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INTERNATIONAL TRIBUNAL FOR THE LAW OF THE SEA

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

(CASE NO. 31)

OBSERVATIONS SUBMITTED

by

THE DEMOCRATIC REPUBLIC OF THE CONGO

13 June 2023

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Acronyms and abbreviations

CoP	Conference of the Parties
DRC	Democratic Republic of the Congo
EEA	European Environment Agency
GHG	greenhouse gas
GML	Global Monitoring Laboratory
GMSL	global mean sea level
GWP	Global Warming Potential
IAEA	International Atomic Energy Agency
ICCPR	International Covenant on Civil and Political Rights
ICESCR	International Covenant on Economic, Social and Cultural Rights
ICJ	International Court of Justice
ILC	International Law Commission
IPCC	Intergovernmental Panel on Climate Change
ITLOS	International Tribunal for the Law of the Sea
IUCN	International Union for Conservation of Nature
LOAC	Land-to-Ocean Aquatic Continuum
NASA	National Aeronautics and Space Administration
NOAA	National Oceanic and Atmospheric Administration
NTFP	non-timber forest products
SRFC	Conference of Ministers of the Sub-Regional Fisheries Commission
UNCLOS	United Nations Convention on the Law of the Sea
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WMO	World Meteorological Organization

1. At its third meeting, which was held on 26 August 2022, the Commission of Small Island States on Climate Change and International Law (hereinafter "the Commission") decided, pursuant to article 2, paragraph 2, of the Agreement of 31 October 2021 for its establishment, to request an opinion from the International Tribunal for the Law of the Sea (hereinafter "the Tribunal") on the following questions:

> What are the specific obligations of State Parties to the United Nations Convention on the Law of the Sea ("UNCLOS"), including under Part XII:
>
> (a) to prevent, reduce and control pollution of the marine environment in relation to the deleterious effects that result or are likely to result from climate change, including through ocean warming and sea level rise, and ocean acidification, which are caused by anthropogenic greenhouse gas emissions into the atmosphere?
>
> (b) to protect and preserve the marine environment in relation to climate change impacts, including ocean warming and sea level rise, and ocean acidification?

2. In its order of 16 December 2022, the Tribunal invited, in accordance with article 133, paragraph 3, of its Rules, the States Parties to UNCLOS to present written statements on the request submitted by the Commission.

3. In its capacity as a State Party to UNCLOS, the Democratic Republic of the Congo (hereinafter "the DRC") submits its observations below in response to the request for an advisory opinion.

Summary of the observations

4. The Tribunal has jurisdiction to give an advisory opinion in the present case:

a. Article 21 of the Statute provides that the Tribunal has jurisdiction in all matters specifically provided for in the United Nations Convention on the Law of the Sea (hereinafter "UNCLOS") or in any other agreement which confers jurisdiction on it (see below, paras. 15-21);

b. Article 2 of the Agreement of 31 October 2021 for the establishment of the Commission of Small Island States on Climate Change and International Law provides for the possibility for the Commission to request an advisory opinion from the Tribunal on any legal question within the scope of UNCLOS (see below, paras. 22-26).

5. The request for an advisory opinion is admissible. The conditions set out in article 138 of the Rules are met:

a. The Agreement of 31 October 2021 satisfies the condition relating to the existence of an international agreement related to the purposes of UNCLOS and specifically providing for the submission to the Tribunal of a request for an advisory opinion (see below, paras. 32-35);

b. The request is submitted to the Tribunal by the co-Chairs of the Commission, who constitute a body authorized by article 3(5) of the Agreement (see below, para. 36);

c. The request concerns legal questions in international law (see below, paras. 37-38).

6. The request for an advisory opinion concerns clearly established scientific facts. Climate change is caused by anthropogenic greenhouse gas (GHG) emissions which originate mainly from a small group of States. GHGs are emitted not only from land but also from the sea on account of discharges of plastics into the oceans. They have a deleterious impact on the oceans and the marine environment. This causes damage and serious threats to human beings and biodiversity. Very urgent action is needed (see below, paras. 41-86).

7. In delivering its advisory opinion, the Tribunal will have recourse to the following rules and methods of interpretation:

a. Systemic interpretation of UNCLOS in light of other sources of international law, particularly international law on climate change and international human rights law (see below, paras. 88-105);

b. The principle of effectiveness, which seeks to establish practical and effective obligations for the States Parties so as to ensure their performance. This principle applies in general international law, in international human rights law and in international environmental law. It is applicable in particular to the *erga omnes* obligations contained in Part XII of UNCLOS. Its application is essential in order to remedy the inaction by States in addressing climate change (see below, paras. 106-132).

8. Article 192 of UNCLOS, which establishes the general obligation for States Parties to protect and preserve the marine environment, forms the foundation for the other provisions of Part XII. In relation to climate change and the marine environment, it must be interpreted as follows:

a. In the face of climate change, the obligations of protection and preservation must be implemented practically and immediately. The obligation of protection is activated where there is an immediate risk. Climate change is already causing substantial damage to the marine environment and exposing it to even greater immediate risks (see below, paras. 134-150);

b. The causes, characteristics and consequences of climate change allow the obligation contained in article 192 to be practically specified. These practical obligations (see below, paras. 151-170):

- must encompass emissions and plastic waste;

- must be implemented urgently and as a priority by all organs of the State in accordance with the principles of the "Environmental Rule of Law" established by the United Nations for all activities under the jurisdiction and control of the State; and

- having regard to the principle of common but differentiated responsibilities and respective capabilities.

9. Climate change gives rise to specific obligations for States to prevent, reduce and control pollution of the marine environment in accordance with article 194 of UNCLOS:

a. Both land-based atmospheric GHG emissions and discharges of plastic waste in the marine environment causing GHG emissions from the sea constitute "introduction by man, directly or indirectly, of substances or energy" into the

marine environment. Their "deleterious or potential effects" are scientifically proven (see below, paras. 174-187);

b. The obligation requires the adoption of *all* measures that are necessary to prevent, reduce and control pollution and therefore calls for the highest possible degree of diligence. The mention of reduction and control cannot in any manner weaken the obligation of prevention (see below, paras. 192-197).

10. Article 195 establishing the specific obligation not to transfer damage or hazards or transform one type of pollution into another implies the following specific obligations in relation to climate change and the marine environment:

a. It must be interpreted and applied in light of the principle of common but differentiated responsibilities and respective capabilities and thus applies to industrialized States in particular. Failure by an industrialized State to bear the greatest possible burdens in the fight against climate change means that that State does not prevent it and thus transfers the damage or hazards of climate change to the countries of the South (see below, paras. 199-205);

b. Industrialized States have a specific international obligation to ensure, throughout their jurisdiction, that damage and hazards caused by fossil fuels and by livestock farming activities are not transformed into similar damage and hazards caused by replacement activities (see below, paras. 206-208);

c. Industrialized States have a specific obligation to ensure that commercial companies (business entities) under their jurisdiction do not develop activities outside their jurisdiction which constitute or give rise to a transfer of damage or hazards to the climate and the marine environment or which transform one type of pollution of the climate and the marine environment into another (see below, paras. 209-210).

10. Article 204, which concerns the obligation to monitor the risks or effects of pollution of the marine environment,

a. is applicable to climate change in relation to the marine environment and must be implemented with the highest possible degree of diligence ("as far as practicable") (see below, paras. 236-241);

b. also covers, in paragraph 2, surveillance of activities undertaken by commercial companies (business entities) under their jurisdiction outside their territory. Such activities must be characterized as activities "which they permit" within the meaning of that provision (see below, paras. 242-247).

11. Article 206, which concerns the obligation to carry out an assessment of the potential effects of planned activities on the marine environment, in so far as it establishes that obligation in respect of "planned activities under their jurisdiction or control", is also applicable to activities undertaken or permitted explicitly or implicitly by commercial companies (business entities) under their jurisdiction outside national territory (see below, paras. 248-264).

12. Article 207, which concerns measures to combat pollution of the marine environment from land-based sources,

a. confirms, in paragraph 1, the principle of effectiveness which must guide the interpretation of UNCLOS in the present case (see below, paras. 211-214);

b. must, in paragraph 2 concerning international cooperation, be applied in accordance with the principle of common but differentiated responsibilities. It requires industrialized States in particular to strictly respect their commitments entered into in climate matters, while refraining from unjustifiable interference with activities carried out by other States (see below, paras. 215-216).

13. With regard to responsibility of States under article 235 of UNCLOS:

a. The question of responsibility of States for climate change is relevant to the present request for an opinion (see below, paras. 266-269):

- Both cessation and relief are essential elements of reduction, control, protection and preservation;

- Responsibility plays an essential preventive role. In order to ensure the prevention of future breaches, it is therefore vital to hold States responsible now;

- This is confirmed by the very structure of Part XII of the Convention: responsibility of States, enshrined in article 235, paragraph 1, is based on the "general obligation" under article 192, which forms the foundation for all the subsequent provisions in Part XII of UNCLOS.

b. Under UNCLOS, responsibility of a State for the breach of its obligations of conduct (including protection and prevention) is incurred from the instant that the State fails to act in the face of a proven risk, and not only from the time when the event to be avoided (the damage) occurs. In any case, climate change is already causing damage to the marine environment (see below, paras. 270-289).

c. The standard of proof is the standard based on the preponderance of evidence. This standard is met by the work of the IPCC (see below, paras. 290-299).

d. States are jointly and severally responsible (see below, paras.300-301).

e. States, and industrialized States in particular, must cease the violation of Part XII of UNCLOS. They have an obligation to comply and must adopt plans to that end (see below, paras. 302-307).

f. Under article 235, paragraphs 2 and 3, States have an obligation to create and ensure effective remedies giving rise to adequate and effective relief (see below, paras. 308-328):

- That obligation must be practically specified in light of the characteristics of climate change in relation to the marine environment, namely (i) urgency; (ii) complexity of scientific data; (iii) the irreparable character of climate change; (iv) its global character; and (v) the inequalities which it creates, particularly between industrialized countries and developing countries.

- It must be practically specified on three levels by reference to international human rights law: access to remedy mechanisms; fair and effective operation of those mechanisms; and the adequate and effective character of relief.

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I. Jurisdiction of the Tribunal and admissibility of the request for an opinion

14. The DRC considers at the outset that the Tribunal has jurisdiction (**A**) and that the request is admissible (**B**) in the present case.

A. The Tribunal has jurisdiction

15. For the second time since it was established,[1] a request for an advisory opinion has been submitted to the Tribunal – as a full court – pursuant to an international agreement other than UNCLOS.

16. Under article 21 of its Statute:

> The jurisdiction of the Tribunal comprises all disputes and all applications submitted to it in accordance with this Convention and all matters specifically provided for in any other agreement which confers jurisdiction on the Tribunal.

As the Tribunal has already affirmed in its first opinion,[2] its jurisdiction is subject to the following prerequisites:

- (i) *disputes* submitted to the Tribunal in accordance with the Convention;
- (ii) *applications* submitted to the Tribunal in accordance with the Convention;
- and (iii) *all matters* specifically provided for in *any other agreement* which confers jurisdiction on the Tribunal.

17. Furthermore, article 138 of the Rules of the Tribunal provides:

> 1. The Tribunal may give an advisory opinion on a legal question if an international agreement related to the purposes of the Convention specifically provides for the submission to the Tribunal of a request for such an opinion.

[1] The first time a request was submitted to the Tribunal was in *Request for Advisory Opinion submitted by the Sub-Regional Fisheries Commission, Advisory Opinion, 2 April 2015, ITLOS Reports 2015*.
[2] *Ibid.*, para. 60.

2. A request for an advisory opinion shall be transmitted to the Tribunal by whatever body is authorized by or in accordance with the agreement to make the request to the Tribunal.

3. The Tribunal shall apply *mutatis mutandis* articles 130 to 137.

18. In its first opinion, mentioned above, which was requested by the Sub-Regional Fisheries Commission, the positions of the States that had submitted written observations differed on whether the advisory jurisdiction of the full Tribunal followed from the abovementioned provisions. Although 12 of the 22 States that had submitted written observations argued in favour,[3] 10 States contended that the Tribunal was not competent.[4]

19. In its advisory opinion delivered on 2 April 2015, the Tribunal stated that "[n]either the Convention nor the Statute makes explicit reference to the advisory jurisdiction of the Tribunal."[5] It held, by contrast, that the legal basis for such jurisdiction stemmed from the combined effect of article 21 of its Statute and of "any other agreement" which confers jurisdiction on the Tribunal. It stated:

> The words all "matters" ("*toutes les fois que cela*" in French) should not be interpreted as covering only "disputes", for, if that were to be the case, article 21 of the Statute would simply have used the word "disputes". Consequently, it must mean something more than only "disputes". That something more must include advisory opinions, if specifically provided for in "any other agreement which confers jurisdiction on the Tribunal".[6]

20. Against this background, the Tribunal made the following important statement:

> When the "other agreement" confers advisory jurisdiction on the Tribunal, the Tribunal then is rendered competent to exercise such jurisdiction with regard to "all matters" specifically provided for in the "other agreement". Article 21 and the "other agreement" conferring jurisdiction on the Tribunal are interconnected and constitute the substantive legal basis of the advisory jurisdiction of the Tribunal.[7]

21. Two consequences follow from these statements made by the Tribunal. First, article 21 of the Statute cannot in itself constitute an autonomous legal basis for the

[3] *Ibid.*, paras. 48-51.
[4] *Ibid.*, paras. 40-47.
[5] *Ibid.*, para. 53.
[6] *Ibid.*, para. 56.
[7] *Ibid.*, para. 58.

Tribunal's advisory function. Second, the existence of an "other agreement" plays a crucial role in this regard or, in the words of the Tribunal, it is "the 'other agreement' … which confers such jurisdiction on the Tribunal".[8]

22. In the present case, in order to establish the Tribunal's jurisdiction to adjudicate on the request submitted by the Commission, regard must be had to a combined reading of article 21 of the Statute of the Tribunal and article 2 of the Agreement of 31 October 2021 for the establishment of the Commission of Small Island States on Climate Change and International Law. Under the latter provision,

> [h]aving regard to the fundamental importance of oceans as sinks and reservoirs of greenhouse gases and the direct relevance of the marine environment to the adverse effects of climate change on Small Island States, the Commission shall be authorized to request advisory opinions from the International Tribunal for the Law of the Sea ("ITLOS") on any legal question within the scope of the 1982 United Nations Convention on the Law of the Sea, consistent with Article 21 of the ITLOS Statute and Article 138 of its Rules.

23. The Tribunal's advisory jurisdiction in the present case is established on the basis of the application of article 21 of the Statute of the Tribunal in conjunction with article 2, paragraph 2, of the Agreement of 31 October 2021 for the establishment of the Commission.

24. In its advisory opinion of 2 April 2015, the Tribunal based its jurisdiction on a combined reading of article 21 of its Statute and article 33 of the Convention on the Determination of the Minimal Conditions for Access and Exploitation of Marine Resources within the Maritime Areas under Jurisdiction of the Member States of the Sub-Regional Fisheries Commission (hereinafter "the MCA Convention"). Under the abovementioned article 33,

> [t]he Conference of Ministers of the SRFC may authorize the Permanent Secretary of the SRFC to bring a given legal matter before the International Tribunal of the Law of the Sea for advisory opinion.

25. It is a slightly different situation with the Agreement of 31 October 2021 for the establishment of the Commission of Small Island States on Climate Change and

[8] *Ibid.*

International Law which, unlike the MCA Convention, does not concern a substantive matter.

26. The DRC asserts that the nature attributed to the Agreement of 31 October 2021 does not make it any different from the MCA Convention for the purposes of article 21 of the Statute of the Tribunal. The effectiveness of article 21 of the Statute – in particular the words "any other agreement" – does not require the existence of a convention governing a substantive matter. As such, the Agreement for the establishment of the Commission of Small Island States on Climate Change and International Law falls within the ambit of the words "any other agreement" in article 21 of the Statute since it includes a procedural provision which confers advisory jurisdiction on the Tribunal. If the Tribunal may be granted advisory jurisdiction in respect of substantive provisions outside of UNCLOS, provided they relate to the purposes of UNCLOS, it must *a fortiori* have such jurisdiction where it is a matter of interpreting UNCLOS itself.

27. It is generally accepted that in case of doubt as to its jurisdiction, the matter shall be settled by decision of the Tribunal.[9] The Tribunal therefore has a discretionary power in assessing its advisory jurisdiction which it may refuse to discharge only for "compelling reasons".[10] In the present case, there are no such reasons which could prevent it from giving an opinion on a request that calls upon it to interpret a convention and, in particular, to clarify the obligations of States Parties to UNCLOS under Part XII thereof.

28. In other words, the jurisdiction of the Tribunal in the present case is manifestly established.

B. The request is admissible

29. Under article 138 of the Rules of the Tribunal, the admissibility of a request for an opinion is determined according to whether the following prerequisites are satisfied:

[9] See inter alia *Legality of Use of Force (Serbia and Montenegro* v. *France), Preliminary Objections, Judgment, I.C.J. Reports 2004*, p. 590, para. 34.
[10] See article 138(1) of the Rules; ITLOS, *Request for Advisory Opinion submitted by the Sub-Regional Fisheries Commission, Advisory Opinion, 2 April 2015, ITLOS Reports 2015*, p. 4, para. 71; ICJ, *Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, I.C.J. Reports 1996*, p. 235, para. 14.

- (i) the existence of an international agreement related to the purposes of the Convention which specifically provides for the submission to the Tribunal of a request for an advisory opinion;
- (ii) the submission of a request to the Tribunal by a body authorized by or in accordance with the agreement mentioned above;
- (iii) the existence of a request on a "legal question".

30. The Tribunal has already stated that the purpose of the prerequisites specified in that article is to establish the admissibility of the request.[11]

31. The DRC asserts that in the present case those prerequisites are satisfied. This can be demonstrated on three levels.

32. *First*, the Agreement of 31 October 2021 for the establishment of the Commission is an international instrument concluded in Edinburgh by two States. It has been duly registered with the Secretariat of the United Nations in accordance with article 102 of the Charter of the United Nations.[12]

33. Furthermore, that Agreement relates to the purposes of UNCLOS. As is stated in its preamble[13] and in article 1, paragraph 3, the object of the Agreement in question is inter alia the definition and implementation 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."[14]

34. Accordingly, the Agreement relates closely to the purposes of UNCLOS as set out in its preamble. These include "establishing, ... with due regard for the sovereignty of all States, a legal order for the seas and oceans which ... will promote the peaceful uses of the seas and oceans, the equitable and efficient utilization of their resources, the conservation of their living resources, and the study, protection and preservation of the marine

[11] *Request for Advisory Opinion submitted by the Sub-Regional Fisheries Commission, Advisory Opinion, op. cit.*, paras. 59-60.
[12] See, Certificate of registration No. 71092 of 3 February 2022, available on line, https://www.itlos.org/fileadmin/itlos/documents/cases/31/Certificate_of_Registration_E_Fr_.pdf.
[13] Agreement of 31 October 2021, preamble, fourth and fifth paragraphs.
[14] Agreement of 31 October 2021, article 1, paragraph 3.

environment"[15] with a view to the "realization of a just and equitable international economic order which takes into account the interests and needs of mankind as a whole and, in particular, the special interests and needs of developing countries, whether coastal or land-locked".[16]

35. In addition, the Agreement expressly provides for the possibility to submit a request for an advisory opinion to the Tribunal.[17]

36. *Second*, there is no doubt that the co-Chairs of the Commission constitute a duly authorized body pursuant to article 3, paragraph 3, of the Agreement of 31 October 2021, under which "[t]he Commission shall be represented by a Chair, or by co-Chairs …". Furthermore, the decision to request an advisory opinion is based on a decision adopted unanimously by the Commission's Members at its third meeting on 26 August 2022[18] pursuant to article , paragraph 5, of its constitutive act.

37. *Third*, the questions in respect of which the opinion has been requested are legal. They are framed in terms of law and raise points of international law in so far as the Tribunal is asked to determine the specific obligations of States Parties to UNCLOS under Part XII thereof.

38. In this regard, the Seabed Disputes Chamber of the Tribunal [re]affirmed, in an advisory opinion given in 2011, that "questions ... framed in terms of law and rais[ing] problems of international law ... are by their very nature susceptible of a reply based on law".[19] The International Court of Justice has consistently taken the same position in several cases.[20]

[15] See UNCLOS, preamble, fifth paragraph.
[16] UNCLOS, preamble, sixth paragraph.
[17] See above, paragraph 23.
[18] Decisions of the third meeting of the Commission of Small Island States on Climate Change and International Law, Virtual meeting, 26 August 2022.
[19] *Responsibilities and obligations of States with respect to activities in the Area, Advisory Opinion, 1 February 2011, ITLOS Reports 2011*, p. 25, para. 39.
[20] See inter alia ICJ, *Accordance with International Law of the Unilateral Declaration of Independence in Respect of Kosovo, Advisory Opinion, I.C.J. Reports 2010*, p. 403, paragraph 25; *Western Sahara, Advisory Opinion, I.C.J. Reports 1975*, p. 12, para. 15.

39. In light of the above considerations, the prerequisites for admissibility are satisfied in the present case.

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II. Situation from the point of view of environmental science

41. The DRC has always argued, and takes this opportunity to reaffirm yet again, that climate change is a scientifically established fact caused by anthropogenic greenhouse gases which originate mainly from a small group of States (**A**). It is therefore important to review the situation as regards greenhouse gases in the oceans and to pinpoint their origins (**B**). The DRC will then describe the impacts on the marine environment (**C**) and the resulting damage to human beings and biodiversity (**D** and **E**), before concluding with the different responses to climate change and its consequences (**F**).

A. The reality of the climate change phenomenon

1. *Probative value of scientific sources relating to climate change*

42. The Intergovernmental Panel on Climate Change (IPCC), an intergovernmental organization created jointly by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) in 1988,[21] is certainly the most important and reliable scientific source for climate change studies. The organization is composed of leading figures drawn from a variety of scientific disciplines. Since it was created, the Panel has worked on assessing knowledge related to climate change. It produces summaries which are based on the results of research conducted by scientific experts and bodies such as NASA, NOAA and the IAEA, known to provide reliable data, and which are also drawn from the most prestigious scientific journals such as "*Nature*" and "*Science*".

> There is considerable confidence that climate models provide credible quantitative estimates of future climate change, particularly at continental scales and above. This confidence comes from the foundation of the models in accepted physical principles and from their ability to reproduce observed features of current climate and past climate changes.[22]

[21] IPCC/WMO/UNEP, *IPCC Factsheet: Timeline – highlights of IPCC history*, 2015, p. 1, para. 1, https://www.ipcc.ch/site/assets/uploads/2018/04/FS_timeline.pdf.

[22] IPCC, Fourth Assessment Report: Climate Change 2007: Working Group I: The Physical Science Basis, Frequently Asked Question 8.1 How Reliable Are the Models Used to Make Projections of Future Climate Change?, 2007, first paragraph, https://archive.ipcc.ch/publications_and_data/ar4/wg1/en/faq-8-1.html.

