, document A/C.6/77/SR.25 (12 December 2022), ¶ 28 (Croatia); Security Council, 9260th Meeting, document S/PV.9260 (14 February 2023), p. 18 (Japan); *id*., Resumption 1 (14 February 2023), p. 2 (Philippines); written statements in ITLOS Case No. 31 of Chile (¶ 100), Japan (fn. 2); Federated States of Micronesia (¶¶ 54–55), and Nauru (¶ 4) (June 2023); oral statements in ITLOS Case No. 31 of Nauru (14 September 2023 (afternoon), p. 23), Mauritius (15 September 2023 (morning), pp. 32–33); Statement of Liechtenstein at the 23rd Meeting of the Sixth Committee of the United Nations General Assembly (23 October 2023), p. 2; United Nations General Assembly, Sixth Committee, Summary Record of the 25th Meeting, document A/C.6/78/SR.25 (25 October 2023), ¶ 42 (Ireland); Statement of Malta on Item 79, Meeting of the Sixth Committee of the United Nations General Assembly at Its 78th Session (27 October 2023); Statement of Spain on Item 79, Sixth Committee Meeting, 78th Session of the UNGA (27 October 2023), p. 4; Statement of the Republic of Korea on Item 79, Sixth Committee Meeting, 78th Session of the United Nations General Assembly (27 October 2023); Government of Malta, Statement at COP28 (5 December 2023); *see also* International Law Association, resolution 5/2018 (August 2018), p. 1.

210 *Cf. Nuclear Weapons* Advisory Opinion, ¶ 96.

211 *See* B. Cheng, *General Principles of Law as Applied by International Courts and Tribunals* (1953) (Annex 4), pp. 29–99.

212 Summary Records and Documents of the First Session Including the Report of the Commission to the General Assembly, *Yearbook of the International Law Commission*, 1949, Vol. I, p. 137, ¶ 14.

norms of general international law—that is, "substantive rules of conduct that prohibit what has come to be seen as intolerable because of the threat it presents to the *survival of States and their peoples* and the most basic human values"[213]. The existential threat posed by climate change attributable to polluting States clearly implicates this foundational right of climate-vulnerable States to survival.

74. *Third*, climate change negatively impacts the right of peoples to self-determination, which entails allowing peoples to "freely determine their political status and freely pursue their economic, social and cultural development", to quote Article 1 common to the International Covenant on Civil and Political Rights ("ICCPR") and the International Covenant on Economic, Social, and Cultural Rights ("ICESCR"). As noted above, the right to self-determination is both an obligation *erga omnes*, as well as a peremptory norm of general international law. Further, the Court has recognized, it is "a fundamental human right [with] a broad scope of application"[214], and the United Nations Secretary-General has noted in the context of the drafts of the ICCPR and ICESCR that "any enumeration of the components of the right is likely to be incomplete"[215].

75. International law recognizes a direct link between peoples' right to self-determination and the land on which they live. The Court has held that peoples "are entitled to exercise their right to self-determination in relation to their territory as a whole", and that the "the right to self-determination of peoples" includes "respect for the national unity and territorial integrity of a State or country"[216]. The Court has also recognized that all States also have the duty to jointly promote the realization of the right of self-determination, and to recognize that right of a people in relation to their land[217]. By definition, the peoples of small island States cannot have free choice over their political, economic, social, or cultural future if climate change threatens to submerge their territory or otherwise render their territory uninhabitable or threaten the very existence of the State. The right to self-determination therefore also reinforces the presumption of the continuation of the State.

76. International law also places special emphasis on the self-determination of Indigenous peoples, including small islanders, who, by virtue of the loss of their land, suffer negative impacts to their political, economic, social, and cultural traditions rooted in that land. In its 2007 Declaration on the Rights of Indigenous Peoples ("UNDRIP"), the General Assembly acknowledged the intimate connection between Indigenous peoples and their land. The Declaration's Preamble recognizes the

> urgent need to respect and promote the inherent rights of indigenous peoples which derive from their political, economic and social structures and from their cultures, spiritual traditions,

---

213 Articles on Responsibility of States for Internationally Wrongful Acts, with Commentaries, *Yearbook of the International Law Commission*, 2001, Vol. II (Part Two), p. 107 ("ARSIWA"), Commentary to Art. 40, ¶ 3 (emphasis added).

214 *Chagos* Advisory Opinion, ¶ 144.

215 United Nations Secretary-General, Draft International Covenants on Human Rights Annotation Prepared by the Secretary-General, document A/2929 (1 July 1955), p. 43, ¶ 15.

216 *Chagos* Advisory Opinion, ¶¶ 155, 160; *see also* Friendly Relations Declaration, p. 124.

217 *Wall* Advisory Opinion, ¶ 156.

> histories and philosophies, *especially their rights to their lands*, territories and resources[218].

This clause reflects what Judge Antônio Augusto Cançado Trindade, then a Member of the Inter-American Court of Human Rights, recognized as the "particular value" that Indigenous peoples attribute to their land: "One cannot live in constant exile and displacement. Human beings share a spiritual need for roots."[219] UNDRIP enumerates States' obligations with regard to the land of Indigenous peoples[220], recognizing that these rights and others that it protects "constitute the minimum standards for the survival, dignity and well-being of the Indigenous peoples of the world"[221].

77. The Co-Chairs of the ILC's Study Group on Sea-Level Rise in Relation to International Law have underscored the risks of climate change to small island States and their peoples, including Indigenous peoples:

> Land inundation stemming from sea-level rise can pose risks to the territorial integrity of States with extensive coastlines and to small island States; at its most extreme, sea-level rise may threaten the continued existence of some low-lying States. . . . In these and other cases, the impact of sea-level rise may deprive indigenous peoples of their traditional territories and sources of livelihoods. The potential loss of traditional territories from sea-level rise and coastal erosion, for example,

---

218 UNDRIP, Preamble; *see also* International Labour Organization, Convention No. 169 Concerning Indigenous and Tribal Peoples in Independent Countries, *United Nations Treaty Series*, Vol. 1650, p. 383 (1989), Art. 15(1) ("The rights of the peoples concerned to the natural resources pertaining to their lands shall be specially safeguarded. These rights include the right of these peoples to participate in the use, management and conservation of these resources.").

219 Inter-American Court of Human Rights, *Indigenous Community Yakye Axa* v. *Paraguay*, Judgment (Interpretation of the Judgment of Merits, Reparations, and Costs) (6 February 2006), Concurring Opinion of Judge Cançado Trindade, ¶ 13.

220 *See* UNDRIP, Art. 8(2)(b) ("States shall provide effective mechanisms for prevention of, and redress for [a]ny action which has the aim or effect of dispossessing them of their lands, territories or resources."); *id*., Art. 10 ("Indigenous peoples shall not be forcibly removed from their lands or territories. No relocation shall take place without the free, prior and informed consent of the indigenous peoples concerned and after agreement on just and fair compensation and, where possible, with the option of return."); *id*., Art. 25 ("Indigenous peoples have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied and used lands, territories, waters and coastal seas and other resources and to uphold their responsibilities to future generations in this regard."); *id*., Art. 26(1) ("Indigenous peoples have the right to the lands, territories and resources which they have traditionally owned, occupied or otherwise used or acquired."); *id*., Art. 26(2) ("Indigenous peoples have the right to own, use, develop and control the lands, territories and resources that they possess by reason of traditional ownership or other traditional occupation or use, as well as those which they have otherwise acquired."); *id*., Art. 29(1) ("Indigenous peoples have the right to the conservation and protection of the environment and the productive capacity of their lands or territories and resources. States shall establish and implement assistance programmes for indigenous peoples for such conservation and protection, without discrimination."); *id*., Art. 32(1) ("Indigenous peoples have the right to determine and develop priorities and strategies for the development or use of their lands or territories and other resources."). UNDRIP enjoys broad acceptance by States: the United Nations General Assembly adopted it with 143 votes in favor, and the four Member States that voted against it—Australia, Canada, New Zealand, and the United States—now support it. See United Nations, Department of Economic and Social Affairs, United Nations Declaration on the Rights of Indigenous Peoples, https://social.desa.un.org/issues/indigenous-peoples/united-nations-declaration-on-the-rights-of-indigenous-peoples.

221 *Id*., Art. 43.

> threatens the cultural survival, livelihoods and territorial integrity of indigenous peoples.[222]

78. These obligations reflect first principles of international law that protect States and peoples from significant external threats to their inviolable sovereignty and rights to survival and self-determination. Climate change is just such a threat to almost every aspect of what it means to exercise State authority or to constitute a people.

B. OBLIGATIONS UNDER INTERNATIONAL ENVIRONMENTAL LAW AND THE LAW OF THE SEA TO MITIGATE AND ADAPT TO CLIMATE CHANGE

79. States' obligations under international environmental law and the law of the sea require them to protect the climate system—"the totality of the atmosphere, hydrosphere, biosphere and geosphere and their interactions"[223]—as well as other parts of the environment from the significant, catastrophic harms that GHG emissions cause[224]. They must do so by addressing the root problem with the requisite level of due diligence, namely "reduc[ing] emissions or enhanc[ing] the sinks of greenhouse gases"[225]. These include the customary obligation to take all measures necessary to prevent significant harm to the environment, including the climate system, resulting from anthropogenic GHG emissions, and customary and treaty obligations to protect and preserve the marine environment. Independently and together, these obligations require States, *at a minimum*, to take all measures objectively necessary to reduce GHG emissions in line with limiting global average temperature rise associated with negative impacts from climate change to no more than 1.5ºC above pre-industrial levels urgently and in accordance with the best available science.

1. Prevention of Significant Transboundary Environmental Harm

80. This Subsection examines (*i*) the source and scope of the customary harm prevention rule to prevent significant transboundary environmental harm, (*ii*) States' due diligence obligations when the principle is triggered, and (*iii*) States' obligations under the harm prevention rule with respect to the conduct of States that is the cause of climate change.

i. Origin and Scope of the Harm Prevention Rule

81. States have an obligation under customary international law to take all necessary measures to prevent significant transboundary harm to the environment of other States or to areas beyond national control from climate change. As recognized and articulated in the landmark *Trail Smelter* award[226], the harm prevention rule is a foundational principle of

---

222 ILC, P. Galvão Teles & J. Ruda Santolaria, Co-Chairs of the Study Group on Sea-Level Rise in Relation to International Law, Second Issues Paper, document A/CN.4/752 (19 April 2022) (Dossier No. 102), ¶ 252(j).

223 UNFCCC, Art. 1.

224 The global nature of climate change and its far-ranging impacts entail a broad array of obligations on States under international environmental law. In the interest of keeping this Written Statement as concise as possible, COSIS does not seek to provide a comprehensive analysis of these obligations. Instead, it has focused here on those obligations of particular relevance to small island States, without prejudice to States' other obligations under international law.

225 IPCC, Working Group I, "Appendix VII: Glossary", *Sixth Assessment Report: The Physical Science Basis* (2021), p. 2239.

226 *See Trail Smelter (United States / Canada)*, Final Award, 11 March 1941, *Reports of International Arbitral Awards*, Vol. III, pp. 1905–1982 ("*Trail Smelter* Award") at 1965.

international environmental law[227]. The Court observed in *Legality of the Threat or Use of Nuclear Weapons*:

> [T]he existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment.[228]

States owe this obligation with respect to all other States impacted by harms originating from areas under their jurisdiction or control[229].

82. States further owe the obligation not to cause environmental harm on an *erga omnes* basis in relation to harms to the environment outside of national jurisdiction, as well as in relation to harms having a serious or far-reaching effect, given the interest of the international community as a whole in the environment[230]. As the Court has stated, *erga omnes* obligations are owed by "a State towards the international community as a whole . . . [i]n view of the importance of the rights involved", such that "all States can be held to have a legal interest in their protection"[231]. Obligations not to cause harm to the environment meet this definition on account of the "often irreversible character of damage to the environment", as well as "growing awareness of the risks [such damage poses] for mankind—for present and future generations"[232]. In the Court's words, the environment is "not an abstraction but represents the living space, the quality of life and the very health of human beings, including generations unborn"[233]. Hence, "vigilance and prevention are required"[234], especially in the context of climate change where the best available science, as reflected in the IPCC's reports, irrefutably demonstrates that climate change has caused and will continue to cause global environmental

---

227 *See, e.g.*, Declaration of the United Nations Conference on the Human Environment, document A/CONF.48/14/Rev.1 (16 June 1972) (Dossier No. 136) ("Stockholm Declaration"), Principle 21; Rio Declaration on Environment and Development, document A/CONF.151/26 (Vol. I) (Annex I) (12 August 1992) (Dossier No. 137) ("Rio Declaration"), Principle 2.

228 *Nuclear Weapons* Advisory Opinion, ¶ 29; *see also* Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area (Request for Advisory Opinion Submitted to the Seabed Disputes Chamber), *Advisory Opinion of 1 February 2011*, *ITLOS Reports 2011*, p. 10 ("*Area* Advisory Opinion"), ¶ 180.

229 *Pulp Mills on the River Uruguay (Argentina* v. *Uruguay)*, *Judgment*, *I.C.J. Reports 2010*, p. 14 ("*Pulp Mills* Judgment"), ¶ 197.

230 *Nuclear Weapons* Advisory Opinion, ¶ 29; *Gabčíkovo-Nagymaros Project (Hungary/Slovakia)*, *Judgment*, *I.C.J. Reports 1997*, p. 7 ("*Gabčíkovo-Nagymaros* Judgment"), Separate Opinion of Judge Weeramantry, pp. 117–118.

231 *Barcelona Traction, Light and Power Company, Limited (Belgium* v. *Spain)*, *Judgment*, *I.C.J. Reports 1970*, ¶ 33.

232 *Gabčíkovo-Nagymaros* Judgment, ¶ 140.

233 *Nuclear Weapons* Advisory Opinion, ¶ 29.

234 *Gabčíkovo-Nagymaros* Judgment, ¶ 140.

damage that implicates "the greater interests of humanity and planetary welfare" sufficient to "transcend the sphere of bilateral relations"[235].

83. The harm prevention rule imposes a rigorous obligation with broad applicability to match the critical importance of the global environment as the necessary predicate to all human life. As the Court found in *Pulp Mills on the River Uruguay*, States must "use all the means at [their] disposal" to prevent transboundary harm[236]. This duty applies to activities conducted within a State's jurisdiction or control that cause harm to another State's territory or to areas beyond national jurisdiction[237], regardless of whether public or private conduct is involved[238]. The harm prevention rule also applies notwithstanding the implication of the conduct of multiple States. As the Court noted in *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina* v. *Serbia and Montenegro)*, where action by more than one State is required to prevent harm, each individual State is nonetheless obligated to "take all measures . . . which [a]re within its power" to prevent that harm[239].

84. The obligation is triggered where the risk of harm is both foreseeable and significant[240]. In its Articles on Prevention of Transboundary Harm from Hazardous Activities, the ILC noted that, "[i]t is to be understood that 'significant' is something more than 'detectable' but need not be at the level of 'serious' or 'substantial'"[241]. In other words, it

---

235 *Id*., Separate Opinion of Judge Weeramantry, p. 115; ARSIWA, Commentary to Art. 48, ¶ 7 (recognizing that obligations "concern[ing], for example, the environment" are owed *erga omnes* because they concern "some wider common interest" that "transcend[s] the sphere of bilateral relations").

236 *Pulp Mills* Judgment, ¶ 101.

237 *Nuclear Weapons* Advisory Opinion, ¶ 29.

238 *Pulp Mills* Judgment, ¶ 197.

239 *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina* v. *Serbia and Montenegro)*, *Judgment*, *I.C.J. Reports 2007*, p. 43 ("*Bosnian Genocide* Judgment"), ¶ 430.

240 *Pulp Mills* Judgment, ¶ 101; Articles on Prevention of Transboundary Harm from Hazardous Activities, with Commentaries, *Yearbook of the International Law Commission*, 2001, Vol. II (Part Two), document A/56/10 (2001) ("ILC Articles on Transboundary Harm"), Commentary to Art. 3, ¶¶ 5, 18.

