

INTERNATIONAL TRIBUNAL FOR THE LAW OF THE SEA

Case No. 31

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



**WRITTEN STATEMENT OF THE
PEOPLE'S REPUBLIC OF BANGLADESH**

16 JUNE 2023

1. The People’s Republic of Bangladesh (“Bangladesh”) is honoured to make this written statement in Case No. 31 pursuant to the Tribunal’s Orders of 16 December 2022 and 15 February 2023 in response to the request for an advisory opinion by the Commission of Small Island States on Climate Change and International Law (“COSIS”).

2. As an original signatory of the U.N. Convention on the Law of the Sea (“UNCLOS,” or the “Convention”) upon the conclusion of the Third Law of the Sea Conference in 1982 and a global leader for climate justice, as well as one of the most vulnerable countries impacted by catastrophic climate change, Bangladesh welcomes these advisory proceedings, which it hopes will clarify the specific obligations of States Parties to prevent, reduce, and control greenhouse gas (“GHG”) emissions and to protect and preserve the marine environment and vulnerable coastal communities from climate-change impacts.

3. As noted by H.E. Sheikh Hasina, the Prime Minister of Bangladesh, at the 26th Conference of the Parties to the U.N. Framework Convention on Climate Change (the “UNFCCC”) in 2021 at Glasgow (“COP26”), “Bangladesh is one of the most climate-vulnerable countries” in the world despite having “contribut[ed] less than 0.47% of global emissions.”¹ Climate change has emerged as the biggest threat to sustainable development in the country and is triggering widespread and unprecedented impacts that disproportionately burden the livelihoods and environmental sustainability of the poorest in society.

4. Bangladesh is particularly vulnerable to climate change in part due to its geography: the Ganges Delta, the world’s largest river delta, comprises over half of Bangladesh’s territory and its entire southern coast on the Bay of Bengal. As a low-lying coastal State, Bangladesh suffers the worst consequences of the deleterious effects of climate change on the ocean, including sea-level rise, coastal flooding, tropical cyclones, and storm surges. As a result, saline seawater is penetrating deep into agricultural lands, with devastating consequences for staple crops. When mixed with vulnerable and exposed social conditions, these compounding hazards displace individuals and communities, damage infrastructure, destroy livelihoods, and lead to loss of life. In 2020 alone, Cyclone Amphan killed 128 people and forced 2.5 million residents to relocate and migrate from their homes.

5. In this written statement, Bangladesh underscores the urgent need for ambitious climate action consistent with the obligations of States under international law and in particular Part XII of the Convention. Section I addresses Bangladesh’s vulnerability to the impacts of climate change on the ocean and its global leadership in responding to those impacts. Section II describes the deleterious effects that Bangladesh and its people suffer due to climate change. Section III then sets out States Parties’ key specific obligation under the Convention regarding GHG emissions. Section IV contains concluding observations.

I. Bangladesh’s vulnerability to climate change and leadership on the response

6. Bangladesh’s geography in and around the Ganges Delta bordering the Himalayas to the north and the Bay of Bengal to the south makes it especially vulnerable to the impacts of climate change on coastal communities and the marine environment. Moreover, three of the world’s largest rivers—the Ganges, the Brahmaputra, and the Meghna—drain their water and silt to the Bay of Bengal through Bangladesh. According to German Watch’s Global Risk Index, between 2000 and 2019, Bangladesh ranks as the seventh-most climate-affected

¹ Statement of H.E. Sheikh Hasina, COP26 (1 November 2021).

country in the world, when accounting for fatalities, economic losses, and number of climate events.²

7. The Ganges Delta consists of the Ganges and Brahmaputra river systems, through which water flows from the Himalayan Mountains into the Bay of Bengal. The Delta spans over 100,000 square kilometres—about the size of Iceland or the Republic of Korea—and lies fewer than five meters above sea level at its highest points. In addition, Bangladesh’s coastal zone accounts for one third of its land territory.³ The satellite photograph below shows the Ganges Delta, with rivers flowing from the Himalayas to the Bay of Bengal.

Ganges Delta, from the Himalayas to the Bay of Bengal



8. Bangladesh’s low elevation and high susceptibility to flooding make it vulnerable to physical and geological changes to the ocean related to climate change. The most significant of these is sea-level rise. Bangladesh’s Soil Resources Development Institute estimates that, from 1973 to 2009, the land surface affected by encroaching seawater grew from 833,000 to

² See National Adaptation Plan of Bangladesh (2023–2050), p. i (citing Germanwatch, *Global Climate Risk Index 2021: Who Suffers Most from Extreme Weather Events?* (2021), p. 13).

³ Hafez Ahmad, *Bangladesh Coastal Zone Management Status and Future Trends*, 22 *J. COASTAL ZONE MANAGEMENT* 1 (2019), p. 1.