43. On that basis, the IPCC also identifies the causes and consequences of the changing climate, as well as its impacts. Furthermore, it outlines possible means of reducing those impacts. It provides decision-makers with the relevant information for the international negotiations concerning the implementation of the United Nations Framework Convention on Climate Change (UNFCCC). It should be noted that, at present, that Convention[23] has been ratified by 198 States, which makes it an instrument having almost universal scope.

44. The message given by the IPCC when it warns States that urgent action must be taken to put into effect their commitments made to the different CoPs on climate is therefore objectively indisputable.[24] The same holds when it communicates to the international community an assessment report on the climate situation based on the most recent scientific advances following the Convention.[25] This set of scientific sources confirm with all certainty that global warming is a reality and is linked to the greenhouse effect.

2. *Climate change is caused by greenhouse gases (GHGs)*

45. The greenhouse effect is a natural phenomenon consisting in the retention in the atmospheric layer bordering the Earth of a proportion of the energy that it receives from the sun. The sunlight that hits the Earth's surface is partly absorbed and transformed into heat energy. Another proportion is reflected back into the atmosphere, in the form of infrared radiation, depending on the reflective power of the illuminated terrestrial surfaces (rocks, soil, water, ice, etc.). This so-called "albedo" power represents around 30% of the solar energy received by the Earth. Atmospheric greenhouse gases (GHGs) absorb this energy and radiate it back to space and to the Earth. This is the cause of the warming of the surface as well as its immediate vicinity.[26]

46. In terms of their concentrations in the atmosphere, the main GHGs are, in order, carbon dioxide (CO_2), methane (CH_4), nitrogen oxides including nitrous oxide (N_2O), and

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[23] United Nations Framework Convention on Climate Change, New York, 9 May 1992, https://treaties.un.org/pages/ViewDetailsIII.aspx?src=TREATY&mtdsg_no=XXVII-7&chapter=27&Temp=mtdsg3&clang=_en#1.

[24] IPCC, *Climate change: a threat to human wellbeing and health of the planet*, Taking action now can secure our future, IPCC Press release 2022/08/PR, https://www.ipcc.ch/report/ar6/wg2/resources/press/press-release/.

[25] Boehm, S. and Schumer, C., 10 Big Findings from the 2023 IPCC Report on Climate Change, World Resources Institute (WRI), https://www.wri.org/insights/2023-ipcc-ar6-synthesis-report-climate-change-findings.

[26] https://climatescience.org/advanced-greenhouse-effect.

chlorofluorocarbons (CFC). The latter destroy the stratospheric ozone (O_3) layer (more than 15km above the Earth). This results in a transfer of a proportion of that gas to the troposphere (the atmospheric layer closest to the Earth), where it contributes to the greenhouse effect.

47. Each GHG is also distinguished on the basis of its own "Global Warming Potential" (GWP). This property is determined by the effectiveness with which a GHG retains heat and the length of time for which it maintains that ability. At present the (reference) unit of measurement of that time is 100 years.[27] Because CO_2 is used as the basis for comparisons of various GHGs, its GWP is equal to 1. It is 25 times lower than the figure for methane. However, methane is diffused into the atmosphere in smaller quantities than CO_2.

48. The greenhouse effect that is due to each GHG depends on its concentration. Since pre-industrial times, these GHGs, particularly carbon dioxide and methane, have been continuously increasing, hence the substantial rise in the Earth's surface temperature. In this regard, the 2023 IPCC report[28] shows that the temperature has already increased by more than 1°C, with a likely range between 0.8°C and 1.2°C, above pre-industrial levels. It could reach the 1.5°C mark by 2040 if its current trajectory remains unchanged. [29] With the policies currently in force, without additional action, GHGs are set to lead to global warming of 2.8°C before the end of the 21st century.[30] This is a particularly alarming prospect for present and future generations.

[27] United Nation Climate Change, Global Warming Potentials (IPCC Fourth Assessment Report), https://unfccc.int/process-and-meetings/transparency-and-reporting/greenhouse-gas-data/frequently-asked-questions/global-warming-potentials-ipcc-fourth-assessment-report; IPCC, 2007: Climate Change 2007: Synthesis Report, Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Core Writing Team, Pachauri, R.K. and Reisinger, A. (eds.)). IPCC, Geneva, Switzerland, 104 pp., Annex 2 – Glossary (p. 81, *in fine*) https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_LongerReport.pdf.

[28] IPCC (2023): Synthesis Report of the IPCC Sixth Assessment Report (AR6), Longer Report, 85pp., Section 2. Current Status and Trends. 2.1. Observed Changes, Impacts and Attribution (p. 6) https://report.ipcc.ch/ar6syr/pdf/IPCC_AR6_SYR_LongerReport.pdf.

[29] Intergovernmental Panel on Climate Change (IPCC), "Framing and Context", in *Global Warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*, Cambridge University Press, 2022, p. 49-92, doi:10.1017/9781009157940.003.

[30] UNEP, Emissions Gap Report 2022: The Closing Window – Climate Crisis Calls for Rapid Transformation of Societies, p. 21, section 7, https://wedocs.unep.org/handle/20.500.11822/40874.

3. *Origins of GHGs causing global warming*

a. Sectors of activity

49. It is essential to determine the origin of GHGs in so far as this makes it possible to identify the parties responsible for the consequences which will be addressed later in these observations.

50. Figure 1 below, taken from the IPCC via the EEA,[31] shows the proportions of GHG emissions per sector of human activity throughout the Earth. This figure shows that energy supply is the leading source of GHGs, accounting for 29.3% of such emissions. The other activities highlighted in the figure are: transport (19.5%), industry (including construction and plastics manufacturing) (19%), the residential and commercial sector (11.5%) and agriculture (11.3%). International aviation and navigation and other sectors are responsible for 9.4% of emissions.

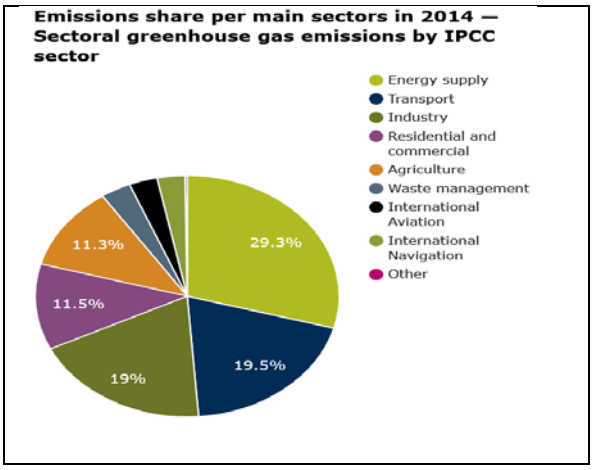

Fig. 1. Shares of GHGs caused by different sectors of human activity

51. Of all the GHGs, carbon dioxide (CO_2) and methane predominate; their shares in the greenhouse effect are 61% and 17% respectively. The largest CO_2 emissions by far result from the oxidation of carbon when fossil fuels are burned.[32] These are the dominant form of

[31] See European Environmental Agency, Data visualization, Sectoral greenhouse gas emissions by IPCC sector, https://www.eea.europa.eu/data-and-maps/daviz/change-of-co2-eq-emissions-2#tab-dashboard-01.
[32] IPCC, "Sources of $C0_2$", in Metz B. and Intergovernmental Panel on Climate Change (eds), *IPCC Special Report on Carbon Dioxide Capture and Storage*, Cambridge University Press, 2005, p. 75-104, section 2.2.1.1, para. 1, https://www.ipcc.ch/site/assets/uploads/2018/03/srccs_chapter2-1.pdf.

energy used in the world (86%).[33] Furthermore, an approximately linear link between cumulative CO_2 emissions and global warming is established. This means that the increase in warming closely follows the increase in carbon dioxide.[34] This means, judiciously speaking, that comparisons of the footprints of each sector of activity on the past and future climate refer to the trends for quantities of this gas.

b. Top emitters of GHGs

52. As regards the geographic location of sources of carbon dioxide emissions, the UNEP[35] provides the following information:

> Over the last decade, the top four emitters (China, the United States of America, EU27+UK and India) have contributed to 55 per cent of the total GHG emissions without LUC. The top seven emitters (including the Russian Federation, Japan and international transport) have contributed to 65 per cent, with G20 members accounting for 78 per cent.

53. Current global warming results from carbon dioxide that has been accumulating mostly since the end of the pre-industrial period (1850). From this point of view, all the States that have been at the forefront of the industrial revolution over the last two centuries are responsible for very large shares of cumulative GHGs, despite still insufficient recent efforts that have been made by just a few countries to reduce their CO_2 emissions.

54. Conversely, "Small Island Developing States (SIDS) and least developed countries (LDCs) represent less than 1 percent and between 3 percent and 6 percent of global greenhouse emissions respectively. Yet they face much higher annual losses, as a percentage of GDP, due to the effects, compared with the global average."[36] Historic and present GHG emissions [from these countries] are very low. "[Africa] contributes just 4 percent of global

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[33] IPCC, "Introduction", in Metz B. and Intergovernmental Panel on Climate Change (eds), *IPCC Special Report on Carbon Dioxide Capture and Storage*, *ibid.*, p. 51-74, especially p. 55, section 1.2.1., https://www.ipcc.ch/site/assets/uploads/2018/03/srccs_chapter1-1.pdf.

[34] Framework Convention on Climate Change, 2021 – Conference of the Parties, Twenty-sixth session, 2020 round table on pre-2020 implementation and ambition, Summary report by the secretariat, 23 pp, § 9, https://unfccc.int/sites/default/files/resource/cp2021_02E.pdf.

[35] UNEP, Emissions Gap Report 2020, p. 5. https://wedocs.unep.org/bitstream/handle/20.500.11822/34438/EGR20ESE.pdf?sequence=1.

[36] Annlyn McPhie, "Progressive Platforms: Backing Small Island Developing States and least developed countries to meet the climate challenge", 2021, UNDP, https://www.undp.org/blog/progressive-platforms-backing-small-island-developing-states-and-least-developed-countries-meet-climate-challenge.

total greenhouse gas (GHG) emissions, the lowest of any region, yet its socio-economic development is threatened by the climate crisis."[37]

B. Greenhouse gases in the oceans

1. *Origins of GHGs affecting marine ecosystems*

55. The growth rate of GHGs in the atmosphere is determined by the balance of emissions and removals from natural processes and human activities.[38] In these exchanges, marine ecosystems display specific characteristics in that they are very important sinks for carbonic gas (CO_2), "absorbing 23% of human-caused CO_2 emissions. Ecosystems such as mangroves, which grow in coastal areas but with roots in sea water, as well as tidal marshes and seagrass meadows, all sequester and store more carbon per unit area than forests."[39]

56. In other words, far from contributing to atmospheric GHG emissions, the oceans have removed them. For example,

> [a]s of 2010, the oceans had absorbed … 28% of the total anthropogenic CO_2 emissions. This capacity for carbon sequestration limits the increase in the CO_2 concentration in the atmosphere and reduces climate change.[40]

57. By doing so, the oceans accumulate increasingly large quantities of CO_2 ,as well as methane (CH_4) and nitrous oxide (N_2O). The graphs showing the trend for concentrations of these three GHGs (Fig. 2)[41] show that between the decades 2000-2009 and 2010-2019 the average annual global growth rate in the atmosphere increased from 1.9 to 2.4 particles per million (ppm) per year, from 2.2 to 7.6 particles per billion (ppb) for methane and from 0.7 to 1.0 ppb for nitrous oxide. However, CO_2 concentrations are most indicative of the increase

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[37] Tanguy Gahouma-Bekale, "COP26 on climate: Top priorities for Africa", *Africa Renewal*, 2021, fifth paragraph, https://www.un.org/africarenewal/magazine/july-2021/cop26-climate-top-priorities-africa.

[38] Benjamin Poulter, Ana Bastos et al., "Inventorying Earth's Land and Ocean Greenhouse Gases. A new special collection in AGU journals will present findings from the Second Regional Carbon Cycle Assessment and Processes (RECCAP2) study with a decade of data on greenhouse gas growth", https://eos.org/editors-vox/inventorying-earths-land-and-ocean-greenhouse-gases.

[39] World Bank, "What You Need to Know About Oceans and Climate Change", 2022, https://www.worldbank.org/en/news/feature/2022/02/08/what-you-need-to-know-about-oceans-and-climate-change.

[40] Toste Tanhua, James C. Orr, Laura Lorenzoni and Lina Hansson, "Monitoring Ocean Carbon and Ocean Acidification", *WMO Bulletin*, Vol. 64(1), 2015, p. 48-51, https://library.wmo.int/doc_num.php?explnum_id=3984.

[41] Benjamin Poulter, Ana Bastos, et al., "Inventorying Earth's Land and Ocean Greenhouse Gases ...", *op. cit.*

in global warming, especially since its trajectory is most closely linked to concentrations of that gas.

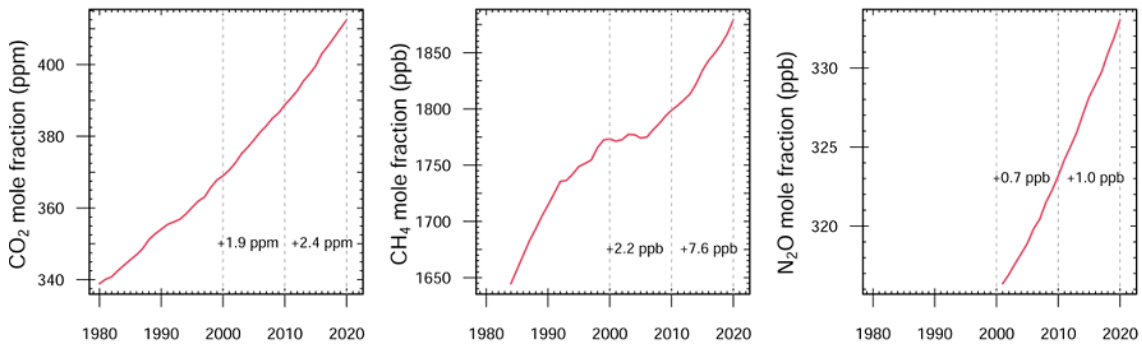


Figure 2: Global annual concentrations of CO_2, CH_4 and N_2O in the marine boundary layer. The rate of growth between 2000-2009 and 2010-2019 has accelerated for all three gases (Canadell, in press). Data from the NOAA, https://gml.noaa.gov, accessed on 15 January 2022.

58. As they accumulate GHGs, the oceans tend to become saturated with them. This prediction is already, beyond any doubt, being realized in Antarctica because this primary carbon sink (15% of total anthropogenic emissions) has stopped increasing its carbon storage in the last 30 years.[42] It should also be noted that, in general, the capacity of the ocean to act as a carbon sink decreases as it acidifies because of the increase in carbon dioxide (CO_2) levels in the atmosphere from human activities.[43]

59. This trend is completely contrary to the need established by the 2015 Paris Agreement to reduce GHGs so as to alter the trajectory of global warming to keep it well below 2°C.

60. Furthermore, it must be stressed that, in addition to atmospheric GHGs, the oceans receive other quantities of GHGs via the Land-to-Ocean Aquatic Continuum (LOAC), which is a network of pathways (including rivers and streams) through which pollutants from the Earth's crust are transported to the oceans. Nowadays the flow of anthropogenic pollutants from the continents to the oceans is no longer in doubt, above all for carbon dioxide (CO_2)

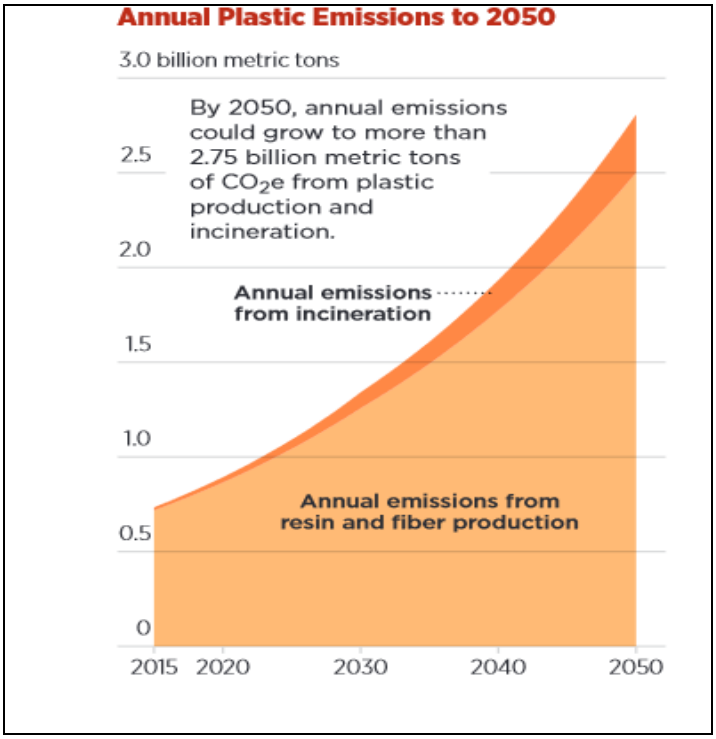
[42] Les océans bientôt saturés de dioxyde de carbone?, https://www.futura-sciences.com/planete/actualites/oceanographie-oceans-bientot-satures-dioxyde-carbone-11859/.

[43] IGBP, IOC, SCOR, Ocean Acidification. Summary for Policymakers – Third Symposium on the Ocean in a High-CO2 World, International Geosphere-Biosphere Programme, http://www.igbp.net/download/18.30566fc6142425d6c91140a/1385975160621/OA_spm2-FULL-lorez.pdf.

and methane (CH_4). This is very important, especially since these two gases are preponderant among the GHGs resulting from human activity.

2. *Transport of CO_2 to the oceans through the LOAC*

61. The export of organic carbon from terrestrial ecosystems to the hydrosphere has increased enormously and continuously since the pre-industrial era, mainly due to the increase in soil carbon export. Plastics are clearly one of the sources of carbon exported in this way. They are made from hydrocarbons; the plastic industry accounts for 6% of global oil consumption.[44] Due to the energy-intensive processes required at the oil extraction and distillation stages, as well as for the production of plastics, the plastic industry is expected to consume 20% of the world's oil by 2050.[45] Incineration of plastics also generates CO_2. Total carbon dioxide emissions from all of these stages of plastic production and the resulting waste are enormous and their values continue to climb (Fig. 3).[46] This gas is transported to the oceans primarily through percolation, run-off to rivers and streams.



[44] See Plastic & Climate. The Hidden Costs of a Plastic Planet, https://www.ciel.org/wp-content/uploads/2019/05/Plastic-and-Climate-FINAL-2019.pdf.
[45] World Bank, "What You Need to Know About Oceans and Climate Change ", *op. cit.*
[46] See Plastic & Climate. The Hidden Costs of a Plastic Planet, *op. cit.*

Fig. 3. Annual CO_2 emissions according to Hamilton (2019)[47]

62. A proportion of the anthropogenic carbon thus exported is respired, while another proportion is sequestered in the sediments and, to a lesser extent, transferred to ocean layers where it can accumulate or be degassed.[48]

3. *Transport of methane (CH_4) to the oceans*

63. Methane is a very powerful GHG. Its Global Warming Potential (GWP) is 25 times higher than that of CO_2, which means that 1 kg of methane is equivalent to 25 kg of carbon dioxide in the atmosphere.[49] It emanates from landfill and agricultural and livestock waste and is transported to the oceans mainly through the LOAC. It is also primarily by this route that methane contained in plastics reaches marine ecosystems.

64. These plastics are produced in colossal quantities (300 million t/year), at least 14 million tonnes of which end up in the oceans annually. When they are exposed to the sun, these synthetic polymers emit methane (CH_4) and ethylene (C_2H_2).[50] Methane also reaches the seas from permafrost (permanently frozen and impermeable soil) when it thaws. This thawing will continue, especially in the Arctic region, and accentuate the greenhouse effect.[51] Similarly, ocean ice is melting at a very fast rate, thereby facilitating the formation of methane hydrates (a mixture of ice and methane). As these materials are packed with energy and escape into coastal waters, they are a time bomb which, if exploded, would be catastrophic.[52]

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[47] See Nina Tsydenova and Pawan Patil, 6 reasons to blame plastic pollution for climate change, 2021, https://blogs.worldbank.org/endpovertyinsouthasia/6-reasons-blame-plastic-pollution-climate-change.

[48] C-Cascades, Le cycle du carbone le long du continuum aquatique continent-océan: Un élément clé pour les projets climatiques, 2013, https://c-cascades.ulb.ac.be/images/FichiersPDF/Factsheet_french.pdf; Pierre Friedlingstein, Michael O'Sullivan et al., "Global Carbon Budget 2022", *Earth System Science Data*, Vol. 14(1), 2022, https://essd.copernicus.org/articles/14/4811/2022/essd-14-4811-2022.pdf.

[49] IPCC Fourth Assessment Report: Climate Change 2007, *op. cit.*, Direct Global Warming Potentials, https://archive.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html.

[50] Sarah-Jeanne Royer, Sara Ferrón, Samuel T. Wilson, David M. Karl, "Production of methane and ethylene from plastic in the environment", PLoS ONE 13(8): e0200574, 2018, https://journals.plos.org/plosone/Article?id=10.1371/journal.pone.0200574.

[51] IPCC, IPCC Special Report on the Ocean and Cryosphere in a Changing Climate, 2019, https://www.ipcc.ch/site/assets/uploads/sites/3/2019/12/SROCC_FullReport_FINAL.pdf.

[52] La réchauffement climatique va-t-il s'emballer à cause du méthane s'échappant du fond des océans?, https://www.futura-sciences.com/planete/actualites/climatologie-rechauffement-climatique-va-t-il-emballer-cause-methane-echappant-fond-oceans-22906/.

C. Impact of global warming on the marine environment

65. Environmental parameters are found to be dangerously modified and will continue to be if the increase in GHGs is not seriously mitigated. The main changes to them in marine environments are reflected in particular in temperature increase, sea level rise, salinity fluctuations and acidification.

1. *Temperature increase – effect on animal species*

66. Unlike the continents, the oceans naturally warm up less quickly on account of their capacity to store thermal energy (4 kJ/kg/K),[53] which is four times higher than that of the continental crust. However, ocean surfaces experienced average temperature increases of 0.88 [0.68 to 1.01]°C between 1850-1900 and 2011-2020: 0.60 [0.44 to 0.74]°C. Like the rest of the Earth, the oceans will continue to warm up and reach extremes even if global warming is stabilized at 1.5°C.[54] "The ~1ºC rise in mean global temperature is causing serious and often unexpected impacts on species, affecting their abundance, genetic composition, behaviour and survival."[55] It has also been proven that at all latitudes, "cold-blooded marine animals (ectotherms): fish, turtles, reptiles and other organisms producing little or no heat, are currently experiencing body temperatures closer to their upper thermal limits than terrestrial ectotherms at all latitudes".[56] Furthermore, "animals need more oxygen to provide for their metabolisms, especially respiration, while this oxygen decreases in water when the water warms up".[57]

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[53] Rowan T. Sutton, Buwen Dong, Jonathan M. Gregory, "Land/sea warming ratio in response to climate change: IPCC AR4 model results and comparison with observations", *Geophysical Research Letters*, vol. 34 (2), L02701, 2007, doi:10.1029/2006GL028164.