241 Although not all of the ILC Articles on Transboundary Harm may reflect customary international law, at least its first three articles—scope, use of terms, prevention, and cooperation—have been influential since the ILC published them in 2001 and the General Assembly "[*c*]*ommend*[*ed*] . . . them to the attention of Governments" in 2007. *See* United Nations General Assembly, resolution 62/68, Consideration of Prevention of Transboundary Harm from Hazardous Activities and Allocation of Loss in the Case of Such Harm, document A/RES/62/68 (8 January 2008), ¶ 3. A significant number of States and international organizations relied on them to address the merits of the question before ITLOS in Case No. 31. See the written statements of Bangladesh (¶ 37), Mauritius (¶ 80), Micronesia (¶ 40), New Zealand (¶ 52), Rwanda (¶ 193), Singapore (¶ 33), the European Union (¶ 25), the International Union for the Conservation of Nature (¶¶ 138, 190, 204), and COSIS; and the oral statements of COSIS (12 September 2023 (morning), pp. 7–13, 22), Belize (18 September 2023 (morning), pp. 36, 39), the European Union (20 September 2023 (morning), pp. 27, 30, 32, 35), France (25 September 2023 (morning), p. 11), and the Netherlands (25 September 2023 (morning), p. 25). International and regional courts and tribunals, too, have relied on these articles. *See Area* Advisory Opinion, ¶ 116 (Art. 3); *South China Sea (Philippines* v. *China)*, PCA Case No. 2013-19, Award (12 July 2016) ("*South China Sea* Award"), ¶ 985 (Art. 4); Inter-American Court of Human Rights, State Obligations in Relation to the Environment in the Context of the Protection and Guarantee of the Rights to Life and to Personal Integrity, Case No. OC-23/17, Advisory Opinion (15 November 2017), ¶ 136 (Arts. 1, 2, 3). They are also among the materials that the United Nations Secretary-General considered "relevant" to the present proceedings by including them in the dossier "likely to throw light upon the question" per Article 65(2) of the Rules of the Court. *See Obligations of States in*

need only "lead to a real detrimental effect" that is "susceptible of being measured"[242]. Further, "on account of the often irreversible character of damage to the environment"[243], the precautionary principle—widely adopted by international courts and tribunals[244]—requires States to act "[w]here there are threats of serious or irreversible damage" despite "lack of full scientific certainty" as to the severity or foreseeability of that damage[245].

85. According to the ILC, the "notion of risk is . . . to be taken objectively, as denoting an appreciation of possible harm resulting from an activity which a properly informed observer had or ought to have had"[246]. The ILC defines the relevant risk as encompassing a spectrum ranging from "a high probability of causing significant transboundary harm" to "a low probability of causing disastrous transboundary harm"[247]. As the ILC points out in its commentary, it is "the combined effect of 'risk' and 'harm' which sets the threshold"[248].

86. As set out in Chapter II above, the conclusions of the IPCC leave no question that the harm prevention rule applies to the State conduct that is the cause of climate change in light of the objectively high and catastrophic risk posed to the natural environment and human social, economic, and cultural systems, especially in small island States. The international consensus around this body of unequivocal scientific evidence clearly implicates the harm prevention rule, including by meeting the definition of "transboundary atmospheric pollution" set out in the ILC's Guidelines on the Protection of the Atmosphere[249]. When the obligation to do no harm is triggered, it requires States to take all measures necessary to prevent the underlying harm, subject to the obligation to undertake such measures with due diligence[250].

ii. Due Diligence to Prevent Significant Transboundary Environmental Harm, Including Harm to the Climate System

87. As ITLOS's Seabed Disputes Chamber explained, due diligence is "an obligation to deploy adequate means, to exercise best possible efforts, *to do the utmost*, to obtain this result"[251]. The jurisprudence of international courts and tribunals explains that the obligation to act with due diligence in the environmental context requires not only the adoption of

---

Respect of Climate Change (Request for an Advisory Opinion), Introductory Note of the Secretary-General (30 June 2023), ¶ 12.

242 ILC Articles on Transboundary Harm, Art. 2, ¶ 4.

243 *Gabcikovo-Nagymaros* Judgment, ¶ 140.

244 *See, e.g.*, *MOX Plant (Ireland* v. *United Kingdom)*, *Provisional Measures*, *Order of 3 December 2001, ITLOS Reports 2001,* p. 95 ("*MOX Plant* Order"), ¶¶ 71–81; *Southern Bluefin Tuna (New Zealand* v. *Japan; Australia* v. *Japan)*, *Provisional Measures, Order of 27 August 1999, ITLOS Reports 1999*, p. 280, ¶¶ 79–80; *Area* Advisory Opinion, ¶ 131; *Pulp Mills* Judgment, ¶ 164.

245 Rio Declaration, Principle 15.

246 ILC Articles on Transboundary Harm, Art. 1, ¶ 14.

247 *Id*., Art. 2(a).

248 *Id*., Art. 2, ¶ 2.

249 *See id*., Arts. 1, 2. That definition requires: "the introduction or release by humans, directly or indirectly, into the atmosphere of substances or energy contributing to significant deleterious effects extending beyond the State of origin of such a nature as to endanger human life and health and the Earth's natural environment". Guidelines on the Protection of the Atmosphere, with Commentaries, document A/76/10 (2021), Guideline 1(b).

250 *Pulp Mills* Judgment, ¶ 101; ILC Articles on Transboundary Harm, Art. 3, ¶ 10; ITLOS, *Area* Advisory Opinion, ¶ 116.

251 *Area* Advisory Opinion, ¶ 110 (emphasis added).

appropriate rules and measures, but also "a certain level of *vigilance in their enforcement* and the *exercise of administrative control* applicable to public and private operators, such as the monitoring of activities undertaken by such operators"[252]. The ILC characterizes the principle of prevention as an obligation of due diligence:

> States are under an obligation to take unilateral measures to prevent significant transboundary harm or at any event to minimize the risk thereof . . . . Such measures include, first, *formulating policies* designed to prevent significant transboundary harm or to minimize the risk thereof and, secondly, *implementing those policies*. Such policies are expressed in legislation and administrative regulations and implemented *through various enforcement mechanisms*.[253]

88. Due diligence entails substantive requirements, such as the adoption and proactive enforcement of appropriate measures to prevent transboundary environmental harm, as well as procedural requirements[254]. Relevant procedural requirements include the obligations to undertake environmental impact assessments[255], and to notify and consult other States[256]. States must also cooperate with one another, in good faith[257], and directly or through relevant international organizations, in order to protect and preserve the marine environment[258]. All these duties are continuous[259].

89. Although States in principle retain discretion to choose the specific measures in the exercise of their due diligence obligations, that does not mean such discretion is unlimited. Critically, the assessment of States' obligations is *objective*. The Court has made clear that an obligation to take measures "is *not* . . . purely a question for the subjective judgment of the

---

252 *Pulp Mills* Judgment, ¶ 197 (emphases added); *see also Area* Advisory Opinion, ¶¶ 115, 239; *Request for an Advisory Opinion Submitted by the Sub-Regional Fisheries Commission*, Case No. 21, *Advisory Opinion*, *ITLOS Reports 2015*, p. 4 ("*SRFC* Advisory Opinion"), ¶ 131; *South China Sea* Award, ¶ 944.

253 ILC Articles on Transboundary Harm, Art. 3, ¶ 10 (emphasis added); ITLOS, *Area* Advisory Opinion, ¶ 116.

254 *See* ILC Articles on Transboundary Harm, General Commentary, ¶ 1; *see also* J. Brunnée, "Procedure and Substance in International Environmental Law", in *Collected Courses of the Hague Academy of International Law*, Vol. 75 (2020), pp. 124–129, 140–141.

255 *See Pulp Mills* Judgment, ¶ 204; ILC Articles on Transboundary Harm, Art. 7.

256 *See Gabčíkovo-Nagymaros* Judgment, ¶¶ 140–147; ILC Articles on Transboundary Harm, Art. 8.

257 *SRFC* Advisory Opinion, ¶ 210; ILC Articles on Transboundary Harm, Art. 4.

258 *MOX Plant* Order, ¶ 82; *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 ("*Straits of Johor* Order"), ¶ 92 (quoting *MOX Plant* Order); *South China Sea* Award, ¶¶ 984–986.

259 *Pulp Mills* Judgment, ¶ 205; *Border Area / Road* Judgment, ¶ 161; *see also* J. Viñuales, "Due Diligence in International Environmental Law: A Fine-Grained Cartography", in *Due Diligence in the International Legal Order* (Heike Krieger et al. eds. 2020) (Annex 5), p. 113; *Trail Smelter* Award, p. 1963 (finding that subsequent measures could have cured initial negligence).

party"[260]. As the International Law Association has observed, "discretion in the choice of means can be limited" because "a specific type of measure is indispensable to avoid harm"[261].

90. A State's capability to take measures is generally considered a relevant factor in determining the level of diligence required[262]. It is well established that "the degree of care expected of a State with a well-developed economy and human and material resources . . . is different from States which are not so well placed"[263]. Yet, this cannot be used to justify non-action by a State, which must nevertheless take necessary steps to prevent significant harm to the climate system and other parts of the environment resulting from activities within its jurisdiction or control that emit GHGs[264].

91. Objective assessment of the risk must account for, first and foremost, the level of risk and foreseeability of the harm. As the Seabed Disputes Chamber observed in its advisory opinion in *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area*, "the standard of due diligence has to be more severe for the riskier activities"[265]. This accords with the ILC's reference to "the combined effect of 'risk' and 'harm'" in setting the threshold to trigger States' obligations[266]. Multiple States and international organizations, including COSIS, affirmed that position in their written statements submitted to ITLOS in June 2023 in *Request for an Advisory Opinion Submitted by the Commission of Small Island States on Climate Change and International Law*[267].

92. The measures objectively required to prevent a certain type of transboundary harm to the environment come from the international consensus around the best available science. Again, in the words of the Seabed Disputes Chamber, "measures considered sufficiently diligent at a certain moment may become not diligent enough in light, for instance, *of new scientific or technological knowledge*"[268]. Scientific evidence thus not only determines the risk and severity of harm, but also the measures "indispensable to avoid that harm"[269]. The ILC has made clear that States must also "keep abreast of technological changes and scientific

---

260 *Certain Iranian Assets (Iran* v. *United States)*, *Judgment*, *I.C.J. Reports 2023*, p. ___ ("*Certain Iranian Assets* Merits Judgment"), ¶ 106 (emphasis added) (internal quotation marks omitted) (citing *Nicaragua* v. *United States* Judgment, ¶ 282, and *Oil Platforms (Iran* v. *United States), Judgment*, *I.C.J. Reports 2003*, p. 183, ¶ 43).

261 International Law Association, Study Group on Due Diligence in International Law, Second Report (2016), pp. 7–8.

262 *Bosnian Genocide* Judgment, ¶ 430.

263 ILC Articles on Transboundary Harm, Art. 3, ¶ 17.

264 *Id*., Art. 3, ¶ 13.

265 *Area* Advisory Opinion, ¶ 117; *see also Alabama Claims (United States* v. *United Kingdom)*, Award of 8 May 1871, *Reports of International Arbitral Awards*, Vol. 125, p. 128 (2012) at 129 (finding that due diligence "ought to be exercised by neutral governments in exact proportion to the risks to which either of the belligerents may be exposed, from a failure to fulfil the obligations of neutrality on their part").

266 ILC Articles on Transboundary Harm, Art. 2, ¶ 2.

267 See the written statements in ITLOS Case No. 31 of the African Union (¶¶ 171, 228), Bangladesh (¶ 37), Belize (¶ 68), Canada (¶ 54), COSIS (¶¶ 54, 232, 281, 284, 361, 425), the European Union (¶ 20), France (¶¶ 107, 144), the International Union for Conservation of Nature (¶ 79), the Republic of Korea (¶ 10), Mauritius (¶ 80), Mozambique (¶ 3.62), New Zealand (¶ 58), Sierra Leone (¶ 64), Singapore (¶ 33), and the United Kingdom (¶¶ 66, 67).

268 *Area* Advisory Opinion, ¶ 117 (emphasis added); *see also* ILC Articles on Transboundary Harm, Art. 3, ¶ 11; *Gabčíkovo-Nagymaros* Judgment, ¶ 140.

269 International Law Association, Study Group on Due Diligence in International Law, Second Report (2016), pp. 7–8.

developments"[270]. Consistent with this approach, at COP28, the States Parties to the Paris Agreement repeatedly reaffirmed "the importance of the *best available science* for effective climate action"[271].

93. Likewise, relevant international rules, standards, and instruments can also "give[] particular shape" to due diligence obligations[272]. For example, the tribunal in the *South China Sea* arbitration read the due diligence obligation in Article 192 of UNCLOS "against the background of other applicable international law" and noted that the "general corpus of international law relating to the environment . . . informs the content of . . . Article 192"[273].

94. The obligation of due diligence as applied in the context of climate change is exacting. The best available science confirms with a high degree of confidence that the harm to the environment of cumulative GHG emissions over time has not only crossed the threshold of significance but moved to the extreme of the risk spectrum contemplated by the ILC. Simply put, Earth faces *a high probability of disastrous harm*. The IPCC has concluded with high confidence that climate change "has caused *substantial damages*, and *increasingly irreversible losses*, in terrestrial, freshwater, cryospheric, and coastal and open ocean ecosystems", as set out in Chapter II above[274]. To give just one example, the IPCC concludes that 70 to 90 percent of tropical corals will likely disappear as a result of mass bleaching and mortality[275], with devastating effects on marine biodiversity[276].

95. The best available science makes clear that climate change poses a very high risk of catastrophic harm. For some small island States, the risks are existential. As a result, States must exercise nothing short of the *highest* level of due diligence—measured on an objective basis—when taking all measures necessary to prevent significant harm to the environment resulting from the activities under their jurisdiction or control that contribute to climate change and its effects. Importantly, given the irreversibility of the significant, catastrophic harm caused to the climate system and other parts of the environment, major State emitters of GHGs have already breached their obligations under the prevention principle.

96. In some cases, violations of the obligation to prevent transboundary environmental harm may constitute violations of a peremptory norm of general international law on account of the rapidly evolving situation with respect to global climate change and the increasingly

---

270 ILC Articles on Transboundary Harm, Art. 3, ¶ 11.

271 COP28, UAE Just Transition Work Programme, decision -/CMA.5 (Advance Unedited Version), p. 1 (emphasis added); *see also, e.g.*, COP28, Outcome of the First Global Stocktake, decision -/CMA.5 (Advance Unedited Version) (13 December 2023), ¶ 6 (committing to "accelerate action in this critical decade *on the basis of the best available science*" (emphasis added)); *id*., ¶ 28(d) (calling on States Parties to "[t]ransition[] away from fossil fuels in energy systems, in a just, orderly and equitable manner, accelerating action in this critical decade, so as to achieve net zero by 2050 *in keeping with the science*" (emphasis added)); *id*., ¶ 39 (encouraging States Parties to come forward with NDCs that reflect "ambitious, economy-wide emission reduction targets . . . aligned with limiting global warming to 1.5C, *as informed by the latest science*" (emphasis added)).

272 *South China Sea* Award, ¶ 959.

273 *Id*., ¶¶ 941, 956, 959

274 *See* § II.B.3 above (citing IPCC, "Summary for Policymakers", *Sixth Assessment Synthesis Report* (2023) (Dossier No. 78), p. 5 (emphasis added)).

275 *See id*. (citing IPCC, "Chapter 3: Impacts of 1.5°C of Global Warming on Natural and Human Systems", *Special Report: Global Warming of 1.5°C* (2018), pp. 179, 229–230 (box 3.4)).

276 *See id*. (citing IPCC, "Chapter 3: Impacts of 1.5°C of Global Warming on Natural and Human Systems", *Special Report: Global Warming of 1.5°C* (2018), pp. 229–230 (box 3.4)).

severe effects resulting from the failure of States to limit GHG emissions. As the First Report of the ILC's Special Rapporteur on Peremptory Norms of General International Law (*Jus Cogens*) explains, customary rules attain peremptory status because they are "basic considerations of humanity"[277]. And as the Special Rapporteur's Fourth Report further notes, there is growing support for a peremptory norm on the environment given the "importance of environmental rules for the very survival of humanity and the planet"[278]. The ILC put forward this idea in 1976 in its work on State responsibility when it observed that "massive pollution of the atmosphere [and] of the seas" may evoke such basic concerns[279].

2. Protection and Preservation of the Marine Environment Under UNCLOS

97. Part XII of UNCLOS sets out a comprehensive legal framework under the law of the sea for the protection and preservation of the marine environment. Part XII begins with Article 192, titled "General Obligation", which provides: "States have the obligation to protect and preserve the marine environment." This obligation, stated broadly and declaratively in Article 192 and further addressed in Article 194, reflects customary international law[280]. Like other environmental obligations contained in multilateral treaties, these obligations are also owed on an *erga omnes partes* basis[281].

