Panel 1: Overshoot of 1.5ºC and International Law: Obligations, Responsibility, and Climate Repair

.

CLE Reading Material:

- United Nations Paris Agreement (2015)
- Legal guardrails on states' dependence on carbon dioxide removal to meet climate targets; Lavanya Rajamani, Ewan White, Joeri Rogelj, Ruben Prütz, Thom Wetzer, Marianne Wood & Rupert F. Stuart-Smith (03 Feb 2026): https://doi.org/10.1080/14693062.2025.2599861
- The pursuit of 1.5°C endures as a legal and ethical imperative in a changing world; Joeri Rogelj and Lavanya Rajamani; https://www.science.org/doi/10.1126/science.ady1186
- Obligations of States in Respect to Climate Change, Advisory Opinion, International Court of Justice (July 2025)

PARIS AGREEMENT



UNITED NATIONS
2015

PARIS AGREEMENT

The Parties to this Agreement,

Being Parties to the United Nations Framework Convention on Climate Change, hereinafter referred to as "the Convention",

Pursuant to the Durban Platform for Enhanced Action established by decision 1/CP.17 of the Conference of the Parties to the Convention at its seventeenth session,

In pursuit of the objective of the Convention, and being guided by its principles, including the principle of equity and common but differentiated responsibilities and respective capabilities, in the light of different national circumstances,

Recognizing the need for an effective and progressive response to the urgent threat of climate change on the basis of the best available scientific knowledge,

Also recognizing the specific needs and special circumstances of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change, as provided for in the Convention,

Taking full account of the specific needs and special situations of the least developed countries with regard to funding and transfer of technology,

Recognizing that Parties may be affected not only by climate change, but also by the impacts of the measures taken in response to it,

Emphasizing the intrinsic relationship that climate change actions, responses and impacts have with equitable access to sustainable development and eradication of poverty,

Recognizing the fundamental priority of safeguarding food security and ending hunger, and the particular vulnerabilities of food production systems to the adverse impacts of climate change,

Taking into account the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities,

Acknowledging that climate change is a common concern of humankind, Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to health, the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity,

Recognizing the importance of the conservation and enhancement, as appropriate, of sinks and reservoirs of the greenhouse gases referred to in the Convention,

Noting 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,

Affirming the importance of education, training, public awareness, public participation, public access to information and cooperation at all levels on the matters addressed in this Agreement,

Recognizing the importance of the engagements of all levels of government and various actors, in accordance with respective national legislations of Parties, in addressing climate change,

Also recognizing that sustainable lifestyles and sustainable patterns of consumption and production, with developed country Parties taking the lead, play an important role in addressing climate change,

Have agreed as follows:

Article 1

For the purpose of this Agreement, the definitions contained in Article 1 of the Convention shall apply. In addition:

(a) "Convention" means the United Nations Framework Convention on Climate Change, adopted in New York on 9 May 1992;

(b) "Conference of the Parties" means the Conference of the Parties to the Convention;

(c) "Party" means a Party to this Agreement.

Article 2

1. This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, 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.

2. This Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.

Article 3

As nationally determined contributions to the global response to climate change, all Parties are to undertake and communicate ambitious efforts as defined in Articles 4, 7, 9, 10, 11 and 13 with the view to achieving the purpose of this Agreement as set out in Article 2. The efforts of all Parties will represent a progression over time, while recognizing the need to support developing country Parties for the effective implementation of this Agreement.

Article 4

1. In order to achieve the long-term temperature goal set out in Article 2, Parties aim to reach global peaking of greenhouse gas emissions as soon as possible, recognizing that peaking will take longer for developing country Parties, 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.

2. Each Party shall prepare, communicate and maintain successive nationally determined contributions that it intends to achieve. Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions.

3. Each Party's successive nationally determined contribution will represent a progression beyond the Party's then current nationally determined contribution and reflect its highest possible ambition, reflecting its common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.

4. Developed country Parties should continue taking the lead by undertaking economy-wide absolute emission reduction targets. Developing country Parties should continue enhancing their mitigation efforts, and are encouraged to move over time towards economy-wide emission reduction or limitation targets in the light of different national circumstances.

5. Support shall be provided to developing country Parties for the implementation of this Article, in accordance with Articles 9, 10 and 11, recognizing that enhanced support for developing country Parties will allow for higher ambition in their actions.

6. The least developed countries and small island developing States may prepare and communicate strategies, plans and actions for low greenhouse gas emissions development reflecting their special circumstances.

7. Mitigation co-benefits resulting from Parties' adaptation actions and/or economic diversification plans can contribute to mitigation outcomes under this Article.

8. In communicating their nationally determined contributions, all Parties shall provide the information necessary for clarity, transparency and understanding in accordance with decision 1/CP.21 and any relevant decisions of the Conference of the Parties serving as the meeting of the Parties to this Agreement.

9. Each Party shall communicate a nationally determined contribution every five years in accordance with decision 1/CP.21 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.

10. The Conference of the Parties serving as the meeting of the Parties to this Agreement shall consider common time frames for nationally determined contributions at its first session.

11. A Party may at any time adjust its existing nationally determined contribution with a view to enhancing its level of ambition, in accordance with guidance adopted by the Conference of the Parties serving as the meeting of the Parties to this Agreement.

12. Nationally determined contributions communicated by Parties shall be recorded in a public registry maintained by the secretariat.

13. Parties shall account for their nationally determined contributions. In accounting for anthropogenic emissions and removals corresponding to their nationally determined contributions, Parties shall promote environmental integrity, transparency, accuracy, completeness, comparability and consistency, and ensure the avoidance of double counting, in accordance with guidance adopted by the Conference of the Parties serving as the meeting of the Parties to this Agreement.

14. In the context of their nationally determined contributions, when recognizing and implementing mitigation actions with respect to anthropogenic emissions and removals, Parties should take into account, as appropriate, existing methods and guidance under the Convention, in the light of the provisions of paragraph 13 of this Article.

15. Parties shall take into consideration in the implementation of this Agreement the concerns of Parties with economies most affected by the impacts of response measures, particularly developing country Parties.

16. Parties, including regional economic integration organizations and their member States, that have reached an agreement to act jointly under paragraph 2 of this Article shall notify the secretariat of the terms of that agreement, including the emission level allocated to each Party within the relevant time period, when they communicate their nationally determined contributions. The secretariat shall in turn inform the Parties and signatories to the Convention of the terms of that agreement.

17. Each party to such an agreement shall be responsible for its emission level as set out in the agreement referred to in paragraph 16 of this Article in accordance with paragraphs 13 and 14 of this Article and Articles 13 and 15.

18. If Parties acting jointly do so in the framework of, and together with, a regional economic integration organization which is itself a Party to this Agreement, each member State of that regional economic integration organization individually, and together with the regional economic integration organization, shall be responsible for its emission level as set out in the agreement communicated under paragraph 16 of this Article in accordance with paragraphs 13 and 14 of this Article and Articles 13 and 15.

19. All Parties should strive to formulate and communicate long-term low greenhouse gas emission development strategies, mindful of Article 2 taking into account their common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.

Article 5

1. 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.

2. Parties are encouraged to take action to implement and support, including through results-based payments, the existing framework as set out in related guidance and decisions already agreed under the Convention for: policy approaches and positive incentives for activities relating to reducing emissions from deforestation and forest degradation, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries; and alternative policy approaches, such as joint mitigation and adaptation approaches for the integral and sustainable management of forests, while reaffirming the importance of incentivizing, as appropriate, non-carbon benefits associated with such approaches.

Article 6

1. Parties recognize that some Parties choose to pursue voluntary cooperation in the implementation of their nationally determined contributions to allow for higher ambition in their mitigation and adaptation actions and to promote sustainable development and environmental integrity.

2. Parties shall, where engaging on a voluntary basis in cooperative approaches that involve the use of internationally transferred mitigation outcomes towards nationally determined contributions, promote sustainable development and ensure environmental integrity and transparency, including in governance, and shall apply robust accounting to ensure, inter alia, the avoidance of double counting, consistent with guidance adopted by the Conference of the Parties serving as the meeting of the Parties to this Agreement.

3. The use of internationally transferred mitigation outcomes to achieve nationally determined contributions under this Agreement shall be voluntary and authorized by participating Parties.

4. A mechanism to contribute to the mitigation of greenhouse gas emissions and support sustainable development is hereby established under the authority and guidance of the Conference of the Parties serving as the meeting of the Parties to this Agreement for use by Parties on a voluntary basis. It shall be supervised by a body designated by the Conference of the Parties serving as the meeting of the Parties to this Agreement, and shall aim:

(a) To promote the mitigation of greenhouse gas emissions while fostering sustainable development;

(b) To incentivize and facilitate participation in the mitigation of greenhouse gas emissions by public and private entities authorized by a Party;

(c) To contribute to the reduction of emission levels in the host Party, which will benefit from mitigation activities resulting in emission reductions that can also be used by another Party to fulfil its nationally determined contribution; and

(d) To deliver an overall mitigation in global emissions.

5. Emission reductions resulting from the mechanism referred to in paragraph 4 of this Article shall not be used to demonstrate achievement of the host Party's nationally determined contribution if used by another Party to demonstrate achievement of its nationally determined contribution.

6. The Conference of the Parties serving as the meeting of the Parties to this Agreement shall ensure that a share of the proceeds from activities under the mechanism referred to in paragraph 4 of this Article is used to cover administrative expenses as well as to assist developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation.

7. The Conference of the Parties serving as the meeting of the Parties to this Agreement shall adopt rules, modalities and procedures for the mechanism referred to in paragraph 4 of this Article at its first session.

8. Parties recognize the importance of integrated, holistic and balanced non-market approaches being available to Parties to assist in the implementation of their nationally determined contributions, in the context of sustainable development and poverty eradication, in a coordinated and effective manner, including through, inter alia, mitigation, adaptation, finance, technology transfer and capacity-building, as appropriate. These approaches shall aim to:

(a) Promote mitigation and adaptation ambition;

(b) Enhance public and private sector participation in the implementation of nationally determined contributions; and

(c) Enable opportunities for coordination across instruments and relevant institutional arrangements.

9. A framework for non-market approaches to sustainable development is hereby defined to promote the non-market approaches referred to in paragraph 8 of this Article.

Article 7

1. Parties hereby establish the global goal on adaptation of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to contributing to sustainable development and ensuring an adequate adaptation response in the context of the temperature goal referred to in Article 2.

2. Parties recognize that adaptation is a global challenge faced by all with local, subnational, national, regional and international dimensions, and that it is a key component of and makes a contribution to the long-term global response to climate change to protect people, livelihoods and ecosystems, taking into account the urgent and immediate needs of those developing country Parties that are particularly vulnerable to the adverse effects of climate change.

3. The adaptation efforts of developing country Parties shall be recognized, in accordance with the modalities to be adopted by the Conference of the Parties serving as the meeting of the Parties to this Agreement at its first session.

4. Parties recognize that the current need for adaptation is significant and that greater levels of mitigation can reduce the need for additional adaptation efforts, and that greater adaptation needs can involve greater adaptation costs.

5. Parties acknowledge that adaptation action should follow a country-driven, gender-responsive, participatory and fully transparent approach, taking into consideration vulnerable groups, communities and ecosystems, and should be based on and guided by the best available science and, as appropriate, traditional knowledge, knowledge of indigenous peoples and local knowledge systems, with a view to integrating adaptation into relevant socioeconomic and environmental policies and actions, where appropriate.

6. Parties recognize the importance of support for and international cooperation on adaptation efforts and the importance of taking into account the needs of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change.

7. Parties should strengthen their cooperation on enhancing action on adaptation, taking into account the Cancun Adaptation Framework, including with regard to:

(a) Sharing information, good practices, experiences and lessons learned, including, as appropriate, as these relate to science, planning, policies and implementation in relation to adaptation actions;

(b) Strengthening institutional arrangements, including those under the Convention that serve this Agreement, to support the synthesis of relevant information and knowledge, and the provision of technical support and guidance to Parties;

(c) Strengthening scientific knowledge on climate, including research, systematic observation of the climate system and early warning systems, in a manner that informs climate services and supports decision-making;

(d) Assisting developing country Parties in identifying effective adaptation practices, adaptation needs, priorities, support provided and received for adaptation actions and efforts, and challenges and gaps, in a manner consistent with encouraging good practices; and

(e) Improving the effectiveness and durability of adaptation actions.

8. United Nations specialized organizations and agencies are encouraged to support the efforts of Parties to implement the actions referred to in paragraph 7 of this Article, taking into account the provisions of paragraph 5 of this Article.

9. Each Party shall, as appropriate, engage in adaptation planning processes and the implementation of actions, including the development or enhancement of relevant plans, policies and/or contributions, which may include:

(a) The implementation of adaptation actions, undertakings and/or efforts;

(b) The process to formulate and implement national adaptation plans;

(c) The assessment of climate change impacts and vulnerability, with a view to formulating nationally determined prioritized actions, taking into account vulnerable people, places and ecosystems;

(d) Monitoring and evaluating and learning from adaptation plans, policies, programmes and actions; and

(e) Building the resilience of socioeconomic and ecological systems, including through economic diversification and sustainable management of natural resources.

10. Each Party should, as appropriate, submit and update periodically an adaptation communication, which may include its priorities, implementation and support needs, plans and actions, without creating any additional burden for developing country Parties.

11. The adaptation communication referred to in paragraph 10 of this Article shall be, as appropriate, submitted and updated periodically, as a component of or in conjunction with other communications or documents, including a national adaptation plan, a nationally determined contribution as referred to in Article 4, paragraph 2, and/or a national communication.

12. The adaptation communications referred to in paragraph 10 of this Article shall be recorded in a public registry maintained by the secretariat.

13. Continuous and enhanced international support shall be provided to developing country Parties for the implementation of paragraphs 7, 9, 10 and 11 of this Article, in accordance with the provisions of Articles 9, 10 and 11.

14. The global stocktake referred to in Article 14 shall, inter alia:

(a) Recognize adaptation efforts of developing country Parties;

(b) Enhance the implementation of adaptation action taking into account the adaptation communication referred to in paragraph 10 of this Article;

(c) Review the adequacy and effectiveness of adaptation and support provided for adaptation; and

(d) Review the overall progress made in achieving the global goal on adaptation referred to in paragraph 1 of this Article.

Article 8

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

2. The Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts shall be subject to the authority and guidance of the Conference of the Parties serving as the meeting of the Parties to this Agreement and may be enhanced and strengthened, as determined by the Conference of the Parties serving as the meeting of the Parties to this Agreement.

3. Parties should enhance understanding, action and support, including through the Warsaw International Mechanism, as appropriate, on a cooperative and facilitative basis with respect to loss and damage associated with the adverse effects of climate change.

4. Accordingly, areas of cooperation and facilitation to enhance understanding, action and support may include:

(a) Early warning systems;

(b) Emergency preparedness;

(c) Slow onset events;

(d) Events that may involve irreversible and permanent loss and damage;

(e) Comprehensive risk assessment and management;

(f) Risk insurance facilities, climate risk pooling and other insurance solutions;

(g) Non-economic losses; and

(h) Resilience of communities, livelihoods and ecosystems.

5. The Warsaw International Mechanism shall collaborate with existing bodies and expert groups under the Agreement, as well as relevant organizations and expert bodies outside the Agreement.

Article 9

1. Developed country Parties shall provide financial resources to assist developing country Parties with respect to both mitigation and adaptation in continuation of their existing obligations under the Convention.

2. Other Parties are encouraged to provide or continue to provide such support voluntarily.

3. As part of a global effort, developed country Parties should continue to take the lead in mobilizing climate finance from a wide variety of sources, instruments and channels, noting the significant role of public funds, through a variety of actions, including supporting country-driven strategies, and taking into account the needs and priorities of developing country Parties. Such mobilization of climate finance should represent a progression beyond previous efforts.

4. The provision of scaled-up financial resources should aim to achieve a balance between adaptation and mitigation, taking into account country-driven strategies, and the priorities and needs of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change and have significant capacity constraints, such as the least developed countries and small island developing States, considering the need for public and grant-based resources for adaptation.

5. Developed country Parties shall biennially communicate indicative quantitative and qualitative information related to paragraphs 1 and 3 of this Article, as applicable, including, as available, projected levels of public financial resources to be provided to developing country Parties. Other Parties providing resources are encouraged to communicate biennially such information on a voluntary basis.

6. The global stocktake referred to in Article 14 shall take into account the relevant information provided by developed country Parties and/or Agreement bodies on efforts related to climate finance.

7. Developed country Parties shall provide transparent and consistent information on support for developing country Parties provided and mobilized through public interventions biennially in accordance with the modalities, procedures and guidelines to be adopted by the Conference of the Parties serving as the meeting of the Parties to this Agreement, at its first session, as stipulated in Article 13, paragraph 13. Other Parties are encouraged to do so.

8. The Financial Mechanism of the Convention, including its operating entities, shall serve as the financial mechanism of this Agreement.

9. The institutions serving this Agreement, including the operating entities of the Financial Mechanism of the Convention, shall aim to ensure efficient access to financial resources through simplified approval procedures and enhanced readiness support for developing country Parties, in particular for the least developed countries and small island developing States, in the context of their national climate strategies and plans.

Article 10

1. Parties share a long-term vision on the importance of fully realizing technology development and transfer in order to improve resilience to climate change and to reduce greenhouse gas emissions.

2. Parties, noting the importance of technology for the implementation of mitigation and adaptation actions under this Agreement and recognizing existing technology deployment and dissemination efforts, shall strengthen cooperative action on technology development and transfer.

3. The Technology Mechanism established under the Convention shall serve this Agreement.

4. A technology framework is hereby established to provide overarching guidance to the work of the Technology Mechanism in promoting and facilitating enhanced action on technology development and transfer in order to support the implementation of this Agreement, in pursuit of the long-term vision referred to in paragraph 1 of this Article.

5. Accelerating, encouraging and enabling innovation is critical for an effective, long-term global response to climate change and promoting economic growth and sustainable development. Such effort shall be, as appropriate, supported, including by the Technology Mechanism and, through financial means, by the Financial Mechanism of the Convention, for collaborative approaches to research and development, and facilitating access to technology, in particular for early stages of the technology cycle, to developing country Parties.

6. Support, including financial support, shall be provided to developing country Parties for the implementation of this Article, including for strengthening cooperative action on technology development and transfer at different stages of the technology cycle, with a view to achieving a balance between support for mitigation and adaptation. The global stocktake referred to in Article 14 shall take into account available information on efforts related to support on technology development and transfer for developing country Parties.

Article 11

1. Capacity-building under this Agreement should enhance the capacity and ability of developing country Parties, in particular countries with the least capacity, such as the least developed countries, and those that are particularly vulnerable to the adverse effects of climate change, such as small island developing States, to take effective climate change action, including, inter alia, to implement adaptation and mitigation actions, and should facilitate technology development, dissemination and deployment, access to climate finance, relevant aspects of education, training and public awareness, and the transparent, timely and accurate communication of information.

2. Capacity-building should be country-driven, based on and responsive to national needs, and foster country ownership of Parties, in particular, for developing country Parties, including at the national, subnational and local levels. Capacity-building should be guided by lessons learned, including those from capacity-building activities under the Convention, and should be an effective, iterative process that is participatory, cross-cutting and gender-responsive.

3. All Parties should cooperate to enhance the capacity of developing country Parties to implement this Agreement. Developed country Parties should enhance support for capacity-building actions in developing country Parties.

4. All Parties enhancing the capacity of developing country Parties to implement this Agreement, including through regional, bilateral and multilateral approaches, shall regularly communicate on these actions or measures on capacity-building. Developing country Parties should regularly communicate progress made on implementing capacity-building plans, policies, actions or measures to implement this Agreement.

5. Capacity-building activities shall be enhanced through appropriate institutional arrangements to support the implementation of this Agreement, including the appropriate institutional arrangements established under the Convention that serve this Agreement. The Conference of the Parties serving as the meeting of the Parties to this Agreement shall, at its first session, consider and adopt a decision on the initial institutional arrangements for capacity-building.

Article 12

Parties shall cooperate in taking measures, as appropriate, to enhance climate change education, training, public awareness, public participation and public access to information, recognizing the importance of these steps with respect to enhancing actions under this Agreement.

Article 13

1. In order to build mutual trust and confidence and to promote effective implementation, an enhanced transparency framework for action and support, with built-in flexibility which takes into account Parties' different capacities and builds upon collective experience is hereby established.

2. The transparency framework shall provide flexibility in the implementation of the provisions of this Article to those developing country Parties that need it in the light of their capacities. The modalities, procedures and guidelines referred to in paragraph 13 of this Article shall reflect such flexibility.

3. The transparency framework shall build on and enhance the transparency arrangements under the Convention, recognizing the special circumstances of the least developed countries and small island developing States, and be implemented in a facilitative, non-intrusive, non-punitive manner, respectful of national sovereignty, and avoid placing undue burden on Parties.

4. The transparency arrangements under the Convention, including national communications, biennial reports and biennial update reports, international assessment and review and international consultation and analysis, shall form part of the experience drawn upon for the development of the modalities, procedures and guidelines under paragraph 13 of this Article.

5. The purpose of the framework for transparency of action is to provide a clear understanding of climate change action in the light of the objective of the Convention as set out in its Article 2, including clarity and tracking of progress towards achieving Parties' individual nationally determined contributions under Article 4, and Parties' adaptation actions under Article 7, including good practices, priorities, needs and gaps, to inform the global stocktake under Article 14.

6. The purpose of the framework for transparency of support is to provide clarity on support provided and received by relevant individual Parties in the context of climate change actions under Articles 4, 7, 9, 10 and 11, and, to the extent possible, to provide a full overview of aggregate financial support provided, to inform the global stocktake under Article 14.

7. Each Party shall regularly provide the following information:

(a) A national inventory report of anthropogenic emissions by sources and removals by sinks of greenhouse gases, prepared using good practice methodologies accepted by the Intergovernmental Panel on Climate Change and agreed upon by the Conference of the Parties serving as the meeting of the Parties to this Agreement; and

(b) Information necessary to track progress made in implementing and achieving its nationally determined contribution under Article 4.

8. Each Party should also provide information related to climate change impacts and adaptation under Article 7, as appropriate.

9. Developed country Parties shall, and other Parties that provide support should, provide information on financial, technology transfer and capacity-building support provided to developing country Parties under Articles 9, 10 and 11.

10. Developing country Parties should provide information on financial, technology transfer and capacity-building support needed and received under Articles 9, 10 and 11.

11. Information submitted by each Party under paragraphs 7 and 9 of this Article shall undergo a technical expert review, in accordance with decision 1/CP.21. For those developing country Parties that need it in the light of their capacities, the review process shall include assistance in identifying capacity-building needs. In addition, each Party shall participate in a facilitative, multilateral consideration of progress with respect to efforts under Article 9, and its respective implementation and achievement of its nationally determined contribution.

12. The technical expert review under this paragraph shall consist of a consideration of the Party's support provided, as relevant, and its implementation and achievement of its nationally determined contribution. The review shall also identify areas of improvement for the Party, and include a review of the consistency of the information with the modalities, procedures and guidelines referred to in paragraph 13 of this Article, taking into account the flexibility accorded to the Party under paragraph 2 of this Article. The review shall pay particular attention to the respective national capabilities and circumstances of developing country Parties.

13. The Conference of the Parties serving as the meeting of the Parties to this Agreement shall, at its first session, building on experience from the arrangements related to transparency under the Convention, and elaborating on the provisions in this Article, adopt common modalities, procedures and guidelines, as appropriate, for the transparency of action and support.

14. Support shall be provided to developing countries for the implementation of this Article.

15. Support shall also be provided for the building of transparency-related capacity of developing country Parties on a continuous basis.

Article 14

1. The Conference of the Parties serving as the meeting of the Parties to this Agreement shall periodically take stock of the implementation of this Agreement to assess the collective progress towards achieving the purpose of this Agreement and its long-term goals (referred to as the "global stocktake"). It shall do so in a comprehensive and facilitative manner, considering mitigation, adaptation and the

means of implementation and support, and in the light of equity and the best available science.

2. The Conference of the Parties serving as the meeting of the Parties to this Agreement shall undertake its first global stocktake in 2023 and every five years thereafter unless otherwise decided by the Conference of the Parties serving as the meeting of the Parties to this Agreement.

3. 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.

Article 15

1. A mechanism to facilitate implementation of and promote compliance with the provisions of this Agreement is hereby established.

2. The mechanism referred to in paragraph 1 of this Article shall consist of a committee that shall be expert-based and facilitative in nature and function in a manner that is transparent, non-adversarial and non-punitive. The committee shall pay particular attention to the respective national capabilities and circumstances of Parties.

3. The committee shall operate under the modalities and procedures adopted by the Conference of the Parties serving as the meeting of the Parties to this Agreement at its first session and report annually to the Conference of the Parties serving as the meeting of the Parties to this Agreement.

Article 16

1. The Conference of the Parties, the supreme body of the Convention, shall serve as the meeting of the Parties to this Agreement.

2. Parties to the Convention that are not Parties to this Agreement may participate as observers in the proceedings of any session of the Conference of the Parties serving as the meeting of the Parties to this Agreement. When the Conference of the Parties serves as the meeting of the Parties to this Agreement, decisions under this Agreement shall be taken only by those that are Parties to this Agreement.

3. When the Conference of the Parties serves as the meeting of the Parties to this Agreement, any member of the Bureau of the Conference of the Parties representing a Party to the Convention but, at that time, not a Party to this Agreement, shall be replaced by an additional member to be elected by and from amongst the Parties to this Agreement.