1.056 million hectares.⁴ The Ministry of Environment, Forest, and Climate Change estimates that sea-level rise will submerge 12 and 18 percent of Bangladesh’s coastal areas by 2100.⁵

9. Bangladesh has experienced more severe flooding due to sea-level rise, as well as more frequent and intense storms. These include tropical cyclones, storm surges, and unprecedented droughts, which cause flooding, coastal and riverbank erosion, and landslides. All of these occur infrequently in the Ganges Delta and the Bay of Bengal, but climate change has resulted in their significant intensification.⁶ For example, Bangladesh experienced extreme rainfall over six days in August 2017, which was rare for the pre-monsoon season. The U.N. Intergovernmental Panel on Climate Change (the “IPCC”) found in its Special Report on the Ocean and the Cryosphere that anthropogenic climate change makes extreme rainfall nearly twice as likely.⁷ Bangladesh is also suffering more frequent cyclones, such as Cyclone Mocha in May 2023, which brought heavy rains and winds of up to 115 kilometres per hour.⁸

Impact of Sea Level Rise



⁴ “Great Distress”: Bangladesh Bears Brutal Cost of Climate Crisis, AL JAZEERA (3 November 2021).

⁵ Ministry of Environment, Forest, and Climate Change, Climate Change Initiatives of Bangladesh: Achieving Climate Resilience, p. 2.

⁶ Third National Communication of Bangladesh to the UNFCCC (June 2018), p. iii.

⁷ IPCC, *Chapter 6: Extremes, Abrupt Changes and Managing Risks*, SPECIAL REPORT ON THE OCEAN AND CRYOSPHERE IN A CHANGING CLIMATE (2019), p. 601.

⁸ United Nations, As Cyclone Mocha Damages Rohingya Refugee Camps, Aid and Support Is Urgently Needed (15 May 2023).

10. The photographs below of Dhaka, Bangladesh’s capital, depict both the extreme vulnerability of the city’s residents and how flooding can affect them, as exemplified by the severe inundation in the 2022 pre-monsoon season.

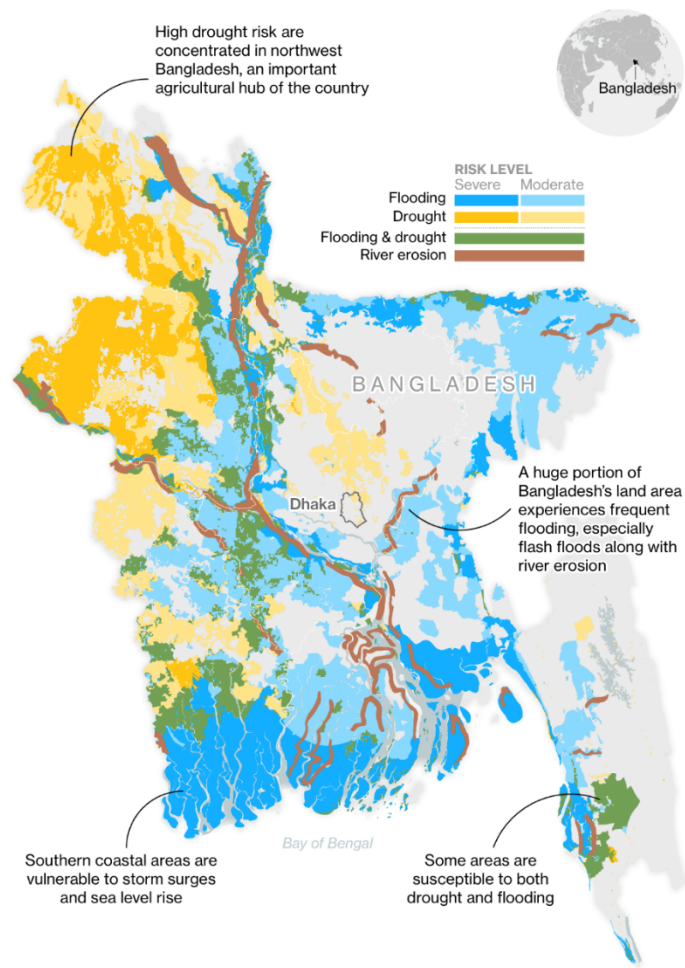
Dhaka, 2022⁹



11. In short, Bangladesh’s geography as a low-lying State makes it highly prone to sea-level rise, coastal flooding, and natural disasters such as tropical cyclones and storm surges. Erratic rainfall patterns also contribute to urban flooding due to heavy rainfall in a short period of time; the existing drainage infrastructure cannot drain the storm waters, causing localized urban flooding. Bangladesh also faces increased risks of erosion, saltwater intrusion, landslides, heatwaves, and droughts due to climate change. The maps below—based on data from the Bangladesh Agricultural Research Council and the Ministry of Environment, Forest, and Climate Change, respectively—shows the regions in which Bangladesh is most vulnerable to flooding, drought, and erosion.

⁹ Stability Eludes Climate Refugees in Bangladesh’s Sinking Cities, PREVENTIONWEB (25 January 2023); Climate Migration Pushes Bangladesh’s Megacity to the Brink, BLOOMBERG (28 June 2022).

Climate Risk Zones in Bangladesh¹⁰



12. In the face of the global climate crisis, Bangladesh has taken a global leadership role in climate change negotiations and has advocated for a global response necessary to effectively address the crisis. Bangladesh ratified the UNFCCC in 1994,¹¹ and it has played a key role in negotiations on behalf of climate-vulnerable States since the first Conference of the Parties in 1995. Bangladesh also led negotiations for the group of Least Developed Countries at UNFCCC from 2005 to 2006 and continues to play a vital role as a top-tier negotiator of that group. Bangladesh ratified the Kyoto Protocol in 2001¹² and signed the Paris Agreement in 2016.¹³

13. Bangladesh is a member of the Climate Vulnerable Forum (the “CVF”), a partnership of States particularly vulnerable to climate change, which works to “build[] cooperation, knowledge and awareness on climate-change issues” and aims “to achieve maximal resilience and to meet 100% domestic renewable energy production as rapidly as possible.”¹⁴

¹⁰ *Climate Migration Pushes Bangladesh's Megacity to the Brink*, BLOOMBERG (28 June 2022) (citing data from the Bangladesh Agricultural Research Council).