98. Article 192 creates a broad substantive obligation with both positive and negative dimensions, requiring States to take positive action to protect and preserve the marine environment, as well as to refrain from degrading the marine environment[282]. It is an obligation of due diligence[283], measured on an objective basis[284]. In the context of climate change, Article 192 requires States to both mitigate and adapt their environment to climate change, including by reducing GHG emissions and preserving and restoring the ocean as a critical carbon sink[285].

---

277 ILC, D. Tladi, Special Rapporteur on Peremptory Norms of General International Law (*Jus Cogens*), First Report, document A/CN.4/693 (8 March 2016), ¶ 71.

278 ILC, D. Tladi, Special Rapporteur on Peremptory Norms of General International Law (*Jus Cogens*), Fourth Report, document A/CN.4/727 (31 January 2019), ¶¶ 134, 136; *see also* Draft Articles on State Responsibility, *Yearbook of the International Law Commission*, 1976, Vol. II (Part Two), p. 95, Commentary to Draft Art. 19, ¶¶ 15, 32 (noting, in the context of draft articles on peremptory norms of general international law, the "imperative need to protect the most essential common property of mankind and, in particular, to safeguard and protect the human environment for the benefit of present and future generations").

279 Draft Articles on State Responsibility, *Yearbook of the International Law Commission*, 1976, Vol. II (Part Two), Draft Art. 19(d), pp. 95–96.

280 *See* M. Nordquist et al. (eds.), "Article 192: General Obligation", in *United Nations on the Law of the Sea 1982: A Commentary* (2012), Vol. IV (2002) (Annex 7), p. 39 (concluding that Article 192 "proclaims in general and universal terms what is regarded as the right or the duty of every State as a general principle of international law"); *see also* D. Czybulka, "Article 192: General Obligation" in *United Nations Convention on the Law of the Sea: A Commentary* (A. Prölß ed., 2017) (Annex 8), pp. 1284–1286.

281 *See Whaling in the Antarctic (Australia* v. *Japan: New Zealand intervening)*, *Judgment*, *I.C.J. Reports 2014*, p. 226, ¶ 247; ARSIWA, Article 48, ¶ 10 (observing that "an obligation aimed at protection of the marine environment [is] in the collective interest"); *Area* Advisory Opinion, ¶ 180.

282 *South China Sea* Award, ¶ 941; M. Nordquist et al. (eds.), "Article 192: General Obligation", in *United Nations on the Law of the Sea 1982: A Commentary* (2012), Vol. IV (2002) (Annex 7), pp. 40–41.

283 *South China Sea* Award, ¶¶ 944, 956, 959.

284 *See* § III.1 above.

285 *See* §§ II.C–II.D, above.

99. Article 194 of UNCLOS also sets out specific obligations regarding marine pollution by GHG emissions in furtherance of Article 192's broader mandate to protect and preserve the marine environment from climate change. Article 194 is engaged where an activity results in "pollution of the marine environment". Article 1(1)(4) defines such pollution as:

> the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities[286].

100. GHG emissions clearly satisfy Article 1(1)(4). Human activities emit GHG into the atmosphere, which direct carbon dioxide (a substance) and heat in the form of energy into the marine environment, causing a wide array of deleterious effects[287]. This threshold point garnered overwhelming consensus in the ITLOS proceedings: by the end of the hearing, thirty States and international organizations agreed that GHG emissions constituted pollution of the marine environment, with not a single State expressly taking the contrary view[288].

101. When the definition in Article 1(1)(4) is met, Article 194(1) requires States to "take, individually or jointly as appropriate, all measures . . . that are necessary [*prennent . . . toutes les mesures . . . nécessaires*] 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"[289]. This obligation is rigorous: as the Court

---

[286] UNCLOS, *United Nations Treaty Series*, Vol. 1833, p. 3 (1982) (Dossier No. 45) ("UNCLOS"), Art. 1(1)(4).

[287] *See* ITLOS, *Request for an Advisory Opinion Submitted by the Commission of Small Island States on Climate Change and International Law*, Case No. 31, Written Statement of COSIS (16 June 2023); *id*., Oral Statement of COSIS, document ITLOS/PV.23/C31/2/Rev.1 (11 September 2023 (afternoon)), pp. 24–29. COSIS has submitted the positions summarized herein before ITLOS in Case No. 31 concerning the Commission's request of 12 December 2023. COSIS set out its position on States Parties' obligations under UNCLOS with respect to climate change in its 125-page Written Statement of 16 June 2023 and over two days at the September 2023 hearing.

[288] See the oral statements in ITLOS Case No. 31 of COSIS (11 September 2023 (afternoon), pp. 24–29); Australia (13 September 2023 (morning), p. 6); Germany (13 September 2023 (morning), p. 22); Argentina (13 September 2023 (afternoon), pp. 6, 10); Bangladesh (13 September 2023 (afternoon), p. 19); Portugal (14 September 2023 (morning), pp. 19-20); Djibouti (14 September 2023 (morning), p. 30); Guatemala (14 September 2023 (afternoon), p. 12); Latvia (15 September 2023 (morning), p. 11); Mauritius (15 September 2023 (morning), p. 24); Micronesia (15 September 2023 (morning), pp. 37); New Zealand (15 September 2023 (afternoon), p 7); the Republic of Korea (15 September 2023 (afternoon), pp. 16–17); Mozambique (18 September 2023 (morning), p. 3); Norway (18 September 2023 (morning), p. 23); Belize (18 September 2023 (morning), p. 29); the Philippines (19 September 2023 (morning), p. 6); Sierra Leone (19 September 2023 (morning), p. 25); Singapore (19 September 2023 (afternoon), p. 2); Timor-Leste (20 September 2023 (morning), p. 15); the European Union (20 September 2023 (morning), p. 22); Vietnam (20 September 2023 (morning), pp. 41–43); Comoros (21 September 2023 (morning), pp. 7-8); the Democratic Republic of the Congo (21 September 2023 (morning), pp. 16–32 (impliedly)); the International Union for Conservation of Nature (21 September 2023 (morning), p. 33); the African Union (21 September 2023 (afternoon), p. 10); France (25 September 2023 (morning), p. 2); Italy 25 September 2023 (morning), p. 19); the Netherlands (25 September 2023 (morning), p. 27); the United Kingdom (25 September 2023 (morning), p. 29).

[289] UNCLOS, Art. 194(1) ("*Les Etats prennent, séparément ou conjointement selon qu'il convient, toutes les mesures . . . qui sont nécessaires pour prévenir, réduire et maîtriser la pollution du milieu marin, quelle*

held in the authoritative French text of *Jurisdictional Immunities of the State*, an obligation to "*prendre . . . toutes les mesures nécessaires*" ("take . . . any and all steps") to achieve a result requires direct and immediate action, at least where that result is not "materially impossible . . . or [where] it would [not] involve a burden . . . out of all proportion to the benefit deriving from it"[290]. Furthermore, while a State may use "best practical means at their disposal" and in accordance with its "capabilities", whether a given measure is "necessary" is not determined by the subjective judgment of that State[291]. Rather, it is an objective inquiry to determine what measures are indispensable to prevent the marine pollution at issue. In the context of climate change, then, Article 194(1) imposes a stringent obligation on States to take *all* measures that are *objectively necessary*—in the sense of being "imperative" or "indispensable"[292]—as informed by the best available science, to prevent, reduce, and control GHG emissions.

102. Article 194(2) further obligates States to "take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment"[293]. This provision echoes the customary obligation to prevent significant harm to the environment described at Subsection III.B.1 above. In the context of climate change, each State must take all measures that are objectively necessary, in the sense of indispensable and as informed by the best available science, to ensure that GHG emissions under their jurisdiction or control do not cause significant damage by pollution to other States and their environment, and also to take all measures that are objectively necessary to ensure that such emissions do not pollute the high seas.

103. Article 194(3) further specifies that "the measures taken pursuant to" the aforementioned obligations "shall deal with *all sources*" of marine pollution[294]. In particular, each State must take all necessary measures to prevent, reduce and control GHG emissions from "*all* sources", including land-based sources, pollution from vessels, and pollution from or through the atmosphere, and pollution from activities in the Area[295].

104. Finally, Article 194(5) extends these obligations to encompass those measures "necessary to protect and preserve rare or fragile ecosystems as well as the habitats of depleted, threatened or endangered species and other forms of marine life"[296]. This obligation is particularly relevant when it comes to GHG emissions, given the IPCC's 2018 finding that some "unique and threatened systems", such as coral reefs, are at "risk from climate change at current temperatures, with increasing numbers of systems at potential risk of severe consequences at global warming of 1.6°C"[297]. Therefore, States' obligations under

---

qu'en soit la source, ils mettent en œuvre à cette fin les moyens les mieux adaptés dont ils disposent, en fonction de leurs capacités . . . .").

290 *Jurisdictional Immunities of the State (Germany* v. *Italy: Greece intervening))*, *Judgment*, *I.C.J. Reports 2012*, p. 99, ¶ 137.

291 *See* § III.1 above; *see also, e.g.*, *Certain Iranian Assets* Merits Judgment, ¶ 106 (noting "whether the measures taken were 'necessary' is 'not purely a question for the subjective judgment of the party'") (citing *Oil Platforms (Iran* v. *United States)*, *Judgment*, *I.C.J. Reports 2003*, p. 183, ¶ 43 (internal citations omitted)).

292 Oxford English Dictionary, "necessary."

293 UNCLOS, Art. 194(2).

294 *Id*., Art. 194(3) (emphasis added).

295 *See also id*., Arts. 207(1), 207(5), 209, 210, 211(2), 212(1), 213, 215, 216, 217–220, 222.

296 *Id*., Art. 194(5).

297 *See* § II.B.3 above (IPCC, "Chapter 3: Impacts of 1.5°C of Global Warming on Natural and Human Systems", *Special Report: Global Warming of 1.5°C* (2018), p. 253).

Article 194(5) encompass any measure necessary to preserving rare and fragile marine ecosystems, as well as habitats of threatened marine species.

105. In these circumstances, therefore, settled scientific conclusions based on current and best available evidence dictate what is "necessary" to mitigate climate change—including to prevent, reduce, and control pollution of the marine environment—by reducing GHG emissions to the requisite levels to prevent significant harm.

3. Specific Obligations Under International Environmental Law and the Law of the Sea to, at a Minimum, Limit Global Warming to 1.5ºC

106. The obligations discussed above—the harm prevention rule, the prevention principle, and Articles 192 and 194 of UNCLOS—dictate the measures necessary to mitigate climate change, and they in turn are informed by the current and best available science on climate change. Likewise, the content of States' due diligence obligation must be measured objectively in light of the foreseeability and severity of the harm, and scientific evidence is critical to that objective assessment and to determining what measures are necessary to mitigate the foreseeable risk. Although not the case for all circumstances of harm from climate change, especially to certain unique and threatened ecological and human systems[298], the current body of evidence, as well as international rules and standards, converge around the obligations to, at a minimum, (*i*) limit temperature increase to 1.5ºC above pre-industrial levels and (*ii*) take urgent measures to mitigate and adapt to the devastating harm of climate change.

107. The well-accepted international consensus around the best available scientific evidence in the climate change context is manifest primarily in the work and conclusions of the IPCC. As detailed in Chapter II, the IPCC concluded with high confidence in March 2023 that "[e]very increment of global warming will intensify multiple and concurrent hazards"[299]. With medium to high confidence, the IPCC has identified 1.5ºC as a particularly significant threshold over which the risks of catastrophic damage significantly increase[300]. Furthermore, the risks associated with each of the IPCC's four other Reasons for Concern—extreme weather events, disproportionate distribution of impacts, global aggregated impacts, and large-scale singular events—jump from moderate to high once average global temperature rise exceeds 1.5ºC above pre-industrial levels[301].

108. In addition, the IPCC's findings constitute a well-accepted and specific *international standard* implicated in Articles 200, 201, and 204 of UNCLOS. Likewise are the international standards reflecting the consensus of the 195 States Parties to the Paris Agreement. Article 2(1)(a) of the Agreement sets forth the aim to "strengthen the global response to the threat of climate change . . . including by":

> Holding the increase in the global average temperature to well below 2ºC above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5ºC above pre-industrial

---

298 *See* §§ II.B.3, II.D above.

299 IPCC, "Summary of Policymakers", *Sixth Assessment Synthesis Report* (2023), p. 12; *see* § II.E above.

300 *See* § II.B above.

301 *See* § II.B.3 (citing IPCC, "Chapter 3: Impacts of 1.5ºC of Global Warming on Natural and Human Systems", *Special Report: Global Warming of 1.5ºC* (3028), p. 254).

> levels, recognizing that this would significantly reduce the risks and impacts of climate change . . . .[302]

109. In Articles 2 and 4 of the Paris Agreement, States Parties noted the need to "reach global peaking of greenhouse gas emissions as soon as possible"[303], to make "finance flows consistent with a pathway towards low greenhouse gas emissions"[304], and that developed States Parties should undertake "economy-wide absolute emission reduction targets"[305]. The States Parties also agreed that they should "conserve and enhance" sinks and reservoirs of GHGs, including the ocean, the entire marine environment, and forests[306]. The Convention on Biological Diversity ("CBD"), with 196 States Parties, elucidates what "enhanc[ing]" the ocean, entire marine environment, and forests entails: States must "[r]ehabilitate and restore degraded ecosystems and promote the recovery of threatened species"[307].

110. Since the Paris Agreement was adopted in 2016, the States Parties to the UNFCCC have reaffirmed and underscored the limitation to stay within 1.5ºC in their annual COPs. For example, at COP27 in 2022, the States Parties agreed that

> limiting the global average temperature increase to 1.5ºC above pre-industrial levels with no or limited overshoot would avoid increasingly severe climate change impacts, *stressing that the severity of impacts will be reduced with every increment of global warming avoided*.[308]

---

302 *See* Paris Agreement, *United Nations Treaty Series*, Vol. 3156, p. 79 (2015) (Dossier No. 16) ("Paris Agreement"), Art. (1)(a).

303 *See* Paris Agreement, Art. 4(1).

304 *Id*., Art. 2(1)(c); *see also* COP28, Long-Term Climate Finance, decision -/CP.28 (Advance Unedited Version), ¶ 10 (emphasizing the "need for further efforts to enhance access to climate finance . . . to address the needs of developing country Parties, in particular for the least developed countries and small island developing States"); *id*., ¶ 12 (noting the particular importance of climate finance in the context of adaptation because of "the fiscal constraints and increasing costs to adapt to adverse effect of climate change").

305 Paris Agreement, Art. 4(4).

306 *Id*., Art. 5(1); *see also* COP28, Outcome of the First Global Stocktake, decision -/CMA.5 (Advance Unedited Version) (13 December 2023), ¶ 33 (emphasizing the "importance of conserving, protecting and restoring nature and ecosystems", including "terrestrial and marine ecosystems acting as sinks and reservoirs of greenhouse gases"); *id*., ¶ 35 (inviting "Parties to preserve and restore oceans and coastal ecosystems").

307 Convention on Biological Diversity, *United Nations Treaty Series*, Vol. 1760, p. 79 (1992) ("CBD"), Art. 8(f). According to the CBD States Parties, ecological restoration is "the process of managing or assisting the recovery of an ecosystem that has been degraded, damaged or destroyed as a means of sustaining ecosystem resilience and conserving biodiversity". *See* CBD Conference of the Parties, decision XIII/5 on Ecosystem Restoration: Short-Term Action Plan, document CBD/COP/DEC/XIII/5 (10 December 2016), Annex, p. 4, ¶ 4.

308 COP27, decision 21/CP.27, document FCCC/CP/2022/10/Add.2 (2023), p. 40, ¶¶ 5,7 ("[*r*]*ecall*[*ing*] that the impacts of climate change will be much lower at the temperature increase of 1.5ºC compared with 2ºC" and "*reaffirm*[*ing*] . . . [to] pursu[e] efforts to limit the temperature increase to 1.5ºC"); *id*., ¶ 8 ("[L]imiting global warming to 1.5ºC requires rapid, deep and sustained reductions in global greenhouse gas emissions, including reducing global carbon dioxide . . . .").

111. The States Parties to the Paris Agreement again reiterated the imperative of limiting global average temperature rise to 1.5ºC at COP28, reaffirming that

> pursuing efforts to limit the temperature increase to 1.5ºC above pre-industrial levels . . . would significantly reduce the risks and impacts of climate change[309].