[54] Seneviratne, S.I., X. Zhang et al., "Weather and Climate Extreme Events in a Changing Climate", in Masson-Delmotte, V., P. Zhai et al., (eds), *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, 2021, p. 1513-1766, https://www.ipcc.ch/report/ar6/wg1/chapter/chapter-11/.

[55] IUCN, *Species and climate change*, 2019, species_and_climate_change_issues_brief-2019-12.pdf (iucn.org).

[56] Malin L. Pinsky, Anne Maria Eikeset, Douglass J. McCauley, Jonathan L. Payne & Jennifer M. Sunday, "Greater vulnerability to warming of marine versus terrestrial ectotherms", *Nature*, vol. 569, p. 108-111, 2019, https://www.nature.com/Articles/s41586-019-1132-4.

[57] *Idem.*

2. *Sea level rise*

67. It should be noted that

> [s]cientific evidence about SLR is clear: GMSL rose by 1.5 mm yr–1 during the period 1901-1990, accelerating to 3.6 mm yr–1 during the period 2005-2015. These are weighted averages of measurements taken by an altimeter during a single satellite trajectory repetition cycle. Water level is likely to rise 0.61-1.10 m by 2100 if global GHG emissions are not mitigated.[58]

Sea level rise is exacerbated in particular by the melting of glaciers, which is in turn linked to "the effects of warmer sea currents beneath ice shelves that lead to thinning and instability and the effects of melted water seeping through vertical ice chimneys, or moulins, and lubricating the contact between ice and rock at the base of the sheet"[59] (in Greenland in particular).

3. *Flooding – storms – salinity fluctuations – acidification*

68. According to the IPCC,[60] the combined effect of mean and extreme sea levels results in an increase in the frequency of events which are rare in the historical context (return period of 100 years or larger). These events will occur yearly at some locations by the middle of this century, for example on intertropical low-lying coasts that are currently exposed to storm surges only infrequently. The discharge of increasing volumes of fresh water into the oceans, in particular as a result of the melting of ice, reduces salinity in subpolar oceans. At the same time, the upper horizons of coastal and island soil are salinized in tropical and subtropical regions because of the rising water.[61]

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[58] IPCC, "Sea Level Rise and Implications for Low-Lying Islands, Coasts and Communities", in *The Ocean and Cryosphere in a Changing Climate: Special Report of the Intergovernmental Panel on Climate Change*, Cambridge: Cambridge University Press, 2022, p. 321-446, https://doi.org/10.1017/9781009157964.006.

[59] UNEP, An Overview of Our Changing Environment, 2008, https://wedocs.unep.org/bitstream/handle/20.500.11822/7641/UNEP_YearBook2008_Full_EN.pdf?sequence=9.

[60] IPCC, "Sea Level Rise and Implications for Low-Lying Islands, Coasts and Communities (...)", *op. cit.*

[61] IPCC, Fourth Assessment Report: Climate Change 2007 – Working Group I: The Physical Science Basis, RT.6.2.3 – Oceans and Sea Level, 2007, https://archive.ipcc.ch/publications_and_data/ar4/wg1/en/tssts-6-2-3.html.

69. The increase in acidity in the marine environment is linked to the increase in carbon dioxide sequestered by it. According to the IAEA,[62] the quantity absorbed by the oceans represents around 30% of anthropogenic CO_2. Because they are absorbing more and more CO_2, more than 95% of the oceans are acidified,[63] as the reaction of water with CO_2 produces carbonic acid. This produces a decrease in oxygen content. The pH of the ocean surface has thus dropped from 8.2 to 8.1 since 1860.[64] Over the period from 1970 to 2010, this loss of oxygen was in a very likely range of 0.5-3.3% from the surface to 1,000 m in ocean depth.[65]

D. Damage caused by sea level rise, floods, storms, salinity fluctuations and acidification

70. Sea level rise, frequent floods combined with catastrophic storms, salinity fluctuations and acidification are causing unprecedented damage across multiple sectors. For the sake of clarity, but without ignoring the mutual influence between these various changes in the marine environment subject to global warming, there are four types of damage in terms of physical and mental, socio-economic and cultural integrity, and biodiversity.

1. *Harm to physical and mental integrity*

71. Sea level rise, severe and more frequent floods and storms, salinity fluctuations and acidification – all of these consequences of climate change – are causing enormous loss of human life and harm to health through malnutrition and pandemics. This is all the more so because 23% of the world's population live both less than 100 km from the coast and less than 100 m above sea level and because population densities in coastal regions are around three times higher than the global average.[66]

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[62] IAEA, https://www.iaea.org/newscenter/news/what-is-ocean-acidification; Mead, L. 2021 – Still Only One Earth: Lessons from 50 years of UN sustainable development policy, IISD – Earth Negotiations Bulletin. Government Offices of Swedish Ministry of the Environment, Norwegian Ministry of Foreign Affairs, Global Affairs Canada https://www.iisd.org/system/files/2021-05/still-one-earth-sustainable-transport.pdf.
[63] https://www.ipcc.ch/srocc/.
[64] Toste Tanhua, James C. Orr, Laura Lorenzoni and Lina Hansson, "Monitoring Ocean Carbon and Ocean Acidification", *op. cit.*, p. 48-51.
[65] IPCC, "Summary for Policymakers", in *The Ocean and Cryosphere in a Changing Climate: Special Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, 2022, p. 3-35, https://doi.org/10.1017/9781009157964.001.
[66] IPCC, "Sea Level Rise and Implications for Low-Lying Islands, Coasts and Communities ...", *op. cit.*

72. These phenomena will lead to an increase in population displacement, not only within a country, but also to foreign countries (climate refugees), because coastal areas are not viable as a result of all the abovementioned upheavals. In the case of island countries, the very recent IPCC report from 2023[67] has just highlighted the scale of this tragedy:

> Climate and weather extremes are increasingly driving displacement in Africa, Asia, North America (high confidence), and Central and South America (medium confidence) (Figure 2.3), with small island states in the Caribbean and South Pacific being disproportionately affected relative to their small population size (high confidence). Through displacement and involuntary migration from extreme weather and climate events, climate change has generated and perpetuated vulnerability (medium confidence).

73. Experience of extreme events and loss of the means of subsistence and communities' culture makes its members vulnerable to psychological problems.

2. *Socio-economic damage*

74. The economic losses to which coastal areas are exposed include:[68]

(i) – loss of coastal areas through devastating erosion, due to the breaking of giant waves and floods, which will increase even if global warming is stabilized at 1.5° C.[69] According to the IPCC, "[n]early 50% of coastal wetlands have been lost over the last 100 years, as a result of … sea level rise … (high confidence)";[70]

(ii) – destruction of basic infrastructure, including homes, businesses, means of transport, health, energy and other systems;

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[67] AR6 Synthesis Report: Climate Change 2023 – The IPCC finalized the Synthesis Report for the Sixth Assessment Report during the Panel's 58th Session held in Interlaken, Switzerland from 13-19 March 2023, https://www.ipcc.ch/report/sixth-assessment-report-cycle/, p. 16.

[68] A. Ozer, P. Ozer, S. Ginesu, "La géographie physique et les risques de pertes et préjudices liés aux changements climatiques: une introduction, Physical geography and the risks of loss and damage related to climate change: an introduction", *Geo-Eco-Trop.*, 2017, 41, 3, p. 313-315.

[69] https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_FOD_Chapter04.pdf.

[70] IPCC, Synthesis Report of the IPCC Sixth Assessment Report (AR6) – Longer Report, 2023, p. 15, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_LongerReport.pdf.

(iii) – deterioration of arable land, not only on account of submersion, but also because its properties are altered by the increase in the salinity of water and its acidification, which makes it unsuitable for agricultural use;

(iv) – loss of drinking water, especially due to its salinization and acidification, which make it unsafe;

(v) – marked decrease in the quantity and quality of fishery resources (molluscs, crustaceans, fish and other) resulting from the combined effect of temperature rise, acidification of the water and the subsequent disruption of the food chain. Furthermore, the diversity of fishery products in many marine ecosystems has been dominated increasingly by warm-water species since the 1970s (medium confidence);

(vi) – the shortfall in the green economy caused by the considerable depletion of carbon sinks, following the bleaching of coral reefs and the influence of changes in seawater density and salinity on mangroves, which grow in coastal areas and whose enormous carbon sequestration capacities were noted in section B.1, paragraph 55.

(vii) – loss of tourism revenue following the destruction of infrastructure (such as hotels), coastal areas, their landscapes and biodiversity, which are the main attractions for visitors.

3. *Losses of cultural heritage*

75. With regard to culture, the same IPCC report states that

> [c]ultural losses, related to tangible and intangible heritage, threaten adaptive capacity and may result in irrevocable losses of sense of belonging, valued cultural practices, identity and home, particularly for Indigenous Peoples and those more directly reliant on the environment for subsistence (medium confidence).[71]

[71] IPCC, Synthesis Report of the IPCC Sixth Assessment Report (AR6) – Longer Report, *ibid.*, Section 2, Current Status and Trends. 2.1. Observed Changes, Impacts and Attributions, p. 6.

4. *Threats to biodiversity*

76. The environmental changes described above are detrimental to the health of the oceans and their biodiversity. Acidification is particularly harmful to living organisms because in acidic environments they expend energy on resisting. For this reason, these animals may be confronted with dwindling resources available to them for their physiological processes such as reproduction and growth.[72] Various groups of animals in marine ecosystems face this situation.

77. In oysters, crabs, sea urchins, lobsters, corals and many other marine organisms with an external skeleton, acidification (decrease in pH) simultaneously leads to a fall in carbonate ions (CO_3^{2-}). This reduces their ability to make and maintain their shell and/or skeleton, severely degrading their health. Some of these species such as corals and anemones, which are fixed and therefore unable to migrate to other places, remain permanently in hostile conditions, which makes them even more vulnerable. That is why in its 2022 report the IUCN placed the coral reef on the red list of critically endangered species. This is far from unusual as 44% of all shellfish species have been recognized as threatened with extinction.[73]

78. Many species of seabirds (including cormorants, seagulls, marabou storks and pelicans) feed on fish and shellfish. Aside from the fact that these prey are dwindling, partly as a result of acidification caused by global warming, they are being poisoned, which has a dangerous impact on their predatory birds.

79. Other animals, including humans, are not spared, because they feed on poisoned plants and animals. As a result of global warming (temperature rise, fall in oxygen dissolved in the water), coral reefs are bleaching. Withered away, they offer less shelter and food to their numerous and diverse hosts. The organisms that maintain close relationships with corals (and that are seriously impacted) include a multitude of planktons, on which their coral hosts feed and which are at the bottom of a food chain in marine ecosystems. This

[72] Joann Liou, What is Ocean Acidification, 2022, https://www.iaea.org/newscenter/news/what-is-ocean-acidification.
[73] International Union for Conservation of Nature, "Human activity devastating marine species from mammals to corals – IUCN Red List", Press release, 2022, https://www.iucn.org/press-release/202212/human-activity-devastating-marine-species-mammals-corals-iucn-red-list.

chain includes oysters, fish, birds, marine mammals: cetaceans (dolphins and whales), sirenians (manatees) and carnivores (sea lions, otters and walruses). The death of corals therefore represents a huge disturbance at all these levels.[74]

80. Humans consume nearly all these animals; bivalves (molluscs with a two-part shell or interconnected valves) are among our common foods. However, these organisms filter and absorb chemicals that are harmful to them and to their human consumers (health problems, etc.). Sea turtles are also part of this food chain. Their situation is very complex. They live for a long time and reproduce less than other marine animals; they lay their eggs on beaches. Because of the abovementioned consequences of global warming, the healthy environment these reptiles need in the seas and on land is far from assured. That is why the majority of them appear among the categories of endangered or critically endangered species.[75]

81. Mangroves are also significantly disturbed. Climate change affects the multiplication of mangroves due to the increase in temperature and salinity. This is because the propagules (organs of dissemination) of many mangrove species have densities close to those of seawater. Changes in these parameters have repercussions for the dispersal of these trees.[76]

E. Measures to be taken: mitigation, adaptation and relief

82. The measures set out below are among various synergistic initiatives to be taken and implemented in order to preserve human lives and to limit the loss of goods and services. They come under mitigation (in particular reduction of GHG emissions), adaptation to the new environment, and relief.

83. It is indisputable that GHGs are the cause of global warming. There is an urgent need to reduce their increase in the environment. Since they come from both the atmosphere and the continents, they impact the oceans. It is impossible to reduce them in the oceans without doing so on land. Therefore, their quantity must be reduced on a global scale. With this in

[74] Coraux: impact du réchauffement climatique sur les récifs, https://www.futura-sciences.com/planete/dossiers/environnement-coraux-face-rechauffement-climatique-2479/page/6.
[75] See https://www.wwf.fr/especes-prioritaires/tortues-marines.
[76] Tom Van der Stocken, Bram Vanschoenwinkel, Dustin Carroll, Kyle C. Cavanaugh, and Nico Koedam, "Mangrove dispersal disrupted by projected changes in global seawater density", *Nature Climate Change* 2022, p. 685-691, https://doi.org/10.1038/s41558-022-01391-9.

mind, the objective to be achieved is laid down clearly and objectively in article 2, paragraph 1(a), of the Paris Agreement:

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

84. Above all, this calls for fossil fuels to be replaced by clean energy sources and the potential for carbon sequestration by forest ecosystems to be maintained and even enhanced, in particular by increasing the extent of mangrove forests, as this kind of forest protects coastal landscapes very effectively from extreme weather events like hurricanes.[77] Since the regression of mangroves in coastal areas of poor countries is primarily due to the fact that these mangroves are destroyed by local communities who cut wood from the forests, practise subsistence farming and/or excessively harvest non-timber forest products there, it is necessary to reduce or even eliminate these pressures. Technical and financial support is needed to allow these communities to become involved in developing alternative activities (micro-enterprises, projects oriented to the creation of value chains).

85. It is then important to take adaptation measures to protect maritime coasts against tides and waves, the ever-increasing force of which is devastating the coastline, killing local populations and undermining economies. This includes the following measures:

- Building very robust sea walls capable of stopping the progression of these water surges on land;
- Promoting early warning systems, which enable the affected populations to perceive objectively the climate hazards to which they are exposed and to be involved in the prevention of those risks, as "[t]oday, one third of the world's people, mainly in least developed countries and small island developing states, are still not covered by early warning systems."[78]

[77] Emma Barnes, "Mangrove as a solution to climate crisis", 2022: "Mangroves are regularly referred to as a 'nature-based solution' – a term often used in reference to tackling the climate crisis. A nature-based solution leverages the strengths that already exist in nature to mitigate or adapt to the impacts of change. One of mangroves' biggest strengths lies in their ability to capture and store carbon ...". https://www.worldwildlife.org/stories/mangroves-as-a-solution-to-the-climate-crisis.

[78] See "The ocean – the world's greatest ally against climate change", https://www.un.org/en/climatechange/science/climate-issues/ocean.

86. Lastly, there is already irremediable damage which requires relief, given that "[t]he emissions of the richest 1 per cent of the global population account for more than twice the combined share of the poorest 50 per cent." (UNEP, 2020).[79] The DRC will return to this point later in its observations.

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[79] UNEP, Emissions Gap Report 2020 – Executive summary, Nairobi, 2022, p. XV, https://wedocs.unep.org/bitstream/handle/20.500.11822/34438/EGR20ESE.pdf?sequence=1.

III. Rules and methods of interpretation of UNCLOS

87. In responding to the questions which are the subject of this request for an opinion, the DRC proposes that the Tribunal adopt a twofold approach combining the *systemic interpretation* method, whereby UNCLOS is interpreted in light of international law on climate change and human rights (**A**), and the *principle of effectiveness*, which seeks to impose on States Parties *obligations that are practical and effective, and not theoretical and illusory* (**B**).

A. Systemic interpretation of UNCLOS

88. In inviting it to have recourse to a systemic interpretation of UNCLOS, the DRC proposes that the Tribunal adopt a reading that takes into account both article 31, paragraph 3(c), of the Vienna Convention on the Law of Treaties and article 293 of UNCLOS (1), before presenting the other key rules of international law to which regard should be had in its interpretation and application in the case at issue (2).

1. *Justification for systemic interpretation*

89. Article 31, paragraph 3(c), of the Vienna Convention on the Law of Treaties provides that the interpretation of a treaty must take into account "any" relevant rules of international law applicable in the relations between the parties. According to the International Law Commission (hereinafter "ILC"), this expresses the "principle of 'systemic integration' whereby international obligations are interpreted by reference to their normative environment …".[80] The technique of systemic integration allows treaty provisions to "receive their force and validity from general law [in force] and set up rights and obligations that exist alongside rights and obligations established by other treaty provisions and rules of customary international law."[81]

90. The expression "rule of international law" in article 31, paragraph 3(c), of the Vienna Convention refers to all the sources of international law mentioned in article 38 of the Statute

[80] ILC, *Fragmentation of international law: difficulties arising from the diversification and expansion of international law*, Report of the Study Group, finalized by Mr. Martti Koskenniemi, Document A/CN.4/L.682 and Add.1, 2006, para. 413, p. 91 ("*ILC Report on fragmentation of international law"*).
[81] *ILC Report on fragmentation of international law*, para. 414, p. 91.

of the International Court of Justice. These are custom, the general principles of international law (article 38, paragraph 1(b)) and the general principles of [national] law accepted by States (article 38, paragraph 1(c)).

91. Under subparagraph (c) of article 31, paragraph 3, the interpretation is to be based on a rule of international law "applicable in the relations between the parties." A strict interpretation would construe the term "parties" as meaning "all the States Parties to UNCLOS".

92. In its Report on fragmentation of international law, the ILC stated, however, that "[a] better solution is to permit reference to another treaty provided that *the parties in dispute* are also parties to that other treaty."[82] This reflects the "need to respect (inherently divergent) party will, as elucidated by reference to those other treaties …".[83]

93. This approach cannot be applied strictly to the present proceedings, in which there are no parties in dispute. Recourse should nevertheless be had to it by analogy in the present request for an opinion. Accordingly, the Tribunal will interpret UNCLOS in light of other treaties of universal application, even if they do not have exactly the same parties as UNCLOS, even by formulating a reservation regarding States which are not bound by all the relevant rules.

94. This method of interpretation is all the more necessary in the present case in light of article 293, paragraph 1, of UNCLOS, which provides that: "[a] court or tribunal having jurisdiction under this section shall apply this Convention and other rules of international law not incompatible with this Convention." This provision confers on the Tribunal the power to *apply* other rules of international law in the present case, provided they are not incompatible with UNCLOS. It will therefore have to go beyond a strict interpretation of article 31, paragraph 3(c), of the Vienna Convention on the Law of Treaties.

[82] *ILC Report on fragmentation of international law*, p. 103.
[83] *Ibid.*

2. *Systemic interpretation in the present case*

95. The Tribunal will take into account, in particular, the relevant rules on climate change (a) and the rules on human rights (b).

a. International law on climate change

96. The context surrounding participation in UNCLOS is largely similar to that for the main international agreements on climate change. All the States which have ratified UNCLOS have also ratified the United Nations Framework Convention on Climate Change (UNFCCC).[84] In addition, all the Parties to UNCLOS have ratified the Paris Agreement,[85] except for Yemen, which has ratified UNCLOS but only signed the Paris Agreement.

97. These two international instruments and the secondary law derived from them are therefore of particular relevance and can serve as other instruments compatible with UNCLOS for the purposes of its interpretation and application. In the present case, regard should be had in particular to the UNFCCC and the Paris Agreement in so far as both of these establish the following rules:

- recognition of scientific facts relating to climate change and of the need to adopt measures to that end;[86]

- the precautionary principle;[87]

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[84] United Nations Framework Convention on Climate Change, New York, 9 May 1992, https://treaties.un.org/pages/ViewDetailsIII.aspx?src=TREATY&mtdsg_no=XXVII-7&chapter=27&Temp=mtdsg3&clang=_en.

[85] United Nations Convention on the Law of the Sea, Montego Bay, 10 December 1982, https://treaties.un.org/pages/ViewDetailsIII.aspx?src=TREATY&mtdsg_no=XXI-6&chapter=21&Temp=mtdsg3&clang=_en.

[86] Article 2 of the UNFCCC provides: "The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner", while article 2 of the Paris Agreement "… aims to strengthen the global response to the threat of climate change … by holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels …".

[87] Article 3 of the UNFCCC provides: "3. The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective

- the principle of common but differentiated responsibilities and respective capabilities.[88]

b. International human rights law

98. Climate change threatens human rights, in particular the rights to life, health and subsistence. The first is threatened by extreme climate events such as more violent and more frequent hurricanes. The second is confronted by the resurgence of vector-borne diseases such as malaria, while the third is endangered by increased food insecurity caused by drought and floods in particular (see above, paragraphs 68-71).

99. The relevance of taking into account human rights in interpreting and applying UNCLOS is readily apparent from its preamble, which states that the Convention is "an important contribution to the maintenance of peace, justice and progress for all peoples of the world" and that it "will contribute to the realization of a just and equitable international economic order which takes into account the interests and needs of mankind as a whole and, in particular, the special interests and needs of developing countries, whether coastal or land-locked". The preamble to the Paris Agreement makes similar statements.[89]

100. In examining the state of play of the participation of States in UNCLOS, in instruments of law relating to climate change and in human rights instruments, a strong correlation is apparent, with the following characteristics:

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so as to ensure global benefits at the lowest possible cost. To achieve this, such policies and measures should take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors. Efforts to address climate change may be carried out cooperatively by interested Parties. …".

[88] Article 3 of the UNFCCC: "1. The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof. 2. The specific needs and special circumstances of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change, and of those Parties, especially developing country Parties, that would have to bear a disproportionate or abnormal burden under the Convention, should be given full consideration."

[89] Paris Agreement, preamble, para. 13: "… climate change is a common concern of humankind, Parties should, 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."

- the following States have ratified UNCLOS, without ratifying or signing the International Covenant on Civil and Political Rights (ICCPR):[90] Brunei Darussalam, Cook Islands, Kiribati, Malaysia, Marshall Islands, Micronesia, Niue, Oman, Saint Kitts and Nevis, Saudi Arabia, Singapore, Solomon Islands, Tonga and Tuvalu;

- the following States have ratified UNCLOS and only signed the ICCPR: China, Comoros, Cuba, Nauru, Palau and Saint Lucia;

- the following States have ratified UNCLOS, without having ratified or signed the International Covenant on Economic, Social and Cultural Rights (ICESCR):[91] Botswana, Brunei Darussalam, Cook Islands, Kiribati, Malaysia, Micronesia, Mozambique, Nauru, Niue, Saint Lucia, Saint Kitts and Nevis, Samoa, Saudi Arabia, Singapore, Tonga, Tuvalu and Vanuatu;

- The following States have ratified UNCLOS and only signed the ICESCR: Comoros, Cuba and Palaos.