4. The Conference of the Parties serving as the meeting of the Parties to this Agreement shall keep under regular review the implementation of this Agreement and shall make, within its mandate, the decisions necessary to promote its effective implementation. It shall perform the functions assigned to it by this Agreement and shall:

(a) Establish such subsidiary bodies as deemed necessary for the implementation of this Agreement; and

(b) Exercise such other functions as may be required for the implementation of this Agreement.

5. The rules of procedure of the Conference of the Parties and the financial procedures applied under the Convention shall be applied *mutatis mutandis* under this Agreement, except as may be otherwise decided by consensus by the Conference of the Parties serving as the meeting of the Parties to this Agreement.

6. The first session of the Conference of the Parties serving as the meeting of the Parties to this Agreement shall be convened by the secretariat in conjunction with the first session of the Conference of the Parties that is scheduled after the date of entry into force of this Agreement. Subsequent ordinary sessions of the Conference of the Parties serving as the meeting of the Parties to this Agreement shall be held in conjunction with ordinary sessions of the Conference of the Parties, unless otherwise decided by the Conference of the Parties serving as the meeting of the Parties to this Agreement.

7. Extraordinary sessions of the Conference of the Parties serving as the meeting of the Parties to this Agreement shall be held at such other times as may be deemed necessary by the Conference of the Parties serving as the meeting of the Parties to this Agreement or at the written request of any Party, provided that, within six months of the request being communicated to the Parties by the secretariat, it is supported by at least one third of the Parties.

8. The United Nations and its specialized agencies and the International Atomic Energy Agency, as well as any State member thereof or observers thereto not party to the Convention, may be represented at sessions of the Conference of the Parties serving as the meeting of the Parties to this Agreement as observers. Any body or agency, whether national or international, governmental or non-governmental, which is qualified in matters covered by this Agreement and which has informed the secretariat of its wish to be represented at a session of the Conference of the Parties serving as the meeting of the Parties to this Agreement as an observer, may be so admitted unless at least one third of the Parties present object. The admission and participation of observers shall be subject to the rules of procedure referred to in paragraph 5 of this Article.

Article 17

1. The secretariat established by Article 8 of the Convention shall serve as the secretariat of this Agreement.

2. Article 8, paragraph 2, of the Convention on the functions of the secretariat, and Article 8, paragraph 3, of the Convention, on the arrangements made for the functioning of the secretariat, shall apply *mutatis mutandis* to this Agreement. The secretariat shall, in addition, exercise the functions assigned to it under this Agreement and by the Conference of the Parties serving as the meeting of the Parties to this Agreement.

Article 18

1. The Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation established by Articles 9 and 10 of the Convention shall serve, respectively, as the Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation of this Agreement. The provisions of the Convention relating to the functioning of these two bodies shall apply *mutatis mutandis* to this Agreement. Sessions of the meetings of the Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation of this Agreement shall be held in conjunction with the meetings of, respectively, the Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation of the Convention.

2. Parties to the Convention that are not Parties to this Agreement may participate as observers in the proceedings of any session of the subsidiary bodies. When the subsidiary bodies serve as the subsidiary bodies of this Agreement, decisions under this Agreement shall be taken only by those that are Parties to this Agreement.

3. When the subsidiary bodies established by Articles 9 and 10 of the Convention exercise their functions with regard to matters concerning this Agreement, any member of the bureaux of those subsidiary bodies representing a Party to the Convention but, at that time, not a Party to this Agreement, shall be replaced by an additional member to be elected by and from amongst the Parties to this Agreement.

Article 19

1. Subsidiary bodies or other institutional arrangements established by or under the Convention, other than those referred to in this Agreement, shall serve this Agreement upon a decision of the Conference of the Parties serving as the meeting of the Parties to this Agreement. The Conference of the Parties serving as the meeting of the Parties to this Agreement shall specify the functions to be exercised by such subsidiary bodies or arrangements.

2. The Conference of the Parties serving as the meeting of the Parties to this Agreement may provide further guidance to such subsidiary bodies and institutional arrangements.

Article 20

1. This Agreement shall be open for signature and subject to ratification, acceptance or approval by States and regional economic integration organizations that are Parties to the Convention. It shall be open for signature at the United Nations Headquarters in New York from 22 April 2016 to 21 April 2017. Thereafter, this Agreement shall be open for accession from the day following the date on which it is closed for signature. Instruments of ratification, acceptance, approval or accession shall be deposited with the Depositary.

2. Any regional economic integration organization that becomes a Party to this Agreement without any of its member States being a Party shall be bound by all the obligations under this Agreement. In the case of regional economic integration organizations with one or more member States that are Parties to this Agreement,

the organization and its member States shall decide on their respective responsibilities for the performance of their obligations under this Agreement. In such cases, the organization and the member States shall not be entitled to exercise rights under this Agreement concurrently.

3. In their instruments of ratification, acceptance, approval or accession, regional economic integration organizations shall declare the extent of their competence with respect to the matters governed by this Agreement. These organizations shall also inform the Depositary, who shall in turn inform the Parties, of any substantial modification in the extent of their competence.

Article 21

1. This Agreement shall enter into force on the thirtieth day after the date on which at least 55 Parties to the Convention accounting in total for at least an estimated 55 per cent of the total global greenhouse gas emissions have deposited their instruments of ratification, acceptance, approval or accession.

2. Solely for the limited purpose of paragraph 1 of this Article, "total global greenhouse gas emissions" means the most up-to-date amount communicated on or before the date of adoption of this Agreement by the Parties to the Convention.

3. For each State or regional economic integration organization that ratifies, accepts or approves this Agreement or accedes thereto after the conditions set out in paragraph 1 of this Article for entry into force have been fulfilled, this Agreement shall enter into force on the thirtieth day after the date of deposit by such State or regional economic integration organization of its instrument of ratification, acceptance, approval or accession.

4. For the purposes of paragraph 1 of this Article, any instrument deposited by a regional economic integration organization shall not be counted as additional to those deposited by its member States.

Article 22

The provisions of Article 15 of the Convention on the adoption of amendments to the Convention shall apply *mutatis mutandis* to this Agreement.

Article 23

1. The provisions of Article 16 of the Convention on the adoption and amendment of annexes to the Convention shall apply *mutatis mutandis* to this Agreement.

2. Annexes to this Agreement shall form an integral part thereof and, unless otherwise expressly provided for, a reference to this Agreement constitutes at the same time a reference to any annexes thereto. Such annexes shall be restricted to lists, forms and any other material of a descriptive nature that is of a scientific, technical, procedural or administrative character.

Article 24

The provisions of Article 14 of the Convention on settlement of disputes shall apply *mutatis mutandis* to this Agreement.

Article 25

1. Each Party shall have one vote, except as provided for in paragraph 2 of this Article.

2. Regional economic integration organizations, in matters within their competence, shall exercise their right to vote with a number of votes equal to the number of their member States that are Parties to this Agreement. Such an organization shall not exercise its right to vote if any of its member States exercises its right, and vice versa.

Article 26

The Secretary-General of the United Nations shall be the Depositary of this Agreement.

Article 27

No reservations may be made to this Agreement.

Article 28

1. At any time after three years from the date on which this Agreement has entered into force for a Party, that Party may withdraw from this Agreement by giving written notification to the Depositary.

2. Any such withdrawal shall take effect upon expiry of one year from the date of receipt by the Depositary of the notification of withdrawal, or on such later date as may be specified in the notification of withdrawal.

3. Any Party that withdraws from the Convention shall be considered as also having withdrawn from this Agreement.

Article 29

The original of this Agreement, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations.

DONE at Paris this twelfth day of December two thousand and fifteen.

IN WITNESS WHEREOF, the undersigned, being duly authorized to that effect, have signed this Agreement.

CLIMATE POLICY
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RESEARCH ARTICLE

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Legal guardrails on states' dependence on carbon dioxide removal to meet climate targets

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ABSTRACT

This paper explores the international legal framework within which States' reliance on carbon dioxide removal in climate targets and emission reduction pathways is set and identifies guardrails on the extent of such reliance. While carbon dioxide removal is a vital component of the response to climate change, significant risks arise when States rely upon promises of future removals as a substitute for near-term emissions reductions. This paper focuses on the obligation of 'due diligence' that attaches to States in relation to their actions that cause and address climate harms. It identifies a standard against which the diligence (or lack thereof) exercised by States can be objectively measured. This standard, discussed at length in the International Court of Justice's Advisory Opinion on Climate Change, draws on several elements relevant to the governance of climate change, including precaution, scientific and technological information, and relevant rules and international standards, especially the normative pillars of the Paris Agreement. Although this standard applies to all actions and omissions by States in relation to climate harms, it assumes particular significance in relation to carbon dioxide removal, given the distinctive risks and uncertainties associated with it. We find that an application of this stringent standard of due diligence results first, in creating a pull towards a narrower range of global emission reduction pathways which minimize overshoot of the Paris Agreement's 1.5°C temperature goal, and second, in the emergence of indicative substantive and procedural guardrails which channel and constrain States' reliance on carbon dioxide removal to meet their climate targets. These findings underscore the need for States to pursue deep emissions reductions alongside transparent, feasible, and coherent strategies for carbon dioxide removal.

Key policy insights

- States have to adhere to a stringent standard of due diligence in relation to their actions that cause and address climate harms, including their use of carbon dioxide removal to meet climate targets.
- Application of this standard requires States to minimize the magnitude and duration of any overshoot of the Paris Agreement's temperature goal and put in place substantive and procedural guardrails on the nature and extent of their use of carbon dioxide removal to meet climate targets.

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- This in turn underscores the need for demanding near term emissions reductions, and greater transparency, feasibility and coherence in plans for reliance on carbon dioxide removal.

1. Introduction

As global temperatures rose to record levels in 2024 (World Meteorological Organization, 2025) and the Paris Agreement's 1.5°C temperature goal appears to be rapidly slipping out of reach, it is crucial to determine whether States' climate targets and pledges meet their legal obligations. In so doing, States' progress against their targets, and whether their action is consistent with the pace and level of stringency to meet the Paris Agreement's temperature goal, must be carefully assessed. This paper builds on the findings of Stuart-Smith et al. (2025) and focuses on a significant and necessary, yet under-researched element of States' plans to meet their climate targets – the reliance on carbon dioxide removal (CDR).

Stuart-Smith et al. (2025) analysed the role of CDR within States' mitigation strategies. It found that a combination of widespread transparency gaps and indications of heavy CDR reliance jeopardize the goals of the Paris Agreement. Yet, the international legal framework governing the use of CDR to meet climate targets is poorly understood and applied, including by States that appear guided by unbridled 'national determination' in their approach to CDR. This paper explores elements of the international legal framework governing climate change to ask if guardrails on the nature and extent of reliance on CDR are discernible in the legal framework and if so, what these might be. We use the term guardrails to signal standards of behaviour anchored in the legal framework that reduce the risk of adverse outcomes.

This paper unfolds as follows. Section 2 summarizes the distinctive risks associated with CDR reliance. Section 3 outlines elements of the relevant international legal framework, especially the duty and standard of due diligence. Section 4 scrutinizes the extent to which global emission reduction pathways with varying degrees of reliance on CDR are aligned with this legal framework. Section 5 distils legal guardrails which channel and constrain States' use of CDR to meet their climate targets. Section 6 concludes.

2. The risks of CDR reliance

CDR deployment is necessary to balance residual emissions and achieve net-zero CO_2 or greenhouse gas (GHG) emissions (IPCC, 2023c, C.11). High levels of emissions globally have reduced the remaining carbon budget for a 50% probability of limiting warming to 1.5°C to just 130 $GtCO_2$ at the start of 2025 (Forster et al., 2025), pointing towards global warming surpassing 1.5°C. CDR will therefore be required to if temperatures are to subsequently return to 1.5°C. However, the nature and extent of CDR deployment substantially alters the risks associated with possible mitigation pathways.

All mitigation strategies carry risks. Efforts to reduce emissions may not succeed, or they may have negative environmental and socioeconomic impacts (Ampah et al., 2024). However, reliance on CDR creates distinctive risks which merit legal scrutiny. The negative impacts of CDR vary depending on the removal and storage methods used as well as the location and scale of deployment (IPCC, 2023c, C.11.2). 'Conventional' forms of CDR such as afforestation and reforestation generate different risks and co-benefits than 'novel' forms such as bioenergy carbon capture and storage (BECCS) and direct air carbon capture and storage (DACCS). The implications of their varying characteristics for the guardrails applicable to States' mitigation strategies are addressed in Section 5. Despite their differences, greater reliance on the deployment of any of these CDR methods to meet climate targets increases risks of overshooting the 1.5°C temperature goal by a greater margin.

In its Sixth Assessment Report, the IPCC identifies a range of global emission reduction pathways that limit warming to 1.5°C above pre-industrial levels by the end of the century (IPCC, 2023c, Table 3.1). A subset of these pathways, categorized as C1, limit warming to 1.5°C above pre-industrial levels in 2100 with 'no or limited overshoot.' In practice, this means that the pathways' central global warming estimate temporarily exceeds 1.5°C by no more than 0.1°C (IPCC, 2023c, Table 3.1). A second category of pathways, C2, return to 1.5°C after higher overshoot, while C3–C8 fail to return to 1.5°C over the course of the century.

The possibility of deploying CDR introduces flexibility in the composition of pathways which ultimately limit warming to 1.5°C. First, CDR can return the global temperature to a given level after temporarily overshooting it. Second, CDR can limit temperature increase to a given level while continuing to emit more GHGs, counterbalancing their warming impact by removing equivalent amounts of CO_2 from the atmosphere. While all C1 and C2 pathways rely on these flexibilities, the extent of this reliance varies widely between pathways. Greater reliance on either flexibility increases risks of overshooting the 1.5°C temperature goal and hence of associated impacts.

Pathways which overshoot 1.5°C substantially increase the likelihood of high-impact climate risks, some of which are irreversible (Möller et al., 2024; Schleussner et al., 2024). In addition to the deaths and economic losses caused by warming over 1.5°C, overshoot may also cause or exacerbate Earth system changes that are irreversible for centuries even if warming is reversed. This includes loss of polar and mountain ecosystems affected by habitat disappearance or the melting of ice sheets or glaciers, extinction of species and the loss of coral reefs (IPCC, 2023b). Overshoot emissions may also trigger tipping points that will amplify warming and cause catastrophic impacts. Every 0.1°C increase in peak temperature increases the risk of key tipping points being triggered (Möller et al., 2024; Wunderling et al., 2023) and there is compelling evidence that removing 'overshoot emissions' later will not immediately reverse global warming (Schleussner et al., 2024).

Even among the IPCC pathways projected to produce no or limited overshoot of the 1.5°C goal, the risks vary depending on how heavily they rely on CDR. Some planned CDR may not be delivered – for example due to technological challenges regarding the deployment of BECCS and DACCS or the re-release of carbon stored in forests (IPCC, 2023c, 3.4.6–3.4.7; Schleussner et al., 2024). Stuart-Smith et al. (2025) demonstrate that plausible CDR non-delivery levels would lead C1 pathways with higher CDR dependence to have increased peak warming and overshoot duration. These effects are more pronounced if the sensitivity of the climate system to cumulative CO_2 emissions is at the higher end of the IPCC's uncertainty range (IPCC, 2023a; Stuart-Smith et al., 2025). Pathways with deeper and more rapid gross emission reductions minimize these risks.

Despite the clear need for a rigorous and cautious approach to CDR reliance, the Stuart-Smith et al. (2025) review of States' nationally determined contributions and long-term strategies reveals heavy reliance on CDR and a lack of transparency regarding the extent of this reliance or how it will be achieved. The pressing need to understand legal constraints on States' CDR strategies emerges in this context.

3. International legal framework

The international legal framework governing climate change includes the treaties comprising the UN climate regime – the 1992 Framework Convention on Climate Change (United Nations, 1992a), the 1997 Kyoto Protocol (UNFCCC, 1997) and the 2015 Paris Agreement (UNFCCC, 2016) – the customary international law principle of harm prevention (*Pulp Mills on the River Uruguay*, 2010), and a range of principles of international environmental law (United Nations, 1992b). Other widely ratified treaties, such as the core human rights instruments, also form an integral part of the wider legal framework. This international legal framework demarcates States' duty of due diligence in relation to actions that cause and address climate change, including CDR.

3.1. The duty of due diligence

States have a duty of due diligence in relation to actions that cause and address climate harms. This duty can be sourced to the customary international law principle of harm prevention as well as core provisions of the Paris Agreement, between which there is dynamic interplay (*Advisory Opinion on Climate Change*, 2025, para. 313). The principle of harm prevention imposes a responsibility on States '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' (United Nations, 1992b, Principle 2). This principle is binding international law applicable to all States (*Certain Activities*, 2015; *Gabčíkovo-Nagymaros*, 1997; International Law Commission, 2001; *Nuclear Weapons*, 1996; *Pulp Mills*, 2010). It imposes on States an obligation of conduct, rather than of result, subject to the exercise of 'due diligence' (Brunnée, 2021). Although some States argued before the ICJ that this principle does not apply to harms to the 'global commons' (China, 2024, para 128; India, 2024, para 17; United States of

America, 2024, para 4.16), the ICJ extended this principle to 'global environmental concerns' and thus the 'climate system' (*Advisory Opinion on Climate Change*, 2025, para. 134).

The duty of due diligence can also be sourced to provisions of the Paris Agreement (Rajamani, 2024). The Paris Agreement requires Parties to submit NDCs at regular intervals, and pursue domestic mitigation measures (UNFCCC, 2016, Article 4.2). The obligation to pursue domestic measures is an obligation to exercise best efforts and is subject to due diligence requirements (*Advisory Opinion on Climate Change*, 2025, paras 250–253; Mayer, 2018; Rajamani, 2020). This raises the question of how the standard of diligence required of States is to be determined. Specifically, how do we assess if the nature and extent of States' reliance on CDR is in keeping with the standard of due diligence required of them?

3.2. The standard of due diligence

The standard of due diligence required of States is context-specific and time dependent. In the *Seabed Mining Advisory Opinion,* the International Tribunal for the Law of the Sea (ITLOS) noted that due diligence is a 'variable concept' which may change in light of 'new scientific or technological knowledge' and/or in 'the risks involved in the activity' (Stephens & French, 2016; *Seabed Mining Advisory Opinion*, 2011, para 117). Although dynamic, the standard of due diligence is 'objective' and 'stringent' and can be 'demanding'. It is objective in that it does not depend on the subjective will and judgment of States but on concrete benchmarks that guide, steer, and constrain the autonomy that States have in relation to their actions. Both the 2024 ITLOS and 2025 ICJ Advisory Opinions on climate change noted that the content and application of the obligation of due diligence should be determined 'objectively' under the circumstances (*Advisory Opinion on Climate Change*, 2025, para. 300; *ITLOS Advisory Opinion on Climate Change*, 2024, para. 257) and that the standard of due diligence for prevent-ing significant harm to the climate system is 'stringent' (*Advisory Opinion on Climate Change*, 2025, para. 138; *ITLOS Advisory Opinion on Climate Change*, 2024, para. 241). The ICJ noted that 'the higher the probability and the seriousness of possible harm, the more demanding the required standard of conduct' and ITLOS that 'an obligation of due diligence can be highly demanding' (*Advisory Opinion on Climate Change*, 2025, para. 275; *ITLOS Advisory Opinion on Climate Change*, 2024, para. 257).

The determination of the conduct required by due diligence requires an 'assessment in concreto' under the circumstances (*Advisory Opinion on Climate Change*, 2025, para. 137) and should consider 'relevant factors' (*ITLOS Advisory Opinion on Climate Change*, 2024, para. 257). Such conduct includes States taking, 'appropriate and, if necessary, precautionary measures, which take account of scientific and technological information, as well as relevant rules and international standards, and which vary depending on each State's respective capabilities' (*Advisory Opinion on Climate Change*, 2025, para. 137). Each of these elements identified by the ICJ enrich the standard of due diligence with concrete content and are discussed below.

3.2.1. Precautionary measures

The need for precautionary measures is directly linked to the nature and extent of harm that would be suffered in the absence of due diligence. The ITLOS *Seabed Mining Advisory Opinion* found precaution to be 'an integral part of the general obligation of due diligence' (*Seabed Mining Advisory Opinion*, 2011, para 131). This approach is endorsed by the ICJ (*Advisory Opinion on Climate Change*, 2025, para. 294) and bolstered by the Framework Convention on Climate Change (United Nations, 1992b, Article 3.3). The standard for due diligence thus should be 'appropriate and proportional to the degree of risk of the transboundary harm' (International Law Commission, 2001, Article 3, para 11). There is robust scientific evidence of substantial risk of irreversible climate impacts when global average surface temperatures increase by more than 1.5°C, as outlined in section 2, suggesting a correspondingly stringent standard of due diligence. The underlying global warming trend stood at 1.3°C to 1.4°C in 2024 (with 2024 at 1.6°C as the hottest year on record) so crossing the 1.5°C threshold is imminent. Section 4 illustrates the legal effect of applying this stringent standard to emission reduction pathways that carry a considerable risk of overshoot.

In the context of CDR reliance, the ICJ's guarded finding that, 'when technologies pose further risks, States are expected to use them with prudence and caution' is salient (*Advisory Opinion on Climate Change*, 2025, para. 286). In cases where CDR has been raised, national courts have also queried factoring the availability of CDR into targets (*Neubauer*, 2021, para 31; *Urgenda*, 2018, para 49; *Urgenda*, 2019, para 7.2.5), including in relation to specificity

and transparency of its use (*Friends of the Irish Environment*, 2020, para 128), and in some cases referencing the precautionary principle (*Neubauer*, 2021, para 229; *Urgenda*, 2018, para 49; *Urgenda*, 2019, para 7.2.5).

3.2.2. Scientific and technological information

The need for precaution is directly linked to the science underpinning the international climate change regime. The UNFCCC and the Paris Agreement stress the importance of being guided by the best available scientific knowledge (UNFCCC, 2016, preambular recital 4; United Nations, 1992b, preambular recital 15 and 16). The Paris Agreement also highlights the salience of 'best available science' in achieving net zero GHGs (UNFCCC, 2016, Article 4.1), and in the context of the Global Stocktake (UNFCCC, 2016, Article 14.1). Subsequent agreements between the Parties, including the 2021 Glasgow Climate Pact (UNFCCC, 2022, para 23) and the 2023 UAE Consensus (UNFCCC, 2024, paras 6, 28(d), 39, 55, 61 and 149) recognize that accelerated action in this critical decade needs to be based on the best available science. States have accordingly endorsed a response premised on the best available science, which the IPCC's Sixth Assessment Report identifies as 'deep, rapid, and sustained reductions in greenhouse gas emissions' (IPCC, 2023d, B.1), a finding highlighted by the ICJ and incorporated into the standard of due diligence required of States (*Advisory Opinion on Climate Change*, 2025, paras 82, 254).

The reliance on best available science has procedural and substantive dimensions. States are to consider best available science when determining the stringency of their measures. This is a robust procedural requirement; the ICJ has interpreted States as needing to 'actively pursue the scientific information necessary' to make that determination (*Advisory Opinion on Climate Change*, 2025, para. 283). Substantively, States are also required to adopt mitigation measures that deliver 'deep, rapid and sustained' GHG reductions, as indicated by the IPCC and endorsed by the ICJ (*Advisory Opinion on Climate Change*, 2025, para. 282).

3.2.3. Relevant rules and international standards

The relevant rules and international standards that determine the standard of due diligence required of States can be sourced to treaties, such as the Paris Agreement, customary norms such as the harm prevention principle, and even non-binding norms such as decisions taken by Conferences of Parties (COP) under the Paris Agreement (*Advisory Opinion on Climate Change*, 2025, para. 287). The relevant standards in the Paris Agreement, and related COP decisions, include (but are not limited to) those discussed in the following sub-sections.

3.2.3.1. The Paris agreement's temperature and net zero goals. The Paris Agreement identifies the global temperature goal as '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 … ' (UNFCCC, 2016, Article 2.1). To achieve this goal, the Paris Agreement requires a balance between GHG emissions by sources and removals by sinks – popularly characterized as 'net zero' GHG emissions – in the second half of this century (Fankhauser et al., 2022; Rajamani & Werksman, 2018; UNFCCC, 2016, Article 4.1).

In response to the Special Report on Global Warming of 1.5°C by the IPCC, which found discernible differences in impacts between 1.5°C and 2°C (IPCC, 2018, I.5), the Glasgow Climate Pact shifted the emphasis in the Paris Agreement's temperature goal from 'well below 2°C' to 1.5°C (UNFCCC, 2022, paras 21 and 22). This shift in emphasis was confirmed in subsequent decisions of the Parties (UNFCCC, 2023, 2024, 2025). The Glasgow Climate Pact also recognized that limiting global warming to 1.5°C requires 'reducing global carbon dioxide emissions […] to net zero around mid-century' (UNFCCC, 2022, para 22).

These consensus-based decisions represent subsequent agreement of the Parties in relation to the interpretation of the treaty (Vienna Convention on the Law of Treaties, 1969, Article 31.3(a)), and generate a normative expectation that Parties' actions will be aligned with these goals. On this basis, the ICJ identified 1.5°C as the Parties' 'agreed primary temperature goal' and the 'scientifically based consensus target' for States (*Advisory Opinion on Climate Change*, 2025, para. 224). The normative weight of 1.5°C has also been recognized by national, regional, and international courts (*ITLOS Advisory Opinion on Climate Change*, 2024, para. 222; *Klimaatzaak v. Kingdom of Belgium and Others*, 2023, para. 191; *Klimaseniorinnen*, 2024, para. 106).