112. As noted above, States Parties also stressed at COP28 the need to "*transition*[] *away from fossil fuels* . . . so as to achieve net zero by 2050 *in keeping with the science*"[310]. And the science is crystal clear: the IPCC has concluded with *high confidence* that current fossil fuel infrastructures "*already exceed the remaining carbon budget*" to limit global warming to 1.5°C[311]. States Parties further urged that "the impacts from climate change are rapidly accelerating", requiring "urgent action and support to keep the 1.5ºC goal within reach and to address the climate crisis during this critical decade"[312]. Nevertheless, as Dr. Maharaj testifies, States "have never reached a specific, binding agreement" for how precisely to achieve "urgently needed emissions reductions despite consistently endorsing the science behind them"[313].

113. A State can hardly be said to be doing "the utmost" or taking "all necessary measures" to prevent climate change if those measures do not reflect the adoption of measures necessary to meet the 1.5ºC threshold, as determined on an objective basis. The 1.5ºC threshold is commensurate with the extreme risks of climate change—which the IPCC has concluded with high confidence present threats as serious as "human well-being and planetary health"[314]. The level of that risk and the foreseeability and severity of that harm are relevant factors in determining the level of due diligence required[315]. This means that, given the high risk of disastrous harm posed by climate change, States must take all necessary measures to prevent climate change in line with the 1.5ºC threshold. As further detailed below, such measures include the obligation to cooperate among States, and in particular, for developed States to meet their specific obligations to provide technical, financial, and other appropriate assistance to developing States to both mitigate and adapt to climate change[316].

---

309 COP28, Outcome of the First Global Stocktake, decision -/CMA.5 (Advance Unedited Version) (13 December 2023), ¶ 4; *see also id*., ¶ 5 (noting that "impacts from climate change are rapidly accelerating" and "*emphasiz*[*ing*] the need for urgent action and support to keep the 1.5ºC goal within reach"); *id*., p. 6, ¶ 39 (encouraging "Parties to come forward in their next [NDCs] with ambitious, economy-wide emission reduction targets, covering all greenhouse gases, sectors and categories aligned with limiting warming to 1.5ºC, as informed by the latest science, in light of different national circumstances").

310 *Id*., ¶ 28; *see also id*., ¶ 27 (recognizing that "limiting global warming to 1.5ºC with no or limited overshoot requires deep, rapid and sustained reductions in global greenhouse gas emissions of 43 per cent by 2030 and 60 per cent by 2035 relative to the 2019 level and reaching net zero carbon dioxide emissions by 2050").

311 *See* § II.E above (citing IPCC, "Summary for Policymakers", *Sixth Assessment Synthesis Report* (2023) (Dossier No. 78), p. 21).

312 COP28, Outcome of the First Global Stocktake, decision -/CMA.5 (Advance Unedited Version) (13 December 2023), ¶¶ 5, 28(d).

313 Maharaj Report, ¶ 117.

314 *See* § II.E above; *see also* IPCC, "Summary for Policymakers", *Sixth Assessment Synthesis Report* (2023) (Dossier No. 78), p. 24).

315 *See* § III.B.1(ii) above (quoting *Area* Advisory Opinion, ¶ 117 ("[T]he standard of due diligence has to be more severe for the riskier activities. . . .")).

316 *See* § IV.B above.

* * *

114. In sum, with respect to climate change, the international scientific consensus has concluded that every increment of global warming will intensify the hazards of global warming, and that the risk of catastrophic, global damage will increase significantly if average global temperature increases by more than 1.5ºC above pre-industrial levels. That same body of evidence demonstrates that the global climate system will avoid some of the worst consequences of climate change should average temperatures remain below 1.5ºC above pre-industrial levels. The 1.5ºC temperature threshold and other points of formal consensus reached by States under the UNFCCC and the Paris Agreement also reflect an internationally agreed, science-backed standard informing what is necessary to prevent the most catastrophic levels of climate change under Articles 200, 201, and 204 of UNCLOS. Although States have some discretion of the means chosen, the obligations under international environmental law and the law of the sea require that States take specific necessary measures based on the objective and best available science.

C. COOPERATION UNDER INTERNATIONAL LAW REGARDING CLIMATE CHANGE

115. Climate change is the quintessential global problem: to various degrees, every State has contributed to it and is affected by it. No State—even the largest emitters—can solve climate change by acting alone. This is one reason that the UNFCCC and the Paris Agreement call climate change a "common concern for mankind"[317]. In this respect, climate change typifies the "international problems of an economic, social, cultural, or humanitarian character" that Article 1(3) of the United Nations Charter seeks to address through the international obligation to cooperate[318].

116. This Section sets out States' obligations with respect to international cooperation: to prevent transboundary harm and protect and preserve the marine environment from climate change (Subsection 1), and to prevent and remedy human rights violations caused by climate change (Subsection 2). In doing so, States must cooperate in line with the international principle of common but differentiated responsibilities (Subsection 3).

117. The duty to cooperate comes *in addition to* States' other obligations under international law regarding climate change; it does not *replace* these obligations. Whereas States have a duty to coordinate their efforts, each State remains subject to its own individual obligations. They are under these obligations even in respect of global problems like climate change. To again quote the Court in *Bosnian Genocide*, where action by more than one State

---

317 Paris Agreement, Preamble; *see also* COP28, Outcome of the First Global Stocktake, decision -/CMA.5 (Advance Unedited Version) (13 December 2023), ¶ 157 ("[I]nternational cooperation is critical for addressing climate change . . . .").

318 *See also* Friendly Relations Declaration, p. 123 (emphasizing States' "duty to co-operate with one another, irrespective of the differences in their political, economic and social systems . . . to promote the general welfare of nations"); R. Wolfrum, "Article 1", in *The Charter of the United Nations: A Commentary* (B. Simma et al. eds., 3d ed., 2012), Vol. I (Annex 9), p. 115 (noting that Article 1 calls not only for cooperation in the "decision-making process in the UN organs" but also "envisage[es] the transformation of the society of States into a community of States . . . facilitated by the sharing of common goals"); L. Boisson de Chazournes & J. Rudall, "Co-Operation", in *The UN Friendly Relations Declaration at 50: An Assessment of the Fundamental Principles of International Law* (J. Viñuales ed. 2015) (Annex 10), p. 105 ("Co-operation is a cornerstone principle of contemporary international law.").

is required to prevent a certain outcome, each individual State must "take all measures . . . which were within its power"[319].

1. Cooperation Under International Environmental Law to Mitigate and Adapt to Climate Change

118. This Subsection discusses the scope and nature of States' obligations to cooperate under international environmental law to mitigate and adapt to climate change.

i. Scope and Nature of the Obligation

119. The duty to cooperate is a fundamental principle of international environmental law. In the words of the 1992 Rio Declaration on Environment and Development, States must "cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem"[320]. It has found further expression in multilateral environmental treaties[321]. The ILC expressed this cooperation principle in Article 4 of the Articles on Prevention of Transboundary Harm from Hazardous Activities:

> States concerned shall cooperate in good faith and, as necessary, seek the assistance of one or more competent international organizations in preventing significant transboundary harm or at any event in minimizing the risk thereof.

120. The duty to cooperate in international law entails both procedural and substantive aspects. The archetypal procedural obligation is to assess the environmental impact of planned activities likely to cause transboundary environmental harm, and to publish that assessment[322]. Substantive duties are ongoing and include those to coordinate with stakeholders during "all phases of planning and of implementation"[323], as well as to implement collective obligations consistent with the general principle that States must comply with their international obligations in "good faith"[324].

121. The ILC recognized that the "principle of cooperation between States is essential in designing and implementing effective policies to prevent significant transboundary harm or at

---

319 *Bosnian Genocide* Judgment, ¶ 430.

320 Rio Declaration, Principle 7.

321 *See, e.g.*, Paris Agreement, Art. 4; CBD, Art. 5; Convention on the International Trade in Endangered Species of Wild Fauna and Flora, *United Nations Treaty Series*, Vol. 993 (1973), Preamble; Convention on the Non-Navigational Uses of International Watercourses, *United Nations Treaty Series*, Vol. 2999 (1997), Preamble; Convention to Combat Desertification, Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, *United Nations Treaty Series*, Vol. 1954 (1994) (Dossier No. 17), Preamble, Art. 2(1); Montreal Protocol on Substances that Deplete the Ozone Layer, *United Nations Treaty Series*, Vol. 1522 (1987) (Dossier No. 26), Preamble.

322 *Pulp Mills* Judgment, ¶ 204; *see also* ILC Articles on Transboundary Harm, Art. 7.

323 ILC Articles on Transboundary Harm, Commentary to Art. 4, ¶ 1.

324 *Id*., ¶ 2; *see, e.g.*, Vienna Convention on the Law of Treaties, *United Nations Treaty Series*, Vol. 1155, p. 331 (1969) ("VCLT"), Preamble; 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."); ILC Articles on Transboundary Harm, Art. 4.

any event to minimize the risk thereof"[325]. In respect of the marine environment, Part XII of UNCLOS expressly requires States Parties to cooperate in at least two key respects. *First*, UNCLOS requires States Parties to coordinate and harmonize their efforts in adopting all measures necessary to prevent, reduce, and control pollution of the marine environment by GHG emissions. Article 194(1) itself requires States Parties to adopt such measures "individually *or jointly* as appropriate", and Article 207(3), for example, requires States Parties to "harmonize their policies" in adopting laws and policies in respect of pollution from "land-based sources". *Second*, UNCLOS requires developed States Parties to cooperate with and assist developing States in their efforts to address pollution of the marine environment by GHG emissions. ITLOS has called the duty to cooperate "a fundamental principle in the prevention of pollution of the marine environment under Part XII of [UNCLOS] and general international law"[326]. As Dr. Maharaj explains, these obligations of scientific and technological assistance are particularly important for small island developing States given the paucity of data critical for climate adaptation[327]. Likewise, in adopting the UNFCCC, the States Parties acknowledged that "the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response"[328].

ii. Obligations to Cooperate with Respect to Mitigation

122. States Parties agreed in the Paris Agreement to measures to promote "cooperation at all levels on the matters" it addressed[329]. Most importantly, the Paris Agreement provides that States Parties "shall prepare, communicate and maintain successive nationally determined contributions that it intends to achieve"[330]. States Parties must also "pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions"[331]. NDCs must "represent a progression beyond the Party's then current nationally determined contribution and reflect its highest possible ambition, reflecting its common but differentiated responsibilities and respective capabilities, in the light of different national circumstances"[332].

123. The UNFCCC and the Paris Agreement are pillars of the global climate regime, but they do not exhaust States' obligations to cooperate in respect of climate change, nor to prevent significant environmental harm and protect and preserve the marine environment from climate change. A State's publication and compliance with its NDCs are relevant factors in assessing whether it has taken all measures necessary to mitigate GHG emissions, but they cannot themselves discharge the obligation. States' due diligence obligations require them to

---

325 ILC Articles on Transboundary Harm, Art. 4, ¶ 1.

326 *MOX Plant* Order, ¶ 82; *SRFC* Advisory Opinion, ¶ 140; *Straits of Johor* Order, ¶ 92; *see also South China Sea* Award, ¶¶ 946, 985–986. For example, Article 202(a) mandates that States Parties "promote programmes of scientific, educational, technical and other assistance to developing States for the . . . prevention, reduction and control of marine pollution". It also specifies that this assistance must include, for example, "training of their scientific and technical personnel", "supplying them with necessary equipment and facilities" and "enhancing their capacity to manufacture such equipment". *See also* UNCLOS, Arts. 266, 276–277.

327 Maharaj Report, ¶¶ 7–13.

328 UNFCCC, Preamble.

329 Paris Agreement, Preamble.

330 *Id*., Art. 4(2).

331 *Id*.

332 *Id*., Art. 4(3).

do the utmost relative to the foreseeability and severity of potential harm; this must be assessed objectively and is not self-judging.

124. The science demonstrates that States are thus far falling short. Published NDCs represent only nine percent of the reductions in GHG emissions that the IPCC estimates must be achieved by 2030 to keep global warming to 1.5ºC, and implemented NDCs will lead to a five percent *increase* in emissions[333]. Accordingly, publishing or even implementing NDCs that, individually and in the aggregate, are plainly insufficient to limit average global temperature to within 1.5ºC cannot possibly satisfy the obligations to cooperate in good faith to prevent environmental damage or to take all necessary measures to prevent, reduce, and control pollution by GHGs emissions.

125. Furthermore, the "overshoot" scenarios demonstrate that NDCs may comply with the Paris Agreement but be inconsistent with other international environmental obligations, such as those under Article 194(5) of UNCLOS. With respect to required programmes and assistance, moreover, the IPCC has concluded with high confidence that both public and private finance flows for fossil fuels continue to be greater than those for climate change adaptation and mitigation[334]. Specifically, the IPCC has found that financing for mitigation falls short of the funding required to limit global warming to below 2°C or to 1.5°C *across all sectors and regions*[335]. In 2018, climate finance from developed to developing countries was significantly below the collective goal of mobilizing US$100 billion per year by 2020 under the UNFCCC and the Paris Agreement[336].

iii. Obligations of Developed States to Cooperate with Respect to Adaptation

126. The duty to cooperate under general international law also includes an obligation to cooperate with respect to adaptation. For instance, assistance with adaptation[337] is a direct and specific obligation of developed States under UNCLOS. Specifically, Articles 198 and 199 provide that, when "the marine environment is in imminent danger of being damaged or has been damaged by pollution", "States in the area affected, in accordance with their capabilities, and the competent international organisations shall co-operate, to the extent possible, in eliminating the effects of pollution and *preventing or minimising the damage*"[338]—which in the context of climate change necessarily implicates adaptation measures.

127. Furthermore, Article 202 of UNCLOS envisages financial support when requiring States to provide "other assistance" and "appropriate assistance" to developing States, and Article 203 expressly grants developing States "preference by international organizations" in

---

333 *See* § II.B.4 above (United Nations Environment Programme, Emissions Gap Report (2002); CAT Emissions Gap, "Climate Action Tracker", https://climateactiontracker.org/global/cat-emissions-gaps).

334 IPCC, "Longer Report", *Sixth Assessment Synthesis Report* (2023), p. 29; *see also* Maharaj Report, ¶ 141.

335 IPCC, "Longer Report", *Sixth Assessment Synthesis Report* (2023), p. 29; *see also* IPCC, "Summary for Policymakers", *Sixth Assessment Synthesis Report* (2023) (Dossier No. 78), p. 33.

336 IPCC, "Longer Report", *Sixth Assessment Synthesis Report* (2023), pp. 28–29; *see also* Maharaj Report, ¶ 141; Cooley Report ¶ 82.

337 The IPCC defines adaption as "the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities". IPCC, Working Group I, "Annex VII: Glossary", *Sixth Assessment Report: The Physical Science Basis* (2021), p. 2216.

338 *See also* T. Stephens, "Article 199: Contingency Plans Against Pollution", in *United Nations Convention on the Law of the Sea: A Commentary* (A. Prölß ed. 2017) (Annex 8), p. 1341 (noting that, "[w]here it is not possible to prevent pollutants escaping into the environment", Article 199 requires that "efforts . . . be made to prevent or minimize the damage those pollutants cause").

"the allocation of appropriate funds". The UNFCCC and the Paris Agreement also oblige developed States Parties to assist developing States with their efforts to mitigate and adapt to climate change. For example, Article 4(5) of the UNFCCC provides that the developed States included in Annex II to the Framework Convention

> shall take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention.

Similarly, Article 9 of the Paris Agreement provides that developed States Parties "shall provide financial resources to assist developing country Parties with respect to both mitigation and adaptation in continuation of their existing obligations" under the UNFCCC.

128. These obligations of financial assistance are particularly relevant for small island States given the small size of their national budgets as compared with the tremendous cost of adaptation to climate change. As Dr. Maharaj explains, small island States are often unable to access affordable finance for recovery or adaptation projects—a vicious cycle that makes resilience against the next climate disaster all the more expensive[339].

2. Cooperation Under International Human Rights Law

129. States also must cooperate to combat climate change to fulfill their duties to promote, protect, and respect human and peoples' rights, violations of which occur when States fail in their obligations to mitigate and adapt to climate change. The Paris Agreement reflects the intersectionality of human rights and climate change mitigation efforts, stating that States,

> when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to health, the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity[340].