101. The Human Rights Council has contributed to raising awareness of the links between human rights and climate change by providing successive, specific clarifications on the ways in which climate change affects human rights. Between 2008 and 2022, on the basis of the UNFCCC and the Paris Agreement, as well as various IPCC reports, the Human Rights Council adopted a total of 21 resolutions, 12 of which make a direct link between climate

[90] International Covenant on Civil and Political Rights, New York, 16 December 1966, https://treaties.un.org/pages/ViewDetails.aspx?src=IND&mtdsg_no=IV-4&chapter=4&clang=_en.
[91] International Covenant on Economic, Social and Cultural Rights, New York, 16 December 1966, https://treaties.un.org/pages/ViewDetails.aspx?src=IND&mtdsg_no=IV-3&chapter=4&clang=_en.

change and human rights,[92] in addition to decisions which underline more broadly a link between human rights and the natural environment.[93]

102. In particular, by its resolution 7/23 (March 2008), which relied on the work of the IPCC, the Council recognized for the first time that climate change "poses an immediate and far-reaching threat to people and communities around the world and has implications for the full enjoyment of human rights."[94] In 2009, by its resolution 10/4 (March 2009), the Council noted that

> the effects of climate change will be felt most acutely by those segments of the population who are already in vulnerable situations.[95]

103. The work of the Human Rights Council relating to human rights and the environment culminated in the adoption of the Framework Principles on Human Rights and the Environment in 2018. Consistency in interpretation by human rights bodies shows that there

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[92] Human Rights Council, Resolution 7/23 of 28 March 2008, Human rights and climate change, https://ap.ohchr.org/documents/e/hrc/resolutions/a_hrc_res_7_23.pdf; Human Rights Council, Resolution 10/4 of 25 March 2009, Human rights and climate change, https://ap.ohchr.org/documents/E/HRC/resolutions/A_HRC_RES_10_4.pdf; Human Rights Council, Resolution 18/22 of 30 September 2011, Human rights and climate change, https://undocs.org/A/HRC/RES/18/22; Human Rights Council, Resolution 26/27 of 27 June 2014, Human rights and climate change, https://undocs.org/A/HRC/RES/26/27; Human Rights Council, Resolution 29/15 of 2 July 2015, Human rights and climate change, https://undocs.org/A/HRC/RES/29/15; Human Rights Council, Resolution 32/33 of 1 July 2016, Human rights and climate change, https://undocs.org/A/HRC/RES/32/33; Human Rights Council, Resolution 35/20 of 22 June 2017, Human rights and climate change, https://undocs.org/A/HRC/RES/35/20; Human Rights Council, Resolution 38/4 of 5 July 2018, Human rights and climate change, https://undocs.org/A/HRC/RES/38/4; Human Rights Council, Resolution 42/21 of 12 July 2019, Human rights and climate change, https://undocs.org/A/HRC/RES/41/21; Human Rights Council, Resolution 44/7 of 16 July 2020, Human rights and climate change, https://undocs.org/A/HRC/RES/44/7; Human Rights Council, Resolution 47/24 of 14 July 2021, Human rights and climate change, https://undocs.org/A/HRC/RES/47/24; Human Rights Council, Resolution 50/9 of 7 July 2022, Human rights and climate change, https://undocs.org/A/HRC/RES/50/9.

[93] Human Rights Council, Resolution 16/11 of 24 March 2011, Human rights and the environment, https://daccess-ods.un.org/tmp/4679319.26250458.html; Human Rights Council, Resolution 19/10 of 22 March 2012, Human rights and the environment, https://daccess-ods.un.org/tmp/4592466.95041656.html; Human Rights Council, Resolution 25/21 of 28 March 2014, Human rights and the environment, https://daccess-ods.un.org/tmp/7971293.92623901.html; Human Rights Council, Resolution 28/11 of 26 March 2015, Human rights and the environment, https://daccess-ods.un.org/tmp/4847836.19642258.html; Human Rights Council, Resolution 31/8 of 23 March 2016, Human rights and the environment, https://daccess-ods.un.org/tmp/2535329.46109772.html; Human Rights Council, Resolution 34/20 of 24 March 2017, Human rights and the environment, https://daccess-ods.un.org/tmp/1309311.3899231.html; Human Rights Council, Resolution 37/8 of 22 March 2018, Human rights and the environment, https://daccess-ods.un.org/tmp/1309311.3899231.html; Human Rights Council, Resolution 46/7 of 23 March 2021, Human rights and the environment, https://daccess-ods.un.org/tmp/5815389.752388.html; Human Rights Council, Resolution 48/13 of 8 October 2021, The human right to a clean, healthy and sustainable environment, https://daccess-ods.un.org/tmp/8741750.12111664.html.

[94] Human Rights Council, Resolution 7/23, Human rights and climate change, *op. cit.*, para. 2.

[95] Human Rights Council, Resolution 10/4. Human rights and climate change, *op. cit.*, para. 7.

are converging trends towards greater uniformity and certainty in the application of human rights law to the environment.[96] Those Principles state that:

> [t]ransboundary and global environmental harm can have severe effects on the full enjoyment of human rights.[97]

104. While the human rights implications of environmental damage are felt around the world, they are felt most acutely by those segments of the population that are already in vulnerable situations. In view of the increased level of such environmental damage and the diversification of its sources, Principle 14 recommends that States "take additional measures to protect the rights of those who are most vulnerable to, or at particular risk from, environmental harm, taking into account their needs, risks and capacities."

105. Consideration must also be given to international human rights law relating to access to justice, which will be examined (see below, paragraph 314 et seq.) in the analysis of article 235 of UNCLOS.

B. Establishment of the effectiveness of the obligations stemming from UNCLOS

106. In order to deal with the *deficit of effectiveness* which characterizes States' international obligations relating to climate change, UNCLOS must be interpreted in such a way as to establish *practical and effective* obligations for the States Parties, rather than theoretical obligations which could make the protection of the marine environment illusory in practice.

107. The practical and effective nature of the obligations under UNCLOS means that its provisions must have practical effect *on the ground*, not only for the law and for jurists but also for human beings and nature. This principle of interpretation is distinct from the maxim *ut res magis valeat quam pereat.* According to that maxim, the provisions of a treaty like UNCLOS should be interpreted in such a way as to make them effective throughout the treaty.[98] Pursuant to the abovementioned principle of effectiveness, UNCLOS should be

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[96] *Ibid.*

[97] Framework Principles on human rights and the environment, p. 19.

[98] See inter alia ICJ, judgment of 9 April 1949, *Corfu Channel (United Kingdom* v. *Albania), I.C.J. Reports 1949*, p. 24, citing respectively PICJ, advisory opinion of 23 July 1926, *Competence of the ILO to Regulate Incidentally the Personal Work of the Employer*, *Series B*, No. 13, p. 19 and PICJ, order of 19 August 1929, *Free Zones of Upper Savoy and the District of Gex, Series A*, No. 22, p. 13; ICJ, judgment of 3 February 1994,

interpreted in such a way not only to make effective each of its provisions in the legal regime of UNCLOS, but also and above all to make that legal regime effective in the real world.

108. The "principle of effectiveness" applies in general international law (1) and finds particular expression in international jurisprudence relating to human rights under which the conventions for the protection of human rights of which they are the guardians must be interpreted so as to ensure rights which are *practical and effective, and not theoretical and illusory* (2) and in international environmental law (3). This is the case in particular for treaties imposing *erga omnes* obligations, like those under the provisions of UNCLOS at issue in the present request for an opinion and, moreover, the international obligations relating to climate change (4). The DRC will identify, lastly, certain practical enunciations of the principle which may be applied by the Tribunal in these proceedings (5).

1. *General international law*

109. In general international law, the principle of effectiveness constitutes a specific enunciation of the principle of good faith enshrined in article 31, paragraph 1, of the Vienna Convention on the Law of Treaties. Furthermore, article 41 of that Convention, which concerns the modification of multilateral treaties between certain of the parties only, lays down the condition that the modification should not be incompatible "with the *effective* execution of the object and purpose of the treaty as a whole" (article 41, paragraph 1(b)(ii)).

110. The principle is also expressed in the advisory opinion of the International Court of Justice concerning *Reparation for injuries suffered in the service of the United Nations*. With regard to the capacity of the United Nations to bring a claim, the Court had held that

> its Members, by entrusting certain functions to it, with the attendant duties and responsibilities, have clothed it with the competence required to enable those functions to be *effectively* discharged.[99]

Territorial Dispute (Libyun Aruh Jamuhiriyu/Chad), Judgment, I.C.J. Reports 1994, p. 25, para. 51 and the earlier jurisprudence cited.

[99] ICJ, advisory opinion of 11 April 1949, *Reparation for injuries suffered in the service of the United Nations, I.C.J. Reports 1949*, p. 179. Emphasis added. See also *loc. cit.*, p. 180.

As regards the international protection of United Nations officials, the Court had then held that:

> Both to ensure the *efficient* and independent performance of these missions and to afford *effective* support to its agents, the Organization must provide them with adequate protection.[100]

111. The principle of effectiveness thus constitutes a principle of interpretation of general international law.

2. *International human rights law*

112. The principle of effectiveness finds one of its *clearest* expressions in international human rights law.

113. It underlies the African Charter on Human and Peoples' Rights, the preamble to which states inter alia that "*the reality* and respect of peoples' rights should necessarily guarantee human rights" and that "*the satisfaction* of economic, social and cultural rights is a guarantee for the enjoyment of civil and political rights". In article 1, the States Parties recognize the rights, duties and freedoms enshrined in the Charter "and undertake to adopt legislative or other measures to give effect to them." These statements aim to give the rights enshrined in the Charter an effective character, reflected practically in the facts of life of the peoples and human beings of Africa.

114. The African Commission on Human and Peoples' Rights strives to ensure the highest possible degree of effectiveness. This leads it to set out in its decisions very detailed measures to be taken by a State responsible for a violation of the Charter,[101] to which the DRC will return in due course (see below, paragraph 130).

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[100] *Loc. cit.*, p. 183. Emphasis added.

[101] See, for example, African Commission on Human and Peoples' Rights, decision of 11 May 2000, Comm Nos 54/91, 61/91, 98/93, 164/97 to 196/97 and 210/98, *Malawi African Association* v. *Mauritania*, in *Compilation of Decisions on Communications of the African Commission on Human and Peoples' Rights 1994-2001*, Extracts from the Commission's Activity Reports 1994-2001, Institute for Human Rights and Development in Africa, p. 162-193; African Commission on Human and Peoples' Rights, decision adopted in October 2003, Comm No. 155/96, *Social and Economic Rights Action Center, Center for Economic and Social Rights* v. *Nigeria*, in *Documents of the African Commission on Human and Peoples' Rights*, volume II 1999-2007, Oxford, Hart Publishing, 2009, p. 333-343.

115. The principle of effectiveness is also enshrined in the preamble to the European Convention on Human Rights, which states that it "aims at securing the universal and effective recognition and observance of the Rights therein declared". It thus makes it possible, in the words of the European Court of Human Rights, to protect

> not rights that are theoretical or illusory but rights that are practical and effective.[102]

116. Similarly, the Inter-American Court of Human Rights establishes the existence of positive obligations on States Parties based on the principle of effective implementation, which the Court also refers to as the principle of *effet utile*.[103] With regard to article 1, paragraph 1, of the Convention, which obliges the States Parties to ensure the free and full exercise of the rights recognized by the Convention to every person subject to their jurisdiction, the Court ruled that the effective guarantee of that right is not ensured by the mere existence of a legal system:

> The obligation to ensure the free and full exercise of human rights *is not fulfilled by the existence of a legal system* designed to make it possible to comply with this obligation – it also requires the government to conduct itself *so as to effectively ensure* the free and full exercise of human rights.[104]

Failing that, according to the Court, the system of protection provided for in the Convention would be *illusory*:

> This principle suits perfectly the nature of the Convention, which is violated whenever public power is used to infringe the rights recognized therein. If acts of public power that exceed the State's authority or are illegal under its own laws were not considered to compromise that State's obligation under the treaty, *the system of protection provided for in the Convention would be illusory*.[105]

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[102] See, for example, ECtHR (Plenary), 13 June 1979, *Marckx* v. *Belgium*, para. 31; ECtHR (Grand Chamber), 13 December 2012, *El-Masri* v. *The Former Yugoslav Republic of Macedonia*, para. 134 (where the Court holds that the principle of effectiveness extends both to obligations imposed on States and to procedural provisions); ECtHR, 27 April 2006, *Sannino* v. *Italy*, para. 48; ECtHR, 12 March 2003, *Öcalan* v. *Turkey*, paras. 146 and 153, confirmed by the Grand Chamber on 12 May 2005, para. 133.

[103] See, for example, IACtHR, interpretation of 3 September 2001 of the judgment on the merits in *Barrios Altos* v. *Peru*, *Series C*, No. 83, para. 17.

[104] IACtHR, judgment of 29 July 1988, *Velasquez Rodriguez* v. *Honduras*, Series C, No. 4, para. 167. Emphasis added.

[105] *Loc. cit.*, para. 171. Emphasis added.

The guarantee of effective rights also imposes procedural obligations and obligations of effective investigation on the States Parties,[106] as well as the obligation to "eliminate all obstacles" to the full exercise of the rights.

3. *International environmental law*

117. The principle of effectiveness also underlies the observation made by the ICJ in its abovementioned advisory opinion of 1996, in which it

> recognizes that the environment is under daily threat and that the use of nuclear weapons could constitute a catastrophe for the environment. The Court also recognizes that *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.

118. Similarly, the ICJ applied the principle in the case concerning *Pulp Mills on the River Uruguay (Argentina* v. *Uruguay)*, when it ruled that the obligation to act with due diligence requires not only the adoption of rules, but also their enforcement. The clarification of the general obligation of due diligence, *which is accompanied, moreover, by an example given by the Court for the parties to the dispute*,[107] is intended to ensure that obligations which exist in the international legal order are effectively put into practice.

4. *Erga omnes obligations under UNCLOS and climate change*

119. The principle of effectiveness is of particular importance for *erga omnes* obligations. International regimes that go beyond reciprocal protection of individual State interests cannot be loosely applied by virtue of State inertia. They must, more than obligations of the mutually reciprocating type,[108] be interpreted in such a way as to ensure their specific application in practice.

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[106] IACtHR, judgment of 3 March 2005, *Huila Tecse* v. *Peru*, Series C, No. 121, para. 66.

[107] ICJ, *Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010,* p. 14, para. 197: "It is an obligation which entails not only the adoption of 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, to safeguard the rights of the other party." Emphasis added.

[108] The DRC is referring here to the distinction between treaties which are mutually reciprocating, of the interdependent type and of the integral type, which was made by the Special Rapporteur of the International Law Commission, Sir Gerald Fitzmaurice, in his third report on the Law of Treaties, *Yearbook of the International Law Commission international*, 1958, II, p. 27 et seq.

120. In its abovementioned advisory opinion on *Legality of the Threat or Use of Nuclear Weapons*, cited by the Arbitral Tribunal in the case concerning the *South China Sea*,[109] the ICJ linked its factual finding that "the environment is not an abstraction" to the obligation of States to ensure that activities within their control respect the environment of areas beyond national jurisdiction.[110]

121. From this point of view too, the principle of effective interpretation is essential to the interpretation of Part XII of UNCLOS. In its advisory opinion of 1 February 2011, the Tribunal held that the obligations laid down in Part XII of the Convention have *erga omnes* character:

> Each State Party may also be entitled to claim compensation in light of the *erga omnes* character of the obligations relating to preservation of the environment of the high seas and in the Area. In support of this view, reference may be made to article 48 of the ILC Articles on State Responsibility …[111]

In the case concerning the *South China Sea*, the Arbitral Tribunal similarly held that:

> The substantive provisions relevant to the marine environment comprise their own Part XII of the Convention. At the outset, the Tribunal notes that the obligations in Part XII apply to all States with respect to the marine environment in all maritime areas, both inside the national jurisdiction of States and beyond it.
>
> Accordingly, *questions of sovereignty are irrelevant to the application of Part XII of the Convention*. The Tribunal's findings in this Chapter have no bearing upon, and are not in any way dependent upon, which State is sovereign over features in the South China Sea.[112]

122. The importance of effective interpretation is further illustrated by various provisions of UNCLOS. For example:

- Article 207, which provides that States "shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment from land-based sources",

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[109] Arbitral Tribunal, award of 12 July 2016, *South China Sea (Philippines* v. *China)*, p. 374, para. 941.
[110] ICJ, advisory opinion of 8 July 1996, *Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, I.C.J. Reports 1996*, p. 241-242, para. 29.
[111] International Tribunal for the Law of the Sea, Advisory Opinion of 1 February 2011, *Responsibilities and obligations of States with respect to activities in the Area (Request for Advisory Opinion submitted to the Seabed Disputes Chamber)*, p. 59, para. 180.
[112] Arbitral Tribunal, award of 12 July 2016, *South China Sea (Philippines* v. *China)*, p. 373, para. 940. Emphasis added.

but also "other measures as may be necessary to prevent, reduce and control such pollution."

- Article 218, which recognizes the right for a port State to undertake investigations and to institute proceedings for discharge violations committed by a vessel in respect of any discharge outside its waters, without that violation having necessarily caused damage in areas within the jurisdiction of the host State.

123. The principle of effective interpretation, which seeks to promote the effective application of international rules in practice, is thus among the essential principles which are to be applied by the Tribunal in interpreting Part XII of UNCLOS.

124. This is particularly true of the application of UNCLOS to climate change and its consequences. The international obligations of States in this area are highly vulnerable to a deficit of effectiveness. This is illustrated inter alia by the fact that the 27th Conference of the States Parties to the UNFCCC held in Sharm El-Sheikh in 2022 (COP27) was dedicated to the implementation of the international obligations under the Framework Convention adopted 30 years previously.[113]

125. This deficit is caused by the diffuse and delayed nature of climate change and its consequences, and by the role of areas beyond national jurisdiction, which reduces the responsiveness of States. These factors are at the root of the current climate emergency. That emergency requires more than ever that UNCLOS be interpreted in such a way as to ensure that the obligations of States Parties are practical and effective.

5. *Implementation of the principle of effectiveness*

126. It is possible to identify certain practical enunciations of the principle of effectiveness on the basis of international jurisprudence and the practice of the United Nations. Those highlighted below are given as examples.

[113] Decision 1/CP.27, Sharm el-Sheikh Implementation Plan, FCCC/CP/2022/10/Add.1 of 17 March 2023, https://unfccc.int/decisions?f%5B0%5D=conference%3A4460.

127. *First*, the interpretation of notions of conventions as *autonomous*[114] and as subject to an *evolutive* interpretation[115] may prove to be an essential condition for the effectiveness of international obligations. Evolutive interpretation may be necessary not only in light of developments in the normative context but equally in light of developments in the factual context. The Tribunal is invited to take this into account, in particular in interpreting the notion of pollution and the associated obligations.

128. *Second*, effective interpretation may give rise to the identification of *positive obligations* incumbent on States even if these are not explicitly laid down in the text of the treaty.[116] The Arbitral Tribunal in the case concerning the *South China Sea* held in this regard that a State can violate article 192 of UNCLOS by damaging the marine environment, but also by failing to take measures to protect and preserve it.[117]

129. *Third*, effective interpretation may lead an international court or tribunal to specify practically the consequences to which the State's obligation may give rise *for different State organs or for different types of State activity*.[118] They may be specified practically as follows:

- They may result from an interpretation of the rule of good faith, in a reasonable manner, and in light of the object and purpose of the treaty and of the rule itself.

- They may result from the "recommended practices and procedures" referred to in articles 207 to 210 of UNCLOS.

- They may, if they are not legally binding, be identified as examples and without prejudice to the rules of domestic law and matters reserved for States. The approach taken by the ICJ in contentious cases is all the more justified in advisory proceedings. This is so *a fortiori* because UNCLOS itself practically specifies the obligations set out therein in this manner. Thus, article 235 of the Convention on responsibility and liability provides, in paragraph 3, that with the objective of assuring prompt and adequate compensation, States are to cooperate in the implementation and development of international law relating to responsibility and liability for the

[114] ECtHR (Grand Chamber), 29 April 1999, *Chassagnou and Others* v. *France*, para. 100.
[115] ECtHR (Grand Chamber), 28 May 2002, *Stafford* v. *United Kingdom*, para. 68.
[116] ECtHR (Grand Chamber), 13 June 1979, *Marckx* v. *Belgium*, para. 31.
[117] Arbitral Tribunal, award of 12 July 2016, *South China Sea (Philippines* v. *China)*, p. 373-374, para. 941.
[118] ICJ, *Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010*, para. 197.

development of criteria and procedures for payment of adequate compensation, "*such as* compulsory insurance or compensation funds."[119]

130. The jurisprudence of the Inter-American Court of Human Rights[120] and of the African Commission on Human and Peoples' Rights shows that such practical enunciations may also concern the *procedures to be followed* in order to ensure the effectiveness of rights and obligations. For example, in its decision in *Social and Economic Rights Action Center, Center for Economic and Social Rights* v. *Nigeria*, the African Commission made very precise recommendations regarding Nigeria. The Commission appealed to Nigeria "to ensure protection of the environment, health and livelihood of the people of Ogoniland" by various means, including:

> [c]onducting an investigation into the … violations …;
>
> [e]nsuring adequate compensation to victims …;
>
> [e]nsuring that appropriate environmental and social impact assessments are prepared for any future oil development and that the safe operation … is guaranteed through … independent oversight bodies …;
>
> [p]roviding information on health and environmental risks ….[121]

131. The Tribunal will thus be able to have regard to the work of the United Nations Environment Programme (UNEP) in specifying practically the obligations of States under Part XII of UNCLOS, whether by way of effective or reasonable interpretation or as examples of implementation of the obligations to be identified by the Tribunal. In particular:

- the Manual on Compliance with and Enforcement of Multilateral Environmental Agreements,[122] adopted by the UNEP in 2006;

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[119] Emphasis added.
[120] See above, paragraph 116.
[121] African Commission on Human and Peoples' Rights, decision adopted in October 2003, Comm No. 155/96, *Social and Economic Rights Action Center, Center for Economic and Social Rights* v. *Nigeria*, in *Documents of the African Commission on Human and Peoples' Rights*, volume II 1999-2007, Oxford, Hart Publishing, 2009, p. 333-343. Emphasis added.
[122] UN Environment, Manual on Compliance with and Enforcement of Multilateral Environmental Agreements, 2006, https://digitallibrary.un.org/record/778165.