¹¹ UN Treaty Collection, [UNFCCC Status List](#).

¹² UN Treaty Collection, [Kyoto Protocol Status List](#).

¹³ UN Treaty Collection, [Paris Agreement Status List](#).

¹⁴ CVF, *Establishment*.

Bangladesh chaired the CVF from 2011 to 2013 and again from 2020 to 2022. Bangladesh is also a member of the Vulnerable Twenty (the “V20”) Group of Ministers of Finance, which was created in 2015 to “strengthen economic and financial responses to climate change.”¹⁵ Bangladesh chaired the V20 from 2020 to 2022.

II. Deleterious effects of climate change on humans and ecosystems

14. The impacts of climate change on the ocean create deleterious effects for humans and ecosystems in Bangladesh that are catastrophic in scale and gravity. This Section discusses the worst of those effects, namely massive population displacement and destruction of infrastructure (Subsection A), hazards to human health (Subsection B), and harm to living resources and marine life (Subsection C).

A. Population displacement and destruction of infrastructure

15. Sea-level rise and flooding put residents of Bangladesh at extreme risk for climate displacement. Climate disasters displaced around 4.1 million persons in Bangladesh in 2019 alone, at least temporarily.¹⁶ Looking ahead, Bangladesh is the country with the second largest number of people facing very high exposure to climate displacement, behind only China.¹⁷ More than half of Bangladesh’s 170 million residents live in the Delta, and virtually all rely on it for survival; furthermore, around 35 million people—29 percent of the population—live in coastal areas with an average elevation under 1.5 meters.¹⁸

16. The IPCC has predicted that nearly 1 million persons in Bangladesh will migrate permanently due to sea-level rise by 2050 and 2.1 million by 2100, “largely internally, with substantial implications for nutrition, shelter and employment in destination areas.”¹⁹ But the effects could be much greater than that: one study showed that a single degree increase in average global temperature above 2019 levels could lead to sea-level rise that would displace 40 million residents of Bangladesh by 2100.²⁰

17. Climate displacements have grave implications for the rights and entitlements of affected individuals and communities. Among other impacts, displacement compromises affected persons’ safety and security; increases incidents of gender-based violence; worsens exploitation of vulnerable persons, including children, senior citizens, and persons with special needs; exacerbates inequality, including in delivery of humanitarian assistance; separates families; and leads to loss of property and personal identification documents. As the

¹⁵ V20, *Establishment*.

¹⁶ World Bank, Country Climate and Development Report: Bangladesh (October 2022), p. 16.

¹⁷ U.S. Agency for Int’l Development, Fragility and Climate Risks in Bangladesh (2018), p. 4.

¹⁸ Hafez Ahmad, Bangladesh Coastal Zone Management Status and Future Trends, 22 J. COASTAL ZONE MANAGEMENT 1 (2019), p. 1; see also Sowmen Rahman & Mohammed Aatur Rahman, Climate Extremes and Challenges to Infrastructure Development in Coastal Cities in Bangladesh, 7 WEATHER & CLIMATE EXTREMES 96 (March 2015).

¹⁹ IPCC, *Chapter 4: Sea Level Rise and Implications for Low-Lying Islands, Coasts and Communities*, SPECIAL REPORT ON THE OCEAN AND THE CRYOSPHERE IN A CHANGING CLIMATE (2019), p. 397.

²⁰ See Permanent Mission of the People’s Republic of Bangladesh to the United Nations, *Climate Change* (citing data from the Ministry of Environment, Forest, and Climate Change).

World Bank has found, “increasing internal climate-induced migration” in Bangladesh will further strain climate-sensitive “infrastructure and social safety net systems.”²¹

18. Such population displacement also has a disproportionate impact on the thousands of Rohingya who have been forcibly displaced to Bangladesh as a result of violent persecution in Rakhine State in Myanmar. Bangladesh is currently hosting approximately 1.2 million Rohingya in various camps, many of which are in coastal zones. Cox’s Bazar, a coastal region of Bangladesh, alone is now home to more than 900,000 displaced Rohingya.²²

19. Coastal flooding and weather events have already destroyed critical infrastructure. The photograph below from September 2018 shows two children playing in what remains of their former school, the Sharaitala Government Primary School, which used to be in the middle of their village in Cox’s Bazar. A cyclone wiped away most of the village in 1991, and repeated flooding led the remaining residents to abandon it entirely in 2015. The World Bank estimates that weather-related coastal destruction like that of Sharaitala cost the Government over US\$3 billion from 1994 to 2013, equal to 1.2 percent of Bangladesh’s gross domestic product (“GDP”).²³

School Destroyed by Extreme Weather, Cox’s Bazar²⁴



²¹ World Bank, Country Climate and Development Report: Bangladesh (October 2022), p. 17.

²² United Nations, Country Team Results Report: Bangladesh (2022) p. 41.

²³ Lia Sieghart & David Rogers, *Why Climate Change Is an Existential Threat to the Bangladesh Delta*, WORLD BANK BLOGS (21 October 2015).