130. This Subsection addresses (*i*) the human rights implicated by climate change and States' obligations to promote, protect, and respect those rights; and (*ii*) the need for States to cooperate in fulfilling those obligations.

i. Obligations to Promote, Protect, and Respect Human Rights in Light of Climate Change Impacts

131. In referring the present question to the Court, the General Assembly "[*e*]*mphasiz*[*ed*]" the importance of the Universal Declaration of Human Rights, the ICCPR, the ICESCR, and the Convention on the Rights of the Child to the "conduct of States over time in relation to activities that contribute to climate change and its adverse effects"[341]. Similarly, the United

[339] Maharaj Report, ¶¶ 140–145.

[340] Paris Agreement, Preamble.

[341] Request, Preamble.

Nations Human Rights Council has acknowledged that "climate change poses an existential threat to some countries, irreversible adverse impact on the full and effective enjoyment of the human rights enshrined in the Universal Declaration of Human Rights and other international human rights instruments unless urgent climate action is taken"[342].

132. The Council went on to emphasize the "range of implications, both direct and indirect", flowing from the adverse effects of climate change that can interfere with the "effective enjoyment of human rights, including, inter alia, the right to life, the right to adequate food, the right to the enjoyment of the highest attainable standard of physical and mental health, the right to adequate housing, the right to self-determination, the rights to safe drinking water and sanitation, the right to work and the right to development"[343]. Other implicated rights include those to a healthy environment, cultural life, home and family life, property, and livelihood, as well as the rights of Indigenous peoples[344]. The Council also recalled that "in no case may a people be deprived of its own means of subsistence"[345].

133. These rights are established in various sources of general or extremely broad applicability, including, among others, general and customary international law; the Universal Declaration on Human Rights; the ICCPR, the ICESCR; the Convention on the Elimination of All Forms of Discrimination Against Women; the Convention on the Rights of the Child; the United Nations Declaration on the Rights of Indigenous Peoples; and various regional human rights treaties[346].

134. States must promote, protect, and respect the human rights implicated by climate change. The nature of States' obligations in that regard varies by the source of the implicated right. In the words of the Human Rights Council, "the human rights obligations and responsibilities as enshrined in the relevant international human rights instruments provide roles for States . . . to promote, protect and respect, as would be appropriate, human rights . . . when taking action to address the adverse effects of climate change"[347].

135. The ICCPR, for example, requires States Parties to "respect and to ensure to all individuals within its territory and subject to its jurisdiction the rights recognized in the present Covenant"[348]. With regard to the right to life in particular, the United Nations Human

---

342 United Nations Human Rights Council, resolution 50/9, Human Rights and Climate Change, document A/HRC/RES/50/9 (14 July 2022) (Dossier No. 275), Preamble.

343 *Id*.

344 *See, e.g.*, ILC, R. Galvão Teles & J. Ruda Santolaria, Co-Chairs of the Study Group on Sea-Level Rise in Relation to International Law, Second Issues Paper, document A/CN.4/752 (19 April 2022) (Dossier No. 102), ¶¶ 246–254.

345 United Nations Human Rights Council, resolution 50/9, Human Rights and Climate Change, document A/HRC/RES/50/9 (14 July 2022) (Dossier No. 275), Preamble.

346 On 18 October 2023, COSIS submitted a legal opinion on human rights issues arising out of the climate emergency before the Inter-American Court of Human Rights in *Climate Emergency and Human Rights (Request for an Advisory Opinion)*.

347 United Nations Human Rights Council, resolution 50/9, Human Rights and Climate Change, document A/HRC/RES/50/9 (14 July 2022) (Dossier No. 275), Preamble.

348 ICCPR, Art. 2(1).

Rights Committee has found "an obligation to respect and to ensure the rights under article 6" of the ICCPR[349].

136. The ICESCR obliges States Parties to "take steps, individually and through international assistance and co-operation, especially economic and technical, to the maximum of its available resources, with a view to achieving progressively the full realization of the rights recognized in the present Covenant by all appropriate means"[350]. The United Nations Committee on Economic, Social, and Cultural Rights has explained that the "progressive realization" of the treaty rights "imposes an obligation [on States Parties] to move as expeditiously and effectively as possible toward that goal"[351].

137. Peoples' right to subsistence under Article 1(2) common to the ICCPR and the ICESCR is nonderogable, which "entails corresponding duties for all States and the international community", in the words of the Human Rights Committee[352].

138. As applied to climate change, promoting, protecting, and respecting human rights requires, at a minimum, limiting global warming to the 1.5ºC threshold. The Human Rights Council, too, has "[*s*]*tress*[*ed*] the importance of holding the increase in the global average temperature to well below 2°C above pre-industrial levels and of pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels" in line with Article 2(1)(a) of the Paris Agreement, "recognizing that this would *significantly reduce the risks and impact of climate change*"[353].

ii. Cooperation to Promote, Protect, and Respect Human and Peoples' Rights in Light of Climate Change Impacts

139. Beyond the obligations that States owe toward their own nationals with respect to climate change, international human rights law obliges States to cooperate with each other to promote, protect, and respect human and peoples' rights of all persons, including those of climate-vulnerable States.

140. International cooperation in fulfilling States' obligations toward human and peoples' rights is a fundamental principle of human rights law[354]. Article 1 of the United Nations Charter calls for "international co-operation . . . in promoting and encouraging respect for human rights and for fundamental freedoms"[355]. The General Assembly reaffirmed this

---

349 United Nations Human Rights Committee, General Comment No. 36: Article 6, Right to Life, document CCPR/C/GC/36 (3 September 2019) (Dossier No. 299), ¶ 63.

350 ICESCR, Art. 2(1).

351 United Nations Committee on Economic, Social, and Cultural Rights, General Comment No. 3: The Nature of States Parties' Obligations, document E/1991/23, Annex III (14 December 1990), p. 85, ¶ 9.

352 United Nations Human Rights Committee, General Comment No. 12: Article 1 (Right to Self-Determination), document HRI/GEN/1/Rev.1 (13 March 1984), ¶ 5.

353 United Nations Human Rights Council, resolution 50/9, Human Rights and Climate Change, document A/HRC/RES/50/9 (14 July 2022) (Dossier No. 275), Preamble (second emphasis added).

354 *See, e.g.*, ICESCR, Arts. 2(1), 11(2), 15(4), 22–23; Convention on the Rights of the Child, *United Nations Treaty Series*, Vol. 1577, p. 3 (1989) (Dossier No. 57), Arts. 4, 24(4).

355 United Nations Charter, Art. 1(3); *see also id*., Art. 13(1)(b) (requiring the General Assembly to "initiate studies and make recommendations for the purpose of . . . promoting international co-operation . . . [in] assisting in the realization of human rights and fundamental freedoms"); *id*., Arts. 55–56 (reflecting a "pledge" by Member States "to take *joint and separate action* . . . for the achievement" of "universal respect for, and observance of, human rights and fundamental freedoms for all" (emphasis added)).

commitment in the Universal Declaration of Human Rights[356] and the Declaration on Principles of International Law Concerning Friendly Relations and Co-Operation, which recognized that "States shall co-operate in the promotion of universal respect for, and observance of, human rights and fundamental freedoms for all"[357].

141. In respect of climate change, the Human Rights Council urged States to "strengthen and implement policies aimed at enhancing international cooperation based on human rights . . . despite the adverse effects of climate change"[358]. States therefore must cooperate to, at a minimum, limit global warming to 1.5°C as a consequence of their obligations under international human rights law. States must comply with this obligation consistent with the principle of common but differentiated responsibilities.

3. Common but Differentiated Responsibilities

142. As set out in the Rio Declaration, the principle of common but differentiated responsibilities recognizes that developed States bear responsibility "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"[359]. As applied to climate change, the UNFCCC provides that "common but differentiated responsibilities" means that "the developed country Parties should take the lead in combating climate change and the adverse effects thereof"[360]. The States Parties to the UNFCCC thus acknowledged that all States must cooperate to respond to the global problem of climate change "in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions"[361].

143. This principle reflects a fundamental point of equity, especially for small island States. It is simple mathematics that some States will have to do more than others to achieve the temperature limit of 1.5ºC given that, as noted above, only four countries contributed over half of global emissions in 2022. It is also the case that small island States have collectively contributed less than one percent of historical emissions, and yet they suffer the most devastating negative effects of climate change[362].

144. Earth's "carbon budget" is nearly exhausted. The stark reality is that, to have any chance of keeping emissions within a range that avoids the worst global consequences of climate change, those States most responsible for current GHG emissions must take the steps necessary to curb emissions going forward consistent with staying within the 1.5ºC limit.

---

356 *See* United Nations General Assembly, resolution 217 (III), document A/RES/217(III) (10 December 1948), Universal Declaration of Human Rights ("UDHR"), Preamble (pledging to "achieve, in co-operation with the United Nations, the promotion of universal respect for and observation of human rights and fundamental freedoms").

357 Friendly Relations Declaration, p. 123.

358 United Nations Human Rights Council, resolution 50/9, Human Rights and Climate Change, document A/HRC/RES/50/9 (14 July 2022) (Dossier No. 275), ¶ 11.

359 Rio Declaration, Principle 7; *see also* Stockholm Declaration, Principle 23.

360 UNFCCC, Art. 3(1); *see also* Paris Agreement, Preamble, Arts. 2(2), 4(3).

361 UNFCCC, Preamble.

362 *See* § II.D above (citing United Nations Development Programme, The State of Climate Ambition (December 2022), p. 3).

* * *

145. As detailed in the Conclusions in Chapter V below, States have obligations under general international law, international environmental law, and international human rights law to take all measures necessary and appropriate to prevent significant environmental harm and to prevent, reduce, and control pollution of the marine environment by GHG emissions, including but not limited to taking measures to ensure that GHG emissions from activities under their jurisdiction or control do not cause damage to other States and their environment, and do not spread beyond the areas over which they exercise sovereign rights; adopt and enforce laws and regulations to prevent, reduce, and control pollution by GHG emissions; cooperate directly or through international organizations to mitigate and adapt to climate change; make finance flows in step with a pathway toward low GHG emissions; for developed States, provide technical, financial, and other appropriate assistance to developing States, directly or through international organizations, to assess the impacts of GHG emissions and to prevent, mitigate, and adapt to negative impacts of GHG emissions; monitor and assess planned activities under their jurisdiction or control, including through environmental impact assessments and contingency plans, to determine whether such activities may cause substantial damage by GHG emissions, and publish any such reports; and assist developing States in meeting their mitigation and adaptation needs in the face of the adverse impacts of climate change. States must fulfill those obligations consistent with the science-backed and internationally recognized standard of limiting average global temperature rise to below 1.5ºC with no or limited overshoot. States must cooperate to achieve that goal consistent with their obligations under international environmental and human rights law, and in line with the principle of common but differentiated responsibilities.

IV. Legal Consequences of Breaches of Obligations in Respect of Climate Change

146. Part (b) of the Request refers to multiple concepts in the customary law of State responsibility, including terms used in the ILC's Articles on Responsibility of States for Internationally Wrongful Acts ("ARSIWA"). These include references to "legal consequences", "injured" States, and States which are "specially affected". This Chapter addresses part (b), namely the legal consequences under the obligations set out in Chapter III above for States "where they, by their acts and omissions, have caused significant harm to the climate system and other parts of the environment". The Chapter sets out those consequences for the responsibility of States for their internationally wrongful acts (Section A) and the right of other States, and especially small island States, to invoke that responsibility (Section B). The Chapter concludes with the host of remedial obligations that States incur as a result of this responsibility (Section C).

147. Aware of the advisory character of the present proceedings, COSIS respectfully asks the Court to affirm the applicability of the fundamental principles of State responsibility described in this Chapter, and reflected in the Court's jurisprudence, in the context of the significant, catastrophic harm to the climate system and other parts of the environment resulting from GHG emissions, and in light of the urgent need for measures of response and redress.

A. State Responsibility for Obligations in Respect of Climate Change

148. States are responsible for violations of international law that are attributable to them[363], including, violations stemming from the conduct of "public [or] private operators" that amount to breaches of State obligations[364]. As applied to climate change, this means that States violate their obligations set out in Chapter III above where they fail to take all measures necessary and appropriate to prevent atmospheric and marine pollution by anthropogenic GHG emissions from activities within their jurisdiction or control or to cooperate in respect of preventing environmental harm and human rights violations resulting from such emissions[365]. States may violate these obligations even when their acts and omissions are unlawful only "in aggregate", in which case

> the breach extends over the entire period starting with the first of the actions or omissions of the series and lasts for as long as these actions or omissions are repeated and remain not in conformity with the international obligation[366].

149. As described in Subsections II.B and II.C above, the acts or omissions of specific States over time with respect to anthropogenic GHG emissions from activities within their jurisdiction or control have already resulted in irreversible and significant harm to the climate system and other parts of the environment, including the death of coral reefs and the

---

[363] Articles on Responsibility of States for Internationally Wrongful Acts, with Commentaries, *Yearbook of the International Law Commission*, 2001, Vol. II (Part Two) ("ARSIWA"), Arts. 1–2; *see also Chagos* Advisory Opinion, ¶ 177; *M/V "Virginia G" (Panama / Guinea-Bissau)*, *Judgment of 14 April 2014*, *ITLOS Reports 2014*, p. 4, ¶ 430 (noting that Article 1 of the ARSIWA reflects customary international law).

[364] *See Pulp Mills* Judgment, ¶ 197.

[365] *Id*.; *see also Trail Smelter* Award, p. 1965.

[366] ARSIWA, Art. 15.

submergence of portions of small island States' land territory. Moreover, taken together, the GHG emissions from a small group of high-emitting States have resulted in catastrophic harm, in the form of climate change itself and its adverse consequences. In some cases, these acts and omissions can be understood, at both the individual and group level, as a composite act within the meaning of the general international law of State responsibility reflected in Article 15 of the ARSIWA[367]. The composite acts of each high-emitting State and, taken together, of the group of high-emitting States have amounted to numerous breaches of treaty and customary obligations, including at least those discussed above, and will continue to result in significant harm according to current scientific models and the evidence discussed in Chapter II above.

150. In setting out the rules on State responsibility (also known as "secondary" rules) that apply to these violations, the ARSIWA do not restrict the ability of underlying legal obligations (also known as "primary" rules) to set out more specific consequences in the event of a breached obligation. The ARSIWA instead provide default rules that may be adjusted by more specific international legal obligations, such as those pertaining to the environment[368].

151. This relationship between specific international legal obligations and the customary rules on State responsibility is expressed in Article 235(1) of UNCLOS, which provides:

> States are responsible for the fulfilment of their international obligations concerning the protection and preservation of the marine environment. They shall be liable in accordance with international law.

B. Invocation of Responsibility by Small Island States for Breaches of State Obligations with Respect to Climate Change

152. Part (b) of the question recognizes the "particular" harm of States' breaches of their international obligations with respect to climate change toward "small island developing States". This Section accordingly sets out the ways by which small island States are entitled to invoke the responsibility of States that breach their obligations set out in Chapter III, including where multiple States are responsible.

1. Invocation of Responsibility by Small Island States

153. International law offers three ways by which small island States are entitled to invoke responsibility for the failures of States to abide by their obligations with regard to climate change.

154. *First*, small island States are entitled to invoke responsibility in relation to breaches of obligations set out in Chapter III owed to each State individually. As reflected in Article 42(a) of the ARSIWA, a State that suffers a breach of obligations "owed to . . . that State

---

[367] ARSIWA, Art. 15(1) ("The breach of an international obligation by a State through a series of actions or omissions defined in the aggregate as wrongful occurs when the action or omission occurs which, taken with the other actions or omissions, is sufficient to constitute the wrongful act."); *id*., Art. 15(2) ("[T]he breach extends over the entire period starting with the first of the actions or omissions of the series and lasts for as long as these actions or omissions are repeated and remain not in conformity with the international obligation.").

[368] *Id*., Art. 55,

individually"[369] is entitled to invoke responsibility for that breach. This rule clearly applies in the case of breaches of bilateral obligations; it also applies where an obligation contemplates performance in relation to a right held by the State itself, or a right held by persons or groups within a State[370]. It further applies where certain obligations are designed for the primary benefit of only a single State, or a limited group of States Parties and thus where such obligations contemplate certain performance in relation to them[371].