- the work of the UNEP on the "environmental rule of law".[123] This work sets out a number of elements which are intended to provide effective environmental governance across multiple levels of institutions, sectors and actors:[124] fair, clear and implementable laws;[125] access to information, public participation and access to justice;[126] the principles of accountability and integrity of institutions and decision-makers;[127] clear and coordinated mandates and roles across institutions;[128] an accessible, fair, impartial, timely and responsive dispute resolution mechanism;[129] and recognition of the mutually reinforcing relationship between rights and the environmental rule of law.[130] Lastly, they advocate specific criteria for the interpretation of environmental law,[131] which correspond, in substance, to the principle of effective interpretation.

132. The DRC invites the Tribunal to have regard to these potential practical enunciations of the principle of effective interpretation in responding to the request for an advisory opinion. It will return to these practical enunciations in later sections of these observations.

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[123] UN Environment, *Environmental Rule of Law – First Global Report*, 2019. Available at https://www.unep.org/resources/assessment/environmental-rule-law-first-global-report.
[124] UN Environment, *Environmental Rule of Law – First Global Report*, 2019, p. 20.
[125] *Idem.*
[126] *Ibid.*, p. 21.
[127] *Ibid.*, 2019, p. 21-22.
[128] *Ibid.*, 2019, p. 24.
[129] *Ibid.*, 2019, p. 25.
[130] *Ibid.*
[131] *Ibid.*, p. 26.

IV. The obligations to protect and preserve the marine environment under article 192 of UNCLOS

133. In ratifying the Montego Bay Convention, the States Parties undertook, pursuant to article 192 thereof, to comply with a "general obligation" to protect and preserve the marine environment. That article clearly stipulates that "States have the obligation to protect and preserve the marine environment." This provision calls for the following observations to be made, first, regarding its scope (**A**) and, second, regarding its application to climate change (**B**).

A. Article 192 of UNCLOS – scope

1. *Establishment of a "general obligation"*

134. Article 192 is a fundamental provision. This is clear both from its title, "general obligation", and from its position at the head of Part XII of UNCLOS. There are no exceptions within its scope,[132] which demonstrates its effectiveness in this field.

135. The general character of the obligation enshrined in this provision clearly implies the two aspects of the statement made in the request for an opinion submitted to the Tribunal in this case. There can be no general protection of the marine environment without practical and specific obligations, whatever their source, capable of guaranteeing, in particular, the prevention, reduction and control of pollution of the environment in general, and especially in the context of climate change and sea level rise.

136. It is important to stress the logical need for the Tribunal to give a practical interpretation of article 192 so as to clarify and specify for the States Parties the scope and extent of the measures and conduct which are expected of them in accordance with this objective of preserving and protecting the marine environment, in particular in the context of climate change. This is without prejudice to the arguments on the interpretation of articles 194 and 235 of the Convention.

[132] Institut du Droit Économique de la Mer, *L'obligation des États de protéger et de préserver le milieu marin*, Résumé du rapport général, January 2023.

2. *The duty to protect and preserve the marine environment*

137. The obligation to "protect" the marine environment relates to measures taken by States to address a future threat. To that end, it requires the States Parties to adopt measures capable of preventing any risk and any attempt to degrade it. The obligation to "preserve" also involves, where appropriate, taking responsibility for the marine area in question. The notions overlap to some extent but, when they are juxtaposed, "protection" characterizes defensive action, while "preservation" characterizes remedial action. Protection is outward facing, while preservation is inward facing.

138. It should be noted that these two obligations can also be distinguished from the point of view of temporality. Accordingly, States aim to guarantee the protection of the field of interaction for marine life from any damaging event in the *future*, but also to improve the *present* state of the marine environment in order to maintain or restore its richness and ecological balance.

139. With a view to protecting the marine environment, States must also ensure that individuals or private organizations do not commit acts that could damage that environment. In this respect, they are required to adopt measures capable of preventing damage of this kind. In this sense, any inaction on their part constitutes a breach of the duty of diligence and therefore incurs their international responsibility.

140. The duty to protect and preserve the marine environment also entails the obligation for States not to allow their territory to be used for acts contrary to the rights of other States,[133] which could as such cause damage to the marine environment.[134]

141. These obligations are, lastly, characterized by the need to be effective. In the case concerning *Pulp Mills on the River Uruguay*, the International Court of Justice recalled the obligation of due diligence as follows:

> … the obligation to "preserve the aquatic environment, and in particular to prevent pollution by prescribing appropriate rules and measures" is an obligation to act with due diligence in respect of all activities which take place

[133] ICJ, *Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010*, p. 45, para. 101.
[134] See Principle 2 of the *Rio Declaration on Environment and Development*, cited below, paragraph 144.

> under the jurisdiction and control of each party. It is an obligation which entails not only the adoption of 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, to safeguard the rights of the other party. [135]

142. Along similar lines, the Tribunal has held, inter alia in *Southern Bluefin Tuna*, that "the parties should in the circumstances act with prudence and caution to ensure that effective conservation measures are taken …".[136]

143. The Tribunal also made similar statements in the rulings in the *M/V "Louisa"* case[137] and in the *Dispute concerning delimitation of the maritime boundary between Ghana and Côte d'Ivoire in the Atlantic Ocean.*[138] In essence it concluded that "… the Parties should … act with prudence and caution to prevent serious harm to the marine environment".[139]

3. *The concept of "marine environment"*

144. The scope *ratione materiae* of the obligation laid down by article 192 covers "the marine environment" without further clarification. It follows that the obligation in question extends to areas beyond the limits of national jurisdiction.

145. Principle 2 of the *Rio Declaration on Environment and Development* adopted in 1992 at the Earth Summit states that:

> States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

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[135] ICJ, *Pulp Mills on the River Uruguay*, *op. cit.*, p. 69-70, para. 197. Emphasis added.
[136] ITLOS Reports 1999, p. 274, para. 77.
[137] *M/V "Louisa" (Saint Vincent and the Grenadines* v. *Kingdom of Spain), Provisional Measures, Order of 23 December 2010, ITLOS Reports 2008-2010*, p. 70, para. 76.
[138] *Delimitation of the maritime boundary in the Atlantic Ocean (Ghana/Côte d'Ivoire), Provisional Measures, Order of 25 April 2015, ITLOS Reports 2015*, p. 160, para. 69.
[139] *M/V "Louisa" (Saint Vincent and the Grenadines* v. *Kingdom of Spain), Provisional Measures, Order of 23 December 2010, ITLOS Reports 2008-2010*, p. 70, para. 77; see also *Delimitation of the maritime boundary in the Atlantic Ocean (Ghana/Côte d'Ivoire), Provisional Measures, Order of 25 April 2015, ITLOS Reports 2015*, p. 160, para. 72.

146. The International Court of Justice noted, in its advisory opinion on the *Legality of the Threat or Use of Nuclear Weapons*, the obligation of States to ensure that activities within their control respect the environment of areas beyond national control. It stated in particular that

> [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.[140]

B. Applicability of article 192 of UNCLOS to climate change

147. The obligations referred to in article 192 logically imply the need to adopt conduct likely to contribute to the fight against climate change, both for the present and for the future. Measures are immediately necessary (1). They are reflected in a series of more specific obligations which derive from the general terms used in that article (2).

1. *The need for immediate measures by States to combat climate change*

148. The imperative of preserving and protecting the marine environment requires an immediate response in the event of the existence or threat of any risk to the integrity of the marine environment.

149. Specifically, the obligation of protection applies unconditionally in so far as there are currently numerous risks and threats to the marine environment. These can be illustrated, in particular, by the following phenomena:

- the effect of climate change on marine animal species, especially cold-blooded marine animals (ectotherms). Extreme temperatures thus represent an important factor which limits the survival of populations of a species (see above, paragraph 66);

- the increased frequency of natural disasters such as floods and storms caused by climate change also falls within the category of risks or threats to the marine environment (see above, paragraph 68).

[140] ICJ, *Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, I.C.J. Reports 1996*, p. 241-242, para. 29.

150. The obligation of preservation is activated by harm to the marine environment. Sea level rise already constitutes harm, this increase having been observed and measured since 1990 (see above, paragraph 67). Acidification of the oceans also constitutes harm to the marine environment (see above, paragraphs 68 and 69).

2. *Practical obligations imposed by article 192*

151. The causes, characteristics and consequences of climate change allow the general obligation to protect and preserve the marine environment to be specified practically in relation to that phenomenon.

a. GHG emissions and plastic waste

152. *First*, it was explained above that greenhouse gases result from emissions not only from land, but also from the sea, mainly due to the heating of various substances, including plastics, which are discharged into the sea and generate GHGs, especially methane (see above, paragraphs 63 and 64).

153. Consequently, the States Parties have an obligation to end greenhouse gas emissions from their territory and areas under their jurisdiction (as well as transport under their jurisdiction wherever it may be located). In the same vein, they must also contribute to ending *discharges of plastics and similar substances into the sea*, while recycling or processing such substances in a way that produces the minimum possible greenhouse gas emissions.

b. Urgency and priority

154. *Second*, given the current and future but already certain effects of climate change, these obligations must be urgently met.

155. This means that States must give the protection and preservation of the marine environment in relation to climate change the highest priority in their national and international action.

156. In implementing this priority action, States, and industrialized States in particular, must take full account of the fact that climate change is causing and will cause violations of human rights and economic damage to countries, particularly developing countries. This future damage will be infinitely greater than the costs of immediate action (see above, paragraphs 70-81).

c. All organs of the State

157. Third, in accordance with the jurisprudence of the International Court of Justice concerning *Pulp Mills on the River Uruguay*, that urgency must be reflected in action by all competent organs of the State so as to ensure that it is effective.

158. Consequently, the urgent and priority action by States must be implemented coherently and effectively through their legislative, regulatory, police, judicial (civil, administrative and criminal) and budgetary actions, as well as by international cooperation.

159. Pursuant to the principle of effective interpretation (see above, paragraphs 121-132), the Tribunal must specify practically these obligations by reference to, inter alia, the UNEP's work on the "environmental rule of law",[141] identifying elements to provide effective environmental governance across multiple levels of institutions, sectors and actors.[142]

160. The Tribunal is thus invited to make clear that in the action in question, States must ensure:

- the adoption and implementation of fair, clear and implementable laws;[143]
- access to information, public participation and access to justice;[144]
- accountability and integrity of institutions and decision-makers;[145]

[141] UN Environment, *Environmental Rule of Law – First Global Report*, 2019, https://www.unep.org/resources/assessment/environmental-rule-law-first-global-report.
[142] UN Environment, *Environmental Rule of Law – First Global Report*, 2019, p. 20.
[143] *Ibid.*, p. 20.
[144] *Ibid.*, p. 21.
[145] *Ibid.*, p. 21-22.

- clear and coordinated mandates and roles across institutions;[146]

- accessible, fair, impartial, timely and responsive dispute resolution mechanisms;[147]

- recognition of the mutually reinforcing relationship between rights and the environmental rule of law.[148]

161. Furthermore, the work of the competent international institutions makes it possible to identify various practical enunciations of the obligation of prevention (and the consequences of its breach), which the Tribunal is invited to confirm by way of an interpretation of article 235, paragraph 1, as internationally agreed practices and procedures within the meaning of article 207, paragraph 1, or, failing that, as examples of measures consistent with the obligation of prevention.

162. Such practical enunciations can be found inter alia in the Manual on Compliance with and Enforcement of Multilateral Environmental Agreements, adopted by the United Nations Environment Programme in 2006.[149] It includes the adoption of the following measures:

- Compliance plans (para. 19);

- Law and regulations which are regularly updated (para. 20) and satisfy the following requirements:

    - They have clear objectives, appropriate implementation times (which must in this case be as short as is reasonably possible);

    - They are technically, economically and socially feasible (taking into account, in this case, the extreme urgency and socio-economic consequences of climate change);

    - They include penalties encouraging compliance by raising the cost of non-compliance above that of compliance and the repayment of costs of restoration or remediation (para. 40);

[146] *Ibid.*, p. 24.
[147] *Ibid.*, p. 25.
[148] *Ibid.*, p. 25.
[149] UNEP, Manual on Compliance with and Enforcement of Multilateral Environmental Agreements, Nairobi, 2006, https://digitallibrary.un.org/record/778165.

- Enforcement measures (para. 22) and criteria for enforcement priorities (para. 41(e)) which give very high priority to the implementation of the obligations under UNCLOS in relation to climate change;

- National focal points (para. 24) and national coordination measures (para. 25);

- Public awareness (para. 31) and awareness raising for the regulated community (para. 41);

- Access to administrative and judicial proceedings (para. 32), including access of the public and civil society to procedures to challenge failures by public authorities or corporate persons to comply with their national and international obligations (para. 41(i)), wherever this is compatible with the national constitutional order.

163. The measures highlighted in the Manual on Compliance with and Enforcement of Multilateral Environmental Agreements largely correspond to the principles of the environmental rule of law mentioned in paragraph 131. That is the case, for example, with the Manual's measure relating to the adoption of laws and regulations which have clear objectives and appropriate implementation times.

164. The same holds for the guidelines in the Manual that highlight the need to provide access to administrative and judicial proceedings for members of the public who wish to challenge non-compliance by public authorities. This guideline is directly connected with the principle of the environmental rule of law concerning "access to information, public participation and access to justice" and with the principle seeking to ensure accountability and integrity of institutions and decision-makers (see above, paragraph 131).

165. Furthermore, the measure envisaged in the Manual relating to public awareness corresponds to the principle of access to information, public participation and access to justice, while the measure aimed at coordination between different authorities has as a direct corollary the adoption of clear and coordinated mandates and roles across institutions.

166. The DRC submits to the Tribunal that all the abovementioned measures constitute obligations for States under UNCLOS, interpreted in accordance with the principle of effectiveness which has been explained (see above, paragraphs 121-132). At the very least,

States must take such measures on the basis of their obligation of good faith performance, except where it is demonstrated that particular circumstances justify a different approach. In the alternative, the DRC requests the Tribunal to identify those measures as examples of implementation on the basis of the abovementioned obligations.

167. The practical obligations of States with regard to access to justice are further examined later (see below, paragraph 313 et seq.) in connection with article 235 of UNCLOS.

d. All activities under the jurisdiction or control of States

168. *Fourth*, it has been shown (see above, paragraph 60) that international maritime and air transport contributes significantly to greenhouse gas emissions.

169. Consequently, States have an international obligation to extend their actions to all occurrences, actions or omissions under their jurisdiction or control (in the words of article 194, paragraph 2), including maritime and air transport wherever it may be located.

e. Common but differentiated responsibilities

170. *Fifth*, in view of the size of the historic and present share of industrialized countries in GHG emissions (see above, paragraphs 52-53) and because developing countries are most vulnerable to climate change and its consequences (see above, paragraph 54), industrialized countries must bear the greatest burden in this respect in accordance with the principle of common but differentiated responsibilities and respective capabilities.

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V. The obligations to prevent, reduce and control pollution of the marine environment

A. Article 194 of UNCLOS – measures to combat pollution of the marine environment

171. The meaning and scope of article 194 of UNCLOS are similar to certain principles set out in the 1972 *Stockholm Declaration* which are considered to have acquired the status of customary law.

172. Its interpretation must take into account the contributions made by other legal instruments relating to climate change. Furthermore, the collective nature of the obligations it contains requires the Tribunal to determine certain conduct that is helpful and necessary for the expected responses to address the consequences of climate change.

1. *Scope of "pollution of the marine environment"*

173. The scope of article 194 is determined, first, by the words "pollution of the marine environment". Under article 1, paragraph 1(4), of UNCLOS,

> "pollution of the marine environment" means 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.

174. UNCLOS covers various sources of marine pollution, including pollution generated by chemicals and pollution produced by aquatic waste, as is clear from articles 204 to 212. There is no doubt, however, that the definition in article 1 is applicable to greenhouse gas emissions causing climate change in the marine environment, and in particular the warming of the oceans.

a. "The introduction by man, directly or indirectly, of substances or energy"

175. Article 1, paragraph 1(4), of UNCLOS defines pollution as "the introduction by man, directly or indirectly, of substances or energy" into the marine environment. These different criteria are satisfied in the case at issue.

176. First, warming, acidification of the oceans and sea level rise are indeed caused by "the introduction … directly or indirectly" of substances or energy into the marine environment.

177. It was established in paragraphs 65 to 69 that the increase in greenhouse gases causes the warming of the oceans, their acidification and sea level rise. This does result from the "introduction … indirectly" of GHGs into the marine environment within the meaning of the definition of "pollution of the marine environment".

178. With regard to the "introduction … directly" of energy or substances, it is established (see above, paragraphs 60-62) that the oceans also receive GHGs via the LOAC. The flow of anthropogenic pollutants from the continents to the oceans, as well as the export of organic carbon from terrestrial ecosystems to the hydrosphere and methane originating from the continents, constitute the introduction directly of energy and substances (see above, paragraph 60).

179. Second, the increase in GHGs corresponds to the introduction of "energy" within the meaning of the same article of UNCLOS, since through the increase in such GHGs solar energy, which will then become heat energy, is captured both in the atmosphere and in the oceans (see above, paragraph 45).

180. The term "substance" covers the phenomena of discharges of plastics into the oceans. Where such substances are discarded in the ocean and exposed to the sun, these synthetic polymers emit methane (CH_4), which is a very powerful GHG, and ethylene (C_2H_2) (see above, paragraph 64). The DRC notes that if the substance is discarded in the ocean, it does produce atmospheric emissions for the purposes of the request for an opinion.

181. Furthermore, the definition in article 1 places the origin of pollution of the marine environment in human activity. In this regard, it echoes the United Nations Framework Convention on Climate Change, which gives the following definition:

> a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.

It has already been shown (see above, paragraphs 41, 49-50) that it is now scientifically established that current climate change is mainly anthropogenic.

182. In its report entitled State of the Global Climate 2021, the World Meteorological Organization stated that

> Most of the excess energy that accumulates in the Earth system due to increasing concentrations of greenhouse gases is taken up by the ocean. The added energy warms the ocean, and the consequent thermal expansion of the water leads to the sea-level rise, to which is added melting land ice.

b. Actual or potential deleterious effects

183. The second essential element in the definition of pollution in article 1 of UNCLOS relates to its consequences. It concerns the introduction of substances or energy "which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health" and so forth.

184. The definition thus covers actual or potential deleterious effects. It was shown earlier (see above, paragraphs 65-69) that it is scientifically established that the introduction of substances or energy into the marine environment, caused inter alia by greenhouse gas emissions, produces "effects" on the marine environment, in particular its warming, its acidification and the resulting destruction of marine life. These various effects must be characterized as "deleterious". It is sufficient to note in this regard that article 1, paragraph 1(4), itself identifies as deleterious, by way of example, "harm to living resources and marine life" and "hazards to human health". These are precisely the effects of climate change in relation to the marine environment.

185. In many respects, these deleterious effects are already "actual". Some are verifiable in the present state of affairs. For others, it is scientifically established that, with a high degree of certainty, they will occur in future. Thus, in its 2021 report, the IPCC stated that

> Many of the changes observed in the climate are unprecedented in thousands, if not hundreds of thousands of years, and some of the changes already set in motion – such as continued sea level rise – are irreversible over hundreds to thousands of years.

These future but virtually certain effects must be characterized as "actual" for the purposes of the definition of pollution, since they are not merely "potential".

186. However, article 1, paragraph 1(4), of UNCLOS does not make the existence of pollution conditional on the presence of such deleterious effects. It is satisfied with their possibility. This is evident from the wording of that article, according to which pollution exists where "the introduction … of substances or energy into the marine environment … results or *is likely to result in* such deleterious effects".[150]

187. All the criteria in the definition are therefore satisfied. Greenhouse gas emissions and discharges of plastics into the sea, as well as the resulting impairments to the marine environment, thus constitute "pollution" within the meaning of article 1 and, consequently, article 194 of UNCLOS.

2. *The criterion relating to "all measures … that are necessary" in relation to action to prevent, reduce and control pollution*

a. The expression "all measures … that are necessary"

188. Under article 194, paragraph 1, of UNCLOS, States have an obligation to take "all measures" consistent with the Convention "that are necessary to prevent, reduce and control" pollution of the marine environment.

189. The obligation of prevention is a best-efforts obligation. This is clear from the words "take ... measures" and from the title of article 194, namely "measures to prevent". However, it is a best-efforts obligation based on the highest possible degree of diligence. This is clear from the words "using for this purpose the best practicable means at their disposal and in accordance with their capabilities".

190. This obligation to comply with the highest possible degree of diligence is further confirmed by the [French] words "*autant que possible*" used in article 194, paragraph 3. These words set a very high standard, in particular in the context of the fight against climate change. This is very clear from the English version of the text, which uses the words "to the

[150] Emphasis added.

fullest possible extent", which can be translated literally as "*de la manière la plus complète possible*". Such interpretation and application, where the words "to the fullest possible extent" are understood as requiring not "mere effort", but on the contrary the greatest conceivable efforts, is all the more necessary when the stakes are so high, as in this case.

191. The mention of obligations of reduction and control cannot in any manner weaken the obligation of prevention. It means that the authors of UNCLOS envisaged the scenario where, despite the obligation of prevention, pollution could occur. In such a case, the obligations of reduction and control are *supplementary* to the obligation of prevention.

b. Prevention, reduction and control in relation to climate change

192. The obligations of prevention, reduction and control imposed by article 194, paragraph 1, of UNCLOS must be translated into a series of measures taken by States. It should be noted in this regard that these obligations are differentiated and also entail the adoption of distinct measures.

193. These obligations must be implemented, without being limited to these two sectors, in respect of land-based GHG emissions but also in respect of plastic pollution in the marine environment, which, as has been shown (see above, paragraphs 65-69), cause the warming and acidification of the oceans. According to the Emissions Gap Report produced in June 2022 by UNEP/UN Environment,[151] the reduction of those emissions must be achieved, in particular, through a transformation of the sectors of electricity supply, industry, transport and buildings.

194. The obligation of prevention must be fulfilled in accordance with the conditions set out (see above, paras. 151-165) with regard to article 192.

195. That obligation of prevention must be implemented not only in respect of GHG emissions, but also in respect of plastic pollution.

[151] UN Environment, Emissions Gap Report 2022: The Closing Window – Climate Crisis Calls for Rapid Transformation of Societies, in particular Chapter V, p. 38-51, available at: https://www.unep.org/resources/emissions-gap-report-2022.