3.2.3.2. The normative expectation of highest possible ambition from States. The standard of due diligence is also influenced by the normative expectation in the Paris Agreement that Parties' NDCs are to reflect their

'highest possible ambition' (UNFCCC, 2016, Article 4.3). Although the term 'highest possible ambition' is not defined, there is a strong normative expectation that Parties will do their utmost to address climate harms (Rajamani, 2020, 2024; Voigt, 2023) which shapes the due diligence standard (Voigt, 2023; Voigt & Ferreira, 2016). The ICJ interprets this provision to mean that the content of Parties' NDCs must 'be capable of making an adequate contribution to the achievement of the temperature goal' (*Advisory Opinion on Climate Change*, 2025, para. 242). The Parties themselves have recognized the need for NDCs to align with the temperature goal (UNFCCC, 2022, para. 29, 2024, para. 39). Rules requiring Parties to provide information on how their contribution is 'fair and ambitious', and addresses 'progression' and 'highest possible ambition' (UNFCCC, 2019a, Annex I, para 6) bolster this position and instil transparency and accountability in Parties' delivery of highest possible ambition. The strong normative expectation of 'highest possible ambition' weighs in favour of current verifiable actions, given that this expectation is attached to NDCs or short – and medium-term contributions, which are subject to ex-ante and ex-post transparency requirements (UNFCCC, 2016, Article 4.8 and 13; UNFCCC, 2019a, 2019b).

As noted above, whether a State's mitigation efforts reflect its highest possible ambition depends in part on whether they make an 'adequate contribution' to the Paris Agreement's temperature goal. The global ambition of the temperature goal can be expressed by estimating a remaining carbon budget (Rogelj et al., 2019) and subsequently translated into national level expectations through an analysis of each State's 'fair share' (*Klimaseniorinnen*, 2024, para. 571; Pelz, Ganti, Pachauri, et al., 2025; Rajamani et al., 2021). Although the ICJ does not explicitly address States' fair shares in addressing climate harms, it interprets the customary duty to cooperate as requiring States to 'co-operate to achieve concrete emission reduction targets or a methodology for determining contributions of individual States, including with respect to the fulfilment of any collective temperature goal' (*Advisory Opinion on Climate Change*, 2025, para. 305). Fair share methodologies are being canvassed in national and regional courts and will likely emerge over time to fill this gap (Mead et al., 2024, pp. 95–97; Sabin Center Climate Litigation Database, 2021a, 2021b, 2024). For States that have overconsumed their fair share of the global budget and are responsible for overshoot, pursuing deepest possible near-term emissions reductions in line with a State's highest possible ambition (Schönfeld & Rogelj, 2025; Voigt et al., 2025) becomes the only way to minimize further entrenching unfairness (Pelz, Ganti, Pachauri, et al., 2025). These ambitious near-term reductions also pave the way to return to their fair shares later through the pursuit of net negative emissions (Li et al., 2025; Pelz, Ganti, Lamboll, et al., 2025).

3.2.3.3. The central importance of transparency. Transparency is another relevant factor informing the standard of due diligence. Transparency is a cross-cutting feature of international environmental law (United Nations, 1992b, Principle 10), and climate change law (UNFCCC, 2016, Articles 12 and 13; UNFCCC 2019a, 2019b; United Nations, 1992a, Article 12). The harm prevention principle has also been interpreted as requiring States to cooperate and exchange information on potential environmental harm (*MOX Plant*, 2001, para 82 and 84). Transparency has strong substantive dimensions. The obligation to report on domestic mitigation measures encourages States to devise and disclose concrete, measurable plans. Transparency can also lead to greater accountability and stronger regulation over time. It enables non-state actors to hold States to their expressed intentions and plans. The European Court of Human Rights has stressed the importance of pro-viding information on mitigation measures to enable the public to assess associated risks (*Klimaseniorinnen*, 2024, para 554(a) and 539(d)).

The ICJ's interpretation of the harm prevention principle, and the attached duty of diligence, also requires States to notify and consult with each other 'when an activity significantly affects collective efforts to address harm to the climate system' (*Advisory Opinion on Climate Change*, 2025, para. 299). As the nature and extent of a States' CDR reliance has significant implications for collective efforts to address harm to the climate system, full transparency, and consequent notification and consultation is necessary.

3.3. Common but differentiated responsibilities and respective capabilities

The standard of due diligence required of States is mediated by the principle of common but differentiated responsibilities and respective capabilities (CBDRRC) (*Advisory Opinion on Climate Change*, 2025, paras 137, 247), a cross-cutting feature of the UN climate regime (UNFCCC, 1997, Article 10, 2016, para. 2.2, 4.2, 4,19;

United Nations, 1992b, Article 3.1). In practice this means the standard of due diligence applicable to a State will depend on its specific situation, subject to the expectation that developed States must satisfy a 'more demanding standard of conduct' (*Advisory Opinion on Climate Change*, 2025, para. 292). There is also an expectation that the applicable standard of due diligence will reflect an 'equitable distribution of burdens', as the ICJ underscores in the context of the duty to cooperate (*Advisory Opinion on Climate Change*, 2025, para. 306). While these elements of the CBDRRC principle add precision and nuance to the determination and application of the standard of due diligence to a particular State, they do not detract from the fact that the standard is objective, stringent and demanding.

To conclude Section 3, the elements that influence the standard of due diligence – precaution, scientific and technological information, and relevant rules and international standards – present a compelling legal case for a stringent and demanding standard of due diligence for States in their actions that cause and address climate harms. Sections 4 and 5 address the application of this standard to States' reliance on CDR.

4. Due diligence and global emission reduction pathways

As discussed in Section 2, the possibility of CDR deployment introduces flexibility in the composition of global emission reduction pathways which ultimately limit warming to 1.5°C above pre-industrial levels. This section argues that the international legal framework imposes constraints on the extent to which States can rely on this flexibility.

Emission reduction pathways are not aligned with the Paris Agreement's temperature goal merely because they *eventually* return to 1.5°C through CDR deployment, without regard for the extent to which they initially overshoot it. The Parties have recognized that 'limiting global warming to 1.5°C with no or limited overshoot requires deep, rapid and sustained reductions in global greenhouse gas emissions' (UNFCCC, 2024, para. 27) and resolved 'to pursue efforts… to limit both the magnitude and duration of any temperature overshoot…' (UNFCCC, 2025, para. 7). The 1.5°C goal is intended to promote the UNFCCC objective of stabilizing GHG concentrations in the atmosphere 'at a level that would prevent dangerous anthropogenic interference with the climate system' (*Advisory Opinion on Climate Change*, 2025, para. 225; United Nations, 1992b, Article 2). That temperatures above the Paris threshold would be 'dangerous' is acknowledged in the final clause of Article 2.1(a) of the Paris Agreement, which indicates that achieving the temperature goal would 'significantly reduce the risks and impacts of climate change'.

The best available science demonstrates that even a temporary exceedance of the 1.5°C threshold would lead to dangerous interference with the climate system. The IPCC concluded that '[o]vershoot entails adverse impacts, some irreversible, and additional risks for human and natural systems, all growing with the magnitude and duration of overshoot' (IPCC, 2023d, para. B.7). Even such a temporary exceedance therefore represents a failure of collective efforts to fulfil the objective of the UNFCCC. In combination with the ICJ's rec-ognition of the need for an 'equitable distribution of burdens' (*Advisory Opinion on Climate Change*, 2025, paras 305–306), this failure could provide the basis for efforts to allocate responsibility for overshoot and identify cor-responding 'carbon drawdown obligations' (Pelz, Ganti, Lamboll, et al., 2025).

Read in light of the UNFCCC's objective and the best available science, aligning with the Paris Agreement's temperature goal not only requires States to do their part in returning to 1.5°C after any exceedance; it also requires them to minimize the magnitude and duration of this overshoot. In conjunction with the expectation that the temperature goal is to be achieved by reaching net zero GHG emissions 'in the second half of this century' (UNFCCC, 2016, Article 4.1), this entails that within the IPCC's Sixth Assessment Report the 'C1a' pathways are most closely aligned with the international legal framework. These 'no or limited overshoot' pathways achieve net zero GHGs in the second half of the century and limit overshoot to a maximum of about 0.1°C (IPCC, 2023c, Table 3.1). C1a pathways may no longer be achievable as they are premised on strong GHG reductions between 2020 and 2030, a period thus far marked by 'global inaction' and 'lock-in' (United Nations Environment Programme, 2025, p. 39). Studies that account for continued high emissions since 2020 find that it remains possible to limit peak warming to 1.7°C and subsequently reduce temperatures back below 1.5°C (Climate Analytics & PIK, 2025).

Even emission reduction pathways projected to produce minimal overshoot of the 1.5°C goal may neverthe-less run serious overshoot-related risks. As discussed in Section 2, pathways which rely more heavily on CDR will

have higher peak warming and overshoot duration if some planned removals are not delivered (Stuart-Smith et al., 2025). This risk grows further if the global warming resulting from cumulative carbon dioxide emissions is higher than the IPCC's central estimate (IPCC, 2023a; Stuart-Smith et al., 2025). The standard of due diligence, and the precaution implicit in it, entails that States must take these risks into account. This standard should be 'appropriate and proportional to the degree of risk of the transboundary harm' (International Law Commission, 2001, Article 3, para 11). The 'degree of risk' of transboundary harm is a function of the likelihood that the harm will occur, and the magnitude of the likely harm should it occur. Given the magnitude of the likely harm, pathways which minimize overshoot and are robust to under-delivery of assumed CDR or higher-than-expected climate sensitivity are more closely aligned with the international legal framework.

Assessing which global emission reduction pathways are more or less aligned with the international legal framework does not in itself specify the duties of individual States. As noted above, the ICJ recognizes the need for an 'equitable distribution of burdens' between States, in accordance with the principle of CBDRRC (*Advisory Opinion on Climate Change*, 2025, paras 305–306). In the context of the rapidly depleting carbon budget for remaining below 1.5°C (Forster et al., 2025), identifying the action required of each State requires an evaluation of their highest possible mitigation ambition (Schönfeld & Rogelj, 2025; Voigt et al., 2025) and the allocation of responsibility for net-negative emissions to reverse temperature overshoot (Li et al., 2025; Pelz, Ganti, Lamboll, et al., 2025).

In any case, two key national-level implications can be drawn from the analysis of global pathways. First, States' mitigation efforts are not aligned with the Paris Agreement's temperature goal merely because these are consistent with pathways which ultimately limit warming to 1.5°C, if these pathways fail to minimize the magnitude and duration of overshoot. Second, given the risks of overshoot associated with CDR non-delivery, States must be both cautious in the extent of their reliance on CDR, and diligent in implementing feasible strategies to ensure CDR delivery. These implications of the Paris Agreement's temperature goal overlap with and support the legal guardrails discussed below.

5. Distilling guardrails on CDR use in line with the standard of due diligence

The legal framework outlined in Section 3 allows us to distil a set of guardrails which channel and constrain States' reliance on CDR. While these guardrails are rooted in explicit requirements established by the UNFCCC, the Paris Agreement, and related COP decisions, they also draw upon the wider elements informing States' duty of due diligence. The substantive guardrails provide standards of conduct for States, while the procedural guardrails indicate information for States to disclose. As there is an interpretational range to some of the relevant rules and international standards, these guardrails are stated at a relatively high level of abstraction. They nevertheless indicate the standard of conduct consistent with States' duties under international law and provide guidance for the clarification of explicit CDR-related requirements within the international rule-making process.

These guardrails are relevant not only to States' NDCs, but also to their longer-term mitigation plans. Article 4.19 of the Paris Agreement urges Parties to formulate long-term low GHG emission development strategies (LT-LEDS), while the UAE Consensus encouraged Parties to align their NDCs with these LT-LEDS (UNFCCC, 2024, para 40). However, absent explicit requirements relating to the content of LT-LEDS States are not provid-ing a clear picture of their longer-term mitigation plans. This is especially true of CDR, because States often rely on it more heavily closer to the point of their net zero targets (Stuart-Smith et al., 2025). Nevertheless, there are explicit longer-term requirements which provide support for some of the guardrails discussed below. Biennial Transparency Reports (BTRs) submitted under Paris Article 13.7(b) are required to include indicative projections of future trends in GHG emissions and removals over 15 years, with flexibility for developing country Parties depending on their capacities (UNFCCC, 2019b, para 3 and Annex I para 95–101).

The long-term applicability of guardrails beyond these explicit requirements can be sourced to the Paris Agreement, and the standard of due diligence. The requirement that States 'provide the information necessary for clarity, transparency and understanding' in communicating their NDCs (UNFCCC, 2016, Article 4.8) can only be satisfied if they are placed coherently within the context of longer-term plans. One key determinant of the short-term emission reductions necessary to enable the achievement of States' net-zero targets is the extent of projected future CDR deployment. When States do not disclose clear plans for future CDR the

assumptions underlying their NDCs are also left unexplained. This vital interdependence of long-term and short-term planning is underscored by the ICJ's conclusion that NDCs 'must, when taken together, be capable of achieving the temperature goal and the purposes of the [Paris] Agreement.' (*Advisory Opinion on Climate Change*, 2025, para. 270). This depends on how Parties' current NDCs fit into longer-term mitiga-tion strategies.

Finally, the need for rigorous long-term planning is supported by the principle of intergenerational equity, referenced in the Paris Agreement's preamble. The ICJ found that States need to consider 'the interests of future generations and the long-term implications of conduct' when planning and implementing policies and measures (*Advisory Opinion on Climate Change*, 2025, paras 155–157). This perspective should inform assess-ments of cost-effectiveness. States may rely on CDR because removals are perceived as less costly than emis-sions reductions. Cost-effectiveness considerations are relevant to the evaluation of States' conduct (*Advisory Opinion on Climate Change*, 2025, para. 286). However, States are not acting diligently if they do not account for the long-term costs and risks of CDR reliance – including those associated with maintaining geological or land-based carbon storage in perpetuity.

5.1. Substantive guardrails

5.1.1. Prioritizing emissions reductions over removals

The Paris Agreement repeatedly emphasizes emissions reductions rather than removals. In Article 4.1 Parties are to 'undertake rapid reductions' and in Article 4.4 developed countries are to lead by undertaking 'economy-wide absolute emissions reduction targets' and developing countries are encouraged to move towards 'economy-wide emissions reduction or limitation targets.' In doing so, Article 4.4 underscores the importance of emissions reductions in States' mitigation efforts (Craik, 2024, p. 353).

Read in context, these provisions are directed at gross, rather than net, emissions reductions. These pro-visions refer only to 'emissions', whereas others refer to 'emissions and removals' or 'mitigation' (Honegger et al., 2021, p. 333). Removals are addressed separately in Article 5.1, which urges action to conserve and enhance GHG sinks. Although removals fall within Article 4.2's 'domestic mitigation measures' (Honegger et al., 2021, p. 330), their distinct treatment in Article 5.1 confirms that Article 4 is primarily focussed on measures to reduce gross emissions.

The standard of due diligence also reinforces the prioritization of emissions reductions. Given uncertainties regarding the feasibility of large-scale novel or conventional CDR deployment, and concerns about the perma-nence of removals, States acting in accordance with the best available science cannot rely on CDR as a substi-tute for rapid and deep emissions reductions. In *Neubauer,* the German Federal Constitutional Court raised concerns regarding the 'economic viability', 'technical feasibility', 'social impacts' and 'emerging ecological risks' of CDR (*Neubauer*, 2021, para 33). In combination with the precautionary principle, these concerns led the Court to conclude that '[t]he main onus is therefore on measures to reduce greenhouse gas emissions' (*Neu-bauer*, 2021, para 197 and 229).

While the due diligence steer to prioritize emissions reductions does not provide precise answers about an appropriate balance between reductions and removals globally, or for individual States, it necessitates asking hard questions about essential (and non-essential) activities. Technological difficulties in abating emissions from animal agriculture and aviation mean these industries feature prominently in estimates of the residual emissions that remain at (and beyond) States' net-zero targets (Buck et al., 2023; Edelenbosch et al., 2024; Luderer et al., 2018). Given the need to prioritize emissions reductions and uncertainties about the availability of large-scale CDR, significant demand-side reductions in these activities should be considered (Lund et al., 2023).

5.1.2. Pursuing feasible and coherent strategies for emissions reductions and removals

The ICJ held that the obligation to 'pursue domestic mitigation measures' under Paris Article 4.2 requires States to 'pursue measures that are reasonably capable of achieving the NDCs set by them.' (*Advisory Opinion on Climate Change*, 2025, para. 253). The Court also found that the duty to prevent significant harm to the environ-ment requires States to implement 'appropriate rules and measures', including 'regulatory mitigation

mechanisms that are designed to achieve deep, rapid and sustained reductions of GHG emissions.' (*Advisory Opinion on Climate Change*, 2025, para. 282). Since this customary obligation applies to 'the prevention of significant harm to the climate system' generally (*Advisory Opinion on Climate Change*, 2025, para. 282), it extends beyond NDCs to encompass long-term mitigation strategies. It is not enough for States to set short-term or long-term targets; they must also put in place feasible and coherent plans for achieving them.

This guardrail has three key implications for CDR. First, States should ensure their CDR plans become achievable. This cautions against relying on novel CDR options such as BECCS or DACCS without actively enabling their deployment through technological development, the construction of CO_2 transport infrastructure, and the identification of suitable storage sites. Similarly, States should not depend on implausible projections of conventional removals. For example, New Zealand's latest mitigation plan assumes that an additional 325,000 hectares of afforestation will take place on top of already high estimates. This assumption was added 'to produce the emissions removals needed to offset the estimate emissions projected to be outstanding in 2050' (New Zealand Ministry for the Environment, 2024, p. 88), leading the Climate Change Commission to caution that it 'may overestimate the potential carbon removals that can be achieved or the land available.' (New Zealand Climate Change Commission, 2025, p. 131).

Second, States should address potential trade-offs arising from CDR. Reliance on DACCS may compete with the energy demands of decarbonization, while biomass sourcing for BECCS may impact land-based sinks (IPCC, 2023c, Table TS.7). Recognizing these concerns, the UK's 2023 Biomass Strategy takes a 'precautionary approach' where bioenergy crops are restricted to abandoned land. However, this restriction makes the UK heavily dependent on biomass imports, potentially jeopardizing its net-zero target given uncertain international supplies (Department for Energy Security & Net Zero, 2023, p. 68, 73).

Third, States should avoid relying heavily on non-permanent land-based sinks to compensate for ongoing GHG emissions with long atmospheric life-spans, as this non-equivalence may jeopardize sustained achievement of net-zero emissions (Brunner et al., 2024; European Scientific Advisory Board on Climate Change, 2025).

5.1.3. Minimizing the adverse effects of CDR

Due diligence requires States to minimize the harms created by climate change as well as by efforts to address climate change. The ICJ warns that where technologies to mitigate climate harms pose risks, they should be approached with 'prudence and caution.' (*Advisory Opinion on Climate Change*, 2025, para. 286). Similarly, UNFCCC Article 4.1 (f) requires Parties to minimize adverse effects of their mitigation and adaptation measures, while the Paris Agreement's preamble urges them to take their human rights obligations into account when taking climate action.

The potential adverse effects of CDR (Deprez et al., 2024; Prütz et al., 2024) are sometimes acknowledged in States' long-term strategies but seldom addressed. For example, Canada's LT-LEDS relies significantly on BECCS, but admits that its modelling 'does not account for the environmental or food security concerns that could potentially arise due to increased production of feedstock.' (Environment and Climate Change Canada, 2022, p. 60).

5.1.4. Prioritizing domestic action over international emissions reductions and removals

Voluntary cooperation within Paris Article 6 is premised on Parties pursuing such cooperation 'to allow for higher ambition in their mitigation and adaptation actions and to promote sustainable development and environmental integrity' (UNFCCC, 2016, Article 6.1). Accordingly, reliance on international credits should enable greater overall mitigation efforts, rather than compensating for domestic efforts which fall short of the 'highest possible ambition' required by the due diligence standard. This aligns with the operational rules for Article 6.2, which require participation to contribute to the implementation of NDCs, LT-LEDS and the Paris Agreement's long-term goals (UNFCCC, 2021, Annex, para 4). Where international cooperation is used to justify less ambitious domestic mitigation efforts it displaces action from one location to another, without enhancing overall ambition. Relying on removals abroad to meet national climate targets carries distinctive risks relating to integrity and permanence, particularly if carbon market governance is weak (Fyson et al., 2020).

5.2. Procedural guardrails

5.2.1. Distinguishing clearly between emissions reductions and removals within targets

Parties are required to 'strive to include all categories of anthropogenic emissions and removals … ' in their NDCs (UNFCCC, 2019a, Annex II, para 3(b)). The rules relating to BTRs require that 'emission projections shall be provided with and without' the land-use, land use change and forestry (LULUCF) sector (UNFCCC, 2019b, Annex I, para 100). In practice many NDCs and LT-LEDS only provide net emissions targets and not the respective contributions of gross emissions and removals. Stuart-Smith et al. (2025) found that 31% of countries with net-zero targets failed to provide any estimate of their gross emissions in the target year – including China, Denmark, India, Ireland, Japan and New Zealand. Failure to set separate targets for emissions reductions and removals creates ambiguity about how much of each is planned, undermining the prioritization of emissions reductions.

5.2.2. Disaggregating emissions by sector and by gas

Parties are required to provide information on the 'sectors, gases, [and] categories' covered by their NDCs (UNFCCC, 2019a, Annex I, para 3(b)). BTRs must provide 'projections on a sectoral basis and by gas, as well as for the national total.' (UNFCCC, 2019b, Annex I, para 98). Transparency on the composition of future GHG emissions is essential for integrity of mitigation targets and feasibility of CDR strategies. Disaggregation of gases enables assessment of whether the duration of the warming effect of emissions is equivalent to the permanence of removals included in targets. Since some sectors and activities are harder to decarbonize than others, sectoral disaggregation is necessary to assess the ambition of planned emission reductions and hence the appropriateness of the corresponding reliance on removals.

5.2.3. Disaggregating removals by type

NDCs are required to provide information on the sectors and 'pools' covered (UNFCCC, 2019a, Annex I, para 3(b)). States should distinguish removals that store carbon in the active carbon cycle (such as afforestation) from those that remove carbon quasi-permanently (such as geological storage). This disaggregation enables assessments of the comparability between emissions and removals.

Due diligence also supports a more granular disaggregation of planned removals. BECCS and DACCS both store carbon geologically, but raise different technological, social and economic challenges. While requirements for NDCs and BTRs do not yet address the need for such disaggregation, the European Commission encourages Member States to provide separate projections for LULUCF, BECCS, and DACCS in their National Energy and Climate Plans (European Commission, 2022, p. 36).

5.2.4. Specifying methodologies and assumptions underlying strategies

NDCs must provide information on the 'assumptions and methodological approaches used for accounting for anthropogenic GHG emissions and removals', including those that are 'sector-, category-, or activity – specific.' (UNFCCC, 2019a, Annex I, para 5). This explicitly includes approaches used to account for natural disturbances, harvested wood products, and the age-class structure in forests (UNFCCC, 2019a, Annex I, para 5). Similarly, BTRs are required to describe 'the methodology used to develop the projections', including 'key underlying assumptions and parameters used for projections' and 'assumptions on policies and measures' (UNFCCC, 2019b, Annex I, para 96).

Unless the assumptions and methodologies underlying CDR strategies are made explicit, it is impossible to assess whether they are feasible and coherent. This includes, for example, assumptions about the type and source of biomass feedstocks for BECCS; the expected energy demands of DACCS; and the effects of carbon saturation and natural disturbances on the LULUCF sink.

The importance of disclosing these methodologies and assumptions is bolstered by Article 12 of the Paris Agreement, which underscores the salience of public awareness, participation, and access to information. As the ICJ stressed, the ability of mitigation measures to contribute to the prevention of significant harm depends on the sharing of information, which can also help to minimize the risk that such measures generate harms of their own (*Advisory Opinion on Climate Change*, 2025, para. 285).

5.2.5. Specifying reliance on international emissions reductions and removals

Parties are required to provide information on their intended use of Article 6 mechanisms in their NDCs (UNFCCC, 2019a, Annex I, para 5(g)). They are not, however, explicitly required to quantify the expected contribution of international credits to their targets. Stuart-Smith et al. (2025) found that States rarely quantify the expected extent of this reliance. For example, Canada, New Zealand, and Singapore rely on international credits to achieve their net-zero targets without placing any limits on their contribution.

While the due diligence standard does not impose precise limits on the use of international credits, preventing inappropriate reliance from materializing requires Parties to be explicit about this use. Unless States are explicit about the extent of their reliance it is impossible to determine the level of domestic mitigation action implied by their targets, undermining the implementation of appropriate measures required under Article 4.2 of the Paris Agreement and the broader duty of due diligence.

6. Conclusion

In an uncertain and volatile international order, characterized by unbridled national interest and faltering diplomatic efforts, some States are gambling on the future deployment of novel and conventional CDR to meet their climate targets in the absence of steep near-term emission reductions. While CDR is essential for meeting the Paris Agreement's 1.5°C temperature goal, greater reliance on removals to reverse avoidable mag-nitudes of overshoot and to balance ongoing emissions that are higher than the lowest, unavoidable levels increases the risk of potentially irreversible climate impacts.

Building on the ICJ's recent Advisory Opinion, this article identifies the standard of due diligence attaching to States' action on climate change and applies this standard in the context of CDR reliance. We find that the objective and stringent standard of due diligence requires minimization of the magnitude and duration of any overshoot of the 1.5°C goal. It also provides guardrails on the nature and extent of CDR deployment by States to meet their climate targets. In line with these guardrails, States should ensure that their CDR strategies are feasible and coherent, and that they do not undermine the ambition of near-term emissions reductions by displacing responsibility into the future. States should also minimize the adverse effects of CDR deployment, prioritize domestic action over removals abroad, and provide clear information about their plans for deploying different forms of CDR.