155. As applied here, the failure of States to take all measures necessary to reduce GHG emissions and mitigate climate change and its effects in accordance with their obligations set out in Chapter III above is resulting in serious injury to small island States. The Request takes these States' injury as background in asking the Court to consider the legal consequences for States injured by the adverse effects of climate change[372]. In some cases, injuries to small island States result from violations of the rights of a State's nationals and peoples[373], which in some circumstances even threaten what the Court has called "the fundamental right of every State to survival"[374]. Because human and peoples' rights are held individually by persons and peoples in small island States, those States can invoke injuries to such rights against any State responsible for them. Although all other States must respect these human rights, ultimately it is the right, and indeed the duty, of small island States to invoke responsibility for violations of such rights internationally[375]. States may make such an invocation for injury to persons within their territory by raising claims on an individual[376] or collective[377] basis, depending on the number of persons and the systemic nature of the violations involved.

156. In other cases, small island States suffer injury in the sense of Article 42(a) of the ARSIWA where States breach obligations that contemplate specific action in relation to small island States. In the context of climate change, such obligations include those of developed States to transfer technology to developing States and to provide financial resources for

---

369 *Id*., Art. 42(a).

370 *See* ARSIWA, Commentary to Art. 42, ¶ 6 (explaining that the "expression 'individually' indicates that in the circumstances, performance of the obligation was owed to that State" which is invoking responsibility).

371 *See id*., Art. 42, ¶¶ 6–7; *see also* G. Gaja, "The Concept of an Injured State", in *The Law of International Responsibility* (J. Crawford et al. eds. 2010) (Annex 11), p. 943.

372 Request, ¶ (b)(i).

373 *See* §§ III.A, C.2 above.

374 *Nuclear Weapons* Advisory Opinion, ¶ 96.

375 *See Mavrommatis Palestine Concessions*, *Judgment No. 2*, *1924, P.C.I.J.*, *Series A*, *No. 2*, p. 12 ("It is an elementary principle of international law that a State is entitled to protect its subjects, when injured by acts contrary to international law committed by another State . . . ."); *see also Avena and Other Mexican Nationals (Mexico* v. *United States)*, *Judgment*, *I.C.J. Reports 2004*, p. 36 ("*Avena* Judgment), ¶ 40.

376 *See* ARSIWA, Art. 44; ARSIWA, Commentary to Art. 44, ¶ 2; *see also Ahmadou Sadio Diallo (Guinea* v. *Democratic Republic of the Congo)*, *Judgment (Preliminary Objections)*, *I.C.J. Reports 2007*, p. 599 ("*Diallo* Judgment"), ¶ 39 ("[U]nder customary international law, . . . diplomatic protection consists of the invocation by a State . . . of the responsibility of another State for an injury caused by an internationally wrongful act of that State to a natural or legal persons that is a national of the former State with a view to the implementation of such responsibility" (citation and internal quotation marks omitted)).

377 *See 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. *Russia)*, *Judgment (Preliminary Objections)*, *I.C.J. Reports 2019*, p. 606, ¶ 130 ("Ukraine does not adopt the cause of one or more of its nationals, but challenges, on the basis of CERD, the alleged pattern of conduct of the Russian Federation with regard to the treatment of the Crimean Tatar and Ukrainian communities in Crimea").

mitigation and adaptation to pollution by GHG emissions, as set out at Subsections III.B.1(i) and III.B.1(ii) above.

157. *Second*, small island States are entitled to invoke the responsibility of States breaching their obligations set out in Chapter III above because they are "specially affected" by the breach of collective obligations owed to a group of States of which they are a part. This rule, reflected in Article 42(b)(i) of the ARSIWA, pertains to situations where, even if an obligation is not directly owed to a State, the obligation is owed to a group of States, such as the parties to a multilateral environmental treaty, and the breach of that obligation results in "particular adverse effects on one State or on a small number of States"[378]. In other words, States are entitled to invoke responsibility for violations of "collective obligations", or "obligations that apply between more than two States and whose performance . . . is not owed to one State individually, but to a group of States or even the international community as a whole"[379], provided that the State invoking responsibility is "specially affected"[380]. To constitute a "specially affected" State, a State "must be affected by the breach in a way which distinguishes it from the generality of other States to which the obligation is owed"[381].

158. Small island States are undoubtedly "specially affected" in relation to breaches of obligations set out in Chapter III above[382]. They are suffering some of the most immediate and harmful effects of climate change due to a combination of sea-level rise, flooding, coastal erosion, salinization of freshwater sources and agricultural lands, and loss of biodiversity and abundance, among others[383]. Small island States further constitute "specially affected" States because they are "particularly vulnerable" to the adverse effects of climate change as recognized by several relevant multilateral environmental agreements, including the UNFCCC and the Paris Agreement[384].

159. *Finally*, small island States are also entitled to invoke the responsibility of States for violations of obligations owed *erga omnes* or *erga omnes partes*. Obligations of the former type are those which are "owed to the international community as a whole"[385] such that, "[i]n view of the importance of the rights involved, all States can be held to have a legal interest in their protection"[386]; obligations of the latter type are "owed to a group of States" and are

---

378 ARSIWA, Commentary to Art. 42, ¶ 12.

379 *Id*., ¶ 11.

380 *Id*.; *see also North Sea Continental Shelf*, *Judgment*, *I.C.J. Reports 1969*, p. 4, ¶ 73; VCLT, Art. 60(2).

381 ARSIWA, Commentary to Art. 42, ¶ 12.

382 Request, ¶ (b)(i); *see also id*., Preamble (noting that among the States "particularly vulnerable to the adverse effects of climate change" are "least developed countries and small island developing States", which are "already experiencing an increase in such effects").

383 *See* § II.D above; *see also* Request, Preamble (noting that small island States are already experiencing an increase in "adverse effects", "including "extreme weather events, land loss and degradation, sea level rise, coastal erosion, [and] ocean acidification . . . leading to displacement of affected persons and further threatening food security, water availability and livelihoods, as well as efforts to eradicate poverty in all its forms and dimensions and achieve sustainable development").

384 UNFCCC, Preamble, Arts. 3(2), 4(4); Paris Agreement, Preamble, Arts. 6(6), 7(2), 7(6), 9(4), 11(1).

385 *Id*., Art. 48(1)(b); *see, e.g.*, *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (The Gambia v. Myanmar)*, *Judgment (Preliminary Objections)*, *I.C.J. Reports 2022*, p. 477, ¶ 108.

386 *Barcelona Traction, Light & Power Co. Ltd. (Belgium* v. *Spain)*, *Judgment (Second Phase)*, *I.C.J. Reports 1970*, p. 3, ¶ 33.

"established for the protection of a collective interest of the group"[387]. Invocation of responsibility *erga omnes* or *erga omnes partes*, as reflected in Article 48 of the ARSIWA, does not depend on whether the invoking State has itself suffered an "injury"[388].

160. In the context of climate change, a number of relevant obligations are owed *erga omnes*, including those to protect and preserve the marine environment, to prevent massive pollution of the atmosphere and of the seas, to protect the right to life, and to respect the self-determination of the peoples of small island States[389]. Likewise, a number of these obligations, where codified by treaty, are also owed *erga omnes partes*, including the obligation to protect and preserve the marine environment under Part XII of UNCLOS, as well as to respect the right of self-determination under the ICCPR and ICESCR[390]. Small island States are accordingly entitled to invoke the responsibility of States that breach these obligations, regardless of whether they show a direct "injury" in their pleadings.

161. States entitled to invoke the responsibility of breaching States for any of these three reasons may do so even if more than one State suffers harm by the breach. As the ILC noted in its commentary to the ARSIWA, "th[e] conclusion has never been doubted" that, where there are multiple injured States, each injured State may separately invoke the responsibility of the State or States which have committed the internationally wrongful act[391].

162. A number of cases bear this out. In *S.S. Wimbledon*, for example, four States initiated arbitration in relation to a breach of a treaty concerning the Kiel Canal[392]. States have also brought cases to the Court on this basis. In *Aerial Incident of 27 July 1955*, Israel, the United Kingdom, and the United States commenced proceedings against Bulgaria concerning the destruction of an Israeli civil aircraft carrying the nationals of these States[393]. More recently, in *Aerial Incident of 8 January 2020*, Canada, Sweden, Ukraine, and the United Kingdom jointly instituted proceedings against Iran in relation to the downing of a civilian plane carrying nationals of all four of their States[394]. Separately, individual States have brought claims arising out of injury to a plurality of States in the environmental context. In *Nuclear Tests*, Australia and New Zealand each brought claims against France on the basis that they were each injured by French atmospheric nuclear tests in the Pacific[395].

---

387 ARSIWA, Art. 48(1)(a).

388 *See Application of the Convention on the Prevention and Punishment of the Crime of Genocide (The Gambia* v. *Myanmar)*, *Judgment (Preliminary Objections)*, *I.C.J. Reports 2022*, p. 516, ¶¶ 106–112.

389 *See* Chapter III above; *see also Area* Advisory Opinion, ¶ 180 (finding that all States Parties to UNCLOS may be entitled to claim compensation for damage to the Area and to the marine environment "in light of the *erga omnes* character of the obligations relating to preservation of the environment of the high seas and in the Area" (citing Art. 48 of the ARSIWA)).

390 *See* Chapter III above; *see also Area* Advisory Opinion, ¶ 180; *Whaling in the Antarctic (Australia* v. *Japan: New Zealand intervening)*, *Judgment*, *I.C.J. Reports 2014*, p. 226.

391 ARSIWA, Art. 46; ARSIWA, Commentary to Art. 46, ¶ 2.

392 *S.S. "Wimbledon"*, *1923*, *P.C.I.J.*, *Ser. A*, *No. 1*, p. 15, p. 20.

393 *Aerial Incident of 27 July 1955 (Israel* v. *Bulgaria; United States* v. *Bulgaria; United Kingdom* v. *Bulgaria)*, Application Instituting Proceedings (27 July 1955).

394 *Aerial Incident of 8 January 2020 (Canada, Sweden, Ukraine, and United Kingdom* v. *Iran)*, Application Instituting Proceedings (4 July 2023).

395 *See Nuclear Tests (Australia* v. *France)*, Application Instituting Proceedings (9 May 1973); *Nuclear Tests (New Zealand* v. *France)*, Application Instituting Proceedings (9 May 1973).

2. Invocation of Responsibility in Relation to a Plurality of Responsible States

163. Any State that has breached its obligations set out in Chapter III above may be held responsible for its breach even though no single State is responsible for climate change and its effects. This Subsection discusses the rules applicable to the invocation of responsibility under international law in cases of a plurality of responsible States.

164. Under these rules, States, including small island States, may invoke the responsibility of multiple States in two circumstances: (*1*) where multiple States are responsible for the "same" internationally wrongful act, and (*2*) where States are injured by "different" internationally wrongful acts committed by several States[396]. The ILC notes that identifying whether the conduct of two or more States constitutes the "same" internationally wrongful act "will depend on the particular primary obligation, and cannot be prescribed in the abstract"[397].

165. These rules reflect the "polluter pays" principle of international environmental law[398]. Whether States are responsible for jointly contributing to injuries resulting from the effects of climate change due to their high GHG emissions, or separately responsible for distinct injuries, international law provides a clear basis for invoking responsibility against those States.

i. Invocation of Responsibility for the "Same" Wrongful Act

166. Where multiple States are responsible for the "same" internationally wrongful act—meaning, the same underlying violation of an international obligation, such as those discussed in Chapter III—an injured State may invoke the responsibility of any one of the responsible States for the wrongful conduct as a whole. As reflected in Article 47 of the ARSIWA, under this rule, "the responsibility of each State may be invoked in relation to that act"[399]. In *Armed Activities on the Territory of the Congo*, for example, the Court found that Uganda was "responsible" for damage that occurred in the Democratic Republic of the Congo as a result of fighting between Ugandan and Rwandan troops, even though Rwanda was not party to the case[400]. Furthermore, as the ILC has explained, given that all of the States involved are

---

396 *See Armed Activities on the Territory of the Congo (Democratic Republic of the Congo* v. *Uganda)*, *Judgment (Reparations)*, *I.C.J. Reports 2022*, p. 13 ("*DRC* v. *Uganda* Reparations Judgment"), ¶ 98; J. Crawford, *State Responsibility: The General Part* (2014) (Annex 12), p. 334 (distinguishing between "situations where a plurality of states collaborate as co-authors of an internationally wrongful act" ("concerted conduct") and "situations in which a plurality of states acting independently are responsible for different breaches in respect of the same injury" ("independent conduct") (citing J. Noyes & B. Smith, "State Responsibility and the Principle of Joint and Several Liability", *Yale Journal of International Law*, Vol. 13, p. 225 (1988) at 228–231)).

397 ARSIWA, Commentary to Art. 47, ¶ 8; *see also Eurotunnel (Channel Tunnel Group Ltd. et al.* v. *United Kingdom et al.)*, PCA Case No. 2003-06, Partial Award (30 January 2007), ¶ 187.

398 *See, e.g.*, Rio Declaration, Principle 16 ("National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.").

399 ARSIWA, Art. 47(1).

400 *DRC* v. *Uganda* Reparations Judgment, ¶¶ 98, 221 (citing Art. 47 of the ARSIWA); *see also Certain Phosphate Lands in Nauru (Nauru* v. *Australia)*, *Judgment (Preliminary Objections)*, *I.C.J. Reports 1992*, p. 240 at 258–262 (finding that Nauru could invoke Australia's responsibility alone even in the absence of the United Kingdom and New Zealand, even though all three made up the Administering Authority under a trusteeship agreement).

responsible for the same breach, each State may seek to "hold each responsible State to account for the wrongful conduct as a whole"[401].

167. Because the obligations to cooperate to prevent environmental harm and to protect human rights from the effects of climate change by definition require the concerted conduct of two or more States[402], a breach of either of those obligations by two or more States would *ipso facto* be the "same" act for purposes of Article 47 of the ARSIWA. The United Nations Committee on the Rights of the Child has reached this conclusion with respect to violations of children's rights caused by GHG emissions, citing Article 47 of the ARSIWA, and explaining that the contribution of multiple States to the violation does not mean any individual State cannot be held responsible[403].

168. It is particularly important that injured States can hold *each* responsible State to account for the wrongful conduct as a whole in the context of climate change where the highest GHG emitting States have caused the overwhelming proportion of damage from global warming, alongside other emitter States.

169. In invoking the responsibility of any of several States responsible for the same internationally wrongful act, no injured State may claim to recover compensation more than the damage it has suffered[404]. Likewise, the right of a State to invoke the responsibility of any one of multiple States is without prejudice to the right of recourse against the other responsible States, as well as the right of responsible States to exercise remedies against one another, as noted above[405].

ii. Invocation of Responsibility for "Different" Internationally Wrongful Acts

170. Where States are injured by different internationally wrongful acts committed by several States, the injured State may separately invoke the responsibility of each of the multiple responsible States for the share of the injury that they caused[406]. The ILC gives the example of several States contributing to pollution of a river by the separate discharge of pollutants[407], a salient illustration in the context of States' obligations to prevent, reduce, and control pollution of the atmosphere and of the marine environment[408]. In such cases, "each State is separately responsible for the conduct attributable to it, and that responsibility is not

---

401 ARSIWA, Commentary to Art. 47, ¶ 2.

402 *See* § III.C above.

403 United Nations Committee on the Rights of the Child, Decision Adopted in Respect of Communication No. 104/2019, *Sacchi et al.* v. *Argentina*, document CRC/C/88/D/104/2019 (22 September 2021), ¶ 10.10 ("[The] collective nature of the causation of climate change does not absolve the State party of its individual responsibility that may derive from the harm that the emissions originating within its territory may cause to children, whatever their location."). See also identical decisions regarding Brazil (document CRC/C/88/D/105/2019, ¶ 10.10); France (document CRC/C/88/D/106/2019 ¶ 10.10; Germany (document CRC/C/88/D/107/2019, ¶ 9.10; and Turkey (document CRC/C/88/D/108/2019, ¶ 9.10).

404 ARSIWA, Art. 47(2)(a).

405 *Id*., Art. 47(2)(b).

406 *See* ARSIWA, Commentary to Art. 47, ¶ 8 ("Of course, situations can also arise where several States by separate internationally wrongful conduct have contributed to cause the same damage.").

407 *Id*.

408 *See* § III.B above.

diminished or reduced" by virtue of the involvement of multiple States in the violation[409]. Furthermore, the responsibility of each responsible State can be invoked separately, "on the basis of its own conduct and by reference to its own international obligations"[410].