196. The work of the Convention on Plastic Pollution, which has been in negotiation within the UNEP since 2022, identifies four pillars of action that form the structural and conceptional framework for the future Convention. The second pillar is plastic pollution prevention. It sets out a series of measures which have already been taken up by UN Environment, including the objective of establishing a safe circular economy for plastics and the adoption of national action plans to that effect.[152] The United Nations Environment Assembly (UN Environment) has thus devoted a series of resolutions to the subject of "Marine plastic debris and microplastics". It stated at the outset that "*prevention* and environmentally sound management of waste are keys to long-term success in combating marine pollution". These resolutions set out a series of preventive measures, including:

- provision of adequate reception facilities for ship-generated wastes (Res. 1/6);[153]
- improvement of waste management practices and support for beach clean-up activities (Res. 1/6);[154]
- information, education and public awareness programmes (Res. 1/6);[155]
- measures to combat the littering of freshwater courses, including measures to adapt to extreme storms, flooding and other effects of climate change (2/11);[156]
- identification of transport and distribution pathways and hotspots of marine litter, cooperation regionally and internationally to clean up such hotspots and development of environmentally sound systems and methods for removal of marine litter (2/11);[157]
- development and implementation of action plans for preventing marine litter and the discharge of microplastics; encouragement of resource efficiency, and increased

[152] Environmental Investigation Agency, *Convention on Plastic Pollution, Toward a new global agreement to address plastic pollution*, June 2020, p. 5, available at: https://eia-international.org/wp-content/uploads/EIA-report-Convention-on-Plastic-Pollution-single-pages-for-print.pdf.
[153] UN Environment, Resolution 1/6 Marine plastic debris and microplastics, paragraph 17, available at: http://wedocs.unep.org/bitstream/handle/20.500.11822/17285/K1402364.pdf?sequence=3&isAllowed=y.
[154] *Ibid.*
[155] *Ibid.*
[156] UN Environment, Resolution 2/11 Marine plastic litter and micro-plastics, UNEP/EA.2/Res.11, paragraph 9, available at: http://wedocs.unep.org/bitstream/handle/20.500.11822/11186/K1607228_UNEPEA2_RES11E.pdf?sequence=1&isAllowed=y.
[157] UN Environment, Resolution 2/11, *op. cit.*, paragraph 12.

collection and recycling rates of plastic waste and re-design and re-use of products and materials; and avoidance of the unnecessary use of plastic and plastic containing chemicals of particular concern (3/7);[158]

- and so on.

197. These various measures reflect reasonable interpretations and applications of the obligation to prevent marine pollution in relation to climate change. The Tribunal is therefore invited to enshrine them by way of an interpretation of UNCLOS, as international standards or, failing that, as examples of measures to be taken.

B. Article 195 of UNCLOS – the specific obligation not to transfer damage or hazards or transform one type of pollution into another

198. Article 195 reads as follows:

> In taking measures to prevent, reduce and control pollution of the marine environment, States shall act so as not to transfer, directly or indirectly, damage or hazards from one area to another or transform one type of pollution into another.

This provision will be analysed below before explaining its particular relevance to climate change and the marine environment.

1. *The scope of article 195 of UNCLOS*

199. The obligation not to transfer, directly or indirectly, damage or hazards and not to transform one type of pollution into another is a "conditional or qualified" obligation in that it applies within a predetermined framework. It is imposed on the parties in the implementation of their commitments under UNCLOS. Accordingly, the obligation not to transfer damage or hazards is more than a mere obligation "of conduct".

200. The DRC submits that it is an "enhanced" or "linked" obligation. It was in this vein that in its advisory opinion of 8 July 1996, the ICJ ruled with regard to article VI of the

[158] UN Environment, Resolution 3/7 Marine litter and microplastics, UNEP/EA.3/Res.7, paragraph 4(c), https://digitallibrary.un.org/record/3976928?ln=en.

Treaty on the Non-Proliferation of Nuclear Weapons[159] that "[t]he legal import of that obligation goes beyond that of a mere obligation of conduct; the obligation involved here is an obligation to achieve a precise result – nuclear disarmament in all its aspects – by adopting a particular course of conduct, namely, the pursuit of negotiations on the matter in good faith."[160] In other words, article VI was interpreted as containing a real obligation to achieve a result and not as an a obligation to negotiate in good faith, even if it were enhanced.

201. The obligation takes on its full meaning in its context, that is to say, by relating it to the purpose and object and the other provisions of UNCLOS. In this regard, the Tribunal will take into account not only the special nature of UNCLOS as an instrument of global public order for the governance of the marine environment, but also its purposes and objects.

202. One of the purposes of UNCLOS, as stated in its preamble, is "to settle, in a spirit of mutual understanding and cooperation, all issues relating to the law of the sea …" as "an important contribution to the maintenance of peace, justice and progress for all peoples of the world". It seeks to establish "a legal order for the seas and oceans which … will promote", inter alia, "the equitable and efficient utilization of their resources, the conservation of their living resources, and the study, protection and preservation of the marine environment" and "friendly relations among all nations in conformity with the principles of justice and equal rights … and the Purposes and Principles of the United Nations as set forth in the Charter". The provisions of UNCLOS must be interpreted in this context.

203. The words "… so as not to …" used in article 195 of the Convention reflects the requirement for positive action on the part of the States Parties. The purposes and the provisions of articles 1, 192, 193 and 194 of UNCLOS must be rendered fully effective so that they are not merely theoretical or illusory obligations, but practical and effective. Consequently, UNCLOS imposes on the States Parties a specific and absolute obligation not to expose the marine environment to damage or hazards, less still to a type of pollution of

[159] "Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control."
[160] ICJ, *Legality of the Threat or Use of Nuclear Weapons*, *ibid.*, para. 99.

the marine environment, within the meaning of article 1 of UNCLOS, by transforming it into another.

204. The obligation not to transfer damage or hazards is inherent in the preservation of the marine environment from any pollution, that is to say, it is inseparable from it and applies *a fortiori* where States fail to take measures.

205. It also applies in particular in respect of areas beyond national jurisdiction that do not benefit from the protection conferred by article 194, paragraph 2, which prohibits causing damage by pollution to other States.

2. *Applicability in relation to climate change and the marine environment*

206. Article 195 must be interpreted and applied in light of the principle of the common but differentiated responsibilities and the respective capabilities of the Parties. It applies to industrialized States in particular. Highlighting the principles of equity and the common but differentiated responsibilities of States provided for in article 3 of the 1992 Framework Convention on Climate Change, climate justice seeks to restore equity between States, within States and between individuals and generations. In the words of the abovementioned provision, it seeks to combat climate injustices and inequalities on three levels: “inequalities in the contributions to climate change, inequalities in the impacts of climate change and, lastly, inequalities in the distribution of the burdens to be allocated in order to address it”.

207. Failure by an industrialized State to bear the greatest possible burdens in the fight against climate change means that it does not prevent it and thus transfers the damage or hazards of climate change to developing countries. This is contrary to article 195.

208. The obligations under article 195 are of fundamental importance in combatting harm to the marine environment caused by GHG emissions. In particular, they commit States to non-fossil fuel production activities and production of foods of non-animal origin. Industrialized States have an international obligation to ensure, throughout their jurisdiction, that damage and hazards caused by fossil fuels and by livestock farming activities are not transformed into similar damage and hazards caused by replacement activities.

209. Pursuant to article 195, industrialized States have a specific obligation to ensure that business entities under their jurisdiction do not develop activities outside their jurisdiction which constitute or give rise to a transfer of damage or hazards to the climate and the marine environment or which transform one type of pollution of the climate and the marine environment into another.

210. As has been explained (see above, paragraphs 151-169) with regard to article 192, this obligation must be implemented urgently, as a priority, by all organs of States and throughout their jurisdictions.

C. Article 207 – measures to combat pollution of the marine environment from land-based sources

211. Consisting of waste discharged into the sea from land or atmospheric pollution by fumes from polluting sources located on land, land-based pollution remains the most difficult to combat and accounts for the majority of marine pollution.

212. The Tribunal will note that prevention, reduction and control of pollution from land-based sources can be effective only by the effect which States give to their commitments not only under UNCLOS but also by virtue of the need to change their conduct in order to combat climate change. The effectiveness of these measures also depends on cooperation between different actors.

1. *The obligation to give effect to the commitments entered into*

213. Paragraph 1 of article 207 requires States to take measures relating to pollution from land-based sources and from other sources of pollution. These measures are legislative, entailing the adoption of laws reflecting best ecological practice, administrative, in the sense that they require involvement of the administrative authorities for their implementation on all levels, and judicial, as they imply the obligation to guarantee remedies with a view to compensation for damage caused by pollution. Reference is made in this regard to the observations concerning article 194 (see above) and article 235, paragraphs 2 and 3 (see below).

214. Article 207 thus confirms the statements made by the DRC (see above, paragraphs 106-132) with regard to the principle of effectiveness.

2. *The obligation of cooperation*

215. By requiring States to endeavour to harmonize their policies to prevent, reduce and control pollution from land-based sources, paragraph 3 of article 207 affirms the obligation of cooperation in order to give effect to the measures to be taken. As the Tribunal has already ruled, the duty to cooperate "is a fundamental principle in the prevention of pollution of the marine environment under Part XII of the Convention and general international law".[161] Such cooperation can be directly between States, through international organizations or between international organizations.

216. Highlighting the value of such cooperation, paragraph 4 of article 207 stresses the need to take into account characteristic features of each region, the economic capacities of developing States and their need for development. In light of the principle of common but differentiated responsibilities, industrialized States have a specific obligation to strictly respect their commitments entered into within the framework of Conferences of Parties relating to climate change. Furthermore, the desired cooperation must have regard to the provisions of article 194, under which States must refrain from unjustifiable interference with activities carried out by other States.

D. Articles 198 and 199 of UNCLOS – the obligations of information and cooperation

217. Article 198 is entitled **"**Notification of imminent or actual damage" and reads as follows:

> When a State becomes aware of cases in which the marine environment is in imminent danger of being damaged or has been damaged by pollution, it shall immediately notify other States it deems likely to be affected by such damage, as well as the competent international organizations.

[161] *MOX Plant (Ireland* v. *United Kingdom), Provisional Measures, Order of 3 December 2001, ITLOS Reports 2001,* p. 110, para. 82; *Land Reclamation in and around the Straits of Johor (Malaysia* v. *Singapore), Provisional Measures, Order of 8 October 2003, ITLOS Reports 2003,* p. 25, para. 92; *Delimitation of the maritime boundary in the Atlantic Ocean (Ghana/Côte d'Ivoire), Provisional Measures, op. cit.*, para. 73.

218. Article 199, entitled "Contingency plans against pollution", provides:

> In the cases referred to in article 198, States in the area affected, in accordance with their capabilities, and the competent international organizations shall cooperate, to the extent possible, in eliminating the effects of pollution and preventing or minimizing the damage. To this end, States shall jointly develop and promote contingency plans for responding to pollution incidents in the marine environment.

219. These two provisions set out respectively the obligation to inform and the obligation to cooperate in the context of the fight against pollution of the marine environment. In ratifying UNCLOS, the States Parties undertook to share information and to cooperate where the marine environment is in imminent danger of being damaged or has been damaged by pollution.

220. In order for each State to be able effectively to "respond to pollution incidents in the marine environment", it is essential that it is informed of cases where the marine environment is exposed to imminent danger of being damaged or has been damaged by pollution. It must have information on both the state of the environment and projects which are likely to damage it seriously, so that it can contribute to preservation efforts in knowledge of the facts. That information must be provided spontaneously by the States Parties affected by the danger or shared by the competent international organizations.

221. The interpretation of this provision of the Convention must have regard in particular to Principle 10 of the Rio Declaration of 1992[162] and the Aarhus Convention of 25 June 1998 on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters.[163]

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[162] According to this principle, environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

[163] Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, Aarhus (Denmark), 25 June 1998, https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg_no=XXVII-13&chapter=27&clang=_en.

222. The European Court of Human Rights has already made reference in its jurisprudence to this principle of information, in particular in the *Öneryıldız* case.[164] With a view to the prevention of marine pollution, States have an obligation to inform each other. It is a generally accepted rule that the obligation to inform, or more precisely to notify certain information, exists in a large number of situations, even in the absence of a rule requiring it expressly.

223. In conventions on regional seas, this obligation is laid down both for projects which are likely to affect the common environment and for critical situations. The Abidjan[165] and Nairobi[166] Conventions oblige the States Parties to disseminate information on the possible effects of planned activities on the environment. The disseminated information will then be able to facilitate effective concertation between States on the decisions to be taken, in this case contingency plans to combat pollution.

224. The obligation to cooperate is a specific form of participation which is more a matter of a desire for dialogue and partnership through concerted action and consultation. For the State informed by another State, consultation consists in expressing its position where there is a negotiation, without this, moreover, prejudging any obligation to reach a negotiated solution, as was underlined in the arbitral award delivered in the *Lake Lanoux case*,[167] which raised the question of the use of the waters of a lake serving as a source of supply for France and Spain. In that dispute, which arose because France wished to divert the current of the lake to a hydroelectric plant, the award stated that "the use of this course serving both States should be carried out in a concerted manner to avoid any dispute".

225. Concertation therefore remains a preferred communication tool in the law governing cross-border relations, especially in the law relating to pollution. Similarly, a State's operations to manage its marine spaces must be carried out in concertation with the other States on the same regional sea.

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[164] ECtHR, *Öneryıldız* v. *Turkey*, obs. J. P. MARGUENAUD, *Rev.europ.dr.envir*., 2003, p. 67.
[165] Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region of 23 March 1981.
[166] Nairobi International Convention on the Removal of Wrecks of 18 May 2007.
[167] Pablo Sandonato de Léon, "L'Affaire relatif à l'utilisation des eaux du lac Lanoux, 50 ans d'actualité; Affaire du lac Lanoux", *AFDI*, 1957, vol. 3, No. 3, p.178-180.

226. Concertation is thus advocated by legal instruments relating to regional seas. That is case with the Geneva[168] and Nairobi[169] Protocols concerning protected areas, which provide inter alia for the implementation of this procedure in cases where the contracting parties intend to establish protected areas contiguous to the frontier or to the limits of the jurisdiction of a State which is not a party to those Protocols. Such concertation is an expressed form of the principle of good neighbourliness in international law.

227. The DRC invites the Tribunal also to have regard, on this point, to the conventions for the protection of the marine environment[170] and the regional seas conventions which indisputably support and extend the commitments made by States under the Convention on the Law of the Sea.

228. They create a geopolitical framework for technical and scientific cooperation. They are a response to the recommendations made in Chapter 17 of the Rio Agenda 21 and allow the application of the provisions of Part XII of UNCLOS. They make it possible to adopt specific regional measures, through protocols and annexes, implementing regional programmes and action plans for the protection of the sea. By encouraging States to create networks of protected marine and coastal areas for the protection of marine biodiversity, they also create tools for technical and scientific assessment. Lastly, they promote initiatives with the creation of thematic commissions and regional sectoral committees, and in some cases bilateral or cross-border agreements.

229. The Parties to the conventions on regional seas[171] have adopted additional protocols on protected marine areas to preserve endangered species.[172] These protocols are intended to maintain or restore animal or plant populations at a satisfactory recruitment level in areas of particular interest for scientific or cultural reasons. In these areas, the UNEP regional seas

[168] Protocol concerning Mediterranean Specially Protected Areas, article 6, paras. 2 and 4.
[169] Protocol concerning Protected Areas and Wild Fauna and Flora in the Eastern African Region, article 13, paras. 2 and 3.
[170] See inter alia the 1973 *International Convention for the Prevention of Pollution from Ships* (MARPOL convention) and its 1978 Protocol; the *International Convention for the Control and Management of Ships' Ballast Water and Sediments* (BWM Convention); and the *Hong Kong International Convention for the safe and environmentally sound recycling of ships.*
[171] Juste Ruiz, "L'évolution des conventions régionales protégeant l'environnement marin de l'Atlantique du nord-est et de la méditerranée" in *Nouvelles technologies et droit de l'environnement marin*, Kluwer, 2000, p. 137.
[172] Geneva 1982, then 1995 for the Mediterranean; Nairobi 1985 for Eastern Africa; Paipa 1989 for the South Pacific; Kingston 1990 for the Caribbean Region.

action plans have encouraged the States primarily concerned to adopt standards for the protection of fauna and flora, following the example of States which had already adopted legislation on parks and reserves.

230. The benefit of the "specially protected areas" protocols is to introduce greater flexibility in the choice of national measures, which can, as necessary, be reduced to regulation of fishing, hunting or navigation. By contrast, the most recent protocols go much further. The Kingston Protocol of 18 January 1990 to the Cartagena Convention provides for cooperation between member States for the establishment of the list of protected areas and species and its scope includes all coastal areas up to the fresh water limit.

231. All forms of pollution and disturbance that destroy ecosystems ultimately lead to a decline in biodiversity first by causing the most fragile species to disappear and allowing opportunistic species to occupy the ecological niches thus released. We know that land-based pollution accounts for 80% of pollution of the seas and its most significant impact is directly on the infralittoral zone, which is richer in biodiversity than the offshore waters.

232. We also know that mechanical disturbances have widely contributed to the disappearance of the habitats of the fauna and flora of the foreshore, but also of migratory species that come to the coast for reproduction. The example of diking on the Mediterranean coasts is another illustration of this loss of biodiversity through the covering of seagrass beds and coralligenous habitats, which are nevertheless very productive in terms of diversity of living organisms.

233. In this regard, the Tribunal will take particular account of the links between climate change and damage to biodiversity, as have been explained (see above, paragraphs 76-81).

E. Article 204 – the obligation to monitor the risks or effects of pollution of the marine environment

234. Article 204 of UNCLOS establishes an obligation for States to monitor marine pollution, which undoubtedly has an impact on climate change. Under that article:

> 1. States shall, consistent with the rights of other States, endeavour, as far as practicable, directly or through the competent international organizations, to

observe, measure, evaluate and analyse, by recognized scientific methods, the risks or effects of pollution of the marine environment.

2. In particular, States shall keep under monitoring the effects of any activities which they permit or in which they engage in order to determine whether these activities are likely to pollute the marine environment.

235. The DRC submits to the Tribunal that this provision establishes two monitoring obligations which differ in their scope. Whereas paragraph 1 of article 204 is intended to generate information on the risks and effects of pollution for the marine environment as a whole (a), paragraph 2 narrows the scope by requiring States, in particular, to keep under surveillance activities under their control (b).

1. *The obligation to monitor the marine environment as a whole*

236. Article 204, paragraph 1, requires States to observe, measure, evaluate and analyse, by recognized scientific methods, the risks or effects of pollution of the marine environment. This obligation to monitor the marine environment is not limited only to coastal States or flag States, but applies to all States Parties to UNCLOS.

237. The DRC considers that monitoring under article 204 implies two procedural requirements for those States. First, it requires States to collect primary data through observation and metrology of the marine environment. Those scientific data, which reflect the current state of the marine environment, will then be evaluated and analysed. It is in reality a combined approach that allows States to evaluate the risks and effects of pollution of the marine environment.

238. Since scientific data on the risks and effects of marine pollution are essential to the effective protection and preservation of the marine environment, the obligations established under article 204 constitute a precondition for the performance by other States of the more general obligations set out in articles 192 and 194 of UNCLOS.

239. Although article 204 does not clarify what is meant by “risks of pollution” and does not give any indication as to how the obligation to monitor these risks could be triggered, the DRC submits to the Tribunal that this should not be considered a regrettable shortcoming. On the contrary, the fact that this provision is more open allows account to be

taken of recent developments in international environmental law that could not have been foreseen when UNCLOS was drafted.

240. The fact that article 204 makes the risks and effects of pollution subject to monitoring by States means that this is an obligation of prevention.

241. The obligation must be fulfilled "as far as practicable", which reflects an obligation based on the highest possible degree of diligence (see above, paragraphs 189-190).

2. *The obligation to keep under surveillance the effects on the marine environment of activities undertaken under the control of States*

242. Unlike the general monitoring obligation introduced by paragraph 1 of article 204, the obligation established under paragraph 2 of that article is quite specific. This is evident from the introductory phrase "[i]n particular", which links paragraph 2 to the general monitoring obligation established in paragraph 1. The scope of that obligation is consequently narrower in so far as paragraph 2 shifts the object of the monitoring from the marine environment as a whole to activities conducted under the control of a State Party to UNCLOS. In doing so, the character of paragraph 2 as a *lex specialis* stems not only from the limited extent of the object being monitored but also from the fact that it sets out a stricter obligation, as suggested by the words "States shall keep under surveillance" as opposed to "shall … endeavour, as far as practicable …" contained in paragraph 1.

243. Moreover, the DRC considers that this stricter obligation under paragraph 2 of article 204 establishes a certain hierarchy. In reality, a State with limited financial resources should first discharge its obligations under paragraph 2 of article 204 before performing its broader duty of monitoring the marine environment as a whole under paragraph 1 of that article.

244. The obligation established by paragraph 2 of article 204 thus stems from a State's control over a source which is potentially harmful to the marine environment. It thus seeks to detect, in a timely manner, the potential harmful effects of "any activities which [the States] permit or in which they engage in order to determine whether these activities are likely to pollute the marine environment". In other words, the purpose of the surveillance

required by paragraph 2 of article 204 is essentially to permit States to evaluate whether activities under their control are likely to pollute the marine environment.

245. Furthermore, the DRC wishes to point out that, as such, this obligation is essential to the "principle of prevention" which the ICJ confirmed as a customary rule in the case concerning *Pulp Mills on the River Uruguay (Argentina* v. *Uruguay).*[173]

246. As was stated at the outset, this specific surveillance obligation introduced by paragraph 2 of article 204 is continuous, like the general monitoring obligation under paragraph 1 of that article. As such, it differs from another related obligation to carry out a study of impact on the marine environment provided for in article 206, which requires prior conduct on the part of the State before permission for the activity being assessed.

247. This obligation also covers surveillance of activities undertaken by commercial companies (business entities) under their jurisdiction outside their territory. Such activities must be characterized as activities "which they permit" within the meaning of that provision. In other words, the words "any activities which they permit" do not only refer to activities for which the State issues an operating permit. It encompasses any activities which the State "allows" – or does not prohibit – on its territory. If that were not the case, States could evade their obligations under article 204 by not making it is necessary to obtain a permit for a certain activity, which would be manifestly contrary to the object and purpose of the provision.

F. Article 206 – the obligation to carry out an assessment of the potential effects of planned activities on the marine environment

248. Under article 206 of UNCLOS:

> When States have reasonable grounds for believing that planned activities under their jurisdiction or control may cause substantial pollution of or significant and harmful changes to the marine environment, they shall, as far as practicable, assess the potential effects of such activities on the marine environment and shall communicate reports of the results of such assessments in the manner provided in article 205.

[173] ICJ, *Pulp Mills on the River Uruguay, ibid.,* p. 45-46, para. 101.