There are strong indications that States are currently falling short of these standards, particularly within long-term strategies (Stuart-Smith et al., 2025). Our findings emphasize that stringent near-term emissions reductions and feasible CDR strategies are not only ethical imperatives – they are legal requirements.

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POLICY FORUM CLIMATE CHANGE

The pursuit of 1.5°C endures as a legal and ethical imperative in a changing world

As the world nears 1.5°C of global warming, near-term emissions reductions and adequate adaptation become ever more important to ensure a safe and livable planet for present and future generations

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Since the 2015 adoption of the Paris Agreement (PA; see table S1), the planet has all but reached 1.5°C of global warming—a limit included under the PA to protect vulnerable populations from the most severe impacts of climate change. With global warming approaching 1.5°C, some scientists have argued that recognizing the precise year when 1.5°C is reached is of utmost urgency (*1*). Their reasoning is that reaching 1.5°C of global warming will trigger questions on what needs to be done to meet the PA's goal. We explain that although approaching 1.5°C is deeply worrying, a robust response requires no such precision. Legal and policy implications do not abruptly emerge but gradually strengthen in importance before, at, and after crossing 1.5°C (see the figure). The pursuit of efforts to limit warming to 1.5°C is, and remains, a critical part of the PA, directing efforts in mitigation, adaptation, and broader climate governance.

Our planet's climate is in a dire state, and 2024 was the hottest year on record, with global average temperatures 1.6°C higher than during the preindustrial period (*2*). This 1.6°C figure consists of the underlying long-term global warming trend, which stood at 1.3° to 1.4°C in 2024 (*3*), combined with short-term natural variability that can make individual years slightly warmer or cooler than the long-term average. The PA's global warming limit of 1.5°C refers to this underlying long-term trend (*4*). At present, global warming is increasing by around 0.26°C per decade (*3*), and climate policies slow down but do not yet curb this trend. Policies presently on the books suggest central estimates of about 2°C of warming by 2050 and almost 3°C by the end of the century (*5*). Even the most optimistic projections, assuming all announced greenhouse gas (GHG) emissions reduction targets are diligently implemented, see median warming estimates peaking at 1.7°C with a 1-in-10 chance of exceeding 2.3°C (*5*).

These projections are not definitive. Countries can submit more ambitious pledges to the PA, called nationally determined contributions (NDCs), over the course of this year or overachieve pledges already made. However, recent geopolitical developments—in-

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cluding President Trump's executive orders that withdraw the US from the PA, roll back low-carbon policies, set up trade barriers, support fossil fuels, and undercut governance and research—add to, rather than reduce, uncertainties around this projection and increase the estimates of the lowest levels of global warming that can be avoided.

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Fundamentally, the chances of keeping warming to 1.5°C are small. Global warming might already be at 1.5°C today (*3*), and our central estimate is that it will exceed 1.5°C over the next decade, with ambitious near-term emission reductions instrumental in limiting the estimated likelihood and magnitude of overshoot but unable to categorically avoid it. This sobering realization begs the question of how the scientific, policy, and legal communities can respond to the world's failure to keep global warming to levels that limit climate risks within acceptable bounds. We argue that most of the consequences are already applicable today, in a world approaching 1.5°C of global warming.

Enduring Temperature Goal

The 1.5°C warming limit is key in international climate law and policy, and its underpinning rationale does not change when 1.5°C of warming is reached. The 1992 United Nations Framework Convention on Climate Change (UNFCCC; see table S1) identified the objective of the climate regime as "stabilization of GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system" (UNFCCC, article 2). The understanding of what was considered dangerous, left undetermined at the time, was concretized in the PA (see table S2). In response to scientific advances and increasing political will, the level was set as one that would hold global warming to "well below 2°C" while pursuing efforts toward limiting it to 1.5°C. Parties to the PA chose this level because they recognized that "this would significantly reduce the risks and impacts of climate change" [PA, article 2.1(a)]. As more compelling evidence emerged of the discernible differences in risks and impacts between 2° and 1.5°C (*6*) and scientific assessments showed that high climate risks can already be expected at lower levels of warming (*7*), the emphasis in the PA goal shifted to 1.5°C (see table S3).

Although the emphasis, rightly, in response to the science, is on 1.5°C, the PA temperature goal covers a range from "well below 2°C" to 1.5°C (*8*). Article 2 does not exclude temporary exceedance of 1.5°C. Meanwhile, the PA's aim to reach net-zero GHG emissions in the second half of the century (PA, article 4.1) implies that warming should peak well before the end of the century but does not provide a precise timing. Exceeding 1.5°C therefore does not render the goal irrelevant.

The nature of the precise goal that is being frustrated matters. Frustration of a goal might render that goal irrelevant in a context where the goal is no longer achievable, for instance, if the goal is to protect a species but the species becomes extinct. This is not the case, however, where the goal remains within reach, albeit through a different path, as in the case of the goal to limit global warming to 1.5°C. Indeed, exceedance of 1.5°C, rather than rendering the goal irrelevant, is a wake-up call alerting Parties to redouble their efforts to bring emissions down and thereby halt or even reverse the increase in global warming. The anchoring of the temperature goal, from the UNFCCC

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to the PA, to the levels of unacceptable risks and impacts of climate change is a testament to its enduring salience. Just as climate risks and impacts increase as temperatures rise, so, too, does the salience of pursuing efforts to return warming to 1.5°C.

Continuing Operational Relevance

Moreover, the PA's temperature goal has continuing operational relevance, whether its limits are breached or not. The temperature goal informs requirements relating to the setting, tracking, and strengthening of Parties' NDCs (PA, articles 3, 4, and 14), all of which remain in place and indeed assume greater importance as global warming approaches, reaches, and exceeds 1.5°C. The temperature goal, and, in particular, the consensus on 1.5°C, has been underscored in numerous judicial decisions in national courts (e.g., in the Belgian Klimaatzaak) and has been relied on by States before the International Court of Justice in relation to its Advisory Opinion on Climate Change (see table S1). The driving force of the PA's temperature goal, especially as 1.5°C is exceeded, tightens expectations of States and underscores the urgency of a commensurate response.

The PA's temperature goal also informs the standard of due diligence expected of States in relation to climate harm. The customary principle of harm prevention reflected in the Rio Declaration on Environment and Development (principle 2; see table S1) generates a stringent standard of due diligence for States in relation to climate harm. This standard of due diligence is informed by, among other things, the temperature goal and the nature and extent of harms that would occur in the absence of due diligence (*9*). Every 0.1°C increase in peak temperature increases loss and damage (*6*, *7*) as well as the risk of key tipping points being triggered in the Greenland and West

Antarctic Ice Sheets, Atlantic Meridional Overturning Circulation, and Amazon rainforest (*10*). Overshoot pathways for 1.5°C have a markedly higher risk of triggering these tipping points, as compared with scenarios in which warming remains below 1.5°C (*11*). The extent by which 1.5°C is exceeded therefore increases climate harm substantially (*6*, *7*, *12*) and presents evidence that States have not exercised the due diligence required of them. Due diligence would then require States to take actions to limit the magnitude and length of overshoot, in order to limit harm and avoid triggering even more catastrophic impacts.

Legal and climate policy implications of approaching 1.5°C of global warming
Implications and expectations do not suddenly emerge when 1.5°C is reached. They are already fully applicable well before warming reaches 1.5°C and gradually strengthen in importance before, at, and after crossing 1.5°C, not hampered by imprecision around the exact timing of when 1.5°C would be reached.

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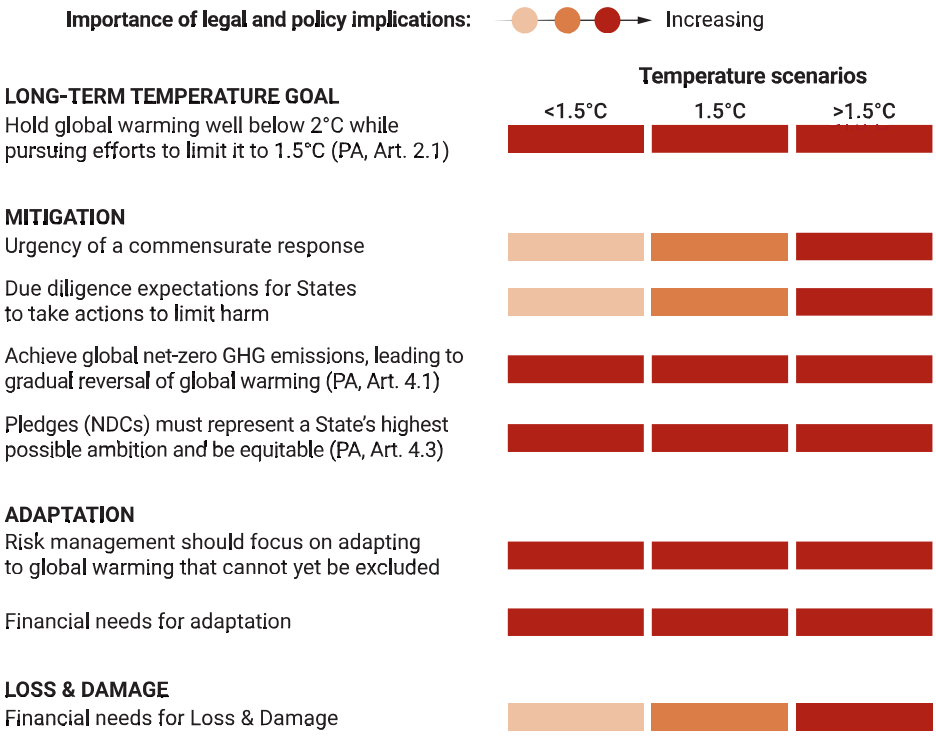
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Shifting Mitigation Perspectives

Exceeding 1.5°C strengthens rather than weakens States' obligations to develop and communicate NDCs that reflect their highest possible ambition (PA, article 4.3). These expectations do not suddenly emerge when 1.5°C is reached (see the figure). They apply at any point before, at, or after 1.5°C and are therefore not hampered by imprecision around the exact timing of when 1.5°C would be reached.

Note that even in a world that has exceeded 1.5°C of global warming, States can continue to pursue 1.5°C-aligned pathways. Though this may seem counterintuitive, such pathways would reflect each State's equitable contribution to limiting warming to 1.5°C from a year-2015 perspective, the year the PA was adopted.

Meanwhile, reaching and exceeding 1.5°C makes clear that some States have failed to do their fair share. Their disproportionate consumption of the global carbon budget in line with 1.5°C needs to be addressed through continued action to lower emissions, both domestically and by supporting others, and through plans to reach net negative emissions that reverse the excess (*13*). Also, this represents a gradual shift of society's long-term focus: from reaching global net-zero GHG emissions as already indicated under the PA to achieving and managing a sustainable netnegative emissions economy to limit overshoot of 1.5°C as much as possible in both magnitude and duration (*12*). In the near-term, however, mitigation expectations before, at, or after crossing 1.5°C remain the same. They need to represent a country's highest possible ambition.

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Exceeding 1.5°C of global warming also has implications for developing States that have not yet exhausted their equitable share of the global carbon budget. Beyond 1.5°C, scientific evidence shows (and governments have acknowledged) that additional GHG emissions will expose poor and vulnerable populations, particularly in developing countries, to potentially existentially dangerous harm (*6*, *7*). This reality creates a tension between these States' claims to emit an equitable share of the GHGs within a global PA-aligned carbon budget—their equitable access to atmospheric space—and their obligations to take all feasible measures to mitigate and adapt to climate change in order to protect their citizens from breaches of a range of human rights.

Mounting Adaptation Risks

Risk management dictates that adaptation plans should focus on levels of warming that cannot yet be excluded rather than the temperature limits that the world aspires to avoid. The realization that 1.5°C is crossed reemphasizes but doesn't change this position. As indicated above, present policy estimates point to warming close to 2°C by mid-century and 3°C by the end of it (*5*). Children alive today risk experiencing global warming crossing 4°C over the course of their lifetime (*5*). These daunting levels of

climate change should remain at the front and center of adaptation and resilience efforts as long as global GHG emissions are not curbed. Even if an overshoot of 1.5°C can be limited in extent and magnitude, the possibility of warming being reversed toward the end of the century provides no respite for adaptation planners (*12*). Although integral to achieving the mitigation aim of the PA, reversal of global warming depends first on achieving netzero carbon dioxide (CO_2) emissions and sustained aggregate CO_2 removal thereafter—a formidable challenge at present and one that will require appropriate legal and governance frameworks to be put in place.





An activist highlights the 1.5°C goal during a demonstration in Berlin in October 2021. PHOTO: NA FASSBENDER/GETTY IMAGES

Increasing Climate Costs

As we exceed 1.5°C of global warming, climate risks and impacts escalate. Adaptation needs will become more pressing, and financial needs to compensate for climate-related loss and damage will increase. One study estimates the global costs of extreme weather attributable to climate change in the past 20 years at US$143 billion per year (*14*). Although costs of Loss and Damage are estimated in the hundreds of billions of US dollars, the United Nations Fund for responding to Loss and Damage has thus far attracted pledges that are about three orders of magnitude smaller (see table S1).

Enduring Salience

The prospect of global warming reaching 1.5°C is deeply concerning and demands sustained attention and decisive action. Approaching, reaching, and surpassing 1.5°C will have profound implications, disproportionally affecting the poor and vulnerable. In response, global climate governance needs to veer toward better and tighter mechanisms of accountability to achieve near-term emissions reductions and a commensurate focus on adaptation, loss and damage, and support.

Critical observers might question whether the goals under the PA matter in a context where the world's largest economy has decided to leave the agreement. We argue that it does and will continue to do so. First, analysis suggests that despite its shortcomings, the PA has contributed to raising ambition and lowering GHG emissions. A review of the first 5 years of the PA's operation found that it is effective in the production of shared norms that raise ambition (*15*). For example, before the PA, estimates put the world on track for a 4°C temperature rise over the course of this century. Presently, this estimate stands about 1°C lower as a result of climate policies that have been adopted since (*5*). Second, the PA is located in a wider multilateral rules-based environment that has evolved over centuries and can withstand and adapt to, as it has in the past, temporary geopolitical shifts and shocks. Finally, the inescapable nature of the consequences of climate change and the need for a globally effective response to this challenge mean that a collective solution must be found. The framework offered by the PA provides the only globally inclusive forum at present.

Despite the challenges posed by today's geopolitical landscape, the PA's goal to pursue efforts to limit global warming to 1.5°C therefore endures as the legal and ethical imperative to secure a safe and livable planet for present and future generations.

Supplementary Materials

This PDF file includes:

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References and Notes

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23 JUILLET 2025

AVIS CONSULTATIF

OBLIGATIONS DES ÉTATS EN MATIÈRE DE CHANGEMENT CLIMATIQUE

OBLIGATIONS OF STATES IN RESPECT OF CLIMATE CHANGE

23 JULY 2025

ADVISORY OPINION

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ABBREVIATIONS, ACRONYMS AND SHORT FORMS

Institutions

CMA	Conference of the Parties serving as the meeting of the Parties
COP	Conference of the Parties
ICAO	International Civil Aviation Organization
IPCC	Intergovernmental Panel on Climate Change
ILC	International Law Commission
IMO	International Maritime Organization
ITLOS	International Tribunal for the Law of the Sea
UNEP	United Nations Environment Programme
WHO	World Health Organization
WMO	World Meteorological Organization

Conventions

Biodiversity Convention	Convention on Biological Diversity
Climate change treaties	UNFCCC, Kyoto Protocol and Paris Agreement
ICCPR	International Covenant on Civil and Political Rights
ICESCR	International Covenant on Economic, Social and Cultural Rights
Montreal Protocol	Montreal Protocol on Substances that Deplete the Ozone Layer
Desertification Convention	United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa
UNCLOS	United Nations Convention on the Law of the Sea
UNFCCC or Framework Convention	United Nations Framework Convention on Climate Change
Ozone Layer Convention	Vienna Convention for the Protection of the Ozone Layer

IPCC Documents

IPCC, *Climate Change 2023: Synthesis Report*	IPCC, 2023, *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
IPCC, 2023 Summary for Policymakers	IPCC, 2023, Summary for Policymakers, *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
IPCC 2023 Glossary	IPCC, 2023, *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, Annex I, Glossary
IPCC, 2022 contribution of Working Group III	IPCC, 2022, *Climate Change 2022: Mitigation of Climate Change*, Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change
IPCC, 2022 contribution of Working Group II	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

Other abbreviations

ILC Articles on State Responsibility	International Law Commission, Responsibility of States for Internationally Wrongful Acts, *Yearbook of the International Law Commission*, 2001, Vol. II, Part Two
EIA	Environmental impact assessment
GHG	Greenhouse gas
NDC	Nationally determined contribution

INTERNATIONAL COURT OF JUSTICE

YEAR 2025

2025
23 July
General List
No. 187

23 July 2025

OBLIGATIONS OF STATES IN RESPECT OF CLIMATE CHANGE

Jurisdiction and discretion.

Questions submitted to the Court are legal in character — The Court has jurisdiction to give the advisory opinion requested — No compelling reasons for the Court to decline to give the advisory opinion requested.

* *

Context of the adoption of resolution 77/276 — Severe and far-reaching consequences of climate change — Most relevant steps taken from 1968 to 2015 at international level to identify risks in order to protect climate system and other parts of the environment — Relevant scientific background — Reports of the Intergovernmental Panel on Climate Change (IPCC) constitute the best available science on the causes, nature and consequences of climate change — Findings of the IPCC on the causes and consequences of climate change — Greenhouse gas (GHG) emissions and climate change — Mitigation and adaptation measures.

* *

Scope and meaning of the questions posed by the General Assembly.

Questions (a) *and* (b) *are interrelated and require the Court to identify the obligations of States in respect of activities that adversely affect the climate system and the legal consequences*

arising from the breach of these obligations — Relevant conduct comprises all actions or omissions of States which result in the climate system and other parts of the environment being adversely affected by anthropogenic GHG emissions — Material scope of the questions encompasses full range of human activities that contribute to climate change as a result of the emission of GHGs — No territorial limits to the Court's inquiry — Temporal scope.

Meaning and scope of question (a) *— The General Assembly seeks the Court's opinion on the obligations incumbent upon States under international law — Question* (a) *is limited to identifying the existing obligations.*

Meaning and scope of question (b) *— Legal consequences arise from a breach by a State of obligations identified under question* (a) *— The Court is requested to address legal consequences in a general manner, not with regard to any particular State or group of States — Consequences for States that, by their actions or omissions, may have adversely affected the climate system and other parts of the environment through GHG emissions — Consequences with respect to States that are "specially affected" or "are particularly vulnerable" — Application of rules on State responsibility under customary international law does not differ depending on the category or status of an injured State — The Court is not called upon to determine specific legal consequences with respect to particular injured States or groups of States — Legal consequences with respect to "peoples and individuals" — Relevance of specific treaties and other legal instruments creating procedural and substantive rights and obligations.*

* *

Question (a) *put to the Court: obligations of States in respect of climate change.*

Applicable law — List established by the Court without prejudice to other rules of international law that may also be relevant.

Most directly relevant treaty law — Charter of the United Nations — Climate change treaties — United Nations Framework Convention on Climate Change (UNFCCC), Kyoto Protocol and Paris Agreement — United Nations Convention on the Law of the Sea (UNCLOS) — Environmental treaties — Ozone Layer Convention, Montreal Protocol, Kigali Amendment to Montreal Protocol, Biodiversity Convention and Desertification Convention.

Most directly relevant customary international law — Duty of States to prevent significant environmental harm — Duty to co-operate for the protection of the environment.

Most directly relevant international human rights law — Core human rights treaties — International Covenant on Economic, Social and Cultural Rights — International Covenant on Civil and Political Rights — Human rights recognized under customary international law.

Guiding principles for the interpretation and application of the most directly relevant legal rules — Principle of sustainable development — Principle of common but differentiated responsibilities and respective capabilities — Equity — Intergenerational equity — Precautionary approach or principle.

Lex specialis *does not lead to general exclusion by climate change treaties of other rules of international law.*

Obligations of States under the climate change treaty framework.

Examination of climate change treaties and relevant decisions of their governing bodies — Distinction between "obligations of conduct" and "obligations of result" not necessarily impermeable — Principle of common but differentiated responsibilities and respective capabilities in the climate change treaties — Precautionary approach or principle incorporated into Kyoto Protocol and Paris Agreement by reference — Principle of sustainable development incorporated in climate change treaties — Equity and intergenerational equity incorporated in climate change treaties — Duty to co-operate identified as principle within climate change treaty framework — Relevance and legal effect of decisions of governing bodies of climate change treaties.

Relationship between UNFCCC, Kyoto Protocol and Paris Agreement — Lex posterior *rule — No incompatibility between the three climate change treaties.*

Obligations of States under UNFCCC — General framework for addressing climate change caused by anthropogenic GHG emissions — Mitigation obligations — Obligations for Annex I parties — Adaptation obligations — Obligations of co-operation and assistance — Duty to co-operate is obligation of conduct, whose fulfilment is assessed against standard of due diligence.

Obligations of States under Kyoto Protocol — Protocol concretized certain obligations under UNFCCC by requiring quantified emission reduction commitments for certain parties — Protocol specifies and strengthens mitigation obligations under UNFCCC — Kyoto Protocol remains in force.

Obligations of States parties under Paris Agreement — Obligations relating to mitigation, adaptation, finance, technology development and transfer, transparency of action and support, and capacity-building — The 1.5°C threshold of Article 2 is the parties' agreed primary temperature goal for limiting the global average temperature increase — Relevance of principle of common but differentiated responsibilities and respective capabilities — Duty to co-operate reflected in several provisions — Mutually supportive obligations of conduct and obligations of result— Compliance of parties with obligations of conduct to be assessed on basis of whether party in question exercised due diligence and employed best efforts.

Mitigation obligations — Article 4, paragraph 2, of Paris Agreement — Obligation of result to prepare, communicate and maintain nationally determined contributions (NDCs) — Parties have limited discretion with regard to content of NDCs — Relevance of the principle of common but differentiated responsibilities and respective capabilities — NDCs must, when taken together, be capable of realizing objectives of Paris Agreement — Obligations of conduct to implement NDCs and to take domestic mitigation measures — Obligations require parties to act with due diligence — Standard of due diligence stringent.

Adaptation obligations — Article 7, paragraph 9, of Paris Agreement — Fulfilment of adaptation obligations of parties is to be assessed against a standard of due diligence — Adaptation obligations complement mitigation obligations.

Obligations of co-operation, including financial assistance, technology transfer and capacity-building — Customary duty to co-operate for protection of environment reinforces treaty-based co-operation obligations under Paris Agreement — States free to select means of co-operating — Means must be consistent with obligations of good faith and due diligence — Principal forms of co-operation include financial assistance, technology transfers and capacity-building.

Obligations of States under customary international law relating to climate change.

Duty to prevent significant harm to environment — Application of this duty to climate system — Risk of significant harm to the environment necessary to trigger application of the duty — Probability or foreseeability of occurrence of harm and severity or magnitude thereof — Accumulation of GHG emissions in the atmosphere causing significant harm to the climate system and other parts of the environment — Application of duty not precluded by diffuse and multifaceted nature of various forms of conduct that contribute to anthropogenic climate change — Due diligence as the required standard of conduct — Relevance of scientific and technological information — Role of decisions of Conferences of the Parties — Capabilities of State key factor for determining applicable standard of due diligence — Precautionary approach or principle guides States in determining required standard of conduct — Environmental impact assessment (EIA) — Specific nature of EIA in context of climate change — Notification and consultation.

Duty to co-operate — Specific character of climate change requires States to take individual measures in co-operation with other States — States required to make good faith efforts to arrive at appropriate forms of collective action — Special importance of the duty in the context of need to reach a collective temperature goal — Duty to co-operate applies to all States.

Relationship between obligations arising from treaties and customary international law relating to climate change — Treaty rules and rules of customary international law have separate existence — Obligations arising from climate change treaties and State practice in implementing them inform general customary obligations and vice versa — Compliance by State with climate change treaties suggests that the State substantially complies with general customary duties to prevent significant harm to environment and to co-operate — Non-party State co-operating with community of States parties to climate change treaties in a way equivalent to co-operation of a State party may be considered to fulfil customary obligations — Burden of non-party State to demonstrate that its policies and practices are in conformity with its customary obligations.

Obligations of States under environmental treaties — Ozone Layer Convention — Montreal Protocol — Biodiversity Convention — Desertification Convention — Court not called upon to address all treaties that are applicable and may be relevant for the protection of the climate system — Obligations under environmental treaties are relevant to protection of climate system — Environmental treaties, climate change treaties and relevant obligations under customary international law inform each other.

Obligations of States under law of the sea and related issues — Obligations of States under UNCLOS — Anthropogenic GHG emissions may be characterized as pollution of marine environment within meaning of UNCLOS — Applicability of Part XII of UNCLOS — Applicability of Articles 192, 193, 194, 197 and 206 of UNCLOS — UNCLOS, climate change treaties, environmental treaties and customary rules of international law inform each other — Obligations of States in relation to sea level rise and related issues — Question of preservation of baselines, maritime entitlements, maritime delimitations and statehood — States parties to UNCLOS under no obligation to update charts or lists of geographical co-ordinates — Once State is established, disappearance of one of its constituent elements would not necessarily entail loss of statehood.

Obligations of States under international human rights law — Adverse effects of climate change on enjoyment of human rights — Protection of environment is precondition for enjoyment of human rights — Human rights whose effective enjoyment may be impaired because of climate change — Right to life — Right to health — Right to an adequate standard of living — Right to privacy, family and home — Rights of women, children and indigenous peoples — Right to clean, healthy and sustainable environment — Territorial scope of human rights treaties to be addressed in light of each instrument's specific provisions.

