INTERNATIONAL COURT OF JUSTICE

OBLIGATIONS OF STATES IN RESPECT OF CLIMATE CHANGE

(REQUEST FOR ADVISORY OPINION)

WRITTEN STATEMENT OF THE INTERNATIONAL UNION FOR CONSERVATION OF NATURE (IUCN)

PREPARED BY THE IUCN WORLD COMMISSION ON ENVIRONMENTAL LAW (WCEL)

19 MARCH 2024

LIST OF CHAPTERS

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LIST OF ABBREVIATIONS

AOSIS	Alliance of Small Island States
ARSIWA	Articles on the Responsibility of States for Internationally Wrongful Acts
BBNJ Agreement	The Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction
CBD	Convention on Biological Diversity
CBDR-RC	Common but Differentiated Responsibilities and Respective Capabilities
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women
CESCR	Committee on Economic, Social and Cultural Rights
CFC	Chlorofluorocarbon
CMA	Conference of the Parties Serving as the Meeting of the Parties to the Paris Agreement
CO_2	Carbon Dioxide
COP	Conference of the Parties to the UNFCCC
CRC	Committee on the Rights of the Child
CRPD	Committee on the Rights of Persons with Disabilities
ECHR	European Convention on Human Rights
ECtHR	European Court of Human Rights
EIA	Environmental Impact Assessment
FAO	Food and Agriculture Organisation
GHG	Greenhouse gas

GST	Global Stocktake
HFC	Hydrofluorocarbon
HFHC	Hydrochlorofluorocarbon
IACtHR	Inter-American Court of Human Rights
ICAO	Interntional Civil Aviation Organisation
ICCPR	International Covenant on Civil and Political Rights
ICERD	International Convention on the Elimination of All Forms of Racial Discrimination
ICESCR	International Covenant on Economic, Social and Cultural Rights
ICJ or the Court	International Court of Justice
IDLO	International Development Law Organisation
ILC	International Law Commission
IMO	International Maritime Organisation
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
ITLOS	International Tribunal for the Law of the Sea
IUCN	International Union for Conservation of Nature
KMGBF	The Kunming-Montreal Global Biodiversity Framework
LDCs	Least Developing Countries
MOP	Meeting of the Parties to the Montreal Protocol
NbS	Nature-based Solutions
NBSAP	National Biodiversity Strategy and Action Plan

NDC	Nationally Determined Contribution
SDGs	Sustainable Development Goals
SIDS	Small Island Developing States
SRFC	Sub-Regional Fisheries Commission
UDHR	Universal Declaration of Human Rights
UNCCD	United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa
UNCRC	United Nations Convention on the Rights of the Child
UNCLOS	United Nations Convention on the Law of the Sea
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNHRC	United Nations Human Rights Committee
UNGA	United Nations General Assembly
VCLT	Vienna Convention on the Law of Treaties
WCEL	World Commission on Environmental Law
WMO	World Meteorological Organisation
WWF	World Wildlife Fund

PART I – INTRODUCTION

1. In its letter dated 14 June 2023, the Court informed the International Union for Conservation of Nature (IUCN) that it had decided, pursuant to Article 66 of its Statute, that IUCN is likely able to furnish information on the questions before the Court, and authorized IUCN, at its request, to participate in these advisory proceedings. IUCN would like to thank the Court for giving it this opportunity.

2. Part I of our statement contains three chapters. In Chapter 1, we will first explain why IUCN is in a unique position to furnish the Court with information that is helpful to the Court in these proceedings. In Chapter 2, we set out how IUCN has interpreted the questions before the Court. This Part concludes with Chapter 3, which contains a summary of IUCN's main arguments.

CHAPTER 1: THE INTERNATIONAL UNION FOR THE CONSERVATION OF NATURE (IUCN)

3. IUCN is the world's largest and most diverse global environmental organization. It is a democratic membership union with more than 1470 members including 86 States, 118 government agencies and over 1150 non-governmental organizations, a Secretariat, and over 16,000 volunteer legal and scientific experts in more than 170 States who work through seven IUCN Commissions. It is governed by the Members' Assembly which meets every four years.

4. IUCN is therefore unique among the intervening parties in these proceedings as its hybrid member composition encompasses States, governmental and non-governmental organizations. With the exception of IUCN, all other intervening parties are States or international organizations with only States as members.

5. Founded in 1948, IUCN has become the international authority on the status of the natural world and the measures needed to safeguard it. IUCN was fundamental to the creation of key international conventions including the Ramsar Convention on Wetlands (1971), the World Heritage Convention (1972), the Convention on International Trade in Endangered Species (1974), and the Convention on Biological Diversity (1992).

6. In 1980, IUCN, the UN Environment Programme (UNEP) and the World Wildlife Fund (WWF) published the World Conservation Strategy which helped define the concept of 'sustainable development' and, in that way, shaped the global conservation agenda.

7. In 1999, as environmental issues continued to gain importance on the international stage, the UN General Assembly granted IUCN official observer status.

8. IUCN's mission is to help the world find scientifically sound and equitable solutions to the most pressing environmental and development challenges. It supports scientific research, manages projects and programmes all over the world and brings together governments, non-governmental organizations, UN agencies, the private sector, academia, members of the judiciary, and indigenous peoples and local communities to develop and implement policies, laws and best practices.

9. Law is at the heart of IUCN's vision and mission. IUCN has been invited several times to participate in advisory proceedings before international courts. In 2013, IUCN submitted written and oral statements to the International Tribunal for the Law of the Sea (ITLOS) in *Request for an Advisory Opinion Submitted by the Sub-Regional Fisheries Commission*. In 2017, IUCN World Commission on Environmental Law (WCEL) presented a joint submission with the Organization of American States (OAS) to the Inter-American Court of Human Rights (IACtHR) on *Request by the Republic of Colombia for an Advisory Opinion from the Inter-American Court of Human Rights Concerning the Interpretation of Article 1(1), 4(1) and 5(1) of the American Convention on Human Rights*.

10. More recently, in June 2023, IUCN submitted written and oral statements to ITLOS in *Request for an Advisory Opinion submitted by the Commission Of Small Island States on Climate Change and International Law*. In December 2023, IUCN submitted a written opinion to the IACtHR in *Request for an Advisory Opinion on the Climate Emergency and Human Rights Submitted to the Inter-American Court of Human Rights by the Republic of Colombia and the Republic of Chile.*

11. This statement was prepared under the coordination of WCEL, which is one of seven expert commissions of IUCN. It is the largest global environmental law network with over 1200 members who are specialists in environmental law, coming from more than 130 countries, providing their expertise and services to IUCN on a voluntary basis.

12. WCEL seeks to enhance the development and implementation of environmental law and policy, including through best practices and inter-sectoral strategies for effective compliance and enforcement. In addition, it promotes the environmental rule of law globally, particularly in countries seeking to improve their law and governance systems. WCEL also aims to strengthen the capacity of governments, the judiciary, prosecutors, law schools and other stakeholders as they develop and implement environmental law.

13. WCEL pursues its objectives in concert with the integrated programme of activities adopted by the IUCN Members' Assembly during the 2021 World Conservation Congress in the IUCN Programme 2021-2025[1] and the mandate given to it by the IUCN Members' Assembly for the 2021-2025 period.[2]

14. WCEL works through its Commission members and Specialist Groups and in cooperation with IUCN Members, other components of IUCN, and international organizations such as UNEP, UNDP, International Development Law Organization (IDLO) and the Food and Agriculture Organization (FAO). The Commission is led by a Chair, elected by the IUCN Members' Assembly, and a deputy chair, approved by the IUCN Council based on the Chair's nomination. The current chair is Professor Dr. Christina Voigt, elected in 2021, and the deputy chair is Ayman Cherkaoui.

15. This statement was prepared by the WCEL Specialist Group on Climate Change Law, which brings together over 400 climate law experts worldwide, and is co-chaired by Professor Dr. Francesco Sindico and Dr. Fabiano De Andrade Correa.

16. IUCN's membership, history, scientific and legal expertise set us apart from other intervening parties and put us in a unique position to contribute to these proceedings. We hope that the Court will find our statement helpful in answering the two questions before it.

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[1] International Union for Conservation of Nature, 'A Programme for the Union: 2021-2024' (IUCN World Conservation Congress, 2020) <https://www.iucncongress2020.org/files/iucn_programme_2021_2024_0.pdf>.
[2] WCC-2020-DEC-157, 'Commission Mandate for the World Commission on Environmental Law (WCEL) 2021–2024' < https://portals.iucn.org/library/sites/library/files/resrecfiles/WCC_2020_DEC_157_EN.pdf>. The term of all current Commissions was extended until 2025 by decision of the IUCN Council to hold the next World Conservation Congress in 2025 in Abu Dhabi, United Arab Emirates.

CHAPTER 2: INTERPRETATION OF THE QUESTIONS PUT TO THE COURT

17. IUCN considers the questions before the Court to be essentially twofold. First, the Court is asked to clarify which "State obligations" exist under international law for a specific purpose: "to ensure the protection of the climate system and other parts of the environment from anthropogenic emissions of greenhouse gases for States and for present and future generations". Second, the Court is asked to determine the "legal consequences" if such State obligations were breached, and if such breach led to significant harm.

I. Question (a):

> *"What are the obligations of States under international law to ensure the protection of the climate system and other parts of the environment from anthropogenic emissions of greenhouse gases for States and for present and future generations?"*

18. IUCN understands the first question to concern the identification of State obligations under international law "to ensure the protection of the climate system" and "other parts of the environment" from anthropogenic greenhouse gas (GHG) emissions.

19. IUCN interprets the phrase "to ensure the protection of the climate system and other parts of the environment" as tantamount to "for the protection of the climate system". IUCN understands the "climate system" as interpreted in Article 1(3) of the United Nations Framework Convention on Climate Change (UNFCCC) as "the totality of the atmosphere, hydrosphere, biosphere and geosphere and their interactions".[3] Thus, the climate system is comprehensive and, by definition, includes other parts of the environment.

20. IUCN also interprets "to ensure the protection" as including, within the scope of Question (a), both obligations that lead to a specific result as well as obligations that require a certain conduct in order to protect the climate system.

21. By referring specifically to "anthropogenic *emissions* of greenhouse gases",[4] IUCN considers that the question is strongly focused on mitigation of those emissions. This statement is therefore focused on the State obligations under international law that will protect the climate system by mitigating climate change.

22. Apart from mitigation, dealing with the climate crisis also requires adaptation to the negative impacts of climate change and other measures, including those to address climate related loss and damages. However, this statement does not deal with those measures because of how the question has been framed and considering the Court's direction for the submissions to be "as

[3] United Nations Framework Convention on Climate Change (adopted 9 May 1992, entered into force 21 March 1994) 1771 UNTS 107, art 1(3). ICJ Dossier No 4.
[4] Emphasis added.

concise as possible".[5] However, where necessary or appropriate, this statement will address some core legal aspects relating to those other measures in Appendix VI "Further Provisions under the UNFCCC, the Kyoto Protocol and the Paris Agreement"

23. The question not only includes State-to-State obligations, but also obligations of States towards individuals and collective groups (peoples), present and future. Thus, IUCN considers that Question (a) concerns also human rights obligations in the context of climate change in a contemporaneous and inter-temporal manner.

II. Question (b):

> *"What are the legal consequences under these obligations for States where they, by their acts and omissions, have caused significant harm to the climate system and other parts of the environment, with respect to:*
>
> *(i) States, including, in particular, small island developing States, which due to their geographical circumstances and level of development, are injured or specially affected by or are particularly vulnerable to the adverse effects of climate change?*
>
> *(ii) Peoples and individuals of the present and future generations affected by the adverse effects of climate change?"*

24. Moving to the second question, IUCN submits that it cannot be answered in the abstract. IUCN responds to this question by setting out the secondary rules of State responsibility that are triggered when primary rules of international law (i.e. the State obligations discussed in answering question (a)) are breached by a State's acts and/or omissions, where those acts and/or omissions are attributable to that State, and where they lead to significant harm to the climate system or other parts of the environment.

25. On its face, the second question appears to combine primary and secondary rules in referring to the presence of significant harm and, to that extent, overlaps with parts of Question (a). For clarity, IUCN will discuss all State obligations, including the obligation to prevent significant harm under customary international law, in its response to Question (a).

26. The determination of harm is discussed in its response to Question (a). However, references in Question (b) to different "geographical circumstances", particular vulnerabilities, and/or different "level[s] of development" are relevant in determining *when* the threshold of significant harm is crossed. Due to their particular vulnerability, this might much earlier be the case for many Small Island Developing States (SIDS).

27. Question (b) frame these particular circumstances of States and peoples within the context of State responsibility. The question concerns the legal consequences when States' acts and/or omissions lead to significant harm, particularly when States are "specially affected by or are

[5] Letter from the Registry of the International Court of Justice to the IUCN of 21 November 2023 detailing the "instructions for the filing of written statements and written observations", para 1: "There is no page limit, although the submissions should be as concise as possible."

particularly vulnerable to the adverse effects of climate change" and individuals and peoples are "affected by the adverse effects of climate change".

28. Having discussed how IUCN has interpreted the two questions before the Court, IUCN now sets out the structure of this written statement.

29. Part II of this statement contains one chapter (Chapter 4: Protection of the climate system), which seeks to provide the Court with a definition of "climate system" and what is required in order to protect it. It also explains how "other parts of the environment" should be understood.

30. Part III contains IUCN's response to Question (a). It sets out the States' obligations to protect the climate system and other parts of the environment from anthropogenic emissions of greenhouse gases. Part III contains four chapters. Chapter 5 focuses on the obligations in the Paris Agreement. Chapter 6 concerns obligations in other relevant treaties that relate to the climate system, including those mentioned in the preamble to the questions before the Court. Chapter 7 discusses customary international law obligations related to the protection of the climate system and other parts of the environment from anthropogenic emissions of greenhouse gases, as well as harm in relation to particular circumstances and vulnerabilities of States, individuals and peoples. Part III concludes with Chapter 8 which sets out the State obligations under human rights treaties to protect the climate system.

31. Part IV addresses Question (b) in one chapter (Chapter 9), seeking to provide the Court with an analysis of the legal consequences when significant harm has been caused to the climate system, in breach of an obligation under Question (a).

32. Appended to this statement are 4 appendices, which seek to provide the Court with further information on certain aspects of this statement.[6]

[6] Appendix I concerns the anthropogenic interference with the climate system and its current and projected impacts. Appendix II concerns the net-zero target and pathways to stay below the 1.5°C temperature threshold. Appendix III discusses the mitigation of climate change through Nature-based Solutions (NbS). Appendix IV contains IUCN's observations on relevant provisions of the UNFCCC, the Kyoto Protocol and the Paris Agreement, which were not fully discussed in the main body of this statement.

CHAPTER 3: SUMMARY OF ARGUMENTS

33. The climate system is all-encompassing, defined as "the totality of the atmosphere, hydrosphere, biosphere and geosphere and their interactions" in Article 1(3) of the UNFCCC. It also includes the interconnections between human and the natural systems.

34. The climate system is on the brink of collapse. To protect it, global average temperature increases must be limited to a maximum of 1.5°C above pre-industrial levels. 1.5°C is the critical threshold set in the Paris Agreement against which to determine States' obligations to protect the climate system. However, global average temperature increases of below 1.5°C will still involve significant risks and impacts, some of them irreversible, for human and natural systems.

35. The Intergovernmental Panel on Climate Change (IPCC) has provided clear, scientifically assessed emissions pathways and timelines which are likely to limit global average temperature increases to 1.5°C – with no or limited overshoot. These pathways require a global reduction of carbon dioxide (CO_2) by at least 45% by 2030 compared to 2019 emission levels, and to reach global net-zero CO_2 emissions by 2050 as well as net-zero emissions of other GHGs by 2070, followed by varying degrees of net-negative emissions. This is the pathway that States have to take if they want to avoid serious and irreversible harm to the climate system, and the planet, its people and nature due to climate change.

36. Given the above understanding of the climate system and the 1.5°C threshold for protecting it, States are obliged to protect the climate system and other parts of the environment. These obligations are contained in the Paris Agreement and other relevant international treaties (the United Nations Convention on the Law of the Sea (UNCLOS), the Vienna Convention for the Protection of the Ozone Layer (Vienna Ozone Convention) and the Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol), the Convention on Biological Diversity (CBD) and the United Nations Convention to Combat Desertification (UNCCD)), as well as under customary international law and international human rights treaties.

37. In relation to the Paris Agreement, the IUCN submits that:

    a) It is the latest and most comprehensive international treaty on climate change.
    b) It sets the threshold of holding temperature increase to 1.5°C above pre-industrial levels.
    c) In order to stay below this threshold, each Party to the Paris Agreement has an obligation to prepare, communicate and maintain a Nationally Determined Contribution (NDC) at the level of its "highest possible ambition" and informed by the outcome of the Global Stocktake, and has to progress in ambition every five years beyond its then current NDC. Each Party is obliged to pursue domestic mitigation measures with the aim of achieving the objective set out in its NDC.
    d) These obligations and normative standards for climate change mitigation ambition are also relevant for the interpretation of other State obligations under treaty and customary international law to protect the climate system.

38. In relation to other relevant treaties:

e) The United Nations Convention on the Law of the Sea, the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer, the Convention on Biological Diversity and the United Nations Convention to Combat Desertification all contain obligations for States that require protecting the various parts of the climate system. All such obligations are informed by the 1.5°C Paris Agreement threshold, as well as other relevant obligations and standards in the Paris Agreement.

39. In relation to customary international law:

f) States are obliged under customary international law to prevent significant harm to the climate system.
g) Harm to the climate system is considered as significant if anthropogenic changes in atmospheric GHG concentrations cause the global average temperature to increase beyond 1.5°C above pre-industrial levels.
h) The obligation to prevent significant harm to the climate system is a due diligence obligation.
i) Given the urgency of addressing climate change and the magnitude of risk, States must act with a significantly heightened level of due diligence. Due diligence requires States to take all appropriate and necessary measures in the light of best available science and in proportion to the risk at stake to prevent significant harm.
j) Due diligence is informed by the 1.5°C threshold and by other obligations and standards contained in the Paris Agreement.
k) Acting with due diligence includes a duty on States to cooperate with each other and to carry out environmental impact assessment(s) for planned activities that may cause significant harm to the climate system.
l) States are obliged to regulate the conduct of private actors by putting in place laws, policies and regulations and to enforce them with the necessary vigilance.
m) Whether States' acts and/or omissions cause significant harm at temperature increases below 1.5°C needs to be assessed on a case-by-case basis.

40. In relation to international human rights treaties:

n) The International Covenant on Civil and Political Rights (ICCPR), the International Covenant on Social, Economic and Cultural Rights (ICSECR), the United Nations Convention on the Rights of the Child (UNCRC), and other core UN human rights treaties place States under positive obligations to take all necessary and appropriate measures to protect relevant human rights. These obligations are informed by the obligations and standards contained in the Paris Agreement, with specific reference to the 1.5°C threshold, and require States to take appropriate measures to avoid known risks to the enjoyment of rights.

41. Given the above understanding of the climate system and the 1.5°C threshold for protecting it, IUCN answers the second question by submitting that breaches of the obligations identified

under Question (a) entail State responsibility under international law. Obligations of continued performance apply, and State responsibility entails the legal consequences of cessation of the internationally wrongful act, non-repetition and full reparation. However, when and how these legal consequences apply depends on the facts of a particular case and cannot be determined *in abstracto.*

PART II – THE CLIMATE SYSTEM

42. The Court is asked the following question:

> "What are the obligations of States under international law to ensure the *protection of the climate system* and other parts of the environment from anthropogenic emissions of greenhouse gases for States and for present and future generations;"[7]

43. IUCN submits that this question cannot be answered without understanding what the climate system is and how it relates to other parts of the environment. In the same vein, this question cannot be answered without having to determine when the climate system can be said to be protected from the threats posed to it by anthropogenic GHG emissions.

44. This Part contains one chapter divided into two sections. Section I provides a definition of the climate system. Section II explains that limiting global temperature increase to 1.5°C is the best available threshold for protecting the climate system. However, even at this or lower levels of warming, negative impacts on human and ecosystems may occur. In parts, the Chapter refers to Appendix I and II, which supplement the information provided in this Chapter.

[7] Emphasis added.

CHAPTER 4: PROTECTION OF THE CLIMATE SYSTEM

I. Summary

45. This Part of our statement contains three main arguments:

a) First, that the climate system is all encompassing and defined as "the totality of the atmosphere, hydrosphere, biosphere and geosphere and their interactions" in Article 1(3) of the UNFCCC. It also includes the interconnections between the human and natural systems.

b) Second, limiting global average temperature increases to a maximum of 1.5°C above pre-industrial levels is the best available option for humanity moving forward. 1.5°C is the critical threshold against which to determine states obligations to protect the climate system. However, keeping global average temperature increases to 1.5°C will still involve significant risks and impacts, some of them irreversible, for human and natural systems.

c) Third, the IPCC has provided clear, scientifically assessed emissions pathways and timelines, which are likely to limit global temperature increases to 1.5°C – with no or limited overshoot. These pathways require a global reduction of CO_2 of at least 45 per cent by 2030, and to reach global net-zero CO_2 emissions by 2050 and net-zero emissions of other GHGs by 2070, followed by varying degrees of net-negative emissions.

II. Defining the Climate System

46. The "climate system" is defined in Article 1(3) of UNFCCC as "the totality of the atmosphere, hydrosphere, biosphere and geosphere and their interactions".[8] There is no alternative definition of the climate system in any other binding multilateral instrument.

47. Two aspects of the UNFCCC definition should be highlighted: first, its all-encompassing and inter-related nature; and, second, its persisting viability. For over three decades, States have accepted, in an international *binding* instrument, that the climate system consists of the Earth's four subsystems – atmosphere, hydrosphere, biosphere and geosphere – which impact one another, and that activities that immediately affect one sphere may cause ripple effects on the

[8] The UNFCCC is the umbrella treaty on climate change, which entered into force in 1994, and has near-universal membership of 198 parties.[8] No declarations or reservations were made in relation to this definition. The definitions contained in Article 1 of the UNFCCC also apply to the 1997 Kyoto Protocol to the UNFCCC (Article 1) and to the 2015 Paris Agreement (Article 1).

others.[9] The concept of the "climate system" acknowledges the inter-relatedness of these four spheres.

48. The UNFCCC definition of the climate system has also stood the test of time. Inter-governmental organizations such as the United Nations (UN),[10] the World Meteorological Organization (WMO)[11] and the World Bank[12] routinely cite the concept of an inter-related and all-encompassing climate system in their reports on climate change. The legal texts of the 1997 Kyoto Protocol and the 2015 Paris Agreement describe the climate system in a similar fashion. Sustainable Development Goal 13 (SDG 13), which relates to climate action, is also grounded in the idea of inter-relatedness – that is at the core of the concept of the climate system.[13] For several decades, in legal, scientific and policy texts, the concept of the climate system as defined in the UNFCCC has been adopted, precisely due to its comprehensive and inter-related nature. Thus, IUCN submits that the concept of the climate system encompasses "other parts of the environment", which should not be artificially dissociated from each other in answering Question (a).

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[9] For example, air pollution is, by definition, the introduction of certain harmful substances into the atmosphere. [A widely accepted definition of "air pollution" can be found in Article 1(a) of the 1979 Convention on Long-range Transboundary Air Pollution: "Air Pollution" means the introduction by man, directly or indirectly, of substances or energy into the air resulting in deleterious effects of such a nature as to endanger human health, harm living resources and ecosystems and material property and impair or interfere with amenities and other legitimate uses of the environment, and "air pollutants" shall be construed accordingly." However, air pollution can also trigger negative consequences to:
(i) the hydrosphere (those substances can be absorbed by oceans, resulting in their warming and acidification) [WMO, 'State of the Global Climate 2022' (2023) 10 https://library.wmo.int/doc_num.php?explnum_id=11593;
(ii) the biosphere (warmer and more acidic oceans can result in the death of coral reefs, which in turn can no longer provide habitat to thousands of marine species) [Hoegh-Guldberg, O., D. Jacob, M. Taylor, M. Bindi, S. Brown, I. Camilloni, A. Diedhiou, R. Djalante, K.L. Ebi, F. Engelbrecht, J. Guiot, Y. Hijioka, S. Mehrotra, A. Payne, S.I. Seneviratne, A. Thomas, R. Warren, and G. Zhou, 2018: Impacts of 1.5ºC Global Warming on Natural and Human Systems. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 175-312, 177 ("IPCC Impacts of 1.5 ºC").]; and
(iii) the geosphere (a warmer atmosphere can contribute to the thawing of permafrost - soil and rock with a temperature below 0ºC -, which can cause landscape instability, and harm to hydrology, ecosystems and infrastructure integrity). [WMO (n 4) 18.]

[10] United Nations, 'United in Science 2021' (2021) <https://library.wmo.int/doc_num.php?explnum_id=10794> accessed 8 August 2023; UNDP (ed), The Next Frontier: Human Development and the Anthropocene (United Nations Development Programme 2020).

[11] World Meteorological Organization 'State of the Global Climate, 2022', WMO-No. 1316.

[12] World Bank, 'World Development Report 2010: Development and Climate Change' (2010).

[13] Indeed, SDG 13 makes it clear that, although it relates to climate issues, the primary legal regime for international climate concerns is the UNFCCC. See SDG 13, 'Take urgent action to combat climate change and its impacts', footnote . United Nations General Assembly, 'A/RES/70/1 Transforming Our World: The 2030 Agenda for Sustainable Development' (21 Oct 2015) 14, p 23.

III. Protection of the Climate System

49. Having explained what is meant by the "climate system", we now turn to what is required to protect it.

50. The IPCC is clear in stating that, to protect the climate system, anthropogenic GHG emissions causing climate change need to be urgently addressed:

> "Human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850–1900 in 2011–2020. Global greenhouse gas emissions have continued to increase, with unequal historical and ongoing contributions arising from unsustainable energy use, land use and land-use change, lifestyles and patterns of consumption and production across regions, between and within countries, and among individuals."[14]

51. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have already occurred, leading to widespread adverse impacts and related losses and damages to nature and people. Continued GHGs emissions will lead to increasing global warming. Every increment of global warming – every fraction of a degree of increased temperatures – will intensify multiple and concurrent hazards and risks. In Appendix I, IUCN has provided further information on anthropogenic climate change for the Court's reference.

52. Against this background, protecting the climate system must be seen in terms of a threshold. This threshold should be set at a level safe to protect humans and the natural world from dangerous anthropogenic interference with the climate system.

53. In this next section (A.), IUCN will explain that 1.5°C should be seen as the *critical* temperature threshold, as supported by overwhelming scientific evidence, and broad political and legal consensus. In section (B.), we then clarify the extent and nature of the global efforts needed to protect the climate system in the light of such temperature threshold. This is further detailed in Appendix II.

A. 1.5°C as the Critical Temperature Threshold

54. What constitutes a safe climate system is based on compound and complex considerations and informed by several parameters, including scientific, economic and socio-political ones. These complex considerations led to the adoption of Article 2 of UNFCCC which sets forth the ultimate objective of:

> "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system".

[14] IPCC, 2023: Summary for Policymakers. In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland (IPCC AR6 SYR (2023)), A1.

55. There is now overwhelming scientific evidence and political and legal consensus indicating that, in order to prevent dangerous climate change, the global average temperature increases should not surpass 1.5°C relative to pre-industrial levels, as reflected in Article 2(1)(a) of the Paris Agreement. Hence, protecting the climate system requires "limit[ing] the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would *significantly* reduce the risks and impacts of climate change".[15]

56. Overshooting 1.5°C poses significant risks for natural and human systems. Limiting warming to 1.5°C, instead of 2°C, could result in around 240 million fewer people frequently exposed to extreme heatwaves, and 65 million fewer people exposed to exceptional heatwaves.[16]

57. In this context, the IPCC warns against overshooting of 1.5°C in the following terms:

> "The higher the magnitude and the longer the duration of overshoot, the more ecosystems and societies are exposed to greater and more widespread changes in climatic impact-drivers, increasing risks for many natural and human systems. Compared to pathways without overshoot, societies would face higher risks to infrastructure, low-lying coastal settlements, and associated livelihoods. Overshooting 1.5°C will result in irreversible adverse impacts on certain ecosystems with low resilience, such as polar, mountain, and coastal ecosystems, impacted by ice-sheet, glacier melt, or by accelerating and higher committed sea level rise."[17]

58. To be clear, even limiting warming to 1.5°C will not be safe for all – for example, some SIDS are projected to experience multiple, inter-related, cascading and compounding risks even at 1.5°C. These risks include coastal flooding with impacts on people, infrastructure and assets, and increasing incidents of permanent loss and damage, which will limit their adaptation options.

59. Increasing warming amplifies the exposure of small islands, low-lying coastal areas and deltas to the risks associated with sea level rise for many human and ecological systems, including increased saltwater intrusion, flooding and damage to infrastructure.

60. These risks are higher at an increase of 2°C compared to 1.5°C.[18] Many SIDS are already experiencing water scarcity, and freshwater resources are already severely threatened on the

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[15] Paris Agreement Article 2(1)(a); emphasis added.
[16] Hoegh-Guldberg, O., D. Jacob, M. Taylor, M. Bindi, S. Brown, I. Camilloni, A. Diedhiou, R. Djalante, K.L. Ebi, F. Engelbrecht, J. Guiot, Y. Hijioka, S. Mehrotra, A. Payne, S.I. Seneviratne, A. Thomas, R. Warren, and G. Zhou, 2018: Impacts of 1.5°C Global Warming on Natural and Human Systems. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Portner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Pean, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 177-178. (IPCC, 1.5 Degrees Warming, 2018)
[17] IPCC AR6 SYR (2023), B7.
[18] IPCC, 1.5 Degrees Warming, p. 8.

planet due to drought, sea level rise and coastal flooding.[19] Freshwater stress in SIDS would be 25% less at 1.5°C (or less) of warming compared to 2°C – in fact a 1°C increase (from 1.7°C to 2.7°C) would expose 60% more people to severe water stress from 2043 to 2071.[20]

61. Human settlements and infrastructure in SIDS are at increasing risks due to slow-onset and extreme climate events – tropical storms of categories 4 and 5 are already severely impacting settlements and infrastructure, leading to complete inundation of some islands.[21] Slow onset sea level rise can compound with more intense tropical storms in the future, likely to lead to significant and irreversible loss and damag in these States, with increased impacts on human health.

62. Risk accumulation and amplification, as a result of increased temperatures, will lead to cascading effects from ecosystems and ecosystem services to human services in SIDS, leading to the inability of these islands to support human life. Atoll nations are at the highest risk of becoming uninhabitable in this century.[22]

63. Keeping global average temperature increases at 1.5°C will still involve significant risks and impacts, some of them irreversible, for human and natural systems[23], but these impacts will be less frequent and less severe than at 2°C.

64. Overshooting 1.5°C poses significant risks also for natural systems. 1.5°C is a critical threshold, with serious biophysical consequences if surpassed. This temperature threshold is particularly critical for several key ecosystems and communities, which already are in a precarious situation.[24] For example, scientists have confirmed that 2023 was the warmest year on record, by far, since 1850.[25] The world experienced devastating heatwaves in the summer of 2023, including severe marine heatwaves, which led to significant coral bleaching events.[26] When coral reefs bleach, they often die, leading to permanent and irreversible loss of these ecosystems. These losses produce devastating effects for other ecosystems and already-vulnerable communities, such as indigenous peoples and coastal communities, who rely on these ecosystems for their survival.

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[19] Mycoo, M., M. Wairiu, D. Campbell, V. Duvat, Y. Golbuu, S. Maharaj, J. Nalau, P. Nunn, J. Pinnegar, and O. Warrick, 2022: Small Islands. In: Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II tothe Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor,E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)].Cambridge University Press, Cambridge, UK and New York, NY, USA, p. 2058. (IPCC, AR6, WG II, 2022)

[20] Ibid, p. 2046.

[21] Ibid, p. 2064.

[22] Ibid, p. 2073.

[23] IPCC, 1.5 Degrees Warming, p. 177.

[24] Chapter 15 of the IPCC Working Group II AR6 report states that 'Models are currently predicting large-scale loss of coral reefs by mid-century under even low-emission scenarios.' IPCC, AR6, WG II, 2022, at 2056.

[25] 2023 also beat the next warmest year, 2016, by a record setting margin of 0.15°C, NOAA, '2023 was the warmest year on record, by far' 12 January 2024: https://www.noaa.gov/news/2023-was-worlds-warmest-year-on-record-by-far#:~:text=Earth's%20average%20land%20and%20ocean,0.15%20of%20a%20degree%20C).

[26] Copernicus Climate Change Services, 'Global Sea Surface Temperature Reached Record High' 8th August 2023, at https://climate.copernicus.eu/global-sea-surface-temperature-reaches-record-high.

65. Even achieving emission reduction targets consistent with the 1.5°C threshold will result in the further loss of 70% to 90% of reef-building corals compared to today, with 99% of coral reefs being lost under warming of 2°C or more above the pre-industrial period.[27] It would be dangerous to contemplate trajectories that allow for overshooting and returning to 1.5°C in the longer term.

66. Many vulnerable nations emphasize that exceeding the 1.5°C threshold constitutes an existential threat to them. The members of the Alliance of Small Island States (AOSIS) and Least Developed Countries (LDCs) were at the forefront of the inclusion of the 1.5°C temperature threshold in the Paris Agreement for this very reason.[28] They established a negotiating "red line" during the Paris Agreement meetings – refusing to adopt the treaty text unless a reference to the 1.5°C threshold was included in it.

67. Since 2008, AOSIS has been calling for a global goal to limit temperature increase to 1.5°C with the slogan "1.5°C to stay alive".[29] Their efforts were supported by the High Ambition Coalition, a collection of 79 developed and developing States, including the United States of America, which successfully negotiated the inclusion of a reference to 1.5°C in the Paris Agreement.[30] A number of countries, in their closing statements of the plenary meeting concluding and adopting the Paris Agreement at UNFCCC COP21, emphasized the 1.5°C threshold as the main focus of that agreement, and stressed that it is essential to the safety and survival of their people and their countries.[31]

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[27] IPCC, 1.5 Degrees Warming, 2018.

[28] This negotiating position developed from the Structured Expert Dialogue of the 2013-2015 temperature goal review which outlined existing rises in temperature and the consequences which would result from further temperature increases: 'Report on the structured expert dialogue on the 2013-2014 Review' FCCC/SB/2015/INF.1 para 16. This expert dialogue demonstrated that with an average temperature of under 1°C, of 0.85°C since 1880, the world had already experienced impacts that exceeded the adaptation capacity of many people and ecosystems, and that there is no universally safe level of climate change or temperature increase. See also submission by AOSIS on the Outcome of the Structured Expert Dialogue and the 2013-2015 Review, May 2015 http://www4.unfccc.int/submissions/SitePages/sessions.aspx?showOnlyCurrentCalls=1&populateData=1&expectedsubmissionfrom=Parties&focalBodies=SBSTA&themes=Science%20and%20Research

[29] For more information on AOSIS see www.aosis.org, 'Alliance of Small Island States 25 Years of Leadership at the United Nations' 2015 AOSIS, http://aosis.org/wp-content/uploads/2015/12/AOSIS-BOOKLET-FINAL-11-19-151.pdf.

[30] 'COP 21: US joins 'high ambition coalition' for climate deal' http://www.bbc.com/news/science-environment-35057282.

[31] For example, the representative for the Maldives, speaking on behalf of AOSIS, stated, "We want to ensure that we anchor the agreement on the objective of staying below 1.5°C, which we hold so dear." Saint Lucia, on behalf of the Caribbean Community, stated that, "I can tell the young people in our region, who adopted 1.5°C to stay alive as their mantra that their future looks much brighter today." The Prime Minister of Tuvalu stated, "Below 1.5°C must be the package of our effort here. Anything less ambitious, to say 2°C, is catastrophic, and will spell out the end disappearance of my own country Tuvalu." The representative of Vanuatu stated, "It is our deepest hope that this Agreement under the Convention, coupled with ambitious pre-2020 action, will indeed help us to keep global temperature rise below 1.5°C." The representative of the Marshall Islands stated, "The Paris Agreement has to deliver the five key things: first, it must respond to the existential threat facing the most vulnerable by anchoring below the 1.5°C temperature goal. 1.5°C is much safer and is still feasible to achieve….". The representative of The Bahamas referenced the achievement of 1.5°C temperature goal and stated, "Mr President, that is the only way to ensure the survival of our nation and our people." The representative of Angola, on behalf of Least Developed Countries, stated "This Agreement encourages us to move towards a global common goal of 1.5°C target through

68. The Paris Agreement refers to 1.5°C as part of a two-fold temperature threshold in its Article 2(1)(a):

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

69. Notwithstanding this formulation in Article 2(1)(a), however, subsequent decisions by the governing body of the Paris Agreement, the Conference of the Parties serving as the Meeting of the Parties to the Paris Agreement (CMA), have focused on the need to hold the increase to 1.5°C. These CMA decisions reflect the universal consensus of the 195 Parties to the Paris Agreement.

70. In 2021, all Parties, by consensus, "*resolved* to pursue efforts to limit the temperature increase to 1.5°C", recognizing that the impacts of climate change will be much lower at the temperature increase of 1.5°C compared with 2°C.[32] In 2022, the Parties confirmed this resolution.[33] Again, at the latest meeting in Dubai in December 2023, the Parties underscored that the impacts of climate change will be much lower at the temperature increase of 1.5°C compared with 2°C and resolved to pursue efforts to limit temperature increase to 1.5°C.[34] In that light, they recognized "the need for deep, rapid and sustained reductions in greenhouse gas emissions in line with 1.5°C pathways".[35]

71. These decisions reflect global consensus, informed by the best available science, which shows that the Parties are prioritizing and putting more weight on the 1.5°C threshold compared to the "well below 2°C" one. This reflects the Parties' recognition that the impacts of climate change will be much lower at a temperature increase of 1.5°C compared to well below 2°C.

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short-term commitment cycles and periodic reviews and stock-takes and the need to promote compliance." The representative of Nicaragua stated, "Like the majority of the developing countries, we support the 1.5°C goal." The representative of Senegal stated, "The Agreement has a necessary level of ambition because it aims to move as close as possible to 1.5°C by 2100." The representative of Nepal stated, "We are optimistic that our joint efforts will limit the global average temperature rise to 1.5°C above the pre-industrial level." The representative of Ecuador focused on decarbonization as the means to achieve 1.5°C and to reduce emissions by 80 per cent by 2050. The representative from France stated: "With the agreement, we are now able to limit the temperature increase to 1.5°C even by the end of this century." The representative of Panama stated: "We will achieve our goal of 1.5°C above pre-industrial levels." The representative of Colombia, on behalf of the Independent Association of Latin America and the Caribbean, stated: "It is now in our hands to do as much as we can to achieve what we have collectively defined here today and keep the average increase in global temperature even below 1.5°C." The representative of The Philippines stated: "The Paris Agreement is a significant stride forward for several reasons. First, its 1.5°C goal has defined the global ambition for climate action. Paris has given us 1.5°C to survive and to thrive. We've seen our parties coalesce around this goal and we shall deliver on this goal." Webcast available at: <www.unfccc.org>

[32] Decision 1/CMA.3 Glasgow Climate Pact, para 21.

[33] Decision 1/CMA.4, Sharm el-Sheikh Implementation Plan, para 8.

[34] Decision -/CMA.5, Outcome of the First Global Stocktake, para 4.

[35] ibid, para 28.

72. In the same vein, the IPCC is clear in stating that near-term actions that limit global warming to 1.5°C would substantially reduce projected loss and damage. Projected impacts are less severe with shorter duration at lower levels of overshoot of 1.5°C.[36]

73. Indeed, as explained in other parts of this statement, the threshold of 1.5°C must inform the obligations of States to protect the climate system because warming beyond that threshold would result in dangerous anthropogenic interference with the climate system, tantamount to causing significant harm to the climate system and other parts of the environment.

74. In this section, we have explained that 1.5°C is the temperature threshold to protect the climate system. We now turn to explaining what needs to happen to avoid crossing that threshold and, consequently, to protect the climate system.

B. Global Efforts to Protect the Climate System in the Light of the 1.5°C Temperature Threshold

75. To stay under the 1.5°C threshold, deep, rapid, and sustained reductions in GHG emissions are necessary. According to the IPCC, limiting warming to 1.5°C with no or limited overshoot involves immediate global reductions of at least 45% of CO_2 emissions in all sectors in this decade (i.e. by 2030) compared to 2019 levels and reaching global net-zero CO_2 emissions in the early 2050s with varying degrees of net-negative emissions thereafter. The Court will find in Appendix II further details on the Net-zero, pathways to 1.5°C, and the need for systemic change.[37]

76. In order to achieve rapid and deep emissions reductions and transformative adaptation to climate change, systemic change is required.[38] Such systemic change will be unprecedented in terms of scaleand speed.[39]

77. Systemic transitions include the deployment of low- or zero-emission technologies; transitioning away from fossil fuel in energy systems; reducing and changing demand through infrastructure design and access; socio-cultural and behavioural changes; increased technological efficiency and adoption; social protection and climate services; and protecting and restoring ecosystems.[40] The Court will find in Appendix II more detail on fossil fuel phase out and systemic change. Feasible, effective, and low-cost options for mitigation and adaptation are already available and documented by the IPCC.[41] Near-term actions that limit global warming to 1.5°C or below would substantially reduce projected impacts and risks, even though these risks cannot be completely eliminated.

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[36] IPCC, AR6 WG II (2021), at 13, 19
[37] IPCC, AR6 SYR (2023), at 9, Box SPM1.
[38] ibid, C.3.1.
[39] IPCC, 1.5 Degrees Warming (2018), at C.1.
[40] Most of these system transitions have been agreed by State Parties to the Paris Agreement in Decision -/CMA.5, Outcome of the First Global Stocktake, Dubai 2023.
[41] Ibid, 28.

78. Not only are these policy options feasible and affordable, but emission reductions can produce co-benefits for SDGs. The IPCC finds that eradicating extreme poverty, energy poverty, and providing decent living standards can be achieved in the near-term without significant global emissions growth. Emission reductions can positively contribute to sustainable development goals.[42]

79. The IPCC is clear that, moving forward, every increment of warming counts, every reduction of emissions counts, and every fraction of a degree of temperature rise counts. The IPCC estimates that, cumulatively, "[e]ach 1000 GtCO2 [gigatonnes] of cumulative CO_2 emissions is … *likely* [to] cause a 0.27°C to 0.63°C increase in global surface temperature".[43]In other words: "[e]very tonne of GHG emissions contributes to warming".[44]

80. The larger the overshoot beyond 1.5°C, the more net-negative GHG emissions would be needed to return to 1.5°C by 2100. By negative CO_2 emissions, we refer to the removal of CO_2 from the atmosphere "by deliberate human activities in addition to the removal that would occur via natural *carbon cycle* processes"[45].

81. Transitioning towards net zero CO_2 emissions faster and reducing non-CO_2 emissions such as methane more rapidly would limit peak warming levels and reduce the requirement for net negative CO_2 emissions, thereby reducing feasibility and sustainability concerns, as well as the social and environmental risks associated with Carbon Dioxide Removal (CDR) deployment at large scales. The Court will find more detail on the risks associated with CDR in Appendix II

82. Only a narrow window of opportunity to enable comprehensive, effective, and innovative responses to the climate crisis currently exists. Climate resilient development pathways are progressively constrained by every increment of warming, particularly beyond 1.5°C.[46] The IPCC clarifies that "[r]isks associated with large-scale singular events or tipping points, such as ice sheet instability or ecosystem loss from tropical forests, transition to high risk between 1.5°C to 2.5°C".[47] In other words, climate action becomes increasingly difficult, expensive, and potentially unfeasible the longer we wait. The IPCC states unequivocally that policy and law matter here – State action of implementing laws and policies that address financial, governance and institutional constraints can overcome blockages to effective climate action,

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[42] IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, doi:10.1017/9781009157896.001 (IPCC, AR6 WG I, 2022) 13.
[43] IPCC, AR6, WGI (2021), p 28. Emphasis in original.
[44] ibid, p 28.
[45] IPCC, 1.5 Degrees Warming (2018), pp. 541-562, 554.
[46] IPCC, 2023: Sections. In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp 35-115, p 77. (IPCC, SYR, 2023)
[47] ibid, p 77.

and lead to better implementation of climate resilient development.[48] Any further delay in implementing concerted, global action on climate change will miss the brief and rapidly closing window of opportunity to secure a livable and sustainable future for all.[49]

83. That window closes in 2030. IPCC's advice is clear – "the choices and actions made in this decade will have impacts now, and for thousands of years".[50]

84. With this message from the IPCC in mind, the 1.5°C threshold for the "protection of the climate system and other parts of the environment from anthropogenic emissions of greenhouse gases" informs this statement in its entirety. Indeed, as explained below, the threshold of 1.5°C has significant legal implications for States' obligations to protect the climate system.

[48] ibid, 26.
[49] ibid, 33.
[50] ibid, 24.

PART III – STATE OBLIGATIONS

85. In this Part, IUCN responds to Question (a), which states:

> "What are the obligations of States under international law to ensure the protection of the climate system and other parts of the environment from anthropogenic emissions of greenhouse gases for States and for present and future generations?"

86. As stated in Chapter 3, IUCN's response to Question (a) can be summarized as follows:

87. Given the understanding of the climate system and the 1.5°C threshold for protecting it as explained above in Part II, States are obliged to protect the climate system and other parts of the environment. These obligations are contained in the Paris Agreement and other relevant treaties (the United Nations Convention on the Law of the Sea (UNCLOS), the Vienna Convention for the Protection of the Ozone Layer (Vienna Ozone Convention) and the Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol), the Convention on Biological Diversity (CBD) and the United Nations Convention to Combat Desertification (UNCCD)), as well as under customary international law and international human rights treaties.

88. In relation to the Paris Agreement (Chapter 5):

    a) It is the latest and most comprehensive international treaty on climate change.
    b) The Paris Agreement sets the threshold of holding temperature increase to 1.5°C above pre-industrial levels.
    c) In order to stay below this threshold, each Party to the Paris Agreement has an obligation to prepare, communicate and maintain a Nationally Determined Contribution (NDC) at the level of its "highest possible ambition" and informed by the outcome of the Global Stocktake, and has to progress in ambition every five years beyond its then current NDC. Each Party is obliged to pursue domestic mitigation measures with the aim of achieving the objective set out in its NDC.
    d) These obligations and normative standards are relevant for the interpretation of other State obligations to protect the climate system.

89. In relation to other relevant treaties (Chapter 6):

    e) The United Nations Convention on the Law of the Sea, the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer, the Convention on Biological Diversity and the United Nations Convention to Combat Desertification all contain obligations for States that require protecting the climate system. All such obligations are informed by the 1.5°C Paris Agreement threshold, as well as other relevant obligations and standards in the Paris Agreement.

90. In relation to customary international law (Chapter 7):

f) States are obliged under customary international law to prevent significant harm to the climate system.
g) Harm to the climate system is considered as significant if anthropogenic changes in atmospheric GHG concentrations cause the global average temperature to increase beyond 1.5°C above pre-industrial levels.
h) The obligation to prevent significant harm to the climate system is a due diligence obligation.
i) Given the urgency of addressing climate change and the magnitude of risk, States must act with a significantly heightened level of due diligence. Due diligence requires States to take all appropriate and necessary measures in the light of best available science and in proportion to the risk at stake to prevent significant harm.
j) Due diligence is informed by the 1.5°C threshold and by other obligations and standards contained in the Paris Agreement.
k) Acting with due diligence includes a duty on States to cooperate with each other and to carry out environmental impact assessment(s) for planned activities that may cause significant harm to the climate system.
l) States are obliged to regulate the conduct of private actors by putting in place laws, policies and regulations and to enforce them with the necessary vigilance.
m) Whether States' acts and/or omissions cause significant harm at temperature increases below 1.5°C needs to be assessed on a case-by-case basis.

91. In relation to international human rights treaties (Chapter 8):

n) The International Covenant on Civil and Political Rights (ICCPR), the International Covenant on Social, Economic and Cultural Rights (ICSECR), the United Nations Convention on the Rights of the Child (UNCRC), and other core UN human rights treaties place States under positive obligations to take all necessary and appropriate measures to protect relevant human rights. These obligations are informed by the obligations and standards contained in the Paris Agreement, with specific reference to the 1.5°C threshold, and require States to take appropriate measures to avoid known risks to the enjoyment of rights.

CHAPTER 5: STATE OBLIGATIONS TO PROTECT THE CLIMATE SYSTEM IN THE PARIS AGREEMENT

I. Introduction and Summary

92. The first question before the Court concerns the obligations to protect the climate system from GHG emissions for States and for present and future generations. Since 1992, the international community has been devoting efforts to tackle the specific challenge of GHG emissions harming the climate system. These efforts led to the adoption of the UNFCCC in 1992, the Kytot Protocol in 1997, and the Paris Agreement in 2015.

93. This first chapter of Part III sets out the State obligations to protect the climate system in the Paris Agreement. Three key submissions are put forth in this Chapter:

    a) The Paris Agreement is the latest and most comprehensive international treaty on climate change. It sets the threshold of holding the temperature increase to 1.5°C above pre-industrial levels;
    b) In order to stay within this threshold of 1.5°C, each Party to the Paris Agreement has an obligation to prepare, communicate and maintain a Nationally Determined Contribution (NDC) at the level of its "highest possible ambition" and informed by the outcome of the Global Stocktake, and is required to progress in ambition every five years beyond its then current NDC. Each Party has an obligation to pursue domestic mitigation measures with the aim to achieve the objective set out in its NDC;
    c) These obligations and normative standards for climate change mitigation ambition are relevant for the interpretation of other State obligations to protect the climate system in treaties and customary international law.