²⁴ Ministry of Foreign Affairs, Brief for the 2021 UN Climate Change Conference (COP26) (November 2021).

Infrastructure Collapsed in Coastal Areas



B. Agriculture, food, and water insecurity

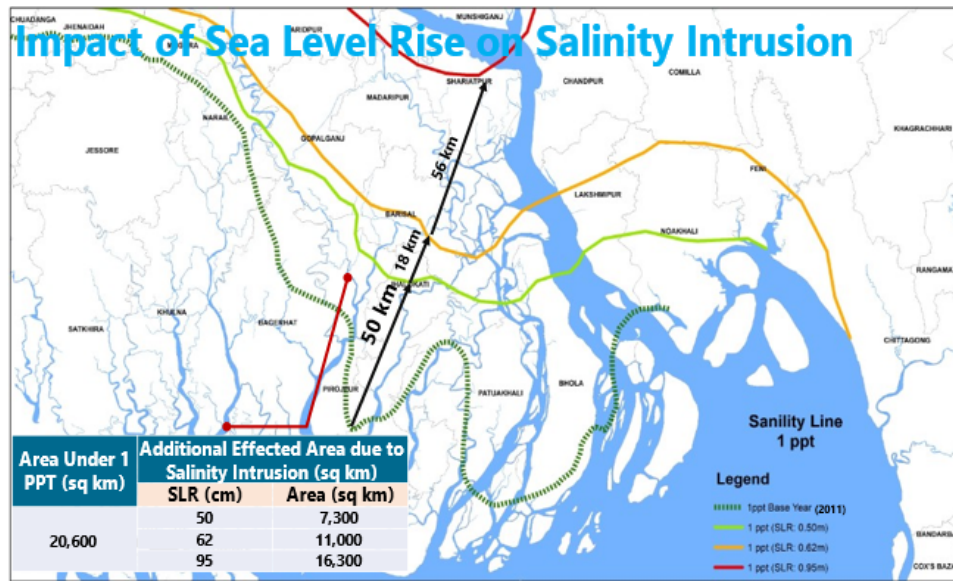
20. One critical and foreseeable impact of sea-level rise is seawater intrusion into cultivable coastal territories affecting agriculture-based livelihoods of coastal populations. The IPCC has noted high salinity levels in the Ganges Delta, with corresponding effects on agriculture and freshwater fish. The IPCC concluded in its Special Report on the Ocean and Cryosphere in a Changing Climate that sea-level rise

will affect agriculture mainly through land submergence, soil and fresh groundwater resources salinisation, and land loss due to permanent coastal erosion, with consequences on production, livelihood diversification and food security, especially in heavily coastal agriculture-dependent countries such as Bangladesh.

The Report went on to note the discontinuance of cultivation of certain crops in coastal Bangladesh “due to challenges to cope with current salinity levels,” and that “salinity is projected to have an unambiguously negative influence on all dry-season crops over the next 15–45 years.”²⁵ The map below shows the impact of sea-level rise on salinity intrusion in Bangladesh’s coastal region.

²⁵ IPCC, *Chapter 4: Sea Level Rise and Implications for Low-Lying Islands, Coasts and Communities*, SPECIAL REPORT ON THE OCEAN AND THE CRYOSPHERE IN A CHANGING CLIMATE (2019), pp. 378–380.

Impact of Sea-Level Rise on Salinity Intrusion



21. Floods, cyclones, and storm surges also damage agricultural lands and irrigation systems, in turn impacting food production, livestock, and fisheries. Flash flooding during the heavy rains in the August 2017 pre-monsoon season mentioned above, for example, inundated some 200,000 hectares of harvestable crops, leading to a 30 percent rise in rice prices.²⁶ These factors are already limiting access to food sources in Bangladesh, leading to malnutrition in affected communities. Food security is a particularly acute challenge given the precious little arable land in Bangladesh, one of the ten most densely populated countries in the world. The photograph below shows flooding from 2020 in an agricultural community outside of Savar, northwest of Dhaka.

Savar, Bangladesh (2020)²⁷



²⁶ IPCC, *Chapter 6: Extremes, Abrupt Changes and Managing Risks*, SPECIAL REPORT ON THE OCEAN AND CRYOSPHERE IN A CHANGING CLIMATE (2019), p. 601.

²⁷ Bangladesh Has an Ambitious Climate Plan; A \$2 Billion Loan Could Give It a Start, BLOOMBERG (24 August 2020).

22. Climate-change impacts on agricultural lands also present a major economic threat. The agricultural sector is the country’s largest source of employment, providing 43 percent of jobs nationally and 54 percent in rural areas.²⁸ The World Bank estimates that, by 2050, “[o]ne-third of agricultural GDP may be lost due to climate variability and extreme events” in Bangladesh and that, by 2040, “cropland may shrink by 18 percent in Southern Bangladesh and 6.5 percent nationally.”²⁹ Severe flooding could decrease GDP by as much as 9 percent.³⁰

23. The water sector in Bangladesh is highly vulnerable to climate-change impacts, including sea-level rise.³¹ Salinization exacerbates an already acute problem of scarce potable water in Bangladesh, where “[d]eaths due to water scarcity and quality are widespread,” especially among children.³² Seawater intrusion affects ground water systems and soil salinity, in turn decreasing quantities of water available for drinking and agriculture production, particularly of rice.³³ High levels of salt in natural drinking water supplies are also associated with hypertension in adults and birth complications among pregnant women.³⁴

C. Harm to living resources and marine life

24. The impacts of climate change on the ocean also threaten Bangladesh’s living resources and marine life. Rising sea levels, extreme weather events, salinization of freshwater and soil, and ocean deoxygenation and acidification all threaten Bangladesh’s biodiverse terrestrial and marine ecosystems.