* *

Question (b) *put to the Court: legal consequences arising from States' acts and omissions that cause significant harm to the climate system and other parts of the environment — Applicability of rules on State responsibility — Responsibility for breaches of obligations in climate change context to be determined by applying rules on State responsibility under customary international law.*

Determination of State responsibility in climate change context — Temporal scope of obligations comprises elements of in concreto *assessment — This question beyond scope of present advisory opinion — Attribution — Difficulties in attributing actions or omissions to a State — Conduct of private actors — Cumulative nature of wrongful conduct — Rules on State responsibility in principle capable of addressing situations where damage caused by multiple States — Each injured State may separately invoke responsibility of every State that has committed internationally wrongful act resulting in damage to climate system and other parts of the environment — Where several States are responsible for same internationally wrongful act, responsibility of each State may be invoked — Causation — Applicability of existing legal standard of sufficiently direct and certain causal nexus — In climate change context, causal link must be established in each case through*

in concreto *assessment — Obligations pertaining to protection of climate system and other parts of environment from anthropogenic GHG emissions are* erga omnes *— Availability of remedies to injured or non-injured States, respectively.*

Legal consequences arising from wrongful acts — Consequences depend on specific breach and nature of particular harm — Duty of performance — Duty of cessation and guarantees of non-repetition — Duty to make reparation through restitution, compensation or satisfaction.

ADVISORY OPINION

Present: *President* IWASAWA; *Vice-President* SEBUTINDE; *Judges* TOMKA, ABRAHAM, YUSUF, XUE, BHANDARI, NOLTE, CHARLESWORTH, BRANT, GÓMEZ ROBLEDO, CLEVELAND, AURESCU, TLADI; *Registrar* GAUTIER.

On the obligations of States in respect of climate change,

THE COURT,

composed as above,

gives the following Advisory Opinion:

1. The questions on which the advisory opinion of the Court has been requested are set forth in resolution 77/276 adopted by the United Nations General Assembly (hereinafter the "General Assembly") on 29 March 2023. By a letter dated 12 April 2023 and received on 17 April 2023, the Secretary-General of the United Nations officially communicated to the Court the decision taken by the General Assembly to submit these questions for an advisory opinion. Certified true copies of the English and French texts of the resolution were enclosed with the letter. The resolution reads as follows:

> "*The General Assembly*,
>
> *Recognizing* that climate change is an unprecedented challenge of civilizational proportions and that the well-being of present and future generations of humankind depends on our immediate and urgent response to it,
>
> *Recalling* its resolution 77/165 of 14 December 2022 and all its other resolutions and decisions relating to the protection of the global climate for present and future generations of humankind, and its resolution 76/300 of 28 July 2022 on the human right to a clean, healthy and sustainable environment,

Recalling also its resolution 70/1 of 25 September 2015 entitled 'Transforming our world: the 2030 Agenda for Sustainable Development',

Recalling further Human Rights Council resolution 50/9 of 7 July 2022 and all previous resolutions of the Council on human rights and climate change, and Council resolution 48/13 of 8 October 2021, as well as the need to ensure gender equality and empowerment of women,

Emphasizing the importance of the Charter of the United Nations, the Universal Declaration of Human Rights, the International Covenant on Civil and Political Rights, the International Covenant 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 in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, among other instruments, and of the relevant principles and relevant obligations of customary international law, including those reflected in the Declaration of the United Nations 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,

Recalling the United Nations Framework Convention on Climate Change, the Kyoto Protocol and the Paris Agreement, as expressions of the determination to address decisively the threat posed by climate change, urging all parties to fully implement them, and noting with concern the significant gap both between the aggregate effect of States' current nationally determined contributions and the emission reductions required to hold the increase in the global average temperature to well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 degrees Celsius above pre-industrial levels, and between current levels of adaptation and levels needed to respond to the adverse effects of climate change,

Recalling also that the United Nations Framework Convention on Climate Change and the Paris Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances,

Noting with profound alarm that emissions of greenhouse gases continue to rise despite the fact that all countries, in particular developing countries, are vulnerable to the adverse effects of climate change and that those that are particularly vulnerable to the adverse effects of climate change and have significant capacity constraints, such as the least developed countries and small island developing States, are already experiencing an increase in such effects, including persistent drought and extreme

weather events, land loss and degradation, sea level rise, coastal erosion, ocean acidification and the retreat of mountain glaciers, leading to displacement of affected persons and further threatening food security, water availability and livelihoods, as well as efforts to eradicate poverty in all its forms and dimensions and achieve sustainable development,

Noting with utmost concern the scientific consensus, expressed, inter alia, in the reports of the Intergovernmental Panel on Climate Change, including that anthropogenic emissions of greenhouses gases are unequivocally the dominant cause of the global warming observed since the mid-20th century, that human-induced climate change, including more frequent and intense extreme events, has caused widespread adverse impacts and related losses and damages to nature and people, beyond natural climate variability, and that across sectors and regions the most vulnerable people and systems are observed to be disproportionately affected,

Acknowledging that, as temperatures rise, impacts from climate and weather extremes, as well as slow-onset events, will pose an ever-greater social, cultural, economic and environmental threat,

Emphasizing the urgency of scaling up action and support, including finance, capacity-building and technology transfer, to enhance adaptive capacity and to implement collaborative approaches for effectively responding to the adverse effects of climate change, as well as for averting, minimizing and addressing loss and damage associated with those effects in developing countries that are particularly vulnerable to these effects,

Expressing serious concern that the goal of developed countries to mobilize jointly USD 100 billion per year by 2020 in the context of meaningful mitigation actions and transparency on implementation has not yet been met, and urging developed countries to meet the goal,

Decides, in accordance with Article 96 of the Charter of the United Nations, to request the International Court of Justice, pursuant to Article 65 of the Statute of the Court, to render an advisory opinion on the following 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, the United Nations Framework Convention on Climate Change, the Paris Agreement, the United Nations Convention on the Law of the Sea, the duty of due diligence, the rights recognized in the Universal Declaration of Human Rights, the principle of prevention of significant harm to the environment and the duty to protect and preserve the marine environment,
>
> *(a)* What are the obligations of States under international law to ensure the protection of the climate system and other parts of the environment from anthropogenic emissions of greenhouse gases for States and for present and future generations?

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

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

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

2. By letters dated 17 April 2023, the Deputy-Registrar gave notice of the request for an advisory opinion to all States entitled to appear before the Court, pursuant to Article 66, paragraph 1, of the Statute.

3. By an Order dated 20 April 2023, the President of the Court decided that the United Nations and its Member States were likely to be able to furnish information on the questions submitted to the Court for an advisory opinion, and fixed 20 October 2023 as the time-limit within which written statements on the questions might be presented to it, in accordance with Article 66, paragraph 2, of the Statute, and 22 January 2024 as the time-limit within which States and international organizations having presented written statements might submit written comments on the written statements made by other States and international organizations, in accordance with Article 66, paragraph 4, of the Statute.

4. By letters dated 21 April 2023, the Registrar informed the United Nations and its Member States of the Court's decisions and transmitted a copy of the Order to them.

5. Ruling on requests from the International Union for the Conservation of Nature (dated 19 May 2023), the Commission of Small Island States on Climate Change and International Law (dated 1 June 2023), the European Union (dated 14 June 2023) and the African Union (dated 6 July 2023), the Court decided, in accordance with Article 66 of its Statute, that those international organizations were likely to be able to furnish information on the questions submitted to the Court, and that consequently they might do so within the time-limits fixed for that purpose by the Order of the President of the Court dated 20 April 2023.

6. Pursuant to Article 65, paragraph 2, of the Statute, the Secretariat of the United Nations, under cover of a letter from the United Nations Legal Counsel dated 30 June 2023, communicated to the Court a dossier of documents likely to throw light upon the questions formulated by the General Assembly, which was received in the Registry on 3 July 2023.

7. In July 2023, Vanuatu and 14 co-signatory States, the Commission of Small Island States on Climate Change and International Law, and Chile separately requested that the Court grant a three-month extension to the time-limits fixed by the Order of the President of the Court dated 20 April 2023.

8. By an Order dated 4 August 2023, the President of the Court extended to 22 January 2024 the time-limit within which all written statements on the questions might be presented to the Court, in accordance with Article 66, paragraph 2, of the Statute, and to 22 April 2024 the time-limit within which States and international organizations having presented written statements might submit written comments on the other written statements, in accordance with Article 66, paragraph 4, of the Statute.

9. Ruling on a request received from the Organization of the Petroleum Exporting Countries (dated 11 August 2023), the President of the Court decided, in accordance with Article 66 of its Statute, that this international organization was likely to be able to furnish information on the questions submitted to the Court, and that consequently it might do so within the time-limits as extended by the Order of the President of the Court dated 4 August 2023.

10. Ruling on requests received from the Organisation of African, Caribbean and Pacific States (dated 6 September 2023), the Melanesian Spearhead Group (dated 11 September 2023), the Forum Fisheries Agency (dated 11 September 2023), the Pacific Community (dated 25 September 2023) and the Pacific Islands Forum (dated 18 October 2023), the Court decided, in accordance with Article 66 of its Statute, that those international organizations were likely to be able to furnish information on the questions submitted to the Court, and that consequently they might do so within the time-limits as extended by the Order of the President of the Court dated 4 August 2023.

11. Pursuant to Article 65, paragraph 2, of the Statute, the Secretariat of the United Nations, under cover of a letter from the United Nations Legal Counsel dated 30 October 2023, communicated to the Court additional documents to be included in the dossier of documents likely to throw light upon the questions submitted to the Court.

12. In November and December 2023, the Pacific Community, Kiribati, the African Union and Nauru requested that the Court grant an extension of at least four months to the time-limits extended by the Order of the President of the Court dated 4 August 2023.

13. By an Order dated 15 December 2023, the President, taking into consideration the above-mentioned requests, as well as the importance of the Court giving an advisory opinion in a timely manner, extended to 22 March 2024 the time-limit within which all written statements on the questions might be presented to the Court, in accordance with Article 66, paragraph 2, of the Statute, and to 24 June 2024 the time-limit within which States and international organizations having presented written statements might submit written comments on the other written statements in accordance with Article 66, paragraph 4, of the Statute.

14. Ruling on a request received from the Alliance of Small Island States (dated 30 November 2023), the Court decided, in accordance with Article 66 of its Statute, that this international organization was likely to be able to furnish information on the questions submitted to the Court, and that consequently it might do so within the time-limits as extended by the Order of the President of the Court dated 15 December 2023.

15. Ruling on a request received from the Cook Islands on 21 December 2023, the Court decided to authorize the latter to present a written statement and written comments on written statements made by other States or international organizations in the advisory proceedings in accordance with the time-limits as extended by the Order of the President of the Court dated 15 December 2023.

16. Ruling on requests received from the Parties to the Nauru Agreement Office (dated 21 February 2024) and the World Health Organization authorization (dated 21 March 2024), the Court decided, in accordance with Article 66 of its Statute, that those international organizations were likely to be able to furnish information on the questions submitted to the Court, and that consequently they might do so within the time-limits as extended by the Order of the President of the Court dated 15 December 2023.

17. Within the time-limit as extended by the Order of the President of the Court dated 15 December 2023, written statements were filed in the Registry, in order of receipt, by Portugal; the Democratic Republic of the Congo; Colombia; Palau; Tonga; the Organization of the Petroleum Exporting Countries; the International Union for Conservation of Nature; Singapore; Peru; Solomon Islands; Canada; the Cook Islands; Seychelles; Kenya; Denmark, Finland, Iceland, Norway and Sweden (jointly); the Melanesian Spearhead Group; the Philippines; Albania; Vanuatu; the Federated States of Micronesia; Saudi Arabia; Sierra Leone; Switzerland; Liechtenstein; Grenada; Saint Lucia; Saint Vincent and the Grenadines; Belize; the United Kingdom of Great Britain and Northern Ireland; the Kingdom of the Netherlands; the Bahamas; the United Arab Emirates; the Marshall Islands; the Parties to the Nauru Agreement Office; the Pacific Islands Forum; France; New Zealand; Slovenia; Kiribati; the Forum Fisheries Agency; China; Timor-Leste; the Republic of Korea; India; Japan; Samoa; the Alliance of Small Island States; the Islamic Republic of Iran; Latvia; Mexico; South Africa; Ecuador; Cameroon; Spain; Barbados; the African Union; Sri Lanka; the Organisation of African, Caribbean and Pacific States; Madagascar; Uruguay; Egypt; Chile; Namibia; Tuvalu; Romania; the United States of America; Bangladesh; the European Union; Kuwait; Argentina; Mauritius; Nauru; the World Health Organization; Costa Rica; Indonesia; Pakistan; the Russian Federation; Antigua and Barbuda; the Commission of Small Island States on Climate Change and International Law; El Salvador; Bolivia; Australia; Brazil; Viet Nam; the Dominican Republic; Ghana; Thailand and Germany.

18. By a communication dated 28 March 2024, the Registry informed States and international organizations having presented written statements that the statements filed by other States and international organizations could be downloaded from a designated web portal managed by the Registry.

19. The Court authorized, on an exceptional basis, the filing of written statements by Nepal, Burkina Faso and The Gambia, after the expiry of the relevant time-limit.

20. By letters dated 12 April 2024, the Registrar informed the United Nations, as well as States entitled to appear before the Court having not presented written statements, of the list of written statements having been filed in the proceedings.

21. Subsequent to the filing of the written statements, over the course of April and May 2024, Fiji; Nigeria; Bangladesh; Nauru; the Organisation of African, Caribbean and Pacific States; the Cook Islands; Palau; Kiribati; the Forum Fisheries Agency; the Philippines; Antigua and Barbuda; the Melanesian Spearhead Group; Vanuatu; the Commission of Small Island States on Climate Change and International Law; Tuvalu; Samoa; Chile; Timor-Leste; the Alliance of Small Island States; Grenada; Saint Lucia; Saint Vincent and the Grenadines and Egypt requested that the Court grant an additional extension of the time-limit for the submission of written comments.

22. By an Order dated 30 May 2024, the President, taking into consideration the above-mentioned requests, as well as the importance of the Court giving an advisory opinion in a timely manner, extended to 15 August 2024 the time-limit within which States and international organizations having presented written statements might submit written comments on the other written statements, in accordance with Article 66, paragraph 4, of the Statute.

23. By communications dated 8 July 2024, the Registry informed the United Nations as well as States and international organizations having been considered likely to be able to furnish information on the questions submitted by the General Assembly that the Court had decided to hold public hearings on the request for an advisory opinion, which would open on 2 December 2024. The addressees were further invited to inform the Registry, by 2 October 2024, if they intended to take part in those hearings. It was specified that, during the oral proceedings, oral statements could be presented by the United Nations, States and international organizations having been considered likely to be able to furnish information regardless of whether they had submitted written statements and, as the case may be, written comments.

24. Within the time-limit as extended by the Order of the President of the Court dated 30 May 2024, written comments on the written statements were filed in the Registry, in order of receipt, by Palau; the Dominican Republic; Timor-Leste; the European Union; the Democratic Republic of the Congo; Seychelles; France; the Melanesian Spearhead Group; Kenya; Antigua and Barbuda; El Salvador; Latvia; Solomon Islands; the Bahamas; Namibia; New Zealand; Colombia; Kiribati; the Cook Islands; the Federated States of Micronesia; Saudi Arabia; Sri Lanka; the Philippines; Switzerland; Costa Rica; the Commission of Small Islands States on Climate Change and International Law; Tuvalu; the Marshall Islands; the Parties to the Nauru Agreement Office; Japan; The Gambia; Vanuatu; Sierra Leone; Albania; the International Union for Conservation of Nature; the United States of America; Barbados; Mauritius; Samoa; the Islamic Republic of Iran; the Organisation of African, Caribbean and Pacific States; Burkina Faso; Chile; Brazil; Nauru; Belize; Cameroon; the United Kingdom of Great Britain and Northern Ireland; Pakistan; Uruguay; Mexico; the Kingdom of the Netherlands; Australia; Ecuador; Grenada; Saint Lucia; Saint Vincent and the Grenadines; Viet Nam; Bangladesh; the African Union; Egypt and the Pacific Islands Forum.

25. By a communication dated 19 August 2024, the Registry informed States and international organizations having presented written statements that written comments on the written statements filed in the Registry within the time-limit, as extended by the Order of the President of the Court dated 30 May 2024, could be downloaded from the designated web portal managed by the Registry.

26. By a communication dated 30 August 2024, the Registry informed States and international organizations having presented written statements that the President of the Court had exceptionally authorized the submission of written comments by Ghana after the expiry of the relevant deadline and that those comments could be downloaded from the aforementioned designated web portal.

27. By communications dated 3 September 2024, the Registry informed the United Nations as well as States entitled to appear before the Court not having presented written statements that the written statements and the written comments filed by participants and international organizations could be downloaded from a designated web portal managed by the Registry.

28. Subsequently, the Registry informed the United Nations as well as States and international organizations having been considered likely to be able to furnish information on the questions submitted by the General Assembly that non-governmental organizations had submitted written statements in the present advisory proceedings on their own initiative, pursuant to Practice Direction XII, and that these statements were available to the addressees on a web portal set up by the Registry for that purpose. The Registry further recalled that, under Practice Direction XII, these statements were "not to be considered part of the case file". According to the same Practice Direction, such statements shall be treated as publications readily available and may accordingly be referred to by States and intergovernmental organizations presenting written and oral statements in the case in the same manner as publications in the public domain.

29. Ruling on a request received from the State of Palestine on 2 October 2024 that it be authorized to participate, pursuant to Article 66 of the Statute, in the oral proceedings, the Court decided that the State of Palestine was likely to be able to furnish information on the questions submitted by the General Assembly. The State of Palestine was therefore authorized to participate in the oral proceedings, in conformity with Article 66 of the Statute.

30. By letters dated 15 October 2024, the Registrar communicated the list of participants in the oral proceedings to those States and international organizations which were taking part in them, and enclosed a detailed schedule of the oral proceedings. By the same letters, he also informed them of certain practical arrangements regarding the organization of the oral proceedings.

31. Further to the Court's decision to allow additional States to participate in the oral proceedings, by a letter dated 5 November 2024, the Registrar communicated an updated schedule of the hearings to those States and international organizations which were taking part in them.

32. By letters dated 6 November 2024, the Registry communicated to the United Nations and those of its Member States which were not taking part in the oral proceedings a schedule of those proceedings, including the list and order of participants.

33. On 26 November 2024, at the invitation of the Court, a group of past and present authors of the reports of the Intergovernmental Panel on Climate Change (hereinafter the "IPCC" or "Panel") met with Members of the Court to enhance the Court's understanding of the key scientific findings

that the IPCC has presented in its periodic assessment reports, which cover the scientific basis, impacts and future risks of climate change, and options for adaptation and mitigation.

34. Pursuant to Article 106 of its Rules, the Court decided to make the written statements and written comments submitted to it accessible to the public after the opening of the oral proceedings. The written statements and written comments of States not taking part in the oral proceedings were made accessible to the public on the first day of the oral proceedings. The written statements and written comments of States and international organizations taking part in the oral proceedings were made accessible at the end of the day on which they presented their oral statements.

35. In the course of the oral proceedings held on 2, 3, 4, 5, 6, 9, 10, 11, 12 and 13 December 2024, the Court heard oral statements, in the following order, by:

for the Republic of Vanuatu and the Melanesian Spearhead Group:	Mr Ralph Regenvanu, Special Envoy for Climate Change and the Environment,
	Mr Arnold Kiel Loughman, Attorney General,
	Mr Ilan Kiloe, Spokesperson, Program Manager Politics, Security and Legal Affairs,
	Mr Julian Aguon, President and Founder, Blue Ocean Law, PC, Hagåtña, Guam,
	Mr Jorge Enrique Viñuales, Harold Samuel Professor of Law and Environmental Policy, University of Cambridge, member of the Institut de droit international,
	Ms Margaretha Wewerinke-Singh, Associate Professor of Sustainability Law, University of Amsterdam, Adjunct Professor of Law, University of Fiji, member of the Bar of Vanuatu, Blue Ocean Law, PC, Hagåtña, Guam,
	Ms Cynthia Rosah Bareagihaka Houniuhi, Spokesperson, Activist, Pacific Islands Students Fighting Climate Change;
for the Republic of South Africa:	Mr Vusimuzi Madonsela, Ambassador of the Republic of South Africa to the Kingdom of the Netherlands,
	Ms Romi Brammer, Principal State Law Adviser, International Law, Department of International Relations and Cooperation,
	Mr Cornelius Scholtz, Legal Counsellor, Embassy of the Republic of South Africa in the Kingdom of the Netherlands;
for the Republic of Albania:	Mr Armand Skapi, Secretary General, Ministry for Europe and Foreign Affairs,
	Ms Cherie Blair, Chair of Omnia Strategy LLP, member of the Bar of England and Wales;

for the Federal Republic of Germany:	Ms Wiebke Rückert, Deputy Legal Adviser and Director for Public International Law, Federal Foreign Office of the Federal Republic of Germany,
	Mr Andreas Zimmermann, Professor of Public Law, Public International and European Union Law, University of Potsdam, Director of the Potsdam Centre of Human Rights;
for Antigua and Barbuda:	HE Mr Gaston Browne, Prime Minister of Antigua and Barbuda,
	Mr Zachary A.R. Phillips, Crown Counsel II, Attorney General's Chambers, Ministry of Legal Affairs;
for the Kingdom of Saudi Arabia:	HH Prince Jalawi Turki Al Saud, Chargé d'affaires, Embassy of the Kingdom of Saudi Arabia in the Kingdom of the Netherlands,
	Sir Michael Wood, KCMG, KC, member of the Bar of England and Wales, Twenty Essex, London,
	Ms Ghaida Bajbaa, Legal Expert;
for Australia:	Mr Jesse Clarke, General Counsel, International Law, Office of International Law, Attorney-General's Department,
	Mr Stephen Donaghue, KC, Solicitor-General of Australia,
	Ms Kate Parlett, member of the Bar of England and Wales, Twenty Essex, London;
for the Commonwealth of the Bahamas:	HE Mr Leo Ryan Pinder, KC, Attorney General, Minister for Legal Affairs,
	Mr Conway Blake, Debevoise & Plimpton LLP, Solicitor Advocate of the Senior Courts of England and Wales, member of the Bar of the Eastern Caribbean Supreme Court;
for the People's Republic of Bangladesh:	HE Mr Tareque Muhammad, Ambassador of the People's Republic of Bangladesh to the Kingdom of the Netherlands,
	Mr Payam Akhavan, LLM SJD (Harvard) OOnt FRSC, Senior Fellow and Human Rights Chair, Massey College, University of Toronto, member of the Permanent Court of Arbitration, associate member of the Institut de droit international, member of the Law Society of Ontario, member of the Bar of the State of New York,
	Ms Catherine Amirfar, Debevoise & Plimpton LLP, member of the Bars of the Supreme Court of the United States of America and the State of New York;
for Barbados:	HE Mr Kerrie D. Symmonds, Minister of Foreign Affairs and Foreign Trade,
	HE Mr François Jackman, Representative of Barbados, Ambassador and Permanent Representative of Barbados to the United Nations,