171. The Court applied this principle of separate invocation in *Corfu Channel*. In that case, the Court found that Albania could be held responsible for the failure to warn the United Kingdom that Yugoslavia had planted mines in the channel, even though Albania knew or should have known that Yugoslavia had done so[411]. The Court held Albania responsible for all the damage that the United Kingdom suffered, notwithstanding Yugoslavia's involvement[412]. *Corfu Channel* thus stands for the proposition that a State may be held responsible for the entirety of the joint damage caused by the independent but related unlawful conduct of two States, "particularly . . . in respect of obligations of prevention (for instance, where there is a failure to exercise due diligence)"[413]. Such a situation may arise out of two or more States' independent failure to mitigate climate change by, for example, preventing significant environmental harm, or protecting and preserving the marine environment from GHG emissions under UNCLOS[414].

C. Remedial Consequences of State Responsibility

172. States that breach their obligations set out in Chapter III above must remedy their violations. Under the customary rules of State responsibility, as reflected in the ARSIWA, breaching States must (*1*) perform their breached obligations and cease any breaches that are ongoing, (*2*) offer appropriate assurances of non-repetition, and (*3*) make full reparation for injuries caused.

1. Performance of Breached Obligations and Cessation of Wrongful Conduct

173. First and foremost, States that have breached their obligations set out in Chapter III above must perform the breached obligation[415] and cease any ongoing conduct that resulted in the violation[416]. The first of these obligations, referred to as the "continued duty of

---

409 ARSIWA, Commentary to Art. 47, ¶ 1; *see DRC* v. *Uganda* Reparations Judgment, ¶ 98 ("The Court recalls that, in certain situations in which multiple causes attributable to two or more actors have resulted in injury, a single actor may be required to make full reparation for the damage suffered" (citing the commentary to Art. 47 of the ARSIWA)); *see also* J. Crawford, *State Responsibility: The General Part* (2014) (Annex 12), pp. 333–336.

410 ARSIWA, Commentary to Art. 47, ¶ 8.

411 *Corfu Channel (United Kingdom* v. *Albania)*, *Judgment (Merits)*, *I.C.J. Reports 1949*, p. 4 ("*Corfu Channel* Judgment"), pp. 22–23.

412 *Id*.; *see also* ARSIWA, Art. 47; ARSIWA, Commentary to Art. 47, ¶ 8; J. Crawford, *State Responsibility: The General Part* (2014) (Annex 12), p. 335.

413 C. Dominicé, "Attribution of Conduct to Multiple States and the Implication of a State in the Act of Another State", in *The Law of International Responsibility* (J. Crawford et al. eds. 2010) (Annex 11), pp. 281–284.

414 *See* § III.B above.

415 ARSIWA, Art. 29 ("The legal consequences of an internationally wrongful act . . . do not affect the continued duty of the responsible State to perform the obligation breached."); *Gabčíkovo-Nagymaros* Judgment, ¶ 114 ("The Court is of the view . . . that although it has found that both Hungary and Czechoslovakia failed to comply with their obligations under the 1977 Treaty, this reciprocal wrongful conduct did not bring the Treaty to an end nor justify its termination.").

416 ARSIWA, Art. 30(a) ("The State responsible for the internationally wrongful act is under an obligation . . . to cease that act, if it is continuing"); *Jurisdictional Immunities of the State (Germany* v. *Italy: Greece*

performance", codifies the fundamental principle of *pacta sunt servanda* in the context of State responsibility: even where States have violated their international legal obligations, those obligations continue in force and States remain obligated to perform them[417].

174. The combination of these two remedial obligations is especially powerful in the climate change context. As described above, it is clear that significant violations of a number of different international legal obligations set out in Chapter III above are ongoing and will worsen dramatically if urgent action is not taken to, at a minimum, limit global temperature rise to no more than 1.5ºC above pre-industrial levels. To comply with their obligations of performance and cessation, responsible States must therefore immediately return to a path of compliance, including by dramatically cutting emissions, reaching global peaking of GHG emissions as soon as possible, and undertaking rapid reductions thereafter[418].

2. Assurances of Non-Repetition

175. Relatedly, responsible States must "offer appropriate assurances and guarantees of non-repetition, if circumstances so require"[419]. Whether such an assurance or guarantee is required is determined on a case-by-case basis depending on "the character of the obligation and of the breach and on whether there is a real risk of repetition"[420].

176. In the context of climate change, there is both a real and serious risk of repetition justifying the need for such assurances and guarantees, as well as the sort of "special circumstances" that the Court has previously found necessary for the order of such measures[421]. With respect to risk of repetition, the science is clear that, if States do not act quickly to limit GHG emissions, they will cause further catastrophic harm to the environment, small island States, and persons and peoples in small island States[422]. Climate change is also creating "positive feedback loops" and "tipping points" beyond which its effects may become irreversible[423]. In these ways, the environmental effects of continued violations of obligations to limit GHG emissions are threatening the *very survival* of small island States and their

---

intervening), Judgment, *I.C.J. Reports 2012*, p. 99 ("*Jurisdictional Immunities* Judgment"), ¶ 137 ("According to general international law on the responsibility of States for internationally wrongful acts, as expressed in this respect by Article 30(a) of the International Law Commission's Articles on the subject, the State responsible for an internationally wrongful act is under an obligation to cease that act, if it is continuing."); *see also Rainbow Warrior (New Zealand / France)*, Decision, 30 April 1990, *Reports of International Arbitral Awards*, Vol. XX, ¶ 114.

417 *See* O. Corten, "The Obligation of Cessation", in *The Law of International Responsibility* (J. Crawford et al. eds. 2010) (Annex 11), p. 546; J. Crawford, *State Responsibility: The General Part* (2014) (Annex 12), pp. 462–465.

418 *See* § III.B.3 above.

419 ARSIWA, Art. 30(b) ("The State responsible for the internationally wrongful act is under an obligation: . . . (b) to offer appropriate assurances and guarantees of non-repetition, if circumstances so require").

420 J. Crawford, *State Responsibility: The General Part* (2014) (Annex 12), p. 476.

421 *Cf. Jurisdictional Immunities* Judgment, ¶ 138 ("[A]s a general rule, there is no reason to suppose that a State whose act or conduct has been declared wrongful by the Court will repeat that act or conduct in the future, since its good faith must be presumed. Accordingly, while the Court may order the State responsible for an internationally wrongful act to offer assurances of non-repetition to the injured State, or to take specific measures to ensure that the wrongful act is not repeated, it may only do so when there are special circumstances which justify this, which the Court may assess on a case-by-case basis.").

422 *See* §§ II.D–E above.

423 *See* §§ II.C–D above.

environments. It is difficult to imagine circumstances more "special"[424] and that could more clearly justify guarantees and assurances of non-repetition.

177. Assurances and guarantees on the part of States that they will take measures to avoid violating their obligations in relation to climate change are particularly important given the systemic nature of State failures to limit GHG emissions. In the case of violations of such obligations, future violations can be expected to continue and to reoccur in the absence of concerted State action. In determining whether guarantees or assurances of non-repetition are warranted in situations where such continued or repeated breaches are expected, the Court has looked closely at evidence of steps taken by the responsible State to prevent future violations[425]. Assurances and guarantees of non-repetition also must be closely tailored to the violations at issue. In determining the measure appropriate in response to transboundary harm in the *Trail Smelter* arbitration, for example, the tribunal examined evidence of meteorological conditions and rates of fumigation to determine which measures of operation were appropriate to prevent future significant pollution[426].

3. Obligations to Make Reparation

178. Responsible States must make reparation for injury caused by the internationally wrongful act[427]. Reparation can take a variety of forms, including restitution,[428] compensation[429], satisfaction[430], or a combination of these[431]. As set out by the Permanent Court of International Justice in *Factory at Chorzów*, reparation "must, as far as possible, wipe out all the consequences of the illegal act and reestablish the situation which would, in all probability, have existed if that act had not been committed"[432]. Injuries may include "any damage, whether material or moral, caused by the internationally wrongful act"[433]. The form

---

424 *See Jurisdictional Immunities* Judgment, ¶ 138.

425 *See LaGrand (Germany* v. *United States)*, *Judgment*, *I.C.J. Reports 2001*, p. 466 ("*LaGrand* Judgment"), ¶¶ 123–124 (taking note of the United States' express commitment to ensure implementation of specific measures necessary to perform its breached obligations before declining Germany's request for a general assurance of non-repetition); *Avena* Judgment, ¶ 149 (taking note of the United States' adoption of outreach efforts to local law enforcement to inform them of relevant treaty obligations); *DRC* v. *Uganda* Merits Judgment, ¶ 256 (taking note of Uganda's commitment during the course of the proceedings to an international agreement obligating it to respect the sovereignty and territorial integrity the DRC).

426 *Trail Smelter* Award, pp. 1934–1937 (noting that the tribunal had taken into account the "nature, the cause, and the course of the fumigations, and . . . the mass of data relative to Sulphur emissions at the Trail Smelter, and relative to meteorological conditions and fumigation at various points down the Columbia River Valley").

427 ARSIWA, Art. 31; *DRC* v. *Uganda* Reparations Judgment, ¶ 70 ("[ARSIWA] Article 31 . . . reflects customary international law"); *Area* Advisory Opinion, ¶ 194 (same).

428 ARSIWA, Art. 35; *DRC* v. *Uganda* Reparations Judgment, ¶ 101.

429 ARSIWA, Art. 36(1); *see Gabčíkovo-Nagymaros* Judgment, ¶ 152; *Wall* Advisory Opinion, ¶¶ 152–153 (recognizing "the essential forms of reparation" including "[r]estitution in kind, or, if this is not possible, payment of a sum corresponding to the value which a restitution in kind would bear" as customary international law (internal citation omitted)).

430 ARSIWA, Art. 37; *DRC* v. *Uganda* Reparations Judgment, ¶¶ 388–389.

431 ARSIWA, Arts. 31, 34–37; *Pulp Mills* Judgment, ¶ 273.

432 *Factory at Chorzów, Judgment (Merits)*, *1928*, *P.C.I.J. Series A*, *No. 17* ("*Factory at Chorzów* Judgment"), p. 47; *see also Wall* Advisory Opinion, ¶¶ 152–153.

433 ARSIWA, Art. 31(2); *see Mixed Claims Commission (Germany / United States)*, *Lusitania Cases*, Opinion, 1 November 1923, *Reports of International Arbitral Awards*, Vol. VII, p. 40 ("*Lusitania* Opinion") ("That one injured is, under the rules of international law, entitled to be compensated for any injury inflicted resulting in mental suffering, injury to his feelings, humiliation, shame, degradation, loss of social position

of reparation depends on "both the actual damage and the technical feasibility of restoring the situation to the *status quo ante*"[434].

179. This Subsection considers restitution, compensation, and satisfaction, which are the forms of reparation most relevant to breaches of the obligations set out in Chapter III above.

i. Restitution

180. Restitution is the primary remedy for breaches of international law. The ILC has endorsed its "primacy" with reference to *Factory at Chorzów*, noting that it "comes first among the forms of reparation" because it "most closely conforms" with the obligation to "re-establish[] the situation that would exist if that act had not been committed"[435]. Article 35 of the ARSIWA thus provides:

> A State responsible for an internationally wrongful act is under an obligation to make restitution, that is, to re-establish the situation which existed before the wrongful act was committed, provided and to the extent that restitution:
>
> (a) is not materially impossible;
>
> (b) does not involve a burden out of all proportion to the benefit deriving from restitution instead of compensation.

181. Albeit in the context of annexation or occupation, the ILC notes that restitution can take many forms, including of "*material restoration* or return of *territory*"[436]. It acknowledges that some forms, such as returning stolen property, may be "simple[]", while not ruling out that, "[i]n other cases, restitution may be a more complex act"[437].

182. This rule can be analogized to climate change. In this context, restitution could come in the form of material, technology, know-how, funding, or other support to restore parts of the built or natural environment lost to climate change. Tuvalu's Long-Term Adaptation Plan ("L-TAP"), for example, is an ambitious project to combat sea-level rise by building up around 3.6 square kilometres of land on the protected side of the country's main island to a maximum height of around 5.75 metres[438]. The project is designed to keep that section of Tuvalu above the worst-case scenarios for sea-level rise by 2100[439]. Work already underway on the project shows that it is possible to take adaptation measures that could save Tuvalu if

---

or injury to his credit or to his reputation, there can be no doubt, and such compensation should be commensurate to the injury. Such damages are very real, and the mere fact that they are difficult to measure or estimate by money standards makes them none the less real and affords no reason why the injured person should not be compensated therefor as compensatory damages.").

434 *Area* Advisory Opinion, ¶ 197.

435 ARSIWA, Commentary to Art. 35, ¶ 3; *see also Pulp Mills* Judgment, ¶ 273 (defining restitution as the "re-establishment of the situation which existed before occurrence of the wrongful act").

436 ARSIWA, Commentary to Art. 35, ¶ 5 (emphases added).

437 *Id*., Art. 35, ¶ 1.

438 Government of Tuvalu, Tuvalu Coastal Adaptation Project, Coastal Construction Designs to Benefit Three Target Islands in Tuvalu (30 August 2021).

439 *Id*.

mitigation progresses apace. The value of keeping alive the chance to save Tuvalu from total submergence is enormously high and would justify significant contributions from a State responsible for the existential threat that Tuvalu faces. Restitution could also go to support systemic adaptation initiatives such as Saint Lucia's Coral Restoration Project, aimed at expanding coral nurseries and restoration programmes in the nation's coasts[440]; Vanuatu's Integrated Water Resource Management project, designed to reduce vulnerability to the impacts from climate change on the country's water resources[441]; Antigua and Barbuda's Debt for Climate Swap, an innovative funding mechanism that allows creditors to finance and redirect the nation's debt toward green domestic investment[442]; and regional initiatives such as the Caribbean Challenge Initiative, which seeks to expand marine protected area coverage in the region[443].

ii. Compensation

183. States responsible for an internationally wrongful act must "compensate for the damage caused thereby, insofar as such damage is not made good by restitution"[444]. The Court has held: "It is a well-established rule of international law that an injured State is entitled to obtain compensation from the State which has committed an internationally wrongful act for the damage caused by it."[445] The ILC's commentary to the ARSIWA notes that "[o]f the various forms of reparation, compensation is perhaps the most commonly sought in international practice"[446].

184. Where a State is responsible for a violation of international law, it must pay compensation for all injury that is causally connected in a "sufficiently direct and certain" manner with the underlying violation[447]. This includes all such damage that is "financially assessable"[448], including all material or moral damage[449]. The ILC has noted that compensable harm includes "the costs incurred in responding to pollution damage"[450]. In the environmental realm, the remedial obligation to pay compensation for pollution damage effectively again reflects the "polluter pays" principle in international environmental law, as noted in Subsection IV.B.2. This principle would require those States most responsible for climate change—that is, major GHG polluting States—to pay compensation for injuries resulting from internationally wrongful acts. Regarding human rights violations, compensation is ultimately "intended . . . to benefit all those who suffered injury resulting from internationally wrongful acts"[451]. In the context of climate change, the requirement of causation serves as the core limiting principle for reparation under the law of State

---

440 Government of Saint Lucia, First National Adaptation Plan Progress Report (2022), p. 27.

441 Government of Vanuatu, National Adaptation Programme for Action (2007), p. 52.

442 Government of Antigua and Barbuda, Adaptation Communication to the UNFCCC (2022), p. 46.

443 Caribbean Challenge Initiative, *The Nature Conservancy* (1 December 2020).

444 ARSIWA, Art. 36(1).

445 *Gabcíkovo-Nagymaros* Judgment, ¶ 152; *see also Pulp Mills* Judgment, ¶ 273.

446 ARSIWA, Commentary to Art. 36, ¶ 2.

447 *DRC* v. *Uganda* Reparations Judgment, ¶ 93.

448 ARSIWA, Art. 36(2).

449 *DRC* v. *Uganda* Reparations Judgment, ¶ 93.

450 ARSIWA, Commentary to Art. 36, ¶ 8.

451 *DRC* v. *Uganda* Reparations Judgment, ¶ 102.

responsibility; indeed, international law does not necessarily require that every State has an equivalent obligation to compensate in the context of climate change.

185. The rule described at Subsection IV.B.2 above with respect to the invocation of responsibility against a plurality of responsible States applies to the obligation to compensate for breach. As the Court explained in *Armed Activities on the Territory of the Congo*, "in certain situations in which multiple causes attributable to two or more actors have resulted in injury, a single actor may be required to make full reparation for the damage suffered"[452]. Nonetheless, causation will have to be assessed in the context of each type of violation[453], and States held liable for reparations can seek to apportion that liability among other major contributors.

186. In the context of climate change, States are responsible to pay under these principles at least two forms of compensation for violations of the obligations set out in Chapter III.