25. Mangroves are particularly important—and threatened—habitats in Bangladesh. The Sundarbans Reserve Forest is the world’s largest continuous mangrove forest, covering 4.07 percent of Bangladesh’s total area.³⁵ It is recognized as a wetland of international importance under the 1992 Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat in 1992, and 1,400 square kilometres of the forest was declared a UNESCO World Heritage Site in 1997. The parts of the Sundarbans facing the sea have already started losing their original banks, along with hundreds of trees. Huge chunks of the Sundarbans have already been submerged. Due to the ingress of saline water, many native Sundari trees are showing signs of decay. This loss of habitat has as a devastating impact on endemic fish and other aquatic animals. Today, the forest is at risk of catastrophic inundation. Seawater may overtake the Sundarbans as early as 2050. This would swamp rare and fragile vegetation endemic to the region, permanently alter aquatic fauna, and destroy the habitat of terrestrial animals that depend on the forest’s resources.³⁶

26. Offshore, Bangladesh’s coastal zone comprises nearly 50,000 square kilometres of marine waters rich in fish and other aquatic resources. These include the coral reefs and over

²⁸ World Bank, Country and Climate Development Report for Bangladesh (2022), p. 37.

²⁹ *Id.*, p. 12.

³⁰ World Bank, Urgent Climate Action Crucial for Bangladesh to Sustain Strong Growth (31 October 2022).

³¹ Third National Communication of Bangladesh to the UNFCCC (June 2018), p. ix.

³² World Bank, Water and Health: Impact of Climate Change in Bangladesh (2022), p. 11.

³³ Third National Communication to the UNFCCC (June 2018), pp. 8–9, 12–15.

³⁴ World Bank, Water and Health: Impact of Climate Change in Bangladesh (2022), p. 31.

³⁵ Third National Communication of Bangladesh to the UNFCCC (June 2018), p. 75.

³⁶ *Id.*, p. 184.

200 species of seaweed around Saint Martin Island, located off the southern tip of the Cox's Bazar peninsula.³⁷ A recent study from Dhaka University revealed that the reefs may be depleted of coral by 2045.³⁸ Bangladesh's marine waters are also home to about 475 species of fish, 335 species of mussels and snails, and numerous species of crustaceans, turtles, and tortoises, several of which are critically endangered.³⁹ As oceans warm and experience deoxygenation, these species and others are predicted to decline in production and abundance.⁴⁰

III. Specific obligations under the Convention

27. Part XII of the Convention places specific obligations on States Parties to prevent, reduce, and control the GHG emissions that result in the deleterious effects related to climate change, and to protect and preserve the marine environment from those effects. The Request submitted by COSIS asks the Tribunal to clarify:

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

(a) to prevent, reduce and control pollution of the marine environment in relation to the deleterious effects that result or are likely to result from climate change, including through ocean warming and sea level rise, and ocean acidification, which are caused by anthropogenic greenhouse gas emissions into the atmosphere?

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

28. In response to Question 1, Subsection A demonstrates why GHG emissions constitute pollution of the marine environment as defined in Article 1(1)(4) of the Convention, and then Subsection B describes States Parties' resulting obligations under Article 194 in Part XII to adopt measures limiting average global temperature rise to within 1.5°C of pre-industrial levels, consistent with scientific consensus and international standards. In response to Question 2, Subsection C describes the obligations under Article 192 in Part XII.

³⁷ Farhad Hossen et al., *Shoreline Change Detection Using DSAS Technique: Case of Saint Martin Island, Bangladesh* (2 March 2023), p. 2.

³⁸ Md. Yousuf Gazi et al., *Detection of Coral Reefs Degradation Using Geospatial Techniques Around Saint Martin's Island, Bay of Bengal*, *OCEAN SCIENCE J.* (2020), p. 8; see also Shaikh Sayed Ahammed et al., *A Study of Environmental Impacts on the Coral Resources in the Vicinity of the Saint Martin Island, Bangladesh*, 5 *INT'L J. SCIENTIFIC & TECHNOLOGY RESEARCH* 37 (January 2016), p. 38.

³⁹ Third National Communication of Bangladesh to the UNFCCC (June 2018), p. 164.

⁴⁰ Elayaperumal Vivekanandan et al., *Climate Change Effects in the Bay of Bengal Large Marine Ecosystem*, 17 *ENVIRONMENTAL DEVELOPMENT* 46 (January 2016), pp. 49–50.

A. GHG emissions constitute pollution of the marine environment as defined in Article 1(1)(4) of the Convention

29. Article 1(1)(4) of the Convention defines “pollution of the marine environment” 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 of use of sea water and reduction of amenities.

30. Anthropogenic GHG emissions satisfy that definition because (1) they indirectly introduce heat into the marine environment and (2) that introduction results or is at least likely to result in deleterious effects in Bangladesh and beyond. The heat that the ocean and marine cryosphere absorb indirectly from anthropogenic GHG emissions cause significant physical changes to the ocean.