249. This article introduces an obligation for States to assess the potential deleterious effects of planned activities before they are carried out and subsequently to disseminate the results. This seeks to ensure that decision-makers are well informed of the consequences of a project for the marine environment when they opt to implement it. This obligation to carry out environmental assessments requires States to act with diligence to identify all potential threats to the marine environment. This is in fact a procedural mechanism for implementing the "principle of prevention", in respect of which the ICJ has ruled, moreover, that it would be difficult for a State to claim compliance if it "did not undertake an environmental impact assessment on the potential effects of such works."[174]

250. The DRC recalls that the Seabed Disputes Chamber of the Tribunal has already confirmed that "the obligation to conduct an environmental impact assessment is a direct obligation under the Convention and a general obligation under customary international law."[175]

251. The DRC submits to the Tribunal that in order to assess whether a State Party to UNCLOS has complied with the obligation under article 206 of the Convention, a fourfold approach is required. In these circumstances, (1) the existence of reasonable grounds for believing that planned activities could cause substantial pollution of or significant and harmful changes to the marine environment; (2) those activities must come under the jurisdiction or control of the State; (3) assessment of the environmental impact of the planned activities; (4) preparation of a report on the results of that assessment.

1. *Existence of reasonable grounds for believing that planned activities could cause substantial pollution of or significant and harmful changes to the marine environment*

252. The DRC considers that the triggering of the obligation under article 206 is subject to a threshold: the existence of reasonable grounds for believing that planned activities could cause substantial pollution of or significant and harmful changes to the marine environment. Other instruments containing an obligation to assess environmental impact also make the triggering of that obligation subject to a similar threshold requirement. That is the case, inter

[174] ICJ, *Pulp Mills on the River Uruguay, ibid.*, para. 204 (*in fine*).
[175] ITLOS, *Responsibilities and obligations of States with respect to activities in the Area, Advisory Opinion*, 1 February 2011, para. 145.

alia, with Principle 17 of the Rio Declaration on Environment and Development,[176] article 14(1)(a) of the Convention on Biological Diversity[177] and article 1 of the ILC Draft articles on prevention of transboundary harm from hazardous activities.[178]

253. Furthermore, the DRC considers that although the phrase "reasonable grounds for believing that planned activities [could] …" introduces *prima facie* a margin of discretion for the State, this is in fact limited by a contextual interpretation of UNCLOS, in particular articles 194 and 196 thereof, which require States to take all measures necessary to prevent pollution. Moreover, that discretionary power is limited by the precautionary principle in international environmental law, under which an assessment of the potential environmental impact of an activity must be carried out despite the existence of uncertainty in that regard.

254. Under article 206 of UNCLOS, only serious consequences are taken into account. It must be possible that the planned activities cause "substantial pollution of or significant and harmful changes to the marine environment". The obligation is thus limited to cases of potentially substantial damage.

255. The abovementioned conditions for the application of article 206 are satisfied in the case of climate change in relation to the marine environment.

2. *All activities under the jurisdiction or control of the State*

256. The assessment of the environmental impact of planned activities under article 206 of UNCLOS requires that those activities – in respect of which there are reasonable grounds for believing that they could cause substantial pollution of or significant and harmful changes to the marine environment – are "under the jurisdiction or control of the State".

257. It is not by chance that the expression "'jurisdiction' or 'control'" is used in a provision of this nature. It is clear that the authors had two scenarios in mind: one in which activities likely to cause substantial pollution of or significant and harmful changes to the marine environment are planned within the jurisdiction of a State and another in which those

[176] United Nations, General Assembly, Doc. UN A/CONF.151/26 (Vol. I), 12 August 1992.
[177] Convention on Biological Diversity, Rio de Janeiro, 5 June 1992, United Nations, https://treaties.un.org/pages/ViewDetails.aspx?src=IND&mtdsg_no=XXVII-8&chapter=27&clang=_en.
[178] *Official Records of the General Assembly, Fifty-sixth session, Supplement No. 10*, Doc. UN A/56/10 (2001).

activities are not planned within its jurisdiction but are under its "control". The term "control" is thus intended to encompass situations in which States exercise power of some kind over those activities without any legal competence in the territory where they are planned. In this regard, the DRC notes that during the initial discussions of the Sea-Bed Committee, it was stressed that this kind of control relates to activities and not to areas of control.[179]

258. On this basis, the normative scope of the obligation to conduct an assessment of the environmental impact of planned activities covers situations where a State simply exercises control over activities even though it does not have *de jure* jurisdiction or exercise *de facto* jurisdiction, in this case situations of unlawful intervention, occupation and annexation under international law.

259. The DRC therefore considers that the scope of the obligation laid down in article 206 of UNCLOS is, to that effect, broad. It does not apply only to activities likely to pollute the territorial sea of the coastal State. It also extends to activities affecting the high seas (article 86 of UNCLOS) and maritime zones coming under the exclusive jurisdiction (articles 56 and 77 of UNCLOS) or the sovereignty (article 2 of UNCLOS) of other States. It is sufficient in this respect that the State has jurisdiction or exercises a degree of control over the planned activities in such zones.

260. These obligations also apply to States, and industrialized States in particular, in respect of activities of commercial companies (business entities) under their jurisdiction, including activities undertaken or permitted explicitly or implicitly by such companies outside national territory (see below, paragraph 318).

3. *Content of the obligation to assess the environmental impact of planned activities*

261. Article 206 does not specify the content of this obligation and does not indicate how the results of the assessment should influence the final decision in relation to the planned activities. While this provision clearly leaves it for States to decide, the ICJ's position

[179] Sea-Bed Committee, Note by the Chairman of Working Group 2 addressed to the Chairman of Sub-Committee III, UN Doc. A/AC.138/SC.III/L.39 (1973), GAOR 28th Sess., Suppl. 21 (A/9021-1), 85, 87 (Annex: WG.2 Working Paper No. 8/ADD.2, footnote 3).

suggests that they are bound by certain minimum requirements in connection with environmental impact assessment. In its judgment in the case concerning *Pulp Mills on the River Uruguay (Argentina* v. *Uruguay)*, it was stated that:

> Consequently, it is the view of the Court that it is for each State to determine in its domestic legislation or in the authorization process for the project, the specific content of the environmental impact assessment required in each case, having regard to the nature and magnitude of the proposed development and its likely adverse impact on the environment as well as to the need to exercise due diligence in conducting such an assessment.[180]

262. In addition, the Court has held that "an environmental impact assessment must be conducted prior to the implementation of a project" and that "once operations have started and, where necessary, throughout the life of the project, continuous monitoring of its effects on the environment shall be undertaken."[181]

263. It is true that, as the Seabed Disputes Chamber of the Tribunal has stated with regard to the scope and content of environmental impact assessments, "article 206 of the Convention gives only few indications of this scope and content".[182] The Chamber nevertheless pointed out that indications contained in other instruments, including project documents, may make it possible to identify the content of the conduct actually expected of the States concerned in order to discharge their obligation. Against this background, the Chamber took into consideration the "Recommendations for the Guidance of the Contractors for the Assessment of the Possible Environmental Impacts Arising from Exploration for Polymetallic Nodules in the Area, issued by the Authority's Legal and Technical Commission in 2002 pursuant to regulation 38 of the Nodules Regulations (ISBA/7/LTC/1/Rev.1 of 13 February 2002)".[183]

4. *The obligation to communicate the report on the environmental impact assessment*

264. Under article 206 of UNCLOS, States are required to disseminate the results of the environmental impact assessment in accordance with article 205 of the Convention. That

[180] ICJ, *Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), ibid*., para. 205.
[181] *Ibid.*
[182] *Responsibilities and obligations of States with respect to activities in the Area*, *op. cit.*, para. 149.
[183] *Ibid*., paras. 149 and 144.

article requires States themselves to publish the results of their analysis or to communicate them to the competent international organizations.

265. Although neither article 205 nor article 206 indicates that this report must be notified to States that are particularly affected, the DRC submits to the Tribunal that such notification is necessary *a fortiori* under article 206. If that obligation to communicate the report is to be meaningful, States potentially exposed to marine pollution must be best informed about planned activities in the marine environment by other States.

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VI. Responsibility of States for failure to act with diligence in prevention, reduction and control and protection and preservation of the marine environment

A. The place of responsibility in the context of the request for an opinion

266. The DRC submits that although the provisions of articles 194 and 192 of UNCLOS lie at the heart of the request for an opinion, there are valid reasons to affirm that the issue of responsibility of States that fail to comply with their obligations in this regard constitutes the logical extension of two elements of the request.

267. Those reasons relate, respectively, to the role of the law on responsibility, on the one hand, and to the principles of interpretation of UNCLOS, on the other.

268. With regard to the role of the law on responsibility, the request for an opinion concerns the protection and preservation of the marine environment and the prevention, reduction and control of marine pollution. However,

- *Cessation*, which is the primary obligation in international law in the cases of continuing violations,[184] is closely linked to the obligation of prevention and *a fortiori* to the obligations to reduce and control marine pollution.

- The obligation of *relief* is linked to the fact that responsibility plays an essential preventive role in any legal order. In order to ensure the prevention of future breaches, it is therefore vital to hold States responsible now.

269. With regard to the interpretation of UNCLOS, the foregoing statements are confirmed:

- *By virtue of the structure of Part XII of the Convention*: responsibility of States, enshrined in article 235, paragraph 1, has its basis in the "general obligation" under article 192, which forms the foundation for all the subsequent provisions in Part XII of UNCLOS.

[184] ILC Articles on Responsibility of States for Internationally Wrongful Acts, article 30.

- *By virtue of the principle of effectiveness in the interpretation of UNCLOS:* responsibility, as has been shown above, is a condition for effective compliance with the obligations under UNCLOS.

B. Article 235, paragraph 1 – responsibility in accordance with international law

1. *Article 235, paragraph 1, of UNCLOS and the obligations of prevention*

270. Article 235, in its French version,[185] is entitled "*Responsabilité*". It provides, in paragraph 1, that "*[i]l incombe aux États de veiller à l'accomplissement de leurs obligations internationales en ce qui concerne la protection et la préservation du milieu marin. Ils sont responsables conformément au droit international*" [English: "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."]

271. As was underlined by the Arbitral Tribunal in the *South China Sea Arbitration*, the general obligation set out in article 192 of UNCLOS and echoed in article 235 includes (i) the positive obligation to take active measures to protect the marine environment from future damage, (ii) [the obligation] to preserve it in the sense of maintaining or improving its present condition, and also (iii) by logical implication, the negative obligation not to degrade the marine environment:

> 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.[186]

272. The obligation to protect is an obligation of prevention. The obligation to preserve, in so far as it concerns maintaining the present condition, is also an obligation of prevention, at least in part.

[185] The different authentic language versions of this provision are analysed below, para. 282.
[186] *The South China Sea Arbitration (The Republic of the Philippines* v. *The People's Republic of China)*, PCA Case No. 2013-19, award of 12 July 2016, para. 941.

273. The DRC will first recall the obligations of prevention in general international law, as specified by the ICJ (see below, 2). It will then show that UNCLOS is more demanding than that jurisprudence on a point of fundamental importance for climate change and its relation to the marine environment: failure to fulfil the obligation of prevention incurs the responsibility of the States Parties to UNCLOS *even before* the event to be prevented has materialized (see below, 3). In any case, all the conditions specified by the ICJ for incurring the responsibility of States with regard to prevention are met in this case in light of the standard of proof to be applied by the Tribunal. Moreover, the pollution of the marine environment caused by GHG emissions constitutes *a fortiori* a violation of UNCLOS for which industrialized States are jointly responsible, without their being able to exculpate themselves in light of the failures of other States (see below, 4).

274. This will lead the DRC to submit to the Tribunal practical obligations stemming, for industrialized countries in particular, from article 235 of UNCLOS in respect of climate change and its relation to the marine environment (see below, 5).

2. *The obligations of prevention based on the jurisprudence of the ICJ*

275. In the case concerning *Application of the Convention on the Prevention and Punishment of the Crime of Genocide*, the ICJ put forward three basic considerations concerning the obligation of prevention in so far as it applied to genocide.

276. First, the ICJ held that, on the basis of what it refers to as a general rule of the law of international responsibility, the breach of an obligation of prevention "occurs when the event occurs and extends over the entire period during which the event continues and remains not in conformity with that obligation."[187] Consequently, the breach would occur only when the act that was to be prevented materialized. The ICJ nevertheless also stressed that the obligation of prevention applies before the event occurs. The abovementioned rule on the occurrence of the breach

> … obviously does not mean that the obligation to prevent genocide only comes into being when perpetration of genocide commences; that would be absurd,

[187] ICJ, *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. 222, para. 431.

> since the whole point of the obligation is to prevent, or attempt to prevent, the occurrence of the act.[188]

The obligation to take preventive action arises at the instant that the State which is subject to the obligation learns of, or should have learned of, a *serious risk of occurrence* of the event to be prevented:

> a State's obligation to prevent, and the corresponding duty to act, arise at the instant that the State learns of, or should normally have learned of, the existence of a serious risk [of occurrence of the event that is to be prevented].[189]

277. Second, because the obligation of prevention is an obligation of *conduct*, a State that has failed to comply with its obligation of prevention cannot exculpate itself on the ground that it was, in any event, unable to prevent the act in question. In the same case, the Court underlined that this is particularly the case where the obligation of prevention is common to several States.[190]

278. Lastly, the ICJ stated that "[t]he decision of the Court d[id] not, in this case, purport to establish a general jurisprudence applicable to all cases where a treaty instrument, or other binding legal norm, includes an obligation for States to prevent certain acts."[191] The Court stressed that obligations of prevention vary from one instrument to another "and depending on the nature of the acts to be prevented."[192] From this point of view, the consequences of climate change for humanity and the entire planet justify a rigorous interpretation of the obligation of prevention laid down in article 235, paragraph 1, of UNCLOS.

279. The DRC does not intend to take a position here on the scope of the obligation of prevention under general international law as outlined in the abovementioned judgment or on the applicability of the abovementioned case law more specifically in relation to climate change. It will confine itself hereinafter to the interpretation and application of the provisions of UNCLOS.

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[188] *Ibid.*
[189] *Ibid.*
[190] *Ibid.*, para. 430.
[191] *Ibid.*, para. 429.
[192] *Ibid.*

3. *The obligations of prevention under UNCLOS: a system of responsibility which does not depend on the occurrence of the event to be prevented*

280. The DRC submits to the Tribunal that the rule set out by the ICJ according to which the breach of an obligation of prevention occurs only when the act that was to be prevented occurs does not apply to the obligations of prevention laid down in Part XII of UNCLOS. The breach of those obligations can be established from the instant that a State Party fails to discharge its obligation to act, even if the event to be prevented has not yet materialized. This is clear from the following considerations.

281. *First*, article 235, which was cited above, provides in paragraph 1 [in French] that "*[i]l incombe aux États de veiller à l'accomplissement de leurs obligations internationales en ce qui concerne la protection et la préservation du milieu marin. Ils sont responsables conformément au droit international*". In its English version, article 235 is entitled "Responsibility and liability" and provides in paragraph 1:

> 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.

282. In its advisory opinion of 1 February 2011 on *Responsibilities and obligations of States with respect to activities in the Area*, the Seabed Disputes Chamber noted that the term "*responsabilité*" in the French text of article 235, paragraph 1, does not have the same meaning as in the English text:

> In the view of the Chamber, in the provisions cited in the previous paragraph, the term "responsibility" refers to the primary obligation whereas the term "liability" refers to the secondary obligation, namely, the consequences of a breach of the primary obligation. Notwithstanding their apparent similarity to the English term "responsibility", the French term "*responsabilité*" and the Spanish term "*responsabilidad*", respectively, indicate also the consequences of the breach of the primary obligation. The same applies to the Arabic term "مسؤولية", the Chinese term "责任" and the Russian term "ответственность".[193]

283. The "secondary obligations" at issue here are obligations resulting from a breach of international law, that is to say, *consequences* of the wrongful act, as is made clear in the

[193] Seabed Disputes Chamber, *Responsibilities and obligations of States with respect to activities in the Area, Advisory Opinion, Opinion of 1 February 2011, ITLOS Reports 2011*, p. 10, para. 66.

opinion of 1 July 2011[194] and as is also expressed by the English term "liable". The second sentence of article 235, paragraph 1, thus refers to the consequences of the wrongful act (which are the subject of Part Two of the Articles on Responsibility of States for Internationally Wrongful Acts) and *not* the rules governing the *occurrence* of an internationally wrongful act (which are the subject of Part One of the Articles). The reference to international law in the second sentence of article 235, paragraph 1, therefore concerns only the consequences of the wrongful act. Specifically, it does not concern the conditions governing the occurrence of a breach of the obligation of prevention, which are the subject of the abovementioned jurisprudence of the ICJ.

284. *Second*, article 235, paragraph 1, provides in its first sentence that "States are responsible for the fulfilment of their international obligations concerning the protection and preservation of the marine environment." The aim of this provision is to emphasize *the actual obligation* to protect and comply, not the damage that can arise from non-compliance. Therein lies its effectiveness.

285. *Third*, although article 194, paragraph 1, of UNCLOS requires States to prevent pollution, pollution of the marine environment is defined in article 1, paragraph 1(4), as the introduction by man, directly or indirectly, of substances or energy in the marine environment "which results or *is likely to* result in such deleterious effects".[195] *The obligation of prevention is thus dissociated from the realization of actual damage.* The words "or is likely to" would be rendered ineffective if responsibility for non-compliance with the obligation of prevention could be incurred only when a deleterious effect occurred.

286. *Fourth*, article 192, entitled "General obligation", provides that "States have the obligation to protect and preserve the marine environment". That obligation does not depend at all on the realization of damage. The specific obligation in article 194, paragraph 1, must be interpreted in light of the general obligation under article 192.

287. *Fifth*, article 204 establishes an obligation to monitor the risks and effects of pollution, and article 206 establishes an obligation to assess and report potential effects of

[194] *Ibid.*, para. 66: "the term 'liability' refers to the secondary obligation, namely, the consequences of a breach of the primary obligation."
[195] Emphasis added.

activities that may cause substantial pollution of or significant and harmful changes to the marine environment. These specific procedural obligations would be rendered ineffective if their breach was conditional on the materialization of pollution. UNCLOS is fundamentally different in this respect from the 1948 Convention on the Prevention and Punishment of the Crime of Genocide, which simply establishes the obligation of prevention as a corollary of the criminalization of genocide.[196]

288. The interpretation of the obligations of prevention under UNCLOS discussed above is especially important in terms of climate change and its relation to the marine environment for two reasons: first, climate change and its effects become apparent only subsequent to the events which have caused it ("deferred damage"); second, climate change is essentially irreversible and its effects are often irreparable.

289. The DRC therefore submits to the Tribunal that in this regard UNCLOS establishes stricter obligations than the abovementioned jurisprudence of the ICJ concerning obligations of prevention and constitutes a *lex specialis* within the meaning of article 55 of the Articles on Responsibility of States for Internationally Wrongful Acts.[197] Under this *lex specialis*, responsibility of States may be incurred for failure to comply with their obligation of prevention even if the event to be prevented has not yet occurred.

4. *Failure to comply with the obligations under UNCLOS with regard to climate change and its relation to the marine environment*

290. In any event, the conditions governing the breach of both the positive obligations of prevention and the negative obligations not to degrade the marine environment are satisfied with regard to climate change and its effects on the marine environment, in particular in the case of industrialized States.

[196] Convention on the Prevention and Punishment of the Crime of Genocide, 9 December 1948; article 1: "The Contracting Parties confirm that genocide, whether committed in time of peace or in time of war, is a crime under international law which they undertake to prevent and to punish."
[197] Article 55 – *Lex specialis*: "These articles do not apply where and to the extent that the conditions for the existence of an internationally wrongful act or the content or implementation of the international responsibility of a State are governed by special rules of international law."

291. The obligations of prevention would be breached even if (*quod non*) they had to be interpreted in light of the abovementioned jurisprudence of the ICJ:

- It is evident from the facts and scientific findings confirmed by the IPCC that pollution, which must be prevented by States, has already materialized seriously and manifestly. The obligation of prevention has therefore been breached and continues to be breached.

- It is evident from the facts and scientific findings confirmed by the IPCC that many years ago States learned of, or should have learned of, the risk of occurrence of the acts to be prevented.

292. The IPCC reports and the underlying scientific studies, particularly where they set out conclusions with "very high confidence" or "high confidence", but also with "medium confidence", satisfy the standard of proof applicable in order to establish the international responsibility of States before the Tribunal. While the first two situations satisfy the standard of proof "beyond reasonable doubt", the third situation satisfies the standard based on the "preponderance of evidence" which applies here.

293. In this regard, the DRC respectfully disagrees with the criticism made Vice-President Wolfrum in his Separate Opinion in the *M/V "Saiga"* case.[198] Mr Wolfrum observed that in that case the Tribunal had applied what he described as a "low" standard of proof,[199] which was in fact not the most rigorous. In addition, he criticized this approach by reference to article 28 of the Statute of the Tribunal, which provides inter alia that when one of the parties does not appear before the Tribunal, the Tribunal "must satisfy itself … that the claim is well founded in fact and law". In the view of Mr Wolfrum, this provision of the Statute, "although applicable to cases where one of the parties is absent, implies that this is the standard of proof to be applied by the Tribunal in general."[200]

294. This reasoning appears to be unfounded for two reasons. First, it is not evident that article 28 establishes a standard of proof: although it provides that the Tribunal must "satisfy

[198] ITLOS, *M/V "SAIGA" (No. 2) (Saint Vincent and the Grenadines* v. *Guinea), Judgment, ITLOS Reports 1999*, p. 10, *Separate Opinion of Vice-President Wolfrum*.
[199] *Ibid.*, para. 14.
[200] *Ibid.*, para. 11.

itself … that the claim is well founded in fact and law", it does not specify what standard of proof allows the Tribunal to reach that conclusion. Second, the fact that article 28 concerns default proceedings is not without relevance. The application of the standard of proof based on the "preponderance of evidence" calls for "balance" which is typically produced in adversarial proceedings. It is difficult, and sometimes impossible, where one party does not appear. Even assuming that article 28 of the Statute did establish a standard of proof, it would not therefore be applicable outside of default proceedings.

295. Consequently, the DRC considers that in the present case it is for the Tribunal to apply the standard of balance of probabilities or preponderance of evidence. As Judge Greenwood recalled in the case concerning *Pulp Mills on the River Uruguay*, this is the standard of proof applicable before international courts and tribunals in environmental matters, especially since "the nature of environmental disputes is such that the application of the higher standard of proof would have the effect of making it all but impossible for a State to discharge the burden of proof."[201]

296. Moreover, as was also recognized by Mr Wolfrum, international tribunals have "some discretion"[202] in respect of the standard of proof and "have combined or modified" the standards "where justifiable under the circumstances of the respective case."[203] Consequently, the Tribunal will treat as compelling not only the IPCC conclusions with "very high confidence" or "high confidence", but also for conclusions with "medium confidence" that are not refuted by facts to the contrary established before the Tribunal.

297. On the basis of the IPCC reports, it is thus established, first, that the event to be prevented has occurred and, second, that many years ago States, and industrialized States in particular, learned, or should have learned, of the risk of occurrence of the acts to be prevented.