	Mr Robert G. Volterra, Co-Representative of Barbados, Barrister and Solicitor at the Law Society of Upper Canada, Solicitor Advocate in England and Wales, Volterra Fietta, Visiting Professor of Law, University College London, Visiting Senior Lecturer, King's College London,
	Mr Gunjan Sharma, member of the Bar of New York, Volterra Fietta;
for Belize:	Mr Kenrick Williams, Chief Executive Officer, Ministry of Sustainable Development and Climate Change,
	Mr Sam Wordsworth, KC, Barrister, Essex Court Chambers, member of the Bar of England and Wales, member of the Paris Bar,
	Ms Amy Sander, Barrister, Essex Court Chambers, member of the Bar of England and Wales;
for the Plurinational State of Bolivia:	HE Mr Roberto Calzadilla Sarmiento, Ambassador of the Plurinational State of Bolivia to the Kingdom of the Netherlands;
for the Federative Republic of Brazil:	HE Mr Luiz Alberto Figueiredo Machado, Special Envoy for Climate Change,
	Mr George Rodrigo Bandeira Galindo, Legal Adviser, Ministry of Foreign Affairs;
for Burkina Faso:	HE Mr Léopold Tonguenoma Bonkoungouu, Ambassador of Burkina Faso to the Kingdom of Belgium,
	Mr Mamadou Hébié, Associate Professor of International Law, Leiden University, member of the Permanent Court of Arbitration, member of the Bar of the State of New York;
for the Republic of Cameroon:	HE Ms Madeleine Liguemoh Ondoua, Ambassador of the Republic of Cameroon to the Kingdom of the Netherlands,
	Mr Pierre-Olivier Savoie, Partner, Savoie Arbitration, Paris, member of the Bars of Ontario, New York and Paris;
for the Republic of the Philippines:	HE Mr J. Eduardo Malaya III, Ambassador of the Republic of the Philippines to the Kingdom of the Netherlands,
	Mr Menardo Guevarra, Solicitor General,
	HE Mr Carlos Sorreta, Permanent Representative of the Republic of the Philippines to the United Nations Office and other international organizations in Geneva;
for Canada:	Mr Louis-Martin Aumais, Legal Adviser and Director General, International Law Bureau, Global Affairs Canada;
for the Republic of Chile:	HE Ms Ximena Fuentes Torrijo, Ambassador of the Republic of Chile to the United Kingdom of Great Britain and Northern Ireland,
	Ms Valeria Chiappini Koscina, Legal Adviser, International Law, Treaties and Legislative Affairs Division, Ministry of Foreign Affairs;

for the People's Republic of China:	HE Mr Xinmin Ma, Legal Adviser, Ministry of Foreign Affairs, member of the International Law Commission;
for the Republic of Colombia:	HE Mr Luis Gilberto Murillo Urrutia, Minister for Foreign Affairs,
	HE Ms Carolina Olarte Bácares, Ambassador of the Republic of Colombia to the Kingdom of the Netherlands;
for the Commonwealth of Dominica:	Mr Levi Peter, Attorney General,
	Ms Vanica Sobers-Joseph, Legal Advocate, Senior State Attorney;
for the Republic of Korea:	Mr Jun-Shik Hwang, Director General for International Legal Affairs, Ministry of Foreign Affairs,
	Mr Keun-Gwan Lee, Professor, Seoul National University School of Law;
for the Republic of Costa Rica:	HE Mr Arnoldo Brenes Castro, Ambassador of the Republic of Costa Rica to the Kingdom of the Netherlands,
	Mr Marcelo Kohen, Professor Emeritus of International Law, Geneva Graduate Institute of International and Development Studies, titular member and former Secretary-General of the Institut de droit international;
for the Republic of Côte d'Ivoire:	Mr Eugène Zagre, Director of Legal Affairs and Litigation, Ministry of the Environment and Sustainable Development,
	Mr Arman Sarvarian, Counsel, Reader in Public International Law, University of Surrey;
for the Kingdom of Denmark, the Republic of Finland, Iceland, the Kingdom of Norway and the Kingdom of Sweden (jointly):	Ms Kaija Suvanto, Director General for Legal Affairs, Ministry of Foreign Affairs of the Republic of Finland,
	Mr Kristian Jervell, Director General for Legal Affairs, Ministry of Foreign Affairs of the Kingdom of Norway,
	HE Ms Vibeke Pasternak Jørgensen, Ambassador, Under-Secretary for Legal Affairs, Ministry of Foreign Affairs of the Kingdom of Denmark;
for the Arab Republic of Egypt:	Mr Wael Aboulmagd, Assistant Minister for Climate Change, Environmental Affairs and Sustainable Development, Ministry of Foreign Affairs, Emigration and Egyptian Expatriates;
for the Republic of El Salvador:	HE Mr Agustín Vásquez Gómez, Ambassador of the Republic of El Salvador to the Kingdom of the Netherlands,
	Mr Fernando Lusa Bordin, Associate Professor, Sidney Sussex College, University of Cambridge, member of the Brazilian Bar;
for the United Arab Emirates:	HE Mr Abdulla Balalaa, Assistant Minister for Energy and Sustainability Affairs, Ministry of Foreign Affairs;
for the Republic of Ecuador:	HE Mr Marcelo Vázquez-Bermúdez, Ambassador, Permanent Representative of the Republic of Ecuador to the United Nations Office and other international organizations in Geneva, member of the International Law Commission,

	Mr Alfredo Crosato Neumann, Assistant Professor of International Law, Kadir Has University, Istanbul, member of the Lima Bar,
	Mr Omri Sender, SJD, Attorney at Law, S. Horowitz and Co.;
for the Kingdom of Spain:	Ms Consuelo Castro Rey, State Attorney, Office of the Attorney General,
	Mr Oriol Solà Pardell, Legal Adviser, International Legal Office, Ministry of Foreign Affairs, European Union and Cooperation,
	Mr Santiago Ripol Carulla, Head of the International Legal Office, Ministry of Foreign Affairs, European Union and Cooperation;
for the United States of America:	Ms Margaret Taylor, Legal Adviser, United States Department of State;
for the Russian Federation:	Mr Maksim Musikhin, Director, Legal Department, Ministry of Foreign Affairs;
for the Republic of Fiji:	HE Mr Luke Daunivalu, Permanent Representative of the Republic of Fiji to the United Nations Office and other international organizations in Geneva,
	Mr Graham Leung, Attorney General;
for the Republic of France:	Mr Diégo Colas, Legal Adviser, Director of Legal Affairs, Ministry for Europe and Foreign Affairs;
for the Republic of Sierra Leone:	HE Mr Mohamed Lamin Tarawalley, Attorney General and Minister of Justice,
	Mr Charles Chernor Jalloh, Professor of International Law and Richard A. Hausler Chair in Law, University of Miami Law School, member and Special Rapporteur of the International Law Commission, member of the Ontario Bar;
for the Republic of Ghana:	HE Mr Francis Danti Kotia, Ambassador of the Republic of Ghana to the Kingdom of the Netherlands,
	Ms Sylvia Ama Adusu, Chief State Attorney and Director of International Law Division, Office of the Attorney General and Ministry of Justice,
	HE Ms Namira Negm, Ambassador, former Legal Counsel of the African Union,
	Mr Muin Boase, Great James Street Chambers, member of the Bar of England and Wales, Senior Lecturer in International Law, University of Derby;
for Grenada:	Ms Rae Thomas, Crown Counsel, Office of the Attorney General and Ministry of Legal Affairs,
	HE Ms Claudette Joseph, Attorney General and Minister for Legal Affairs,
	Mr Justin Sobion, Senior Tutor, Faculty of Law, University of Auckland, New Zealand;

for the Republic of Guatemala:	HE Ms Ana Cristina Rodríguez Pineda, Ambassador of the Republic of Guatemala to the Kingdom of the Netherlands;
for the Cook Islands:	Ms Sandrina Thondoo, Director, Treaties, Multilaterals and Oceans Division, Ministry of Foreign Affairs and Immigration,
	Mr Fuimaono Dylan Asafo, Senior Lecturer, Faculty of Law, University of Auckland;
for the Republic of the Marshall Islands:	HE Mr John Silk, Ambassador and Permanent Representative of the Republic of the Marshall Islands to the United Nations, New York,
	Ms Kathy Jetnil-Kijiner, Climate Envoy,
	Mr Johnathen Kawakami, Deputy Attorney General;
for Solomon Islands:	Mr John Muria Jnr., Attorney General,
	Mr Harjeevan Narulla, Barrister, Doughty Street Chambers, London;
for the Republic of India:	Mr Luther Rangreji, Joint Secretary and Legal Adviser, Ministry of External Affairs;
for the Islamic Republic of Iran:	Mr Seyed Ali Mousavi, Director General, Department for International Legal Affairs, Ministry of Foreign Affairs;
for the Republic of Indonesia:	Mr Arif Havas Oegroseno, Vice-Minister for Foreign Affairs;
for Jamaica:	HE Ms Kamina Johnson Smith, Minister for Foreign Affairs and Foreign Trade,
	Ms Sherise Gayle, Senior Assistant to the Attorney General, Attorney General's Chambers,
	Ms Michelle Walker, Deputy Solicitor General, Attorney General's Chambers;
for the Independent State of Papua New Guinea:	HE Mr Fred Sarufa, Ambassador and Permanent Representative of the Independent State of Papua New Guinea to the United Nations, New York,
	HE Mr Pila Kole Niningi, Attorney General and Minister for Justice,
	Mr Eric Lokai Kwa, Secretary, Department of Justice and Attorney General,
	Mr Leslie Benjamin Mamu, Public Solicitor;
for the Republic of Kenya:	HE Ms Halima Mucheke, Ambassador of the Republic of Kenya to the Kingdom of the Netherlands,
	Ms Phoebe Okowa, Professor of Public International Law, Queen Mary University, London, member of the International Law Commission, Advocate of the High Court of Kenya;
for the Republic of Kiribati:	HE Mr Teburoro Tito, Ambassador and Permanent Representative of the Republic of Kiribati to the United Nations, New York,
	Mr Aretaake Ientaake, Director of Human Rights, Ministry of Justice,

	Mr Eyal Benvenisti, Emeritus Whewell Professor of International Law, University of Cambridge, member of the Institut de droit international;
for the State of Kuwait:	HE Mr Talal Sulaiman Al-Fassam, Ambassador of the State of Kuwait to the Republic of Austria, Permanent Representative of the State of Kuwait to the United Nations and international organizations in Vienna,
	Mr Dan Sarooshi, KC, Legal Adviser;
for the Republic of Latvia:	HE Ms Solvita Āboltiņa, Ambassador Extraordinary and Plenipotentiary of the Republic of Latvia to the Kingdom of the Netherlands,
	Mr Mārtiņš Paparinskis, Professor of Public International Law, University College London, member of the International Law Commission, member of the Permanent Court of Arbitration;
for the Principality of Liechtenstein:	HE Mr Pascal Schafhauser, Ambassador of the Principality of Liechtenstein to the Kingdom of Belgium;
for the Republic of Malawi:	HE Mr Thabo Chakaka-Nyirenda, Attorney General,
	Ms Tafadzwa Pasipanodya, Partner, Foley Hoag LLP;
for the Republic of the Maldives:	HE Mr Ahmed Usham, Attorney General,
	Ms Jessica Wells, member of the Bar of England and Wales, Essex Court Chambers,
	Ms Naomi Hart, member of the Bar of England and Wales, Essex Court Chambers;
for the African Union:	Ms Hajer Gueldich, Legal Counsel, African Union,
	Mr Makane Moïse Mbengue, Professor of International Law, Director of the Department of International Law and International Organization, University of Geneva, associate member of the Institut de droit international;
for the United Mexican States:	HE Ms Carmen Moreno Toscano, Ambassador of the United Mexican States to the Kingdom of the Netherlands,
	Ms Alicia Patricia Perez Galeana, Counsellor, Head of Multilateral Legal Affairs, Embassy of the United Mexican States in the Kingdom of the Netherlands,
	Mr Alfonso Ascencio Herrera, Minister, Deputy Head of Mission, Embassy of the United Mexican States in the Kingdom of the Netherlands,
	Mr Pablo Adrian Arrocha Olabuenaga, Legal Adviser, Ministry of Foreign Affairs;
for the Federated States of Micronesia:	Mr Clement Yow Mulalap, Legal Adviser;
for the Republic of the Union of Myanmar:	HE U Soe Lynn Han, Ambassador of the Republic of the Union of Myanmar to the Kingdom of Belgium, the Kingdom of the Netherlands, the Grand Duchy of Luxembourg, the Republic of Croatia and the European Union;

for the Republic of Namibia:	HE Ms Mekondjo Kaapanda-Girnus, Ambassador of the Republic of Namibia to the Kingdom of Belgium, the Kingdom of the Netherlands and the Grand Duchy of Luxembourg and Head of Mission to the European Union,
	Mr Ndjodi Ndeunyema, Counsel, Solicitor, England and Wales;
for Japan:	Mr Nakamura Kazuhiko, Director General for Global Issues, Ministry of Foreign Affairs,
	Ms Takamura Yukari, Professor, Institute for Future Initiatives, University of Tokyo,
	Ms Alina Miron, Professor of International Law, University of Angers, member of the Paris Bar, Founding Partner, FAR Avocats;
for the Republic of Nauru:	Hon. Lionel Rouwen Aingimea, Minister for Foreign Affairs and Trade,
	Mr Eirik Bjorge, Counsel, Professor of Law, University of Bristol;
for Nepal:	HE Ms Arzu Rana Deuba, PhD, Minister for Foreign Affairs,
	Mr Udaya Raj Sapkota, Secretary, Ministry of Law, Justice and Parliamentary Affairs,
	Mr Suvanga Parajuli, Under-Secretary, Ministry of Foreign Affairs;
for New Zealand:	Ms Victoria Hallum, Deputy Secretary, Multilateral Legal Affairs, Ministry of Foreign Affairs and Trade;
for the State of Palestine:	HE Mr Ammar Hijazi, Ambassador, Permanent Representative of the State of Palestine to International Organizations in the Netherlands,
	Ms Kate Mackintosh, Legal Counsel,
	Ms Nilufer Oral, Legal Counsel;
for the Islamic Republic of Pakistan:	Mr Mansoor Usman Awan, Office of the Attorney General for Pakistan;
for the Republic of Palau:	HE Mr Gustav Aitaro, Minister of State,
	Ms Ernestine Rengiil, Attorney General;
for the Republic of Panama:	Mr Fernando Gómez Arbeláez, Director of International Legal Affairs and Treaties, Ministry of Foreign Affairs;
for the Kingdom of the Netherlands:	Mr René Lefeber, Legal Adviser, Ministry of Foreign Affairs,
	Mr Mert Kumru, Youth Representative, World's Youth for Climate Justice;
for the Republic of Peru:	HE Ms Franca Deza Ferreccio, Ambassador of the Republic of Peru to the Kingdom of the Netherlands;

for the Democratic Republic of the Congo:	Mr Ivon Mingashang, Professor, University of Kinshasa, member of the International Law Commission, honorary member of the Brussels Bar and member of the Kinshasa/Gombe Bar,
	Ms Sandrine Maljean-Dubois, Director of Research at CNRS, Faculty of Law and Political Science, Aix-Marseille University,
	Mr Nicolas Angelet, Professor, Ghent University and the Université libre de Bruxelles, member of the Brussels Bar, Associate Tenant of Doughty Street Chambers, London;
for the Portuguese Republic:	Ms Patrícia Galvão Teles, Director of the Department of Legal Affairs, Ministry of Foreign Affairs;
for the Dominican Republic:	Mr Boni Guerrero Canto, Director of Legal Affairs, Ministry of Foreign Affairs of the Dominican Republic,
	Ms Alejandra Torres Camprubí, Adjunct Professor of International Environmental Law, Faculty of Laws of IE University, International Legal Counsel at Torres Iuris, member of the Bars of Madrid and Paris,
	Mr Julio Rojas Báez, Professor of International Law, Universidad Iberoamericana, Vice-President of the Inter-American Juridical Committee and Special Rapporteur on the Legal Implications of Sea-Level Rise in the Inter-American Regional Context, member of the Bar of the Dominican Republic;
for Romania:	Ms Alina Orosan, Director General for Legal Affairs;
for the United Kingdom of Great Britain and Northern Ireland:	The Rt Hon. Lord Richard Hermer, KC, HM Attorney General for England and Wales;
for Saint Lucia:	Mr Desmond Simon, Chargé d'affaires a.i., Embassies of the Eastern Caribbean States to the Kingdom of Belgium and Missions to the European Union,
	Ms Jan Yves Remy, External Counsel, Director, Shridath Ramphal Centre,
	Ms Kate Wilson, Legal Officer, Department of Sustainable Development,
	Ms Rochelle John-Charles, Crown Counsel IV, Office of the Attorney General;
for Saint Vincent and the Grenadines:	Mr Edmund Jackson, NDC Partnership In-Country Facilitator, Sustainable Development Unit,
	Ms Shernell Hadaway, Parliamentary Counsel III, Attorney General's Chambers, Ministry of Legal Affairs, Deputy Chair Prime Ministerial Advisory Council on Youth, Climate Change Sector,
	Mr Justin Sobion, Senior Tutor, Faculty of Law, University of Auckland, New Zealand;

for the Independent State of Samoa:	Ms Peseta Noumea Simi, Chief Executive Officer, Ministry of Foreign Affairs and Trade,
	Ms Su'a Hellene Wallwork, Attorney General, Office of the Attorney General;
for the Republic of Senegal:	HE Ms Ramatoulaye Ba Faye, Ambassador of the Republic of Senegal to the Kingdom of the Netherlands;
for the Republic of Seychelles:	HE Mr Flavien Joubert, Minister for Agriculture, Climate Change and Environment,
	Mr Jean-Marc Thouvenin, Professor, University of Paris Nanterre, Secretary-General of The Hague Academy of International Law, associate member of the Institut de droit international, member of the Paris Bar, Sygna Partners,
	Mr Andres Villegas Jaramillo, Associate of the Instituto Hispano-Luso-Americano de Derecho Internacional, former Judicial Fellow of the International Court of Justice, member of the Colombian Bar, Sygna Partners,
	HE Mr Anthony Derjacques, Minister for Transport;
for the Republic of The Gambia:	HE Mr Pa Musa Jobarteh, Ambassador of the Republic of The Gambia to the Kingdom of Belgium and Head of Mission of the Republic of The Gambia to the European Union,
	Mr Charles Chernor Jalloh, Professor of International Law and Richard A. Hausler Chair in Law, University of Miami Law School, member and Special Rapporteur of the International Law Commission, member of the Ontario Bar,
	Mr Andrew Loewenstein, Partner, Foley Hoag LLP,
	Ms Christina Hioureas, Partner, Foley Hoag LLP;
for the Republic of Singapore:	Ms Rena Lee, Ambassador for International Law, Chief Executive, Intellectual Property Office of Singapore;
for the Republic of Slovenia:	Mr Marko Rakovec, Director-General for International Law, Ministry of Foreign and European Affairs,
	Ms Vasilka Sancin, Professor of International Law, Faculty of Law, University of Ljubljana,
	Mr Daniel Müller, Partner, FAR Avocats, member of the Paris Bar;
for the Republic of the Sudan:	Mr Marwan Ahmed Mohamed Khier, Deputy Head of Mission, Legal Officer, Embassy of the Republic of the Sudan in the Kingdom of the Netherlands,
	Mr Fabián O. Raimondo, Associate Professor of Public International Law, Maastricht University, member of the Bar of the City of La Plata (Argentina);
for the Democratic Socialist Republic of Sri Lanka:	Hon. Parinda Ranasinghe Jnr., President's Counsel, Attorney General,
	Ms Avanti Perera, Deputy Solicitor General;

for the Swiss Confederation:	HE Mr Franz Perrez, Head of the Directorate of International Law, Federal Department of Foreign Affairs;
for the Republic of Serbia:	Mr Aleksandar Gajić, Chief Legal Adviser, Ministry of Foreign Affairs;
for the Kingdom of Thailand:	Ms Suphanvasa Chotikajan Tang, Director-General, Department of Treaties and Legal Affairs,
	Mr Songchai Chaipatiyut, Deputy Director-General, Department of Treaties and Legal Affairs;
for the Democratic Republic of Timor-Leste:	Ms Elizabeth Gouveia Leite Exposto, Chief of Staff to the Prime Minister, Chief Executive Officer, Land and Maritime Boundary Office,
	HE Mr Adão Soares Barbosa, Special Envoy and Ambassador-at-Large for Climate Affairs,
	Mr Eran Sthoeger, Legal Counsel, Litigator and Consultant in International Law, Adjunct Professor of Law, Brooklyn Law School; Lecturer in International Environmental Law, Columbia University School of Professional Studies;
for the Kingdom of Tonga:	Ms Linda Simiki Folaumoetu'i, Attorney General, Attorney General's Office,
	Ms Gitanjali Bajaj, Partner, Co-Head for International Arbitration Asia-Pacific, DLA Piper;
for Tuvalu:	HE Ms Eselealofa Apinelu, High Commissioner of Tuvalu to Fiji, Secretary General, Commission of Small Island States on Climate Change and International Law,
	Hon. Laingane Italeli Talia, Attorney General of Tuvalu,
	Ms Philippa Webb, Professor of Public International Law, Blavatnik School of Government, University of Oxford, member of the Bars of Belize, England and Wales, and the State of New York, Twenty Essex, London;
for the Union of the Comoros:	HE Mr Youssouf Mondoha Assoumani, Ambassador of the Union of the Comoros to the Federal Democratic Republic of Ethiopia and Permanent Representative to the African Union,
	Mr Guy-Fleury Ntwari, Doctor of Law, Consultant and former Legal Adviser to the African Union,
	Ms Kiara Neri, Professor of International Law, Director of the Centre for International Law, Jean Moulin Lyon 3 University;
for the Eastern Republic of Uruguay:	HE Mr Álvaro González Otero, Ambassador of the Eastern Republic of Uruguay to the Kingdom of the Netherlands,
	Ms Mariana Cabrera, Deputy Secretary of the President of the Eastern Republic of Uruguay,
	Mr Marcos Dotta Salgueiro, Director of International Law Affairs, Ministry of Foreign Affairs,

	Ms Yas Banifatemi, Founding Partner, Gaillard Banifatemi Shelbaya Disputes, Adjunct Professor of Law, Panthéon-Sorbonne University, Visiting Professor of Law, Harvard Law School;
for the Socialist Republic of Viet Nam:	Ms Nguyen Thi Lan Anh, Vice-President, Diplomatic Academy of Viet Nam,
	Mr Nguyen Dang Thang, Legal Adviser, Director General, Department of International Law and Treaties, Ministry of Foreign Affairs;
for the Republic of Zambia:	Mr Marshal Muchende, Solicitor General, Ministry of Justice,
	Ms Sambwa Simbyakula-Chilembo, Assistant Director, Ministry of Justice,
	Mr Christian Tams, Legal Counsel, International Law Chair and Director, Glasgow Centre for International Law and Security;
for the Forum Fisheries Agency:	Mr Pio Manoa, Deputy Director General, Acting Legal Counsel, Forum Fisheries Agency;
for the Alliance of Small Island States:	HE Mr Fatumanava-o-Upolu III Pa'olelei Luteru, Ambassador and Permanent Representative of the Independent State of Samoa to the United Nations, New York, Chair of the Alliance of Small Island States (AOSIS),
	Mr Richard Bryce Rudyk, Legal Adviser;
for the Commission of Small Island States on Climate Change and International Law:	HE Ms Eselealofa Apinelu, High Commissioner of Tuvalu to Fiji, Secretary General, Commission of Small Island States on Climate Change and International Law (COSIS),
	Ms Catherine Amirfar, Debevoise & Plimpton LLP, member of the Bars of the Supreme Court of the United States of America and the State of New York, Co-Representative of COSIS,
	Mr Payam Akhavan, LLM SJD (Harvard) OOnt FRSC, Professor of International Law, Chair in Human Rights, and Senior Fellow, Massey College, University of Toronto, member of the Permanent Court of Arbitration, associate member of the Institut de droit international, member of the Bar of the State of New York, member of the Law Society of Ontario, Co-Representative of COSIS;
for the Pacific Community:	Mr Stuart Minchin, Director-General,
	Ms Coral Pasisi, Director of Climate Change and Environmental Sustainability,
	Mr Vishal Prasad, Director, Pacific Island Students Fighting Climate Change;
for the Pacific Islands Forum:	Mr Esala Nayasi, Deputy Secretary General, Strategic Policy and Programming;

for the Organisation of African, Caribbean and Pacific States:	Ms Cristelle Pratt, Assistant Secretary-General,
	HE Ms Cheryl Eloise Bazard, KC, Chair of the Small Island Developing States Forum of the Organisation of African, Caribbean and Pacific States,
	Mr Pierre-Marie Dupuy, Professor Emeritus of International Law, University of Paris II, Panthéon-Assas, Graduate Institute of International and Development Studies, Geneva, member of the Institut de droit international,
	Ms Brenda Reson Sapuro, Youth Representative;
for the World Health Organization:	Mr Tedros Adhanom Ghebreyesus, Director-General,
	Mr Derek Walton, Legal Counsel;
for the European Union:	Mr André Bouquet, Legal Adviser, member of the Legal Service of the European Commission,
	Ms Josephine Norris, member of the Legal Service of the European Commission,
	Ms Margherita Bruti Liberati, member of the Legal Service of the European Commission,
	Mr Bernhard Hofstötter, member of the Legal Service of the European Commission;
for the International Union for Conservation of Nature:	Ms Grethel Aguilar, Director General,
	Ms Christina Voigt, Professor of Law, University of Oslo, Department of Public and International Law, Chair of the International Union for Conservation of Nature World Commission on Environmental Law,
	Mr Francesco Sindico, Professor of International Law, University of Strathclyde, Co-Chair of the International Union for Conservation of Nature World Commission on Environmental Law Climate Change Law Specialist Group.

36. Questions were put by four Members of the Court to participants at the close of the oral proceedings; sixty-seven replied in writing, as requested, within the prescribed time-limits.

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I. JURISDICTION AND DISCRETION

37. When seised of a request for an advisory opinion, the Court must first consider whether it has jurisdiction to give the opinion requested and, if so, whether there is any reason why the Court should, in the exercise of its discretion, decline to answer the request (see *Legal Consequences arising from the Policies and Practices of Israel in the Occupied Palestinian Territory, including East Jerusalem, Advisory Opinion of 19 July 2024*, para. 22; *Legal Consequences of the Separation of the Chagos Archipelago from Mauritius in 1965, Advisory Opinion, I.C.J. Reports 2019 (I)*, p. 111, para. 54).

A. Jurisdiction

38. The Court's jurisdiction to give an advisory opinion is based on Article 65, paragraph 1, of its Statute, which provides that it "may give an advisory opinion on any legal question at the request of whatever body may be authorized by or in accordance with the Charter of the United Nations to make such a request". The Court notes that, pursuant to Article 96, paragraph 1, of the Charter, the General Assembly "may request the International Court of Justice to give an advisory opinion on any legal question".

39. In accordance with the requirement in Article 96 of the Charter and Article 65 of its Statute, the Court must satisfy itself that the question on which it is requested to give its opinion is a "legal question".

40. The first question put to the Court concerns 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 (hereinafter "GHGs") for States and for present and future generations. The second question concerns 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 States, and peoples and individuals of the present and future generations affected by the adverse effects of climate change. The Court considers that these questions are legal questions.

41. The Court further notes that

> "lack of clarity in the drafting of a question does not deprive [it] of jurisdiction. Rather, such uncertainty will require clarification in interpretation, and such necessary clarifications of interpretation have frequently been given by the Court." (*Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory, Advisory Opinion, I.C.J. Reports 2004 (I)*, pp. 153-154, para. 38; *Legal Consequences arising from the Policies and Practices of Israel in the Occupied Palestinian Territory, including East Jerusalem, Advisory Opinion of 19 July 2024*, para. 29.)