31. The most significant of these for Bangladesh is sea-level rise. Heat absorption by the marine environment causes sea-level rise for two principal reasons. *First*, heat causes water to expand as it warms,⁴¹ accounting for 50 percent of sea-level rise from 1971 to 2018. *Second*, it causes the marine cryosphere to melt, contributing 20 percent of mean sea-level rise in the same period.⁴² The IPCC has concluded definitively that these two factors have caused sea-level rise: it estimates that the global mean sea level increased by approximately 0.20 meters between 1901 and 2018, with future projections rising significantly after that.⁴³

32. The IPCC has also concluded that ocean warming changes ocean and air currents, intensifying storms and cyclones especially in the tropics.⁴⁴ As noted above, the IPCC has concluded that rising atmospheric temperatures made recent severe storms—including in Bangladesh—much more likely to have occurred.⁴⁵ As the ocean warms, it absorbs less heat from the atmosphere, leaving more of that heat in the air. The warmer atmosphere increases the intensity and frequency of storms.⁴⁶

33. The physical changes caused by the introduction of heat into the marine environment—including sea-level rise by thermal expansion and melting of the marine

⁴¹ This phenomenon is known as thermal expansion.

⁴² IPCC, *Chapter 9: Ocean, Cryosphere and Sea Level Change*, SIXTH ASSESSMENT REPORT—CLIMATE CHANGE 2021: THE PHYSICAL SCIENCE BASIS (2021), p. 1216.

⁴³ IPCC, *Summary for Policymakers*, SIXTH ASSESSMENT SYNTHESIS REPORT (2023), pp. 12–13; *see also* IPCC, *Chapter 4: Sea Level Rise and Implications for Low-Lying Islands, Coasts and Communities*, SPECIAL REPORT ON THE OCEAN AND THE CRYOSPHERE IN A CHANGING CLIMATE (2019), p. 324.

⁴⁴ *See* IPCC, *Chapter 15: Small Islands*, SIXTH ASSESSMENT REPORT—CLIMATE CHANGE 2022: IMPACTS, ADAPTATION AND VULNERABILITY (2022), p. 2045; IPCC, *Chapter 11: Weather and Climate Extreme Events in a Changing Climate*, SIXTH ASSESSMENT REPORT—THE PHYSICAL SCIENCE BASIS (2021), pp. 1517–1765.

⁴⁵ *See* ¶ 9 above (citing IPCC, *Chapter 6: Extremes, Abrupt Changes and Managing Risks*, SPECIAL REPORT ON THE OCEAN AND CRYOSPHERE IN A CHANGING CLIMATE (2019), p. 601).

⁴⁶ *See* IPCC, *Chapter 11: Weather and Climate Extreme Events in a Changing Climate*, SIXTH ASSESSMENT REPORT—THE PHYSICAL SCIENCE BASIS (2021), p. 1517.

cryosphere, as well as changing weather and storm patterns—result or are likely to result in “deleterious effects,” satisfying that portion of the definition in Article 1(1)(4).

34. As noted in Section II above, sea-level rise and changing storm patterns have had catastrophic, deleterious effects on Bangladesh, threatening to make our country uninhabitable by the end of the century. Sea-level rise and storms have displaced millions of people in Bangladesh, wiping out entire communities. Seawater intrusion on arable land and in aquifers creates food and water insecurity. Moreover, all these effects have severely damaged rare and fragile coastal ecosystems in the Ganges Delta. The deleterious effects of climate change in Bangladesh alone are sufficient to meet the definition in Article 1(1)(4)—and are emblematic of deleterious effects the world over that will only intensify to ever more devastating levels as the ocean warms.

B. States Parties must take all necessary measures to limit global average temperature rise to 1.5°C above pre-industrial levels

35. In relation to Question 1, Part XII imposes several specific obligations on States Parties to protect and preserve the marine environment from pollution. The key obligation, as reflected in Article 194(1) of the Convention, is to take measures that are necessary to prevent, reduce, and control pollution of the marine environment. As applied to GHG emissions, States Parties must take such measures in light of the scientific consensus that warming beyond 1.5°C above pre-industrial levels would substantially increase the risk of severe harm, and of the prevailing international standard that global average temperature rise must not exceed that threshold.

36. Article 194(1) of UNCLOS requires States Parties to take “all measures consistent with this Convention that are necessary to prevent, reduce and control pollution of the marine environment from any source, using for this purpose the best practicable means at their disposal and in accordance with their capabilities.” Relatedly, Article 194(2) requires States Parties 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, and that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the areas where they exercise sovereign rights in accordance with this Convention.

37. These requirements to “take all measures” are obligations of due diligence. The Seabed Disputes Chamber has described such obligations as duties to “deploy adequate means, to exercise best possible efforts, to do the utmost, to obtain this result.”⁴⁷ The content of the due diligence obligation evolves with relevant scientific standards. As the Seabed Disputes Chamber found, “due diligence” is a variable concept: what it requires “may change over time as measures considered sufficiently diligent at a certain moment may become not

⁴⁷ Responsibilities and Obligations of States with Respect to Activities in the Area, Case No. 17, Advisory Opinion, 2011 ITLOS REP. 10 (1 February) (“Area Advisory Opinion”), ¶ 110; see also Pulp Mills on the River Uruguay (Argentina v. Uruguay), Judgment, 2010 ICJ REP. 14 (20 April), ¶ 187.

diligent enough in light, for instance, of *new scientific or technological knowledge*,” or “in relation to the risks involved in the activity.”⁴⁸

38. This is also consistent with the Convention’s emphasis on scientific standards, including the obligation in Article 200 that States Parties cooperate “for the purpose of promoting studies, undertaking programmes of scientific research and encouraging the exchange of information and data acquired about pollution of the marine environment,” and to “acquire knowledge for the assessment of the nature and extent of pollution, exposure to it, and its pathways, risks and remedies.” The obligation to conduct scientific research into pollution of the marine environment would be hollow if that research did not inform what measures were “necessary” to address it.