94. To recall, as explained in Chapter 2, IUCN understands that, by referring specifically to "anthropogenic emissions of greenhouse gases",[51] Question (a) is strongly focused on the mitigation of said emissions. Because of how Question (a) has been phrased and the Court's direction to keep this statement "as concise as possible", [52] IUCN does not address in this statement adaptation or other measures which are necessary to deal the climate crisis. Information on such other measures are provided for the Court's reference in Appendix IV "Other relevant provisions of the UNFCCC, the Kyoto Protocol and the Paris Agreement".

95. This Chapter focuses on the State obligations under the Paris Agreement that will protect the climate system by taking mitigating measures. It first sets out the international legal regime on climate change, stressing the importance of 1.5°C as the threshold for State obligations under the Paris Agreement, which is the key treaty to protect the climate system (Section II). The chapter then discusses States' obligations to protect the climate system from GHG emissions in the Paris Agreement (Section III).

[51] Emphasis added.
[52] Letter from the Registry of the International Court of Justice.

II. The Paris Agreement, the 1.5°C Threshold and the Protection of the Climate System

A. The Paris Agreement and its Relationship to the UNFCCC

96. The UN climate regime contains three international treaties that specifically address climate change: the United Nations Framework Convention on Climate Change (UNFCCC),[53] the Kyoto Protocol to the UNFCCC (Kyoto Protocol)[54] and the Paris Agreement,[55] adopted under the UNFCCC, which is the most comprehensive and most recent international climate treaty.

97. The UNFCCC is the foundational treaty addressing climate change. It provides the normative background for the development of the UN climate regime. It was adopted in 1992 and entered into force in 1994. Currently, the UNFCCC has 198 Parties (197 States and 1 Regional Economic Integration Organisation, i.e. the European Union).

98. The implementation of the UNFCCC is informed by its ultimate objective, which is to "achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system".[56]

99. The UNFCCC reflects the understanding that, to create an effective and fair response to the threat of climate change, due regard needs to be given to the Parties' different circumstances. Based on the premise that climate change is a "common concern of humankind"[57], which requires the widest possible cooperation by all countries, the UNFCCC recognizes different contributions to climate change, as well as different capacities to take mitigating measures. This is reflected in the principle of Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC).[58] Accordingly, the UNFCCC established more demanding obligations for Parties listed in its annexes.[59] Annex I Parties lists developed country Parties and other Parties, i.e. those with with Economies in Transition, while Annex II lists only developed country and other developed Parties and contains, thus, a subset of Annex I.

100. Article 17 of the UNFCCC provided for the future development of Parties' obligations through successive protocols. To date, only one such protocol – the Kyoto Protocol – was adopted in 1997, which entered into force in 2005.

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[53] United Nations Framework Convention on Climate Change (adopted 9 May 1992, entered into force 21 March 1994) 1771 UNTS 107. ICJ Dossier No 4.
[54] Kyoto Protocol to the United Nations Framework Convention on Climate Change (adopted 11 December 1997, entered into force 16 February 2005) 2303 UNTS 162. ICJ Dossier No 11.
[55] Paris Agreement (adopted 12 December 2015, entered into force 4 November 2016) TIAS No. 16-1104. ICJ Dossier No 16.
[56] UNFCCC Article 2.
[57] UNFCCC, Preamble, first paragraph.
[58] ibid, Article 3(1).
[59] ibid, Article 4.

101. The Kyoto Protocol strengthened the commitments in UNFCCC's Article 4(2)(a) and (b) for ratifiying Parties listed in UNFCCC's Annex I that ratified it. The Kyoto Protocol set up specific commitment periods for Annex I Parties (i.e. developed country Parties and Parties with Economies in Transition) to comply with their quantified emission reduction and limitation obligations.[60] The first commitment period was from 1 January 2008 to 31 December 2012, and the second commitment period was from 1 January 2013 to 31 December 2020. The Kyoto Protocol has 192 parties. (191 States and 1 Regional Economic Integration Organisation, i.e. the European Union) It did not introduce any new commitments for non-Annex I Parties (i.e. developing country Parties). While the Kyoto Protocol remains in force, no further commitment period beyond 2020 has been adopted.

102. The Paris Agreement was adopted by the 21st Conference of the Parties of the UNFCCC (COP21) on 12 December 2015 and is the most recent and most comprehensive multilateral climate agreement. It entered into force on 4 November 2016, and is a "treaty" as defined in Article 2 of the 1969 Vienna Convention on the Law of Treaties (VCLT), with legal binding force. At the time of writing, it has 195 Parties. (194 States and 1 Regional Economic Integration Organisation, i.e. the European Union)

103. The Paris Agreement was adopted *under* the the UNFCCC, but it is neither a protocol[61] to the UNFCCC nor an implementing agreement of the UNFCCC. It is an independent treaty with its own governing and decision-making body – the Conference of the Parties serving as the Meeting of the Parties (CMA) – and with the object and purpose of *enhancing* the implementation of the UNFCCC and strengthening the global response to the threat of climate change.[62]

104. Notably, the formulation "in enhancing the implementation of the [UNFCCC]"[63] was deliberately adopted by consensus of all Parties over the alternative formulation "in implementing the Convention" to indicate that the Paris Agreement, while building on the UNFCCC, contains obligations that go above and beyond those established under the UNFCCC.

105. This was necessary to comply with the Durban mandate for the Paris Agreement, which called for the development of "a protocol, another legal instrument or an agreed outcome with legal force under the Convention *applicable to all Parties*".[64] Different from the UNFCCC, which contains differentiated obligations depending on whether a Party is listed in Annex I, II or not in any Annex, the Paris Agreement contains new obligations for its Parties, most of which apply equally to all Parties and are separate and independent from

[60] See Kyoto Protocol Article 3.
[61] The Durban Mandate under which the Paris Agreement was negotiated explicitly mentioned the option of a protocol, but Parties decided deliberately not to choose this option as the legal form for the Paris Agreement, see Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP), Decision 1/CP.17.
[62] Paris Agreement Article 2(1).
[63] ibid.
[64] UNFCCC 'Decision 1/CP.17, Establishment of an Ad Hoc Working Group on the Durban Platform for Enhanced Action' (15 March 2012) UN Doc FCCC/CP/2011/9/Add.1, para 2. ICJ Dossier No 148.

those under the UNFCCC. In particular, the Annexes to the UNFCCC do not apply in the context of the Paris Agreement.

106. While the Paris Agreement aims to pursue the objectives of the UNFCCC and is guided by its principles,[65] it modifies and replaces some of the obligations under the UNFCCC. Several legal obligations under the UNFCCC, especially on transparency, were superseded by the relevant obligations under the Paris Agreement.[66] A notable exception is the obligation of developed country Parties to provide financial resources to developing countries. Under the Paris Agreement, this obligation of developed country Parties applies "in continuation of their existing obligations under the Convention".[67]

107. While the UNFCCC remains in force, the Paris Agrement is the latest treaty and contains the most specific treaty-based State obligations on climate change. For this reason, IUCN focuses on the Paris Agreement in this statement. For the Court's reference, further information about the UNFCCC and the Kyoto Protocol are provided in Appendix IV.

B. The 1.5°C Threshold and the Protection of the Climate System

108. The Paris Agreement reflects, in its goals, a global science-based legal and political consensus on the threshold for climate change and on the adaptation and finance to address climate change. These goals set international standards with significant legal implications. They are expressed in Article 2(1) of the Paris Agreement:

> "This Agreement … aims to strengthen the global response to the threat of climate change including by:
>
> (a) Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;
> (b) Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production; and
> (c) Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development."

109. In protecting the climate system, the temperature threshold in Article 2(1)(a) of the Paris Agreement is of utmost importance. It concretizes the ultimate objective of the UNFCCC

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[65] Paris Agreement preamble.
[66] For example, Decision 1/CP.21 states "that the modalities, procedures and guidelines of this transparency framework "Adoption of the Paris Agreement" shall build upon and eventually *supersede* the measurement, reporting and verification system established by decision 1/CP.16…", para 98 (emphasis added). UNFCCC 'Decision 1/CP.21, Adoption of the Paris Agreement' (29 January 2016) UN Doc FCCC/CP/2015/10/Add.1. ICJ Dossier No 155.
[67] Paris Agreement Article 9(1).

and the acceptable level of interference with the climate system. To recall, the ultimate objective of the UNFCCC and any related instrument 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."[68]

110. The level of "dangerous anthropogenic interference" was undefined in the UNFCCC. This uncertainty has now been resolved through the Paris Agreement, which sets as one of its goals:

> "Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change."[69]

111. It is widely understood that the temperature threshold in the Paris Agreement, when crossed, defines what can be considered "dangerous anthropogenic interference". While the Paris Agreement itself sets a two-fold temperature threshold, there is now overwhelming scientific evidence demonstrating that "dangerous anthropogenic interference" is at a level where global average temperature increases surpass 1.5°C above pre-industrial levels.[70]

112. As explained above, through successive decisions by the governing body of the Paris Agreement , the CMA, in recognizing that the impacts of climate change will be much lower at a temperature increase of 1.5°C compared with 2°C, the Parties unanimously resolved to "pursue efforts to limit the temperature increase to 1.5°C".[71]

113. For instance, at the latest meeting in Dubai in December 2023, the Parties underscored that the impacts of climate change will be much lower at the temperature increase of 1.5°C compared with 2°C and resolved to pursue efforts to limit the temperature increase to 1.5°C.[72] The Parties recognized "the need for deep, rapid and sustained reductions in greenhouse gas emissions in line with 1.5°C pathways".[73]

114. These decisions reflect a global consensus, informed by the best available science, which demonstrates that the Parties prioritize and put stronger normative weight on the 1.5°C threshold compared to the "well below 2°C" one. This is because the Parties to the Paris Agreement recognize that the impacts of climate change will be much lower at a temperature increase of 1.5°C compared to "well below 2°C".

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[68] UNFCCC Article 2.
[69] Paris Agreement Article 2(1)(a).
[70] IPCC, AR6 WG II (2022), pp 3–33. ICJ Dossier No 76.
[71] UNFCCC 'Decision 1/CMA.3, Glashow Climate Pact UN Doc DT.DD.CMA.i2.1, para 21. See also UNFCCC 'Decision 1/CMA.4, Sharm el-Sheikh Implementation Plan' (17 March 2023) UN Doc FCCC/PA/CMA/2022/10/Add.1, para 8. ICJ Dossier No 174.
[72] UNFCCC 'Decision -/CMA.5, Outcome of the first global stocktake' (13 December 2023) UN Doc FCCC/PA/CMA/2023/L.17, para 4.
[73] ibid, para 28.

115. Article 2(1)(a) of the Paris Agreement cannot be viewed in isolation from its Article 4(1), which specifies a tentative timeline for peaking and decline of GHG emissions to meet the long-term temperature goal. In this regard, Article 4(1) of the Paris Agreement provides that:

> "Parties aim to reach global peaking of greenhouse gas emissions as soon as possible, recognizing that peaking will take longer for developing country Parties, and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century, on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty"."

116. The "balance between emissions … and removals" referred to in Article 4(1) is often referred to as 'net-zero emissions' or 'climate neutrality'.

117. Importantly, Article 4(1) is not static, but is relative to the emission reductions achieved. The longer it takes to reach global peaking, the deeper and more rapid have the emission reductions to be in order to reach net-zero. The reference to "in accordance with best available science" indicates that the Parties agreed on the understanding that Article 4(1) is to be kept dynamic and flexible. "Best available science" refers to the regular assessments made by the IPCC.

118. The timeline in Article 4(1) is consistent with the IPCC's 6th Assessment Report. According to the IPCC, the only emission pathway that is very likely to keep temperature increases close to 1.5°C without overshoot sees reducing global carbon dioxide emissions by 45% by 2030 relative to 2019 levels, and have emissions decline to net-zero around 2050, followed by net-negative emissions until the end of the century.[74] The timeframe set out in Article 4(1) of the Paris Agreement for achieving global net-zero emissions is, therefore, fully supported by the assessment of the IPCC.

119. This understanding was endorsed by all Parties to the Paris Agreement when they unanimously recognized in 2021 that:

> "limiting temperature increases to 1.5°C requires rapid, deep and sustained reductions in global greenhouse gas emissions, including reducing global carbon dioxide emissions by 45 per cent by 2030 relative to the 2010 level and to net zero around mid-century, as well as deep reductions in other greenhouse gases."[75]

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[74] Already the IPCC Special Report on 'Global Warming of 1.5ºC' noted that "in model pathways with no or limited overshoot of 1.5°C, global net anthropogenic CO_2 emissions decline by about 45% from 2010 levels by 2030 (40-60% interquartile range), reaching net zero around 2050 (2045–2055 interquartile range)."
IPCC 'Global Warming of 1.5 ºC' (2018) 12. This was confirmed by the IPCC in the Sixth Assessment Report, stating "pathways that limit warming to 1.5 °C (>50%) with no or limited overshoot reach net zero CO_2 in the early 2050s, followed by net negative CO_2 emissions." IPCC AR6 SPM (2023) 20.

[75] UNFCCC 'Decision 1/CMA.3, Glasgow Climate Pact' (8 March 2022) UN Doc FCCC/PA/CMA/2021/10/Add.1, para 22. ICJ Dossier No 173.

120. In 2023, Parties modified this slightly to:

> "limiting global warming to 1.5°C with no or limited overshoot requires deep, rapid and sustained reductions in global greenhouse gas emissions of 43 per cent by 2030 and 60 per cent by 2035 relative to the 2019 level and reaching net zero carbon dioxide emissions by 2050."[76]

121. Many States have acknowledged the importance of this emission pathway by pledging to reach either net-zero CO_2 ("carbon neutrality") or net-zero GHG emissions ("climate neutrality") at some point during the second half of this century.[77] Several States have such targets already for before 2050,[78] while some States are already carbon neutral.[79] Thus, State practice also demonstrates the importance of reaching net-zero emissions by or soon after 2050.

122. Taking into account these latest developments, it may indeed be possible to argue that there has been a shift in the interpretation of Article 2(1)(a) of the Paris Agreement. The latest CMA decisions, as well as State practice, support the argument that the Parties consider the temperature threshold of 1.5°C as *the* central temperature reference of the Paris Agreement. These developments arguably constitute "subsequent practice in the application of the treaty which establishes the agreement of the Parties regarding its interpretation" within the meaning of Article 31(3)(b) of the VCLT.

123. In sum, the Paris Agreement provides States with a clear temperature threshold that States must stay within in order to protect the climate system. The IPCC complements the Paris Agreement and provides clarity on the level of GHG emission reductions needed, and the emission pathway and timeline by when such emission reductions need to happen in order to keep warming within the 1.5°C temperature threshold. IUCN submits that *all* State obligations to protect the climate system, whether in treaty law or customary international law, are informed by this threshold.

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[76] UNFCCC 'Decision -/CMA.5, Outcome of the first global stocktake' para 27.

[77] Canada, for example, states its target to reach net zero in 2050 in its 'Canadian Net-Zero Emissions Accountability Act'. The European Union similarly aims to be the first climate-neutral continent by 2050, and comprehensively outlines how it seeks to achieve this target in its 'Green Deal'. As of March 2024, 33 countries and the European Union have set a net-zero target. See Climate Action Tracker, 'Net Zero Targets' <https://climateactiontracker.org/methodology/net-zero-targets/#:~:text=Introduction,or%20in%20a%20policy%20document>.

[78] An example is Finland, which aims to be carbon neutral by 2035. Another example is Scotland, which aims to reach net-zero by 2045.

[79] Eight States that have already achieved carbon neutrality are Panama, Gabon, Bhutan, Suriname, Niue, Guyana, Madagascar and the Comoros. Nasdaq, Which Countries Are Carbon Neutral? (3 October 2023)< https://www.nasdaq.com/articles/which-countries-are-carbon-neutral>.

III. State Obligations under the Paris Agreement

124. Having demonstrated the central role of the Paris Agreement in mitigating climate change and the need for the global average temperature not to overshoot the critical 1.5°C temperature threshold, this section sets out the existing State obligations in the Paris Agreement to protect the climate system from anthropogenic GHG emissions.

125. The Paris Agreement contains several individual obligations for each Party. Most of these obligations are procedural in nature and require the Parties to submit specific information at certain points in time in regular intervals, and to report or account in accordance with agreed rules. These are:

a) to prepare, communicate and maintain successive Nationally Determined Contributions (NDCs);[80]
b) to communicate an NDC every five years[81] – the Parties have to communicate in 2025 an NDC with an end date of 2035; in 2030 an NDC with an end date of 2040; and so on and so forth every five years thereafter[82]; and new NDCs shall be submitted 9 to 12 months in advance of the relevant session of the CMA;[83]
c) to provide information necessary for clarity, transparency and understanding of the NDCs;[84]
d) to be informed by the outcomes of the global stocktake when communicating an NDC every five years;[85]
e) to account for the NDCs;[86]
f) to pursue domestic mitigation measures;[87]
g) to provide on a biennial basis a national inventory report and information to track the progress made in implementing and achieving the NDCs;[88] and
h) to pursue domestic measures in implementing the NDCs.[89]

126. In addition, the Paris Agreement establishes standards of conduct – due diligence standards –that require each Party to act in a certain manner when implementing its legal obligations. This pertains to:

[80] Paris Agreement Article 4(2).
[81] ibid, Article 4(9).
[82] UNFCCC 'Decision 6/CMA.3, Common time frames for nationally determined contributions referred to in Article 4, paragraph 10, of the Paris Agreement' (13 November 2021) UN Doc DT.CMA3.i3b, para 2.
[83] UNFCCC 'Decision 1/CP.21' Adoption of the Paris Agreement, para 25. This means that each Party has to submit its 2025 NDC to the UNFCCC Secretariat in the first quarter of 2025 (i.e. 9-12 months prior to COP 30, which is scheduled to take place in Belem, Brazil, in 10-21 November 2025 – at the latest in February 2025).
[84] Paris Agreement Article 4(8).
[85] ibid, Article 4(9) and 14(3).
[86] ibid, Article 4(13).
[87] ibid, Article 4(2).
[88] ibid, Article 13(7)(a) and (b).
[89] ibid, Article 4(2)(2).

a) aligning the level of ambition contained in the NDCs with the global temperature threshold and emissions pathways;[90]
b) progressing in ambition every time a successive NDC is being communicated; [91]
c) reflecting a Party's highest possible ambition in its NDCs;[92] and
d) pursuing domestic measures with the aim of achieving its NDCs.[93]

127. The Paris Agreement does not prescribe specific, quantified emission reduction targets or the exact level of ambition to be taken by any given State. Rather, it guides States to act with the *due care* required of them.

128. The Paris Agreement has been characterized as a 'bottom-up' agreement, assuming that the level of ambition included in NDCs is left to the Parties' own discretion. This is not correct. These standards of conduct outlined above represent 'top-down' guidance to progressively scale up mitigation ambition. They circumscribe the conduct expected of the Parties when carrying out their legal obligation to prepare and communicate their respective NDCs.

129. IUCN submits that the requirements of progression and highest possible ambition, contained in Article 4(3) of the Paris Agreement, should be understood as due diligence standards.[94] They contain the expectation for each Party to act in certain ways: to deploy its 'best efforts', or simply to do the best it possibly can,[95] in each successive NDC. The operative word "will" was deliberately chosen by consensus of all Parties, because it carries a stronger legal weight than "should", although it does not amount to a strict legal obligation of "shall".

130. In that light, Article 4(3) should be seen as setting a standard of conduct that each Party will take all appropriate measures at its disposal.[96] This was recognized in the IPCC's 6th Assessment Report Working Group III chapter on international cooperation, which observed that:

> "[w]hile what represents a Party's highest possible ambition and progression is not prescribed by the Agreement or elaborated in the Paris Rulebook … *these obligations could be read to imply a due diligence standard*."[97]

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[90] ibid, Articles 4(1) and 2(1)(a).
[91] ibid, Article 4(3).
[92] ibid.
[93] ibid, Article 4(2).
[94] IPCC, AR6 WG III (2022) 1466.
[95] *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area (Request for Advisory Opinion Submitted to the Seabeds Dispute Chamber)* (Advisory Opinion, Order of 1 February 2011) ITLOS Reports 2011, 10, para 110.
[96] See, e.g., the first report of the International Law Association (ILA) Study Group on Due Diligence in International Law, 'First Report' (ILA, 7 March 2014) <https://www.ila-hq.org/en_GB/documents/first-report-washington-dc-2014>.
[97] IPCC AR6 WG III (2022) 1451 and 1466. Emphasis added.

131. In the context of Article 4(3), the Paris Agreement adopts differentiation among the Parties according to common but differentiated responsibilities and respective capabilities (CBDR-RC), in the light of different national circumstances. However, the Paris Agreement departs from the strict division between developed and developing countries adopted in the UNFCCC, as evident from the fact that the Paris Agreement has no Annexes containing lists of States. The Paris Agreement does not draw a line between developed and developing countries, recognizing that CBDR-RC is responsive to many different national circumstances.

132. Moreover, the requirements of 'highest possible ambition' and 'progression' reflect the *standard of care* to be adopted by States in their national climate policies and laws, ensuring that their efforts reflect their common responsibilities, respective capabilities and national circumstances.[98] Both progression and highest possible ambition are responsive to the Parties' national responsibilities and capabilities, allowing for greater and more nuanced differentiation among State parties.

133. The qualifier "in the light of different national circumstances" introduces a dynamic and flexible element when interpreting responsibilities and capabilities, broadening the parameters for differentiation. It allows a much more complex approach, taking into account a larger array of criteria, including past, current, as well as projected future emissions, and also financial and technical capabilities, human capacity, population size and other demographic criteria, abatement costs, opportunity costs, skills.

134. The references to CBDR-RC in the Preamble and Articles 2(2) and 4(3) indicate that the Paris Agreement should be implemented in a manner that is not static, but open to change. Its general, principled character allows the Parties' obligations to respond to evolving understandings of accountability for temperature increases and changing political, social and economic circumstances for holding them to 1.5°C. Responsibilities, capabilities and national circumstances differ significantly and are in flux. Thus, they should be taken into account in a dynamic fashion.

135. In order to act with the due diligence required, a Party must deploy adequate means, exercise best possible efforts, and do its utmost.[99] Thus, the Parties need to exercise best efforts in their climate action, including in their NDC. This requires the NDC to be based on a comprehensive analysis of the overall mitigation potential by each Party and an assessment of all mitigation options in all relevant economic sectors, ensuring that all necessary and appropriate measures have been taken.[100]

136. In the light of the significant risk that climate change poses to people and nature, "highest possible ambition" must be understood as an expectation that each Party exercises its best efforts and uses *all* means at its disposal to address activities in its territory and in any area

[98] Paris Agreement Article 4(3).
[99] *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area (Request for Advisory Opinion Submitted to the Seabeds Dispute Chamber)*.
[100] ibid. See also *Pulp Mills on the River Uruguay* (*Argentina v Uruguay*) (Judgment) [2010] ICJ Rep 14, para 197.

under its jurisdiction or control that cause anthropogenic emissions of GHGs. Thus, apart from territorial emissions, the extraterritorial consequences of actions and omissions, including on the marine environment or to the environment of other States or areas beyond national jurisdiction, must be taken into account.[101] This includes territorial emissions caused by or controlled by a State ('scope 1 emissions') and also indirect emissions as a consequence of imports of products that cause emissions in other States, or emissions caused by exported products that are consumed or combusted somewhere else, such as fossil fuel exports ('scope 2 and 3 emissions'). For instance, it would not be justifiable for a State with significant fossil fuel exports to claim "highest possible ambition" in its climate policy if emissions caused by these exports remain entirely unaddressed.

137. 'Highest possible ambition' also requires the Parties to deploy all adequate political, regulatory, legal, socio-economic, financial, and institutional capacities in defining their NDC objectives. As mentioned above, the Parties are expected to align their level of ambition with their respective responsibilities and capabilities, in the light of national circumstances. Thus, countries with higher responsibility and/or more capacity must go further and faster in their NDC objectives, consistent with the emission pathways necessary to stay within the threshold of 1.5°C. Countries with less capacity may need more time and technical assistance in order to implement policies, plans and laws that reduce GHG emissions to these levels.

138. Under the Paris Agreement, successive NDCs shall be informed by the outcome of the Global Stocktake (GST).[102] Article 14(3) of the Paris Agreement provides that:

> "The outcome of the global stocktake *shall* inform Parties in updating and enhancing, in a nationally determined manner, their actions and support in accordance with the relevant provisions of this Agreement, as well as in enhancing international cooperation for climate action." (emphasis added)

and Article 4(9) states that:

> "Each Party *shall* communicate a nationally determined contribution every five years in accordance with decision 1/CP21 and any relevant decisions of the Conference of the Parties serving as the meeting of the Parties to this Agreement and *be informed by the outcomes of the global stocktake referred to in Article 14*." (emphasis added)

139. The GST took place for the first time in 2023 and will take place every five years thereafter. The outcome of the GST shall inform the next round of NDCs which are due in 2025 and every 5 years thereafter.

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[101] This issue is relevant in several climate cases pending before the ECHR, most directly in *Duarte Agostinho and others v Portugal and 32 Other States* App no 39371/20 (ECHR, communicated 13 November 2020, Grand Chamber hearing took place on 27 September 2023).
[102] Paris Agreement Articles 4(9) and 14(3).

140. The GST always takes place two years before the next round of NDCs are due. This is to enable the Parties to take the outcome of the GST duly into account in preparing their next NDC. Thus, in addition to the requirements of progression and highest possible ambition[103] discussed above, the GST outcome is an important normative lever to increase ambition, to be considered by the Parties when preparing their successive NDCs.

141. The 2023 CMA Decision on the 'Outcome of the First Global Stocktake', in recognizing the need for deep, rapid and sustained reductions in GHG emissions in line with 1.5°C pathways, called on the Parties to contribute to the following global efforts in a nationally determined manner, taking into account the Paris Agreement and their different national circumstances, pathways and approaches:

a) "Tripling renewable energy capacity globally and doubling the global average annual rate of energy efficiency improvements by 2030;
b) Accelerating efforts towards the phase-down of unabated coal power;
c) Accelerating efforts globally towards net zero emission energy systems, utilizing zero- and low-carbon fuels well before or by around mid-century;
d) Transitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner, accelerating action in this critical decade, so as to achieve net-zero by 2050 in keeping with the science;
e) Accelerating zero- and low-emission technologies, including, *inter alia*, renewables, nuclear, abatement and removal technologies such as carbon capture and utilization and storage, particularly in hard-to-abate sectors, and low-carbon hydrogen production;
f) Accelerating and substantially reducing non-carbon-dioxide emissions globally, including in particular methane emissions by 2030;
g) Accelerating the reduction of emissions from road transport on a range of pathways, including through development of infrastructure and rapid deployment of zero- and low-emission vehicles;
h) Phasing out inefficient fossil fuel subsidies that do not address energy poverty or just transitions, as soon as possible."[104]

142. The 2023 Decision also emphasized the importance of conserving, protecting and restoring nature and ecosystems, including through enhanced efforts towards halting and reversing deforestation and forest degradation by 2030, and other terrestrial and marine ecosystems acting as sinks and reservoirs of greenhouse gases and by conserving biodiversity, while ensuring social and environmental safeguards, in line with the Kunming-Montreal Global Biodiversity Framework, as well as to preserve and restore oceans and coastal ecosystems.[105]

143. Important in this context is also the expectation expressed in Article 5(1) of the Paris Agreement that "Parties should take action to conserve and enhance, as appropriate, sinks and reservoirs of greenhouse gases as referred to in Article 4, paragraph 1(d), of the Convention, including forests." This Article informs the ambition of the Parties when

[103] ibid, Article 4(3).
[104] UNFCCC 'Decision -/CMA.5, Outcome of the first global stocktake' para 28.
[105] ibid, paras 33 and 35.

preparing their NDCs and creates an important call for the inclusion of actions to conserve forests, oceans and other terrestrial, coastal and marine ecosystems.

144. Such mitigation measures are crucial for reaching net-zero emissions. Net-zero not only requires drastic reductions in emissions but also the increasenof removal capacities in sinks. Important in this context is that measures aiming at increase in removals doe not replace, but complement rapid emission reductions. Nature-based solutions can offer important levers to both conserve biological diversity and nature, while addressing climate change.[106] Appendix III provides more detail on the role of nature, ecosystems and nature-based solution.

145. The efforts outlined in the 2023 GST Decision are crucial for holding temperature increases to 1.5°C. Parties are legally obliged to take them into account and be informed by them when preparing their 2025 NDC, which is to be communicated by February 2025, at the latest. Moreover,in their 2025 NDC, each Party must provide information on how the GST outcome informed the preparation of its NDC.[107] This means that each Party, individually, must carefully consider the 2023 GST Decision and communicate in 2025 an NDC that contains a country-specific breakdown of the global efforts on renewable energy, on transitioning away from fossil fuels, on protecting nature, oceans and biodiversity and more.

146. Under Article 4(2) of the Paris Agreement, the Parties are obliged to pursue domestic mitigation measures, with the aim of achieving the objectives of their NDCs. This clearly includes the obligation to prepare, communicate and maintain an NDC. [108]

147. It is less clear whether Article 4(2) includes an obligation to implement and achieve the objectives of their NDCs. On one hand, the second sentence of Article 4(2), which provides that "Parties shall pursue domestic mitigation measures, *with the aim of achieving* the objectives of such NDCs" (emphasis added)[109] has been interpreted as not establishing an obligation of result on each Party to implement or achieve its NDC, but to act with the purpose to do so.

148. However, IUCN submits Article 4(2) actually contains a legal obligation to pursue domestic mitigation measures. If a Party takes no measure, this would violate that provision. Moreover, Article 4(2) also contains an obligation of acting with due diligence to achieve the NDC. In this connection, the IPCC states that the Paris Agreement establishes an

[106] UNEA 5.2 defined nature-based solution as "actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services, resilience and biodiversity benefits" Resolution adopted by the United Nations Environment Assembly on 2 March 2022 5/5. Nature-based solutions for supporting sustainable development, UNEP/EA.5/Res.5. See also IUCN (2020) Global Standard for Nature-based Solutions. A user-friendly framework for the verification, design and scaling up of NbS. First edition. Gland, Switzerland.
[107] UNFCCC 'Decision 4/CMA.1, Further guidance in relation to the mitigation section of decision 1/CP.21' (19 March 2019) UN Doc FCCC/PA/CMA/2018/3/Add.1, Annex I, para 4(c).
[108] Paris Agreement Article 4(2).
[109] ibid.

"obligation of conduct to make best efforts to achieve the objectives of NDCs".[110] The achievement of the NDC itself does not become legally binding, but a State must pursue measures that are coherent with the purpose of the NDC and rationally related to it. They must be necessary, meaningful and timely to achieve the NDC.They should also be enforced with a certain level of vigilance.

149. Each Party is also obliged to report on its NDC implementation and achievement. Under the Enhanced Transparency Framework, "each Party shall provide…information necessary to track progress made in implementing and achieving its NDC" on a biennial basis.[111] Such information is a mandatory part of the Biennial Transparency Reports, the first of which are due on 31 December 2024.[112] The reporting of this information is crucial for building mutual trust and confidence and to promote effective implementation of the Paris Agreement.

150. The Paris Agreement most important aspect to increase ambition are these iterative, ever-increasing cycles (i.e. communication of NDCs every 5 years, Global Stocktake every five years, Biennial Reporting), which are predictable and common for all Parties.[113] These processes contain a number of legal obligations for parties which repeat themselves in regular intervals. The effective compliance with these repetitive obligations provides the basis for increasing collective climate ambition over time

151. This chapter has shown that Parties to the Paris Agreement have legal obligations to regularly prepare, communicate and maintain NDCs. In carrying out this obligation, Parties must act with the necessary due diligence. This includes to reflect in each NDC highest possible ambition, to progress in ambition and to be informed by the outcomes of the regular global stocktakes. Parties are also obliged to take national measures with the aim of achieving their NDC.

[110] IPCC AR6 WG III (2022) 1466.
[111] Paris Agreement Article 13(7)(b).
[112] See UNFCCC 'Decision 18/CMA.1, Modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement' (19 March 2019) UN Doc FCCC/PA/CMA/2018/3/Add.2, para 3 and Annex III.
[113] "[A]n ever-increasing cycle of ambitious action" may be required, which "could eventually meet the goals of the climate regime", L Rajamani, "Due Diligence in International Climate Change Law" in H Krieger, A Peters, L Kreuzer (eds) *Due Diligence in the International Legal Order* (OUP 2020), 164, 180

CHAPTER 6: STATE OBLIGATIONS TO PROTECT THE CLIMATE SYSTEM IN OTHER TREATIES

I. Introduction and Summary

152. The previous chapter answered the first question in relation to the Paris Agreement. IUCN submits that, notwithstanding the importance of the Paris Agreement, there are other relevant treaties that include State obligations to protect the climate system. As noted above in this statement,[114] the climate system includes the atmosphere, the geosphere, the biosphere and the hydrosphere and the relations between them. In this statement, IUCN does not seek to provide an exhaustive list of all State obligations to protect the climate system in all treaties beyond the Paris Agreement. Rather, it focuses on the treaties listed in the preamble to the UN General Assembly resolution requesting for an advisory opinion in this case.[115]

153. In this Chapter, IUCN will discuss the United Nations Convention on the Law of the Sea (Section II), the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer (Section III), the Convention on Biological Diversity (Section IV) and the United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (Section V).

154. The treaties listed above and the Paris Agreement operate in a mutually supportive manner and do not require a determination of hierarchy. Rather, they operate in a relationship of complementarity, in line with Article 31(3)(c) of the VCLT.[116] That provision expresses the principle of 'systemic integration' which requires that any treaty must be interpreted harmoniously with both other treaty law, and the general body of international law. [117] In this vein, this Court observed in the *South West Africa Advisory Opinion* that treaties do not operate in isolation but are "interpreted and applied within the framework of the entire legal system prevailing at the time of interpretation".[118]

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[114] See Chapter 2 of this Submission.

[115] UNGA 'Res 77/276, Request for an Advisory Opinion of the International Court of Justice on the Obligations of States in Respect of Climate Change' (4 April 2023) UN Doc A/RES/77/276, preamble, recital 5. ICJ Dossier No 2. This preambular paragraph reads: "*Emphasizing* the importance of the Charter of the United Nations, the Universal Declaration of Human Rights, the International Covenants on Civil and Political Rights and on Economic, Social and Cultural Rights, the Convention on the Rights of the Child, the United Nations Convention on the Law of the Sea, the Vienna Convention for the Protection of the Ozone Layer, the Montreal Protocol on Substances that Deplete the Ozone Layer, the Convention on Biological Diversity and the United Nations Convention to Combat Desertification among other instruments, and of the relevant principles and relevant obligations of customary international law, including those reflected in the Declaration of the Stockholm Conference on the Human Environment and the Rio Declaration on Environment and Development, to the conduct of States over time in relation to activities that contribute to climate change and its adverse effects,"

[116] Vienna Convention on the Law of Treaties (entered into force 27 January 1980) 1155 UNTS 331 (VCLT).

[117] International Law Commission, 'Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law: Report of the Study Group of the International Law Commission Finalized Martti Koskenniemi' (13 April 2006) UN Doc A/CN.4/L.682, 84-88.

[118] *Legal Consequences for States of the Continued Presence of South Africa in Namibia (South West Africa) Notwithstanding Security Council Resolution 276 (1970)*, *Advisory Opinion*, I.C.J. Reports 1971, p. 31, para 53.

155. In each section below and for each treaty, IUCN will stress that anthropogenic GHG emissions and consequent harm to the climate system makes it difficult, if not impossible, for States to meet that treaty's objective(s) (A – relationship between GHG emissions and the treaty's objective(s)). IUCN will then set out the State obligations under each treaty that require States to deal with GHG emissions and, in doing so, clarify the legal and binding nature of such obligations (B – treaty obligations to protect the climate system). Each section will conclude with a specific analysis of how the standard of due diligence in the Paris Agreement, and the 1.5°C temperature threshold in particular, informs the above-mentioned treaty obligations (C – Paris Agreement standards and treaty obligations to protect the climate system).

156. As demonstrated above, UNCLOS, the Vienna Ozone Convention and the Montreal Protocol, the CBD and the UNCCD all contain obligations that require States to protect the various spheres of the climate system by reducing GHG emissions. These obligations must be informed by the 1.5°C temperature threshold and other relevant normative standards in the Paris Agreement in order to protect the climate system.

II. The United Nations Convention on the Law of the Sea

157. As noted above,[119] the climate system includes the atmosphere, the geosphere, the biosphere and the hydrosphere. Focusing on the hydrosphere and marine biosphere, this section addresses the obligations of States contained in UNCLOS[120] to protect the ocean, and specifically the marine environment, from GHG emissions.

158. In this section, IUCN makes three submissions:

a) First, UNCLOS State Parties have a due diligence obligation under its Article 192 to take all measures necessary to prevent against future harm to the marine environment and to preserve – that is, maintain or improve the marine environment – against the harmful impacts of climate change on the marine environment, and under Article 194 to adopt all measures necessary to prevent, reduce and control pollution of the marine environment from greenhouse gases.

b) Second, these obligations under UNCLOS are informed by the UNFCCC and the Paris Agreement. In particular, States must take into account the 1.5°C temperature threshold, as well as the obligations of conduct in the Paris Agreement, especially for NDCs to reflect each Party's highest possible ambition. This is to fulfil their obligation to protect and preserve the marine environment in the light of overwhelming scientific evidence that the impacts of climate change will be much lower at a temperature increase of 1.5°C compared with 2°C.

[119] See Chapter 2of this Submission.
[120] United Nations Convention on the Law of the Sea (adopted 10 November 1982, entered into force 16 November 1994) 1833 UNTS 3 (UNCLOS). ICJ Dossier No 45.

c) Third, these obligations reflect customary international law and therefore apply to all States.

159. UNCLOS is considered the "constitution of the oceans"[121]. It sets out the legal framework within which all activities in the oceans and seas must be carried out. In particular, Part XII, which concerns the protection and preservation of the marine environment, contains an integrated and holistic framework for that purpose.

160. UNCLOS was opened for signature in Montego Bay, Jamaica, on 10 December 1982 and entered into force on 14 November 1994. At the time of writing, UNCLOS has 168 Parties.

161. It is important to note that all the Parties to UNCLOS are also Parties to the UNFCCC and the Paris Agreement. Thus, the UNFCC and the Paris Agreement are clearly applicable in the relations between UNCLOS State Parties.

162. The Preamble of UNCLOS as a whole reflects the intention of the Parties to "settle all issues relating to the law of the sea" and to "establish a legal order of the seas and oceans" that, amongst other things, promotes the protection and preservation of the marine environment. The Convention is the only global treaty that comprehensively addresses all matters related to the protection of the marine environment.[122] Moreover, the Convention assimilates obligations in other relevant treaties through its Article 237(2), which provides that obligations assumed by State Parties under other marine environmental treaties "should be carried out in a manner consistent with the general principles and objectives" of the Convention.

163. Even though UNCLOS does not directly refer to climate change as it was negotiated and adopted in 1982, before climate change was a matter of concern for the international community, it is a living treaty and can be interpreted in an evolutive manner to address new or emerging issues, including climate change.[123]

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[121] T Koh, 'A Constitution for the Oceans', Remarks Adapted from Statements Made by the President of the Third UN Conference on the Law of the Sea on 6 and 11 December 1982 at the Final Session of the Conference at Montego Bay. Available at: <https://www.un.org/depts/los/convention_agreements/texts/koh_english.pdf>.

[122] Alexander Proelss (ed), *United Nations Convention on the Law of the Sea: A Commentary*, (CH Beck, 2017), 1281. R Churchill, V Lowe and A Sander, *The Law of the Sea* (4th edn, Manchester University Press 2022) 640.

[123] Its dynamic structure is evidenced by a number of factors. First, UNCLOS uses general terms deliberately intended by the negotiators to have meaning or content capable of evolving over time. UNCLOS thus falls squarely within the concept of 'evolutionary treaties' characterized by the ICJ as treaties that use generic terms; have been in force for a long time or are of a continuing duration; and where the Parties "must be presumed, as a general rule, to have intended those terms to have an evolving meaning." See *Dispute Regarding Navigational and Related Rights (Costa Rica v. Nicaragua)* (Judgement) [2009] ICJ Rep 213, para. 66. Second, Part XII of UNCLOS relies on rules and standards developed by competent international organizations or diplomatic conferences to implement UNCLOS obligations in relation to specific sources of pollution. This is a vital mechanism to ensure that UNCLOS adapts to new knowledge and changing circumstances as it links its obligations to rules and standards that are continually being promulgated to address new threats to the environment. See T Heidar, 'How Does the Law of the Sea Adapt to New Knowledge and Changing Circumstances?' in T Heidar (ed), *New Knowledge and Changing Circumstances in the Law of the Sea* (Brill 2020), 6. Third, Article 237(1) of UNCLOS envisages the adoption of subsequent marine environmental protection agreements "which may be concluded in furtherance of the general priciples" of the Convention to implement its obligations. In case law, see *Gabcíkovo-Nagymaros*, para 141; Indus

164. In this sense, the UNFCCC and the Paris Agreement play a critical role in informing the content of the obligations contained in UNCLOS' Part XII. These global climate treaties and their normative content, principles and rules, inform the obligation "to protect and preserve the marine environment", pursuant to Article 192 of UNCLOS, as well as the obligation enshrined in Article 194(1) and (3) to, *inter alia*, take all measures "necessary to prevent, reduce and control pollution from *any* source", including "those designated to minimize to the fullest extent: (a) the release of toxic, harmful or noxious substances, especially those which are persistent, from land-based sources, from or through the atmosphere or by dumping"[124].

165. The UNFCCC and the Paris Agreement are binding legal treaties that clearly constitute "other rules of international law not incompatible" with the Convention under Article 293. Not only are they *not* incompatible, but the hydrosphere is comprised in the definition of the global climate system provided by the UNFCCC, which recognises the interactions between the climate system and marine ecosystems and, accordingly, the possible adverse side effects of sea-level rise on islands and coastal areas.[125] This recognition is further illustrated by the overarching goal of promoting the enhancement of sinks and reservoirs of all GHGs, which include ocean and marine ecosystems.[126] The Paris Agreement elaborates on this goal in Article 5(1), and affirms the importance of ensuring the integrity of all ecosystems, which include the oceans.[127]

166. Moreover, the global climate treaties shall be taken into account in interpreting UNCLOS by virtue of the *general rule of interpretation* established in Article 31(3)(c) of the VCLT, which the Court has acknowledged, ensures that treaties do not operate in isolation, but are "interpreted and applied within the framework of the entire legal system prevailing at the time of interpretation".[128] The principle of systemic integration applies in this context due to States' consensus around climate change, as reflected in the near universal acceptance of the UNFCCC and the Paris Agreement, and, specifically the fact that all Parties to UNCLOS are also Parties to both of these treaties.

167. The importance of climate change to the marine environment was underscored in the recently adopted Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National

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Waters Kishenganga (Pakistan/India), Partial Award (18 February 2013) 31 RIAA 55, para 452: "[i]t is established that principles of international environmental law must be taken into account even when … interpreting treaties [were] concluded before the development of that body of law".

[124] UNCLOS, Article 194(3)(a); emphasis added.

[125] UNFCCC, Article 1(3) and 12th Preambular paragraph.

[126] UNFCCC, 4th Preambular paragraph and Article 4(1)(d).

[127] Paris Agreement, 12th and 13th Preambular paragraphs.

[128] Legal Consequences for States of the Continued Presence of South Africa in Namibia (South-West Africa) Notwithstanding Security Council Resolution 276 (Advisory Opinion) [1971] ICJ Rep 16, para 31.

Jurisdiction (BBNJ Agreement),[129] which, when it enters into force, will be the first binding implementing agreement to UNCLOS to make express reference to climate change.[130] One of its objectives is to:

> "[p]rotect, preserve, restore and maintain biological diversity and ecosystems, including with a view to enhancing their productivity and health, and strengthen resilience to stressors, including those related to climate change, ocean acidification and marine pollution".[131]

168. The BBNJ Agreement was adopted by consensus, reflecting a shared understanding by the States of the need to take active measures against climate change for the protection and preservation of the marine environment.

A. Relationship between the Law of the Sea, the Marine Environment and the Protection of the Climate System

169. The ocean, as part of the hydrosphere and biosphere and, thus, part of the climate system, necessarily includes the marine environment. While not defined in UNCLOS, the marine environment has been given a broad meaning.

170. As stated by ITLOS in *Southern Bluefin Tuna*, the "living resources of the sea" are part of the "marine environment" that State Parties must protect and preserve.[132] This was reiterated by ITLOS in the *Sub-Regional Fisheries Commission* Advisory Opinion.[133]

171. Similarly, in the *South China Sea* case, the UNCLOS Annex VII Arbitral Tribunal adopted a broad and inclusive definition of the marine environment as encompassing "a dynamic complex of plant, animal and micro-organism communities," as well as "their non-living environment".[134]

172. The marine environment, understood in those terms, is part of the hydrosphere and the biosphere under the UNFCCC definition of climate system.[135] Climate change is negatively affecting the ocean and its living organisms. This relationship is explained in greater detail in Appendix I to this statement. For present purposes, it suffices to mention that anthropogenic GHG emissions, which are causing climate change and harming the climate

[129] The Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction (adopted 19 June 2023, not yet entered into force) UN Doc A/CONF.232/2023/4 (BBNJ Agreement). ICJ Dossier No 48.
[130] The BBNJ Agreement will enter into force 120 days after the 60th State ratification. ibid, Article 68.
[131] ibid, art 7.
[132] *Southern Bluefin Tuna Cases (New Zealand v. Japan; Australia v. Japan),* (Provisional Measures, Order of 27 August 1999) ITLOS Reports 1999, 280, para 70.
[133] *Request for an Advisory Opinion Submitted by the Sub-Regional Fisheries Commission (SRFC)*, (Advisory Opinion, Order of 2 April 2015) ITLOS Reports 2015, 4, para 216.
[134] *South China Sea (Philippines v. China)*, Permanent Court of Arbitration Case No. 2013-19 (Award of 12 July 2016), para 945.
[135] See Chapter 2 of this Statement.

system, are also harming the marine environment. Hence, to protect the marine environment, GHG emissions must be reduced at a level aligned with the 1.5ºC threshold.

B. UNCLOS State Obligations to Protect the Climate System

173. Because of the inter-relationship between the marine environment and climate change, UNCLOS State obligations to protect the marine environment are relevant in answering Question (a).

174. Part XII of UNCLOS is specifically dedicated to the marine environment and stands as the cornerstone of the international regime on marine environmental protection. Articles 192 and 194 set out in detail the obligations of States in relation to the marine environment.

175. First, Article 192 provides that: "States have the obligation to protect and preserve the marine environment." This provision sets out the general duty to protect and preserve the marine environment, which reflects customary international law, and is therefore applicable to all States.[136] In addition, ITLOS has recognized that the duty to protect and preserve the marine environment applies in all maritime areas[137] and has an *erga omnes* nature in the high seas and the Area.[138]

176. The Arbitral Tribunal in the *South China Sea* case held that Article 192 entails a general obligation "to prevent future damage to the marine environment" and a duty "to preserve" the marine environment, which requires States to maintain or improve the marine environment.[139] The Arbitral Tribunal also held that the obligation under Article 192 is a due diligence obligation.[140] Of particular importance to Question (a), the Tribunal held:

> "…that it considers the duty to prevent the harvest of endangered species follows from Article 192, read against the background of other applicable international law. The Tribunal considers that this general obligation is given particular shape in the context of fragile ecosystems by Article 194(5)."[141]

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[136] A Proelss (ed), *United Nations Convention on the Law of the Sea: A Commentary*, (CH Beck, 2017), 1285.
[137] *Request for an Advisory Opinion Submitted by the Sub-Regional Fisheries Commission* para 120. Affirmed in *South China Sea (Philippines v. China)* para 940.
[138] *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area (Request for Advisory Opinion Submitted to the Seabeds Dispute Chamber)*, (Advisory Opinion, Order of 1 February 2011) ITLOS Reports 2011, 10, para 180. According to UNCLOS, (a) 'the Area' is defined as "the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction" (art 1(1)(1)); (b) the high seas are understood as "all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State" (art 86).
[139] *South China Sea (Philippines v. China)* para 941.
[140] ibid, para 956. See also paras 743-744: The Arbitral Tribunal agreed with the opinion of the ITLOS in the SRFC Advisory Opinion that "the flag State is under the 'due diligence obligation' to take all necessary measures to ensure compliance and to prevent IUU fishing by fishing vessels flying its flag" and found that the same standard of due diligence applied to a State in preventing its nationals from unlawfully fishing in the exclusive economic zone of another.
[141] ibid, para 959.

177. IUCN submits that this translates into a similar obligation in relation to climate change and its harm to rare or fragile ecosystems and other marine life.

178. As held by the *South China Sea* Arbitral Tribunal, the obligation under Article 192 imposes:

> "a due diligence obligation to take those measures 'necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life.' Therefore, in addition to preventing the direct harvesting of species recognised internationally as being threatened with extinction, Article 192 extends to the prevention of harms that would affect depleted, threatened, or endangered species indirectly through the destruction of their habitat."[142]

179. A failure to take such measures would violate Articles 192 and 194 of UNCLOS.

180. The *South China Sea* Arbitral Tribunal further stated that:

> "adopting appropriate rules and measures to prohibit a harmful practice is only one component of the due diligence required by States pursuant to the general obligation of Article 192 read in conjunction with Article 194(5)…"[143]

181. To fully comply with Articles 192 and 194 and to meet their due diligence obligations, the Parties need to ensure enforcement of such rules and measures. This is in line with this Court's holding in *Pulp Mills* where it stated that due diligence requires:

> "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."[144]

182. Thus, it can be seen that the obligation of due diligence under Article 192 in relation to the protection of endangered species of marine life and for the protection and preservation of rare or fragile ecosystems, as well as the habitat of depleted, threatened or endangered species *and* other forms of marine life, imposes a high standard of due diligence and requires UNCLOS Parties to take all necessary measures.