187. *First*, States must pay compensation for losses and damages associated with climate change, including for environmental and human rights impacts. The Court affirmed in *Costa Rica* v. *Nicaragua* that "damage to the environment, and the consequent impairment or loss of the ability of the environment to provide goods and services, is compensable under international law"[454]. The difficulty of estimating the damages to which a State is entitled as compensation for a wrongful act does not qualify the obligation to afford compensation[455]: the Court has recognized the challenges posed by the fact that some parts of the natural environment, especially biodiversity, are not as well documented as the human environment[456]. It has also observed that situations may result where there is a lack of evidence altogether but that compensation may still be awarded[457]. Echoing these principles, the ILC has noted that damage to "environmental values (bio-diversity, amenity, etc.—sometimes referred to as 'non-use values') is, as a matter of principle, no less real and compensable than damage to property, though it may be difficult to quantify"[458].

---

452 *DRC* v. *Uganda* Reparations Judgment, ¶ 98.

453 *Id*., ¶ 94 ("It is also possible that several internationally wrongful acts of the same nature, but attributable to different actors, may result in a single injury or in several distinct injuries. The Court will consider these questions as they arise, in light of the facts of th[e] case and the evidence available. Ultimately, it is for the Court to decide if there is a sufficiently direct and certain causal nexus.").

454 *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua)*, *Judgment, Compensation*, *I.C.J. Reports 2018*, ¶ 42; *see also id*., ¶¶ 34, 41–43. Courts and tribunals in other cases have also quantified environmental damage. *See DRC* v. *Uganda* Reparations Judgment, pp. 126–127, ¶¶ 332, 363–366 (awarding compensation for damage to natural resources, flora, and fauna as part of a global sum); United Nations Compensation Commission, Report and Recommendation Made by the Panel of Commissioners Concerning the Fifth Instalment of "F4" Claims, document S/AC.26/2005/10 (30 June 2005), ¶¶ 102–225, 315–389, 413–490, 546–683, 777 (awarding compensation to Iran, Jordan, Kuwait and Saudi Arabia for environmental damage such as, *inter alia*, reduced crop yields, salinization and depletion of groundwater resources, and damage to marine and coastal ecosystems from oil contamination).

455 *Lusitania* Opinion, p. 40; *Diallo* Judgment, Declaration of Judge Greenwood, ¶ 7 ("[D]amages are no less real because of the difficulty of estimating them . . . .").

456 *See DRC* v. *Uganda* Reparations Judgment, ¶ 360 (recognizing that "wildlife is often subject to less social and technical monitoring than human beings or commercial goods").

457 *See id*., ¶ 106 ("[T]he absence of adequate evidence of the extent of material damage will not, in all situations, preclude an award of compensation for that damage.").

458 ARSIWA, Commentary to Art. 36, ¶ 15.

188. With respect to causation, the Court has required a "sufficiently direct and certain" connection between an injury for which compensation is sought and an underlying wrongful act[459]. As set out in Section II.B above, the IPCC has found overwhelming scientific evidence that GHG emissions cause climate change.

189. The obligation to compensate does not displace other more specific obligations with respect to loss and damage that may apply under relevant primary rules. UNCLOS, for example, calls for establishment of *lex specialis* provisions with respect to damage[460]. In particular, Article 235(2) requires that States Parties take certain actions within their domestic systems to

> ensure that recourse is available in accordance with their legal systems for prompt and adequate compensation or other relief in respect of damage caused by pollution of the marine environment by natural or juridical persons under their jurisdiction[461].

Article 235(3) further requires that States Parties cooperate at the international level "in the implementation of existing international law and the further development of international law" with respect to payment of adequate compensation, such as through "compulsory insurance or compensation funds"[462].

190. *Second*, responsible States must pay compensation to help developing States adapt to climate change. In the context of climate change, "wip[ing] out all consequences of the illegal act" to "reestablish the situation which would, in all probability, have existed if that act had not been committed"[463] means giving States the resources they need to, as closely as possible, restore their natural and built environments to resemble a world without climate change and to make them more resilient against future warming. States that have violated their obligations with respect to climate change, including those described in Chapter III, must therefore materially support States' national adaptation plans for achieving those goals.

iii. Satisfaction

191. Responsible States owe satisfaction in relation to any injuries caused by a violation not fully repaired by the obligations of restitution or compensation[464]. Satisfaction is thus a particularly appropriate remedy for non-material or effectively moral damages to the State[465]. A declaration of a violation by an international court or tribunal is a particularly common form of satisfaction[466]. Other forms of satisfaction have included "a trust fund to manage

---

459 *DRC* v. *Uganda* Reparations Judgment, ¶ 93.

460 UNCLOS, Art. 235(3) (requiring States Parties to "cooperate in the implementation of existing international law and the further development of international law relating to responsibility and liability for the assessment of and compensation for damage and the settlement of related disputes, as well as, where appropriate, development of criteria and procedures for payment of adequate compensation, such as compulsory insurance or compensation funds").

461 UNCLOS, Art. 235(2).

462 *Id*., Art. 235(3).

463 *Cf. Factory at Chorzów* Judgment, p. 47.

464 ARSIWA, Art. 37(1).

465 *See* J. Crawford, *State Responsibility: The General Part* (2014) (Annex 12), p. 527.

466 *See, e.g.*, *DRC* v. *Uganda* Reparations Judgment, ¶ 387.

compensation payments in the interest of the beneficiaries" or a symbolic monetary award for non-pecuniary damages[467].

192. Even as harm to small island States is subject to compensation, the entirety of the injuries being suffered cannot be easily repaired through compensation alone. In *Corfu Channel*, for example, the Court ordered satisfaction in relation to obligations owed to the State sounding in moral damage, in addition to material damage. The Court explained that satisfaction in the form of a declaration of wrongfulness was warranted in light of the need to repair the violation of territorial sovereignty suffered by Albania and to prevent future violations[468]. When called on to adjudicate alleged violations arising out of climate change like those set out in Chapter III, courts and tribunals should likewise consider satisfaction a critical component of responsibility, particularly with respect to the need to establish compensation fund(s), as appropriate.

4. Consequences for All States of Violations of Peremptory Norms

193. As noted above, certain obligations applicable in the context of climate change, including the obligation to respect the right to self-determination, constitute peremptory norms of international law[469], meaning rules of general applicability "from which no derogation is permitted"[470]. Where a State commits a serious breach of a peremptory norm of international law, that breach results in corresponding obligations on all States, even those States not directly connected to a violation. A breach of a peremptory norm of international law is "serious" where it involves a "gross or systematic failure by the responsible State to fulfil the obligation"[471].

194. The first obligation resulting for third States from such a serious breach of a peremptory norm is the obligation not to recognize any situation resulting from that breach, including by refraining from rendering aid or assistance in maintaining such a situation. This obligation, reflected in Article 41(2) of the ARSIWA[472], has recently been affirmed by the ILC in its work on peremptory norms of general international law[473].

195. In applying this obligation of non-recognition in relation to violations of self-determination specifically, the Court has emphasized the role of all States in promoting and

---

467 *See* ARSIWA, Commentary to Art. 37, ¶ 5.

468 *Corfu Channel* Judgment, pp. 35–36.

469 *See* §§ III.A–B.1 above.

470 VCLT, Art. 53; *see also* ILC, Draft Conclusions on Identification and Legal Consequences of Peremptory Norms of General International Law (*Jus Cogens*), with Commentaries, document A/77/10 (2022), Conclusion 3.

471 ARSIWA, Art. 40(1).

472 *Id*., Art. 41(2) ("No State shall recognize as lawful a situation created by a serious breach [of a peremptory norm of international law], nor render aid or assistance in maintaining that situation.").

473 ILC, D. Tladi, Special Rapporteur on Peremptory Norms of General International Law (*Jus Cogens*), Third Report, document A/CN.4/714 (12 February 2018), ¶¶ 78, 86.

protecting the right to self-determination[474]. The Court has also recognized the obligation of States not to recognize illegal changes or efforts to solidify international boundaries[475].

196. In the context of climate change, an important manifestation of the non-recognition obligation resulting from violations of peremptory norms thus pertains to the endurance of statehood and the sovereignty of small island States. To give effect to the obligation not to recognize the consequences of States' violations of their obligations to protect the environment and prevent environmental harm infringing the rights to self-determination and sovereignty of small island States, all other States must not credit the consequences of State failures to limit GHG emissions. States must instead recognize the perpetual sovereignty of small island States as well as the permanence of their maritime boundaries and their entitlements to natural resources, even in the face of submergence of land territory[476].

197. The second consequence resulting from a serious breach of a peremptory norm is the obligation of all States to cooperate to bring an end to those breaches, as reflected in Article 41(1) of the ARSIWA[477]. As the ILC explains in its commentary to the ARSIWA: "What is called for in the face of serious breaches is a joint and coordinated effort by all States to counteract the effects of these breaches."[478] This obligation, which the ILC has recently affirmed in relation to its work on peremptory norms[479], accordingly means that third States incur positive duties to cooperate with one another to help put an end to serious violations when they occur.

198. In considering breaches of the right to self-determination, the Court has applied this obligation by emphasizing the role of all States in cooperating to bring an end to violations of that right. For example, in *Wall*, the Court recognized the importance "for all States, while respecting the United Nations Charter and international law, to see to it that any impediment . . . to the exercise . . . of [the] right to self-determination is brought to an end"[480]. And in *Chagos*, the Court called upon States to cooperate with the United Nations to resolve the illegal situation resulting from the violation of the right to self-determination, where in that case the United Nations held a relevant mandate in relation to the issue[481].

199. Cooperation within the meaning of Article 41(1) can take many forms, in line with the discussion above in Chapter III[482]. The form cooperation must take can also vary depending on the guidelines and requirements imposed by international organizations, multilateral environmental compliance mechanisms, and other frameworks entrusted with relevant

---

474 *Chagos* Advisory Opinion, ¶ 180; *see also* ARSIWA, Art. 40, ¶ 5 (explaining that the principle of self-determination "gives rise to an obligation to the international community as a whole to permit and respect its exercise").

475 *See Wall* Advisory Opinion, ¶ 159; *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, ¶¶ 119, 126.

476 *See* § III.A above.

477 ARSIWA, Art. 41(1) ("States shall cooperate to bring to an end through lawful means any serious breach [of a peremptory norm of international law].").

478 *Id*., Commentary to Art. 41, ¶ 3.

479 ILC, D. Tladi, Special Rapporteur on Peremptory Norms of General International Law (*Jus Cogens*), Third Report, document A/CN.4/714 (12 February 2018), ¶¶ 78, 86.

480 *Wall* Advisory Opinion, ¶ 159.

481 *Chagos* Advisory Opinion, ¶ 182.

482 *See* § III.C above.

mandates in relation to climate change and the particular rights implicated by climate change. The multifaceted, inherently global nature of the problem of climate change in no way minimizes these obligations to cooperate on both a multilateral and a bilateral basis. As the ILC notes in its commentary to the ARSIWA, "cooperation, especially in the framework of international organizations, is . . . often the only way of providing an effective remedy" in the case of many breaches of peremptory obligations[483]. Furthermore, cooperation, whether multilateral or bilateral, does not defeat or replace other obligations of States to limit GHG emissions, as described above.

* * *

200. As this Chapter has shown, violations of obligations with respect to climate change result in specific legal consequences. States that are injured by the breach of obligations owed by one or more States may invoke the responsibility of such other States. In some cases, they may even invoke the responsibility of any one of the responsible States for the wrongful conduct as a whole.

201. Responsible States also incur a number of remedial obligations. Critically, they continue to remain liable for the fulfilment of their obligations. They must also urgently cease all ongoing violations. In the context of climate change, the combination of these obligations means that responsible States will be required to take action urgently to return to compliance with their obligations, including by, at a minimum, taking all measures necessary to mitigate climate change consistent with limiting global warming to 1.5ºC. Responsible States must also make guarantees and assurances of non-repetition as well as provide reparation for injuries caused by their violations, including in the form of compensation and satisfaction as appropriate.

202. Third States also incur obligations to cooperate to put an end to failures to limit GHG emissions resulting in serious breaches of peremptory norms, as well as to avoid recognizing situations resulting from breaches of such obligations.

[483] *Id*.

V. Conclusions

203. In response to the Request, and for the reasons set out in this Written Statement, COSIS submits that—

(a) In light of the specific obligations imposed by international law, all States must, as a matter of urgency, and consistent with the principle of common but differentiated responsibilities:

(i) Take all measures necessary on the basis of the best available scientific and international standards, which require, at a minimum, (*1*) limiting average global temperature rise to no more than 1.5ºC above pre-industrial levels, without overshoot, and accounting for any current emissions gaps and the need to transition away from fossil fuels, where current levels of fossil fuel use already exceed Earth's remaining carbon budget[484]; and (*2*) reaching global peaking of GHG emissions as soon as possible and undertaking rapid reductions thereafter;

(ii) Take all measures necessary to ensure that GHG emissions from activities under their jurisdiction or control do not cause damage to other States and their environment, and do not spread beyond the areas over which they exercise sovereign rights, as informed by the duty of due diligence and best available scientific and international standards, consistent with the specific temperature limit and timetable noted in sub-subparagraph (i) above;

(iii) Adopt and enforce laws and regulations to prevent, reduce, and control pollution by GHG emissions, taking account of the best available scientific and international standards, consistent with the specific temperature limit and timetable noted in sub-subparagraph (i) above;

(iv) Cooperate directly or through international organizations to (*1*) prevent, reduce, and control pollution by GHG emissions and (*2*) promote, protect, and respect human and peoples' rights implicated by climate change and its effects;

(v) Make finance flows consistent with a pathway toward low GHG emissions consistent with the specific temperature limit and timetable noted in sub-subparagraph (i) above;

(vi) For developed States, provide technical, financial, and other appropriate assistance to developing States, directly or through international organizations, to assess the impacts of GHG emissions and to prevent, mitigate, and adapt to negative impacts of GHG emissions as informed by the best available and international standards, consistent with the specific temperature limit and timetable noted in sub-subparagraph (i) above;

[484] *See* ¶ 61 above (citing IPCC, "Summary for Policymakers", *Sixth Assessment Synthesis Report* (2023) (Dossier No. 78), p. 21).

(vii) Monitor and assess planned activities under their jurisdiction or control, including through environmental impact assessments and contingency plans, to determine whether such activities may cause substantial damage by GHG emissions, and publish any such reports; and

(viii) Assist developing States in meeting their mitigation and adaptation needs in the face of the adverse impacts of climate change; and

(b) Although afforded a measure of discretion in the means taken, States must be guided by the IPCC's concrete recommendations for reducing GHG emissions through legislation and policy governing energy generation, industry, transportation, agriculture, land use, and other areas;

(c) Where a State or multiple States, by their acts or omissions, breach obligation(s) under subparagraph (a) above by causing significant harm to the climate system and other parts of the environment:

(i) Each State is responsible for any such breaches attributable to it under international law; and, in the case of multiple breaching States responsible for the same internationally wrongful act, States entitled to invoke the responsibility of a breaching State may do so for the full extent of the breach;

(ii) Injured States specially affected by any such breaches, including small island developing States, may invoke the responsibility of the breaching State(s) for any breach of an obligation owed to (*1*) the injured State individually or (*2*) a group of States, including that specially affected State;

(iii) Any State may invoke the responsibility of the breaching State(s) for failure to comply with obligations owed to the international community as a whole;

(iv) The breaching State(s) must (*1*) continue to perform the breached obligation, (*2*) cease any continuing breaches and offer appropriate assurances and guarantees of non-repetition, and (*3*) make full reparation—including restitution, compensation, and/or satisfaction, as appropriate—for the injury caused to the injured State by the internationally wrongful act, including for any damage, whether material or moral, caused by such act; and

(v) All other States must (*1*) refrain from recognizing or aiding or assisting in the continuation of a situation resulting from any such breach amounting to a serious breach of a peremptory norm of international law, and (*2*) cooperate to bring an end to that breach, including through frameworks supplied under multilateral environmental conventions and international organizations, including the United Nations.

(*Signed*)

Hon. Gaston Browne, Prime Minister
Government of Antigua and Barbuda
Co-Chair of the Commission

(*Signed*)

Hon. Feleti Penitala Teo, Prime Minister
Government of Tuvalu
Co-Chair of the Commission

CERTIFICATION

I certify that:

- All Annexes are true copies of the documents referred to; and
- The number of pages of original Annexes attached to this Written Statement does not exceed 750 in total.

(*Signed*)

Catherine Amirfar
Counsel to the Commission