39. Accordingly, international rules and standards supplement scientific knowledge to determine the content of the due diligence obligation, consistent with the explicit references to such rules and standards in Articles 197, 207(1), 211(2), and 213. In particular, Article 207(1) provides that States Parties “shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment from land-based sources . . . *taking into account internationally agreed rules, standards and recommended practices and procedures.*” Article 213 further requires States Parties to “adopt laws and regulations and take other measures necessary to *implement applicable international rules and standards* established . . . to prevent, reduce and control pollution of the marine environment from land-based sources.” Finally, Article 222 imposes the same obligation as Article 213 with respect to pollution “from or through the atmosphere.”

40. Furthermore, determining what “measures” are “necessary” to prevent, reduce, and control greenhouse gas emissions, and control their spread, requires reference to other international standards. Article 31(3)(c) of the Vienna Convention on the Law of Treaties provides that, in treaty interpretation: “There shall be taken into account, together with the context . . . any relevant rules of international law applicable in the relations between the parties.” Consistent with this rule, “when several norms bear on a single issue they should, to the extent possible, be interpreted so as giving rise to a single set of compatible obligations.”⁴⁹

41. Other “relevant rules of international law” must include the contemporary state of international environmental law. For example, the *South China Sea* tribunal interpreted Article 194 of UNCLOS by reference to the Convention on Biological Diversity—which postdates UNCLOS by over a decade—and the Convention on International Trade in Endangered Species of Wildlife Fauna and Flora (“CITES”) in identifying States Parties’ obligations under Part XII.⁵⁰ Similarly, the International Court of Justice (the “ICJ”) has held

⁴⁸ *Area Advisory Opinion*, ¶ 117 (emphasis added); see also UN International Law Commission, *Commentaries on the Draft Articles on Prevention of Transboundary Harm from Hazardous Activities*, 2001 Y.B. International Law Commission, vol. II, part II, Article 3, ¶ 11.

⁴⁹ UN International Law Commission, *Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law*, UN Doc. A/CN.4/L/682 (13 April 2006), ¶ 4.

⁵⁰ *South China Sea (Philippines v. China)*, PCA Case No. 2013-19, Award (12 July 2016) (“*South China Sea Award*”), ¶¶ 945, 956.

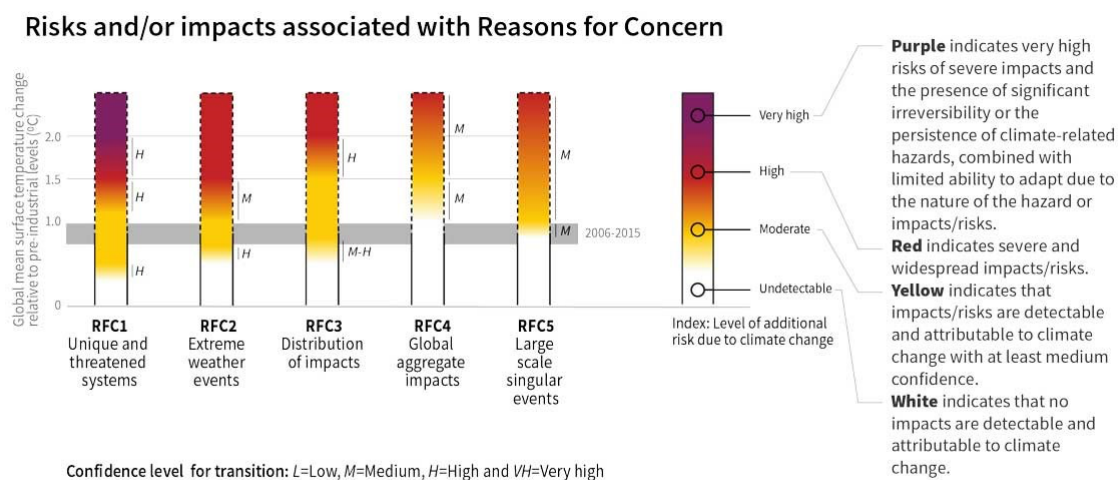
that an ongoing, treaty-based obligation to “protect” requires States Parties to account for “current standards” when evaluating “environmental risks.”⁵¹

42. Thus, determining the scope and content of States Parties’ due diligence obligation under Article 194 to prevent, reduce, and control pollution of the marine environment requires reference to scientific consensus and international standards. Those standards converge on a target of limiting global average temperature rise to 1.5°C above pre-industrial levels. Accordingly, Article 194(1) imposes a due diligence obligation on States Parties to take all necessary measures aimed at limiting the increase in global average temperature to 1.5°C above pre-industrial levels.