183. Another UNCLOS provision which includes State obligations to protect the climate system is Article 194. This provision contains obligations to prevent, reduce and control pollution of the marine environment. Article 1(1)(4) of UNCLOS defines pollution as:

> "the direct or indirect 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

[142] ibid.
[143] ibid, para 964.
[144] *Pulp Mills on the River Uruguay* (*Argentina v Uruguay*) (Judgment) [2010] ICJ Rep 14 para 197.

> 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."

184. Anthropogenic GHG emissions meet this definition. This is demonstrated by the vast majority of States who expressed this view in their written and oral statements to ITLOS in the advisory proceedings in Case 31 submitted by the Commission of Small Island States.[145] Indeed, anthropogenic GHG emissions into the atmosphere that drive ocean warming, ocean de-oxygenation, sea level rise, and ocean acidification fall within the definition of "pollution of the marine environment" in Article 1(1)(4) of UNCLOS because they constitute a direct or indirect introduction by man of substances or energy into the marine environment, resulting in deleterious effects to the marine environment.

185. These serious harms interact with one another and are worsening rapidly due to an overriding heating signature across the whole ocean and all ocean depths.[146] One-fifth of the world's fisheries are in areas subject to heating, acidification, and de-oxygenation. The world's largest aggregated fishery (tuna) is now gravely affected.

186. GHG emissions into the superjacent air space, water column, seabed or sediments from vessels and installations at sea directly pollute the marine environment. UNCLOS does not define what is 'indirect introduction'. Its ordinary meaning suggests that the introduction of substances or energy is not limited to direct introduction into the water column or seabed of the marine environment. Indeed, even though GHG emissions from other anthropogenic sources may originate elsewhere, including on States' land territories, they could be well-mixed into the atmosphere and introduced into seawater through chemical and physical processes. Thus, GHG emissions fall within the scope of Article 194(3) obligations to address all sources of pollution of the marine environment.

187. Article 194(1) of UNCLOS imposes an obligation on States:

> "to take, individually or jointly as appropriate, all measures consistent with this Convention that are necessary to prevent, reduce and control pollution of the marine environment from any source".

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[145] For the questions before the Tribunal, see *Request for an Advisory Opinion Submitted by the Commission of Small Island States on Climate Change and International Law* (Order 2022/4 of 16 December 2022). ITLOS has received written submissions from 34 states. Oral hearings also took place from 11-25 September 2023. All records accessible at < https://www.itlos.org/en/main/cases/list-of-cases/request-for-an-advisory-opinion-submitted-by-the-commission-of-small-island-states-on-climate-change-and-international-law-request-for-advisory-opinion-submitted-to-the-tribunal/>. For a summary of written submissions, see MA Tigre and K Silverman-Roati (eds), *ITLOS Advisory Opinion on Climate Change: Summary of Briefs and Statements Submitted to the Tribunal* (Sabin Center for Climate Change Law, Columbia Law School, 2023), 10. Available at: <https://scholarship.law.columbia.edu/sabin_climate_change/208>.

[146] See D Laffoley and JM Baxter (eds), *Ocean Deoxygenation: Everyone's Problem* (IUCN 2019); D Laffoley and JM Baxter (eds), *Explaining Ocean Warming* (IUCN 2016); IPCC 2019: Summary for Policymakers. In: *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate* [HO Pörtner, DC Roberts, V Masson-Delmotte, P Zhai, M Tignor, E Poloczanska, K Mintenbeck, A Alegría, M Nicolai, A Okem, J Petzold, B Rama, NM Weyer (eds)]. ICJ Dossier No 74.

188. Further, Article 194(2) imposes an obligation to:

> "take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment…"

189. The obligation under Article 194 establishes a high standard for States to take "all measures" – not simply exercise 'best efforts' – to prevent, reduce and control pollution from "any source".

190. Three elements of the Articlce 194 obligation must be highlighted. First, the scope of the obligation requires the taking of 'all measures necessary'. Thus, it leaves little margin of discretion to the State Parties. Necessary measures are indispensable measures, as informed by the best available science, required to meet the triple obligation to "prevent, reduce and control pollution" of the marine environment. In other words, Article 194 sets a very high standard for what States must do.

191. Second, for purposes of Article 194(1), it is the best available science that determines the measures necessary to be taken by State Parties to prevent, reduce, and control marine pollution by GHG emissions, using the best practicable means at their disposal and in accordance with their capabilities.

192. Third, the obligation applies to "any source" of pollution, which is inclusive and open-ended, and would include pollution from greenhouse gases.

193. In this connection, the Annex VII Arbitral Tribunal in *Chagos Marine Protected Area* held that the protection and preservation of the marine environment under Article 194(5) was not limited to pollution control.[147] This was reaffirmed by the Arbitral Tribunal in *South China Sea*.[148] These decisions confirm that Article 194(5) imposes an obligation on State to protect and preserve "rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life." One stark example of the serious harm to fragile ecosystems is that of tropical coral reefs and the associated marine biodiversity.[149]

194. In conclusion, Articles 192 and 194 of UNCLOS oblige States to protect and preserve the marine environment and to prevent, reduce and control pollution of the marine environment. Both obligations are due diligence obligations, and include protecting the ocean from the negative effects caused by the release of GHG emissions.

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[147] *Chagos Marine Protected Area Arbitration (Mauritius v. United Kingdom)*, Permanent Court of Arbitration Case No 2011-03 (Award of 18 March 2015), para 320.
[148] *South China Sea (Philippines v. China)* para 945.
[149] Scientific findings underscore that a temperature increase exceeding the 1.5° Celsius threshold would result in a loss of 70-90% of tropical corals as a result of mass bleaching and mortality. This has devastating effects on marine biodiversity, given that these coral reefs provide habitats for over one million species. See IPCC 'Global Warming of 1.5 ºC' (2018) 229-230 and 234-235.

C. Acting with Due Diligence in the Light of the Paris Agreement

195. As stated above, States are obliged to act with due diligence, including cutting GHG emissions which are harmful to the marine environment. As such, the measures taken by States to protect and preserve the marine environment, as part of the hydrosphere and biosphere, must be informed by the best available science.

196. Mitigation strategies for addressing the serious and adverse impacts on the marine environment include measures to (1) significantly and rapidly cut CO_2 emissions; (2) develop adequate carbon management for marine and coastal ecosystems; (3) effectively apply marine and coastal management, conservation and restoration strategies, including marine protected areas and integrated coastal management, to increase the world's natural carbon sinks; and (4) maintain healthy marine and coastal ecosystems and restore those that have been degraded.[150] These measures are not exhaustive, but constitute the minimum measures, as dictated by science, that must be taken to address the adverse impacts of climate change on the marine environment.

197. IUCN now turns to explain how the obligations and standards under the UNFCCC and the Paris Agreement inform the content of obligations under Part XII of UNCLOS. These global climate treaties constitute "relevant rules of international law applicable in relations between the parties", which shall be taken into account in interpreting a treaty, in accordance with Article 31(3)(c) of the VCLT.[151]

198. Apart from Articles 192 and 194 of UNCLOS discussed above, the UNFCCC and the Paris Agreement are also relevant to the interpretation of the obligations to prevent, reduce and control pollution from land-based sources under Article 207 and from atmospheric sources under Article 212.

199. In particular, Articles 207(1) and 212(1) oblige State Parties to adopt laws and regulations to prevent, reduce and control land-based and atmospheric pollution "taking into account internationally agreed rules, standards and recommended practices and procedures". The UNFCCC and the Paris Agreement have received nearly universal acceptance and clearly meet the threshold of "internationally agreed rules and standards". IUCN submits that the obligation to "take into account" requires States, at a minimum, to adopt laws and regulations that give effect to their obligations under the UNFCCC and the Paris Agreement.

200. One such important internationally agreed rule or standard is the temperature threshold adopted by consensus in Article 2 of the Paris Agreement. This is reflected in Article 2(1)(a) of the Paris Agreement as "[h]olding 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".

201. In addition, the requirement of adequate mitigation ambition in the light of the temperature threshold applies to the UNCLOS obligations. As explained above, as stated in Article 4(3)

[150] D Herr and GR Galland, *The Ocean and Climate Change: Tools and Guidelines for Action* (IUCN 2009).
[151] See Chapter 6 of this Submission.

of the Paris Agreement, each Party´s successive NDC "will represent a progression beyond the Party's then current NDC and reflect its highest possible ambition, reflecting common but differentiated responsibilities and respective capabilities, in the light of different national circumstances". This informs the due diligence standard imposed by Articles 192 and 194 of UNCLOS.[152]

202. Reading the Paris Agreement and UNCLOS together also means that emissions reductions need to reflect each Party's highest possible ambition and that the Parties need to adopt the necessary effective national measures to this end.

203. This requires States Parties to take all necessary measures aligned with the collective pathway to rapidly, deeply, and immediately reduce GHG emissions by 45% in 2030 with a view to achieving global net-zero CO_2 emissions by 2050 and net-negative emissions thereafter.[153] Reducing CO_2 emissions at this level also addresses the challenge of ocean acidification.

204. The marine environment cannot be effectively protected and preserved without addressing climate change and its adverse effects. Part XII of UNCLOS is informed by the 1.5°C temperature threshold in the Paris Agreement. This means that when adopting laws and regulations to preserve and protect the marine environment and to prevent, reduce and control pollution from various sources under Part XII of UNCLOS, State Parties must, at a minimum, align their measures with the 1.5°C temperature threshold and its respective emission pathway and timeline. This includes setting NDCs at the level of their highest possible ambition, in accordance with Articles 2 and 4(3) of the Paris Agreement, and implementing and achieving them.

205. In sum: (a) Part XII of UNCLOS applies to climate change; (b) greenhouse gas emissions constitute pollution as defined under UNCLOS, thereby triggering the obligations under Article 194 of UNCLOS with respect to GHG emissions; (c) the States are imposed a high standard obligation to take *all measures necessary* to prevent, reduce and control pollution from *any source*, including GHGs; (d) Article 194(5), read together with Article 192, applies to pollution and consequent harm to the marine environment from climate change; (e) the Paris Agreement informs the interpretation and scope of obligations of States Parties under UNCLOS. Rules and standards contained in the Paris Agreement, especially the 1.5°C temperature threshold and the due diligence standards must be taken into account by Parties to UNCLOS under Part XII; (f) the best available science, including the IPCC assessment reports and special reports, must be applied by States in performing and interpreting their UNCLOS Part XII obligations, particularly in determining the measures necessary to meet those obligations.

[152] See Chapter 5.
[153] See Chapter 4.

III. The Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer

206. The Vienna Convention for the Protection of the Ozone Layer (Vienna Ozone Convention),[154] is a framework convention with an overall aim of protecting the ozone layer. Following its adoption in 1985, the State Parties adopted the Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol) in 1987.[155] The Montreal Protocol has continuously evolved since its adoption through several adjustments and amendments.[156]

207. In 2009, the Montreal Protocol, together with the Vienna Ozone Convention, became the first and only multilateral environmental treaty to achieve universal ratification. All Parties to the UNFCCC and the Paris Agreement are also Parties to the Vienna Ozone Convention and the Montreal Protocol.

208. The overarching objective of the Vienna Ozone Convention is to "protect human health and the environment against [the] adverse effects resulting or likely to result from human activities which modify or are likely to modify the ozone layer".[157] As a framework convention, the Vienna Ozone Convention does not require its Parties to undertake any specific or concrete control action with respect to ozone depleting substances. The Montreal Protocol, on the other hand, establishes binding and measurable obligations on all Parties to phase down and phase out ozone depleting substances. In that way, it provides 'teeth' to the Vienna Ozone Convention.

209. While the Vienna Ozone Convention and Montreal Protocol explicitly address stratospheric ozone depletion, they also address climate change by controlling certain ozone depleting substances that are also greenhouse gases.[158] In this connection, the Vienna Ozone Convention adopts a broad definition of adverse effects, which expressly includes "changes in climate".[159]

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[154] Vienna Convention for the Protection of the Ozone Layer (adopted 22 March 1985, entered into force 22 September 1998) 1513 UNTS 293. ICJ Dossier No 25.
[155] Montreal Protocol on Substances that Deplete the Ozone Layer (adopted 16 September 1987, entered into force 1 January 1989) 1522 UNTS 3. ICJ Dossier No 26.
[156] Amendments include 'the London Amendment' (adopted 29 June 1990. ICJ Dossier No 29); 'the Copenhagen Amendment' (adopted 25 November 1992. ICJ Dossier Nos 31-33); 'the Montreal Amendment' (adopted 17 September 1997. ICJ Dossier No 35); 'the Beijing Amendment' (adopted 3 December 1999. ICJ Dossier Nos 36-38); and 'the Kigali Amendment' (adopted 15 October 2016. ICJ Dossier Nos 40-43).
[157] Vienna Convention for the Protection of the Ozone Layer Article 2(1).
[158] This includes chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) and halons. See IPCC/TEAP 2005: Summary for Policymakers. In B Metz, L Kuijpers, S Solomon, SO Andersen, O Davidson, J Pons, D de Jager, T Kestin, M Manning, and L Meyer (eds), *Safeguarding the Ozone Layer and the Global Climate System: Issues Related to Hydrofluorocarbons and Perfluorocarbons* (CUP 2005), 3; World Meteorological Organization, *Scientific Assessment of Ozone Depletion: 2022*, GAW Report No. 278 (WMO 2022), 309-312.
[159] Vienna Convention for the Protection of the Ozone Layer Article 1(2).

210. In 2016, the Kigali Amendment to the Montreal Protocol was adopted to tackle the issue of hydrofluorocarbons (HFCs).[160] HFCs do not contribute towards ozone depletion and have been used as substitutes to ozone depleting substances, primarily chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs).[161] However, while not ozone depleting substances, HFCs are extremely potent greenhouse gases that contribute significantly to global warming.[162] This demonstrates the dynamic and evolutive nature of the Montreal Protocol, which is pivotal in addressing GHG emissions and keeping within the 1.5°C threshold.

A. Relationship between the Ozone Layer and the Protection of the Climate System

211. The ozone layer exists in the stratosphere, one of the five primary layers of the Earth's atmosphere. Accordingly, the ozone layer is part of the atmosphere under the UNFCCC's definition of climate system.[163]

212. Climate change and ozone depletion are also directly connected by common cause. As mentioned, several ozone depleting substances (such as HCFCs, CFCs and halons) are also greenhouse gases.

213. In addition, climate change negatively impacts the ozone layer. This is explained in greater detail in Appendix I to this statement. For present purposes, it suffices to mention that an increase in GHG emissions, which causes climate change and harm to the climate system, also harms the ozone layer. Thus, GHG emissions must be reduced to protect the ozone layer.

B. State Obligations to Protect the Climate System

214. Because of the inter-relationship between ozone depletion and climate change, State obligations under the Vienna Ozone Convention and the Montreal Protocol to protect the ozone layer fall within Question (a).

215. The Vienna Ozone Convention establishes a general obligation under Articles 2(1) and (2) to take "appropriate measures" to protect human health and the environment from the adverse effects of ozone depletion, with an emphasis on the importance of international cooperation.

216. The Montreal Protocol establishes progressive and time-bound phase out obligations concerning the production and consumption of all the major ozone depleting substances, in the form of control measures.[164] In total, the Montreal Protocol regulates around 100 ozone

[160] Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer (Kigali) (adopted 15 October 2016, entered into force 1 January 2019) UNTS Depositary notification C.N.872.2016.TREATIES-XXVII.2.f. ICJ Dossier No 40.
[161] This is because they do not contain any ozone-depleting chlorine or bromine. See IPCC/TEAP 'Safeguarding the Ozone Layer' (2005) 5.
[162] See IPCC/TEAP 2005 (WMO, *Scientific Assessment of Ozone Depletion: 2022* 309-312.
[163] See Chapter 4 of this Statement
[164] Montreal Protocol Article 2.

depleting substances. These are categorised and listed under its Annexes A, B, C, E and F.[165] The phase-out schedules are contained in Articles 2A-J of the Montreal Protocol.

217. These obligations are legally binding and applicable to all Parties, albeit with different phase out timetables for developed countries (non-A5 Parties) and developing countries (A5 parties).[166]

218. In addition to phase out obligations, the Parties also have obligations with respect to the control of and trade with ozone depleting substance trade (Articles 4 and 4A), the establishment and implementation of licensing systems to control ozone depleting substance imports and exports (Article 4B), and reporting (Article 7).

219. As mentioned, a number of ozone depleting substances are also potent GHG and accordingly significant contributors to climate change. The Montreal Protocol controls several of these substances, including CFCs and HCFCs. Significantly, CFCs and HCFCs have a far more intense global warming effect than the primary greenhouse gas, CO_2.[167] GHG that are controlled by the Montreal Protocol are exempt from the scope of the UNFCCC, Kyoto Protocol and the Paris Agreement.

220. The Montreal Protocol establishes binding State obligations that directly deal with GHG emissions and the protection of the climate system by phasing out ozone depleting substances that are also GHG.

221. In addition to the obligation of result (i.e. to phase out ozone depleting substances), the regime also imposes an obligation on its Parties to "take *appropriate measures*…to protect human health and the ennvironment against adverse effects resulting or likely to result from human activities which modify or are likely to modify the ozone layer".[168] This obligation to take 'appropriate measures' is reiterated in the preamble of the Montreal Protocol. Such measures "should be based on relevant scientific knowledge".[169]

222. A review of the best available science and environmental information is conducted every four years.[170] As a result of several amendments and adjustments, State obligations under the Montreal Protocol have progressively developed, including by expanding the scope of regulated substances and fine-tuning phase-out schedules.

[165] Namely, CFCs and halons (Annex A), other fully halogenated CFCs, carbon tetrachloride and methyl chloroform (Annex B), HCFCs (Annex C), methyl bromide (Annex E), and HFCs (Annex F).
[166] ibid, Article 5. Developing countries are granted a grace period to phase out the production and consumption of controlled ozone depleting substances.
[167] IPCC/TEAP 'Safeguarding the Ozone Layer' (2005) 8.
[168] Vienna Ozone Convention Article 2(1).
[169] Montreal Protocol preamble.
[170] ibid, Article 6.

223. At the nineteenth Meeting of the Parties (MOP) to the Montreal Protocol in 2007, the Parties adopted an accelarated phase-out of HCFCs.[171] This decision was informed by the rapid growth of HCFC use and the threat that this posed to not only the recovery of the ozone layer, but also from the perspective of climate change.

224. The importance of addressing climate change is made clear in the decisions adopted at the nineteenth MOP. For example, as part of the decision to accelerate the phase out of HCFCs, the Parties were encouraged to "promote the selection of alternatives to HCFCs that minimize environmental impacts, in particular impacts on climate".[172] The nineteenth MOP also resulted in the Montreal Declaration, which expressly recognises "the importance of accelerating ozone layer recovery in a way that also addresses other environmental issues, notably climate change".[173]

225. In October 2016, the Parties adopted the Kigali Amendment,[174] which is the most recent amendment to the Montreal Protocol. The Kigali Amendment established a legally binding obligation on all Parties to gradually phase down the consumption and production of HFCs, with concrete targets and schedules. Developed countries have a phase-down obligation of 85% between 2019 and 2036.[175] Most developing countries have a phase-down obligation of 80% between 2024 and 2045, while a second group of developing countries have a phase-down obligation of 85% between 2028 and 2047.[176]

226. As mentioned, HFCs are not harmful to the ozone layer and therefore, have been widely used as replacements for ozone depleting substances. They are, however, extremely powerful greenhouse gases with very high global warming potental.[177] The Kigali Amendment thus imposes State obligations to reduce greenhouse gases, with the direct goal of mitigating climate change.

227. If fully implemented, the Kigali Amendment is projected to prevent up to 0.3-0.5°C of global warming by 2100,[178] thereby providing a potentially significant contribution to stay within the 1.5°C temperature threshold of the Paris Agreement.

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[171] UNEP Report of the Nineteenth Meeting of the Parties *to the Montreal Protocol on Substances that Deplete the Ozone Layer* (21 September 2007) UN Doc UNEP/OzL.Pro.19/7. 'Decision XIX/6: Adjustments to the Montreal Protocol with Regard to Annex C, Group I, Substances (Hydrochlorofluorocarbons)'.
[172] ibid, para 9.
[173] ibid, Annex IV.
[174] Kigali Amendment.
[175] ibid, Article 2J.
[176] ibid. The second group of developing countries is comprised of India, Pakistan, Saudi Arabia, Bahrain, Kuwait, Oman, Qatar, Iran, Iraq, and the United Arab Emirates.
[177] For example, the global warming potential of HFC-23 is 14,800 times higher than CO_2 for a 100-year time horizon. IPCC/TEAP 'Safeguarding the Ozone Layer' (2005) 8.
[178] ibid. WMO, *Scientific Assessment of Ozone Depletion: 2022* 310.

IV. The Convention on Biological Diversity

228. Climate change and biodiversity are intrinsically inter-related. Biodiversity loss can further accelerate climate change and undermines nature's ability to regulate GHG emissions and protect against extreme weather events. Protecting biodiversity and reversing biodiversity loss can therefore help to mitigate climate change.

229. Climate change is expected to be the main driver of biodiversity loss by the end of the century, and it is expected to cause significant disturbances to species and ecosystems.[179] It has already altered ecosystems, caused species loss, and increased diseases. This threatens the economy, food security, medicine availability, water quality and other aspects of human life.

230. Mitigating climate change can therefore help to conserve biodiversity while protecting and conserving ecosystems helps addressing climate change. Nature-based solutions[180], such as conserving or restoring nature and ecosystems can remove carbon dioxide from the atmosphere, thus helping to address climate change by storing carbon. Addressing this nexus between biodiversity and climate change requires coordinated, global efforts as well as national and local actions.[181] For the Court's reference, Appendix III to this statement explains the relationship between biodiversity and climate change in greater detail .

231. The nexus between biodiversity and climate change was recently recognised by the Parties of the Paris Agreement in the first Global Stocktake in this way:

> "the importance of conserving, protecting and restoring nature and ecosystems towards achieving the Paris Agreement temperature goal, including through enhanced efforts towards halting and reversing deforestation and forest degradation by 2030, and other terrestrial and marine ecosystems acting as sinks and reservoirs of greenhouse gases

179 IPBES (2019): Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. S. Díaz, J. Settele, E. S. Brondízio, H. T. Ngo, M. Guèze, J. Agard, A. Arneth, P. Balvanera, K. A. Brauman, S. H. M. Butchart, K. M. A. Chan, L. A. Garibaldi, K. Ichii, J. Liu, S. M. Subramanian, G. F. Midgley, P. Miloslavich, Z. Molnár, D. Obura, A. Pfaff, S. Polasky, A. Purvis, J. Razzaque, B. Reyers, R. Roy Chowdhury, Y. J. Shin, I. J. Visseren-Hamakers, K. J. Willis, and C. N. Zayas (eds.). IPBES secretariat, Bonn, Germany.

180 UNEA 5.2 defined nature-based solution as "actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services, resilience and biodiversity benefits" Resolution adopted by the United Nations Environment Assembly on 2 March 2022 5/5. Nature-based solutions for supporting sustainable development, UNEP/EA.5/Res.5. See also IUCN (2020) Global Standard for Nature-based Solutions. A user-friendly framework for the verification, design and scaling up of NbS. First edition. Gland, Switzerland.

181 IPCC AR6 SPM WGII (2022) ; IPBES (2019): *Summary for Policymakers of the Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. S Díaz, J Settele, ES Brondízio, HT Ngo, M Guèze, J Agard, A Arneth, P Balvanera, KA Brauman, SHM Butchart, KMA Chan, LA Garibaldi, K Ichii, J Liu, SM Subramanian, GF Midgley, P Miloslavich, Z Molnár, D Obura, A Pfaff, S Polasky, A Purvis, J Razzaque, B Reyers, R Roy Chowdhury, YJ Shin, IJ Visseren-Hamakers, KJ Willis, and CN Zayas (eds), 12-16, sections B and C of 'Key Messages'. ICJ Dossier No 205.

and by conserving biodiversity, while ensuring social and environmental safeguards, in line with the Kunming-Montreal Global Biodiversity Framework."[182]

232. The central international treaty to address biodiversity is the Convention on Biological Diversity (CBD),[183] which was adopted on 5 June 1992. It entered into force on 29 December 1992 and currently has 196 Parties.[184]

233. The CBD has three objectives:

> "the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources…"[185]

234. The CBD contains a number of legal obligations for its Parties. As a core legal obligation, States, in accordance with their particular conditions and capabilities, are to develop national biodiversity strategies, plans and programs (NBSAPs)[186] and as far as possible adopt measures that act as incentives for the conservation and sustainable use of biological diversity.[187] In this regard, they are to identify and monitor the components of biological diversity (ecosystems, species, genomes and genes) that are important for its conservation and sustainable use, and maintain relevant data.[188]

235. The CBD promotes *in situ* conservation as well as *ex situ* conservation to complement *in situ* conservation, which should preferably be carried out in the country of origin of the biodiversity components.[189]

236. In addition, States are obliged to cooperate, as appropriate, directly or through competent international organizations, particularly with respect to providing financing and other support for conservation activities in developing countries, as well as in technical and scientific cooperation, education, training and public awareness programs, as well as concerning notification and exchange of information in case of activities likely to cause significant adverse effects, situations of imminent or grave danger and arrangements for emergency responses.[190]

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[182] UNFCCC 'Decision -/CMA.5, Outcome of the First Global Stocktake' (13 December 2023) UN Doc FCCC/PA/CMA/2023/L.17 para 33.
[183] Convention on Biological Diversity (adopted 5 June 1992, entered into force 29 December 1993) 1760 UNTS 79. ICJ Dossier No 19.
[184] ''Biological diversity' is defined in Article 2 of the CBD as 'the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems.'
[185] CBD Article 2.
[186] ibid, Article 6.
[187] ibid, Article 11.
[188] ibid, Articles 7 and 10.
[189] ibid, Articles 8 and 9.
[190] ibid, Articles 5 and 12-14.

237. CBD Parties are also under the obligation to establish, as far as possible and as appropriate, procedures for environmental impact assessment, which allow, where appropriate, for public participation in the process,[191] and to submit national reports on the implementation of their national measures.[192]

238. In this statement, IUCN focuses on the legal obligation of each Party to develop an NBSAP (Article 6) and to submit a national report (Article 26).

239. The CBD Conference of Parties (COP) has guided the development of NBSAPs by adopting more specific long-term (10 year) Strategic Plans. Two 10-year Strategic Plans - Strategic Plan 2002–2010 and Strategic Plan 2011–2020 (including the Aichi Biodiversity Targets) - have previously been adopted.[193] Official and scientific reports of these two Strategic Plans have shown that most targets have been missed, with biodiversity continuing to decline.[194]

240. In 2022, the COP to the CBD adopted a new, third 10-year Strategic Plan named the Kunming-Montreal Global Biodiversity Framework (KMGBF).[195] This plan set out a vision of a world of living in harmony with nature where:

> "by 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people."[196]

241. The mission for the period up to 2030, towards the 2050 vision, is to:

> "take urgent action to halt and reverse biodiversity loss to put nature on a path to recovery for the benefit of people and planet by conserving and sustainably using biodiversity and by ensuring the fair and equitable sharing of benefits from the use of genetic resources, while providing the necessary means of implementation".[197]

The KMGBF contains 4 long-term global goals for 2050[198] and 23 global targets for 2030. The actions set out in each target need to be initiated immediately and completed by 2030.[199]

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[191] ibid, Article 14.
[192] ibid, Article 26.
[193] CBD 'Decision VI/26, Strategic Plan for the Convention on Biological Diversity' (27 May 2002) UN Doc UNEP/CBD/COP/6/20; CBD 'Decision X/2, Strategic Plan for Biodiversity 2011–2020' (29 October 2010) UN Doc UNEP/CBD/COP/DEC/X/2.
[194] Secretariat of the CBD, *Global Biodiversity Outlook 5* (2020), 7-22. To date, 194 of 196 Parties have developed at least one NBSAP. See CBD, *National Biodiversity Strategies and Action Plans (NBSAPs).* Available at: <https://www.cbd.int/nbsap/>.
[195] CBD 'Decision 15/4, Kunming-Montreal Global Biodiversity Framework' (19 December 2022) UN Doc CBD/COP/DEC/15/4, Annex. ICJ Dossier No 183.
[196] ibid, para 10.
[197] ibid, para 11.
[198] ibid, para 12.
[199] ibid, para 13.

242. Without action on climate change, the object and purpose of the CBD and of the KMGBF will not be achievable. In this next section, we explain which State obligations under the CBD are related to the protection of the climate system.

A. CBD State Obligations to Protect the Climate System

243. Because of the inter-relation between biodiversity and climate change, CBD State obligations to conserve biological diversity are relevant to the first question before the Court.

244. Parties to the CBD are under an obligation to undertake general measures for conservation and sustainable use of biological diversity. In this context, each Party has the obligation to, in accordance with its particular conditions and capabilities:

> "(a) Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes which shall reflect, inter alia, the measures set out in this Convention relevant to the Contracting Party concerned; and
>
> (b) Integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies."[200]

245. The measures set out in the Convention include the identification and monitoring of biodiversity[201], the establishment of protected areas and other measures for *in situ* conservation[202], the recovery and rehabilitation of threatened species and other measures for *ex situ* conservation[203], and the adoption of measures for sustainable use[204]. These measures, actions and targets are specified and concretized through the 10-year Strategic Plans adopted by the CBD COP. The latest of such 10-year plans is the KMGBF.[205]

246. The CBD does not explicitly mention climate change. However, the KMGBF contains various provisions referring to the climate system and climate change. Of particular importance is Target 8, which aims to:

> "Minimize the impact of climate change and ocean acidification on biodiversity and increase its resilience through mitigation, adaptation, and disaster risk reduction actions, including through nature-based solutions and/or ecosystem-based approaches, while minimizing negative and fostering positive impacts of climate action on biodiversity."[206]

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[200] CBD Article 6.
[201] ibid, Article 7.
[202] ibid, Article 8.
[203] ibid, Article 9.
[204] ibid, Article 10.
[205] CBD 'Decision VI/26' ; CBD 'Decision X/2' ; CBD 'Kunming-Montreal Global Biodiversity Framework'.
[206] The KMGBF builds upon previous efforts by CBD parties to address synergies in climate change mitigation and biodiversity conservation. See e.g. CBD 'Decision 10/33, Biodiversity and Climate Change' (29 October 2010) UN

247. This sets out a global target for urgent action to be taken to address climate change over the decade, by 2030. The actions set out in this target, as well as the other 27 targets, need to be initiated immediately and completed by 2030. Actions to reach these targets should be implemented consistently and in harmony with the CBD and its Protocols, and other relevant international obligations, taking into account national circumstances, priorities and socioeconomic conditions.[207]

248. The implications for States to reduce GHG emissions and enhancing removals by sinks under this target are evident. The mitigation of climate change, including through nature-based solutions and/or ecosystem-based approaches involves the conservation and enhancement of sinks and reservoirs, such as forests, oceans and other terrestrial, coastal and marine ecosystems. It also includes wider actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously protecting human well-being and biodiversity.[208]

249. The KMGBF was adopted by a COP decision and is not, as such, legally binding. However, it is intrinsically linked to the legal obligation of each Party to develop and implement the NBSAPs. The legal link between NBSAPs and the KMGBF is found in another CBD COP Decision (Decision 15/6), which:

> "*Requests* Parties to revise and update their national biodiversity strategies and action plans in accordance with Article 6 of the Convention, following the guidance provided in annex I to the present decision, aligned with the Kunming-Montreal Global Biodiversity Framework and its goals and targets, including those related to means of implementation, and to submit them through the clearing-house mechanism by the sixteenth meeting of the Conference of the Parties."[209]

250. The COP adopted specific guidance for revising or updating NBSAPs to align with the KMGBF.[210]

251. IUCN would like to emphasize that there is a legal expectation that the Parties include the targets of the KMGBF, including the climate action required under Target 8, in their NBSAPs. Complying with a due diligence standard requires each Party to take into account these targets when implementing its legal obligation under Article 6 of the CBD.

Doc UNEP/CBD/COP/DEC/X/33. ICJ Dossier No 178.; CBD 'Decision 12/20, Biodiversity and Climate Change and Disaster Risk Reduction' (17 October 2014) UN Doc CBD/COP/DEC/XII/20.

[207] CBD 'Kunming-Montreal Global Biodiversity Framework' para 13.

[208] IUCN, *Global Standard for Nature-Based Solutions. A User-Friendly Framework for the Verification, Design and Scaling Up of NbS*. (1st edn, IUCN 2020).

[209] CBD 'Decision 15/6, Mechanisms for Planning, Monitoring, Reporting and Review' (19 December 2022) UN Doc CBD/COP/DEC/15/6, para 6.

[210] ibid, Annex. The Decision also provides for global reviews of collective progress in the implementation of the KMGBF at the seventeeth and nineteenth meetings of the COP (paras 15-21).

252. Further, the Parties are obliged to report on measures taken for the implementation of the CBD and their effectiveness in meeting its objectives.[211] The Parties also adopted an associated monitoring framework for the KMGBF, which is intended to facilitate consistent, standardized and scalable tracking of its goals and targets.[212] The Parties' national reports to be submitted in 2026 and 2029 are expected to include headline and, as appropriate, other indicators adopted in Decision 15/6. In that way, the decisions adopted by COP15 in Decision 15/6 add a certain standard of conduct to the legal obligation under Article 26 of the CBD. For action on climate change under Target 8, the indicators are as follows:

Goal / target	Headline indicator	Component indicator	Complementary indicator
8b		Total climate regulation services provided by ecosystems and by ecosystem type (System of Environmental Economic Accounts). Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030 which include biodiversity. National greenhouse inventories from land us-use change. BERI	Above-ground biomass stocvk in forest (tonnes/ha). National greenhouse inventories from land use and land-use change. Proportion of local government that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies. Number of least developed countries and small island developing States with nationally determined contributions, long term strategies, national adaptation plans, strategies as reported in adaptation communications and national communications. Index of coastal eutrophication. Carbon stocks and annual net greenhouse gas emissions, by land-use category, split by natural and non-natural cover

253. In addition to the obligation to develop and update the NBSAP, States are obliged to implement the NBSAP by acting with due diligence, which requires them to undertake best efforts to develop and pursue an NBSAP, including the adoption of legislation and policies, as appropriate, as well as their compliance and enforcement.[213]

[211] CBD Article 26.
[212] CBD 'Decision 15/5, Monitoring Framework for the Kumming-Montreal Global Biodiversity Framework' (19 December 2022) UN Doc CBD/COP/DEC/15/5.
[213] *Request for an Advisory Opinion Submitted by the Sub-Regional Fisheries Commission (SRFC)* para 131; *Pulp Mills on the River Uruguay* (*Argentina v Uruguay*) para 197.

254. Within this context of developing and implementing NBSAPs, IUCN submits that the obligations of Parties to the CBD include the mitigation of climate change, notably through nature-based solutions and/or ecosystem-based approaches.

B. Acting with Due Diligence in Updating and Revising NBSAPs in Light of the Paris Agreement

255. As outlined above, the Parties are required to act with due diligence when fulfilling their obligations under the CBD to prepare their NBSAPs to address the targets of the KMGBF, in particular Target 8 with respect to climate change.

256. Target 8 explicitly refers to mitigation action (i.e. reduction of GHG emissions by sources and increase in removals in sinks) in order to minimize the impact of climate change and ocean acidification on biodiversity, such as through nature-based solutions and/or ecosystem-based approaches.

257. IUCN now turns to discuss how the rules, principles and norms under the Paris Agreement inform the content of obligations under the CBD, specifically their due diligence obligations.

258. As explained above, Article 31(3)(c) of the VCLT expresses the principle of 'systemic integration', requiring "any relevant rules of international law applicable in relations between the parties" to be taken into account when interpreting a treaty, alongside its ordinary meaning and in light of its overall object and purpose. Thus, treaties should not be interpreted in a vacuum, but in view of the wider international legal context they exist in.

259. Both the UNFCCC and the Paris Agreement constitute 'relevant rules of international law applicable in relations between the parties'. Thus, they inform the interpretation of the CBD for Parties to those treaties who are Parties to the CBD.

260. IUCN submits that the obligation under Article 31(3)(c) of the VCLT to take into account relevant rules of international law requires, at a minimum, the CBD Parties to mitigate GHG emissions to give effect to the obligations and norms contained in the UNFCCC and the Paris Agreement.

261. As outlined in Chapter 5 above, the Paris Agreement sets particular standards of conduct (i.e. due diligence requirements).

262. Perhaps most significantly, the Paris Agreement contains a near universal, science-based pathway to address the threat of climate change, in the form of a global temperature goal:

> "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".[214]

[214] Paris Agreement Article 2(1)(a).

263. In relation to the mitigation of GHG emissions, the standard of conduct that is required of Parties to the Paris Agreement is therefore informed by this overarching temperature goal. To reierate, 1.5°C is a critical threshold, with particularly severe consequences for ecosystems and species, if crossed. This internationally agreed standard carries significant normative and legal relevance that should influence and inform the interpretation of due diligence obligations found beyond the Paris Agreement, including in the CBD.

264. IUCN submits that this threshold must inform the interpretation of obligations contained in the CBD, as warming beyond 1.5°C would result in dangerous anthropogenic interference with the climate system, including the biosphere. This necessitates rapid and deep emissions reductions, that includes cutting carbon dioxide emissions by 45% by 2030 and reaching net zero around mid-century.

265. In addition to this global temperature goal, another important due diligence standard of the Paris Agreement concerns 'highest possible ambition' which places an obligation on each Party to utilize its 'best efforts' when preparing its NDC. Due to the direct linkage between climate change and biodiversity loss, the due diligence requirement of 'deploying best efforts' should also inform the level of ambition when CBD Parties revise their NBSAPs in the light of Target 8 of the KMGBF.

266. Biodiversity cannot be effectively protected and preserved without addressing climate change and its adverse effects. Under the due diligence obligations contained in the CBD, the Parties are required to take appropriate measures based on available scientific knowledge to conserve and sustainably use biodiversity.

267. The obligations with respect to the conservation and sustainable use of biodiversity with respect to minimizing the impacts of climate change and ocean acidification on biodiversity and increasing its resilience through mitigation (Target 8 of KMGBF) are informed by the due diligence standard expressed in the Paris Agreement, specifically the 1.5°C temperature goal, in addition to the standard of 'highest possible ambition'. Therefore, acting with due diligence under the biodiversity regime requires the Parties to undertake all appropriate measures to reduce GHG emissions, as part of their obligations under the CBD, in a manner aligned with the Paris Agreement, i.e. informed by the 1.5°C threshold and is also reflective of each Party's highest possible ambition.

268. Specifically, this requires the Parties to undertake measures under the CBD that support and are aligned with the collective pathway to reduce GHG emissions by 45% by 2030 relative to 2019 levels, with a view to achieving net-zero emissions around 2050 and net-negative emissions thereafter.

C. Protecting Biodiversity when Taking Climate Change Mitigation Measures

269. It is possible that mitigation of climate change can have a destructive impact on biodiversity. For example, initiatives to construct large-scale solar farms can denude the biodiversity

beneath solar panels. Efforts to sequester carbon with monoculture plantations can also impact biodiversity.[215]

270. In this regard, States must ensure that biodiversity is not endangered when adopting and implementing State obligations to protect the climate system. The twin planetary climate and nature crises are to be addressed simultaneously. This is acknowleged in the Preamble of the Paris Agreement, which states:

> "the importance of ensuring the integrity of all ecosystems, including oceans, and the protection of biodiversity, recognized by some cultures as Mother Earth, and noting the importance for some of the concept of 'climate justice,' when taking action to address climate change."[216]

271. Target 8 of the KMGBF takes a more holistic approach and refers to the need for Parties to 'minimize negative' and 'foster positive' impacts of climate action on biodiversity. Specifically, CBD parties have recognized the need to improve biodiversity conservation while sequestering carbon.[217]

272. A similar need for safeguards to protect biodiversity when implementing mitigation policies was recognized by the Parties to the UNFCCC.[218] For example, in the context of forest protection in developing countries as a climate mitigation action within Article 5(2) of the Paris Agreement, the Parties must promote and respect safeguards, including ensuring that their actions complement or are consistent with the objectives of national forest programmes and relevant international conventions and agreements, and that their actions are consistent with the conservation of natural forests and biological diversity.[219]

273. In this section, IUCN has demonstrated the relevance of the CBD and related instruments to the obligations of States to ensure the protection of the climate system. In sum:

a) Under Article 6 of CBD, there is a legal obligation on each Party to take into account the KMGBF targets, including the climate action required under Target 8, when revising and updating its NBSAPs;

b) The obligation to include climate change, including through nature-based solutions and/or ecosystem-based approaches, in their NBSAPs implies that the Paris Agreement, and in particular the 1.5°C temperature threshold, needs to be taken into account when developing and implementing an NBSAP. This applies only to Parties to the Paris Agreement who are also Parties to the CBD; and

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[215] IPBES SPM 'Global Assessment Report' (2019) D8: "Nature-based solutions with safeguards are estimated to provide 37 per cent of climate change mitigation until 2030 needed to meet the goal of keeping climate warming below 2°C, with likely co-benefits for biodiversity."
[216] Paris Agreement Preamble, 13th paragraph.
[217] CBD 'Decision 10/33, Biodiversity and Climate Change' , para 8(o).
[218] UNFCCC 'Decision 1/CP.16, The Cancun Agreements' (15 March 2011) UN Doc FCCC/CP/2010/7/Add.1. ICH Dossier No. 156. Appendix 1.
[219] ibid, para 2.

c) State obligations to mitigate climate change shall be undertaken in a way that minimizes negative impacts and fosters positive impacts on biodiversity.

V. The United Nations Convention to Combat Desertification

274. At the time the United Nations Convention to Combat Desertification (UNCCD) was negotiated, the emphasis was on the effects of desertification and drought in Africa. However, the UNCCD is of global significance. Desertification, land degradation and drought takes more forms and affects all parts of the terrestrial world. Recent reports warn that land degradation currently impacts the well-being of at least 3.2 million people globally. This number is expected to increase in the coming decades.[220]

275. The UNCCD has 197 Parties, giving the treaty near universal membership.

276. Implementation of the UNCCD follows a bottom-up approach similar to the Paris Agreement and the CBD. It revolves around the preparation, publication and implementation of National Action Programmes by affected country parties.[221] Developed countries are under additional obligations to provide support and financing to affected developing countries to combat desertification, land degradation and drought.[222] The objectives and implementation of the UNCCD are now also guided by the 2018–2030 Strategic Framework adopted by the Conference of the Parties.[223]

277. The UNCCD explicitly refers to climate variations as a factor contributing to desertification and drought. It also refers to the UNFCCC. IUCN submits that State obligations under the UNCCD include protection of the climate system. This obligation is in turn informed by the obligations and standards for mitigation developed under the Paris Agreement.

A. The Relationship between Desertification, Land Degradation and Drought and the Protection of the Climate System

278. Article 2(1) of the UNCCD states that its core objective is "to combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification".

279. Desertification is defined broadly in Article 1(a) as "land degradation in arid, semi-arid, and dry sub-humid areas, resulting from various factors, including climatic variations and human activities". As the regime evolves, the Parties have come to adopt the catch-all phrase

[220] IPBES 2018, *Summary for Policymakers of the Assessment Report on Land Degradation and Restoration* [R Scholes, L Montanarella, A Brainich, N Barger, B ten Brink, M Cantele, B Erasmus, J Fisher, T Gardner, TG Holland, F Kohler, JS Kotiaho, G Von Maltitz, G Nangendo, R Pandit, J Parrotta, MD Potts, S Prince, M Sankaran and L Willemen (eds)], pp 10-11.
[221] 169 of the 196 country parties (86%) to the UNCCD have declared they are affected by desertification, land degradation and drought.
[222] UNCCD Articles 5, 6, 9 and 10.
[223] UNCCD 'Decision 7/COP.13, The Future Strategic Framework of the Convention' (23 October 2017) UN Doc No. ICCD/COP(13)/21/Add.1, Annex.

'desertification, land degradation and drought' to encompass the full range of the UNCCD's subject matter, which includes land degradation in humid climates as well as drylands.[224]

280. Desertification, land degeneration and drought relate to the geosphere and biosphere, which are inter-related parts of the climate system, as defined in Article 1(4) of the UNFCCC.

281. Elements of desertification, land degradation and drought occur in all parts of the world and can take many forms, such as soil erosion, deforestation, or freshwater degradation.[225] It has many negative environmental and socio-economic consequences, which operate at both local and global levels, including loss of biodiversity and ecosystem services, reduction in agricultural productivity, food and water insecurity, and human health impacts.[226]

282. As recognized in the UNCCD, desertification, land degradation and drought is caused by multiple and interacting causes relating to either human activities or the climate. Land management factors may include land use changes and unsustainable agriculture practices. Climate change exacerbates the rate and magnitude of desertification, land degradation and drought processes, by worsening the impact of almost all of its direct drivers and introducing new degradation patterns.[227] Therefore, mitigating against climate change is a key element in combatting desertification, land degradation and drought.

283. At the same time, the effects of desertification, land degradation and drought contribute to climate change, creating a feedback loop of effects. This occurs, for example, through decreased forest and vegetation cover, increased sand and dust storms, increased aridity of soils, and wildfires.[228] Therefore, combatting desertification, land degradation and drought is *itself* also a land-based climate change mitigation strategy.

284. The interlinked relationship between desertification, land degradation and drought and climate change was most recently highlighted and summarised in (a) the IPBES's 2018 Assessment Report on Land Degradation and Restoration[229] and (b) the IPCC's 2019 Special Report on Climate Change and Land[230]. More information on this linkage can be found in Appendix I to this statement for the Court's reference.

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[224] See e.g. 2018–2030 Strategic Framework, which uses the term throughout.
[225] IPBES 'Assessment Report on Land Degradation and Restoration' (2018) 11.
[226] Ibid, 10; IPCC 2019, Summary for Policymakers. In: *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems* [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.- O. Pörtner, D. C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds)], pp 3-36, 16. ICJ Dossier No 73.
[227] IPBES 'Assessment Report on Land Degradation and Restoration' (2018) 13; IPCC SPM 'Climate Change and Land' (2019) 17.
[228] IPCC SPM 'Climate Change and Land' (2019) 14.
[229] IPBES 'Assessment Report on Land Degradation and Restoration' (2018) 13; IPCC SPM 'Climate Change and Land' (2019).
[230] IPCC SPM 'Climate Change and Land' (2019).

B. UNCCD State Obligations to Protect the Climate System

285. Because of the inter-relation between desertification and land degradation processes and climate change, UNCCD State obligations are relevant to Question (a). IUCN submits that the UNCCD, by requiring States to combat desertification, land degradation and drought, also contains obligations to protect the climate system.

286. This understanding is established through the links between climate change and desertification, land degradation and drought, as expressly recognized in the UNCCD, which in turn informs the interpretation of the obligations.

287. As noted above, the UNCCD's definition of desertification recognises climatic variations as one of its causes. Moreover, the Preamble to the UNCCD recognizes "the relationship between desertification and other environmental problems of global dimension facing the international and national communities." It also calls on the Parties to bear in mind "the contribution that combating desertification can make to achieving the objectives of the United Nations Framework Convention on Climate Change, the Convention on Biological Diversity and other related environmental conventions". [231]

288. As explained in the VCLT, the Preamble forms part of the text of the treaty and is to be considered as part of the context in its interpretation.[232] The preambular paragraphs mentioned above clearly show that the Parties, at the time of adopting the UNCCD, recognized the importance of the linkages between addressing climate change and desertification, land degradation and drought.

289. This is further supported by the operative text of Article 8 of UNCCD. That provision concerns the UNCCD's relationship with other Conventions and it states:

> "The Parties shall encourage the coordination of activities carried out under this Convention and, if they are Parties to them, under other relevant international agreements, particularly the United Nations Framework Convention on Climate Change and the Convention on Biological Diversity, in order to derive maximum benefit from activities under each agreement while avoiding duplication of effort. The Parties shall encourage the conduct of joint programmes, particularly in the fields of research, training, systematic observation and information collection and exchange, to the extent that such activities may contribute to achieving the objectives of the agreements concerned."

290. As evident from the above, Article 8 specifically incorporates the UNFCCC as a relevant source of law, and recognizes that certain activities may simultaneously contribute towards the goals of both the UNFCCC and the UNCCD. [233] Such activities include combatting

[231] UNCCD, Preamble, 22th and 23th paragraphs, respectively.
[232] VCLT Articles 31(1) and (2).
[233] Building on Article 8, Strategic Objective 4 of the 2018-2030 Strategic Framework is "to generate global environmental benefits through effective implementation of the UNCCD", recognising that "addressing climate

desertification, land degradation and drought as a form of land-based climate mitigation, reducing GHG emissions and other climate mitigation strategies.

291. More generally, the UNCCD is framed within the principles of international cooperation and takes into account the needs and circumstances of affected developing countries.[234] Developed countries are obliged to actively support affected developing country parties in combatting desertification, land degradation and drought.[235] Given the cumulative nature of the causes of climate change, these principles and obligations can be interpreted to require all States, regardless of the extent to which they may be affected by desertification, land degradation and drought themselves, to consider and address their contributions to climate change as a driver of desertification, land degradation and drought on the global scale.