42. The Court will interpret the questions put to it where necessary (see paragraphs 98-111 below).

43. In light of the above, the Court concludes that the request meets the conditions set out under the provisions of the Charter and the Statute of the Court, and therefore that it has jurisdiction to render the requested opinion.

B. Discretion

44. The fact that the Court has jurisdiction to give an advisory opinion does not mean that it is under an obligation to exercise it. As the Court has repeatedly emphasized, Article 65, paragraph 1, of the Statute "should be interpreted to mean that the Court has a discretionary power to decline to give an advisory opinion even if the conditions of jurisdiction are met" (*Legal Consequences of the Separation of the Chagos Archipelago from Mauritius in 1965, Advisory Opinion, I.C.J. Reports 2019 (I)*, p. 113, para. 63; *Legal Consequences arising from the Policies and Practices of Israel in the Occupied Palestinian Territory, including East Jerusalem, Advisory Opinion of 19 July 2024*, para. 30).

45. This discretion exists to protect the integrity of the Court's judicial function as the principal judicial organ of the United Nations (*Legal Consequences arising from the Policies and Practices of Israel in the Occupied Palestinian Territory, including East Jerusalem, Advisory Opinion of 19 July 2024*, para. 30; *Legal Consequences of the Separation of the Chagos Archipelago from Mauritius in 1965, Advisory Opinion, I.C.J. Reports 2019 (I)*, p. 113, para. 64). The Court is mindful of the fact that its answer to a request for an advisory opinion "represents its participation in the activities of the Organization, and, in principle, should not be refused" (*Interpretation of Peace Treaties with Bulgaria, Hungary and Romania, First Phase, Advisory Opinion, I.C.J. Reports 1950*, p. 71; *Legal Consequences of the Separation of the Chagos Archipelago from Mauritius in 1965, Advisory Opinion, I.C.J. Reports 2019 (I)*, p. 113, para. 65; *Legal Consequences arising from the Policies and Practices of Israel in the Occupied Palestinian Territory, including East Jerusalem, Advisory Opinion of 19 July 2024*, para. 30).

46. Thus, only "compelling reasons" may lead the Court to decline to give its opinion in response to a request falling within its jurisdiction (*Legal Consequences arising from the Policies and Practices of Israel in the Occupied Palestinian Territory, including East Jerusalem, Advisory Opinion of 19 July 2024*, para. 31; *Legal Consequences of the Separation of the Chagos Archipelago from Mauritius in 1965, Advisory Opinion, I.C.J. Reports 2019 (I)*, p. 113, para. 65).

47. The Court observes that resolution 77/276 was co-sponsored by 132 Member States of the United Nations and was adopted without a vote. This underscores the interest of Member States of the United Nations in the Court's consideration of their request.

48. The Court notes that, during the proceedings, one participant raised concerns as to whether, by responding to the questions put to it, the Court would exceed its judicial function and assume a legislative role. The Court, however, recalls that it

> "states the existing law and does not legislate. This is so even if, in stating and applying the law, the Court necessarily has to specify its scope and sometimes note its general trend." (*Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, I.C.J. Reports 1996 (I)*, p. 237, para. 18.)

49. In light of the above, the Court concludes that there is no compelling reason for it to decline to give the opinion requested by the General Assembly.

II. General context and scientific aspects

50. Having determined that it has jurisdiction and that there are no compelling reasons for it to decline to give the opinion requested by the General Assembly, the Court will now turn to the context in which resolution 77/276 was adopted, as well as to the relevant scientific background.

A. Context of the adoption of resolution 77/276

51. On 3 December 1968, the General Assembly, in its resolution 2398 (XXIII), noted, in particular, "the continuing and accelerating impairment of the quality of the human environment caused by such factors as air and water pollution, erosion and other forms of soil deterioration, waste, noise and the secondary effects of biocides", and expressed concern about "the consequent effects on the condition of man, his physical, mental and social well-being, his dignity and his enjoyment of basic human rights". Convinced of "the need for intensified action at the national, regional and international level in order to limit and, where possible, eliminate the impairment of the human environment", the General Assembly decided "to convene in 1972 a United Nations Conference on the Human Environment". The Court will mention some of the most relevant steps taken at the international level to identify risks in order to protect the climate system and other parts of the environment.

52. The United Nations Conference on the Human Environment was held in Stockholm in June 1972. It adopted the "Declaration of the United Nations Conference on the Human Environment" (hereinafter the "Stockholm Declaration"), which contains a series of principles aimed at preserving the human environment, the "Action Plan for the Human Environment", and several resolutions. The Conference called upon governments and peoples to "exert common efforts for the preservation and improvement of the human environment, for the benefit of all the people and for their posterity".

53. In February 1979, the First World Climate Conference (a conference of "experts on climate and mankind"), sponsored by the World Meteorological Organization (hereinafter "WMO"), was held in Geneva. The Declaration adopted by the Conference states that

> "we can say with some confidence that the burning of fossil fuels, deforestation, and changes of land use have increased the amount of carbon dioxide in the atmosphere by about 15 per cent during the last century and it is at present increasing by about 0.4 per cent per year. It is likely that an increase will continue in the future. Carbon dioxide plays a fundamental role in determining the temperature of the earth's atmosphere, and it appears plausible that an increased amount of carbon dioxide in the atmosphere can contribute to a gradual warming of the lower atmosphere, especially at high latitudes."

54. On 10 December 1982, the United Nations Convention on the Law of the Sea (hereinafter "UNCLOS") was opened for signature. It establishes a "legal order for the seas and oceans", and provides, *inter alia*, for the protection and preservation of the marine environment. This Convention entered into force on 16 November 1994 and currently has 170 parties.

55. In 1985, States adopted the Vienna Convention for the Protection of the Ozone Layer (hereinafter the "Ozone Layer Convention"), whose objective 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" (Article 2, paragraph 1). This Convention entered into force on 22 September 1988. It currently has 198 parties.

56. Also in 1985, the International Conference on the Assessment of the Role of Carbon Dioxide and of Other Greenhouse Gases in Climate Variations and Associated Impacts was held jointly by the United Nations Environment Programme (hereinafter "UNEP"), the WMO and the International Council for Science in Villach, Austria, with scientists from 29 countries participating. In the statement adopted at the conference, participating scientists concluded that

> "[c]limate change and sea level rises due to greenhouse gases are closely linked with other major environmental issues, such as acid deposition and threats to the Earth's ozone shield, mostly due to changes in the composition of the atmosphere by man's activities" (Report of the International Conference on Assessment of the Role of Carbon Dioxide and of Other Greenhouse Gases in Climate Variations and Associated Impacts, Villach, Austria, 9-15 October 1985, WMO — No. 661, 1986, p. 1, para. 2).

It was further pointed out that "[r]eduction of coal and oil use and energy conservation undertaken to reduce acid deposition will also reduce emissions of greenhouse gases" and that "a reduction in the release of chloro-fluorocarbons (CFCs) will help protect the ozone layer and will also slow the rate of climate change" (*ibid.*). According to the statement, these conclusions were based on the "consensus of current basic scientific understanding" that, *inter alia*, "greenhouse gases are likely to be the most important cause of climate change over the next century" (*ibid.*, p. 2). The conference recommended that a programme on climate change be promoted by governments and the scientific community.

57. In 1987, the Montreal Protocol on Substances that Deplete the Ozone Layer (hereinafter the "Montreal Protocol") was adopted by the parties to the Ozone Layer Convention. It addresses stratospheric ozone depletion by establishing progressive and time-bound phase-out obligations for the production and consumption of all the major ozone-depleting substances. This Protocol entered into force on 1 January 1989. It currently has 198 parties.

58. On 6 December 1988, the General Assembly adopted resolution 43/53, which noted with concern that the emerging evidence indicated that continued growth in atmospheric concentrations of GHGs could produce global warming. The General Assembly recognized for the first time that

"climate change is a common concern of mankind, since climate is an essential condition which sustains life on earth", adding that climate change "affects humanity as a whole and should be confronted within a global framework so as to take into account the vital interests of all mankind".

59. In the same resolution, the General Assembly endorsed the decision of the WMO and UNEP to jointly establish

> "an Intergovernmental Panel on Climate Change to provide internationally coordinated scientific assessments of the magnitude, timing and potential environmental and socio-economic impact of climate change and realistic response strategies".

60. The IPCC was created in 1988 and currently comprises 195 "Member Countries". The task of its experts is to provide guidance to governments by producing regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation. The IPCC conducts assessments every five to seven years, during which it reviews thousands of scientific papers (including the reports of the WMO, the World Health Organization (hereinafter "WHO"), the International Maritime Organization (hereinafter "IMO"), UNEP and other international organizations) to provide a comprehensive summary of the state of knowledge on climate change. Through its assessments, the IPCC identifies the strength of scientific agreement in different areas and indicates where further research is needed. The IPCC experts producing the reports are currently divided into three working groups: Working Group I deals with the physical science basis of climate change; Working Group II with climate change impacts, adaptation and vulnerability; and Working Group III with mitigation of climate change. Assessment Reports undergo extensive review by experts and governments before being accepted or adopted by the relevant Working Group or IPCC plenary session. The IPCC's findings are either formulated as statements of fact or associated with an assessed level of confidence. Each IPCC report includes a Summary for Policymakers, which is subject to line-by-line review by representatives of the IPCC's "Member Countries" at plenary sessions.

61. The First Assessment Report of the IPCC was published in 1990. The major scientific findings endorsed in that report include the following: "[e]missions resulting from human activities are substantially increasing the atmospheric concentrations of the greenhouse gases"; "[c]arbon dioxide has been responsible for over half of the enhanced greenhouse effect in the past, and is likely to remain so in the future"; and "[i]ndustrialized and developing countries have a common but varied responsibility in dealing with the problem of climate change and its adverse effects". The IPCC noted in its First Assessment Report that industrialized countries "should take the lead" because "[a] major part of emissions affecting the atmosphere at present originates in industrialized countries where the scope for change is greatest". It further noted that "[e]missions from developing countries are growing in order to meet their development requirements and thus, over time, are likely

to represent an increasingly significant percentage of global emissions". These findings were subsequently reflected to a large extent in the preamble and provisions of the United Nations Framework Convention on Climate Change (hereinafter the "UNFCCC" or "Framework Convention").

62. In June 1992, the United Nations Conference on Environment and Development, also known as the "Earth Summit", was held in Rio de Janeiro. During this Conference, two conventions were opened for signature, namely the UNFCCC and the Convention on Biological Diversity (hereinafter the "Biodiversity Convention").

63. The UNFCCC entered into force on 21 March 1994 and currently has 198 parties. This Convention sets an overall framework for intergovernmental efforts to tackle the adverse effects of climate change and acknowledges that

> "the global nature of climate change calls for the widest possible co-operation by all countries and their participation in an effective and appropriate international response, in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions" (sixth preambular paragraph).

Its objective is to "stabiliz[e] greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system . . . within a time-frame sufficient to allow ecosystems to adapt naturally to climate change" (Article 2). The Conference of the Parties (hereinafter the "COP") is the "supreme body" set up by the Framework Convention to "keep under regular review the implementation of the Convention and any related legal instruments that the Conference of the Parties may adopt, and shall make, within its mandate, the decisions necessary to promote the effective implementation of the Convention" (Article 7, paragraph 2).

64. The Biodiversity Convention entered into force on 29 December 1993 and currently has 196 parties. This Convention provides for "the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of benefits arising out of the utilization of genetic resources".

65. In June 1994, the United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (hereinafter the "Desertification Convention") was adopted. This Convention aims at protecting the climate system and other parts of the environment by preventing desertification and land degradation, and encouraging reforestation and the replenishment of GHG sinks and reservoirs. It entered into force on 26 December 1996 and currently has 197 parties.

66. On 11 December 1997, the Kyoto Protocol was adopted in order to operationalize the UNFCCC by committing developed country parties and other developed parties included in Annex I to the Framework Convention to limit and reduce GHG emissions (see paragraph 81 below) in accordance with agreed individual targets. It entered into force on 16 February 2005 and currently

has 192 parties. The Protocol provides for, *inter alia*, binding emission reduction targets to be achieved during "commitment periods", the last of which expired in 2020 (see paragraph 118 below).

67. On 3 June 2009, the General Assembly adopted resolution 63/281, in which it noted with concern that "the adverse impacts of climate change, including sea-level rise, could have possible security implications". It invited the relevant organs of the United Nations to "intensify their efforts in considering and addressing climate change, including its possible security implications". It also requested the Secretary-General to submit a comprehensive report to the General Assembly on the possible security implications of climate change. In his report dated 11 September 2009, the Secretary-General emphasized, *inter alia*, that climate change threatens food security and human health, and increases human exposure to extreme events. He noted that migration, competition over natural resources, and other coping responses of households and communities faced with climate-related threats could increase the risk of internal conflict, as well as have international repercussions. He also observed that there were implications for the rights, security and sovereignty of States due to the disappearance of territory. He further observed that the impact of climate change on shared or undemarcated international resources could have implications for international co-operation (Report of the Secretary-General on climate change and its possible security implications, 11 September 2009, UN doc. A/64/350).

68. In 2010, the COP to the UNFCCC, at its sixteenth session (COP 16), adopted the Cancun Agreements, which, among other things, discussed temperature goals, recognizing that

> "deep cuts in global greenhouse gas emissions are required according to science, and as documented in the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, with a view to reducing global greenhouse gas emissions so as to hold the increase in global average temperature below 2°C above pre-industrial levels, and that Parties should take urgent action to meet this long-term goal, consistent with science and on the basis of equity" (decision 1/CP.16, 10-11 December 2010, UN doc. FCCC/CP/2010/7/Add.1, p. 3, para. 4).

The Conference also decided that a periodic review of the adequacy of the long-term global goal described above should be

> "guided by the principles of equity, and common but differentiated responsibilities and respective capabilities and take into account, inter alia:
>
> . . . . . .
>
> [c]onsideration of strengthening the long-term global goal, referencing various matters presented by the science, including in relation to temperature rises of 1.5°C" (*ibid.*, p. 23, para. 139).

69. In 2011, the COP to the UNFCCC, at its seventeenth session (COP 17), adopted the decision to establish an Ad Hoc Working Group on the Durban Platform for Enhanced Action, which also addressed temperature goals in its preamble, noting with grave concern

> "the significant gap between the aggregate effect of Parties' mitigation pledges in terms of global annual emissions of greenhouse gases by 2020 and aggregate emission pathways consistent with having a likely chance of holding the increase in global average temperature below 2°C or 1.5°C above pre-industrial levels" (decision 1/CP.17, 11 December 2011, UN doc. FCCC/CP/2011/9/Add.1, second preambular paragraph).

70. On 12 December 2015, the COP to the UNFCCC, at its twenty-first session (COP 21), adopted the Paris Agreement, which entered into force on 4 November 2016. As of today, the Paris Agreement has 195 parties. Guided by, *inter alia*, "the principle of equity and common but differentiated responsibilities and respective capabilities, in the light of different national circumstances", this instrument "aims to strengthen the global response to the threat of climate change", including through measures designed to limit the increase in global average temperature.

71. On 29 March 2023, the General Assembly adopted resolution 77/276.

B. Relevant scientific background

72. Many participants emphasized the significant and devastating consequences they face as a result of climate change, stressing the urgent nature of the problem and the imminence of the threat it poses to their populations, territories, economies, cultural traditions and, for some, the very existence of their State. As explained further in this section, it is scientifically established that the climate system has undergone widespread and rapid changes, including, in particular, an increase in global surface temperatures, or global warming. Climate change is caused by the accumulation of certain gases in the atmosphere that trap the sun's radiation around the Earth, leading to a greenhouse warming effect. While certain GHGs occur naturally, it is scientifically established that the increase in concentration of GHGs in the atmosphere is primarily due to human activities, whether as a result of GHG emissions, including by the burning of fossil fuels, or as a result of the weakening or destruction of carbon reservoirs and sinks, such as forests and the ocean, which store or remove GHGs from the atmosphere.

73. The consequences of climate change are severe and far-reaching; they affect both natural ecosystems and human populations. Rising temperatures are causing the melting of ice sheets and glaciers, leading to sea level rise and threatening coastal communities with unprecedented flooding. Extreme weather events, such as hurricanes, droughts and heatwaves, are becoming more frequent and intense, devastating agriculture, displacing populations and exacerbating water shortages. Furthermore, the disruption of natural habitats is pushing certain species toward extinction and leading to irreversible loss of biodiversity. Human life and health are also at risk, with an increased

incidence of heat-related illnesses and the spread of climate-related diseases. These consequences underscore the urgent and existential threat posed by climate change.

74. The Court will consider these issues in more detail. In so doing, it will rely primarily on the IPCC reports, which participants agree constitute the best available science on the causes, nature and consequences of climate change. It further observes that the adverse effects of climate change on the climate system have been acknowledged by the United Nations, including UNEP, and its specialized agencies, such as the WMO, WHO and the IMO.

75. The IPCC defines the climate system as "[t]he global system consisting of five major components: the atmosphere, the hydrosphere, the cryosphere, the lithosphere and the biosphere and the interactions between them" (IPCC, 2023, *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 (hereinafter "IPCC, *Climate Change 2023: Synthesis Report*"), Annex I, Glossary (hereinafter "IPCC 2023 Glossary"), p. 122). For the purposes of this Advisory Opinion, the Court notes that this definition is substantially equivalent to that of Article 1, paragraph 3, of the UNFCCC, which defines the "climate system" as "the totality of the atmosphere, hydrosphere, biosphere and geosphere and their interactions".

76. According to the IPCC, climate change refers to

> "[a] change in the state of the climate that . . . may be due to natural internal processes or external forcings such as modulations of the solar cycles, volcanic eruptions and persistent anthropogenic changes in the composition of the atmosphere or in land use" (IPCC 2023 Glossary, p. 122).

For the purposes of this Advisory Opinion, the Court notes that this definition is consistent with that of Article 1, paragraph 2, of the UNFCCC, which characterizes climate change 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".

77. The IPCC's most recent reports were produced during the sixth assessment cycle, which was completed in March 2023 with the publication of *Climate Change 2023: Synthesis Report*. The Court observes that, in those reports, the IPCC found that widespread and rapid changes have occurred in the atmosphere, ocean, cryosphere and biosphere, and that "[h]uman-caused climate change is already affecting many weather and climate extremes in every region across the globe". The IPCC stated that this has led to "widespread adverse impacts and related losses and damages to nature and people", with vulnerable communities which have historically contributed the least to climate change being "disproportionately affected" (*Climate Change 2023: Synthesis Report*, pp. 42-51, section 2). In particular, the IPCC concluded that "[h]uman influence [is] very likely the main driver" of sea level rise since 1971 and has likely increased the chance of extreme events such as "heatwaves, heavy precipitation, droughts, and tropical cyclones" (IPCC, 2023, Summary for

Policymakers, *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 (hereinafter "IPCC, 2023 Summary for Policymakers"), p. 5, Statements A.2-A.2.1). The IPCC also concluded with high confidence that climate change has caused substantial damage and increasingly irreversible losses in ecosystems, including the loss of species and biodiversity.

78. The IPCC has determined that approximately 3.3 to 3.6 billion people are highly vulnerable to climate change. It has concluded with high to very high confidence that, in all regions, increases in extreme heat events have resulted in human mortality and morbidity, and that there is an increased incidence of climate-related diseases. Moreover, increasing weather and climate extreme events have exposed millions of people to acute food insecurity and reduced water security. Individuals' livelihoods have been affected through the destruction of homes and infrastructure, and the loss of property, income and human health.

79. The Court further notes that, according to the IPCC,

> "[h]uman 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" (IPCC, 2023 Summary for Policymakers, p. 4, Statement A.1).

80. More specifically, the IPCC has emphasized that the global surface temperature has increased faster since 1970 than in any other 50-year period over at least the last 2,000 years, that the increases in GHG concentrations in the atmosphere since around 1750 are unequivocally caused by GHG emissions from human activities (stating with high confidence that about 42 per cent of these cumulative emissions have occurred between 1990 and 2019), and that the concentrations of the three main GHGs (carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O)) are now higher than at any time in at least 800,000 years (very high confidence). It has noted that the average annual GHG emissions during 2010-2019 were higher than in any previous decade on record, and that emission reductions have been less than emission increases from rising global activity levels. The IPCC also underlined that historical contributions of GHG emissions vary substantially across regions, and that differences remain today, with the least developed countries and small island developing States having much lower per capita emissions of GHGs than the global average (IPCC, 2023 Summary for Policymakers, pp. 4-5, subsection A.1). Working Group III of the IPCC has reported specifically with respect to CO_2 emissions that "the three developing regions together contributed

28% to cumulative CO_2 FFI emissions between 1850 and 2019, whereas Developed Countries contributed 57% and Least-Developed Countries contributed 0.4%" (IPCC, 2022, *Climate Change 2022: Mitigation of Climate Change*, Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (hereinafter "IPCC, 2022 contribution of Working Group III"), p. 218).

81. The IPCC defines GHGs as being

> "[g]aseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of radiation emitted by the Earth's surface, by the atmosphere itself, and by clouds. This property causes the greenhouse effect." (IPCC 2023 Glossary, p. 124.)

According to the Panel, water vapour (H_2O), CO_2, N_2O, CH_4 and ozone (O_3) are the primary GHGs in the Earth's atmosphere. GHGs generated exclusively by human activities include sulphur hexafluoride (SF_6), hydrofluorocarbons (HFCs), chlorofluorocarbons (CFCs) and perfluorocarbons (PFCs). Several of these are also ozone-depleting. Different combinations of gases are emitted from different activities. The IPCC adds that the largest source of CO_2 is combustion of fossil fuels in energy conversion systems such as boilers in electric power plants, engines in aircraft and automobiles, and in cooking and heating within homes and businesses (approximately 64 per cent of emissions). It further observes that fossil fuels are a major source of CH_4, the second biggest contributor to global warming. Finally, the Panel states that, while most GHGs come from fossil fuel combustion, about a quarter comes from land-related activities such as agriculture (mainly CH_4 and N_2O) and deforestation (mainly CO_2), with additional emissions from industrial processes (mainly CO_2, N_2O and fluorinated gases), and municipal waste and wastewater (mainly CH_4) (IPCC, 2022 contribution of Working Group III, p. 194).

82. Furthermore, according to the IPCC,

> "[c]ontinued greenhouse gas emissions will lead to increasing global warming, with the best estimate of reaching 1.5°C in the near term [i.e. 2021-2040] in considered scenarios and modelled pathways. Every increment of global warming will intensify multiple and concurrent hazards . . . Deep, rapid, and sustained reductions in greenhouse gas emissions would lead to a discernible slowdown in global warming within around two decades, and also to discernible changes in atmospheric composition within a few years" (IPCC, 2023 Summary for Policymakers, p. 12, Statement B.1).

83. The IPCC has also concluded with "very high confidence" that risks and projected adverse impacts and related loss and damage from climate change will escalate with every increment of global warming. It added that these risks, projected adverse impacts and related loss and damage are "higher for global warming of 1.5°C than at present, and even higher at 2°C" (IPCC, 2023

Summary for Policymakers, p. 15, Statement B.2.2). Indeed, in 2018, the IPCC concluded with high confidence that "[w]arming of 1.5°C is not considered 'safe' for most nations, communities, ecosystems and sectors and poses significant risks to natural and human systems" (IPCC, 2018, *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*, Chap. 5, p. 447).

84. As mentioned above (see paragraphs 51-70), over the years, States have adopted instruments in order to protect the climate system and other parts of the environment from the adverse effects of climate change. They have, in particular, committed to take measures to mitigate and facilitate adequate adaptation to climate change (see, for example, UNFCCC, Article 4).

85. The IPCC defines mitigation as a "human intervention to reduce emissions or enhance the sinks of greenhouse gases" (IPCC 2023 Glossary, p. 126). Mitigation includes both reducing GHG emissions through measures such as transitioning away from fossil fuels and improving energy efficiency, and enhancing sinks through measures such as reforestation and reduced deforestation. The IPCC explains that global warming is more likely than not to reach 1.5°C before 2040 even under a very low GHG emissions scenario. The best estimate for global warming by 2081-2100 ranges from 1.4°C for a very low GHG emissions scenario to 4.4°C for a very high GHG emissions scenario (IPCC, 2023 Summary for Policymakers, p. 12, Statement B.1.1).

86. The IPCC defines adaptation as "the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities" (IPCC 2023 Glossary, p. 120). The IPCC noted in 2023 that adaptation options exist that are effective in reducing climate risks in certain contexts, such as the restoration of ecosystems, the creation of early warning systems, and resilience-enhancing infrastructure (IPCC, *Climate Change 2023: Synthesis Report*, pp. 55-56, section 2.2.3).

87. The IPCC notes that adaptation measures are still insufficient, that limits to adaptation have been reached in some ecosystems and regions, and that maladaptation — i.e. actions that may lead to an increased risk of adverse climate-related outcomes, increased or shifted vulnerability to climate change, more inequitable outcomes, or diminished welfare, now or in the future — is happening in some sectors and regions. The Panel adds that current global financial flows for adaptation are insufficient and constrain implementation of adaptation options, especially in developing countries (IPCC, 2023 Summary for Policymakers, pp. 8-9, subsection A.3). The IPCC further observes that adaptation options that are feasible and effective today will become constrained and less effective with increasing global warming. It adds that loss and damage will increase and that additional human and natural systems will reach adaptation limits (high confidence) (*ibid.*, p. 19,

subsection B.4). According to the Panel, climate change is a threat to "human well-being and planetary health" and there is a "rapidly closing window of opportunity to secure a liveable and sustainable future for all" (very high confidence). It adds that the choices and actions implemented between 2020 and 2030 "will have impacts now and for thousands of years" (high confidence) (*ibid.*, p. 24, Statement C.1).