43. In March 2023, the IPCC concluded that “[e]very increment of global warming will intensify multiple and concurrent hazards”⁵² It identified 1.5°C as an especially important threshold over which the risks of catastrophic harm significantly increase. Some “unique and threatened systems” 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.”⁵³

44. Furthermore, as shown in the chart below, the risks associated with each of the IPCC’s four other Reasons for Concern—extreme weather events, disproportionate distribution of impacts, global aggregate impacts, and large-scale singular events—jumps from moderate to high once average global temperature rise exceeds 1.5°C above pre-industrial levels.⁵⁴

Risks or Impacts Associated with Reasons for Concern⁵⁵



⁵¹ *Gabčíkovo-Nagymaros Project (Hungary/Slovakia)*, Judgment, 1997 ICJ REP. 7 (25 September), ¶ 140.

⁵² IPCC, *Summary for Policymakers*, SIXTH ASSESSMENT SYNTHESIS REPORT (2023), p. 12.

⁵³ 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.

⁵⁴ *Id.*, p. 254.

⁵⁵ *Id.*

45. Based on these findings, the IPCC concluded that “[d]eep, rapid, and sustained reductions in greenhouse gases emissions would lead to a discernible slowdown in global warming within around two decades, and also to discernible changes in atmospheric composition within a few years.”⁵⁶ Specifically, the IPCC noted that, to avoid the most catastrophic effects of climate change, global GHG emissions must fall by at least 43 percent by 2030 and 60 percent by 2035 compared to 2019 levels, coupled with removal and storage of atmospheric carbon.⁵⁷

46. International standards reflect that scientific consensus. In 2016, 195 States—including Bangladesh and all other States Parties to UNCLOS—agreed in Article 2(1)(a) of the Paris Agreement to aim to:

Hold[] the increase in the global average temperature to well below 2°C above pre-industrial levels and pursu[e] efforts to *limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change*

47. The States Parties to the Paris Agreement have consistently reaffirmed the critical importance of the target of 1.5°C in their annual Conference of the Parties. At the most recent Conference of the Parties in 2022, at Sharm el-Sheikh in Egypt, the States Parties agreed that:

- (a) “[K]eeping the global average temperature rise to below 1.5°C will be essential to limiting future loss and damage”;⁵⁸ and
- (b) “[L]imiting the global average temperature increase to 1.5°C 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”;⁵⁹
- (c) “[L]imiting global warming to 1.5°C requires rapid, deep and sustained reductions in global greenhouse gas emissions, including reducing global carbon dioxide.”⁶⁰

48. The 1.5°C threshold thus reflects the scientifically informed, international consensus on what is necessary to prevent the most catastrophic effects of climate change. Further, the risks of climate change—no less than existential for life in Bangladesh and other States—are at least commensurate with the ambition of that limit.

⁵⁶ IPCC, *Summary for Policymakers*, SIXTH ASSESSMENT SYNTHESIS REPORT (2023), p. 12.

⁵⁷ *Id.*, p. 22.

⁵⁸ UNFCCC Conference of the Parties, Decision 2/CP.27, Preamble.

⁵⁹ UNFCCC Conference of the Parties, Decision 21/CP.27, ¶ 7.

⁶⁰ *Id.*, ¶ 8.

C. Obligation of States Parties to protect and preserve the marine environment

49. In relation to Question 2, Article 192 provides that “States have the obligation to protect and preserve the marine environment.” Importantly, the scope of this provision is not limited to pollution of the marine environment, but also encompasses all actual or potential harms to the marine environment, including ocean warming, sea level rise, and ocean acidification. Thus, Article 192 is a source of obligations of State Parties in connection with climate change impacts separate and independent from the provisions discussed above in response to Question 1.

50. Article 192 addresses both the “protection” of the marine environment from future harm, and its “preservation” in its present condition. It thus implies both positive and negative obligations. In the words of the *South China Sea* tribunal:

This “general obligation” extends both to “protection” of the marine environment from future damage and “preservation” in the sense of maintaining or improving its present condition. Article 192 thus entails the positive obligation to take active measures to protect and preserve the marine environment, and by logical implication, entails the negative obligation not to degrade the marine environment.⁶¹

51. These obligations are obligations of due diligence, which as explained above must be informed by scientific knowledge as supplemented by international rules and standards. States Parties thus must exercise due diligence to protect the marine environment from climate change impacts, including ocean warming, sea-level rise, and ocean acidification, and seek to mitigate those impacts. They must also exercise due diligence to preserve the marine environment, which implies a positive obligation to implement resilience and adaptation measures.

IV. Concluding observations

52. In sum, UNCLOS States Parties must exercise their obligations to protect and preserve the marine environment, and to prevent, reduce, and control greenhouse gas emissions in a way that reflects scientific consensus and international agreement that global average temperature increase must be kept within 1.5°C of pre-industrial levels. Failing to do so will create an existential threat for Bangladesh given its extreme vulnerability to climate change as one of the world’s lowest-lying States.

53. Bangladesh attaches great significance to the clarification of these principles of international law by the Tribunal, consistent with the overwhelming scientific evidence of the catastrophic harm that will almost certainly result if UNCLOS States Parties fail to adopt the necessary measures. These advisory proceedings will no doubt establish a historic precedent of lasting significance for the protection and preservation of the marine environment, and indeed for the future survival of humankind.

⁶¹ *South China Sea Award*, ¶ 941.



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