292. In this context, Article 2 states that the objective of the UNCCD to combat desertification, land degradation and drought should be achieved "through effective action at all levels, supported by international cooperation and partnership arrangements, in the framework of an integrated approach", and through "long-term integrated strategies that focus simultaneously, in affected areas, on improved productivity of land, and the rehabilitation, conservation and sustainable management of land and water resources".

293. Article 4 sets out the Parties' general obligations, which require adopting 'an integrated approach' addressing the "physical, biological and socio-economic aspects of the processes of desertification and drought".[236] The physical aspects referred to can be understood as including climate variations and change. Therefore, integrated approaches to combat desertification, land degradation and drought include strategies that contribute to climate change mitigation.

294. In terms of the standard of conduct expected of States, affected countries are obliged to "give due priority" to combatting desertification, land degradation and drought, and "allocate adequate resources in accordance with their circumstances and capabilities".[237]

295. The UNCCD also emphasises the role of scientific research in informing activities under the treaty. This can be seen from the preamble, which states that "strategies to combat desertification and mitigate the effects of drought will be most effective if they are based on sound systematic observation and rigorous scientific knowledge and if they are continuously reevaluated." Article 9 of UNCCD specifically provides that National Action Programmes should be updated on the basis of research results.

296. The UNCCD adopts a science-based concept of land degradation neutrality as a core strategic objective, whereby "the amount and quality of land resources necessary to support

change" is one of its impacts. Trends in carbon stocks above and below ground are to be used as an indicator for reporting on progress towards this objective. See 2018-2030 Strategic Framework paras 5 and 18.

[234] UNCCD Articles 3(b) and (d).

[235] ibid, Article 6(a).

[236] ibid, Article 4(a).

[237] ibid, Article 5(a).

ecosystem functions and services and enhance food security remain stable or increase within specified temporal and spatial scales and ecosystems".[238] Given the interlinked relationship between climate change and land degradation, achieving land degradation neutrality requires simultaneously addressing the causes of climate change through mitigation strategies.[239]

297. As demonstrated above, State obligations to combat desertification, land degradation and drought under the UNCCD include the duty to mitigate against climate change. This should be pursued through land-based mitigation strategies, and also climate change mitigation more broadly, including cutting GHG emissions.

298. The more specific content of this climate mitigation obligation is informed by the rules, principles and norms developed under the UNFCCC and the Paris Agreement.

299. The obligations and standards developed under the UNFCCC and Paris Agreement are incorporated, first, by virtue of the principle of systemic integration recognized in Article 31(3)(c) of the VCLT. Second, they are incorporated through the UNCCD's explicit reference to the UNFCCC in the Preamble and Article 8 as a relevant source of law, obliging the Parties to derive 'maximum benefit' from aligned activities under each treaty, as discussed above.

300. As outlined in Chapter 5 above, while the Paris Agreement does set some obligations of result (e.g. to prepare and submit NDCs and provide information to track progress[240]), it also comprises several normative components that establish particular standards of conduct (i.e. due diligence requirements) with an important legal bearing on the UNCCD duties.

301. Most significantly, the Paris Agreement contains a near universal, science-based pathway to address the threat of climate change, namely the global temperature threshold:

> "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."[241]

302. Accordingly, IUCN submits that this threshold must inform the interpretation of obligations contained in the UNCCD, as warming beyond 1.5°C would result in dangerous anthropogenic interference with the climate system, which in turn contributes to desertification, land degradation and drought. This will necessitate rapid and deep emissions reductions, that includes cutting carbon dioxide emissions by 45% by 2030 relative to 2019 levels and reaching net zero around mid-century.[242]

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[238] UNCCD 'Decision 3/COP.12, Integration of the Sustainable Development Goals and Targets into the Implementation of the United Nations Convention to Combat Desertification and the Intergovernmental Working Group Report on Land Degradation Neutrality' (23 October 2015) UN Doc ICCD/COP(12)/20/Add.1, para 2; UNCCD 'Decision 18/COP.13, Follow Up on the Work Programme of the Science-Policy Interface for the Biennium 2016-2017' (14 September 2017) UN Doc ICCD/COP(13)/21/Add.1, para 1.
[239] IPCC SPM 'Climate Change and Land' (2019) 29.
[240] Paris Agreement Articles 4(2) and 13(7).
[241] Ibid, Article 2(1)(a).
[242] IPCC SPM '1.5 Degrees Warming' (2018) 3-24.

303. In addition to this global temperature goal, another important normative layer of the Paris Agreement concerns the requirement on each party to submit an NDC that is representative of its "highest possible ambition, reflecting common but differentiated responsibilities and respective capabilities, in the light of different national circumstances".[243] This reflects another articulation of a due diligence standard in the Paris Agreement, specifically, that each Party will utilize its 'best efforts' and all appropriate measures. In answering the first question presented to the Court in relation to State obligations to protect the climate system, IUCN submits that the obligations under the UNCCD to combat desertification, land degradation and drought through climate change mitigation must be informed by these due diligence standards of conduct.

[243] Paris Agreement Article 4(3).

CHAPTER 7: CUSTOMARY INTERNATIONAL LAW STATE OBLIGATIONS TO PROTECT THE CLIMATE SYSTEM

I. Introduction and Summary

304. The Court is asked to identify State obligations to protect the climate system from GHG emissions for States and for present and future generations. In this Chapter, IUCN discusses those obligations as found in customary international law.

305. In this Chapter, IUCN makes the following submissions:

a) States are obliged under customary international law to prevent significant harm to the climate system.
b) Harm to the climate system is considered as significant if anthropogenic changes in atmospheric GHG concentrations cause the global average temperature to increase beyond 1.5°C above pre-industrial levels.
c) The obligation to prevent significant harm to the climate system is a due diligence obligation.
d) Given the urgency of addressing climate change and the magnitude of risk, States must act with a significantly heightened level of due diligence. Due diligence requires States to take all appropriate and necessary measures in the light of best available science and in proportion to the risk at stake to prevent significant harm.
e) Due diligence is informed by the 1.5°C threshold and by other obligations and standards contained in the Paris Agreement.
f) Acting with due diligence includes a duty on States to cooperate with each other and to carry out environmental impact assessment(s) for planned activities that may cause significant harm to the climate system.
g) States are obliged to regulate the conduct of private actors by putting in place laws, policies and regulations and to enforce them with the necessary vigilance.
h) Whether States' acts and/or omissions cause significant harm at temperature increases below 1.5°C needs to be assessed on a case-by-case basis.
i) Several State obligations to protect the climate system, which are contained in treaties discussed in this statement, reflect customary international law: (i) to protect and preserve the marine environment and to take all measures necessary to prevent, reduce and control pollution of the marine environment from any source set out in Articles 192 and 194 of UNCLOS[244]; and (ii) to take measures aimed at reducing their GHG emissions, for the purpose of safeguarding the enjoyment of rights and complying with their obligations under international human rights law.[245]

[244] See Chapter 6, Section II of the statement.
[245] See Chapter 8 and Appendix V of the present statement. See also German Constitutional Court, *Neubauer and Others v Germany*, Judgment of the First Senate of 24 March 2021 – 1 BvR 2656/18 -, N. 1-270, para 117, acknowledging that the allowance of "general amounts of CO_2 to be emitted in the near term" will come at greater costs and severe impairment of freedoms at short notice.

306. This Chapter is divided in six Sections. After this introductory section, this Chapter discusses the customary international law obligation to prevent significant harm and explains how it applies to the protection of the climate system (Section II). We then explain what constitutes significant harm in the context of protecting the climate system and discuss the issue of collective contribution (Section III). The Chapter then explains how the customary international law obligation to prevent significant harm is a due diligence obligation and sets out how the standards contained in the Paris Agreement inform the due diligence obligation (Section IV). We then discuss the procedural measures included in the due diligence obligation to prevent significant harm to the climate system (Section V). The Chapter concludes with IUCN's observations regarding the *erga omnes* nature of the customary international law obligation to cooperate in order to prevent significant harm to the climate system (Section VI).

II. Customary International Law Obligation to Prevent Significant Harm and its Application to the Protection of the Climate System

307. This section explains that the obligation to prevent significant harm to the environment as a rule of customary international law ("no-harm rule") applies to the protection of the climate system.

308. As the Court has recognized on many occasions, States are obliged under customary international law to prevent significant harm to the environment of other States and areas beyond national jurisdiction.[246] Further, States' sovereign right to exploit their own resources is coupled with the responsibility and obligation not to cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.[247]

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[246] *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion of 8 July 1996, [1996] ICJ Reports 226, para 29: "The 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."; *Gabčikovo-Nagymaros Project* (*Hungary v Slovakia*) Judgment of 25 September 1997 [1997] ICJ Rep 7, para 140; *Pulp Mills on the River Uruguay* (*Argentina v Uruguay*) Judgment of 20 April 2010 [2010] ICJ Rep 14, para 101; *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v Nicaragua) and Construction of a Road in Costa Rica along the San Juan River* (*Nicaragua v Costa Rica*), Judgment of 16 December 2015 [2015] ICJ Rep 665, para 118. See also *Arbitration regarding the Iron Rhine ('Ijzeren Rijn') Railway between the Kingdom of Belgium and the Kingdom of the Netherlands* Award of 24 May 2005 [2005] PCA Case No 2003-02 27 RIAA 35, para 222. *Indus Waters Kishenganga Arbitration* (Pakistan v India) Partial Award of 18 February 2013 [2013], para 451 and Final Award, 20 December 2013 [2013], para 112.

[247] Principle 21 of the 1972 Stockholm Declaration of the United Nations Conference on the Human Environment UN Doc A/CONF/48/14/REV1. ICJ Dossier No. 136. Principle 2 of the Rio Declaration restated Principle 21, adding reference to States' right to pursue their own developmental policies. Declaration of the UN Conference on Environment and Development UN Doc A/CONF/151/26/Rev1. ICJ Dossier No. 137. Principle 21 also served as the basis for Article 30 of the Charter of Economic Rights and Duties of States. See likewise Article 3 of the Convention on Biological Diversity 1992. In the UNFCCC's 8th preambular paragraph the obligation becomes an affirmative duty of protection: "Recalling also 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," See similarly Article 193 of UNCLOS.

309. This specific obligation to prevent significant harm to the environment evolved out of the 'no harm rule' established in *Corfu Channel*.[248] In that case, the Court acknowledged "every State's obligation not to allow knowingly its territory to be used for acts contrary to the rights of other States".[249]

310. Protecting the rights and interests of other States, and of present and future generations, requires States to regulate and control activities within their territory and under their jurisdiction or effective control.

311. The obligation to prevent significant harm is triggered by the existence of a risk of causing significant harm, rather than harm itself.[250] Even if significant harm cannot be totally prevented, a State may violate this obligation if it not acted with the necessary due diligence, which requires it to "exert its best possible efforts to *minimise the risk*".[251]

312. IUCN submits that States' obligation to prevent significant harm to the environment of other States and areas beyond national jurisdiction applies with respect to the climate system because of the risk of harm to the climate system and to the atmosphere *per se,* and the risk of significant harm for both present and future generations.[252]

313. In the UNFCCC, States recognized the applicability of customary international law on transboundary harm to areas beyond national jurisdiction in respect of climate change.[253] The obligation to prevent significant harm to the Earth's atmosphere is also referred to in Guideline 3 of the 2021 International Law Commission's (ILC) Guidelines on the Protection of the Atmosphere, which states:

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[248] *Corfu Channel Case (UK v Albania)* (Merits) [1949] ICJ Rep 4. The Court recognised in *Pulp Mills* that the principle of prevention as a customary international law rule has its origins in the due diligence that is required of a State in its territory. *Pulp Mills* para 101. See also *Trail Smelter* A*rbitration, Decisions of 16 April 1938 and 11 March 1941*, vol. III, UNRIAA, 1905-1982, 1965.

[249] *Corfu Channel (UK v Albania)*, Judgment on the Merits, 9 April 1949, [1949] ICJ Rep, 4, 22 in line with the maxim "use your own in such a way that you do not injure that of others": *sic utere tuo ut alienum non laedas*. The no harm rule is rooted in States' sovereign equality as equal members of the international community; *Island of Palmas*, (Netherlands v US) (Award) [1928] 2 RIAA 829, 839; Declaration on the Principles of International Law concerning Friendly Relations and Co-operation among States in accordance with the Charter of the United Nations (General Assembly resolution 2625 (XXV)) Preamble and principle 5.

[250] As in the ILC Prevention Articles, Article 3.

[251] ILC, "Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, with commentaries" para 7, emphasis added.

[252] Science makes it clear that risks of climate change "far exceed the threshold of significant harm" L Rajamani 'Due Diligence in International Climate Change Law' in H Krieger, A Peters and L Kreuzer (eds), *Due Diligence in the International Legal Order* (Oxford University Press 2020) 178. States reflected the understanding that anthropogenic atmospheric GHG concentration could be responsible for significant harm in the UNFCCC, contemplating climate change's 'adverse effects', (UNFCCC, Preambular paras 1, 2, 19, 21; and Articles 1(1), 3(1) (2) and (3), 4(1)(f), 4(4) and4(8)). The Convention defines as adverse effects "significant deleterious effects on the composition, resilience or productivity of natural and managed ecosystems or on the operation of socio-economic systems or on human health and welfare" UNFCCC Article 1(1), emphasis added. The Paris Agreement likewise refers to climate change's adverse effects. Paris Agreement, Preamble paras 5 and 9; Article 2(1)(b); Article 6(6); Article 7(6); Article 8(1) and (3); Article 9(4); Article 11(1).

[253] See UNFCCC, 8th preambular paragraph.

> "States have the obligation to protect the atmosphere by exercising due diligence in taking appropriate measures, in accordance with applicable rules of international law, to prevent, reduce or control atmospheric pollution and atmospheric degradation."[254]

314. In this context, harm includes direct harm to the climate system in the form of anthropogenic changes in concentration levels of GHGs in the atmosphere causing global average temperature to increase. It also includes harm to the climate system in the form of harm caused to the hydrosphere, geosphere and biosphere.

315. Much of the direct harm to the atmosphere occurs in areas beyond national jurisdiction: in the atmosphere above the high seas (60 per cent of the global atmospheric cover) or at high altitudes (above 100 km). The atmosphere below this level is considered to be part of the airspace and therefore falls under the national jurisdiction of the subjacent state. [255]

316. The accumulation of GHGs in the atmosphere changes and harms the climate system, driving, *inter alia,* the rise in global average temperatures and of sea levels, ocean warming, deoxigenation and acidification – the effects and (compounding) risks of which are unequally distributed amongst communities. Projected changes harming the climate system produce transboundary economic impacts, and risks to water, energy and food systems, as well as widespread, pervasive, and irreversible losses in terrestrial, freshwater, coastal, and open marine ecosystems, and species extinctions.[256]

317. Harm to the climate system will generate increasing damage to the territory of States, particularly SIDS and the Least Developed Countries, and to areas beyond national jurisdiction in the form of adverse changes, disruption or harm to the natural environment, with grave impacts on human life and natural, cultural and economic resources.

318. We now turn to discuss when harm to the climate system, and subsequent damage to territories and people, can be considered significant and, thus, capable of triggering the application of the *no harm* customary international law obligation discussed above.

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[254] UNGA A/RES/76/112, *Co-operation between States in the field of the environment*, 17 December 2021. The UN General Assembly observed that the subject of protection of the atmosphere is of major importance in international relations when it took note of the Guidelines in 2021, UN General Assembly in Resolution 26/112 (9 December 2021).

[255] S Hobe, 'Airspace' (Max Planck Encyclopedia of Public International Law) [2019], paras 2 and 13.

[256] See Appendix I: Anthropogenic Climate Change in this statement. See also IPCC AR6 SPM.

III. Significant Harm to the Climate System and the 1.5°C Threshold

A. Determination of Significant Harm

319. The Court has articulated the obligation to prevent harm to the environment of other States or areas beyond national jurisdiction by reference to the significance of harm,[257] and has consistently applied a fact-sensitive assessment of what constitutes significant harm.[258]

320. In its Articles on Prevention of Transboundary Harm from Hazardous Activities the ILC has defined "[r]isk of causing significant transboundary harm" as including "risks taking the form of a high probability of causing significant transboundary harm" and taking the form of "a low probability of causing disastrous transboundary harm;…".[259]

321. The ILC has also observed that it is when impacts on other States reach the threshold of significance that they go beyond the tolerable.[260] The ILC adds that:

    (i) significant harm means harm that is more than "detectable", but which need not be at the level of "serious" or "substantial";[261]

    (ii) whether there is significant harm is to be determined on a case-by-case basis, involving more factual considerations than legal determination,[262] taking into account the circumstances of a particular case and the period in which the determination is made;[263]

    (iii) to be significant, the harm must lead to a real detrimental effect on matters that must be susceptible of being measured by factual and objective standards;[264]

    (iv) at a certain point in time, due to the prevailing scientific understanding, harm might not be considered significant, but, as perceptions and knowledge evolve, what was once viewed as insignificant could later be recognised as significant.

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[257] *Pulp Mills on the River Uruguay* (*Argentina v Uruguay*) Judgment of 20 April 2010 [2010] ICJ Rep 14, para 101, above. See also, *Indus Waters Kishenganga Arbitration* (Pakistan v India) Partial Award of 18 February 2013 [2013], para 451 and Final Award, 20 December 2013 [2013], para 112.
[258] *See Dispute over the Status and Use of the Waters of the Silala (Chile v. Bolivia), Judgment, I.C.J. Reports 2022, p. 614,* para. 127; *Certain Activities/Construction of a Road [full citation needed],* p. 707, para. 105; p. 731, para. 194. *Costa Rica/Nicaragua,* the Court noted that, in assessing whether there was risk of significant harm, it would "have regard to the nature and magnitude of the project and the context in which it was to be carried out." *Costa Rica/Nicaragua*, para 155.
[259] International Law Commission, 'Prevention of Transboundary Harm from Hazardous Activities', in Yearbook of the International Law Commission (United Nations Yearbook of the International Law Commission, Volume II) (2001), ch 9, Article 2(a).
[260] ibid, Commentary to Article 2, paragraph 5.
[261] Ibid, Commentary (4) to Article 2.
[262] ibid.
[263] ibid, Commentary (7).
[264] ibid, Commentary (4).

322. The normal conduct of various beneficial development and other activities will result in some transboundary harm. The emphasis is on harm that is serious enough to have far-reaching consequences for the environment and human well-being. The specific criteria for determining whether harm is 'significant' may vary according to the context, but may include factors such as the magnitude and duration of the harm, the vulnerability of the affected ecosystem or population, and the potential for irreversibility of harm.[265]

323. When applying these general principles to determine the significance of harm in relation to climate change, IUCN submits that a threshold for significant harm has already been established by the level of "dangerous interference with the climate system", according to UNFCCC Article 2. This threshold – as specified in the Paris Agreement - is the level of anthropogenic GHG emissions that will lead to average global temperature increase above 1.5°C relative to pre-industrial mean temperature levels, discussed in Chapters 4 and 5 above. IUCN submits that warming beyond 1.5°C amounts to such dangerous interference and constitutes significant harm to the climate system.

324. As explained above, direct harm to the climate system is significant when anthropogenic changes in atmospheric GHG concentrations cause the global average temperature to increase beyond 1.5°C degrees above pre-industrial levels. This temperature increase is predicted, based on the best available science, to be reached within a few years from now, unless States take prompt and effective action to reduce atmospheric GHG concentration.

325. Overshooting 1.5°C presents significant risks for natural and human systems. Limiting warming to 1.5°C instead of 2°C could result in around 240 million fewer people frequently exposed to extreme heatwaves, and 65 million fewer people exposed to exceptional heatwaves, and irreversible loss and damage, experienced particularly by low resilience, delicate ecosystems, "such as polar, mountain and coastal ecosystems".[266] Thus, "worldwide climate resilient development action is more urgent than previously assessed in [the IPCC's Fifth Assessment Report]"[267] and "deep, rapid and sustained mitigation" is required for "reduc[ing] losses and damages related to climate change for humans and ecosystems", with adaptation limits being reached.[268]

326. As explained above,[269] the higher the temperature increase, the higher the risk of significant harm. In fact, at 1.1°C of warming, the climate system will no longer be safe for everyone,

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[265] See, e.g., NYS Dept. of Environmental Conservation, *Part 3 - how to determine significance*. Available at: https://www.dec.ny.gov/permits/91450.html. See also Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction A/CONF.232/2023/4 19 June 2023, Article 30(2) which includes a non-exhaustive list of factors that indicate an activity will have more than a minor or transitory effect.

[266] IPCC AR6 SYR, p. 23. See Appendix I: Anthropogenic Climate Change in this statement.

[267] IPCC AR6 SYR, p 24.

[268] Ibid, p 25-6. "To accelerate climate action, the adverse consequences of these changes can be moderated by fiscal, financial, institutional and regulatory reforms and by integrating climate actions with macroeconomic policies through (i) economy-wide packages, consistent with national circumstances, supporting sustainable low-emission growth paths; (ii) climate resilient safety nets and social protection; and (iii) improved access to finance for low-emissions infrastructure and technologies, especially in developing countries."

[269] Chapter 4 and Appendix I: Anthropogenic Climate Change of this statement.

everywhere. Damage that may constitute severe harm is occurring in specific instances, even at a temperature increase of below 1.5°C.

327. In addition to the 1.5°C temperature threshold, IUCN submits that there are three further considerations that need to be taken into account when determining the significance of harm to the climate system. These are a) intragenerational equity ("differential impacts on the more vulnerable, and related equity concerns"); b) the temporal dimension of climate change; and c) the principle of intergenerational equity.

328. First, the same action or omission can produce different effects and levels of harm for those affected, depending on their particular vulnerability and exposure. This raises equity concerns. SIDS, which account for "much lower per capita emissions … than the global average"[270], and are particularly vulnerable to the adverse effects of climate change, may suffer significant harm even where other States do not.

329. Indeed, the IPCC has shown that "[r]egions and people with considerable development constraints have high vulnerability to climatic hazards … with the largest adverse impacts observed in many locations and/or communities in Africa, Asia, Central and South America, LDCs, Small Islands and the Arctic, and globally for Indigenous Peoples, small-scale food producers and low-income households".[271]

330. In the context of agricultural productivity, climate change has caused "negative impacts mainly in mid and low latitude regions but positive impacts in some high latitude regions".[272] In a similar vein, SIDS' cities, settlements, buildings and infrastructural assets, as well as their corals and "significant levels of global terrestrial species diversity and endemism" have been under increasing pressure, affected by sea-level rise, heavy precipitation events, flooding, storm surges and tropical cyclones – the latter with intensity and intensification rates growing globally over the past 40 years, but severely impacting small islands. Moreover, growing trends in droughts, particularly in the Caribbean and as part of "dynamic climate impacts" place small islands' freshwater systems "among the most threatened on the planet".[273]

331. Second, the temporal dimension of climate change is highly relevant when considering the significance of harm.[274] As explained in Chapter 4, climate change is not a singular event, but a prolonged process where changes in weather patterns occur over years or decades,

[270] IPCC AR6 SYR p 5, Appendix I: Anthropogenic Climate Change
[271] IPCC AR6 SYR.
[272] ibid, 6.
[273] IPCC, 2022: Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press. Cambridge University Press, Cambridge, UK and New York, NY, USA, 3056 pp., doi:10.1017/9781009325844, p 2045. See also Appendix I: Anthropogenic Climate Change.
[274] D Shindell et al, 'Temporal and Spatial Distribution of Health, Labor, and Crop Benefits of Climate Change Mitigation in the United States' (2021) 118 Proceedings of the National Academy of Sciences.

leading to present, future and developing harm.[275] Initially minor or moderate damage can accumulate over time, leading to significant or catastrophic consequences. This highlights the importance of assessing the cumulative effects.[276] Similarly, some apparently non-significant damage may have long-term consequences that are not immediately visible, but can lead to severe impacts over time, making the temporal assessment of climate change effects crucial for understanding delayed or enduring impacts.[277] Thus, it is not correct to assume that, just because at the present moment we do not see or feel the immediate consequences of the harm caused by anthropogenic changes to atmospheric GHG concentrations, they are not 'significant' enough exceed the threshold of harm. As highlighted by the German Constitutional Court, despite certain harm and damage only crystalizing in the future, "irreversible causal chains are already set in motion now that will lead to those harms, if no action is taken".[278]

332. Third, in assessing climate-related damage, intergenerational equity is a crucial factor. The principle of intergenerational equity establishes that the present generation holds the Earth on trust for future generations[279], emphasizing the need to consider both immediate and long-term impacts[280] when formulating and implementing current climate policies.[281]

333. In particular, a forward-looking assessment should be adopted, rather than just focusing on present conditions. Certain climate actions, such as emissions reductions or adaptation measures, may entail high upfront costs for the current generation. However, these actions are not only justified, but required by the principle of intergenerational equity, if they prevent severe and irreversible damage to the climate system that would otherwise compromise the well-being of future generations.

334. The principle of intergenerational equity is reflected in the inclusion of long-term goals in the Paris Agreement, including the pathway to reach them, i.e. achieving a balance between anthropogenic emissions and removals by sinks of greenhouse gases in the second half of the century[282]. Similarly, the Global Stocktake, which is designed to assess collective

[275] United Nations, *What is climate change?*. Available at: https://www.un.org/en/climatechange/what-is-climate-change.World Bank, *What is Climate Change ?,* Climate Change Knowledge Portal. Available at: https://climateknowledgeportal.worldbank.org/overview#:~:text=Climate%2C%20refers%20to%20the%20long,example%2C%20warmer%2C%20wetter%2C%20or.

[276] J Rising et al, 'The Missing Risks of Climate Change' (2022) 610 Nature 643.

[277] ibid..

[278] German Constitutional Court, *Neubauer and Others v Germany*, Judgment of the First Senate of 24 March 2021 – 1 BvR 2656/18 -, N. 1-270,

[279] The 1972 Stockholm Declaration on the Human Environment expressly refers to the safeguarding of the interests of present and future generations in Principles 1 and 2, 11 and 18. See also the 1982 United Nations World Charter for Nature, UNGA Res 37/7, 37 UNGAOR Suppl (No 51) 17, UN Doc A/37/51 (1982) and Principles 3 and 4 of the Rio Declaration 1992,. See further UN Declaration on the Rights of Indigenous Peoples, Article 25, and Article 13, as well as the Earth Charter of 2000 as well as in The Hague Principles for a Universal Declaration on Responsibilities for Human Rights and Earth Trusteeship in 2018, both launched by civil society.

[280] The 1974 Charter on Economic Rights and Duties of States, Article 30, provides that the protection, preservation, and improvement of the environment for the benefit of present and future generations is the responsibility of all states.

[281] Article 3.1 UNFCCC. See *Urgenda Foundation v State of the Netherlands*, para 5.6.2.

[282] Paris Agreement, Article 4(1).

progress at regular 5-year intervals, ensures that the responsibility for climate action is continually re-evaluated, on the basis of equity, which arguably includes equity towards future generations.[283]

335. Therefore, IUCN submits that, when evaluating the severity of environmental damage for the purpose of determining whether there is significant harm, the Court should take into account the consequences of present actions and/or inaction for the future of present generations and also future generations. The causal chains are already in motion.

336. In sum, there is a recognised threshold of 1.5°C temperature increase, which was based on political and scientific consensus. Beyond this threshold, the situation *ipso facto* constitutes significant harm to the climate system. The Court can base its analysis of significant harm on this threshold, while recognizing that the threshold could change change in the future, if, for instance, significant harm exists at a lower temperature, or if circumstances otherwise change.[284]

B. Collective Contribution to the Harm/Risk of Harm

337. The risk of significant harm to the climate system is a problem of collective causation in the sense that many actors have contributed to it, over a long period of time, through their actions and/or omissions. This makes it difficult to attribute significant harm or the risk thereof to the climate system to individual States.[285] While the activity of a single State in isolation may not cause interference, taken together, States' collective conduct contributes to the risk of significant harm to the climate system and other parts of the environment.

338. IUCN submits that a traditional 'but for' or *conditio sine qua non* causation test would not be appropriate in the climate change context.[286] Instead, each state should be held accountable for its contribution to climate change. In this sense it is irrelevant that a State's contribution to global emissions, when considered in isolation, did not lead and would not have led to climate change and interference with the climate system.[287] What matters is that the contribution by a State increases the risk of harm to the climate system. In this context the fact matters that every tonne of GHG emissions increases global temperature rise.

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[283] ibid, Article 14.

[284] See German Constitutional Court, *Neubauer and Others v Germany*, Judgment of the First Senate of 24 March 2021 – 1 BvR 2656/18 -, N. 1-270.

[285] J Setzer and C Higham (2022) Global Trends in Climate Change Litigation: 2022 Snapshot. London: Grantham Research Institute on Climate Change and the Environment and Centre for Climate Change Economics and Policy, London School of Economics and Political Science. See also, N Nedeski and A Nollkaemper, 'A Guide to Tackling the Collective Causation Problem in International Climate Change Litigation' (EJIL: Talk!, 15 December 2022) https://www.ejiltalk.org/a-guide-to-tackling-the-collective-causation-problem-in-international-climate-change-litigation.

[286] N Nedeski and A Nollkaemper, 'A Guide to Tackling the Collective Causation Problem in International Climate Change Litigation' (EJIL: Talk!, 15 December 2022) https://www.ejiltalk.org/a-guide-to-tackling-the-collective-causation-problem-in-international-climate-change-litigation/.

[287] N Nedeski and A Nollkaemper, 'A Guide to Tackling the Collective Causation Problem in International Climate Change Litigation' (EJIL: Talk!, 15 December 2022) https://www.ejiltalk.org/a-guide-to-tackling-the-collective-causation-problem-in-international-climate-change-litigation/ accessed 6 December 2023.

339. This approach does not require proving a direct causal link between a State's actions and specific harm under the 'but for' test.[288] Rather, causation is established if a State was aware of the risk of harm and did not take preventive measures with the due diligence required.[289]

340. Although climate change is a "genuinely global phenomenon" that cannot come to a stop by the conduct of a single State, individual contributions matter. Mitigating harm to the climate system, through the actions of individual States, is neither "impossible [n]or superfluous"[290] – quite the opposite, it is imperative on individual States by virtue of the customary international law obligation of harm prevention. In other words, "all countries will have to do the necessary"[291] and "no reduction is negligible".[292]

341. IUCN submits that in determining significant harm or the risk thereof, the focus should be on whether the State is *aware* of the potential harm from its actions, in the light of the best available science, and whether it has acted with the due diligence required – as we will address now to take preventive measures to mitigate and prevent climate change. The collective effort of multiple States, each addressing their contributions to the increase of risk of significant harm, is vital.

IV. Due Diligence in Preventing Significant Harm

342. Once the risk of significant harm to the climate system has been established, the next question is what the obligation to prevent significant harm to the climate system comprises.

343. IUCN submits that in order for States to comply with this obligation, they need to act with due diligence. In this section, we will explain how general international law, and the Court itself, has established what due diligence entails, and then discuss how normative benchmarks, including those contained in the Paris Agreement, assist in unpacking and clarifying what constitutes due diligence in the context of protecting the climate system.

[288] ibid.
[289] ibid. See Section B: Acting in relation to the risk at stake, in this chapter.
[290] *Neubauer v Germany*, para 99.
[291] Urgenda Foundation v State of the Netherlands, paras 5.7.4
[292] ibid, para 5.7.9.

344. The obligation to prevent significant transboundary harm requires States to act with due diligence, which requires all necessary[293] and appropriate[294] measures to prevent such harm.[295]

345. The Court confirmed this understanding of due diligence in *Pulp Mills*:

> "A State is thus obliged to use *all the means at its disposal* in order to avoid activities which take place in its territory, or in any area under its jurisdiction, causing significant damage to the environment of another State." [296]

346. The Seabed Disputes Chamber of ITLOS has further explained that, in order to act with due diligence, a State must deploy adequate means, exercise best possible efforts, and do its utmost.[297]

347. The 'necessary and appropriate' measures required will vary from situation to situation. In other words, due diligence is context-specific. The jurisprudence has established three key factors to be considered when assessing whether the measures adopted by a State comply with its due diligence obligations: (A) the risk at stake (and knowledge or foreseeability thereof); (B) the need to take all necessary and appropriate measures or deploy best possible effort[298] to prevent significant harm from occurring, in relation to which the Paris Agreement sets climate-specific benchmarks; and (B) the measures need to be effectively implemented and enforced with a certain level of vigilance.[299]

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[293] *Request for an Advisory Opinion Submitted by the Sub-Regional Fisheries Commission* (Advisory Opinion of 2 April 2014) ITLOS Reports 2015 4 paragraphs 124, 129, 134-136, 219 (3),*Case concerning Pulp Mills* the criterion of necessity was already present in Articles 35 and 36 of the Statute of the River Uruguay. See also Institut de Droit International 1997 Procedures for the Adoption and Implementation of Rules in the Field of Environment Article 9(1): "States, regional and local governments and juridically natural persons shall, to the extent possible, ensure that their activities do not cause any damage to the environment that could significantly diminish the enjoyment of the latter by other persons. In this respect, they shall take all necessary care."

[294] *Case concerning Pulp Mills* para 197; *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area* (Advisory Opinion of 1 February 2011) para. 242. See also at para 230 and 228.

[295] As reflected in Article 3 of the ILC Prevention Articles, according to which "The State of origin shall take *all appropriate measures* to prevent significant transboundary harm or at any event to minimize the risk thereof." Emphasis added.

[296] Pulp Mills paragraph 101, emphasis added; see also *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v Nicaragua) and Construction of a Road in Costa Rica along the San Juan River* (*Nicaragua v Costa Rica*) Judgment of 16 December 2015 [2015] ICJ Rep 665 para 118.

[297] International Tribunal for the Law of the Sea (2011) *Responsibilities and obligations of States sponsoring persons and entities with respect to activities in the Area (Request for Advisory Opinion submitted to the Seabed Disputes Chamber)* para. 110.; *Request for an Advisory Opinion Submitted by the Sub-Regional Fisheries Commission* (Advisory Opinion of 2 April 2014) paragraphs 128-129.

[298] *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area* (Advisory Opinion of 1 February 2011) para 110

[299] ibid*,* para 114

A. Acting in Relation to the Risk at Stake

348. The higher the risk, the more is required to satisfy the requirements of due diligence. The best available scientific information on the risk, appropriate co-operative processes, and environmental impact assessments will assist States in gauging the actions required.[300]

349. Acting with due diligence requires a State to act in proportion to the risk at stake, taking into account the precautionary principle, based on its actual or constructive knowledge of that risk in the light of the value of the interest protected, and to adopt all necessary and appropriate measures.[301]

350. Acting with precaution is an integral part of due diligence under customary international law.[302] Notwithstanding that the science on climate change has reached levels of certainty mandating action, States continue to be bound, through the due diligence standard, to give effect to the precautionary principle and apply the precautionary approach where applicable. The Paris Agreement preamble confirms that the Parties intended that the precautionary principle continues to apply as one of the principles recognized in the UNFCCC.[303] The Court observed in the *Pulp Mills* case that the precautionary principle may be relevant in interpreting and applying other applicable international law.[304]

351. States must apply the precautionary principle as part of the customary international law obligations to act with due diligence, as well as under the UNFCCC and the Paris Agreement. This may be relevant, for example, if there are circumstances where the effectiveness or sufficiency of mitigation action is uncertain, or if there is uncertainty as to the nature, timing, geographical location, cumulative impact or extent of harm to the climate system and the environment, or whether a certain activity will cause harm. The precautionary principle is

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[300] Due diligence will be diligence that is "commensurate with the emergency or with the magnitude of the results of negligence". *Alabama claims of the United States of America against Great Britain Award rendered on 14 September 1872 by the tribunal of arbitration established by Article I of the Treaty of Washington of 8 May 1871*, RIAA VOLUME XXIX,, above, page 495. "The standard of due diligence, against which the conduct of the state of origin should be examined, is that which is generally considered to be appropriate and proportional to the degree of risk of transboundary harm in the particular instance", ILC, "Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, with commentaries", commentary to Article 3, para 11.

[301] *Corfu Channel* case, Judgment of April 9th, 1949 : I.C. J. Reports 1949, p 4

[302] As the Seabed Disputes Chamber observed, the due diligence obligation: "applies in situations where scientific evidence concerning the scope and potential negative impact of the activity in question is insufficient but where there are plausible indications of potential risks. A sponsoring State would not meet its obligation of due diligence if it disregarded those risks. Such disregard would amount to a failure to comply with the precautionary approach". *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area* (Advisory Opinion of 1 February 2011) para 131, citing the Tribunal's Order of 27 August 1999 in the *Southern Bluefin Tuna Cases (New Zealand v. Japan; Australia v. Japan)* (ITLOS Reports 1999, p. 274, at paragraph 77, see also para. 80.

[303] Article 3(3). See also Paris Agreement, 3rd prembular paragraph.

[304] *Pulp Mills* para 164, in that case, the Statute of the River Uruguay. See also *Gabcikovo-Nagymaros Project (Hungary/Slovakia)* (Judgment) [1997] ICJ Rep 7 para 112.

also important in relation to the risks of employing novel technologies in attempting to mitigate climate change.[305]

352. Customary international law may impose higher demands on States' due diligence over time,[306] as new knowledge about risks emerges and when risk levels increase. As the ITLOS Deep Seabed Disputes Chamber held:

> "due diligence" is a variable concept. It may change over time as measures considered sufficiently diligent at a certain moment may become not diligent enough in light, for instance, of new scientific or technological knowledge. It may also change in relation to the risks involved in the activity…"[307]

353. With respect to anthropogenic climate change, the significance of the harm being caused increases with every increment in atmospheric GHG concentration.[308] The effort required of States under customary international law to prevent significant harm rises accordingly. Reflecting the high level of severe risk that climate change has on the planet, its people and nature, States need to act with a *heightened level* of due diligence.

354. An individual State's specific obligations will be context-dependent. A State with higher levels of responsibility for and/or capabilities to address and mitigate climate change has a *heightened level of due diligence* compared to States with less responsibility and/or capabilities.

355. In this context, 'knowledge' and 'foreseeability of risk' are important elements to determine the extent to which a State has acted with due diligence in carrying out its obligation to prevent significant harm to the environment. Knowledge and foreseeability of risk are particularly relevant in the context of due diligence in protecting the climate system. At the latest with the publication of the First Assessment Report by the IPCC in 1990, the risk of climate change and its adverse impacts were known or could have been known and were foreseeable for all states.

356. States must alsotake into account their obligations to monitor their actions and respond to increasing or changing risk levels, applying the best available science, including relevant advances in scientific and technical knowledge, as well as the precautionary principle,[309] to ensure that they are taking all necessary and appropriate measures. Monitoring helps to

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[305] See Appendix II on CDR.
[306] A Boyle, C Redgwell and P Birnie, *Birnie, Boyle and Redgwell's International Law and the Environment* (4th ed, Oxford University Press, 2021) 160; as in the ILC Prevention Articles, see commentary to Article 2, para 7.
[307] *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area* (Advisory Opinion of 1 February 2011) ITLOS Reports 2011 10 para 117. Also ITLOS Advisory Opinion Sub Regional Fisheries Commission para 32. See also IACHR Advisory Opinion Oc-23/17 of November 15, 2017, The Environment and Human Rights, para 142
[308] IPCC AR6 SYN "Technical dialogue of the first global stocktake: Synthesis report by the co-facilitators on the technical dialogue" 8 September 2023 FCCC/SB/2023/9 see Chapter 4 in this statement and Appendix I: Anthropogenic Climate Change.
[309] Priciple 15, Rio Declaration. See also ILC Articles on Prevention, commentary to Art 3, para 14.

ensure that a State is in a position to adjust its necessary and appropriate measures in response to increasing risk levels and developments in scientific knowledge.[310] For Parties to the Paris Agreement, the regular Global Stocktakes under the Paris Agreement, the 5-year deadlines for successive NDCs, progression and highest possible ambition in NDCs, and the biennal reporting on domestic action to achieve and implement the NDC will assist States in adjusting their actions to the due diligence required customary international law.[311]

B. Exercising Best Possible Efforts

357. In the light of the risk at stake and the nature and value of the legal interest protected, every State must exercise its best possible efforts, and do its utmost, in preventing significant harm arising from the release of GHG emissions. States are obliged to employ all necessary and appropriate measures to prevent significant harm, including exercising best efforts in regulating and controlling the activities of public and private actors, taking into account relevant standards.

358. In the context of climate change, the standards contained in the Paris Agreement provide specific benchmarks for the exercise of due diligence. The Paris Agreement, as the specific treaty on climate change, provides benchmarks for taking 'best possible efforts' on the mitigation of climate change. It is of direct relevance as the international standard-setting instrument establishing the 1.5ºC threshold and guiding States on how to stay within this threshold. IUCN submits that the Paris Agreement is central to, and also parallels and reinforces, the customary international law on prevention of significant harm. The standards contained in the Paris Agreement are relevant in determining whether States' measures are necessary and appropriate to prevent significant harm to the climate system.

359. In particular, the following benchmarks in the Paris Agreement are key to determining the due diligence expected of States, each of which is addressed below:

(i) climate action to be aligned with the 1.5ºC temperature threshold together with corresponding emissions reduction pathways and timelines;
(ii) highest possible ambition in climate action;
(iii) progression in ambition in climate action;
(iv) climate action to be informed by the outcome of the Global Stocktakes;
(v) temporal scope of due diligence; and
(vi) effective domestic implementation measures.

[310] See Article 4(1) Paris Agreement, above. Decision 1/CMA.4, Sharm el-Sheikh Implementation Plan, para 10 ; and Decision 1/CMA.3 Glasgow Climate Pactpara 1.
[311] "[A]n ever-increasing cycle of ambitious action" may be required, which "could eventually meet the goals of the climate regime", L Rajamani, "Due Diligence in International Climate Change Law" in H Krieger, A Peters, L Kreuzer (eds) *Due Diligence in the International Legal Order* (OUP 2020), 164, 180.

(i) Climate Action to be Aligned with the 1.5°C Temperature Threshold together with Corresponding Emissions Reduction Pathways and Timelines

360. The central benchmark for due diligence under customary international law in respect of climate change mitigation is the global temperature threshold in the Paris Agreement, developed with reference to the best available science, which stands at 1.5°C above pre-industrial levels. This threshold is set out in Article 2(1)(a) of the Paris Agreement and re-referenced in its Article 4(1):

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

361. In 2021, the Parties reaffirmed this temperature threshold at the 26th Conference of the Parties in Glasgow,[312] expressing that:

> "*alarm and utmost concern* that human activities have caused around 1.1 °C of warming to date, that impacts are already being felt in every region, and that carbon budgets consistent with achieving the Paris Agreement temperature goal are now small and being rapidly depleted".[313]

362. The Parties also recognized that the impacts of climate change will be much lower at a temperature increase of 1.5 °C compared with 2 °C and *resolved* to pursue efforts to limit the temperature increase to 1.5 °C.[314]

363. Again, in 2022, at the 27th Conference of the Parties in Sharm el-Sheikh, the Parties:

> "reiterate[d] that the impacts of climate change will be much lower at the temperature increase of 1.5 °C compared with 2 °C and *resolve[d*] to pursue further efforts to limit the temperature increase to 1.5 °C".[315]

364. At the recent 28th Conference of the Parties in Dubai, the Parties reiterated these points,[316] and recognized "the need for deep, rapid and sustained reductions in greenhouse gas emissions in line with 1.5°C pathways".[317]

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[312] UNFCCC, 'Decision 1/CMA.3, Glasgow Climate Pact' (13 November 2021) UN Doc FCCC/PA/CMA/2021/10/Add.1, para 21; UNFCCC, 'Sharm el-Sheik Implementation Plan, Decision 1/CMA.4' (20 November 2022), UN Doc, FCCC/PA/CMA/2022/10/Add.1para 7.
[313] UNFCCC, 'Decision 1/CMA.3, Glasgow Climate Pact, ibid , para 3.
[314] ibid, para 21.
[315] Sharm el-Sheikh, Decision 1/CMA.4, (n) para 4; Glasgow Decision 1/CMA.3, ibid., para 22.
[316] Decision 1/CMA.5, Outcome of the first global stocktake, Advance unedited version, para 2.
[317] UNFCCC, 'Decision -/CMA.5, Outcome of the first global stocktake, Revised Advance Version' (13 December 2023) UN Doc FCCC/PA/CMA/2023/L.17, paras 2 and 15

365. These decisions reflect a global consensus, informed by best available science, that the 1.5°C threshold holds greater normative weight than "well below 2°C". The Parties' explicit recognition that the impacts of climate change will be much lower at a temperature increase of 1.5°C compared to well below 2°C underlines this consensus. 1.5ºC therefore serves as the relevant benchmark for due diligence.

366. In 2021, the Parties also recognized that pursuing the 1.5°C threshold requires rapid, deep and sustained reductions in global greenhouse gas emissions, including reducing global carbon dioxide emissions by 45% by 2030 relative to the 2019 level and to net zero around mid-century, as well as deep reductions in other greenhouse gases.[318]

367. At the 2023 Conference of the Parties in Dubai, the Parties refined this pathway by recognizing that "limiting global warming to 1.5°C with no or limited overshoot requires deep, rapid and sustained reductions in global greenhouse gas emissions of 43 per cent by 2030 and 60 per cent by 2035 relative to the 2019 level and reaching net zero carbon dioxide emissions by 2050".[319]

368. States must follow this 'Paris-aligned' emission pathway and timeline in order to comply with their due diligence obligation. What this means is that, for a State to comply with its obligation under customary international law to protect the climate system, its measures need to be aligned with the 1.5°C temperature goal and contribute to the global GHG emissions reduction pathways.

369. In pursuing these pathways, one of the appropriate and necessary measures is to prepare, maintain and communicate an NDC. As provided in the Paris Agreement, each NDC: (a) needs to reflect each State's highest possible ambition; (b) needs to represent a progression beyond the State's then NDCs; (c) needs to be informed by the results of Global Stocktakes; and (d) countries have to pursue meaningful and effective domestic measures with the aim of achieving the objectives of NDCs.[320] The due diligence needed to comply with the customary international law obligation to prevent significant harm to the climate system needs to be understood in the light of these four requirements. As explained below, each of them is strongly anchored in the critical 1.5°C temperature threshold.

(ii) Highest Possible Ambition in Climate Action

370. In the light of the significant risk that climate change poses, IUCN submits that "highest possible ambition" is to be understood as informing and reinforcing the due diligence-prevention obligation under customary international law. This is consistent with the requirement that each Party exert its best efforts and use all the means at its disposal to reduce, over time, all GHG emissions to net-zero from activities which take place in its territory, or under its jurisdiction or control, aligned with the 1.5ºC threshold.

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[318] ibid, 3, para 22.
[319] Decision -/CMA.5, Outcome of the first global stocktake, para 27.
[320] See Part III, Chapter 5.

371. The 'best efforts' requirement under customary international law and the "highest possible ambition" requirement under Article 4(3) of the Paris Agreement are mutually informing. Under customary international law, States need to exercise best efforts in their climate action. This obligation is informed by Article 4(3) of the Paris Agreement.[321] A State's NDC will reflect that State's highest possible ambition and thus needs to be based on a comprehensive assessment of all mitigation options in all relevant economic sectors. This includes all anthropogenic GHG emissions by all actors under a State's jurisdiction or effective control, including private actors.[322]

372. Moreover, the Parties are expected to align their level of ambition with their respective national circumstances. Article 4(3) of the Paris Agreementspecifies that NDCs will reflect each Party's highest possible ambition, which is accompanied by reference to the principle of CBDR-RC, in the light of different national circumstances. This means that an assessment of whether any State Party is conducting itself consistently with the Paris Agreement will be context-specific, requiring an assessment of the particular circumstances, provided that each State's contribution reflects its highest possible ambition and best possible efforts.

373. It follows that an assessment of whether a State is abiding by its customary international law obligations will also be context-specific. This is because of how Article 4(3) of the Paris Agreement has been formulated, and because due diligence in the prevention of significant harm to the environment is contextual and inherently responsive to national circumstances.

374. In this connection, the ILC observed that:

> "The main elements of the obligation of due diligence involved in the duty of prevention could be thus stated: the degree of care in question is that expected of a good Government… It is, however, understood that the degree of care expected of a State with a well-developed economy and human and material resources and with highly evolved systems and structures of governance is different from States, which are not so well placed. Even in the latter case, vigilance, employment of infrastructure and monitoring of hazardous activities in the territory of the State, which is a natural attribute of any Government, are expected."[323]

375. Moreover, the ILC Commentary to the prevention articles further notes that "The economic level of States is one of the factors to be taken into account in determining whether a State has complied with its obligation of due diligence. But a State's economic level cannot be used to dispense the State from its obligation under the present articles." [324]

376. At the same time, the Paris Agreement requires that each Party's NDC reflect its highest possible ambition, and customary international law requires each State to exercise its best possible efforts to reduce GHG emissions, employing all necessary and appropriate

[321] See *Pulp Mills* and ITLOS Seabed Dispute Chamber.
[322] See *Milieudefensie et al v Royal Dutch Shell* (2021).
[323] See ILC Prevention Articles Commentary to Article 3, paragraph 17 (footnotes omitted).
[324] Commentary to Article 3 of the ILC Prevention Articles, para 13.

measures. Countries with higher responsibility and/or more capacity must go further and faster in their NDC objectives, consistent with the emission pathways necessary to stay at a maximum global temperature increase of 1.5˚C. Countries with less capacity may need more time and technical assistance in order to implement policies, plans and laws that reduce GHG emissions to these levels. In this connection, the *best possible efforts* requirement provides a baseline to all Parties' obligations. This helps to avoid the equivalent of a 'sponsoring States of convenience' phenomenon, where economic activity is incentivised to move to a jurisdiction where a State is not acting in accordance with the highest possible ambition and best possible efforts requirement.[325]

(iii) Progression in Ambition in Climate Action

377. As provided in Article 4(3) of the Paris Agreement, NDCs should represent progression beyond the Party's then *current* nationally determined contribution.[326] Further, Article 4(11) of the Paris Agreement provides that where a Party updates its NDC within the 10-year period of an NDC, it can only do so to *enhance* the level of ambition.[327] IUCN submits that the requirement of progression in the Paris Agreement also informs States' due diligence obligation under customary international law.