298. In accordance with rule set out by the ICJ in the case concerning *Application of the Convention on the Prevention and Punishment of the Crime of Genocide*,[204] for which there

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[201] ICJ, *Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010, Separate Opinion of Judge Greenwood*, para. 26.
[202] ITLOS, *M/V "SAIGA" (No. 2) (Saint Vincent and the Grenadines* v. *Guinea), Judgment, ITLOS Reports 1999*, Separate Opinion of Vice-President Wolfrum, para. 10.
[203] *Ibid.*, para. 12.
[204] ICJ, *Application of the Convention on the Prevention and Punishment of the Crime of Genocide, ibid.*,

is no *lex specialis* in the law applicable in the present proceedings, no State is entitled to exculpate itself on the ground that it was unable, by itself, to prevent the occurrence of the damage to the marine environment caused by atmospheric greenhouse gas emissions and the resulting climate change. In the words of the ICJ:

> On the other hand, it is irrelevant whether the State whose responsibility is in issue claims, or even proves, that even if it had employed all means reasonably at its disposal, they would not have sufficed to prevent [the act to be prevented] … this is irrelevant to the breach of the obligation of conduct in question, the more so since the possibility remains that the combined efforts of several States, each complying with its obligation to prevent, might have achieved the result … which the efforts of only one State were insufficient to produce.[205]

299. This conclusion also holds for the obligations of prevention under Part XII of UNCLOS.

300. Furthermore, as the Arbitral Tribunal ruled in the *South China Sea Arbitration*, the obligations of prevention set out in article 192 of UNCLOS include by logical implication the negative obligation not to degrade the marine environment.[206] Pollution of the marine environment thus constitutes an internationally wrongful act, independent from that of the breach of the obligation of prevention. States, and industrialized States in particular, are jointly responsible for the resulting pollution of the marine environment. Article 47 of the Articles on Responsibility of States for Internationally Wrongful Acts, which provides that "[w]here several States are responsible for the same internationally wrongful act, the responsibility of each State may be invoked in relation to that act", is thus applicable.

301. It follows, in particular, that each industrialized State is individually responsible for climate change in relation to the marine environment and for the damage caused by it, especially in developing countries, including African countries.

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p. 221, para. 430.
[205] *Idem.*
[206] See *The South China Sea Arbitration (The Republic of the Philippines* v. *The People's Republic of China), PCA Case No. 2013-19, award of 12 July 2016*, para. 941, cited above, para. 271.

5. *Specific obligations of States*

302. On the basis of the law on international responsibility, the primary obligation arising from the breach of the abovementioned obligations of prevention, preservation and protection is *cessation*.

303. Furthermore, the work of the competent international institutions makes it possible to identify various practical enunciations of the obligation of prevention (and the consequences of its breach), which the Tribunal is invited to confirm by way of an interpretation of article 235, paragraph 1, as generally recognized practices and procedures or, failing that, as examples of measures consistent with the obligation of prevention.

304. Such practical enunciations can be found inter alia in the Manual on Compliance with and Enforcement of Multilateral Environmental Agreements, adopted by the United Nations Environment Programme in 2006.[207] It includes the adoption of the measures to which the DRC has already referred in its analysis of article 192 (see above, paragraph 161).

305. The DRC submits to the Tribunal that these measures constitute obligations for States under UNCLOS, interpreted in accordance with the principle of effectiveness which has been explained. At the very least, States must take such measures on the basis of their obligation of good faith performance, except where it is demonstrated that particular circumstances justify a different approach.

306. In the alternative, the DRC requests the Tribunal to identify those measures as examples of implementation in accordance with the abovementioned obligations.

307. The abovementioned measures are also necessary as guarantees of non-repetition and are accompanied by the obligation to grant relief in respect of damage in accordance with the principles set out in section C below.

[207] UNEP, Manual on Compliance with and Enforcement of Multilateral Environmental Agreements, *op. cit.*

C. Responsibility under article 235, paragraphs 2 and 3, of UNCLOS

308. Article 235 of the Convention provides in paragraph 2 that "States shall 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." Paragraph 3 further provides that "[w]ith the objective of assuring prompt and adequate compensation in respect of all damage caused by pollution of the marine environment, States shall 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."

309. These provisions establish, in essence, the obligation for States to create and ensure effective remedies giving rise to adequate and effective relief.

310. It has already been explained (see above, paragraphs 266-269) why issues of responsibility are integral to the request for an opinion. It should be added that article 235, paragraph 2, refers to the grant of compensation "or other relief in respect of damage". Such other relief may include relief in kind (*restitutio in integrum*) and *a fortiori* cessation of a continued breach. These measures clearly contribute to the "preservation" of the marine environment and the "reduction" and "control" of pollution for the purposes of articles 192 and 194.

311. It will be shown below that the obligations under article 235, paragraphs 2 and 3, can be further specified on the basis of three criteria, which are practical enunciations of the right to a fair remedy:[208] access to remedy mechanisms; fair and effective operation of those mechanisms; and the adequate and effective character of relief.

312. Each of these criteria is important in light of the abovementioned particular features of climate change, specifically in so far as it affects the marine environment: (i) *urgency* of

[208] See inter alia International Covenant on Civil and Political Rights, article 14, para. 1; African Charter on Human and Peoples' Rights, article 7(1)(a); European Convention on Human Rights, article 6.

the fight against climate change and its consequences; (ii) *complexity* of the relevant factual and scientific data; (iii) the *irreparable* character of climate change, except in the very long term; (iv) its international and truly *global* character; and (v) the *inequalities* which it creates, particularly between industrialized countries and developing countries.

313. The DRC invites the Tribunal to establish the practical enunciations below by way of an interpretation of article 235, paragraphs 2 and 3, as generally recognized practices and procedures or, failing that, as examples of measures consistent with the obligations under article 235, paragraphs 2 and 3.

1. *Conditions for effective access to remedies*

314. Access to remedies can be effective only if due account is taken of the inequalities in the face of climate change and its global character, whereby atmospheric GHG emissions in industrialized countries cause damage in terms of climate change in developing countries. With this in mind, States, and industrialized States in particular, must, in order to ensure the effective and good faith performance of their obligations under article 235, paragraphs 2 and 3, take the following measures.

315. *First*, financial obstacles to private action before remedy mechanisms must be eliminated. This relates to both obstacles at the initiation of proceedings ("*cautio judicatum solvi*") and obstacles at the end of proceedings (allocation of the costs of the proceedings), as well as access to legal services for destitute victims. This requirement is recognized as a condition for access to courts and tribunals and equality before courts and tribunals[209] and as determining the effectiveness of remediation mechanisms in many reports by United Nations bodies and specialized agencies.[210]

[209] United Nations, Human Rights Committee, *General Comment No. 32, Article 14. Right to equality before courts and tribunals and to a fair trial*, doc. UN CCPR/C/GC/32 (2007), paras. 8-11; African Commission on Human and Peoples' Rights, *Resolution on the Right to Fair Trial and Legal Aid in Africa*, 26th Ordinary Session, 1-15 November 1999, Kigali, Rwanda, p. 758 and points G and H; European Court of Human Rights, *Steel and Morris* v. *United Kingdom*, 15 May 2005, para. 72.

[210] United Nations, Human Rights Council, Improving accountability and access to remedy for victims of business-related human rights abuse, Report of the United Nations High Commissioner for Human Rights, A/HRC/32/19 of 10 May 2016, p. 21-22, policy objectives 15 and 16; United Nations, Human Rights Council, Improving accountability and access to remedy for victims of business-related human rights abuse through non-State-based grievance mechanisms, Report of the United Nations High Commissioner for Human Rights, A/HRC/44/32 of 19 May 2020, para. 8.7: "The mechanism does not charge a fee to access the mechanism and,

316. *Second*, national legislation, in industrialized States in particular, must allow foreign victims who suffer damage abroad to have effective access to remedy mechanisms. This includes the introduction of class action mechanisms. Again, this is a criterion of effectiveness recognized in many reports by United Nations bodies and specialized agencies.[211]

317. *Third*, national legislation, in industrialized States in particular, must ensure the protection of the marine environment beyond the jurisdiction of States by granting standing to bring proceedings before remedy mechanisms to civil society organizations or independent public-interest prosecution authorities. More generally, the rules on standing to bring proceedings must allow access to effective relief.[212]

318. *Fourth*, national legislation, in industrialized States in particular, must ensure that the structures of commercial companies do not constitute barriers, in law or in fact, to obtaining an effective remedy.[213] The "natural or juridical persons under [the] jurisdiction" of States must include parent companies and company executives where they fail to exercise vigilance in respect of pollution of the marine environment caused directly by their subsidiaries, even foreign subsidiaries. The DRC refers in this regard to the work of the United Nations Human Rights Committee[214] and Committee on Economic, Social and Cultural Rights.[215]

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furthermore, takes such steps to minimize the financial costs thereafter as may be appropriate in light of the mechanism's mandate, objectives and operations"; UN Environment, *Environmental Rule of Law – First Global Report*, *op. cit.*, p. 186 and 191.

[211] A/HRC/44/32, *op. cit.*, para. 8.5: "The mechanism makes appropriate provision for rights holders to collaborate and seek collective redress for business-related human rights harms."

[212] African Commission on Human and Peoples' Rights, Principles and Guidelines on the Right to a Fair Trial and Legal Assistance in Africa, point E, which provides that States must ensure "through adoption of national legislation, that in regard to human rights violations, which are matters of public concern, any individual, group of individuals or non-governmental organization is entitled to bring an issue before judicial bodies for determination"; UN Environment, *Environmental Rule of Law – First Global Report*, *op. cit.*, p. 185-186.

[213] See A/HRC/32/19 of 10 May 2016, *op. cit.*, p. 10-11, paras. 21-23.

[214] Human Rights Committee, *General comment No. 36, article 6: right to life*, CCPR/C/GC/36 of 3 September 2019, para. 22: "[States parties] must take appropriate legislative and other measures to ensure that all activities taking place in whole or in part within their territory and in other places subject to their jurisdiction, but having a direct and reasonably foreseeable impact on the right to life of individuals outside their territory, including activities undertaken by corporate entities based in their territory or subject to their jurisdiction, are consistent with article 6, taking due account of related international standards of corporate responsibility and of the right of victims to obtain an effective remedy".

[215] Committee on Economic, Social and Cultural Rights, *General comment No. 24 (2017) on State obligations under the International Covenant on Economic, Social and Cultural Rights in the context of business activities*, E/C.12/GC/24, 10 August 2017, para. 28: "Extraterritorial obligations arise when a State party may influence situations located outside its territory, consistent with the limits imposed by international law, by controlling

2. *Conditions for fair and effective operation of remedies*

319. The operation of remedy mechanisms can be fair and effective only if due account is taken of the complexity of climate change and the relevant factual and scientific data; the international and truly global character of climate change; and the inequalities created by climate change, particularly between industrialized countries and developing countries. With this in mind, States, and industrialized States in particular, must, in order to ensure the effective and good faith performance of their obligations under article 235, paragraphs 2 and 3, take the following measures.

320. *First*, the operation of remedy mechanisms must take due account of the various vulnerabilities in the face of climate change and its consequences. This follows from the principle of equality before the courts and tribunals[216] and is consistent with statement made by the United Nations General Assembly that "while the human rights implications of environmental damage are felt by individuals and communities around the world, the consequences are felt most acutely by women and girls and those segments of the population that are already in vulnerable situations, including indigenous peoples, children, older persons and persons with disabilities."[217]

321. *Second*, the members of remedy mechanisms must have access to adequate resources and must have sufficient specialization or support to understand the factual and scientific data on climate change and its relation to marine environments.[218]

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the activities of corporations domiciled in its territory and/or under its jurisdiction, and thus may contribute to the effective enjoyment of economic, social and cultural rights outside its national territory", and para. 30: "The extraterritorial obligation to protect requires States parties to take steps to prevent and redress infringements of Covenant rights that occur outside their territories due to the activities of business entities over which they can exercise control, especially in cases where the remedies available to victims before the domestic courts of the State where the harm occurs are unavailable or ineffective."

[216] International Covenant on Civil and Political Rights, article 14, paragraph 1; United Nations, Human Rights Committee, General Comment No. 32 on the International Covenant on Civil and Political Rights, CCPR/C/GC/32 of 23 August 2007, paras. 3 and 7; African Commission on Human and Peoples' Rights, Principles and Guidelines on the Right to a Fair Trial and Legal Assistance in Africa, 2003, point A.

[217] United Nations General Assembly, Resolution A/76/L/75 of 26 July 2022, "The human right to a clean, healthy and sustainable environment", https://digitallibrary.un.org/record/3983329/files/A_RES_76_300-EN.pdf?ln=en.

[218] Cf. A/HRC/44/32 of 19 May 2020, *op. cit.*, 7.8 The mechanism adopts and implements the policies and processes needed to ensure that personnel engaged in the handling of grievances: (a) Are cognizant of (i) the rights and needs of the people for whom the mechanism is intended (including through adopting a gender perspective and paying special attention to those at heightened risk of vulnerability or marginalization), (ii) the social, economic, structural and cultural issues that can affect the ability of the mechanism to meet those needs,

322. *Third*, domestic remedies must include effective rules and procedures for evidence gathering. Judicial authorities must be empowered to compel a party to produce evidence in its possession. These requirements are enshrined in other areas of international law in order to ensure the effective protection of the rights of litigants.[219] In the view of the DRC, they reflect a general principle of law.

323. *Fourth*, domestic remedy mechanisms must, as far as possible, benefit from international judicial or administrative cooperation in order to manage fairly and effectively the international aspects of proceedings brought before them. This requirement is also recognized by the competent United Nations bodies.[220]

3. *Conditions for effective relief*

324. To be effective, a relief mechanism must take due account of the irreparable character of climate change, except in the very long term, and the diversity of the needs, in terms of relief and adaptation, of the victims of climate change, particularly in developing countries. With this in mind, States, and industrialized States in particular, must, in order to ensure the effective and good faith performance of their obligations under article 235, paragraphs 2 and 3, take the following measures.

325. *First*, domestic remedies must include legally binding and effective provisional measures and measures for cessation.[221] Although, in the law on international responsibility,

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and (iii) the manner in which different sources of discrimination can combine to exacerbate inequalities in society"; see UN Environment, *Environmental Rule of Law – First Global Report*, *op. cit.*, p. 187-188.

[219] See inter alia The Hague Convention of 1907 for the Pacific Settlement of International Disputes, article 74: "The Tribunal is entitled to issue rules of procedure for the conduct of the case, to decide the forms, order, and time in which each party must conclude its arguments, and to arrange all the formalities required for dealing with the evidence"; International Court of Justice, article 49 of the Statute and article 62 of the Rules; International Tribunal for the Law of the Sea, articles 77 and 81 of the Rules; WTO Agreement on Trade-Related Aspects of Intellectual Property Rights, article 43: "Evidence 1. The judicial authorities shall have the authority, where a party has presented reasonably available evidence sufficient to support its claims and has specified evidence relevant to substantiation of its claims which lies in the control of the opposing party, to order that this evidence be produced by the opposing party, subject in appropriate cases to conditions which ensure the protection of confidential information. 2. In cases in which a party to a proceeding voluntarily and without good reason refuses access to, or otherwise does not provide necessary information within a reasonable period, or significantly impedes a procedure relating to an enforcement action, a Member may accord judicial authorities the authority to make preliminary and final determinations, affirmative or negative, on the basis of the information presented to them, including the complaint or the allegation presented by the party adversely affected by the denial of access to information, subject to providing the parties an opportunity to be heard on the allegations or evidence."

[220] A/HRC/32/19 of 10 May 2016, *op. cit.*, p. 22-23, policy objectives 17 and 18.

[221] Cf. WTO, Agreement on Trade-Related Aspects of Intellectual Property Rights, articles 44 (injunctions)

cessation is not, strictly speaking, among the forms of relief, an institution's power to order relief includes *a fortiori* the power to order cessation. This holds all the more in the case of climate change, which is essentially irreparable, except in the very long term. In this regard, article 235 of UNCLOS must be interpreted having regard to article 8, paragraph 1, of the Paris Agreement, which provides:

> Parties recognize the importance of averting, minimizing and addressing loss and damage associated with the adverse effects of climate change, including extreme weather events and slow onset events, and the role of sustainable development in reducing the risk of loss and damage.

326. Although it was stated upon the adoption of the Paris Agreement that article 8 thereof does not involve or provide a basis for any liability or compensation,[222] this does not mean that article 235 of UNCLOS, which constitutes in itself a sound basis for international responsibility and liability, cannot and must not be interpreted having regard to the *recognition of facts* contained in article 8, paragraph 1, of the Paris Agreement.

327. *Second*, a joint perpetrator of pollution of the marine environment caused by climate change cannot evade its responsibility on the ground that it alone did not cause the resulting damage. This principle is reflected in article 47 of the Articles on Responsibility of States for Internationally Wrongful Acts concerning plurality of responsible States.[223] It is also established by the jurisprudence of the ICJ cited above.[224] This principle is a condition *sine qua non* for the effectiveness of relief mechanisms in relation to climate change, which is inherently caused by different perpetrators.

328. *Third*, States, and industrialized States in particular, must ensure that their domestic law, including procedural law, company law and law on responsibility, does not establish, in law or in fact, barriers to obtaining effective relief and does not provide decision-makers,

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and 50 (provisional measures).

[222] Conference of the Parties to the United Nations Framework Convention on Climate Change, Decision 1/CP.21, Adoption of the Paris Agreement, in: *Report of the Conference of the Parties on its twenty-first session, held in Paris from 30 November to 13 December 2015, Addendum, Part two: Action taken by the Conference of the Parties at its twenty-first session*, doc. UN, FCCC/CP/2015/10/Add.1 of 29 January 2016, para. 51.

[223] Article 47 – Plurality of responsible States: "1. Where several States are responsible for the same internationally wrongful act, the responsibility of each State may be invoked in relation to that act. 2. Paragraph 1: (a) does not permit any injured State to recover, by way of compensation, more than the damage it has suffered; (b) is without prejudice to any right of recourse against the other responsible States."

[224] See above, para. 276.

who are ultimately responsible for pollution, with impunity, which is incompatible with the preventive function of the law on responsibility.[225]

[225] See A/HRC/32/19 of 10 May 2016, *op. cit.*, p. 12 et seq., policy objectives 1, 2 and 3.

VII. Conclusions

329. ACCORDINGLY, THE DEMOCRATIC REPUBLIC OF THE CONGO ASKS THE TRIBUNAL TO ADJUDGE THAT:

330. The Tribunal has jurisdiction and the request for an opinion is admissible.

331. In relation to climate change and the marine environment, article 192 of UNCLOS must be interpreted as follows.

a. In the face of climate change, the obligations of protection and preservation must be implemented practically and immediately. The obligation of protection is activated where there is an immediate risk. Climate change is already causing substantial damage to the marine environment and exposing it to even greater immediate risks;

b. The causes, characteristics and consequences of climate change allow the obligation contained in article 192 to be specified practically. These practical obligations:

   - must encompass emissions and plastic waste;
   - must be implemented urgently and as a priority by all organs of the State in accordance with the principles of the "Environmental Rule of Law" established by the United Nations for all activities under the jurisdiction and control of the State; and having regard to the principle of common but differentiated responsibilities and respective capabilities.

332. Climate change gives rise to specific obligations for States to prevent, reduce and control pollution of the marine environment in accordance with article 194 of UNCLOS:

a. Both land-based atmospheric GHG emissions and discharges of plastic waste in the marine environment causing GHG emissions from the sea constitute "introduction by man, directly or indirectly, of substances or energy" into the marine environment. Their "deleterious or potential effects" are scientifically proven;

b. The obligation requires the adoption of *all* measures that are necessary to prevent, reduce and control pollution and therefore calls for the highest possible degree of diligence. The mention of reduction and control cannot in any manner weaken the obligation of prevention.

333. Article 195 establishing the specific obligation not to transfer damage or hazards or transform one type of pollution into another implies the following specific obligations in relation to climate change and the marine environment:

a. It must be interpreted and applied in light of the principle of common but differentiated responsibilities and respective capabilities and thus applies to industrialized States in particular. Failure by an industrialized State to bear the greatest possible burdens in the fight against climate change means that that State does not prevent it and thus transfers the damage or hazards of climate change to the countries of the South;

b. Industrialized States have a specific international obligation to ensure, throughout their jurisdiction, that damage and hazards caused by fossil fuels and by livestock farming activities are not transformed into similar damage and hazards caused by replacement activities;

c. Industrialized States have a specific obligation to ensure that commercial companies (business entities) under their jurisdiction do not develop activities outside their territory which constitute or give rise to a transfer of damage or hazards to the climate and the marine environment or which transform one type of pollution of the climate and the marine environment into another.

334. Article 204, which concerns the obligation to monitor the risks or effects of pollution of the marine environment,

a. is applicable to climate change in relation to the marine environment and must be implemented with the highest possible degree of diligence ("as far as practicable");

b. also covers, in paragraph 2, surveillance of activities undertaken by commercial companies (business entities) under their jurisdiction outside their territory. Such activities must be characterized as activities "which they permit" within the meaning of that provision.

335. Article 206, which concerns the obligation to carry out an assessment of the potential effects of planned activities on the marine environment, in so far as it establishes that obligation in respect of "planned activities under their jurisdiction or control", is also applicable to activities undertaken or permitted explicitly or implicitly by commercial companies (business entities) under their jurisdiction outside national territory.

336. Article 207, which concerns measures to combat pollution of the marine environment from land-based sources,

a. confirms, in paragraph 1, the principle of effectiveness which must guide the interpretation of UNCLOS in the present case;

b. must, in paragraph 2 concerning international cooperation, be applied in accordance with the principle of common but differentiated responsibilities. It requires industrialized States in particular to strictly respect their commitments entered into in climate matters, while refraining from unjustifiable interference with activities carried out by other States.

337. With regard to responsibility of States under article 235 of UNCLOS:

a. Under UNCLOS, responsibility of a State for the breach of its obligations of conduct is incurred from the instant that the State fails to act in the face of a proven risk, and not only from the time when the event to be avoided (the damage) occurs. In any case, climate change is already causing damage to the marine environment.

b. The standard of proof is the standard based on the preponderance of evidence. This standard is met by the work of the IPCC.

c. States are jointly and severally responsible.

d. States, and industrialized States in particular, must cease the breach of their obligations under Part XII of UNCLOS in relation to climate change. They have an obligation to comply and must adopt plans to that end.

e. Under article 235, paragraphs 2 and 3, States have an obligation to create and ensure effective remedies giving rise to adequate and effective relief:

- That obligation must be specified practically in light of the characteristics of climate change in relation to the marine environment, namely (i) urgency; (ii) complexity of scientific data; (iii) the irreparable character of climate change; (iv) its global character; and (v) the inequalities which it creates, particularly between industrialized countries and developing countries.

- It must be specified practically on three levels by reference to international human rights law: access to remedy mechanisms; fair and effective operation of those mechanisms; and the adequate and effective character of relief.

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Done at Kinshasa, 13 June 2023

FOR THE DEMOCRATIC REPUBLIC OF THE CONGO,

Its Agent,

IVON MINGASHANG