378. As explained above,[328] as the risk from GHG emissions increases, customary international law requires a heightened level of due diligence and, consequently, increasingly progressive national contributions to emissions reduction, which reduces States' scope for discretion in how they may fulfil their due diligence obligation. Indeed, a stagnation or even regression in efforts would be inconsistent with the due diligence required under customary international law.

(iv) Climate Action to be Informed by the Outcomes of the Global Stocktakes

379. A fourth benchmark in the Paris Agreement that informs States' customary international law due diligence obligation to prevent significant harm to the climate system is provided by the Global Stocktakes (GST) and their outcomes.[329]

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[325] In its *Seabed Mining Advisory Opinion*, the Seabed Disputes Chamber of ITLOS found that "equality of treatment" was consistent with the need to prevent the spread of sponsoring States of convenience which "would jeopardize uniform application of the highest standards of protection of the marine environment, the safe development of activities in the Area and the protection of the common heritage of mankind." Accordingly, the general provisions concerning the responsibilities and liabilities of States Parties sponsoring deep seabed mining in the Area applied equally to all sponsoring States, whether developing or developed. The same rationale applies here, and underpins both the Paris Agreement and customary international law. *Responsibilities of States Advisory Opinion* para 159.

[326] Paris Agreement, Article 4(3) and see Chapter 5 of this statement.

[327] Paris Agreement, Art 4(11).

[328] See Chapter 5 of this statement.

[329] The First GST was concluded at COP28 Dubai, UNFCCC, 'Decision -/CMA.5, Outcome of the first global stocktake, Revised Advance Version' (13 December 2023) UN Doc FCCC/PA/CMA/2023/L.17.

380. GSTs can be understood as a form of monitoring the risk stemming from climate change, where States collectively are, and where they need to get to in addressing climate change. The GST outcome informs and guides States in defining their necessary and appropriate measures in response to increasing risk levels and developments in scientific knowledge.[330] The regular Global Stocktakes under the Paris Agreement will assist States in fulfilling their due diligence requirements under customary international law to monitor and adjust their climate measures.[331]

381. Articles 4(9) and 14(3) of the Paris Agreement require that a State's NDCs and its other actions be informed by the results of Global Stocktakes. It follows that due diligence requires States' NDCs and other actions to be based on consideration of the results of the Global Stocktakes. the GST outcomes help to inform the heightened levels of due diligence which are required given the increasing magnitude of the risks stemming from atmospheric GHG concentration.

382. This requirement is particularly important considering that the first Global Stocktake has been completed in 2023. States have now a roadmap of what they need to consider when communicating their next NDCs in early 2025.

383. Specifically, the Decision on the "Outcome of the First Global Stocktake", recognizing the need for deep, rapid and sustained reductions in GHG emissions in line with 1.5°C pathways, calls on the Parties to contribute to the following global efforts, in a nationally determined manner, taking into account the Paris Agreement and their different national circumstances, pathways and approaches:[332]

    a) Tripling renewable energy capacity globally and doubling the global average annual rate of energy efficiency improvements by 2030;
    b) Accelerating efforts towards the phase-down of unabated coal power;
    c) Accelerating efforts globally towards net zero emission energy systems, utilizing zero- and low-carbon fuels well before or by around mid-century;
    d) Transitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner, accelerating action in this critical decade, so as to achieve net zero by 2050 in keeping with the science;
    e) Accelerating zero- and low-emission technologies, including, inter alia, renewables, nuclear, abatement and removal technologies such as carbon capture and utilization

[330] See Article 4(1) Paris Agreement, above, Aricle. 4(9) and Article 14(3).
[331] "[A]n ever-increasing cycle of ambitious action" may be required, which "could eventually meet the goals of the climate regime", L Rajamani, "Due Diligence in International Climate Change Law" in Krieger, A Peters, L Kreuzer (eds) *Due Diligence in the International Legal Order* (OUP 2020), 164, 180. Best available science and risk are key benchmarks in determining the level of due diligence a State needs to adopt to comply with the obligation to prevent significant harm to the climate system. In fact, States are under a customary international law obligations to monitor and respond to increasing or changing risk levels, applying the best available science and relevant advances in scientific and technical knowledge, and applying the precautionary principle, in order to ensure they are taking all necessary and appropriate measures. See principle 15, Rio Declaration and see also ILC Articles on Prevention, Commentary to Art 3, para 14.
[332] Decision -/CMA.5, Outcome of the first global stocktake, Advance unedited version, para 28.

and storage, particularly in hard-to-abate sectors, and low-carbon hydrogen production;

f) Accelerating and substantially reducing non-carbon-dioxide emissions globally, including in particular methane emissions by 2030;

g) Accelerating the reduction of emissions from road transport on a range of pathways, including through development of infrastructure and rapid deployment of zero- and low-emission vehicles;

h) Phasing out inefficient fossil fuel subsidies that do not address energy poverty or just transitions, as soon as possible.

384. In addition, the Decision emphasizes the importance of conserving, protecting and restoring nature and ecosystems, including through enhanced efforts towards halting and reversing deforestation and forest degradation by 2030, and other terrestrial and marine ecosystems acting as sinks and reservoirs of greenhouse gases and by conserving biodiversity, while ensuring social and environmental safeguards, in line with the Kunming-Montreal Global Biodiversity Framework; as well as to preserve and restore oceans and coastal ecosystems.[333]

385. The global efforts outlined in the Global Stocktake decision are crucial for holding the temperature increase to 1.5ºC. As a matter of due diligence, each State must carefully consider them and communicate in 2025 an NDC that contains a country-specific breakdown of the collective pathways for achieving the outcomes directed in this decision, inter alia, on renewable energy, on transitioning away from fossil fuels in enery systems, and on protecting nature, oceans and biodiversity.

386. The Global Stocktake decision provides more granularity to the measures that States need to include in their NDCs. Taking the promotion of renewable energy as an example, one global effort is tripling renewable energy capacity globally by 2030. Thus, IUCN submits that, following the first Global Stocktake, a country with the necessary financial and technological resources is under a due diligence obligation to take all adequate measures with the aim of tripling its renewable energy mix.

387. In sum, the Global Stocktake decisions strengthen the multilateral process underpinning the Paris Agreement, and inform States'due diligence obligations under customary international law.

(v) Temporal Scope of Due Diligence

388. A fifth benchmark in the Paris Agreement concerns the temporal scope of climate actions. Acting with due diligence requires respecting the present circumstances and also extends into the future in certain respects. The principle of intergenerational equity is reflected in the

[333] Decision 1-CMA.5, para. 33.

Paris Agreement[334] and in customary international law.[335] These obligations require due regard for future generations.

389. Future generations' legal interests in the prevention of anthropogenic climate change are prominent in the UN General Assembly's request to the Court in these proceedings, and are recognised in Article 3(1) of the UNFCCC, which states:

> "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." [336]

390. States' action or inaction on climate law and policy will affect future generations within and beyond them. As a matter of intergenerational equity, due regard for future generations is required not only vis-à-vis a State's own population, but also future generations on this planet.

391. Procedurally, due regard for future generations takes many forms. For instance, due 'regard' should be built into States' environmental impact assessment processes, although this will not, on its own, fulfil the due regard requirement.

392. Substantively, 'due' regard will depend on the extent to which States' actions embody consideration in practical terms for the nature and value of future generations' interests and the risks they face.

393. In this connection, the Court's reasoning in its prior jurisprudence suggests that States' exercise of their sovereignty may be subject to requirements to avoid manifestly excessive adverse impacts on others' rights and interests.[337] This reasoning may may apply in relation to the requirement of due regard for future generations in the context of anthropogenic

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[334] The Paris Agreement's 1st preambular paragraph states that "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*" (emphasis added)

[335] See Appendix V.

[336] United Nations Framework Convention on Climate Change: Article 3(1), emphasis added. See also UNFCCC preambular paras eleven and twenty-three. Consistently, it is envisaged in the International Law Commission's 2021 Draft Guidelines on the Protection of the Atmosphere that: "The atmosphere should be utilized in an equitable and reasonable manner, *taking fully into account the interests* of present and future generations." ILC Draft Guidelines on the Protection of the Atmosphere, with Commentaries Thereto, 2021, Guideline 6 on the equitable and reasonable utilization of the atmosphere, emphasis added. The commentary to Guideline 6 States that "[t]he word "fully" seeks to demonstrate the importance of taking various factors and considerations into account, and it should be read with the seventh preambular paragraph, which recognizes that the interests of future generations of humankind in the long-term conservation of the quality of the atmosphere should be fully taken into account." Commentary to Guideline 6, para 3. As the Commentary explains: "The goal is to ensure that the planet remains habitable for future generations." Commentary to preamble ILC Guidelines on the Atmosphere, paragraph 9.

[337] *Dispute regarding Navigational and Related Rights* (*Costa Rica v Nicaragua*) Judgment of 13 July 2009 [2009] ICJ Rep 213 para 87; noting also *Certain Iranian Assets (Islamic Republic of Iran v. United States of America)* Judgment of 30 March 2023 [2023] ICJ Reports [147].

climate change, especially considering the Court's recognition 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."[338]

394. In sum, the Paris Agreement includes a temporal benchmark that informs the application of the customary international law obligation to prevent significant harm. In particular, acting with due diligence to comply with such an obligation requires fully respecting the principle of intergenerational equity by having due regard for present and future generations.

(vi) Effective Domestic Implementation Measures

395. A sixth benchmark in the Paris Agreement relevant for due diligence is the requirement to pursue effective domestic implementation measures. In the context of NDCs, the Paris Agreement provides that "Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of such NDCs".[339] The general obligation to pursue domestic mitigation measures referred to in Article 4(2) is a legally binding obligation, even if the achievement of the NDC is not part of it.

396. Domestic measures must have a coherent, rational or reasonable relationship with the aim of achieving the NDC objectives, and must be calibrated accordingly. In short, there must be regulatory coherence between the measures and the NDC objectives.[340] However, whether the measures lead to the achievement of an NDC lies outside the legal obligation as per the second sentence of Article 4(2).

397. States' measures will be many and varied, depending on each State's specific emissions portfolio and relevant national circumstances. States may employ diverse combinations of economic tools and legal interventions at all levels of government, including climate statutes, emissions trading schemes, taxation, subsidies, resource management policies, and direct regulation and standards, as well as the promotion of public information and disclosure to enable the better understanding and participation of all actors in relation to the mitigation of climate change.

398. When submitting an NDC and reporting on its implementation and achievement, each State needs to provide information and evidence on how their domestic measures relate to the aim of achieving the objectives of national contributions.[341] Thus, when submitting its NDC, a

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[338] ICJ, *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion, ICJ Reports 1996, p. 226, at 242. See chapter 8 of this statement.

[339] Paris Agreement Article 4(2), second sentence.

[340] *Whaling in the Antarctic (Australia v Japan; New Zealand intervening),* Judgment of 31 March 2014 [2014] ICJ Rep 226; C E Foster *Global Regulatory Standards in Environmental and Health Disputes: Regulatory Coherence, Due Regard and Due Diligence* (Oxford University Press, 2021) 24-27, 60-85.

[341] Consistent with the Court's judgement in *Whaling in the Antarctic,* where the Court looks to Japan to assist it with explanations on the history and design of the Japanese Antarctic Whaling Program JARPA II. *Whaling in the Antarctic* paragraphs 68, 141, 144. The Court explained that it was turning to Japan for an explanation of the basis of the decision to grant a scientific research permits because, as it was a Japanese decision to grant the permits, Japan presumably had determined that the lethal take under its whaling program was for purposes of scientific research

State needs to explain how the NDC is fair and ambitious and represents its highest possible ambition, and how successive contributions represent a progression.[342] In other words, "each State would need to provide convincing reasons why its target cannot be set at a higher level", likely involving "a sound analysis of all mitigation options".[343]

399. Such domestic measures will target not only a State's operations, but also other socio-economic sectors in which private actors operate. In this respect, States must work with private actors within and beyond agreed frameworks to lift their performance and ways of doing business to new climate standards, including under the UN Guiding Principles on Business and Human Rights[344] and taking into account the Information Note on Climate Change and the UNGPS released by the Working Group on Business and Human Rights in June 2023. This will include initiatives to help ensure climate-responsible conduct and integrity in reporting standards for business, as well as the disciplining of greenwashing under national laws.

400. Private actors operate in a globalized and interconnected economic system. Thus, States' appropriate and necessary measuresinclude vital work to develop and adopt international trade and investment law and policies and other international legal frameworks for public and private actions that will further a speedy transition to carbon neutral economies and promote the safe removal of excess carbon from the atmosphere through appropriate incentives, consistent with States' international legal obligations.[345]

401. In this context, States may have to carry out a structural and substantive reform of Investor-State Dispute Settlement (ISDS). This must go beyond mere procedural changes to include substantial ones. This includes, among other matters, revision of bilateral treaties currently in force and revising the terms and standards under which investments are protected. It is necessary to define which investments are protected, such as by eliminating the protection for fossil fuels and other carbon intensive industries, and to set the conditions under which investors, as a last resort after exhausting all local legal avenues, may resort to investment arbitration. This would align with the requirement in Article 2(1)(c) to "making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development".

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under the ICRW 1946. In such a context the Court would look to an authorising State "to explain the objective basis for its decision". Paragraph 68. In the circumstances of the case the Court frequently looked to Japan to provide it with the evidence to assess the case. See also paragraphs 137, 141, 144, 185, 193, 194, 206, 222, 226

[342] UNFCCC, 'Decision 4/CMA.1, Further guidance in relation to the mitigation section of decision 1/CP.21' (15 December 2018) UN Doc FCCC/PA/CMA/2018/3/Add.1, Annex, para 6

[343] C Voigt, 'The Power of the Paris Agreement in International Climate Litigation' 32 Review of Europen, Comparative and International Environmental Law (RECIEL) 2 (2023), 237-249.

[344] United Nations Office of the High Commissioner for Human Rights, 'Guiding Principles on Business and Human Rights : Implementing the United Nations 'Protect, Respect and Remedy' Framework' (United Nations, Office of the High Commissioner for Human Rights New York, 2011) UN Doc A/HRC/17/31.

[345] Consider for instance, World Trade Organization 'Trade Policy Tools for Climate Action' (WTO Secretariat, 2 December 2023) < https://www.wto.org/english/res_e/booksp_e/tptforclimataction_e.pdf>.

402. At present, the possibility of investment arbitration and the mere threat of claims before ISDS tribunals can often constrain States' "ability … to adopt the ambitious policies needed to combat climate change"[346] The UN Special Rapporteur on Human Rights Rapporteur and the Environment has pointed out that ISDS proceedings frequently serve as a platform to challenge climate and environmental measures implemented by States, with claims amounting to billions of dollars in compensation.[347] Notably, it is estimated that governments fulfilling their commitments under the Paris Agreement on climate change may be liable to oil and gas corporations for US$340 billion in future ISDS cases, which is a major disincentive for implementing ambitious climate action, thereby causing regulatory chill.[348] In this regard, IUCN submits that acting with due diligence requires of States to (1) avoid undermining their climate change commitments and (2) continue regulating and ensuring that polluters within their jurisdiction or control align their conduct with the temperature threshold and finance flows goal expressed in Article 2(1)(a) and 2(1)(c) of the Paris Agreement, respectively.

403. There is a global necessity to allocate billions of dollars towards mitigation and adaptation efforts, and foreign direct investment should contribute positively and significantly. This presents States with a crucial opportunity to reconsider trade and investment governance strategies to ensure that they align with, and bolster, climate objectives both nationally and internationally.

404. As noted by research institutions, States must specifically reform investment treaties to:

    a. Promote trade and investments that support State parties in fulfilling their climate and energy goals, including efforts in mitigation, ensuring universal access to affordable renewable energy, and adapting to climate change. It is vital for States to make sure treaties do not protect investments in fossil fuels and carbon intensive industries that weaken their ability to meet climate change commitments.[349]
    b. Enhance domestic governance and strengthen public institutions. Addressing the climate emergency demands stringent regulation and the effective enforcement of climate policies, which may impact some foreign direct investments negatively. Treaties should enhance States' regulatory powers to regulate investment in line with climate commitments and human rights standards.[350]
    c. Serve as tools of addressing gaps in transnational climate governance and prevent regulatory races to the bottom. These agreements ought to provide a framework for

[346] UNGA, 'A/78/168, *Paying polluters: the catastrophic consequences of investor-State dispute settlement for climate and environment action and human rights*, 13 July 2023 UN Doc A/78/168, Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, David R. Boyd, in accordance with Human Rights Council resolution 46/7, para. 46.
[347] ibid, para. 4.
[348] ibid, para. 6.
[349] E. Merrill et al'International Investment Governance and Achieving A Just Zero-Carbon Future\ (Columbia Center of Sustainable Investment August 2022), <https://ccsi.columbia.edu/sites/default/files/content/ccsi-international-investment-governance-climate-zero-carbon-future.pdf>.
[350] ibid, p. 9

promoting sustainable investment practices and ensuring environmental protection standards are upheld across borders.[351]

405. In this context, States should engage in structural reform of ISDS by eliminating ambiguity allowing for an overly broad interpretation of protection standards such as legitimate expectations and most-favored-nation clauses, which provides investors with protections from third-party treaties. Additionally, it is necessary for States to address the lack of binding precedent in the system. For these reasons, States should consider reform of the system that targets not only procedural matters but also an overhaul of the system as a whole.

406. In addition, States' appropriate and necessary measures may include engaging in cooperative approaches for enhancing ambition in GHG emissions reduction, such as enabling international carbon trading. The Paris Agreement foresees the deployment of such measures in its Article 6(2) and (4). The 'Rulebook' supplies technical guidelines and recommendations to help ensure the environmental and social integrity of such measures.[352] States' domestic mitigation measures will also include appropriate policies to ensure the accountability and credibility of net-zero emissions commitments of entities under their jurisdiction or effective control, and encourage universal transition to a net zero GHG emission economy consistent with applicable international law. These may include appropriate measures, including border measures, addressing carbon leakage.

407. Both State and private actors' activities can lead to climate change-related impacts beyond the State's boundaries. For example, the export of fossil fuels can lead to significant emissions of GHGs outside the territory of a State, if combustion takes place in another State. IUCN submits that States' Paris Agreement obligations, and similarly their due diligence obligations under customary international law, apply in respect of States' own territories and also extend beyond them when a State has jurisdiction and/or control over the activities of private and public actors, consistent with its obligation to prevent significant harm to the environment of other States and areas beyond national jurisdiction.

408. It follows that acting with due diligence, or 'exercising best efforts', requires States to take into account the extra-territorial consequences of their actions, including, for example, consequences for the marine environment beyond their national jurisdiction or the consequences of exported fossil fuels.[353] For example, a State with significant fossil fuel exports would find it difficult to argue that it is demonstrating the 'highest possible ambition' in its climate policy, and that it is acting with due diligence, if emissions caused by these exports were to remain entirely unaddressed.

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[351] ibid.

[352] Decision 2/CMA.3 Guidance on cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement, and Decision 3/CMA.3 Rules, modalities and procedures for the mechanism established by Article 6, paragraph 4, of the Paris Agreement.

[353] Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction (BBNJ Agreement) C.N.203.2023.TREATIES-XXI.10 of 20 July 2023.

409. In this connection, States' sovereign right to exploit their own resources must be exercised consistently with their customary international law obligations in respect of the prevention of harm to the environment of other States and areas beyond national jurisdiction..

C. Vigilance in Enforcement of Domestic Climate Measures

410. States are not only obliged to adopt effective climate change mitigation measures to prevent significant harm to the climate system, they also have to apply vigilance in the implementation, compliance and enforcement of those measures.[354]

411. This Court held in *Pulp Mills* that due diligence includes, in fact, 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".[355] This includes exercising jurisdiction and control over the activities of natural and juridical persons, as well as ships and aircraft.

412. As the *Trail Smelter* Tribunal observed: "A State owes at all times a duty to protect other States against injurious acts by individuals from within its jurisdiction".[356]

413. The obligation to exercise proper jurisdiction and control with respect to private actors has also been recognized by the ILC and by States.[357] It includes the control and enforcement of regulation of public actors. This means that States need to have the institutional, financial and technological infrastructure in place to effectively control and enforce their climate change related regulations and legislation of private actors.

414. In sum, to comply with the obligation to prevent significant harm to the climate system, the due diligence required of States needs to be assessed against a set of benchmarks: (i) the risk at stake and foreseeability of these risks as established in the Court's jurisprudence; (ii) the need to exercise best efforts as supplemented by the specific standards contained in the Paris Agreement, which are: the 1.5ºC temperature threshold together with relevant emissions

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[354] *Pulp Mills* para 197.

[355] *ibid,* para 197. See also *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area* (Advisory Opinion of 1 February 2011) para 115, *Request for an Advisory Opinion Submitted by the Sub-Regional Fisheries Commission* (Advisory Opinion of 2 April 2014) para 131, 137-139; see also ILC Prevention Articles Commentary to Article 3 at para 4; ILC Draft Guidelines on the Protection of the Atmosphere, Commentary to Article 3, paragraph 6.

[356] *Trail Smelter* A*rbitration, Decisions of 16 April 1938 and 11 March 1941*, vol. III, UNRIAA, 1905-1982, 1965 at 1963,quoting Professor Eagleton, (*Responsibility of States in International Law*, 1928, p. 80). The *Trail Smelter* tribunal relied here also on the seminal *Alabama Claims* arbitration, *Alabama Claims (US/UK)*, Award (14 September 1872), 29 RIAA 125, 129

[357] ILC, 'Draft Articles on Prevention of Transboundary Harm from Hazardous Activities' (2001) GAOR 56th Session Supp 10, 370, Commentary to Article 2, para 9. UN Member States jointly proclaimed in the 1982 World Charter for Nature that "Activities which might have an impact on nature shall be controlled, and the best available technologies that minimize significant risks to nature or other adverse effects shall be used; in particular: (a) Activities which are likely to cause irreversible damage to nature shall be avoided;" UNGA, *World Charter for Nature* (UNGA) UN Doc A/RES/37/7, Annex. See also, *Milieudefensie v Royal Dutch* Shell [2021] ECLI:NL:RBDHA:2021:5339.

reduction pathways and timelines; the highest possible ambition; progression; the outcomes of the Global Stocktakes; temporal considerations; and (iii) effective domestic implementation, compliance and enforcement measures.

415. IUCN submits that a State will comply with its due diligence obligation not to cause significant harm to the climate system only if it fully takes into account these benchmarks when taking action to protect the climate system. Such measures will target both public actors and private actors under its jurisdiction, as well as activities susceptible of causing climate change impacts beyond national boundaries where the State has jurisdiction and/or control over the actors.

V. Procedural Due Diligence Measures

416. Acting with due diligence to comply with the obligation to prevent significant harm to the environment further encompasses a number of procedural measures, including:

a) The obligation to carry out environmental impact assessments where there is a risk that activities may lead to significant harm;
b) The obligation to consult with and notify other States in case of activities that may lead to significant harm; and
c) The obligation to cooperate.

417. These procedural measures have become themselves, in some cases, self-standing customary international law obligations. All three obligations, which we now turn to, apply in relation to climate change and mitigating GHG emissions.

A. Obligation to Carry out Environmental Impact Assessments (EIAs)

418. States' obligation to prevent significant harm to the environment of other States and areas beyond national jurisdiction requires States to carry out environmental impact assessments (EIA) where there is a risk that activities may lead to significant harm. To be clear, the obligation to carry out an EIA is an objective one, notwithstanding the subjective opinion of a state of whether activities in its jurisdiction or control may lead to harm.

419. The Court has previously confirmed that this duty to carry out environmental impact assessments is an aspect of due diligence:

> "Moreover, due diligence, and the duty of vigilance and prevention which it implies, would not be considered to have been exercised, if a party planning works liable to affect the regime of the river or the quality of its waters did not undertake an environmental impact assessment on the potential effects of such works."[358]

[358] *Case concerning Pulp Mills*, para 204. *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua)* and *Construction of a Road in Costa Rica along the San Juan River* (Nicaragua v. Costa Rica), Judgment, I.C.J. Reports 2015 (II), p. 707, para. 104.

420. The Court has maintained that an EIA has to take place if the activity may lead to significant harm.[359]

421. As discussed above, what amounts to significant harm is highly contextual, but it is clear that the larger the amount of anthropogenic GHG the higher is the risk risks of 'significant' harm to the climate system.

422. Given the nature of climate change, IUCN submits that a State has to carry out an EIA if it decides to engage an activity which may lead to a significant release of GHG emissions in the atmosphere.

423. In the context of climate change, IUCN submits that there are some considerations, as discussed below, which help to cast light on how the obligation to carry out an EIA operates within a global (and not only a bilateral transboundary) context.

424. GHG emissions are mixed in the atmosphere, which means that wherever emissions occur— unlike most pollutants — they will cause transboundary harms affecting other States and areas beyond national jurisdiction. This means that the EIA needs to be comprehensive enough to assess the global impacts of States' activities, including the emissions caused by the export of fossile fuels.[360] Thus, the obligation to carry out an EIA is owed not just to neighboring States, but to all other States and to the international community as a whole. For example, States' due diligence obligation to carry out EIAs, where activities may lead to significant harm, does not cease to apply when it comes to the extraction and combustion of fossil fuels, where it is reasonably foreseeable that the extracted fossil fuel will lead to emissions of GHGs within or outside the territory of that State.

425. With this in mind, States may need to develop suitable mechanisms, such as a clearing-house mechanism for EIAs and, as discussed below, mechanisms for notification and consultation, in order to give effect to their customary international law obligations in the multilateral setting.

426. Such mechanisms would not be unprecedented. In fact, they can be found in the BBNJ Agreement which demonstrates the latest State practice on EIA in a multilateral setting. Under the BBNJ Agreement, a State is required to ensure that an EIA is conducted for any planned activity that it determines may cause substantial pollution of or significant and

[359] *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua)* and *Construction of a Road in Costa Rica along the San Juan River* (Nicaragua v. Costa Rica), Judgment, I.C.J. Reports 2015 (II), p. 707, para. 104.

[360] This is in line with a recent judgment by the Oslo District Court in The North Sea Fields Case, *Greenpeace Nordic and Natur og Ungdom (Young Friends of the Earth Norway) v Norwegian State* ([2024] OS C-1) Judgement of 18 January 2024, which found three plans for development and operation of oil and gas fields invalid. The invalidity was based on procedural grounds: the environmental impact assessment on which the approval of the plans was based, had not considered the emissions, which are caused by the combustion of oil and gas products in third States, i.e. States that buy oil and gas produced in Norway. The plan had therefore been approved based on insufficient information.

harmful changes to the marine environment in areas beyond national jurisidction.[361] All States have an opportunity to review and comment on the EIA.[362]

427. To reiterate for emphasis, as a matter of due diligence, States must ensure that private parties comply with the applicable laws and regulatory mechanisms for EIA as it is often the private actors itself that carries out the EIA.

428. For completeness, it should be mentioned that while this statement has focused on EIA as an aspect of complying with the obligation to prevent significant harm to other States and areas beyond national jurisdiction, the obligation to carry out environmental impact assessments is also, by itself, an obligation under customary international law.[363]

B. Obligation to Consult and Notify

429. The due diligence required of States under their obligation to prevent significant harm to the environment of other States and areas beyond national jurisdiction imposes also a duty to consult with and notify other States where there is a risk of significant harm.[364] The risk of harm may have been established by an EIA or in another way.[365] As explained above, anthropogenic changes in GHG concentrations are already building up towards significant damage to States, persons and nature.[366]

430. The duty to consult and notify is triggered when there exists a risk of significant transboundary harm arising from activities planned and/or carried out by a State or under its jurisdiction and control. As a matter of due diligence, these obligations will also require States to ensure that private parties comply with the applicable regulatory mechanisms.

431. Accordingly, if the EIA confirms the likelihood of significant harm to the environment,[367] the due diligence required of States under their obligation to prevent significant harm to the

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[361] Article 28(1) and (2).
[362] BBNJ Agreement Article 32.1. Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization, UN Doc UNEP/CBD/COP/10/L.43/Rev.1, Article 14.
[363] *Case concerning Pulp Mills,* para 204. *Certain Activities/Road Case,* para 104.
[364] "If …there is a risk of significant transboundary harm, the State planning to undertake the activity is required, *in conformity with its due diligence obligation*, to notify and consult in good faith with the potentially affected State, where that is necessary to determine the appropriate measures to prevent or mitigate that risk." *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua) and Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica)*, Judgment, I.C.J. Reports 2015 (II), pp. 706-707, para. 104 Emphasis added. *Silala case*, para 114.
[365] In the *Silala case*, para 118, the Court seems to regard the threshold for the notification and consultation requirements as being specifically the risk of significant harm, rather than the existence of an environmental impact assessment determining this risk exists when stating: "It therefore concludes that each riparian State is required, under customary international law, to notify and consult the other riparian State with regard to any planned activity that poses a risk of significant harm to that State".
[366] See Section I in this Chapter.
[367] *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua)* and *Construction of a Road in Costa Rica along the San Juan River* (Nicaragua v. Costa Rica), Judgment, I.C.J. Reports 2015 (II), p. 707, para. 104.

environment of other States and areas beyond national jurisdiction imposes a duty to consult with and notify other States. This may only be the case of large-scale projects that lead to large volumes of GHG emissions or significantly reduce removals in sinks, such as for example large scale deforestation or destruction of other ecosystems. As this Court held:

> "If …there is a risk of significant transboundary harm, the State planning to undertake the activity is required, *in conformity with its due diligence obligation*, to notify and consult in good faith with the potentially affected State, where that is necessary to determine the appropriate measures to prevent or mitigate that risk."[368]

432. With the world getting dangerously close to the 1.5ºC threshold , the prospect for an EIA to conclude that activities generating GHG emissions do not cause significant harm to the environment will be very limited, if not non-existent.[369] This is especially the case in relation to the extraction of fossil fuels, even if they are not intended for domestic consumption, and exported elsewhere.

433. Within the current climate change scenario, and with the current levels of risk that climate change poses to the planet, its people and nature,[370] IUCN submits that a State will have to consult and notify the result of the EIA and any other relevant information related to the planned activity, should the EIA show that the planned activity leads to significant GHG emissions or significantly reduces sinks.

434. The obligations to notify and consult are more easily understood in a bilateral transboundary context. However, they also apply in broader global, multilateral settings.

435. The BBNJ Agreement, as mentioned above, illustrates one approach to notification and consultation in a multilateral setting, by providing specifically for consideration of and response to comments received during the consultation process from potentially affected States.[371]

436. In this connection, the Court has held that the vulnerability of the affected State or natural environment goes to the significance of the harm in the context of ascertaining States' obligations to consult and notify.[372]

437. Further, States' due diligence obligations to consult and notify where activities may lead to significant harm also apply to the extraction and combustion of fossil fuels, where it is reasonably foreseeable that the extracted fossil fuel will lead to emissions of GHGs within or outside the territory of that State.

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[368] *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua) and Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica)*, Judgment, I.C.J. Reports 2015 (II), pp. 706-707, para. 104. Emphasis added. *Silala* , para.114.
[369] See Section I of this Chapter.
[370] See Chapter 4 of this statement. See also, Appendix I: Anthropogenic Climate Change.
[371] BBNJ Agreement, Article 32.
[372] *Certain Activities*, para. 155. See Section A above.

438. The implementation of the obligations to notify and consult are required as a matter of due diligence in accordance with the obligation to prevent significant harm to the climate system. Apart from being an aspect of the due diligence obligation to prevent significant harm, these obligations are also emerging as free-standing obligations under customary international law.

C. Co-operation

439. The obligation to prevent significant harm to the environment of other States and areas beyond national jurisdiction requires States to act with due diligence, which imposes an obligation to cooperate in relation to the prevention of significant harm. In the context of mitigating climate change, this requires States to work collaboratively to fulfil their prevention obligations.

440. Prevention will only be effective if states cooperate. Keeping global average temperature rise to below 1.5°C depends practically and politically on multilateral, reciprocal international commitment among all States, calling for a coordinated response among all members of the international community.

441. States have recognised consistently that the nature of climate change calls for "the widest possible cooperation",[373] and as the UN General Assembly has emphasized, "climate change and its adverse impacts have to be addressed through cooperation at all levels".[374] The General Assembly has called on States to show strong political will in working cooperatively towards achieving the ultimate objective of the UNFCCC.[375]

442. The legal obligations and processes in the Paris Agreement provide a vehicle through which States parties can engage in key aspects of the cooperation required. For instance, the Paris Agreement provides a framework for collwctive, iterative processes for helping to ensure that States prepare, communicate, maintain and implement appropriate national contributions to global emissions reduction, and helping to ensure transparency and integrity in carbon accounting and trading.[376]

443. The obligation to cooperate extends beyond the Paris Agreement and requires the further development and implementation of international law in multiple fields.

444. In particular, States' cooperation in the development of international investment law and especially international trade law will be crucial for the fulfilment of the prevention

[373] United Nations General Assembly Resolution 60/1: 2005 World Summit Outcome [UNGA] UN Doc A/RES/60/1, GAOR 60th Session Supp 49 Vol 1, 3, para 53.
[374]United Nations General Assembly Resolution 43/53 on Protection of Global Climate for Present and Future Generations of Mankind [UNGA]) UN Doc A/RES/43/53, Operative clause 3, see also Operative clauses 1 and 6.
[375] ibid, Operative clause n. 1: Recognizes the urgency of addressing and the seriousness of the challenge of climate change, and calls upon States to show strong political will in working cooperatively towards achieving the ultimate objective of the United Nations Framework Convention on Climate Change through the urgent implementation of its provision.
[376] See Chapter 5 and Appendix IV.

obligation. This will require cooperation in the World Trade Organization, and through the adoption of Trade Agreements consistent with international law. International trade is a major driver of industry, and only with timely, pro-climate initiatives in international economic law will it be possible to mitigate climate change effectively. States must work to promote international trade and investment law and policies that will further a speedy transition to carbon neutral economies and promote the safe removal of excess carbon from the atmosphere through appropriately focused incentives, consistent with States' international legal obligations.[377] Equally, cooperation in international organizations including the International Civil Aviation Organization (ICAO) and International Maritime Organization (IMO) will be vital for emissions reduction.

445. The many forms of cooperation required to reduce GHG concentrations in the atmosphere are also part of the necessary and appropriate measures that States are obliged to take in fulfilment of their due diligence obligation to prevent significant harm to the climate system and other parts of the environment. States' cooperation to prevent significant harm to the climate system reflects their commitment to cooperate in the Charter of the United Nations and the Declaration on Principles of International Law concerning Friendly Relations and Co-operation among States of 1970.[378]

446. Apart from being a part of the due diligence requirements attached to States' obligation of prevention under customary international law, the obligation to cooperate to address climate change may be a free-standing obligation under customary international law by virtue of States' recognition that mitigating climate change is a matter of common concern.[379]

VI. Cooperation as an Obligation Erga Omnes

447. IUCN submits that the obligation to cooperate to protect the climate system and other parts of the environment from anthropogenic emissions of greenhouse gases is an obligation *erga omnes*, applying among all States, both as (i) an aspect of due diligence in the prevention of harm to the climate system and (ii) as a freestanding duty founded on recognition of the climate system as a matter of common concern.

448. Obligations *erga omnes* are "the concern of all States", and "in view of the importance of the rights involved, all States can be held to have a legal interest in their protection."[380]

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[377] See Remaking Trade for a Sustainable Future, 'Villars Framework for a Sustainable Global Trade System, Version 2.0 (*Remaking the Global Trading System for a Sustainable Future Project*, January 2024) < https://remakingtradeproject.org/villars-framework>.

[378] UN Charter, Articles 55 and 56; UNGA, Declaration on Principles of International Law concerning Friendly Relations and Cooperation among States in accordance with the Charter of the United Nations, A/RES/2625(XXV), 24 October 1970.

[379] Paris Agreement, 11th preambular paragraph.

[380] *Barcelona Traction, Light and Power Company, Limited (Belgium v. Spain)Second Phase, Judgement [1970] ICJ Reports 3, 32 para 33;International Court of Justice (ICJ), 5 February 1970; Legal Consequences of the Separation of the Chagos Archipelago from Mauritius in 1965*, Advisory Opinion, I.C.J. Reports 2019, 95

449. The category of obligations *erga omnes* is not a closed list. As international law responds to changing world circumstances, new norms may be recognised as having this status. For instance, the Court has declared that the right of peoples to self-determination is an *erga omnes* right, [381] and recognised that certain obligations of international humanitarian law have an *erga omnes* character.[382]

450. The United Nations Compensation Commission[383] has recognised the moral substance or underpinnings of the prevention principle as compatible with its recognition as an obligation *erga omnes*.[384]

451. The Commentary to the ILC Draft Guidelines on the Protection of the Atmosphere records that the Guidelines are formulated without prejudice to whether the obligation to protect the atmosphere is an *erga omnes* obligation.[385]

452. Scholars have also suggested that the prevention obligation, when applied for the benefit of the international community as a whole, operates *erga omnes*.[386] Judge *ad hoc* Dugard expressed the view in *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua)* that: [387]

"The obligation not to engage in wrongful deforestation that results in the release of carbon into the atmosphere and the loss of gas sequestration services is certainly an obligation *erga omnes*."

453. ITLOS has already recognised that the obligations relating to prevention of significant harm to the environment of the high seas and the Area are obligations *erga omnes*.[388] Such recognition is especially important in the context of preserving the environment, where cooperation on preventive actions is necessary.

454. Given the above, IUCN submits that the obligation to cooperate to protect the climate system and other parts of the environment from anthropogenic emissions of greenhouse gases is an obligation *erga omnes*, both as (i) an aspect of due diligence in the prevention of harm to the

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[381] *East Timor, Portugal v Australia, Judgment, jurisdiction, ICJ GL No 84, [1995] ICJ Rep 90, ICGJ 86Case Concerning East Timor (Portugal v. Australia),* 1995 ICJ Rep 90, 102, para 29.
[382] *Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory, Advisory Opinion, I. C. J. Reports 2004*, 136, paras 155-158.
[383] United Nations Compensation Commission, Governing Council, "Report and Recommendations made by the Panel of Commissioners Concerning the First Instalment of "F4 Claims" S/AG .26/2005/10 (30 June 2005) para 41.
[384] L Duvic-Paoli, *The Prevention Principle in International Environmental Law* (Cambridge University Press, 2018) 339.
[385] Paragraph 5 of the Commentary to guideline 3 of the ILC Draft Guidelines on the Protection of the Atmosphere, ILC, 'Draft Guidelines on the Protection of the Atmosphere' in ILC Report, 72nd session, A/76/10 (2021) 13.
[386] A Boyle, C Redgwell and P Birnie, *Birnie, Boyle and Redgwell's International Law and the Environment* (4th ed, Oxford University Press, 2021) 162.
[387] *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua),* Dissenting Opinion of Judge *Ad Hoc* Dugard para 35.
[388] *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area* (Advisory Opinion of 1 February 2011), para 180.

climate system and (ii) as a freestanding duty founded on recognition of the climate system as a matter of common concern.

455. The duty to cooperate is an obligation *erga omnes* because of the importance to the international community of States' cooperation to protect the climate system and other parts of the environment from anthropogenic emissions of greenhouse gases, and also because, by its nature, all States have a legal interest in its performance. Recognising the status of this obligation as *erga omnes* is important because it allows all States to invoke responsibility for failing to fulfil that obligation.

456. To conclude Chapter 7, IUCN submits that:

a. States have a customary international law obligation to prevent significant harm to the climate system.
b. Harm to the climate system can always be considered significant if anthropogenic changes in atmospheric GHG concentrations cause the global average temperature to increase beyond 1.5°C above pre-industrial levels.
c. Given the urgency of addressing climate change and the magnitude of risk, States must act with a significantly heightened level of due diligence.
d. Due diligence requires States to take all appropriate and necessary measures to prevent significant harm in the light of best available science and in proportion to the risk at stake.
e. Due diligence in the specific context of climate change is informed by the 1.5°C threshold and other normative standards in the Paris Agreement.
f. States are obliged to regulate the conduct of private actors by putting in place laws, policies and regulations and enforce them with the necessary vigilance.
g. Acting with due diligence also includes a duty to carry out an environmental impact assessment for planned activities that risk causing significant harm to the climate system, and to notify, consult and to cooperate with each other.

CHAPTER 8: STATE OBLIGATIONS TO PROTECT THE CLIMATE SYSTEM IN HUMAN RIGHTS TREATIES

I. Introduction and Summary

457. The Court is asked the question:

> "Having particular regard to the Charter of the United Nations, the International Covenant on Civil and Political Rights, the International Covenant on Economic, Social and Cultural Rights, [and] the rights recognized in the Universal Declaration of Human Rights (…), [w]hat are the obligations of States under international law to ensure the protection of the climate system and other parts of the environment from anthropogenic emissions of greenhouse gases for States and *for present and future generations*."[389]

458. The specific reference in the preamble to the questions to international human rights treaties, combined with the specific inclusion of present and future generations, underscores the important connection between climate change and human rights, which this chapter will address in the context of Question (a).

459. In this chapter, IUCN will first explain that the increase in GHG emissions and consequent harm to the climate system will make it impossible for States to meet human rights treaties' objectives (section II). IUCN will then discuss the State obligations under the human rights treaties that require dealing with GHG emissions and clarify their legal nature (section III). Section III also contains a specific analysis of how the normative benchmarks in the Paris Agreement, and the 1.5°C temperature threshold in particular, inform the international human rights treaties obligations.

460. The existing human rights framework consists of inter-dependent rights, including, in particular, the rights to life, mental and physical health, freedom from torture and ill-treatment, development, non-discrimination, food, water, culture, property, and to a healthy environment. Question (a) invites the Court to consider the present, long-term and inter-temporal implications of current actions and/or inactions concerning climate change on the protection and enjoyment of human rights. This includes the rights of those who are young today and will grow up into an uncertain future, and those who are not yet born. The human rights framework also requires particular regard for those in vulnerable situations.

461. Our main submission in this chapter is that the human rights protected by the ICCPR, ICESCR, UNCRC, and other core UN human rights treaties place States under positive obligations (due diligence obligations / obligations to protect and fulfil) that must be informed by obligations and standards contained in the Paris Agreement, with specific reference to the 1.5°C threshold, mandating States to take appropriate measures to avoid known risks to the enjoyment of rights.

[389] Emphasis added.

462. In this chapter, IUCN also argues that:

a) There is an undeniable factual and legal link between regional and international human rights law and the impacts of anthropogenic climate change, as the climate crisis is simultaneously a crisis for the protection of human rights;

b) States' obligations concerning climate change, including those under human rights law, should be interpreted in a way that ensures complementarity and consistency to avoid creating diverging, fragmented or contradictory standards;[390] and

c) States must take their human rights obligations into account when designing and implementing climate change mitigation actions.

II. Relationship between Human Rights and Climate Change

463. Climate change is already causing or aggravating a wide range of human rights impacts, and these impacts will progressively worsen as GHG emissions continue. Because individuals live in and depend on the natural environment, the existing and projected impacts of climate change on that environment will affect many recognized human rights entitlements.[391] In other words, there is a clear link between anthropogenic climate change and human rights.[392]

464. Along with domestic and various regional courts, UN human rights bodies are increasingly recognizing the risks that climate change poses to the enjoyment of human rights. In this connection, the UN Human Rights Council recognized that climate change "has already had an adverse impact on the full and effective enjoyment of the human rights enshrined in the [UDHR] and other international human rights instruments".[393]

465. Human rights protections are also increasingly being aligned, whether implicitly or explicitly, with the human right to a healthy environment, as recognized by the UN General Assembly in 2022.[394] In this regard, the former UN Special Rapporteur on obligations related to the enjoyment of a safe, clean, healthy and sustainable environment, John H. Knox, remarked in 2013, early in his mandate as the Independent Expert on human rights and the

[390] This is supported by the interpretation rules contained in the VCLT and reflects the understanding that international legal rules should be interpreted according to the principle of systemic integration, according to which any relevant rules of international law applicable in the relation between the parties need to be taken into account.
[391] See, e.g., UNGA 'Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment' (15 July 2019) UN Doc A/74/161, para 26. ICJ Dossier No 312.
[392] PSB et al v Brazil (on Climate Fund) ADPF 708 [2022]: "Treaties on environmental law are a species of the genus human rights treaties and enjoy, for this reason, supranational status. Thus, there is no legally valid option of simply omitting to combat climate change." https://climatecasechart.com/wp-content/uploads/non-us-case-documents/2022/20220701_ADPF-708_decision-1.pdf (unofficial translation).
[393] UN Human Rights Council Res 44/7 (23 July 2020) UN Doc A/HRC/RES/44/7, preamble, recital 18. ICJ Dossier No 273.
[394] UNGA Res 76/300 (1 August 2022) UN Doc A/RES/76/300. ICJ Dossier No 260.

environment, on the "remarkably coherent" views of different human rights bodies and other authorities on the relationship between human rights law and the environment, which provide "strong evidence of converging trends towards greater uniformity and certainty in the human rights obligations relating to the environment."[395]

466. As set out in the next section, the increase of climate change threatens the protection and enjoyment of the human rights enshrined in various international and regional human rights instruments.

467. This includes core UN human rights treaties, especially the ICCPR and the ICESCR, the UNCRC, the Convention on the Rights of Persons with Disabilities (CRPD), the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) and the International Convention on the Elimination of All Forms of Racial Discrimination (ICERD).[396] The rights in these instruments are inter-connected and inter-dependent, and they stand alongside those in the Universal Declaration of Human Rights (UDHR)[397] and the United nations Declaration on the Rights of Indigenous Peoples (UNDRIP).[398]

468. The failure to take appropriate actions is incompatible with the object and purpose of these treaties, which is to create legally binding human rights standards that protect rights-bearers' fundamental human dignity[399] and to provide an efficacious supervisory machinery for the corresponding obligations undertaken by States.[400]

469. As recently noted by the UN General Assembly:

> "environmental degradation, climate change, biodiversity loss, desertification and unsustainable development constitute some of the most pressing and serious threats to the ability of present and future generations to effectively enjoy all human rights."[401]

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[395] UN Human Rights Council 'Mapping report of the Independent Expert on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment' (30 December 2013) UN Doc A/HRC/25/53, para 27. ICJ Dossier No 304.

[396] ICCPR (adopted 16 December 1966, entered into force 23 March 1976) 999 UNTS 171. ICJ Dossier No 49; ICESCR (adopted 16 December 1996, entered into force 3 January 1976) 993 UNTS 3. ICJ Dossier No 52; UNCRC (adopted 20 November 1989, entered into force 2 September 1990) 1577 UNTS 3. ICJ Dossier No 57; CRPD (adopted 13 December 2006, entered into force 3 May 2008) 2315 UNTS 3. ICJ Dossier No 55; CEDAW (adopted 18 December 1979, entered into force 3 September 1981) 1249 UNTS 13. ICJ Dossier No 65; ICERD (adopted 7 March 1966, entered into force 4 January 1969) 660 UNTS 195. ICJ Dossier No 68. The Court received the text of these treaties, and their optional protocols, from the Secretariat in the context of the present proceedings (30 June 2023, Multilateral Treaties (documents received from the Secretariat of the United Nations), Part II (F): Human rights).

[397] UNGA Res 217 (III) (10 December 1948) UN Doc A/Res/217 (III). ICJ Dossier No 257.

[398] UNGA Res. 61/295. United Nations Declaration on the Rights of Indigenous Peoples, A/RES/61/295 (2 October 2007).

[399] On this see, for the ICESCR, D Moeckli, 'Interpretation of the ICESCR: Between Morality and State Consent' in D Moeckli, H Keller, and C Heri (eds), *The Human Rights Covenants at 50: Their Past, Present, and Future* (Oxford 2018).

[400] For eg the ICCPR, this has been explicitly clarified by the UNHRC, 'General Comment No. 24' (11 November 1994) UN Doc CCPR/C/21/Rev.1/Add.6, para 7.

[401] UNGA Res 76/300 preamble, recital 14.

470. Thus, IUCN invites the Court to recognize this link between the enjoyment of human rights and States' greenhouse gas emissions. Climate change is a crisis of human rights protection, and the extent of States' international obligations in this regard (e.g. States' obligations to protect the climate system and other parts of the environment) must accordingly include due and coherent regard for the human rights framework. This approach is in line with this Court's recognition 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."[402]

III. State Obligations to Protect the Climate System in International Human Rights Treaties

471. Climate change threatens a number of universal human rights, including individual rights and collective rights of particular groups, including children and Indigenous Peoples. These impacts are relevant in different contexts: the inter-connected rights enshrined in human rights treaties such as the ICCPR, the ICESCR and the UNCRC; under the overarching protection of the UDHR; or the right to a healthy environment. Vulnerabilities and inequalities in the protection of rights are also aggravated by the effects of climate change.[403]

472. For the purpose of this statement, IUCN limits its discussion to some of the key human rights protections endangered by climate change, which require States to take measures aimed at mitigating climate change and reducing their GHG emissions to comply with their obligations towards present and future generations. This discussion is not exhaustive.

A. The Relationship between Climate Change and Human Rights in specific International Human Rights Treaties

473. The right to life, as protected in Article 6 of the ICCPR, Article 3 of the UDHR and in various regional human rights instruments is frequently invoked in the context of climate change.[404] This is because a changing climate endangers the conditions of human life on Earth. In this connection, the UN Special Rapporteur on human rights and the environment has emphasized that:

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[402] *Legality of the Threat or Use of Nuclear Weapons* (Advisory Opinion) [1996] ICJ Rep 226, 242.

[403] UN Human Rights Council Res 47/24 (26 July 2021) UN Doc A/HRC/RES/47/24. ICJ Dossier No 274; UNGA 'Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment' ; IPCC AR6 SYR (2023) 62; UNGA 'Report of the Special Rapporteur on the promotion and protection of human rights in the context of climate change' (26 July 2022) UN Doc A/77/226 para 29. ICJ Dossier No 320. See further Appendix V.

[404] See Convention for the Protection of Human Rights and Fundamental Freedoms (European Convention on Human Rights, as amended) (ECHR) ETS No 005, art 2; American Convention on Human Rights "Pact of San José, Costa Rica" (IACHR) (adopted 22 November 1969, entered into force 18 July 1978) 1144 UNTS 123, Article 4(1); African Charter on Human and Peoples' Rights (adopted 27 June 1981, entered into force 21 October 1986) 1520 UNTS 217 (ACHPR) Article 4.

> "[c]limate change has many direct and indirect effects on the full enjoyment of the right to life. Climate-related deaths are caused by extreme weather events, heat waves, floods, droughts, wildfires, water-borne and vector-borne diseases, malnutrition and air pollution. Globally, at least 150,000 premature deaths annually have been linked to climate change."[405]

474. The UN Human Rights Committee (UNHRC) has played a leading role in recognizing the links between the right to life in the ICCPR and climate change.[406] In addition to the right to life, climate change threatens other ICCPR rights. This includes the right to respect for one's private, family and home life under Article 17 of the ICCPR.[407] In addition, mental and physical suffering reaching a certain intensity may violate the prohibition of torture and cruel, inhuman and degrading treatment.[408] Further, Article 27 of the ICCPR enshrines the right of minorities to enjoy their own culture and protects the ability of Indigenous Peoples to maintain their traditional ways of life and transmit their cultures and traditions, and applies in the context of climate change.[409]

475. Climate change impacts that threaten the right to life may also threaten the right to health.[410] In addition, other economic, social and cultural rights enshrined in the ICESCR are also threatened by the progression of climate change, such as the right to an adequate standard of living.[411]

476. In this regard, the Committee on Economic, Social and Cultural Rights (CESCR) has noted that "[c]limate change already affects, in particular, the rights to health, food, water and sanitation; and it will do so at an increasing pace in the future."[412] The CESCR has repeatedly noted States' obligations concerning climate change in its review of individual States, including with reference to the duty of international assistance and co-operation in Article 2(1) of the ICESCR.[413]

477. In addition to impacting the enjoyment of a range of universal human rights, climate inaction particularly imperils specific groups of rights bearers, including vulnerable groups. One such group is children, whose special protection is enshrined in the UNCRC and in Article 24 of the ICCPR. In its recent General Comment No. 26, the Committee on the Rights of the Child

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[405] UNGA 'Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment' para 29.
[406] UNHRC 'General Comment No. 36 on Article 6: right to life' (3 September 2019) UN Doc CCPR/C/GC/36, para 62. ICJ Dossier No 299; UNHRC, *Daniel Billy et al v Australia*, Communication No 3624/2019 (18 September 2023) UN Doc CCPR/C/135/D/3624/2019, para 8.3.
[407] UNHRC, *Daniel Billy et al v Australia* para 8.12.
[408] ICCPR Article 7; UNHRC, 'General Comment No. 36 on Article 6: right to life' para 54.
[409] UNHRC, *Daniel Billy et al v Australia* para 8.14.
[410] ICESCR Article 12; UDHR Article 25(1); ICERD (Article 5; CEDAW Article 12; UNCRC Article 24; CRPD Article25. See further UNHRC, 'General Comment No. 36 on Article 6: right to life' para 26.
[411] ICESCR ibid, Article 11.
[412] CESCR 'Climate change and the International Covenant on Economic, Social and Cultural Rights' (31 October 2018) UN Doc E/C.12/2018/1, para 4. ICJ Dossier No 298.
[413] CESCR 'Concluding observations on the sixth periodic report of Italy' (7 December 2022) UN Doc E/C.12/ITA/CO/6, paras 17 and 51.

(CRC) recognized that children have the right to a clean, healthy and sustainable environment while also noting that environmental factors shape the enjoyment of many other rights.[414] It also highlighted the disproportionate impacts of climate change on the rights of Indigenous children and children belonging to minority groups.[415] In this context, child-led and youth-led climate litigation is increasingly clarifying States' obligations.[416]

478. Indigenous Peoples' rights stand to be particularly affected by climate change in several ways, including through cultural loss, changes to livelihoods, exacerbated inequity and marginalization, and impacts from afforestation or other CDR technologies, e.g. carbon capture projects.[417]

479. The ICCPR[418] and the ICESCR[419] require special protection of Indigenous populations. The ICCPR grants minorities a right to enjoy their own culture (elsewhere discussed as the right to cultural identity[420]), protecting the collective ability of Indigenous Peoples to maintain and transmit their culture and traditional way of life. The UNHRC has recognized that this requires States to take measures to protect these cultures from climate-related impacts.[421]

480. The CESCR has noted the particular impact of both climate change and mitigation measures on Indigenous Peoples' lands while underscoring Indigenous Peoples' right to free, prior and informed consent.[422] This right and participation, overall, is a central concept of the UN Declaration on the Rights of Indigenous Peoples.[423] In this regard, the right to self-determination, which is also enshrined in Articles 1 of both the ICESCR and the ICCPR, is invoked alongside the right of Indigenous peoples to own and control their lands.[424]

481. In addition, it is clear that unmitigated GHG emissions, and the climate change they contribute to, undermine the enjoyment of the right to a clean, healthy and sustainable environment (also discussed as the right to a safe, clean, healthy and sustainable environment, or with different combinations of these terms). Iterations of this right are recognized by the constitutions of "a vast majority of States" around the world,[425] as well as

[414] CRC 'General Comment No. 26 on Children's Rights and the Environment with a Special Focus on Climate Change' (22 August 2023) UN Doc CRC/C/GC/26, paras 13, 63, and *passim*. ICJ Dossier 302A.
[415] ibid, para 58. See also UNCRC Article 30.
[416] CRC, *Sacchi et al v Argentina et al* (11 November 2021) UN Doc CRC/C/88/D/104/2019 et al, para 10.13.
[417] IPCC, AR6 SYR (2023) 17, 54 and 66.
[418] UNHRC, *Daniel Billy et al v Australia* para 8.14.
[419] CESCR 'General comment No. 26 (2022) on land and economic, social and cultural rights' (24 January 2023) UN Doc E/C.12/GC/26, para 58. ICJ Dossier No 302.
[420] See, e.g., *Indigenous Communities of the Lhaka Honhat (Our Land) Association v Argentina*, Inter-American Court of Human Rights Series C-400 (6 February 2020) para 251.
[421] UNHRC, *Daniel Billy et al v Australia* para 8.14.
[422] CESCR 'General comment No. 26 (2022) on land and economic, social and cultural rights' paras 56–58.
[423] UNGA Res 61/295 (2 October 2007) UN Doc A/RES/61/295, arts 32(1) and (2); see also art 27.
[424] See ibid, art 25–27; The ILO's Indigenous and Tribal Peoples Convention of 1989 (No. 169) (adopted 27 June 1989, entered into force 5 September 1991) arts 14–19; UNGA 'Report of the Special Rapporteur on the rights of Indigenous Peoples' (1 November 2017) UN Doc A/HRC/36/46, para 44. ICJ Dossier No 337.
[425] UNGA Res 76/300 preamble, recital 20.

by the Human Rights Council and the UN General Assembly.[426] This is an independent right. It is also an implicit part of other rights, such as the rights to life, personal integrity, property, non-discrimination, health, food, water, progressive development, and freedom from torture and inhuman and degrading treatment.[427]

482. For example, in 2023, the CRC recognized that the right to a healthy environment is implicit in the UNCRC and that a dynamic interpretation of that instrument was required in the light of "[u]nprecedented environmental crises and the resulting challenges for the realization of children's rights".[428]

483. It has been also argued that the high density of recognition and codification of the right to a clean, healthy and sustainable environment in domestic laws, different regional human rights systems and international law is creating an emerging norm of customary international law,[429] with 155 States subject to some form of legal obligation in this regard.[430] However, some States have pointed to the non-binding nature of this right.[431]

484. Since COP27, the right to a healthy environment has been recognized under the paris Agreement.[432] The 2023 Global Stocktake decisions states:

> "Acknowledging that climate change is a common concern of humankind and that Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, *the right to a clean, healthy and sustainable environment*, 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," (emphasis added)[433]

485. The spatial and temporal scope of these human rights obligations show that the choices on climate policy – and especially emissions reductions – being made today will shape the enjoyment of human rights everywhere, now and in the future.[434] These choices have

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[426] ibid.
[427] 'The Strasbourg Principles of International Environmental Human Rights Law' (2022) 13 Journal of Human Rights and the Environment 195, principle 8.
[428] CRC 'General Comment No. 26 on Children's Rights and the Environment with a Special Focus on Climate Change' paras 9 and 63.
[429] C Rodríguez-Garavito, 'A Human Right to a Healthy Environment?: Moral, Legal, and Empirical Considerations' in J H Knox and R Pejan (eds), *The Human Right to a Healthy Environment* (CUP 2018) 160.
[430] D Boyd, 'The Right to a Healthy and Sustainable Environment' in Y Aguila and J E Viñuales (eds), *A Global Pact for the Environment: Legal Foundation*s (Cambridge: C-EENRG 2019) 32.
[431] UNGA, Seventhy-Sixth Session, 97th meeting, Press Release GA/12437 (28 July 2022) explanation by representative of New Zealand <https://press.un.org/en/2022/ga12437.doc.htm>.
[432] UNFCCC 'Decision 1/CMA.4 Sharm el-Sheikh Implementation Plan' (17 March 2023) UN Doc FCCC/PA/CMA/2022/10/Add.1, preamble. ICJ Dossier No 174.
[433] Decision -/CMA.5, Preamble,
[434] German Constitutional Court, *Neubauer and Others v Germany*, Judgment of the First Senate of 24 March 2021 – 1 BvR 2656/18 -, N. 1-270, para 194.

repercussions on a global scale, beyond the national territory of emitting states, and human rights frameworks have proven capable of adapting to this reality.[435]

B. Positive State Obligations under Human Rights Law

486. While the scale of climate change as a global phenomenon is unprecedented, this does not stand in the way of determining the individual obligations of States to prevent human rights infringements due to the impacts of climate change. Climate change is a global problem, but responses in a global order built around the sovereignty of individual States must come from these States.

487. This approach has been followed by human rights bodies. For example, the CRC noted in its *Sacchi* decision that:

> "while climate change and the subsequent environmental damage and impact on human rights it causes is a global collective issue that requires a global response, States parties still carry individual responsibility for their own acts or omissions in relation to climate change and their contribution to it."[436]

In its General Comment No. 26, the CRC found that:

> "States have a due diligence obligation to take appropriate preventive measures to protect children against reasonably foreseeable environmental harm and violations of their rights, paying due regard to the precautionary principle. This includes assessing the environmental impacts of policies and projects, identifying and preventing foreseeable harm, mitigating such harm if it is not preventable and providing for timely and effective remedies to redress both foreseeable and actual harm."[437]

and that:

> "States have an individual responsibility to mitigate climate change in order to fulfil their obligations under the Convention and international environmental law, including the commitment contained in the Paris Agreement to hold the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels by 2030. Mitigation measures should reflect each State party's fair share of the global effort to mitigate climate change, in the light of the total reductions necessary to protect against continuing and worsening violations of children's rights. Each State, and all States working together, should continuously strengthen climate commitments in line with the highest possible ambition and their common but

[435] See, e.g., CRC, *Sacchi et al v Brazil* (9 November 2021) UN Doc CRC/C/88/D/105/2019, para 10.8.
[436] CRC, *Sacchi et al v Argentina et al*, para 10.8.
[437] CRC, 'General Comment No. 26 on Children's Rights and the Environment with a Special Focus on Climate Change' para 69.

differentiated responsibilities and respective capacities. High-income States should continue to take the lead by undertaking economy-wide absolute emission reduction targets, and all States should enhance their mitigation measures in the light of their different national circumstances in a manner that protects children's rights to the maximum possible extent»[438]

488. In *Sacchi,* the CRC found that "the collective nature of the causation of climate change does not absolve the State party of its individual responsibility that may derive from the harm that the emissions originating within its territory may cause to children, whatever their location".[439] While the issue of location is discussed below with regard to the territorial scope of human rights obligations, the fact that individual States can be held responsible for the harm caused by climate change based on their contribution of GHG emissions is of central relevance here.

489. It is noteworthy that no court has accepted the so-called 'drop in the ocean' argument, which is that States' individual contributions to climate change are minimal or negligible and, accordingly, they cannot be held responsible for the impacts of the collective emissions.[440]

490. In this regard, the German Constitutional Court has held that "[t]he fact that the German state is incapable of halting climate change on its own and is reliant upon international involvement because of climate change's global impact and the global nature of its causes does not, in principle, rule out the possibility of a duty of protection arising from fundamental rights."[441] In this case, the Court held that Germany was under a constitutional obligation to take more stringent climate action in order to protect, among other things, the future enjoyment of rights. Likewise, in *Urgenda*, the Dutch Supreme Court held that the State must "do 'its part' in order to prevent dangerous climate change, even if it is a global problem",[442] ultimately finding that Dutch climate policy had violated Articles 2 and 8 of the ECHR.

491. Human rights law places different types of obligations on States, including positive and negative obligations. Positive obligations, also termed obligations to protect and fulfil rights, are a precondition for the effective protection of human rights, and stand alongside States' negative obligation to respect rights.

492. It is well-established across UN and various regional human rights bodies that rights cannot be adequately protected simply by obligating States to refrain from interfering with their enjoyment; they also require States to take action (i.e. contain an obligation of conduct and

[438] Ibid, para 98 (b).
[439] CRC, *Sacchi et al v Argentina et al* para 10.10.
[440] L Maxwell, S Mead and D van Berkel, 'Standards for Adjudicating the Next Generation of *Urgenda*-style Climate Cases' (2022) 13(1) Journal of Human Rights and the Environment 35, 45.
[441] German Constitutional Court, *Neubauer and Others v Germany* para 149.
[442] Dutch Supreme Court (Hoge Raad), *Urgenda Foundation v the Netherlands*, Judgment of 20 December 2019, No. 19/00135, ECLI:NL:HR:2019:2006, para 5.7.1.

due diligence) to facilitate the effective protection of rights.[443] This is especially so where a threat to rights is apparent and the State can act to prevent or mitigate the threat.

493. For example, the UNHRC has found that the right to life "cannot be properly understood if it is interpreted in a restrictive manner, and that the protection of that right requires States parties to adopt positive measures to protect the right to life", meaning that States "should take all appropriate measures to address the general conditions in society that may give rise to direct threats to the right to life or prevent individuals from enjoying their right to life with dignity."[444]

494. The CESCR has noted with regard to the right to health that:

> "[this right], like all human rights, imposes three types or levels of obligations on States parties: the obligations to respect, protect and fulfil. In turn, the obligation to fulfil contains obligations to facilitate, provide and promote. The obligation to respect requires States to refrain from interfering directly or indirectly with the enjoyment of the right to health. The obligation to protect requires States to take measures that prevent third parties from interfering with article 12 guarantees. Finally, the obligation to fulfil requires States to adopt appropriate legislative, administrative, budgetary, judicial, promotional and other measures towards the full realization of the right to health."[445]

495. In the Inter-American human rights system, where it is termed an obligation to 'ensure' rights, this means that States have a duty "to organize the governmental apparatus and, in general, all the structures through which public power is exercised, so that they are capable of juridically ensuring the free and full enjoyment of human rights", including by preventing, investigating and punishing violations of human rights.[446]

496. The ECHR system has long established similar obligations, whereby States are not only required to refrain from arbitrary interference with rights, but must also adopt reasonable and appropriate measures to protect the rights of the individual.[447]

497. In the context of environmental impacts on or risks to rights, these positive obligations take the form of an obligation to respect and to protect rights by creating an appropriate regulatory framework to address the causes of climate change and to deal with its impacts both through

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[443] CESCR 'General Comment 3, The nature of States parties' obligations' (14 December 1990) UN Doc E/1991/23; UNHRC 'General Comment No. 36 on Article 6: right to life'); *The Environment and Human Rights*, Advisory Opinion OC-23/17, Inter-American Court of Human Rights Series A No 23 (15 November) paras 149–152; *Osman v the UK* ECHR 1998-VIII, para 116.
[444] UNHRC, *Daniel Billy et al v Australia* para 8.3.
[445] CESCR 'General Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12)' (11 August 2000) UN Doc E/C.12/2000/4, para 33.
[446] *Velásquez-Rodríguez v Honduras* (Judgment) Inter-American Court of Human Rights Series C No 4 (29 July 1988) para 166.
[447] *Cordella and Others v Italy* App no 54414/13 and 54264/15(ECtHR, 24 January 2019).

domestic policy measures and through cooperation on the international level.[448] This means taking all appropriate steps to safeguard rights by putting in place a legislative and administrative framework designed to provide effective deterrence against threats to those rights, including especially the right to life, as well as obligations to take such "preventive operational measures as are necessary and sufficient" to protect individuals at risk where the State has actual or putative knowledge of such a risk.[449]

498. This also entails obligations concerning the supervision of dangerous activities, investigative obligations and access to adequate information.[450] For example, in its environmental case-law, the ECtHR has consistently found that this positive obligation contains an obligation to regulate dangerous activities, i.e. to create "regulations geared to the specific features of the activity in question".[451]

499. Likewise, the UNHRC has recognized that States have an obligation to prevent foreseeable threats to the right to life, which may include adverse climate change impacts and requires States to "take all appropriate measures" to address these risks.[452] In *Portillo Cáceres et al. v. Paraguay*, a case concerning the illegal use of pesticides, it found that:

> "States parties should take all appropriate measures to address the general conditions in society that may give rise to threats to the right to life or prevent individuals from enjoying their right to life with dignity, and these conditions include environmental pollution" , finding that States may violate the right to life by failing to tackle threats even if these do not result in loss of life.[453]

500. As explained below, States' positive obligations (i.e. obligations to protect human rights from climate change) are, at their core, due diligence obligations, which must be interpreted in the light of the Paris Agreement and its temperature target, as well as customary international law on the prevention of significant harm to the environment. This approach helps to ensure the coherence of these regimes of international law, which all apply in the context of climate change.

C. Standard of Care in Performing Positive Obligations in the Light of Climate Change

501. Human rights law must be understood as complementary to international environmental law, in particular the UN climate treaties and applicable customary international law. The complementary and consistent interpretation of concurrently existing legal obligations is supported by the interpretation rules contained in the VCLT,[454] and reflects the principle of

[448] On regulatory obligations, see generally UNGA 'Report of the Special Rapporteur on the promotion and protection of human rights in the context of climate change' paras 13–15.
[449] *Öneryildiz v Turkey* ECHR 2004-XII, para 101.
[450] ibid, paras 89–91.
[451] *Jugheli and Others v Georgia* App no 38342/05 (ECtHR, 13 July 2017) para 75, with further case-law references.
[452] UNHRC, *Daniel Billy et al v Australia* para 8.3.
[453] UNHRC, *Portillo Cáceres et al v Paraguay*, Communication No. 2751/2016 (20 September 2019) UN Doc CCPR/C/126/D/2751/2016, para. 7.3.
[454] As per VCLT Article 31(1) and 31(3)(c).

systemic integration,[455] according to which any relevant rules of international law applicable in the relations between the parties need to be taken into account when interpreting a treaty.[456]

502. From the perspective of human rights more specifically, the idea that rights cannot be interpreted in a vacuum is well-established.[457] In other words, it is possible and necessary to interpret international environmental law (including the UN climate change regime), relevant customary international law, and human rights law (e.g. States' obligations to respect, protect and fulfil rights) as a coherent whole.

503. Protecting the climate system is not (or not only) an end in itself. Failing to do so will also affect the ability of States to meet the objectives of international human rights treaties and the international climate regime. Thus, IUCN submits that the legal instruments should be interpreted in a way that recognizes the legal coherence between the relevant regimes. This requires interpreting the international climate regime in harmony with the human rights obligations to protect and regulate.

504. In the context of climate change, human rights obligations can and must be read in the light of the international climate regime, especially the Paris Agreement, as well as customary international law on the environment. The obligations in question overlap and align in terms of their nature and substance.

505. Human rights law's positive obligations to protect, i.e. State's regulatory obligations, are due diligence obligations.[458] These due diligence or regulatory obligations can be fulfilled by taking effective action on the domestic or international level to protect rights.

506. States are expected to implement the available measures to prevent human rights violations. The UNHRC speaks of "all necessary measures intended to prevent" violations,[459] while tempering this by noting that States are under a "due diligence obligation to undertake reasonable positive measures which do not impose on them disproportionate burdens".[460]

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[455] ILC, 'Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law', Yearbook of the International Law Commission (2006), vol II part 2, 175–184; *Case Concerning Oil Platforms (Islamic Republic of Iran v United States of America)* [2003] ICJ Rep 161, para 41; A Peters, 'The Refinement of International Law: From Fragmentation to Regime Interaction and Politicization' (2017) 15(1) International Journal of Constitutional Law 671–704; *Al-Adsani v the United Kingdom* ECHR 2001-XI, para 60; *Banković and Others v Belgium and Others* ECHR 2001-XII paras 55–57.

[456] As discussed eg in G O Zabalza, *The Principle of Systemic Integration: Towards a Coherent International Legal Order* (LIT 2012); A Peters, 'The Refinement of International Law: From Fragmentation to Regime Interaction and Politicization' (2017) 15(1) International Journal of Constitutional Law 671–704.

[457] See e.g. *Al-Adsani v the United Kingdom* para 55, finding that "[t]he Convention should so far as possible be interpreted in harmony with other rules of international law of which it forms part".

[458] M Malaihollo, 'Due Diligence in International Environmental Law and International Human Rights Law: A Comparative Legal Study of the Nationally Determined Contributions under the Paris Agreement and Positive Obligations under the European Convention on Human Rights' (2021) 68 Netherlands International Law Review 121, 136–137.

[459] UNHRC 'General Comment No. 36 on Article 6: right to life' para 13.

[460] ibid, para 21.

507. The CESCR is guided by parties' obligation to achieve progressive realization of the economic, social and cultural rights that it interprets, and requires States to take "all appropriate means" in order to "move as expeditiously and effectively as possible" towards full realization of those rights.[461]

508. These positive or protective obligations, which pervade human rights law and are well-established in the practice of various human rights bodies, must be interpreted in the light of the Paris Agreement and the international environmental law principles of prevention and precaution.[462] IUCN submits that this would be in line with this Court's jurisprudence on the due diligence required in accordance with the environmental law obligation to prevent significant harm.[463]

509. Further, in *Bosnian Genocide,* this Court recalled Article 14(3) of the Articles on State Responsibility and observed, regarding the obligation to prevent genocide, that "the whole point of the obligation is to prevent, or attempt to prevent, the occurrence of the act", arising in the "instant that the State learns of, or should normally have learned of, the existence of a serious risk."[464] IUCN submits that this reasoning can be applied *mutatis mutandis* to the grave threat to humanity and the natural basis of its existence presented by the progression of climate change, which threatens the enjoyment of a wide range of human rights, including notably the fundamental human right to life.[465]

510. Which measures are 'reasonable and appropriate' or are commensurate with the diligence expected of States must be assessed on a case-by-case basis. It would therefore not be possible for the Court to issue an exhaustive, detailed list of all the measures a State ought to take to comply with its positive human rights obligations. The standard of what constitutes 'appropriate measures' is flexible and must be determined in the light of the risk in question. The higher the risk, the higher the requirements of the positive obligation. This flexible standard also means that the type of State conduct required will change over time, especially in the light of new scientific or technological knowledge.

D. Interpreting Human Rights Obligations in the Light of the Paris Agreement

511. By its nature, climate change affects the human rights of all, abroad and at home. The relevant standards of conduct under the three relevant bodies of law discussed here – the international climate regime, customary international environmental law, and human rights

[461] CESCR 'General Comment No. 3: The Nature of States Parties' Obligations (Art. 2(1) ICESCR)' (14 December 1990) UN Doc E/1991/23, paras 3 and 10.
[462] See, e.g., A Nolan, 'Addressing Economic and Social Rights Violations by Non-state Actors through the Role of the State: A Comparison of Regional Approaches to the "Obligation to Protect"'(2009) 9(2) Human Rights Law Review 225.
[463] *Pulp Mills on the River Uruguay (Argentina v Uruguay)* (Judgment) [2010] ICJ Reports 14 para 101.
[464] *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina v Serbia and Montenegro)* (Judgment) [2007] ICJ Rep 43, para 431.
[465] UNGA 'Report of the Special Rapporteur on the promotion and protection of human rights in the context of climate change' para 1.

law – overlap with and reinforce one another. International human rights law indicates important factors that must be taken into account in the context of the proper implementation of the principles and rules of international environmental law, including the customary no-harm rule, and vice versa.[466]

512. While the link between climate change and the protection and enjoyment of human rights is unmistakable, the scope of States' obligations and the ways in which they interact with international environmental law calls for clarification. In this regard, the Court is well-placed to provide guidance and clarity to States and the international community on the complementarity and consistency, as well as the content, of the legal obligations in question.

513. To interpret existing human rights obligations in a practical, effective and systematically unifying[467] way in the context of climate change, it is necessary to interpret the relevant instruments in the light of the Paris Agreement and customary international law.[468] As set out below, the relevant standards of conduct, i.e. positive human rights obligations and due diligence climate obligations, overlap. The human rights framework provides markers of compliance with due diligence obligations,[469] and human rights bodies regularly interpret the human rights framework in the light of environmental law principles, including the principle of precaution,[470] and due diligence standards.[471]

514. In this regard, the Paris Agreement represents a specialized normative framework that States have undertaken in the specific context of climate change, which must be considered in the interpretation of their human rights obligations.[472]

515. Human rights obligations require of States to act with due diligence. This does not guarantee that a given risk will not materialise, only that States must strive to do their best to prevent the risk. In other words, the positive obligation is not an obligation of result, but an obligation of conduct, or of employing best efforts.

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[466] Paraphrasing *Legality of the Threat or Use of Nuclear Weapons* (Advisory Opinion) [1996] ICJ Rep 226 242–243.

[467] The "practical and effective, not theoretical and illusory" formula reflects a long-standing formulation by the ECtHR, but it corresponds to a more general principle of human rights law that concerns the effective protection of rights. For the ECtHR, see *Airey v Ireland* (1979) Series A no 32, para 26. For the Inter-American Court, see *The Environment and Human Rights*, Advisory Opinion OC-23/17, Inter-American Court of Human Rights Series A No 23 (15 November 2017) para 179.

[468] C Voigt, 'The Climate Change Dimension of Human Rights: Due Diligence and States' Positive Obligations' (2022) 13 Journal of Human Rights and the Environment 152.

[469] See, e.g., S McCluskey, 'Calibrating States' Emissions Reduction Due Diligence Obligations with Reference to the Right to Life' (2022) 31(3) Review of European, Comparative & International Environmental Law 483.

[470] *The Environment and Human Rights*, Advisory Opinion OC-23/17, Inter-American Court of Human Rights Series A No 23 (15 November 2017) para 175–180; *Tătar v Romania* App no 67021/01 (ECtHR 27 January 2009), para 109.

[471] *Cordella and Others v Italy* para 161.

[472] VCLR Article 31(3)(c) indicates that account must be taken of "any relevant rules of international law applicable in the relations between the parties". On this, see *Al-Adsani v the United Kingdom* para 55.

516. In the context of climate change, certain parameters can be helpfully derived from the Paris Agreement when interpreting human rights obligations. In the context of cclimate change, human rights treaties must be interpreted in the light of the Paris Agreement. Thus, the levels of protection or due diligence expected from States can only be properly understood in the context of the international climate regime, the 1.5°C temperature threshold set out in the Paris Agreement, and the obligations of result and of conduct the Paris Agreement places on States. As detailed above in Chapter 5, this includes the obligations to prepare, communicate and maintain successive NDCs with increased ambition,[473] in line with the 1.5ºC temperature threshold, to provide the necessary information,[474] and – crucially – to submit successive NDCs that progress from the previous one and reflect each State's "highest possible ambition, reflecting […] common but differentiated responsibilities and respective capabilities, in the light of different national circumstances".[475]

517. When read in the light of the Paris Agreement's requirements and customary international law, States' due diligence obligations under human rights law do not require States to guarantee success or a certain outcome (i.e. they are obligations of conduct, and not results). However, they must be appropriate to averting the risks at stake and must ensure the effective protection of the rights concerned.[476] These obligations cannot be met where States take no climate action, or unambitious or ineffective climate action. In order to comply with their human rights obligations, States must design and effectively implement their climate laws through all appropriate and necessary measures.[477] IUCN submits that this can only be at the level of their best possible climate efforts, pursuant to Article 4(3) of the Paris Agreement and customary international law.

518. This means that States must use their best efforts to address the conduct of public and private actors, including through legislation and regulation, in the light of the risk at stake and based on the precautionary principle, informed by best-available science, and that they must adopt effective compliance and enforcement measures. The burden of proof concerning the adequacy of the measures rests on the State where a risk of harm to rights has been demonstrated. This was the approach taken by the Dutch courts in the *Urgenda* case, where the Supreme Court found, regarding the State's positive obligation to take appropriate measures to prevent dangerous climate change, that the demanded reductions target (i.e. a reduction of at least 25 per cent by 2020) had to be regarded "as an absolute minimum", and that the State had not been able to substantiate why deviating from that target was nevertheless responsible.[478] In that case, the Supreme Court observed that because States have agreed on the Paris Agreement's 1.5°C threshold, and it is clear what reductions are

[473] Paris Agreement Article 4(2) and 4(9).
[474] ibid, art 4(8).
[475] ibid, Article 4(3).
[476] For the ICCPR , see also the general duty to ensure the rights recognized in the Covenant art 2(1). Overall see *The Environment and Human Rights*, Advisory Opinion OC-23/17, Inter-American Court of Human Rights Series A No 23 (15 November 2017) para 143.
[477] See on this UNHRC 'General Comment No. 36 on Article 6: right to life'.
[478] Dutch Supreme Court (Hoge Raad), *Urgenda Foundation v the Netherlands*, Judgment of 20 December 2019, No. 19/00135, ECLI:NL:HR:2019:2006, para 7.5.1. See also C E Foster, *Science and the Precautionary Principle on International Courts and Tribunals: Expert Evidence, Burden of proof and Finality* (CUP 2011).

needed by the year 2100 to achieve this target, the choice of appropriate measures – i.e. reductions pathways – is limited.[479]

519. In other words, taken together, the Paris Agreement's temperature threshold and the emission reduction pathways provide clear benchmarks for the appropriate measures to protect human rights. It is clear that overshooting this target will have detrimental consequences for human life and the natural environment.[480]

520. Article 4(3) of the Paris Agreement is an obligation of due diligence, where each party has committed to taking all necessary and appropriate climate change mitigation measures in order to achieve the long-term temperature threshold of the Agreement, as expressed in its Article 2(1)(a).[481] Based on the available science assessed by the IPCC, this commitment requires taking all necessary and appropriate measures with the objective of reducing global CO_2 emissions by about 45 per cent by 2030, to net-zero around 2050 and to remaining net-negative thereafter.[482]

521. Moreover, in order to achieve global net-zero emissions, the Parties that are in a position to do so, based on their responsibilities and capabilities, will need to reach net-zero targets much earlier than 2050, in order to enable the Parties that might need longer to also get there around 2050.[483] This could require, for example, that States with higher responsibility and capacity must cut their emissions much earlier than 2050 and at a much deeper level than net-zero in order to ensure the global goal remains achievable.

522. While it is not possible in this statement to set out all the measures that could be used to comply with States' obligations, human rights bodies have clearly set out the *minimum* measures required.[484] As held by the IACtHR, to comply with their human rights obligations of prevention, protection and due diligence, States are obligated to regulate, supervise and monitor activities in their jurisdiction that could produce significant environmental damage, which includes greenhouse gas emissions; conduct environmental impact assessments where there is a risk of significant environmental harm; prepare contingency plans; and take measures to mitigate the impacts of any significant environmental damage that may have occurred nonetheless (i.e. take adaptation measures).[485] These obligations apply regardless of a State's level of development,[486] and include a human rights obligation to conduct *ex*

[479] See Chapter 2 of this statement.
[480] IPCC AR6 SPM WG II(2022) B.6.A.
[481] C Voigt, 'The Paris Agreement: What is the Standard of Conduct for Parties?' (2016) Questions of International Law 17, 26 <http://www.qil-qdi.org/paris-agreement-standard-conduct-parties/> ; C Voigt and F Ferreira, '"Dynamic Differentiation": The Principles of CBDR-RC, Progression and Highest Possible Ambition in the Paris Agreement' (2016) 5(2) Transnational Environmental Law 285.
[482] As set out in IPCC 'Global Warming of 1.5°C' (2018) 93-174.
[483] G Peters, 'The Path to Net-Zero', Presentation at the Third Annual Conference of the Transatlantic University Collaboration for Climate and Energy Law, Oslo, 28 April 2021. <https://www.jus.uio.no/nifs/english/research/events/2021/04-28-tucccel.html>.
[484] *The Environment and Human Rights*, Advisory Opinion OC-23/17, Inter-American Court of Human Rights Series A No 23 (15 November 2017) para 144.
[485] ibid, para 145.
[486] ibid, para 142.

ante and participatory environmental impact assessments with specified content, take precautionary measures and "continuously monitor the environmental impact of a project or activity".[487]

E. Interpreting Human Rights in the Light of Customary International Law, especially the Obligation to Prevent Significant Harm

523. Human rights obligations arealso informed by the customary international law obligation to prevent causing significant damage to the environment of other States and areas beyond national jurisdiction.[488] As this Court recognized in its 1996 *Advisory Opinion on Nuclear Weapons*, "[t]he existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment".[489] International human rights law requires States to take appropriate measures to prevent harm, including environmental harm, caused by acts on their territories or under their control.

524. Various human rights bodies have taken this approach, increasingly integrating customary environmental and human rights law. For example, the UNHRC has found that States' obligations under international environmental law should "inform the content of article 6 of the Covenant", which enshrines the right to life.[490]

525. Similarly, the IACtHR has recognized that States are under a regulatory and supervisory obligation "to prevent significant environmental damage within or outside their territory".[491]

526. In the same vein, the CRC has found that "States have a due diligence obligation to take appropriate preventive measures to protect children against reasonably foreseeable environmental harm and violations of their rights, paying due regard to the precautionary principle", which includes obligations to assess, identify, prevent, mitigate and redress environmental harm.[492]

527. The ECtHR has also recognized that States have regulatory obligations concerning dangerous activities that would affect the enjoyment of human rights, such as the right to life and the ight to privacy and family life.[493]

528. It is necessary to ensure complementarity, consistency and harmonization in the legal regimes. International human rights law must be interpreted in accordance with international

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[487] ibid, para 151, 153 and 179, with further references to the case-law of this Court (including *Pulp Mills on the River Uruguay (Argentina v Uruguay)* para 205.
[488] *Corfu Channel (United Kingdom v Albania)* 22; *Pulp Mills on the River Uruguay (Argentina v Uruguay)*) para 101, citing *Legality of the Threat or Use of Nuclear Weapons* para 29.
[489] ibid.
[490] UNHRC 'General Comment No. 36 on Article 6: right to life' para 62.
[491] *The Environment and Human Rights*), Advisory Opinion OC-23/17, Inter-American Court of Human Rights Series A No 23 (15 November 2017) para 242(b).
[492] CRC 'General Comment No. 26 on Children's Rights and the Environment with a Special Focus on Climate Change' para 69.
[493] *Jugheli and Others v Georgia* App no 38342/05(ECtHR 13 July 2017) para 75, with further case-law references.

environmental law, including the obligation to prevent significant environmental harm to the environment of other States and areas beyond national jurisdiction, as well as the international climate regime. This helps to avoid diverging, fragmented and/or contradictory standards.

PART IV – LEGAL CONSEQUENCES

529. This part addresses Question (b):

> *What are the legal consequences under these obligations for States where they, by their acts and omissions, have caused significant harm to the climate system and other parts of the environment, with respect to:*
>
> *(i) States, including, in particular, small island developing States, which due to their geographical circumstances and level of development, are injured or specially affected by or are particularly vulnerable to the adverse effects of climate change?*
>
> *(ii) Peoples and individuals of the present and future generations affected by the adverse effects of climate change?"*

530. On its face, Question (b) appears to combine primary and secondary rules of State responsibility by referring to the presence of significant harm and thus, to that extent, overlap with parts of Question (a). For clarity, IUCN has addressed all State obligations, including the obligation to prevent significant harm under customary international law, in its response under Question (a) above. This Chapter focuses on the secondary rules of State responsibility that are triggered when primary rules of international law (the State obligations discussed in answering Question (a) above) are breached by a State's acts or omissions, where those acts or omissions are attributable to that State, and where they lead to significant harm to the climate system or other parts of the environment.

531. The determination of "harm", referred to in Question (b), was addressed in Chapter 7. However, Question (b) provides important context as to when "significant harm" occurs. Different "geographical circumstances", particular vulnerabilities or different "level[s] of development" are relevant in determining when the threshold of significance of harm may be crossed. This is the case, for example, for many SIDS. Question (b) brıngs these specific cırcumstances of States and people into the realm of State responsibility by inquiring into the legal consequences when acts and omissions of States lead to significant harm for such States and people. In particular, when States are "specially affected by or are particularly vulnerable to the adverse effects of climate change" and people are "affected by the adverse effects of climate change".

532. Building on an understanding of the comprehensive nature of the climate system and the 1.5°C threshold for protecting it, IUCN answers Question (b) by submitting that breaches of the obligations identified under Question (a) can give rise to State responsibility under international law. Obligations of continued performance apply, and State responsibility entails the legal consequences of cessation of the internationally wrongful act, non-repetition and full reparation. However, when and how these legal consequences apply in a particular case depends on the facts and cannot be determined *in abstracto*. In other words, Question (b) cannot be answered in the abstract.

CHAPTER 9: LEGAL CONSEQUENCES OF THE BREACH OF STATES' OBLIGATIONS TO PROTECT THE CLIMATE SYSTEM

I. Introduction

533. This Chapter sets out IUCN's response to Question (b):

> *"What are the legal consequences under these obligations for States where they, by their acts and omissions, have caused significant harm to the climate system and other parts of the environment, with respect to:*
>
> *(i) States, including, in particular, small island developing States, which due to their geographical circumstances and level of development, are injured or specially affected by or are particularly vulnerable to the adverse effects of climate change?*
>
> *(ii) Peoples and individuals of the present and future generations affected by the adverse effects of climate change?"*

534. IUCN responds to this second question by discussing the secondary rules of State responsibility. State responsibility concerns the general rules governing the international responsibility of the State for a breach of an international obligation, where that breach is attributable to that State. This is the situation where (i) the State obligations that were identified in answering Question (a) above are breached by a State's acts and/or omissions, (ii) those acts and/or omissions are attributable to that State. In the context of this submissions, a further requirement is added, namely (iii) the conduct in question has caused significant harm to the climate system or other parts of the environment.

535. The determination of significant harm is addressed in Chapter 7, in the context of discussing the customary international law obligation to prevent significant harm to the environment of other States and areas beyond national jurisdiction.

536. Question (b) points to specific circumstances, such as different 'geographical circumstances', particular vulnerabilities, or different 'levels of development' that are relevant for the determination of when the threshold of significance of harm may be crossed. This may anticipate the crossing of the threshold for 'significant harm' for example, for many SIDS.

537. Those circumstances are also relevant for determining the legal consequences, especially the extent of reparations, once State responsibility is established. States that are "specially affected by or are particularly vulnerable to the adverse effects of climate change"[494] or people who are "affected by the adverse effects of climate change"[495] may experience greater harm which should lead to increased reparation.

[494] UNGA Res 77/276 (29 March 2023) UN Doc A/RES/77/276, 3. ICJ Dossier No 2.
[495] ibid.

538. State responsibility arises where there is an internationally wrongful act.[496] Section II address the requirements of an internationally wrongful act, i.e. State conduct consisting of an action or omission, which:

a) constitutes a breach of an international obligation of the State; and

b) is attributable to the State under international law .[497]

539. Section III recalls the key points on what constitutes significant harm as set out in Chapter 7 and sets out additional considerations when determining what consttutes significant harm for the purpose of establishing State responsibility, taking into account the formulation of Question (b).

540. Section IV sets out the legal consequences that arise from State responsibility: cessation of the internationally wrongful act, non-repetition and full reparation.

541. In the context of reparation, the existence of significant harm to the climate system and other parts of the environment (as assessed in Chapter 7) and the causal link between such significant harm and acts or omissions attributable to States are relevant. Section IV also addresses in its analysis of reparation the specific circumstances of (i) States which, due to their geographical circumstances and level of development, are injured or are specially affected or particularly vulnerable to the adverse effects of climate change, in particular SIDS; and of (ii) peoples and individuals of the present and future generations affected by the adverse effects of climate change.

542. As explained in Section IV, where a State, by its acts or omissions, has caused significant harm to the climate system and other parts of the environment, it bears international responsibility if those acts or omissions constitute a breach of its international obligations. The term 'internationally wrongful act' is intended to cover all wrongful conduct of a State, whether it arises from positive action or from an omission or a failure to act.[498] Such conduct which is 'internationally wrongful' entails international responsibility, which carries the following consequences:

a) ceasing the wrongful act if it is still continuing;[499]

b) offering appropriate assurances and guarantees of non-repetition, if circumstances so require;[500] and

[496] Articles on Responsibility of States for Internationally Wrongful Acts, ILC, 'Report of the International Law Commission on the Work of its 53rd Session' (23 April-1 June and 2 July-10 August 2001) UN Doc A/56/10, 26-30 ('ARSIWA') Article 1.
[497] ibid, Article 2.
[498] Commentary on the Articles on Responsibility of States for Internationally Wrongful Acts, ILC, 'Report of the International Law Commission on the Work of its 53rd Session' (23 April-1 June and 2 July-10 August 2001) UN Doc A/56/10 ('ARSIWA Commentary'), 34, para 8.
[499] ARSIWA Article 30(a).
[500] ibid, Article 30(b).

c) making full reparation for the injury caused by the internationally wrongful act, in the form of restitution, compensation and satisfaction, either singly or in combination.[501]

543. In addition, the responsible State is obliged to continue performing its obligations even though those obligations have been breached.[502]

544. Section IV also makes the point that the general rules of States responsibility can apply to determine the consequences when harm is caused to particularly vulnerable States, individuals or peoples. There are no special or unique rules of State responsibility that apply based on the differentiation of victims. These general rules are broad and flexible enough to take into account those particular circumstances in the context of climate change.

545. When and how these consequences apply, depend on the facts of particular cases and cannot be determined in the abstract/ *in abstracto*.

II. Internationally Wrongful Act

A. Breach of an International Obligation

546. Question (b) concerns the legal consequences for States of breaches of the obligations identified in Part III, in response to Question (a), above (the 'Climate Obligations') for States which have caused significant harm to the climate system and other parts of the environment.[503]

547. As explained above,[504] IUCN understands Question (b) to engage only with breaches of Climate Obligations that have caused significant harm to the climate system and other parts of the environment. This means that not all breaches of all obligations discussed in Part III will be relevant in the context of Question (b). Where States have breached their Climate Obligations in ways that do not cause significant harm to the climate system and other parts of the environment, the discussion of those consequences falls outside the scope of Question

[501] ibid, Articles 31(1) and 34.
[502] ibid, Article 29.
[503] On its face, Question (b) is not confined to situations where States have breached their Climate Obligations. Rather, it arguably includes situations where States have complied with their Climate Obligations, but have nevertheless caused significant harm to the climate system and other parts of the environment. However, for the purpose of this statement, IUCN does not consider it necessary to discuss such consequences at length. It suffices to mention that in its 2006 Draft Principles on the Allocation of Loss in the Case of Transboundary Harm Arising out of Hazardous Activities, the ILC considers that where States have caused significant harm to the environment, despite complying with their international obligations, they should take all necessary measures to ensure that prompt and adequate compensation is available to the victims (Principle 4(1)) and to take all feasible measures to mitigate and, if possible, eliminate the effects of such damage (Principle 5(d)). ILC, 'Report of the International Law Commission to the General Assembly on the Work of its 58th Session' (1 May-9 June and 3 July-11 August 2006) UN Doc A/61/10. IUCN would further highlight that State responsibility arises for all attributable internationally wrongful acts, irrespective of whether they have led to any actual harm or not.
[504] See Chapter 1 of this Statement.

(b). Thus, in this part of its statement, IUCN will limit itself to discussing the consequences of breaches causing significant harm.

548. We will discuss each of the legal consequences later in this chapter. As a preliminary matter, and as set out in Article 2 of the Articles on Responsibility of States for Internationally Wrongful Acts (ARSIWA), conduct consisting of an action or omission is an internationally wrongful act when (a) it is attributable to the State under international law; and (b) it constitutes a breach of an international obligation.[505] Thus, where a State's act or omission breaches its Climate Obligations, that alone is insufficient to characterise the act or omission as an internationally wrongful act. It is necessary to also confirm that the relevant act or omission is attributable to that State.

B. Attribution of Acts or Omissions to States

549. As explained by the ILC, the general rule under international law is that:

> "the only conduct attributed to the State at the international level is that of its organs of government, or of others who have acted under the direction, instigation or control of those organs".[506]

As identified by the ILC, the conduct of the following non-exhaustive list of entities is attributable to a State:

a. an organ of that State;[507]

b. a person or entity which is empowered by the law of that State to exercise elements of the governmental authority, provided the person or entity was acting in that capacity in the particular instance;[508]

c. a person or a group of persons acting on the instructions, or under the direction or control of that State;[509] and

d. an entity whose relevant conduct the State has acknowledged and adopted as its own.[510]

550. In general, "the conduct of private persons is not as such attributable to the State".[511] However, such conduct may be attributable to the State where it was carried out under the direction or control of that State. Article 8 of ARSIWA states that:

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[505] ARSIWA Article 2.
[506] ARSIWA Commentary para 2. See also *Dispute between Italy and Greece (Corfu Incident) (1923)* 11 League of Nations Official Journal (November 1923), 1349; *Laura M.B. Janes et al. (USA) v Mexico* (1925) 4 RIAA 82.
[507] ARISWA Article 4(1).
[508] ibid, Article 5.
[509] ibid, Article 8
[510] ibid, Article 11.
[511] ARSIWA Commentary, 38, para 3.

> "The conduct of a person or group shall be considered an act of a State under international law if the person or group of persons is in fact acting on the instructions of, or under the direction or control of, that State in carrying out the conduct."

551. The rules for attributing alleged internationally wrongful conduct to a State do not vary with the nature of the wrongful act in question in the absence of a clearly expressed *lex specialis*. Therefore, the first key point is that significant harm to the climate system and other parts of the environment will be considered as attributable to a State if, and to the extent that, the conduct causing significant harm has been committed by *de jure* State organs or, alternatively, *de facto* organs of the State in the form of persons or entities acting wholly or in part on the instructions or directions of the State, or under its effective control. This is the state of customary international law, as reflected in ARSIWA.[512]

552. In its advisory opinion in *Responsibilities and Obligations of States with respect to Activities in the Area*, the ITLOS Seabed Dispute Chamber confirmed that, in certain situations, the acts of private individuals or entities may be attributable to the State.[513] This applies in the situations referred to in the previous paragraph including where the individual or entity in question has been empowered to act as a State organ or where the conduct has been acknowledged and adopted by the State as its own.

553. The second key point is that it is well established in international law and universally recognized that, where a State owes preventive obligations, a State may bear responsibility in respect of effects of the conduct of private parties if it failed to take necessary measures to prevent those effects, even where the private parties' conduct is not attributable to the Statesuch. Commentary (4) to Chapter II of ARSIWA states in this respect:

> "But the different rules of attribution stated in chapter II have a cumulative effect, such that a State may be responsible for the effects of the conduct of private parties, if it failed to take necessary measures to prevent those effects." [514]

This is particularly relevant where States have failed, for example, to exercise due diligence by failing to take the necessary regulatory and legislative measures to prevent significant transboundary harm caused by private persons or entities to the territory or another state or to areas beyond national jurisdiction. What is relevant for the conduct of the State is its *own* omission to act with the diligence required in regulating the conduct of private actorsAs explained above,[515] this is precisely the nature of the customary international law obligation to prevent significant harm to the climate system and other parts of the environment. This may apply in situations where States have not taken the necessary and adequate regulatory

[512] In *Bosnian Genocide*, the Court confirmed that where a State has exercised "effective control over the action during which the wrong was committed", such action is attributable to that State in accordance with Article 8 of ARSIWA. *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina v Serbia and Montenegro)* 210, para 406.
[513] *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area* (Advisory Opinion of 1 February 2011) ITLOS Reports 2011, 10, 60, para 182.
[514] ARSIWA Commentary 38, para 4.
[515] See Chapter 7 in this Statement.

or legal measures to ensure that the conduct of private actors is aligned with the Paris Agreement`s temperature threshold or failed to apply the necessary vigilane in enforcing compliance with those measures.

554. Thus, States bear international responsibility when they fail in their due diligence obligation to control private actors' activities within their jurisdiction or control. This is particularly relevant in relation to GHG emissions since many of the activities within a State that could lead to a breach of State obligations to protect the climate system stem from the actions and/or omissions of private actors.

III. Significant Harm to the Climate System and other Parts of the Environment

555. Question (b) concerns the consequences where States, in breaching Climate Obligations in a way that is attributable to them, have caused "significant harm to the climate system and other parts of the environment". In Chapter 7, IUCN has set out what constitutes such 'significant harm'. [516] To recall the key points:

(a) As scientific understanding evolves, it becomes evident that environmental impacts, initially deemed insignificant, might later be recognized as significant. The current lack of qualification of certain environmental harms as significant does not preclude them from being considered as such in the future, potentially triggering State responsibility where appropriate. [517] This understanding of international law as an evolving creature underscores the dynamic and progressive nature of both environmental science and international law, as they adapt to new findings and understandings in the field of climate science.

(b) Due to the all-encompassing nature of the climate system as defined in Article 1(4) UNFCCC, significant harm to the climate system implies by definition significant harm to other parts of the environment.[518]

(c) A temperature increase of 1.5°C will create significant harm to the climate system.[519] Even at a temperature increase of below 1.5°C, there is a risk of significant harm the climate system.

(d) The same action or omission can produce minimal or no harm for one State, yet produce significant harm for another State. SIDS, which are particularly vulnerable to the adverse effects of climate change, may suffer from significant harm even where other States do not.[520] The impacts of climate change at a temperature increase of below 1.5°C could indeed have devastating consequences for SIDS that amount to significant harm.[521]

[516] See Chapter 7 in this Statement.
[517] ibid.
[518] ibid.
[519] ibid.
[520] ibid.
[521] IPCC 'Global Warming of 1.5 ºC' (2018) 181.

556. To reiterate, not all breaches of Climate Obligations fall under the scope of Question (b), which concerns only those breaches that lead to significant harm to the climate system and to other parts of the environment. In Part III of this statement, IUCN has demonstrated that there are several State obligations to protect the climate system and other parts of the environment in the Paris Agreement,[522] in other relevant treaties,[523] in customary international law[524] and under international human rights treaties.[525] .

557. Question (b) concerns the consequences where States, in breaching their Climate Obligations, have 'caused' significant harm to the climate system and other parts of the environment.

558. Under international law, there is no single test to determine causation that applies to every situation. The ILC has identified the following general principles when determining causation:[526]

    a. establishing causation is a legal and not only historical or causal exercise;

    b. terms used to describe the causal link required for reparation to be due under the law on state responsibility include: the wrongful act must be "a proximate cause"[527]; "the damage should not be "too indirect, remote, and uncertain to be appraised"[528]; "direct loss … as a result of" the wrongful act[529];

    c. causality is a necessary, but not sufficient condition for reparation. Other criteria include "directness"[530] and "foreseeability"[531]; and

    d. other factors include whether the State deliberately caused the harm in question, or whether the harm caused was within the ambit of the rule that was breached, having regard to the purpose of that rule.[532]

559. IUCN submits that these general principles are equally applicable when determining whether States' acts or omissions have 'caused' significant harm to the climate system and other parts of the environment.

560. As explained in Chapter 4, the scientific evidence is clear in establishing a direct causal link between increasing levels of GHG concentrations in the atmosphere and increasing global

[522] See Chapter 5.
[523] See Chapter 6.
[524] See Chapter 7.
[525] See Chapter 8.
[526] ARSIWA Commentary 92-93, para 10.
[527] *Mixed Claims Commission (United States and Germany)* (Administrative Decision) (1923) 7 RIAA 23, 30.
[528] *Trail Smelter case (United States and Canada)* (Decision) (1938) 3 RIAA 1911, 1931.
[529] UNSC Res 687 (3 April 1991) UN Doc S/RES/687, 14, para 16.
[530] ibid.
[531] *Portuguese Colonies case (Naulilaa incident)* (1928) 2 RIAA 1011, 1031.
[532] *Islamic Republic of Iran v United States of America* (1999) 11(2) World Trade and Arbitration Materials 45.

mean temperatures.[533] There is also a clear causal link between increasing GHG concentrations in the atmosphere and significant harm to the climate system.[534] Thus, when States fail to meet their Climate Obligations under chapter 7 and curtail GHG emissions accordingly, they contribute to significant harm to the climate system, if temperature increases cross 1.5ºC. As explained in chapter 7, IUCN submits that this contribution suffices to establish a causal link between those breaches and significant harm to the climate system..

561. It is critical to emphasize that scientific evidence is not static and evolves over time, deepening our understanding of the causes of climate change and its effects. Levels of GHG emissions that were previously considered insignificant may actually be harmful as scientific understanding advances. Indeed, in line with the evolving nature of science, the Parties to the Paris Agreement have committed to base their actions on "the best available science".[535] It follows that determination of causation for the purpose of State responsibility should align with the prevailing scientific knowledge, at any given time.

562. When determining causation in the context of harm to the climate system, there are two issues which require further consideration:

(a) Where the harm to the climate system is partly due to causes other than the internationally wrongful act ('concurrent causes'). This may be relevant in cases where other environmental or social disasters or third party conduct exacerbate the impacts of climate change.

(b) Where the injured State has contributed to the climate damage ('contribution to the injury'). This might be relevant where the injured State itself has produced significant emissions and also in cases of risk-increasing activities, such as poor planning or unregulated urban sprawl to highly exposed and vulnerable areas, or building permissions in areas that are prone to flooding.

563. Each of these issues will be discussed below.

a) Concurrent Causes

564. In the context of climate change, it may be argued that there are concurrent causes other than the internationally wrongful act that contribute to the damage. This may complicate the attribution of the damage to any specific act or omission. For example, an armed conflict or a natural disaster, may contribute to the damage to the climate system, in addition to the internationally wrongful acts envisaged in the question.

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[533] IPCC SPM 'Global Warming of 1.5 ºC' (2018) , 3 *See also*, A Stips and others, 'On the Causal Structure Between CO_2 and Global Temperature' [2016] Scientific Reports. "Using the IF concept we were able to confirm the inherent one-way causality between human activities and global warming, as during the last 150 years the increasing anthropogenic radiative forcing is driving the increasing global temperature, a result that cannot be inferred from traditional time delayed correlation or ordinary least square regression analysis."
[534] IPCC SPM 'Global Warming of 1.5 ºC' (2018), 3, 5, (A.1, A.3).
[535] Paris Agreement Preambular paragraph 4, and Articles 4(1) and 7(5).

565. During the drafting of ARSIWA, the ILC discussed this issue and considered that "the wrongdoing State should be liable for all the harm caused, irrespective of the role which external causes might have played in aggravating the harm."[536]

566. The ILC Commentary to ARSIWA notes that international practice does not support the attenuation of responsibility or the reduction or attenuation of reparation in cases of concurrent causes.[537] It adds that the same result will follow in cases "where the concurrent cause is not the act of another State (which might be held separately responsible) but of private individuals, or some natural event such as a flood."[538] In the same vein, the ILC noted that:

> "unless one part of the injury can be shown to be severable in causal terms from that attributed to the responsible State, the latter is held responsible for all the consequences, not being too remote, of its wrongful conduct."[539]

567. This is consistent with the Court's jurisprudence. For instance, in *Corfu Channel*, the Court ordered Albania to pay full compensation to the United Kingdom, even though the mines were laid by a third party, because Albania failed to fulfill its duty to warn the UK about the mines.[540]

568. Consideration of a concurrent cause in the form of a natural event can be found in the jurisprudence of the Eritrea–Ethiopia Claims Commission. In relation to Ethiopia's claims concerning internally displaced persons (the *Tigray case*), the Claims Commission held:

> "A further complication is that some areas in Tigray were plagued at relevant times both by war and by drought, and both afflictions caused displacement. The evidence did not distinguish between persons who left their homes on account of the war, and those who left for other reasons. However, it was clear that the war was by far the most significant cause of internal displacement, and the Commission has not taken drought into account in seeking to assess the numbers of persons displaced on account of the jus ad bellum violation."[541]

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[536] ILC, 'Summary Records of the Meetings of the 44th Session' (4 May-24 July 1992) UN Doc A/CN.4/SER.A/1992, 217. In the Drafting Committee's opinion, that type of situation did not call for a specific provision, but should simply be covered in the commentary. In any case, the Drafting Committee did not reject the relevance of the contributory negligence of the injured State.

[537] ARSIWA Commentary 93, para 12. "[a]lthough, in such cases [concurrent causes], the injury in question was effectively caused by a combination of factors, only one of which is to be ascribed to the responsible State, international practice and the decisions of international tribunals do not support the reduction or attenuation of reparation for concurrent causes."

[538] ibid.

[539] ARSIWA Commentary 93, para 13. Emphasis added.

[540] *Corfu Channel Case (UK v Albania)* (Merits) [1949] ICJ Rep 4 , 23.

[541] *Final Award: Ethiopia's Damages Claims* (2009) 26 RIAA 631, 733.

569. In this context, the IUCN submits that the obligation to make reparation should be fully applicable in situations where an act or omission results in significant harm to the climate system, contributing to damage in the territory of a given State. The presence of concurrent causes, such as war or earthquakes, should not serve as an exculpatory excuse for states

570. At the same time the para 14 of the commentary to ARSIWA Article 31 suggests that reparation will not be due which is out of all proportion to the gravity of a breach.

B) Contribution to the Injury

571. The concept of contribution to the injury concerns situations in which an injured State suffers greater damage due to its own act or omission.[542]

572. As explained below, a State's contribution to its own injury is only relevant when determining States responsibility if the contribution was wilful or negligent.[543] Further, the degree of negligence or wilfullness impacts the determination of reparation.[544]

573. Where a State has contributed to its own harm through wilful or negligent actions, its reparations should be reduced due to the "relevance of the injured State's contribution to the damage in determining the appropriate reparation."[545] This is reflected in Article 39 of ARSIWA, citing the *LaGrand* case.[546] In this regard, the ILC observed that:

> "[n]ot every action or omission which contributes to the damage suffered is relevant for this purpose. Rather, article 39 allows to be taken into account only those actions or omissions which can be considered as willful or negligent, i.e. which manifest a lack of due care on the part of the victim of the breach for his or her own property or rights".[547]

574. Applied to the context of climate change, States' reparations should be reduced in proportion to their contribution to their own harm, when those emissions result from wilful or negligent behaviour. The standard of due diligence, as informed by the Paris Agreement, apply and require States to adopt all necessary and appropriate measures – or to deploy their best efforts – in the light of the climate change risk. Contribution to the damage to the climate system can thus be said to be based on a breach of those due diligence standards, either wilfully or by neglect. Given the significant level of threat to the climate system, there is a good argument that States' breaches of their Climate Obligations are wilful and/or negligent.

575. Therefore, IUCN submits that contribution to the injury by the injured State can serve as a basis for reducing reparation for climate change for, for example, high-emitting States. This

[542] ARSIWA Commentary 109-110, para 1.
[543] ARSIWA Article 39.
[544] ARSIWA Commentary 110, para 5.
[545] ibid para 4.
[546] *LaGrand (Germany v United States of America)*, Judgement, I.C.J. Reports 2001, p. 466.
[547] ibid.

concept is a relevant factor in limiting the extent of compensation for those States or other States that negligently or willfully contributed to the harm.

IV. Legal Consequences for States for Breach of their Climate Obligations

576. In this section, IUCN discusses the legal consequences for States where they have breached their Climate Obligations in a manner that is attributable and caused significant harm to the climate system and other parts of the environment.

577. As stated in Article 2 of ARSIWA, where an act or omission attributable to a State constitutes a breach of that State's Climate Obligations, that act or omission is an internationally wrongful act. As stated in Article 1 of ARSIWA, every internationally wrongful act of a State entails the international responsibility of that State. As noted by the ILC, this is a "basic principle" of international law.[548] Thus, where a State breaches its Climate Obligations, it bears international responsibility.

578. We will first address each of the legal consequences stemming from State responsibility and consider the extent to which they could be considered appropriate in a situation where there has been a breach of a climate obligation leading to significant harm to the climate system (A). We will then respond to the part of Question (b) which concerns specific consequences where States have caused significant harm to (i) small island developing States (SIDS), which due to their geographical circumstances and level of development, are injured or specially affected by or are particularly vulnerable to the adverse effects of climate change (B); and (ii) peoples and individuals of the present and future generations affected by the adverse effects of climate change (C).

A. Consequences under the Law of State Responsibility

579. ARSIWA Article 1 provides that international responsibility arises in respect of internationally wrongful acts.[549] Article 12 of ARSIWA states that there is a breach of an international obligation when an act of the State concerned is not in conformity with what is required of it by the obligations set in this statement, whatever its origin or character.[550] ARSIWA Article 2 provides that "[t]here is an internationally wrongful act of a State when conduct consisting of an action or omission: (a) is attributable to the State under international law; and (b) constitutes a breach of an international obligation of the State."[551]

580. It is well accepted that "the automatic substantive corollaries of responsibility are cessation (if the breach is continuing) and reparation*"*.[552]According to general international law, the State responsible for an internationally wrongful act is required to:

[548] ARSIWA Commentary 32, para 1.
[549] Article 1.
[550] ibid, Article 12.
[551] ibid, Article 2.
[552] J Crawford, *State Responsibility: The General Part* (Cambridge University Press 2013), 357.

a. cease and non-repeat the wrongful act if it is still continuing;[553]

b. offer appropriate assurances and guarantees or non-repetition, if circumstances so require;[554] and

c. make full reparation for the injury caused by the internationally wrongful act[555], in the form of restitution, compensation and satisfaction, either singly or in combination.[556]

581. In addition, the responsible State is required to continue performing its obligations even though those obligations have been breached.[557]

582. Beyond these general principles, the exact content of a State's international responsibility will depend on the particular circumstances in each case. Where the circumstances concern a State's breach of its Climate Obligations, IUCN submits that the following considerations should apply.

583. First, a State in breach of its Climate Obligations is: (i) still under a continued duty to perform the obligation it has breached[558] and (ii) is required to cease its breaches.[559] This may require the State to refrain from taking certain actions. For example, in the *Whaling* case, the Court ordered Japan to refrain from granting any further permits in pursuant of its whaling programme, JARPA II.[560]

584. In a climate change context, States would need to implement and effectively enforce the necessary measures to fulfill their climate obligations, i.e mitigation measures that comply with the legal obligations outlined in Part III above. This applies even in a situation where such measures might violate domestic laws or conflict with other international obligations, for example under international trade or investment law.[561] In the latter case, States would

[553] ARSIWA Article 30(a); *Jurisdictional Immunities of the State (Germany v Italy: Greece intervening)* (Judgment) [2012] ICJ Reports 99, 153, para 137.
[554] ARSIWA art 30(b); *Jurisdictional Immunities of the State (Germany v Italy)* 154 , para 138.
[555] ARSIWA Article 31(1); *Case Concerning the Factory at Chorzów (Claim for Indemnity)* (Jurisdiction) PCIJ Rep Series A No 9, 47.
[556] ARSIWA Article 34.
[557] ibid, Article 29.
[558] ibid. See also, ARSIWA Commentary 88, para 2.
[559] ARSIWA Article 30(a); *Jurisdictional Immunities of the State (Germany v Italy)* 153, para 137.
[560] *Whaling in the Antarctic (Australia v Japan: New Zealand intervening),* (Judgment)*,* [2014] ICJ Rep 226 , 300, para 247(7).
[561] Two domestic cases give an example: *RWE v the Netherlands,* ICSID Case No. ARB/21/4; and *Uniper SE, Uniper Benelux Holding B.V. and Uniper Benelux N.V. v Kingdom of the Netherlands,* ICSID Case No. ARB/21/22. In these cases, German investors challenged the decision by the Government of the Netherlands to phase out coal-fired power generation by 2030 in compliance with its climate change objectives. The claims arose from the 2019 law that prohibits the use of coal for electricity production and requires the shutdown of the claimants' coal-fired power plant at the end of a 10-year transitional period on January 1, 2030. At the national level, the Dutch District Court ruled that the prohibition of coal use in electricity production by 2030, despite being arguably expropriatory, remains lawful. The measure does not constitute de facto expropriation, as the plants can still be economically useful, for instance, by converting to biomass. Therefore, the measures are deemed proportional, necessary, and foreseeable, especially given the ongoing societal debate on climate issues. The court found that the transition period

need to seek ways to concurrently apply all international obligation which they have taken upon them, without breaching any of them.

585. Second, a State in breach of its Climate Obligations may be required to offer appropriate assurances and guarantees that it will not breach those obligations again.[562]

586. As regards reparation, the responsible State is required to provide full reparation for the injury caused by the internationally wrongful act, which can take the form of restitution, compensation and satisfaction, either singly or in combination. As held by the Court in *DRC v Uganda*:

> "it is well established in general international law that a State which bears international responsibility for an internationally wrongful act is under an obligation to make full reparation for the injury caused by that act".[563]

What constitutes adequate reparation depends on the concrete circumstances in each case.[564] Reparation can take the form of restitution, compensation and/or satisfaction.

587. Restitution involves the "re-establishment as far as possible of the situation which existed prior to the commission of the internationally wrongful act".[565] This applies unless restitution is materially impossible or involves a burden out of all proportion to the benefit deriving from restitution instead of compensation. Restitution may not be a suitable form of reparation for most of the Climate Obligations given that it may not be realistically possible for just a single State or even a handful of States to reverse the harm to the climate system and other parts of the environment.

588. As regards compensation, a State responsible for an internationally wrongful act is under an obligation to compensate for the damage caused, insofar as such damage is not made good by restitution. The compensation shall cover any financially assessable damage including loss of profits insofar as it is established.[566]

589. The Court recognized in *Certain Activities/Construction of a Road* that "damage to the environment, and the consequent impairment or loss of the ability of the environment to

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until 2030 provides a fair balance between the companies' rights and the public interest, not placing an excessive burden on the companies.

[562] In this regard, the Court has stated that, as a general rule, if a State's conduct has been declared wrongful by the Court, there is no reason to assume that it would repeat that conduct in the future. The Court also stated in *Germany v. Italy* that, in special circumstances, it may order the State responsible to take specific measures to ensure that the wrongful act is not repeated. *Jurisdictional Immunities of the State (Germany v Italy)* 154, para 138.

[563] *Case Concerning Armed Activities on the Territory of the Congo (Democratic Republic of the Congo v Uganda)*, (Merits) [2005] ICJ Rep 168, 257, para 259. See also *Factory at Chorzów* 21; *Case Concerning the Gabčíkovo-Nagymaros Project (Hungary/Slovakia)* [1997] ICJ Rep 7, 81, para 152; *Avena and Other Mexican Nationals (Mexico v. United States of America)* (Merits) [2004] ICJ Rep 12, 59, para 119.

[564] *Avena and Other Mexican Nationals (Mexico v. United States of America)* (Merits) [2004] ICJ Rep 12, 59, paras 119 and 123.

[565] ARSIWA Commentary 96, para 1.

[566] ARSIWA Article 36.

provide goods and services, is compensable under international law".[567] Therefore, the mere fact that the type of damage is environmental damage is no legal impediment to compensation being a form of reparation. As the Court explained:

> "[s]uch compensation may include indemnification for the impairment or loss of environmental goods and services in the period prior to recovery and payment for the restoration of the damaged environment".[568]

590. Whether cessation or reparation in from of restitution or compensation provide adequate consequences depends on the form of harm. As we say in Chapter 7 , significant harm could take the form of significant harm to the climate system *per se* and also the form of damage to States). Both are forms of significant harm. So far as damage to the climate system is concerned, arguably it is cessation that is the primary way to help reverse (over time) as much as possible the harm to the climate systemIn addition, the removal of quantities of greenhouse gases from the atmosphere could help reverse damage to the climate system, as a form of restitution in so far as it is not legally required under primary law. Where it is legally required it may constitute cessation. So far as damage to states consequent on damage to the climate system is concerned (eg as a result of severe weather events), partial restitution such as the rebuilding of damaged facilities and infrastructure, together with compensation, could both have become relevant.

591. the third form of reparation is satisfaction. However, satisfaction alone is very unlikely to be an appropriate form of reparation where a State has breached its Climate Obligations. Thus, if the consequences of a State's breach of its Climate Obligations were to be determined by an international court or tribunal, including this Court, a mere declaration that the State has breached its Climate Obligations is unlikely to meet the standard of 'full reparation'.

592. In general, the injured State can invoke State responsibility. A State is entitled as an injured State to invoke the responsibility of another State if the obligation breached is owed to that State individually (Art 42(a)). A State is also entitled as an injured State to invoke the responsibility of another State if the obligation breached is owed to a group of States including that State, or to the international community as a whole, and the breach of the obligation specially affects that State or is of such a character as to radically change the position of all the other States to which the obligation is owed with respect to the further performance of the obligation (Art 42(b)).[569]

593. With respect to climate change, there may be obligations contained in bilateral treaties which apply on a State-to-State basis, not discussed in this statement.

594. Under customary international law, the argument can be made that the obligation to prevent significant harm is owed to the injured state(s) which are affected by climate change impacts.

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[567] *Certain Activites Carried Out by Nicaragua in the Border Area (Costa Rica v Nicaragua)* (Compensation) [2018] ICJ Rep 15, 28, para 42.
[568] ibid, para 43.
[569] ARSIWA Article 42.

595. Moreover, the obligation to prevent harm to the climate system can be considered is an obligation owed to the community as a whole, as indicated in Chapter 7.[570] In cases of breaches of these *erga omnes* obligations, any State can invoke the responsibility of the State conducting the internationally wrongful act.[571] With respect to significant harm to the climate system, it is most likely that either or both of these requirements would be fulfilled.

596. If State responsibility is invoked by a non-injured State, it will not receive reparation.[572]

B. State Responsibility Considerations Concerning Small Island Developing States

597. The general rules governing the consequences where States have caused significant harm to the climate system set out above equally apply to situations where the injured parties are SIDS or vulnerable peoples or individuals adversely affected by climate change. This is unless there are special rules that apply as a matter of *lex specialis*. The possibility of special rules governing State responsibility is recognized by the ILC in Article 55 of ARSIWA.[573]

598. Under existing international law, there is no special or unique regime that applies to determine the consequences where the injured parties are SIDS or vulnerable peoples or individuals adversely affected by climate change. This is not to say that the consequences in every situation are the same regardless of the identity of the injured party. Rather, the general rules of State responsibility are broad and flexible enough to take into account particular circumstances. As explained above, a case-by-case assessment is required to determining the exact consequences in a specific situation. There is no unique set of rules that governs how the consequences should be determined where injured parties are SIDS or vulnerable peoples or individuals adversely affected by climate change.

599. As explained above, a specially affected State can invoke the responsibility of another State as an injured State if the obligation breached is owed to the international community as a whole.[574] Thus, a SIDS, which is specially affected by the impacts of climate change, may have standing to invoke the responsibility of another State in breach of its Climate Obligations that are owed to the international community. This could be the case where common interests are at stake, or in situations where a particular breach addresses a common concern of humankind,[575] such as climate change.[576]

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[570] Chapter 7 Of this Susmission
[571] ARSIWA 48.
[572] ibid Article 48.
[573] ARSIWA Article 55.
[574] ibid, art 42(b). See the definition of *erga omnes* obligations in *Barcelona Traction, Light and Power Company, Limited* (Judgment) [1970] ICJ Rep 3, 32, para 33-34.
[575] See, e.g., CBD , UNFCCC; Paris Agreement
[576] ARSIWA Article 42; UNFCCC preamble.

C. State Responsibility Considerations Concerning Peoples and Individuals of the Present and Future Generations Affected by the Adverse Effects of Climate Change

600. Similarly, IUCN submits there are no special rules or *lex specialis* to determine the consequences where the significant harm is suffered by peoples and individuals of present and future generations. Rather, these consequences would follow the application of the principles discussed above, which are broad and flexible enough to take into account the impacts on peoples and individuals of the present and future generations.

601. Nevertheless, as highlighted throughout this statement, in the context of State responsibility regarding peoples and individuals affected by climate change, the principle of intergenerational equity requires both the Court and States to consider the long-term impacts of their actions on future generations. This principle should be taken into consideration when determining State responsibility. Cessation of the wrongful act is imperative in order to protect the climate system, and the rights and interests of current generations in the future and of future generations.

602. Intergenerational equity was recognized by the Court in its *Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons*, where it held that the environment is not a mere abstraction, but "represents the living space, the quality of life and the very health of human beings, including generations unborn".[577] Similarly, in *Pulp Mills*, Justice Cançado Trindade noted that "[n]owadays, in 2010, it can hardly be doubted that the acknowledgment of intergenerational equity forms part of conventional wisdom in international environmental law"[578], which underlines the relevance of intergenerational equity to climate change.

603. Based on the principle of intergenerational equity, claims and requests for the cessation of wrongful acts may also be made on behalf of future generations, not just current ones. The UNHRC has recognized the rights of future generations on several occasions in the face of the climate crisis.[579] In *Teitiota v New Zealand,* the Human Rights Committee noted that environmental degradation and climate change are among the most pressing and serious threats to the ability of future generations to enjoy the right to life, including the right to live in dignity.[580] Additionally, in *Torres Straits Islanders v Australia*, the Human Rights Committee recognized that the principle of intergenerational equity imposes a duty on

[577] *Legality of the Threat or Use of Nuclear Weapons.*
[578] *Pulp Mills on the River Uruguay (Argentina v Uruguay)* (Separate Opinion of Judge Cançado Trindade) [2010] ICJ Rep 14, 181, para 122. See also, the Separate Opinion of Judge Cançado Trindade in the 2014 case *Whaling in the Antarctic (Australia v Japan)* (where he concluded that 'inter-generational equity marks presence nowadays in a wide range of instruments of international environmental law, and indeed of contemporary public international law'). *Whaling in the Antarctic (Australia v Japan: New Zealand intervening)* (Separate Opinion of Judge Cançado Trindade) [2014] ICJ Rep 226, 366, para 47.
[579] See e.g., UNHRC, *Ioane Teitiota v New Zealand*, 'Views adopted by the Committee under article 5 (4) of the Optional Protocol, concerning communication No. 2728/2016' (23 September 2020). CCPR/C/127/D/2728/2016, 9, para 9.4; UNHRC, *Daniel Billy et al v Australia* para 5.8.
[580] UNHRC, *Ioane Teitiota v New Zealand* 9, para 9.4.

present generations to act as responsible stewards of the planet and to ensure the right of future generations to meet their developmental and environmental needs.[581]

[581] UNHRC, *Daniel Billy et al v Australia* para 5.8. See also, *Future generations v Ministry of the Environment* (2018) – in which the Colombian Supreme Court ruled that future generations are subject to constitutional protection. The Court interpreted that unborn subjects "deserve to enjoy the same environmental conditions enjoyed by us." *Andrea Lozano Barragán, Victoria Alexandra Arenas Sánchez, José Daniel Rodríguez Peña y otros v Presidencia de la República, Ministerios de Ambiente y Desarrollo Sostenible y de Agricultura y Desarrollo Rural y otros,* Sala Cas. Civil CSJ Colombia, No. STC4360-2018 (5 April 2018), 35-39, para 11.1–11.3.

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IUCN is also grateful to the following IUCN WCEL members: Soledad Aguilar, Chhaya Bhardwaj, Dimitrios Dimitrakos, Kathryn Gwiazdon, Irene Heuser, Ana Kantzelis, Alessandra Lehmen, Christopher Lentz, Warren Lavey, Ademola Oluborode Jegede, Petros Patronos, Jacqueline Peel, Birgit Peters, Andrew Raine, Aaron Wu, for their learned advice and support.

APPENDICES

1. The UN Secretariat has compiled an impressive amount of materials for the Court's dossier in these proceedings, including a number of scientific reports "likely to throw light upon the question[s]".[582] Rather than repeat those reports, the Appendices below highlight key scientific facts and policy issues on climate change that are relevant to IUCN's statement and the Questions in these proceedings.

2. **Appendix I** concerns the anthropogenic interference with the climate system and its current and projected impacts.

3. **Appendix II** concerns the net-zero targets and pathways to stay below the 1.5°C temperature threshold.

4. **Appendx III** discusses the mitigation of climate change through Nature-based Solutions (NbS).

5. **Appendix IV** contains IUCN's observations on relevant provisions of the UNFCCC, the Kyoto Protocol and the Paris Agreement, which were not fully discussed in the main body of this statement.

[582] Statute of the International Court of Justice, Article 65(2).

APPENDIX I: ANTHROPOGENIC CLIMATE CHANGE

I. Natural Greenhouse Effect and Anthropogenic Interference with the Climate System

6. The 'natural' greenhouse effect – i.e. the trapping of heat by the Earth's atmosphere – is necessary for life on Earth. Without it, "the average temperature at Earth's surface would be below the freezing point of water".[583]

7. The greenhouse effect[584] has naturally occurred on Earth long before human civilization. However, since the Industrial Revolution, the greenhouse effect has increased due to human activity, with unprecedented levels of emissions of greenhouse effect-causing gases into the atmosphere.[585]

8. Human-led greenhouse gas (GHG) emissions increase the global surface temperature constitute 'anthropogenic' interference with the climate system.[586]

A. Greenhouse gases

9. GHGs are "gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation".[587] The primary GHGs present in the Earth's atmosphere are water vapour (H_2O), carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4) and ozone (O_3).[588]

10. GHGs are emitted from a variety of sources and economic sectors and activities, mainly from energy and transportation systems and industrial processes, as well as from agriculture and land use changes, including deforestation. GHGs accumulate in the atmosphere over time, and the increase of GHG atmospheric concentrations increases the atmosphere's heat-trapping function.[589]

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[583] IPCC, 2007: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [S Solomon, D Qin, M Manning, Z Chen, M Marquis, KB Averyt, M Tignor and HL Miller (eds)], 115.

[584] Le Treut, H., R. Somerville, U. Cubasch, Y. Ding, C. Mauritzen, A. Mokssit, T. Peterson and M. Prather, 2007: *Historical Overview of Climate Change*. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, p 97, 115-116.

[585] IPCC Archive, Working Group I: The Scientific Basis, 1.3 Human-induced Climate Variations. Available at: https://archive.ipcc.ch/ipccreports/tar/wg1/044.htm.

[586] IPCC, 2007: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [S Solomon, D Qin, M Manning, Z Chen, M Marquis, KB Averyt, M Tignor and HL Miller (eds)], 135.

[587] UNFCCC Article 1(5).

[588] In addition to these GHGs, the Kyoto Protocol also covers sulphur hexafluoride (SF_6), hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs). There are also some man-made GHGs, such as *halocarbons* and other chlorine- and bromine-containing substances, dealt with under the Montreal Protocol.

[589] In 2019, atmospheric CO_2 concentrations (410 parts per million) were higher than at any time in at least 2 million years. See IPCC AR6 SPM (2023) 4.

11. They are long-lived and well-mixed in the atmosphere, which means emissions from different sectors and countries are combined and dispersed globally in the atmosphere, where they remain for varying durations of time. Once emitted, these gases contribute to the greenhouse effect for hundreds or thousands of years. Different GHGs have different warming potency – also known as global warming potential (GWP) – and this depends on their ability to absorb energy and how long they remain active in the atmosphere.[590]

B. Climate Change Science: the IPCC

12. The "state of scientific, technical and socio-economic knowledge on climate change, its impacts and future risks, and options for reducing the rate at which climate change is taking place"[591] is regularly and comprehensively assessed by the Intergovernmental Panel on Climate Change (IPCC).[592]

13. The IPCC was established by the WMO and UNEP to provide governments with scientific information that they can use to develop climate policies.

14. Volunteer scientists at the IPCC assess thousands of scientific papers, and issue assessments of climate science, environmental and socio-economic impacts of climate change, as well as formulate climate change response strategies "that are policy relevant, but not policy-prescriptive: they may present projections of future climate change based on different scenarios and the risks that climate change poses and discuss the implications of response options, but they do no not tell policymakers what actions to take".[593]

15. Since its establishment in 1988, IPCC assessment reports have fed directly into international climate policymaking and the Climate Conferences held under the framework of the UNFCCC. The IPCC works "on a comprehensive, objective, open and transparent basis",[594]

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[590] "The impact of greenhouse gas emissions upon the atmosphere is related not only to radiative properties, but also to the time-scale characterizing the removal of the substance from the atmosphere. Radiative properties control the absorption of radiation per kilogram of gas present at any instant, but the lifetime … controls how long an emitted kilogram is retained in the atmosphere and hence is able to influence the thermal budget. …GWPs [global warming potentials] are a measure of the relative radiative effect of a given substance compared to another, integrated over a chosen time horizon. The choice of the time horizon depends in part upon whether the user wishes to emphasise shorter-term processes (e.g., responses of cloud cover to surface temperature changes) or longer-term phenomena (such as sea level rise) that are linked to sustained alterations of the thermal budget (e.g., the slow transfer of heat between, for example, the atmosphere and ocean). In addition, if the speed of potential climate change is of greatest interest (rather than the eventual magnitude), then a focus on shorter time horizons can be useful." IPCC Archive Working Group I: The Scientific Basis, 6.12 Global Warming Potentials, Available at: https://archive.ipcc.ch/ipccreports/tar/wg1/247.htm.

[591] The Intergovernmental Panel on Climate Change, https://www.ipcc.ch/

[592] IPCC Factsheet, 'What is the IPCC?' [2021] https://www.ipcc.ch/site/assets/uploads/2021/07/AR6_FS_What_is_IPCC.pdf

[593] ibid.

[594] Principles Governing IPCC Work, para 2. Available at: https://www.ipcc.ch/site/assets/uploads/2018/09/ipcc-principles.pdf.

assessing the best available science and representing the minimum global consensus in the areas above.[595]

C. Anthropogenic Interference with the Climate System

16. In its Sixth Assessment Report, the IPCC confirmed that "human activities, principally through the emissions of GHGs, have 'unequivocally' caused warming of the climate system", with increases in atmospheric GHG concentrations from around the year 1750.[596]

17. In addition, the IPCC found that GHG emissions have been rising, with 2010-2019 levels higher "than in any previous decade".[597] In fact, 17% of all "historical cumulative net CO_2 emissions since 1850 occurred between 2010 and 2019".[598] This percentage is very likely to even higher in the current decade, as the most recent data estimates that total global GHG emissions in 2021 were similar to or even surpassed emissions in 2019,[599] and that GHG emissions in 2022 reached a new record high.[600]

18. This scientific finding that humans influence the climate system is included in the second preambular paragraph of the UNFCCC, which refers to the States Parties' concern that:

> "human activities have been substantially increasing the atmospheric concentrations of greenhouse gases, that these increases enhance the natural greenhouse effect, and that this will result on average in an additional warming of the Earth's surface and atmosphere and may adversely affect natural ecosystems and humankind."

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[595] "IPCC's reports are regarded as the most authoritative source of information on the science of climate change since they are subject to extensive review by experts and governments, ensuring the highest standards of quality and policy relevance." https://research-and-innovation.ec.europa.eu/news/all-research-and-innovation-news/dg-research-and-innovation-welcomes-intergovernmental-panel-climate-change-ipcc-report-2023-03-20_en

[596] IPCC AR6 SPM (2023) 4.

[597] ibid.

[598] IPCC, 2022: Summary for Policymakers. In: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [P.R. Shukla, J. Skea, R. Slade, A. Al Khourdajie, R. van Diemen, D. McCollum, M. Pathak, S. Some, P. Vyas, R. Fradera, M. Belkacemi, A. Hasija, G. Lisboa, S. Luz, J. Malley, (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA. doi: 10.1017/9781009157926.001., 10. The IPCC issues "comprehensive assessment reports every 5 to 7 years" and special reports periodically on topics agreed to by its member governments. IPCC reports often build on previous reports and reflect new findings in the literature. IPCC reports are subject to intensive, multi-year, reviews. The IPCC also produces summaries of its reports to guide policy-makers. These summaries are subject to line-by-line political consensus. As IPCC reports take several years to compile the reports, the latest emission numbers are from 2019. IPCC, 'IPCC agrees on the set of scientific reports for the seventh assessment cycle. Available at: https://www.ipcc.ch/2024/01/19/ipcc-60-ar7-work-programme/; IPCC, 'Preparing Reports'. Available at: https://www.ipcc.ch/about/preparingreports/.

[599] UNEP 2022, *Emissions Gap Report 2022: The Closing Window — Climate crisis calls for rapid transformation of societies*, xvi.

[600] WMO, 'Greenhouse Gas Concentrations Hit Record High. Again' Available at: < https://wmo.int/news/media-centre/greenhouse-gas-concentrations-hit-record-high-again>. See also, UNEP 2023, *Emissions Gap Report 2023: Broken Record,* 4; IEA (2023), CO_2 Emissions in 2022. Available at: https://www.iea.org/reports/co2-emissions-in-2022.

19. The anthropogenic element is prominent in the concept of climate change, defined in Article 1(2) of the UNFCCC as "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."

20. Indeed, it is this anthropogenic interference that is driving climate change,[601] the rise in global average temperatures, ocean acidification, the rise of sea levels, the warming of oceans and many other adverse impacts on the climate system. Anthropogenic interference pose threats to human and natural systems, as well as to the very existence of some States.

II. Historic and Current Levels of GHG emissions

21. Since 1750, the world has emitted over 1.5 trillion tons of CO_2.[602] Historical emissions matter because it is the absolute accumulation of GHGs in the atmosphere over time that drives climate change.[603] In the 18th century, only a few countries were responsible for the vast majority of historical emissions.[604]

22. This picture has changed. Since the beginning of the industrial revolution, GHG emissions have continued to increase rapidly, rising to uncharted levels in human history.[605] Atmospheric CO_2 concentrations are now 50% higher than pre-industrial levels.[606] CO_2 emissions increased from 10.9 billion tons per year in the 1960s to approximately 36.6 billion tons per year in 2022.[607]

23. The amount of CO_2 in the atmosphere today is comparable to where it was around 4.3 million years ago, during the mid-Pliocene epoch, when sea level was about 22.86 metres (75 feet) higher than today, and the average temperature was 7 degrees Fahrenheit higher than in pre-industrial times.[608]

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[601] Glossary: Climate Change. Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Climate_change

[602] H Ritchie and M Roser (2020) - "CO_2 emissions" Published online at OurWorldInData.org. Available at: https://ourworldindata.org/co2-emissions; IPCC AR6 SPM (2023) para A.1.3.

[603] Historical emissions and the absolute volume of CO_2 emissions being determining for current warming provide "the scientific basis for the cabon budget, the total amount of CO_2 that can be emitted to stay below any given limit on global temperatures", CarbonBrief, 'Analysis: Which countries are historically responsible for climate change'. Available at: https://www.carbonbrief.org/analysis-which-countries-are-historically-responsible-for-climate-change/.

[604] Hannah Ritchie (2019) - "Who has contributed most to global CO2 emissions?" Published online at OurWorldInData.org. Available at: https://ourworldindata.org/contributed-most-global-co2.

[605] ibid; IPCC AR6 SPM (2023).

[606] WMO, 'Greenhouse Gas Concentrations Hit Record High. Again'. Available at: https://wmo.int/news/media-centre/greenhouse-gas-concentrations-hit-record-high-again.

[607] NOAA, 'Greenhouse gases continued to increase rapidly in 2022'. Available at: https://www.noaa.gov/news-release/greenhouse-gases-continued-to-increase-rapidly-in-2022#:~:text=The%20main%20driver%20of%20increasing,the%20Global%20Carbon%20Project%20%2C%20which.

[608] ibid.

24. Updated scientific data, which used methods as close as possible to the most recent IPCC AR6 reports, produced estimates of key climate indicators which show that human-induced warming reached 1.14°C over the 2013-2022 decade, and 1.26°C in 2022.[609] According to some reports, 2024 has seen global warming exceeding temperatures of 1.5°C over a 12-month period.[610] Between 2013 and 2022, "human-induced warming has been increasing at an unprecedented rate of over 0.2°C per decade".[611] Even if States take immediate action on their most ambitious plans, GHG emissions and atmospheric concentrations are projected to keep increasing at least until 2025.[612]

25. Despite scientific assessments about the devastating consequences of climate change, global GHG emissions continue to increase, although regional contributions differ.[613]

26. In fact, contributions differ dramatically. Least developed countries and SIDS contributed minimal emissions – less than 0.4% and 0.5% of historical cumulative CO_2 emissions respectively.[614] There is a similar gap between more and less developed countries when we look at present day emissions. The world's top seven emitting States account for approximately 50% of current global GHG emissions. Emissions from all G20 countries account for 76% of current global GHG emissions. This means that the remaining countries in the world only emit 24% of the current global GHG emissions.[615]

III. The Scientifically Assessed Current and Projected Impacts of a Warming Climate System

27. In this Section, IUCN discusses the current impacts of climate change on people, nature and society, followed by its projected impacts. Impacts of temperature increases below 1.5°C are also discussed below.

A. Observed Climate Change Impacts

28. Climate change already plays a dire impact on human well-being and our planet.[616]

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[609] P Forster et al, 'Indicators of Global Climate Change 2022: Annual update of large-scale indicators of the state of the climate system and human influence' (2023) 15(6) Earth System Science Data
[610] Copernicus Climate Change Service, 'Surface Air Temperature for January 2024'. Available at: https://climate.copernicus.eu/surface-air-temperature-january-2024.
[611] ibid.
[612] UNFCCC Subsidiary Body for Scientific and Technological Advice and Subsidiary Body for Implementation, 'Technical Dialogue of the First Global Stocktake. Synthesis Report by the Co-Facilitators on the Technical Dialogue.' (8 September 2023) FCCC/SB/2023/9, p 16.
[613] IPCC AR6 Headline Statements from the Summary for Policymakers. Available at https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_HeadlineStatements.pdf.
[614] IPCC, Climate Change 2022: Mitigation of Climate Change SRM, B.3.2.
[615] UNEP 2023, *Emissions Gap Report 2023: Broken Record,* 4; IEA (2023), CO2 Emissions in 2022. Available at: https://www.iea.org/reports/co2-emissions-in-2022.
[616] IPCC AR6 SPM (2023) para A.2.

29. As "[i]t is unequivocal that human influence has warmed the atmosphere, ocean and land",[617] the IPCC assessed that increased weather and climate extremes have already led to "irreversible impacts, as natural and human systems are pushed beyond their ability to adapt".[618] It reported that "[c]limate change has already caused substantial damages, including increasingly widespread, pervasive, and irreversible losses in terrestrial, freshwater, coastal, and open marine ecosystems" and species extinctions.[619]

30. Other forms of damage are approaching irreversibility, such as hydrological changes from retreating glaciers and changes in mountain and Arctic ecosystems from permafrost thaw.[620] As explained by the IPCC:

> "Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred. Human-caused climate change is already affecting many weather and climate extremes in every region across the globe. This has led to widespread adverse impacts and related losses and damages to nature and people (high confidence). Vulnerable communities who have historically contributed the least to current climate change are disproportionately affected (high confidence)."[621]

31. June to August 2023 was the warmest summer on record.[622] On 4 July 2023, the world experienced its hottest average temperature ever at 17.04°C. This record was broken the next day, with the global average temperature reaching 17.06°C. That further increased to 17.08°C on 6 July 2023.[623]

32. The average global surface temperature in July was 1.12°C above average, ranking it as the warmest July in the US National Oceanic and Atmospheric Administration's (NOAA) 174-year record, and likely the warmest month in the past 120,000 years.[624] WMO predicts that temperatures over the next five years will surge to record levels.[625]

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[617] IPCC AR6 WGI, Headline Statements from the Summary for Policymakers, A.1.
[618] IPCC AR6 WGII, Summary for Policymakers, B.1 IPCC, 2022: Summary for Policymakers [H.-O. Pörtner, D.C. Roberts, E.S. Poloczanska, K. Mintenbeck, M. Tignor, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem (eds.)]. In: Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 3–33.
[619] ibid, 9, B.1.2.
[620] ibid.
[621] ibid, B.1.
[622] Copernicus Climate Climate Change Service, 'Summer 2023: the hottest on record' (5 September 2023) <https://climate.copernicus.eu/summer-2023-hottest-record.
[623] Copernicus Climate Change Service, 'July 2023 Sees Multiple Global Temperature Records Broken' (8 August 2023) < https://climate.copernicus.eu/july-2023-sees-multiple-global-temperature-records-broken >.
[624] National Oceanic and Atmospheric Administration (NOAA), 'Record Shattering: Earth had its Hottest July in 174 Years' (14 August 2023) < https://www.noaa.gov/news/record-shattering-earth-had-its-hottest-july-in-174-years>; United Nations News, 'It's Official: July 2023 was the Warmest Month Ever Recorded' (8 August 2023) < https://news.un.org/en/story/2023/08/1139527>
[625] WMO, 'Global Temperatures Set to Reach New Records in Next Five Years' (17 May 2023) < Global temperatures set to reach new records in next five years (wmo.int)>

33. Sea surface temperatures also broke historic records around the world in 2023. The Copernicus Climate Change Service documented that on 31 July 2023, average daily sea surface temperatures reached 20.96°C, which was the highest in the organization's dataset, with the largest sea surface temperature anomaly by far for any July in the dataset.

34. These record high sea surface temperatures are associated with several marine heatwaves, including sea surface anomalies as large as 3°C in the Mediterranean, and reaching "5.5°C along the coasts of Italy, Greece and North Africa".[626] Sea surface temperatures reached record breaking levels in July and August 2023 in the Caribbean Basin.[627] Every day in August 2023 has seen global average sea surface temperatures exceeding the previous record.[628]

B. Ongoing Irreversible Impacts on Natural and Human Systems

35. This level of heat stress in the oceans is causing significant coral bleaching events that experts opine will cause catastrophic and permanent reef mortality.[629] Reefs in Panama, Colombia, El Salvador, Costa Rica, Mexico and other countries in the Caribbean, including The Bahamas and Cuba, are suffering significant bleaching events, and corals are dying from unprecedented levels of ocean heat stress.[630]

36. It has been observed that "[e]cosystems are rapidly changing in response to climate change and other global change drivers, not only in response to temperature changes but also associated changes in precipitation, atmospheric carbon dioxide concentration, water balance, ocean chemistry, and the frequency and magnitude of extreme events. Ecosystems vary in their sensitivity and response to climate change because of complex interactions among organisms, disturbance and other stressors".[631]

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[626] Copernicus Climate Change Services, 'Global Sea Surface Temperature Reached Record High' (8 August 2023) <https://climate.copernicus.eu/global-sea-surface-temperature-reaches-record-high.
[627] NOAA, 'The World Just Sweltered Through Its Highest August On Record' (14 September 2023) <https://www.noaa.gov/news/world-just-sweltered-through-its-hottest-august-on-record#:~:text=August%202023,-The%20average%20global&text=For%20the%20fifth%2Dconsecutive%20month,month%20in%20NOAA's%20climate%20record>; NOAA, 'The Ongoing Marine Heatwaves in U.S. Waters Explained' (14 July 2023) <https://www.noaa.gov/news/ongoing-marine-heat-waves-in-us-waters-explained>; NOAA, 'Global Oceans Roiled by Marine Heatwaves, with More on the Way' (28 June 2023) <https://research.noaa.gov/2023/06/28/global-ocean-roiled-by-marine-heatwaves-with-more-on-the-way/>.
[628] Copernicus Climate Change Service, 'Summer 2023: The Hottest on Record' (5 September 2023) <https://climate.copernicus.eu/summer-2023-hottest-record>
[629] The Guardian, 'Huge Coral Reef Bleaching Event Unfolding Across The Americas Prompts Fear of Global Tragedy' (11 August 2023) <https://www.theguardian.com/environment/2023/aug/11/coral-bleaching-central-america>.
[630] ibid.
[631] ibid. "Climate change ultimately drives terrestrial biodiversity loss and affects ecosystem carbon storage both directly and indirectly via land use change, i.e. climate change-driven cropland expansion."

37. The extent and magnitude of the current impacts are greater than the IPCC's estimates in previous assessment reports.[632] Human-induced climate change is driving the increasing frequency, intensity and duration of extreme weather events, including droughts, wildfires, terrestrial and marine heatwaves, cyclones, and major flooding.[633] These events indicate that, even at an increase of just 1.1°C, which is the current level of temperature increase above pre-industrial level, the climate system can no longer be considered safe for all, everywhere.

38. The effects and risks arising from climate change are unequally distributed. While climate change affects all countries, not all countries are equally vulnerable. Across regions and sectors, the most vulnerable people and systems are disproportionately impacted by climate change.[634] Despite their much lower contributions to global emissions, these populations are most negatively affected by climate impacts and climate extremes, and have the least capacity to adapt to, or survive, these impacts.

39. For example, between 2010 and 2020, human mortality from floods, droughts and storms was 15 times higher in highly vulnerable regions, compared to regions with very low vulnerability.[635]

40. Where climate hazards interact with high levels of vulnerability, climate change contributes to humanitarian crises such as displacement, flood and drought-related acute food insecurity and malnutrition.[636] The IPCC estimates that approximately 3.3 to 3.6 billion people live in situations that are highly vulnerable to climate change.[637] Global hotspots of high human vulnerability are found in West, Central and East Africa, Central and South America, SIDS, and the Arctic.[638]

41. Any loss of or damage to ecosystems, and the services they provide, has cascading and long-term impacts on people, especially for Indigenous People and local communities (IPLCs) directly dependent on ecosystems to meet their basic needs.[639]

42. Climate change has already adversely affected the physical health of global populations, increasing diseases, trauma from climate extremes, loss of livelihood and culture, exposure to wildlife smoke, atmospheric dust, and cardiovascular and respiratory distress.

[632] ibid.
[633] IPCC AR6 SPM (2023) para A.2.1-7.
[634] IPCC AR6 SPM 'Impacts, Adaptation and Vulnerability' (2022) 9.
[635] ibid, 12.
[636] ibid, 11.
[637] ibid, 12.
[638] ibid.
[639] ibid, 12.

C. Future Climate Change Impacts

43. The impacts described above will continue and increase in the near term (2021-2040) mainly due to cumulative CO_2 emissions in all pathways considered by the IPCC.[640]

44. The IPCC reported that :

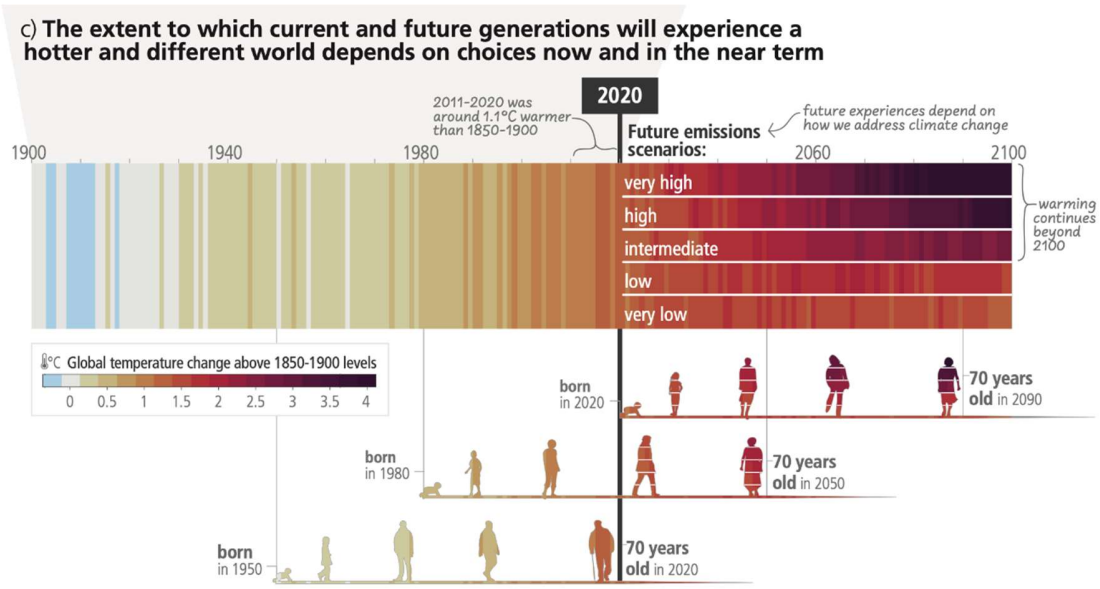
> "[c]ontinued emissions will further affect all major climate system components. With every additional increment of global warming, changes in extremes continue to become larger. Continued global warming is projected to further intensify the global water cycle, including its variability, global monsoon precipitation, and very wet and very dry weather and climate events and seasons."[641]

45. Other projected changes include the reduction of almost all cryospheric elements, further sea level rise, and increased ocean acidification and deoxygenation.[642] Heatwaves and droughts, extreme sea level events, and wildfire are projected to become more frequent. Tropical cyclones and extra-tropical storms are projected to become more intense.[643]

46. In addition, higher global warming levels increases the probability of low-likelihood, high impact events.[644] At higher levels of warming, tipping points, which are critical thresholds beyond which a system reorganizes, often abruptly and/or irreversibly, in the climate system may be reached, leading to abrupt and irreversible changes, such as accelerated Antarctic ice-sheet melt and forest dieback.[645]

[640] IPCC AR6 SPM (2023) para B.1.1.
[641] ibid, para B.1.3.
[642] ibid.
[643] ibid, para B.1.4.
[644] ibid, para B.3.
[645] ibid.

47. As demonstrated in the figure below reproduced from the IPCC's Sixth Assessment report summary for policy makers, children and future generations are likely to experience the worst impacts of climate change.[646]



48. Climate change will also have transboundary economic effects, through impacts on supply chains, markets, and natural resource flows, with increasing transboundary risks across many sectors, including water, energy and food sectors.[647] By 2100, the value of global assets at risk of a 1-in-100-year coastal floodplain is projected to be between US$7.9 and US$12.7 trillion.

49. By 2100, currently 1-in-100-year extreme sea level events are projected to occur at least annually in more than half of all tidal gauge locations.[648] Approximately a billion people globally are projected to be at risk from coastal-specific climate hazards by mid-century.[649]

50. The impacts of climate change impede economic growth, increase debt levels in vulnerable countries, and can roll back existing development gains.

51. Further, concurrent and repeated hazards will occur in all regions, and multiple risks can compound by interacting with each other, creating new vulnerabilities.

[646] ibid, Figure SPM.1.
[647] IPCC AR6 SPM 'Impacts, Adaptation and Vulnerability' (2022) para B.5.3.
[648] ibid, para B.4.5.
[649] ibid.

D. Impacts of 1.5ºC Warming

52. Even if global average temperatures were kept below 1.5°C, there remains increased risks of unavoidable, irreversible or abrupt changes.[650] This includes species extinctions and irreversible loss of biodiversity. Many changes from past, present and future GHG emissions are irreversible for centuries to millennia, especially changes in the ocean and ice sheets.

53. Reaching 1.5°C in the near-term would cause unavoidable increases in multiple climate hazards and multiple risks to ecosystems and humans.[651] For example, coral-dominated ecosystems are projected to be almost non-existent at an increase of just 1.2°C. This would produce dire consequences.[652] Tropical coral reefs provide habitats to thousands of species and provide food, livelihoods, coastal protection, and cultural sustenance for millions of people.[653]

54. At 1.5°C of increase in temperature, climate change is expected to be a poverty multiplier, making poor people poorer, and increasing the number of people living in poverty.[654] Climate change could force more than 3 to 16 million people into extreme poverty from impacts on agriculture and food prices alone.[655]

E. Impacts on the Ocean, Ozone layer, Biodiversity and Land

55. The ocean is critical to the climate system. It is a natural sink and reservoir for atmospheric greenhouse gases, absorbing and storing some 25% of carbon dioxide out of the atmosphere and 90% of the atmospheric heat. This happens through the process of photosynthesis by plant-like organisms (phytoplankton) and by chemical processes, either as a dissolved gas or, over a longer time, as carbonate sediments on the seafloor. The ocean contains some 50 times the quantity of carbon dioxide found in the atmosphere and roughly 20 times the quantity of carbon dioxide currently contained in terrestrial plants and soils. Without the protective force of the ocean, the harmful impacts of anthropogenic climate change would be greater and the average temperature increase may have already reached 2°C.

56. The scientific community has long been warning that the capacity of the ocean to fulfil this important climate regulating role is at risk. The ocean's critical sink and reservoir function is performed by its marine life, including phytoplankton, sea grass, mangroves, coral reefs and its collective force and biodiversity. Thus, part of the solution to reduce GHG emissions, lies in protecting and preserving the marine environment.

57. It is the recognition of the crucial climate regulating services provided by the ocean and its marine environment that underlies the obligation in Article 4(1)(d) of the UNFCCC for the Parties to sustainably manage and conserve the ocean as a sink and reservoir. Similarly, an

[650] IPCC AR6 SPM (2023) 18.
[651] IPCC AR6 SPM 'Impacts, Adaptation and Vulnerability' (2022) 13.
[652] IPCC 'Global Warming of 1.5 ºC' (2018) 226.
[653] ibid.
[654] IPCC 'Global Warming of 1.5 ºC' (2018) 244.
[655] ibid.

express reference to the ocean is found in the preamble of the Paris Agreement: "[n]oting the importance of ensuring the integrity of all ecosystems, including oceans, and the protection of biodiversity".

58. Climate change and increased GHG emissions can also negatively impact the ozone layer. Although GHGs warm the lower atmosphere (i.e. the troposphere), they generate a cooling effect in the upper atmosphere (i.e. the stratosphere). Accordingly, as GHGs emissions increase, the upper atmosphere is increasingly experiencing more extreme, and more frequent, low temperatures. These cold conditions enable the creation of what is known as 'polar stratospheric clouds'.[656] These clouds transform chlorine from non-reactive into reactive gases in the stratosphere, which promote the rapid depletion of ozone.[657]

59. Climate change also impacts biodiversity. Studies have identified "profound transformation of the biosphere [that]" due to climate change, including "both continuous and abrupt changes in the distribution of ecosystems and species".[658]

60. Land plays an important role in the climate system. From 2007-16, land absorbed almost 30 per cent of global GHG emissions.[659]

61. 'Desertification, land degradation and drought' has been widely adopted by expert communities as a collective term, given the closely interlinked nature of these environmental problems. Desertification concerns land degradation in arid, semi-arid, and dry sub-humid areas, often collectively known as drylands.[660] Land degradation is described by the IPCC as a negative trend in land conditions expressed as long-term reduction or loss of at least one of the following: biological productivity, ecological integrity, or value to humans.[661] Land degradation can affect any terrestrial zone and may include soil erosion, vegetation loss, reduction in land fertility, or decrease in water quality.[662]

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[656] WMO, *Scientific Assessment of Ozone Depletion: 2022*, GAW Report No. 278 (WMO 2022), 282.
[657] ibid, 277-278.
[658] T Conradi and others, 'Reassessment of the Risks of Climate Change for Terrestrial Ecosystems' [2024] Nature Ecology & Evolution.
[659] ibid, IPCC SPM 'Climate Change and Land' (2019) 10.
[660] IPCC SPM 'Climate Change and Land' (2019) 6; IPBES SPM 'Assessment Report on Land Degradation and Restoration' (2018) 26; UNCCD Article 1(a).
[661] ibid, IPCC SPM 'Climate Change and Land' (2019) 6. Land degradation is defined in UNCCD art 1(f) as "reduction or loss, in arid, semi-arid and dry sub-humid areas, of the biological or economic productivity and complexity of rainfed cropland, irrigated cropland, or range, pasture, forest and woodlands resulting from land uses or from a process or combination of processes, including processes arising from human activities and habitation patterns, such as soil erosion caused by wind and/or water; deterioration of the physical, chemical and biological or economic properties of soil; and long-term loss of natural vegetation"; Land degradation is defined by the IPBES as: "the many human-caused processes that drive the decline or loss in biodiversity, ecosystem functions or ecosystem services in any terrestrial and associated aquatic ecosystems." (IPBES SPM 'Assessment Report on Land Degradation and Restoration' (2018) 18).
[662] IPBES SPM 'Assessment Report on Land Degradation and Restoration' (2018) 11; IPCC SPM 'Climate Change and Land' (2019) 16.

62. Land degradation can diminish land-based carbon sinks and cause further GHG emissions.[663] Additionally, desertification, land degradation and drought has other negative environmental and socioeconomic consequences including loss of biodiversity and ecosystem services, reduction in agricultural productivity, food and water insecurity, and impacts on human health.[664] It can induce migration, erode cultural identity and indigenous knowledge, and generate conflict.[665] Vulnerable groups experience the greatest negative effects.[666]

63. Desertification, land degradation and drought is caused by both human activities and climate factors. Its human drivers include expansion of crop and grazing lands into native vegetation, unsustainable agricultural and forestry practices, urban expansion, infrastructure development and extractive industry.[667]

64. Climate change contributes to and exacerbates processes of desertification, land degradation and drought through, for example, increase in rainfall intensity, flooding, drought frequency and severity, heat stress, dry spells, wind, sea-level rise and wave action, and permafrost thaw.[668] These climate-induced impacts occur particularly in low-lying coastal areas, river deltas, drylands and in permafrost areas.[669]

65. According to the IPCC, all modelled pathways that limit warming to 1.5ºC or well below 2°C require land-based mitigation and land-use change.[670] IPBES has also reported that avoiding land degradation could provide more than one third of the most cost-effective greenhouse gas mitigation activities required by 2030 to keep global warming to below 2°C.[671]

66. Thus, mitigating against climate change is an important element of combatting against desertification, land degradation and drought. Conversely, combatting against the human drivers of desertification, land degradation and drought is also a key land-based climate mitigation strategy.

[663] ibid,, 10.
[664] IPBES SPM 'Assessment Report on Land Degradation and Restoration' (2018) 11 and 22.
[665] ibid, 24 and 26.
[666] ibid, 10.
[667] ibid, 10.
[668] IPCC SPM 'Climate Change and Land' (2019) 10.
[669] ibid, 7 and 23.
[670] ibid, 24.
[671] IPBES SPM 'Assessment Report on Land Degradation and Restoration' (2018) 10.

APPENDIX II: PATHWAYS TO 1.5°C, NET-ZERO EMISSIONS AND THE NEED FOR SYSTEMIC CHANGE

I. Defining 'Net-Zero' targets

1. As countries move forward with the implementation of the Paris Agreement, including the design and implementation of mitigation targets and measures based on 'net-zero' GHG emissions, it is important to define the key elements of this goal, including 'net-zero emissions', setting the time frame for reaching this goal, which sectors and GHGs to include, and the role of carbon removal and storage and international transfers in achieving net-zero emissions.

2. Achieving 'net-zero CO_2 emissions' ('carbon neutrality') or net-negative CO_2 emissions requires not only rapid and deep GHG emission reductions across all sectors but also the protection of GHG sinks and the significant enhancement of GHG removals. In this context, nature and ecosystems play a crucial role. The capacity of terrestrial sinks and reservoirs, such as soils, wetlands, peatlands, mangroves and forests to sequester and store CO_2, as well as the adoption of practices and processes in the use and management of land (e.g. management of practices in agricultural land, avoiding conversion of natural forest land to other uses) to limit emissions and enhance removals, will be key in achieving net-zero CO_2 emissions.

3. An important nuance relates to the GHGs covered by the net-zero emission target. While several GHGs contribute to global warming, cumulative carbon dioxide emissions are reported by the IPCC as the primary determinant of temperature change in this century. noting that "[l]imiting global mean temperature increase at any level requires global CO_2 emissions to become net zero at some point in the future".[672] Nearly all IPCC pathways consistent with the 1.5°C goal include net-zero GHG emissions between 2050 (CO_2) and 2070 (non-CO_2).

4. Other relevant GHGs include methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF6), and nitrogen trifluoride (NF3). Although some of them are "shorter-lived" (such as methane and HFCs) and do not accumulate in the atmosphere for a long time, they are still strong drivers of climate change.

5. A second key issue relates to terminology, as a variety of terms has been used by public and private stakeholders to designate such targets, including 'net-zero emissions' and 'zero emission' targets, 'climate neutrality', 'carbon neutrality', and 'deep decarbonisation'. In addition to understanding these terms, it is also relevant to consider whether they refer to domestic or international targets.
6. While 'carbon neutrality' refers to net-zero emissions of CO_2 only, 'climate neutrality' refers to net-zero emissions of all GHGs (CO_2 and non-CO_2).

[672] IPCC, 1.5 degree Warming (2018).

7. Further, the Court may find the following definitions helpful:

Source:

- A physical unit or process that releases a GHG into the atmosphere (such as fuel combustion, cement production, livestock management, and waste disposal).

Sink:

- A physical unit or process that removes and stores a GHG from the atmosphere (such as photosynthesis and other biological sinks, geochemical sinks and direct air capture and storage).

Removals:

- Transfer of a GHG (primarily CO_2; and therefore also often referred to as 'Carbon Dioxide Removal' – CDR) from the atmosphere by a sink to long-term storage within a pool, such as trees, soil, or geologic, terrestrial, oceanic reservoirs, and in products.

Net-zero emissions:

- At the global level, 'net-zero GHG emissions' refers to a global balance between anthropogenic emissions and removals of GHGs over a given time period (typically a year);
- At the country level, net-zero emissions (excluding international transfers of GHG mitigation outcomes) refers to keeping GHG emissions from sources within the national territory in the target year in balance with GHGs removed from the atmosphere by sinks within the country's territory in the target year. These definitions refer to anthropogenic GHG emissions and removals in units of 'CO_2 equivalent'. Countries can further specify the proportion of the target being met through emission reductions versus removals (in either definition) or the proportion of domestic GHG mitigation versus international transfers of GHG mitigation outcomes (in the second definition).
- Based on these definitions, countries might have, within a given time period, net-zero emissions, net-positive emissions (i.e. annual GHG emissions are higher than annual GHG removals within the territory), or net-negative emissions (i.e. annual GHG emissions are lower than annual GHG removals within the territory).
- Other important elements include the target time frame (i.e. range of years), boundary (i.e. comprehensive or partial coverage of GHGs) and the use or exclusion of international transfers of GHG mitigation outcomes (e.g. to include or not transfer of carbon credits).

8. As outlined above, one important aspect relates to the use or exclusion of offsets towards 'net-zero'. This is a controversial topic and poses some limitations and risks under the Paris Agreement's global governance framework, including the fact that the treaty envisions a goal of global net-zero GHG emissions ("balance of anthropogenic emissions and removals").[673]

9. The widespread resort to offsets might help to balance emissions in some countries, but might also hamper efforts towards net-negative emissions at large. Moreover, the use of

[673] Paris Agreement Article 4(1).

offsets might undermine the efforts of some countries to promote real emission reductions in their territories.

10. Further, if not balanced with appropriate safeguards, offsetting approaches can create conflicts and challenges for host countries in their efforts to enhance domestic ambition.

11. A further aspect is equity in reaching global net-zero emissions around 2050. While it is understood that this is a global goal, some countries might need longer to reach it.[674] This is in line with the principle of CBDR-RC, in light of different national circumstances.[675] If the timeline of reaching net-zero emissions is not to be overshot, those countries with greater capacity and responsibility need to take deeper cuts and to reach territorial net-zero or net-negative emission far ahead of 2050, in order to allow countries which need longer to also get there by 2050. They might also be required not to contribute to increasing emissions elsewhere through the 'export' of emissions in whatever way and manner; making it more difficult to reach a global balance.

12. Another important aspect concerns Carbon Dioxide Removals (CDR) measures and technologies. While the exploration, development and deployment of CDR are considered key elements for the achievement of the goals of the Paris Agreement, such technologies and practices are in their early stages, so there are uncertainties relating to the methodologies for calculating their impact, as well as questions about the permanence of carbon storage. This means that these measures still need time for further development. In this regard, support for 'nature-based solutions' (discussed further in Appendix III) should be considered especially attractive, in addition to the multitude of environmental and social co-benefits that they entail if correctly and carefully implemented.

II. The Need for Systemic Transitions

13. Rapid and far-reaching transitions across all sectors and systems are necessary to achieve deep and sustained emissions reductions and to secure a liveable and sustainable future for all. While this type of systemic change will be unprecedented in terms of scale, the IPCC notes that it is not unprecedented in terms of speed. Scaling up mitigation and adaptation action is where international law and policy can serve a vital role. Regulatory and economic instruments can support deep emissions reductions, if scaled up and applied more widely. Finance, technology and international cooperation are critical enablers for accelerated climate action. The magnitude and rate of climate change depend strongly on near-term mitigation and adaptation action.

14. In addition, emission reductions can have co-benefits for Sustainable Development Goals. The IPCC observed that eradicating extreme poverty, energy poverty, and providing decent living standards can be achieved in the near-term without significant global emissions

[674] ibid.
[675] ibid, Article 2(2).

growth. The IPCC also states unequivocally that policy and law matter. It finds that policies that address financial, governance and institutional constraints can overcome blockages to mitigation and adaptation action and lead to better implementation of climate-resilient development.

15. Only a small window of opportunity to enable comprehensive, effective, and innovative responses currently exists. Climate resilient development pathways are progressively constrained by every increment of warming, particularly beyond 1.5°C. Climate action becomes increasingly difficult, expensive, and potentially unfeasible the longer we wait. Any further delay in implementing concerted, global action on adaptation and mitigation will miss the brief and rapidly closing window of opportunity to secure a livable and sustainable future for all.

16. In this connection, the IPCC's advice is clear - the choices and actions in this decade will have impacts now, and for thousands of years.

III. Phasing Out Fossil Fuels

17. It is imperative to limit warming to 1.5°C to minimise climate-related loss and damage to people and nature. Meeting this goal is also essential for the continued provision of critical ecosystem services from natural systems.

18. This requires – first and foremost – the rapid and equitable phase out of fossil fuels and fossil fuel subsidies without any further delay, and the accelerated and equitable deployment of sustainable clean energy systems worldwide. In this respect, the Decision reached during COP28 calls for a time-bound transitioning away from fossil fuels, including oil and gas, within a framework that ensures a just transition.

IV. Transition in Energy Systems

19. The deployment of renewable energy generation and distribution systems, including community-based renewable energy systems and micro-grids, must be accelerated.

20. In doing so, States must ensure a just transition by avoiding any detrimental impacts on communities, ecosystems and species and by actively pursuing net positive impacts aligned with the Kunming-Montreal Global Biodiversity Framework. This requires effective spatial planning, rigorous assessment of associated cumulative impacts and actively building sustainability goals into policy and regulatory frameworks.

21. As pointed out jointly by IPBES and IPCC, technology-based measures that are effective for climate change mitigation can sometimes threaten biodiversity and should be evaluated in terms of their overall benefits and risks.Recent studies have documented that, in the absence of adequate risk mitigation measures, renewable energy systems can have negative

population-level impacts on avian and marine species that extend well beyond the immediate vicinity of the installations.[676]

22. Further, the growing demand for minerals and metals required for the energy transition is placing increased pressure on protected areas.[677]

23. IUCN, together with its members and partners, has developed guidance for mitigating the biodiversity impacts associated with solar and wind energy development for project developers . [678] This seeks to provide a practical framework for managing risks and improving overall outcomes related to biodiversity and ecosystem services by deploying the mitigation hierarchy during planning and implementation.

V. Carbon Dioxide Removal (CDR) Technologies

24. The IPCC has defined carbon dioxide removal (CDR) as "technologies, practices, and approaches that remove and durably store carbon dioxide (CO_2) from the atmosphere".[679] Once removed from the atmosphere, carbon is storaged "either in reservoirs such as vegetation, soils, geological formations, or the ocean, or in manufactured products".[680]

25. Natural CO_2 removal is not considered CDR. CDR activities are deliberate, and they comprise "different [] methods and associated implementation options, with different timescales and risk factors".[681]

26. In its message to the UNFCCC States Parties, during COP28, IUCN cautioned against the reliance on " unproven, untested and unregulated geoengineering technologies to reach net-zero emission goals".[682] CDR is one of the two categories of 'geoengineering',[683] the other being solar radiation management (SRM). Both CDR and SRM involve "significant social

[676] Conkling TJ et al. 2022 Vulnerability of avian populations to renewable energy production. R. Soc. Open Sci. 9, Madsen et al. 2006, Wind turbine underwater noise and marine mammals: implications of current knowledge and data needs, Marine Ecology Progress Series, vol. 309.
[677] Whieldon et al 2022 ,https://www.spglobal.com/esg/insights/featured/special-editorial/rocks-and-hard-places-the-complicated-nexus-of-energy-transition-minerals-and-biodiversity
[678] IUCN, 'IUCN position paper for UNFCCC COP28' 3.
[679] IPCC AR6 WGIII: CDR Factsheet.
[680] ibid.
[681] ibid.
[682] IUCN Position Paper for UNFCCC COP28. Available at: https://www.iucn.org/sites/default/files/2023-09/iucn-position-paper-for-unfccc-cop28-en.pdf.
[683] IPCC, 2012: Meeting Report of the Intergovernmental Panel on Climate Change Expert Meeting on Geoengineering [O. Edenhofer, R. Pichs-Madruga, Y. Sokona, C. Field, V. Barros, T.F. Stocker, Q. Dahe, J. Minx, K. Mach, G.-K. Plattner, S. Schlömer, G. Hansen, M. Mastrandrea (eds.)]. IPCC Working Group III Technical Support Unit, Potsdam Institute for Climate Impact Research, Potsdam, Germany, pp. 99, 2.

and environmental risks". The precautionary approach should be applied, considering the negative impact that geoengineering techniques may entail.[684]

[684] IUCN Position Paper, p 3-4 reads: "IUCN urges all Parties to collectively avoid overshooting the temperature rise targets agreed to under the Paris Agreement, and particularly cautions against reliance on the deployment of unproven, untested and unregulated geoengineering technologies to reach net-zero emission goals. It notes the high risks that these technologies can pose for human and natural systems, and the adverse and potentially irreversible impacts that overshoot entails. The IPCC Sixth Assessment Report makes it clear that in pathways with overshoot, societies face higher risks to infrastructure, low-lying coastal settlements and associated livelihoods. Also, as it clearly states, overshooting 1.5°C will "result in irreversible adverse impacts on certain ecosystems with low resilience, such as polar, mountain, and coastal ecosystems, impacted by ice-sheet, glacier melt, or by accelerating and higher committed sea level rise" (IPCC 2023 AR6 Synthesis Report SPM). Other recent scientific studies also warn that exceeding 1.5°C of global warming can trigger multiple climate tipping points, including collapse of the Greenland and West Antarctic ice sheets, die-off of low-latitude coral reefs and widespread abrupt permafrost thaw with their consequent adverse impacts (Armstrong McKay et al 2022). This also highlights the need to invest in long-term observation, data recording and early warning systems. There is growing interest today in exploring new geoengineering technologies such as solar radiation modification (SRM), ocean fertilisation and alkalinisation, and other novel carbon dioxide removal (CDR) methods in combatting the climate crisis. However, it is important that a precautionary approach be taken with respect to these emerging technologies, including to ensure that they do not delay or lower national ambition on the GHG emission reductions that are urgently required across all sectors today. This is essential given their unproven nature, the significant social and environmental risks that they pose, the moral hazard that they can drive and – most importantly – the critical unresolved issues around their ethics, consent, equity and governance (UNEP 2023, Smith et al 2023). Likewise, carbon capture and storage (CCS) technologies should not be used to delay rapid decarbonisation." See also, Shepherd JG, 'Geoengineering the Climate: An Overview and Update' (2012) 370 Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences 4166.

APPENDIX III: THE ROLE OF NATURE, ECOSYSTEMS AND NATURE-BASED SOLUTIONS (NbS)

1. The scientific evidence set out in the recent reports of the IPCC and IPBES demonstrate that this current decade represents a critical window of opportunity for tackling the inter-dependent crises of biodiversity loss, land degradation and climate change in a coherent and mutually supportive way. As addressed above, climate change is one of the main drivers of biodiversity loss and increases the severity and frequency of hazards such as droughts and wildfires, changing the ranges in which species can thrive, and altering food webs. At the same time, ecosystem loss and land degradation release enormous GHG volumes, reduce the ability of ecosystems to absorb carbon from the atmosphere, and exacerbate the impact of climate hazards.

2. Thus, an integrated approach is essential to address the challenges of climate change, biodiversity, and land degradation, while enhancing, instead of sacrificing, social equity. The concept of 'Nature-based Solutions' (NbS) emerged within the last decade, informed by the position that through working with, rather than against, nature, the drivers and impacts of climate change can be addressed while enhancing biodiversity and securing the ecosystems that support human well-being.

3. The concept of NbS was developed during the 2009 UNFCCC negotiations. It was subsequently introduced in the 2013-2016 IUCN Global Programme. IUCN adopted a formal definition of NbS at the 2016 World Conservation Congress and Members' Assembly. This definition was reflected in the outcomes of the United Nations Environment Assembly:

> "Actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services, resilience and biodiversity benefits."[685]

4. Within the context of climate change, NbS is an umbrella term for a wide range of actions and interventions that involve enhancing and working with nature to help both climate change mitigation and adaptation. To clarify, NbS are not single-issue actions, and measures that can have detrimental social or environmental impacts, such as the use of monoculture forest plantations as a mitigation strategy, should not be framed as a NbS. These actions, which reduce ecosystem integrity as well as social wellbeing, do not meet the NbS definition.

5. In 2022, at the UNFCCC COP27, the initiative named Enhancing Nature-based Solutions for an Accelerated Climate Transformation (ENACT) was launched to coordinate global efforts to drive collective actions across climate change, ecosystem degradation, and biodiversity loss through NbS.

[685] UNEP/EA.5/Res.5.

6. Two-thirds of the Parties to the Paris Agreement included NbS actions in their NDCs, aiming to reduce GHG emissions and improve ecosystem resilience. NbS have also started to feature more prominently in other national legal and policy documents, including National Adaptation Plans, climate laws, disaster risk reduction strategies.

7. Nature-based solutions can deliver land-based mitigation and adaptation options through protection, restoration and sustainable management of natural carbon sinks and reservoirs. There is also mitigation potential from NbS in coastal and marine ecosystems.

8. A conservative interpretation of the existing evidence, taking into account the uncertainties and the time needed to deploy safeguards, indicates that by 2030, NbS implemented across all ecosystems can deliver emission reductions and removals of at least 5 GtCO2e per year, to a maximum estimate of 11.7 GtCO2e per year. By 2050, this rises to at least 10 GtCO2e per year, to a maximum estimate of 18 GtCO2e per year. This is a significant proportion of the total mitigation needed.

9. Approximately 62 per cent of this contribution is estimated to come from NbS related to forests; about 24 per cent from solutions in grasslands and croplands; and 10 per cent from additional solutions in peatlands. The remaining 4 per cent will come from solutions implemented in coastal and marine ecosystems.

10. The contribution from NbS will require adherence to strict social and environmental safeguards. Much careful work has already been undertaken on the formulation of such safeguards. This is reflected in guidelines such as the IUCN Global Standard for Nature-based Solutions,[686] which offers specific criteria and indicators to enable the coherent design, execution, and evaluation of NbS. The application of such a framework is essential to increase the scale and impact of NbS, prevent any unanticipated negative outcomes or misuse, and help to fund agencies, policy makers and other stakeholders to assess the effectiveness of interventions.

11. Under the UNFCCC and the Paris Agreement Article 5(2), the Cancun safeguards for REDD+ (Reducing Emissions from Deforestation and forest Degradation, plus the sustainable management of forests, and the conservation and enhancement of forest carbon stocks)[687] also provide important safeguards that should be taken into account when developing and implementing NbS for climate action.

12. However, NbS should not be used as a substitute for, or as a reason to postpone, the rapid, ambitious and continuous GHG emission reduction efforts required today, to achieve the objective of net-zero emissions by the middle of this century as provided under the Paris Agreement.

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[686] IUCN, 'Global Standard for Nature-based Solutions. A user-friendly framework for veritifcation, design and scaling up of NbS' (IUCN, 2020) <https://portals.iucn.org/library/sites/library/files/documents/2020-020-En.pdf?>.
[687] Decisions 1/CP.16 and 12/CP.17 Guidance on systems for providing information on how safeguards are addressed and respected and modalities relating to forest reference emission levels and forest reference levels as referred to in decision 1/CP.16.

13. IUCN stresses that any use of NbS for offsetting purposes must be limited to compensate only for those residual emissions that cannot otherwise be abated through emission reduction efforts and must be governed by robust accounting systems to prevent any double-counting, and follow adequate social and environmental safeguards. In this respect, IUCN highlights the need for robust accounting systems that can help reduce current discrepancies in emissions reporting.

14. The land sector can provide numerous NbS and is key for achieving 'net-zero' GHG emissions. As noted by the IPCC, land provides the basis for human livelihoods and well-being including food supply, freshwater and multiple other ecosystem services, as well as biodiversity.

15. At the same time, human activity has already directly affected more than 70 per cent of the global ice-free land surface. Land can be simultaneously a source and a sink of CO_2 due to both anthropogenic and natural drivers, making it difficult to separate anthropogenic from natural fluxes.

16. The IPCC reports that activities related to "Agriculture, Forestry and Other Land Use (AFOLU)" accounted for around 13 per cent of CO_2, 44 per cent of methane (CH4), and 81 per cent of nitrous oxide (N2O) emissions from human activities globally during 2007-2016, representing 23 per cent of total net anthropogenic GHG emissions.[688] This is a significant share, and is more than the total emissions from other key sectors such as transportation.

17. Further, agricultural emissions have increased since the turn of the century and, under a business-as-usual scenario, and in the face of an expected increase in demand for agricultural products, are expected to rise sharply over the coming years and decades, largely due to the projected increase in the world population (from seven billion today to almost 10 billion in 2050), and changes in diets due to a wealthier middle class particularly in emerging economies.[689]

18. The IPCC notes that transitions in global and regional land use are found in all pathways limiting global warming to 1.5°C, but their scale depends on the pursued mitigation portfolio. Due to the multiple objectives which the land sector serves, difficult choices will have to be made. In this connection, the IPCC notes that:

> "such large transitions pose profound challenges for sustainable management of the various demands on land for human settlements, food, livestock feed, fibre, bioenergy, carbon storage, biodiversity and other ecosystem services. Mitigation options limiting the demand for land include sustainable intensification of land-use practices, ecosystem restoration and changes towards less resource-intensive diets. The implementation of land-based mitigation options would require overcoming socio-

IPCC SPM 'Climate Change and Land' (2019) 3-36, 7-10.

[689] Food and Agriculture Organization, 'The State of Food and Agriculture 2016 (SOFA): Climate change, agriculture and food security' (Food and Agriculture Organization, 2016) <https://www.fao.org/publications/card/en/c/18679629-67bd-4030-818c-35b206d03f34/>.

economic, institutional, technological, financing and environmental barriers that differ across regions".[690]

19. Land-based climate change mitigation activities can be effective and support biodiversity conservation goals, but it can also negatively impact conservation goals. The 2019 Global Assessment Report on Biodiversity and Ecosystem Services by the IPBES warns that:

> "the large-scale deployment of bioenergy plantations and afforestation of non-forest ecosystems can come with negative side effects for biodiversity and ecosystem functions. Nature-based solutions with safeguards are estimated to provide 37 per cent of climate change mitigation until 2030 needed to meet the goal of keeping climate warming below 2°C, with likely co-benefits for biodiversity. Therefore, land-use actions are indispensable, in addition to strong actions to reduce greenhouse gas emissions from fossil fuel use and other industrial and agricultural activities. However, the large-scale deployment of intensive bioenergy plantations, including monocultures, replacing natural forests and subsistence farmlands, will likely have negative impacts on biodiversity and can threaten food and water security as well as local livelihoods, including by intensifying social conflict."[691]

20. Agriculture is amongst the sectors already suffering from the heaviest negative impacts of climate change. Extreme weather events are having a profound effect on agricultural performance worldwide and will likely be both more frequent and more intense in the future. Not only does this influence levels of agricultural production, but it is also expected to alter the present conditions of agriculture in almost all countries worldwide, posing risks for other important goals like food security.[692]

21. At the same time, the mitigation potential of agriculture is large, equivalent to around 6 billion tons of carbon dioxide per year. Around 90 per cent of this potential lies in increasing carbon sinks, primarily through sequestering carbon in the soil, reducing emissions from inputs (e.g. fertilizers) and livestock management (e.g. manure management). This can be promoted, among other means, through the implementation of practices such as agroforestry, improved grazing land management, crop rotations and fallows, residue management, reduced tillage and the restoration of degraded lands.[693]

22. In addition, considering that CDR technologies are still in their infancy, NbS are gaining increasing recognition due to their huge potential and easier implementation. The IPCC emphasized that all modelled pathways that limit global warming to 1.5°C or below 2°C require land-based mitigation and land-use changes, with most pathways including different combinations of reforestation, afforestation, reduced deforestation, and bioenergy.

[690] IPCC SPM 'Climate Change and Land' (2019) 24.

APPENDIX IV: OTHER RELEVANT PROVISIONS OF THE UNFCCC, KYOTO PROTOCOL AND PARIS AGREEMENT

I. UNFCCC and Kyoto Protocol

1. As explained in the main body of this statement, the UNFCCC is the foundational international treaty to address climate change and provides the normative background for the development of the UN climate regime.

2. The Parties' obligations are informed by the ultimate objective of the UNFCCC contained in its Article 2, which is to "achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system".

3. The level of interference with the climate system that is considered "dangerous" was unclear at the time of the adoption of the UNFCCC. Now, the Paris Agreement's Article 2(1)(a) clarifies that "avoiding dangerous interference" requires:

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

4. Under Article 4(1) of the UNFCCC, all Parties have legal obligations to:

   a) Develop, periodically update, and publish national inventories of anthropogenic emissions and removals of all greenhouse gases not controlled by the Montreal Protocol;
   b) Formulate, implement, publish and regularly update national and regional climate change mitigation and adaptation programmes;
   c) Promote and cooperate on various issues, such as in:
      i. development, application and transfer of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases in all relevant sectors;
      ii. scientific, technological, technical, socio-economic and other research, systematic observation and development of data archives related to the climate system;
      iii. in the full, open and prompt exchange of relevant scientific, technological, technical, socio-economic and legal information related to the climate system and climate change, and to the economic and social consequences of various response strategies; and
      iv. in education, training and public awareness related to climate change and encourage the widest participation in this process, including that of non-governmental organizations.

5. Under Article 4(2) of the UNFCCC, developed country Parties and other Parties included in UNFCCC's Annex I have the obligation to:

   a) adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs;
   b) communicate detailed information on these policies and measures, with the aim of returning individually or jointly to their 1990 GHG emission levels these anthropogenic;
   c) coordinate as appropriate with other Annex I Parties, relevant economic and administrative instruments; and
   d) identify and periodically review its own policies and practices.

6. Under Article 4(3) of the UNFCCC, developed country Parties and other developed Parties included in UNFCCC's Annex II shall:

   a) provide new and additional financial resources to meet the agreed full costs incurred by developing country Parties in complying with their reporting obligations under UNFCCC Article 12(1);
   b) provide such financial resources, including for the transfer of technology, needed by the developing country Parties to meet the agreed full incremental costs of climate change implementing measures;
   c) assist the developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects; and
   d) shall take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know- how to other Parties, particularly developing country Parties.

7. The Parties are guided by a set of principles contained in Article 3 of the UNFCC, including:

   a) protecting the climate system for the benefit of present and future generations of humankind,
   b) equity,
   c) common but differentiated responsibilities and respective capabilities,
   d) full consideration for 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;
   e) taking take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects,[694]
   f) comprehensiveness,[695]

[694] UNFCCC Article 3(3) states "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 so as to ensure global benefits at the lowest possible cost."
[695] Meaning that climate change measures should "cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors" as outlined in UNFCCC.

g) promotion of sustainable development,
h) appropriateness and integrated with national development programmes, taking into account that economic development is essential for adopting measures to address climate change.

8. The UNFCCC reflects the principle that, in order to create an effective and fair response to the threat of climate change, due regard needs to be given to Parties' different circumstances. The principle of 'common but differentiated responsibilities and respective capabilities' (CBDR-RC) acknowledges that developed countries should take the lead in the joint effort of combatting climate change and its adverse effects.[696] Based on the premise that climate change is a common concern of humankind, which requires the widest possible cooperation by all countries, the UNFCCC recognizes different contributions to environmental harm ('causality'), as well as different capacities to take mitigation measures ('capability'). Accordingly, the UNFCCC has addressed differentiation not only by enshrining CBDR-RC, but also by establishing more demanding and substantively stronger obligations for the Parties explicitly listed in its annexes.[697]

9. The principles of the UNFCCC guide the Paris Agreement.[698] However, as the latest and most specific international climate treaty, the Paris Agreement's provisions, to the extent that they differ from the UNFCCC's, modify and replace some of the UNFCCC obligations.

10. One such modification is apparent in the use of the CBDR-RC principle in the Paris Agreement, which now applies "in the light of different national circumstances".[699] The addition of this qualifier allows a wide range of considerations to be taken into account when differentiating between different Parties, and is not limited to historical responsibility.[700]

11. Several of the legal obligations under the UNFCCC, especially on transparency, were superseded by corresponding obligations in the Paris Agreement.[701] A notable exception is the obligation of developed country Parties to provide financial resources to developing countries.[702] This obligation applies "in continuation of their existing obligations under the Convention".[703]

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[696] UNFCCC ibid, art 3(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."
[697] L Rajamani, 'The Doctrinal Basis for and Boundaries of Differential Treatment in International Environmental Law', in L Rajamani (ed), *Differential Treatment in International Environmental Harm* (Oxford University Press 2006).
[698] Paris Agreement preamble.
[699] ibid, Articles 2(2) and 4(3).
[700] See main submission Part III.
[701] For example, UNFCCC 'Decision 1/CP.21 Adoption of the Paris Agreement' para 98 states "that the modalities, procedures and guidelines of this transparency framework shall build upon and eventually *supersede* the measurement, reporting and verification system established by decision 1/CP.16…" (emphasis added).
[702] UNFCCC Article 4(3).
[703] Paris Agreement Article 9(1).

12. As mentioned in the main body of this statement, Article 17 of UNFCCC provided for the future development of Parties' obligations through successive protocols. Only one such protocol – the Kyoto Protocol[704] – has been adopted. It entered into force in 2005.

13. The Kyoto Protocol strengthened the commitments in UNFCCC's Article 4(2)(a) and (b) for developed countries and other Parties included in UNFCCC's Annex I. It did not introduce any new commitments for Parties not included in Annex I (i.e. developing country Parties).

14. The Kyoto Protocol was designed to set up specific, successive commitment periods for Annex I parties. During those commitment periods, Annex I Parties had quantified emission reduction and limitation obligations.[705] The first commitment period was from 1 January 2008 to 31 December 2012. The second commitment period was from 1 January 2013 to 31 December 2020.

15. The mitigation commitments of developed country Parties under the Kyoto Protocol are now superseded by NDCs under the Paris Agreement.

16. The Kyoto Protocol set up significant monitoring and reporting obligations, which are now largely included in the Enhanced Transparency Framework established under Article 13 of the Paris Agreement. The protocol's rules on carbon markets,[706] have been superseded by Article 6 of the Paris Agreement.

17. Thus, the Kyoto Protocol is now of limited normative value in identifying States obligations to protect the climate system, but it remains in force until discontinued by a decision by its Parties.

II. Other Relevant Provisions of the Paris Agreement

A. Further Obligations of States

18. In addition to the obligations discussed in the main text of this statement, the Paris Agreement contains further obligations for its Parties on reporting and transparency, adaptation and the provision of support. Each of these obligations is discussed further below.

Reporting and Transparency

19. With respect to reporting, each Party has the legal obligation, on a biennial basis, to provide information on its national GHG inventory in a National Inventory Report and information necessary to track progress made in implementing and achieving its NDC.[707] In addition,

[704] Kyoto Protocol.
[705] ibid, Article 3.
[706] See ibid, Articles 7, 12 and 17.
[707] Paris Agreement Articles 13(7)(a) and (b).

each developed county party shall report on the financial, technology and capacity building support provided to developing countries.[708]

20. All this information is to be provided through a Biennial Transparency Report (BTR),[709] the first of which is due on 31 December 2024, and then every two years thereafter. Article 13 of the CMA contains detailed guidance on how reporting should be done.[710]

21. These reporting obligations under the Paris Agreement are crucial elements for the effective functioning of the Agreement, as well as to promote mutual trust and confidence. After Parties have submitted their BTRs, each report will undergo an independent technical expert review.

22. The Parties are also obliged to participate in a facilitative, multilateral consideration of progress (FMCP).[711] This requires the Parties to participate in a written question and answer session and in a working group session, where any other Party can ask questions to a Party with respect to its financial efforts under Article 9 (discussed below) and its implementation and achievement of its NDC(s).

Adaptation

23. In order to increase the ability to adapt to the adverse impacts of climate change and foster climate resilience and low GHG emission development,[712] each Party has an obligation to, as appropriate, engage in adaptation planning processes and the implementation of adaptation actions.[713] Though not a legal obligation, each Party should also submit an adaptation communication either as part of their NDC or independently. The adaptation plan is recorded in a public registry on the UNFCCC website.

Means of support (finance, technology-transfer and capacity building)

24. The provision and mobilization of finance, capacity support and technology transfer are important enablers to enhance mitigation ambition.

25. Developing country Parties – in continuation of their existing obligations under the UNFCCC – have the collective obligation to provide financial resources to assist developing country Parties with respect to both mitigation and adaptation.[714]

[708] ibid Article 13(9).
[709] The National Inventory Report can also be submitted as a self-standing report, and does not have to be part of the BTR.
[710] UNFCCC 'Decision 18/CMA.1, Modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement'.
[711] Paris AgreementArticle 13(11).
[712] ibid, Article 2(1)(b).
[713] ibid, Article 7(9).
[714] ibid, Article 9(1).

26. "Provision of financial resources" is understood as applying to public sources of finance only. Wider sources, instruments and channels of finance, such as private sources, are captured in the concept of "mobilizing climate finance".[715] As part of a global effort, developed country Parties should continue to take the lead in mobilizing climate finance.[716] The commitment to mobilize USD 100 billion annually from 2020 is to be understood in this context.[717]

27. In several places in the Paris Agreement, the purpose of financial support is specified. For example, continuous and enhanced international support shall be provided to developing country Parties for adaptation action,[718] for preparation and submission of NDCs,[719] or for the implementation of reporting and transparency obligations.[720]

28. Further, each developed country Party has the obligation to communicate on a biennial basis indicative information on the finance to be provided and mobilized (on an *ex-ante* basis).[721] This obligation to provide biennial finance communications is independent from the reporting information under Article 13 as mentioned above, and the communications will be recorded on the UNFCCC website.[722]

29. Apart from these obligations, the Paris Agreement also contains a number of other provisions that may be relevant to the Court's consideration of the Questions.

B. Other Relevant Provisions

Human Rights

30. The Paris Agreement is the first international climate treaty that explicitly refers to human rights. In its preamble, the Parties acknowledged that:

> "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".

[715] see ibid, Article 9(3).
[716] ibid.
[717] UNFCCC 'Decision 1/CP.21' para 53. Parties currently negotiate a new quantified collective finance mobilization goal, to be adopted at the CMA meeting in 2024.
[718] Paris Agreement Article 17(13).
[719] ibid, Article 4(5).
[720] ibid, Article 13(14).
[721] ibid, Article 9(5).
[722] See UNFCCC, Biennial Communications received in accordance with Article 9, paragraph 5, of the Paris Agreement <https://unfccc.int/Art.9.5-biennial-communications>.

31. In later CMA decisions, this paragraph was extended to also include a reference to a "right to a clean, healthy and sustainable environment".[723]

32. These rights establish the normative background for the implementation of the Paris Agreement. They have to be taken into account when the Parties implement their domestic actions on climate change. However, they arguably do not establish new rights in addition to those human rights obligations that already apply to the Parties in their international or national commitments.

Loss and Damage

33. As part of the Paris Agreement, States recognized the importance of averting, minimizing and addressing loss and damage associated with the adverse impacts of climate change under its Article 8(1). While Article 8 of the Paris Agreement recognises the loss and damage associated with climate change, the decision adopting the Paris Agreement clarifies that "Article 8 does not involve or provide a basis for any liability or compensation".[724]

34. Loss and damage include impacts from extreme events and slow-onset events. Slow-onset events are understood to include events such as sea level rise, ocean warming, ocean acidification, and adverse effects such as coral reef bleaching and death.

35. The Parties also agreed to enhance understanding and support with respect to loss and damage.[725] The work of the Parties on loss and damage is supported by the Warsaw International Mechanism for Loss and Damage.[726]

36. In 2022, the Parties to the Paris Agreement expressed alarm at the outcomes of the IPCC Sixth Assessment Report, and agreed to establish new funding arrangements to assist developing countries that are particularly vulnerable to the adverse effects of climate change. This includes providing and assisting in mobilizing new and additional resources, including

[723] See for the latest decisions (at the time of writing): UNFCCC 'Decision -/CMA.5 Outcome of the First Global Stocktake' preamble, which states: "Acknowledging that climate change is a common concern of humankind and that Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, *the right to a clean, healthy and sustainable environment*, 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"-(emphasis added).
[724] UNFCCC 'Decison 1/CP.21' para 51.
[725] Paris Agreement Article 8(3).
[726] ibid, Article 8(2).

a fund for responding to loss and damage.[727] In 2023, the guidelines for operationalisation of the new funding arrangements and the fund were adopted.[728]

Carbon Markets

37. The Paris Agreement enables the Parties to cooperate voluntarily with each other in order to increase ambition in their mitigation and adaptation actions and to promote sustainable development.[729] Such cooperative approaches may include (i) bilateral arrangements that involve the transaction of internationally transferable mitigation outcomes;[730] (ii) a centralized mechanism that allows the trading with emission allowances and also include the possibility for the participation of private actors;[731] and (iii) the possibility for Parties to cooperate in a way that does not involve market-based approaches.[732] Some details for these approaches were agreed in 2022, but other details remain outstanding.[733]

[727] UNFCCC 'Decisions 2/CP.27 Funding arrangements for responding to loss and damage associated with the adverse effects of climate change, including a focus on addressing loss and damage' (17 March 2023) UN Doc FCCC/CP/2022/10/Add.1, para 2 and UNFCCC 'Decision 2/CMA.4 Funding arrangements for responding to loss and damage associated with the adverse effects of climate change, including a focus on addressing loss and damage' (17 March 2023) UN Doc FCCC/PA/CMA/2022/10/Add.1, para 2.

[728] UNFCCC 'Decision -/CP.28 and -/CMA.5 Operationalization of the new funding arrangements, including a fund, for responding to loss and damage referred to in paragraphs 2–3 of decisions 2/CP.27 and 2/CMA.4', advanced unedited versions, <https://unfccc.int/sites/default/files/resource/cma5_auv_10g_LnDfunding.pdf>.

[729] Paris Agreement Article 6(1).

[730] ibid, Article 6(2).

[731] ibid, Article 6(4).

[732] ibid, Article 6(8).

[733] UNFCCC 'Decision 2/CMA.3 Guidance on cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement' (8 March 2022) UN Doc FCCC/PA/CMA/2021/10/Add.1; UNFCCC 'Decision 3/CMA.3 Rules, modalities and procedures for the mechanism established by Article 6, paragraph 4, of the Paris Agreement' (8 March 2022) UN Doc FCCC/PA/CMA/2021/10/Add.1; UNFCCC 'Decision 4/CMA.3 Work programme under the framework for non-market approaches referred to in Article 6, paragraph 8, of the Paris Agreement' (8 March 2022) UN Doc FCCC/PA/CMA/2021/10/Add.1.