III. SCOPE AND MEANING OF THE QUESTIONS POSED BY THE GENERAL ASSEMBLY

88. The Court now turns to the scope and meaning of the two questions posed by the General Assembly, and recalls that they are formulated as follows:

> "Having particular regard to the Charter of the United Nations, the International Covenant on Civil and Political Rights, the International Covenant on Economic, Social and Cultural Rights, the United Nations Framework Convention on Climate Change, the Paris Agreement, the United Nations Convention on the Law of the Sea, the duty of due diligence, the rights recognized in the Universal Declaration of Human Rights, the principle of prevention of significant harm to the environment and the duty to protect and preserve the marine environment,
>
> *(a)* What are the obligations of States under international law to ensure the protection of the climate system and other parts of the environment from anthropogenic emissions of greenhouse gases for States and for present and future generations?
>
> *(b)* What are the legal consequences under these obligations for States where they, by their acts and omissions, have caused significant harm to the climate system and other parts of the environment, with respect to:
>
> (i) States, including, in particular, small island developing States, which due to their geographical circumstances and level of development, are injured or specially affected by or are particularly vulnerable to the adverse effects of climate change?
>
> (ii) Peoples and individuals of the present and future generations affected by the adverse effects of climate change?"

89. As the Court has previously stated, it has the power to interpret the questions put to it for an advisory opinion (*Legal Consequences arising from the Policies and Practices of Israel in the Occupied Palestinian Territory, including East Jerusalem, Advisory Opinion of 19 July 2024*, para. 49). It is for the Court "to appreciate and assess the appropriateness of the formulation of the questions" (*ibid.*). If questions put to the Court are ambiguous or vague, the Court may clarify them before giving an opinion (*Interpretation of the Agreement of 25 March 1951 between the WHO and Egypt, Advisory Opinion, I.C.J. Reports 1980*, p. 87, para. 35).

90. In the present instance, the Court considers that there is no need for it to reformulate the questions submitted to it.

91. Even in cases where the questions posed do not require reformulation, the Court observes that it may "interpret the questions put to it wherever clarification may be necessary" (*Legal Consequences arising from the Policies and Practices of Israel in the Occupied Palestinian Territory, including East Jerusalem, Advisory Opinion of 19 July 2024*, para. 29). In this regard, the Court may, "where necessary, determine for itself the scope and the meaning of the questions put to it" (*ibid.*, para. 49).

92. In the present instance, since diverging views have been expressed as to the scope and meaning of the questions, the Court will examine the questions put to it in order to ascertain the precise meaning and scope to be attached to the words and expressions used therein.

A. Scope of the General Assembly's request

93. In formulating its reply to the questions, the Court must frame the material, territorial and temporal scope of its inquiry (*Legal Consequences arising from the Policies and Practices of Israel in the Occupied Palestinian Territory, including East Jerusalem, Advisory Opinion of 19 July 2024*, para. 284).

94. With regard to its material scope, the Court observes that question *(a)* posed by the General Assembly asks the Court to set forth the legal 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". Question *(b)* asks the Court to address the legal consequences under these obligations for the "acts and omissions" of States where they have caused significant harm to the climate system and other parts of the environment. In the Court's view, the two questions are interrelated and require the Court to identify the obligations of States in respect of activities that adversely affect the climate system, as well as the legal consequences arising from the breach of these obligations. In this regard, the Court is further of the view that the relevant conduct for the purposes of these advisory proceedings is not limited to conduct that, itself, directly results in GHG emissions, but rather comprises all actions or omissions of States which result in the climate system and other parts of the environment being adversely affected by anthropogenic GHG emissions. The Court considers that the material scope of its inquiry encompasses the full range of human activities that contribute to climate change as a result of the emission of GHGs, including both consumption and production activities. This interpretation is confirmed by the understanding of most of the participants that replied to the question posed by a Member of the Court concerning "the specific obligations under international law of States within whose jurisdiction fossil fuels are produced". These participants submitted that obligations pertaining to the protection of the climate system do not rest exclusively with consumers and end users, but also include activities such as ongoing production, licensing and subsidizing of fossil fuels.

95. The Court's conclusion as to the relevant conduct that falls within the material scope of the questions is further confirmed by the use of the terms "climate system" and "climate change" in the request submitted by the General Assembly. As the Court has observed above (see paragraphs 74-76), the climate system — the protection of which is the object of the obligations to be identified by the Court — and climate change have also been defined in broad terms in the reports

of the IPCC, which are referenced in the request (see General Assembly resolution 77/276, ninth preambular paragraph). The Court's inquiry must therefore have a broad material scope encompassing States' obligations concerning all actions or omissions of States, and of non-State actors within their jurisdiction or effective control, that result in the climate system and other parts of the environment being adversely affected by anthropogenic GHG emissions. In the Court's view, such a broad material scope is particularly apt when addressing legal issues pertaining to a problem of the magnitude of climate change, which the General Assembly has characterized as the "common concern of mankind" (see General Assembly resolution 43/53, 6 December 1988) and an "unprecedented challenge of civilizational proportions" (see General Assembly resolution 77/276).

96. Turning to the territorial scope of the request, it follows from the Court's conclusions on the material scope of the questions put to it that the General Assembly did not intend to impose any territorial limits to the Court's inquiry. The references in the preamble to the request to the "protection of the global climate" lead the Court to conclude that it is requested by the General Assembly to formulate its reply not in respect of any particular territory or regions, but in global terms, especially since GHG emissions are "unequivocally caused by . . . human activities" (IPCC, *Climate Change 2023: Synthesis Report*, p. 42, section 2.1), which are not territorially limited. This is to be done by determining the obligations of all States pertaining to the protection of the climate system as a whole, as well as determining the legal consequences for all States that fail to comply with these obligations.

97. With regard to the temporal scope of the request, the Court observes that diverging submissions were made by participants in connection with both questions. Participants noted that the issue of temporality pertains to question *(a)*, in so far as it concerns the crystallization and identification of obligations for States regarding the protection of the climate system from anthropogenic GHG emissions, and also to question *(b)*, since the law of State responsibility requires a determination of whether a State was bound by an international obligation "in force" when the conduct allegedly leading to the breach occurred (International Law Commission (hereinafter "ILC"), Responsibility of States for Internationally Wrongful Acts, *Yearbook of the International Law Commission*, 2001, Vol. II, Part Two (hereinafter "Articles on State Responsibility"), Article 13). The determination of when obligations arose, in the case of customary obligations, or entered into force, in the case of treaty obligations, may also be affected by other legal rules and factual questions, such as the principle of non-retroactivity enshrined in Article 28 of the Vienna Convention on the Law of Treaties of 1969 in respect of treaty obligations, the emergence of the relevant rules of customary international law, and questions of sufficient scientific understanding of the causes of climate change and its adverse effects in respect of obligations under general international law. The Court observes that while these temporal issues may be particularly relevant for an *in concreto* assessment of the responsibility of States for breaches of obligations pertaining to the protection of the climate system, the present opinion is not concerned with the invocation and determination of the responsibility of individual States or groups of States (see further consideration below at paragraphs 423-424). Rather, the present opinion considers the legal obligations of all States under question *(a)* and identifies the relevant legal régime applicable to legal consequences arising under those legal obligations in reply to question *(b)*.

B. Meaning and scope of question *(a)*

98. Turning now to the scope of question *(a)*, the Court observes that it is requested by the General Assembly to identify "the obligations of States under international law to ensure the protection of the climate system and other parts of the environment". In the Court's view, the unqualified reference to obligations "under international law" indicates the intention of the General Assembly to seek the Court's opinion on the obligations incumbent upon States under the entire corpus of international law, and not to limit the Court's reply to any particular source or area of international law. Accordingly, it falls to the Court "to state the law applicable to the factual situation referred to it by the General Assembly in its request for an advisory opinion" (*Legal Consequences of the Separation of the Chagos Archipelago from Mauritius in 1965, Advisory Opinion, I.C.J. Reports 2019 (I)*, p. 129, para. 137) and to consider all available rules of international law, in order to identify the relevant applicable law (*Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, I.C.J. Reports 1996 (I)*, p. 239, para. 23).

99. The above interpretation of the scope of the first question is confirmed by the *chapeau* to the questions, which requests the Court, when formulating its reply, to have "particular regard" to certain legal instruments, and rules and principles of international law. These legal instruments, rules and principles cover different areas of international law and are to be found in different sources. The Court must therefore pronounce on a range of legal obligations of States to protect the climate system and other parts of the environment from anthropogenic GHG emissions.

100. The Court observes that its response to question *(a)* is limited to identifying the existing obligations of States under international law to ensure the protection of the climate system and other parts of the environment from anthropogenic GHG emissions, thereby elucidating the content of these obligations, and clarifying the relationship between obligations arising from various sources of international law. This limit is inherent in the Court's judicial function because "the Court, as a court of law, cannot render judgments *sub specie legis ferendae*, or anticipate the law before the legislator has laid it down" (*Fisheries Jurisdiction (United Kingdom* v. *Iceland), Merits, Judgment, I.C.J. Reports 1974*, pp. 23-24, para. 53).

C. Meaning and scope of question *(b)*

101. The Court now turns to question *(b)*, and considers that the meaning and scope of the question rests on the interpretation of the following terms: "under these obligations"; "legal consequences"; legal consequences "for States" and with respect to States that are "specially affected"; and legal consequences with respect to "peoples and individuals".

1. "Under these obligations"

102. At the outset, the Court observes that question *(b)* is connected with question *(a)*. While in the first question the General Assembly asks the Court about "the obligations of States under international law to ensure the protection of the climate system and other parts of the environment", the second question refers back to the obligations enumerated in question *(a)*, enquiring specifically about "the legal consequences *under these obligations* for States" (emphasis added).

103. The Court considers that the use of the phrase "under these obligations" means that the legal consequences to be determined by the Court are those arising from the various obligations under international law which the Court is called upon to identify under question *(a)*.

2. "Legal consequences"

104. With regard to the term "legal consequences" contained in question *(b)*, the Court observes that, in general, legal consequences are identified and addressed through the application of the secondary rules of international law concerning the responsibility of States for internationally wrongful acts (see paragraph 3 of the general commentary, ILC Articles on State Responsibility, p. 31; see also paragraphs 407-420 below). In these proceedings, some participants argued that question *(b)* requests the Court to determine the legal consequences arising not only from internationally wrongful acts, but also from acts not prohibited by international law when such acts have caused significant damage to the climate system.

105. In the Court's view, nothing in the question indicates that the General Assembly intended to request the Court to opine on the legal consequences, if any, for injuries arising out of acts not prohibited by international law. Indeed, under the law of State responsibility, the term "legal consequences" attaches to, and flows from, the commission "of an internationally wrongful act" (see ILC Articles on State Responsibility, Article 28), and the General Assembly's request to the Court to state the "legal consequences" arising under States' "obligations" must therefore be understood to pertain to legal consequences arising from a breach of States' obligations identified under question *(a)*.

106. In this context, the Court considers that it has been requested to address legal consequences in a general manner, and that it is not called upon to identify the legal responsibility of any particular State or group of States. It also bears noting in this context that the responsibility of individual States or groups of States requires an *in concreto* assessment that must be undertaken on a case-by-case basis. In its view, the Court, in relation to question *(b)*, is only called upon, first, to establish the applicable legal framework of State responsibility in respect of States that have breached their obligations to protect the climate system, and, second, to outline in general terms the legal consequences flowing therefrom. In doing so, the Court does not prejudge the merits of any future claims that may be brought in relation to the subject-matter of the present proceedings before courts or tribunals.

3. Legal consequences "for States" and with respect to States that are "specially affected" or "are particularly vulnerable"

107. Question *(b)* (i) asks the Court to opine on the legal consequences under the identified 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 . . . States, including . . . 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".

108. The term "for States" in this context refers to States that, by their actions or omissions, may have adversely affected the climate system and other parts of the environment through GHG emissions. While some participants submitted in these proceedings that the Court may determine specific breaches of obligations by a particular State or group of States, the Court recalls that it is not called upon to determine the responsibility of any State or group of States under international law, generally or in any specific instance. Such a determination may involve complex questions regarding, *inter alia*, causation and apportionment of responsibility for harm, and can be made only by an *in concreto* assessment that is beyond the scope of these proceedings.

109. As for legal consequences with respect to certain categories of States that are "specially affected" or "are particularly vulnerable", the Court notes that the application of the rules on State responsibility under customary international law does not differ depending on the category or status of an injured State. Thus, "specially affected" States or States that are "particularly vulnerable" are in principle entitled to the same remedies as other injured States. Moreover, since, in these proceedings, the Court is not called upon to identify particular States that may have breached their relevant obligations, it follows that it is also not called upon to determine any specific legal consequences with respect to particular injured States or groups of States.

110. The Court recognizes, however, that certain States, in particular small island developing States, have faced and are likely to face greater levels of climate change-related harm owing to their geographical circumstances and level of development. As explained by the IPCC, areas at a disproportionately higher risk of harms associated with climate change include Arctic ecosystems and dryland regions, as well as small island developing States and least developed countries (IPCC, *Climate Change 2023: Synthesis Report*, p. 71, section 3.1.2). A unique situation faced by small island States and low-lying coastal States was addressed by many participants that raised concerns over issues of sea level rise, which causes the coasts of such States to recede, thereby potentially affecting the outer limits of their maritime zones or even threatening their very existence. However, in the Court's view, these matters do not fall within the scope of question *(b)*. Rather, they are governed by the relevant primary rules of international law, in particular rules concerning maritime zones and entitlements and statehood. Accordingly, these matters will be addressed in the Court's consideration of the relevant obligations of States under question *(a)* (see Part IV.E below).

4. Legal consequences with respect to "peoples and individuals"

111. The Court observes that question *(b)* (ii) enquires about the legal consequences "with respect to . . . [p]eoples and individuals of the present and future generations affected by the adverse effects of climate change". The Court considers that whether or not individuals have any entitlement to invoke the legal responsibility of States, or to make a claim in a particular circumstance involving

injury or harm arising from climate change, is dependent on the relevant primary obligations of States (see Article 33, paragraph 4 of the commentary, ILC Articles on State Responsibility, p. 95). The Court notes in this regard that certain treaties enable actors other than States, such as individuals or other private actors, to bring claims against States on the international plane. Thus, whether individuals are entitled to invoke a State's responsibility for failure to comply with obligations identified under question *(a)* depends not on the general rules on State responsibility, but on the specific treaties and other legal instruments that create procedural and substantive rights and obligations governing the relationship between the States and individuals concerned.

IV. QUESTION *(A)* PUT TO THE COURT: OBLIGATIONS OF STATES IN RESPECT OF CLIMATE CHANGE

112. Having defined the scope and meaning of the questions posed by the General Assembly, the Court will now address question *(a)*. The Court will begin by considering the law applicable to question *(a)* (Section A). It will then examine obligations of States under the climate change treaty framework (Section B), before analysing obligations of States under customary international law (Section C). The Court will then assess obligations of States under other relevant international environmental treaties (Section D), under the law of the sea (Section E), and under international human rights law (Section F).

A. Applicable law

113. In its request, the General Assembly invites the Court to have "particular regard to"

> "the Charter of the United Nations, the International Covenant on Civil and Political Rights, the International Covenant on Economic, Social and Cultural Rights, the United Nations Framework Convention on Climate Change, the Paris Agreement, the United Nations Convention on the Law of the Sea, the duty of due diligence, the rights recognized in the Universal Declaration of Human Rights, the principle of prevention of significant harm to the environment and the duty to protect and preserve the marine environment".

114. As noted above (see paragraph 99), the phrase "particular regard to", while indicating that a wide range of international legal rules and principles are potentially relevant, does not mean that the General Assembly requests the Court to address every rule of international law, including the obligations contained therein, in respect of climate change. The Court will therefore identify "the most directly relevant applicable law governing the question[s] of which it [has been] seised" (*Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, I.C.J. Reports 1996 (I)*, p. 243, para. 34). It will first identify those rules which are most directly relevant (see subsections 1-7, paragraphs 115-161, below), and thereafter determine whether any of those rules are excluded by virtue of the interpretative principle of *lex specialis* (see subsection 8, paragraphs 162-171, below).

1. Charter of the United Nations

115. The Charter of the United Nations is a pillar of contemporary international law. Its purposes include achieving international co-operation in solving international problems of an economic, social, cultural or humanitarian character (Article 1). Climate change is a global problem which manifests itself in all these and other fields of concern for the United Nations. The Charter also provides that Member States "shall act in accordance with" certain principles (Article 2), including when addressing problems of common concern, such as climate change. These principles include the fulfilment in good faith of the obligations assumed by States under the Charter. Accordingly, the Charter forms part of the most directly relevant applicable law.

2. Climate change treaties

116. The UNFCCC, the Kyoto Protocol and the Paris Agreement are the principal legal instruments regulating the international response to the global problem of climate change.

117. The UNFCCC serves a foundational and co-ordinating purpose for related legal instruments on climate change. Its "ultimate objective . . . and [that of] any related legal instruments . . . is to achieve [the] stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system" (Article 2).

118. The Kyoto Protocol of 1997 is a "related legal instrument" within the meaning of Article 2 of the UNFCCC. It pursues the object and purpose of the UNFCCC by envisaging "quantified emissions limitation and reduction commitments", the attainment of which is to be pursued by certain States (listed in Annex B) within specified "commitment periods" (Article 3). The Parties have agreed on two commitment periods (2008-2012 and 2013-2020). No further commitment period after 2020 has been agreed upon.

119. The Paris Agreement was adopted in 2015 by the COP of the UNFCCC, at its twenty-first session (COP 21), "[i]n pursuit of the objective of the Convention" (third preambular paragraph). Thus, the Paris Agreement is also a "related legal instrument" to the UNFCCC. According to its Article 2, the Paris Agreement "aims to strengthen the global response to the threat of climate change" by "enhancing the implementation of the [Framework] Convention, including its objective". Unlike the Kyoto Protocol, the Paris Agreement does not include quantified emission limitation and reduction commitments for certain States but provides for "nationally determined contributions" (hereinafter "NDCs") to the global response to climate change by all States (Article 3).

120. The UNFCCC, the Kyoto Protocol and the Paris Agreement complement each other. The Framework Convention establishes the ultimate objective as well as the basic principles and general obligations of States in respect of climate change, whereas the Kyoto Protocol and the Paris Agreement respectively translate these basic principles and general obligations into a set of more specific interrelated obligations, each of which gives expression to a broad practical approach of the

community of States parties to the problem of climate change. The Court considers that the lack of agreement on a further commitment period under the Kyoto Protocol after the adoption of the Paris Agreement does not mean that the Kyoto Protocol has been terminated. The Kyoto Protocol therefore remains part of the applicable law. The Court will return to this issue and to the relationship between the three climate change treaties more generally below (see paragraphs 187-195).

121. The Court thus concludes that the three climate change treaties, namely the UNFCCC, the Kyoto Protocol and the Paris Agreement, form part of the most directly relevant applicable law.

3. United Nations Convention on the Law of the Sea

122. The request from the General Assembly includes UNCLOS among the sources to which the Court is asked to have "particular regard".

123. The Court notes that the International Tribunal for the Law of the Sea (hereinafter "ITLOS" or the "Tribunal") rendered an advisory opinion on climate change and international law on 21 May 2024 (*Request for Advisory Opinion submitted by the Commission of Small Island States on Climate Change and International Law*; hereinafter "*Climate Change, Advisory Opinion, ITLOS Reports 2024*") which addresses the relationship between UNCLOS and climate change. The Tribunal held therein that many provisions of UNCLOS constitute obligations of States in respect of climate change (see paragraphs 337-338 below).

124. In the view of the Court, UNCLOS also forms part of the most directly relevant applicable law.

4. Other environmental treaties

125. The Court must also determine which other environmental treaties form part of the most directly relevant applicable law. Several treaties received particular attention during the proceedings and are referred to in the *chapeau* to the questions asked by the General Assembly. First among these are the ozone layer treaties, namely the Ozone Layer Convention and the Montreal Protocol. Other treaties which have been referred to are the Biodiversity Convention and the Desertification Convention.

126. The ozone layer treaties regulate an issue of common concern that is related to climate change: the protection of the atmosphere against degradation by certain anthropogenic substances. While their primary object and purpose is the protection of human health and the environment, the ozone layer treaties are closely related to the issue of climate change, particularly the Kigali amendment to the Montreal Protocol adopted on 15 October 2016 (see paragraph 324 below).

127. Article 2 of the Biodiversity Convention defines "biodiversity" as comprising not only "the variability among living organisms from all sources", but also "the ecological complexes of which they are part", meaning their ecosystems. The Court observes that, in certain instances, ecosystem protection measures may simultaneously operate as climate change mitigation or adaptation measures.

128. The preamble to the Desertification Convention refers to the UNFCCC and affirms that combating desertification has the potential to assist States in achieving the UNFCCC's objective. Article 8 addresses the Convention's interaction with the UNFCCC and the Biodiversity Convention.

129. Given their close connection with the issue of climate change and their complementary relationship, the Court considers that the ozone layer treaties, the Biodiversity Convention and the Desertification Convention form part of the most directly relevant applicable law.

130. The Court is aware that there are many other treaties which are relevant for the efforts of the international community of States to address the global problem of climate change. Such treaties have been concluded for specific sectors or within regional frameworks, and they also concern general matters such as access to information and public participation. However, the Court confines itself to examining the most directly relevant applicable law regarding climate change (see paragraph 114 above).

5. Customary international law

131. The Court turns now to consider the applicability and relevance of customary international law. In the context of climate change, *(a)* the duty to prevent significant harm to the environment requires particular attention, as does *(b)* the duty to co-operate for the protection of the environment.

(a) ***Duty to prevent significant harm to the environment***

132. Participants generally agree that States have a duty under customary international law to prevent significant harm to the environment. Indeed, the Court has recognized that "[a] State is . . . 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" (*Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, p. 56, para. 101).

133. As concerns the applicability of the duty to prevent significant harm to the environment in the context of climate change, participants expressed two positions. Most participants affirmed that this duty is applicable to climate change, relying, *inter alia*, on the general nature of the no harm principle from which the Court derived the duty to prevent significant harm to the environment

(see *Corfu Channel (United Kingdom* v. *Albania), Merits, Judgment, I.C.J. Reports 1949*, p. 22). Other participants argued that this duty does not apply in the climate change context. They maintained, *inter alia*, that it is confined to instances of direct cross-border harm, as addressed by the Court in the past, and that climate change is a process which, by its cumulative and global nature, is distinct from more specific processes resulting in transboundary harm.

134. In its Advisory Opinion on the *Legality of the Threat or Use of Nuclear Weapons*, the Court recognized that

> "[t]he existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment" (*I.C.J. Reports 1996 (I)*, pp. 241-242, para. 29).

This jurisprudence affirms that the duty to prevent significant harm to the environment is not confined to instances of direct cross-border harm and that it applies to global environmental concerns. Therefore, the customary duty to prevent significant harm to the environment also applies with respect to the climate system and other parts of the environment.

135. The duty to prevent significant harm to the environment is an obligation to act with due diligence (see *Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, pp. 55-56, para. 101, and p. 79, para. 197). As the Court has held, while an obligation to prevent "is one of conduct and not one of result, in the sense that a State cannot be under an obligation to succeed, whatever the circumstances, in preventing" harm, "the obligation of [States] is rather to employ all means reasonably available to them, so as to prevent [harm] so far as possible" (*Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina* v. *Serbia and Montenegro), Judgment, I.C.J. Reports 2007 (I)*, p. 221, para. 430).

136. The conduct required by due diligence has several elements. These elements include States taking, to the best of their ability, appropriate and, if necessary, precautionary measures, which take account of scientific and technological information, as well as relevant rules and international standards, and which vary depending on each State's respective capabilities. Other elements of the required conduct include undertaking risk assessments and notifying and consulting other States, as appropriate. The Court will address these elements more specifically below (see paragraphs 280-300).

137. The determination of what is required by due diligence ultimately "calls for an assessment *in concreto*" of what is reasonable under the specific circumstances in which a State finds itself (*Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina* v. *Serbia and Montenegro), Judgment, I.C.J. Reports 2007 (I)*, p. 221, para. 430). This does not exclude the identification of a required standard of conduct at a general level, depending on the overall character of the risk to the part of the environment in question.

This is particularly apposite with respect to climate change because the specific character of the risk of significant harm to the climate system is indisputably established. The best available science, as presented by the IPCC, confirms that cumulative GHG emissions are the primary source of risks arising from anthropogenic climate change (see paragraphs 72-87 above). All States contribute to that risk, albeit to significantly differing degrees, and all States are affected by the cumulative effects of GHG emissions, depending on their respective situations. Climate change therefore poses a quintessentially universal risk to all States. This risk is of a general and urgent character, requiring the identification of a corresponding general standard of conduct, to be applied subject to the principle of common but differentiated responsibilities and respective capabilities.

138. Under these circumstances, the Court recognizes that the standard of due diligence for preventing significant harm to the climate system is stringent (see *Climate Change, Advisory Opinion, ITLOS Reports 2024*, pp. 91-92, para. 241, pp. 92-93, para. 243, p. 94, para. 248, pp. 137-138, paras. 398-400, and pp. 152-158, para. 441). Moreover, as the Court has explained, due diligence "entails not only the adoption of appropriate rules and measures, but also a certain level of vigilance in their enforcement and the exercise of administrative control" (*Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, p. 79, para. 197). As concerns climate change, a heightened degree of vigilance and prevention is required.

139. The Court concludes that the duty of States to prevent significant environmental harm applies in the context of climate change and that this duty forms part of the most directly relevant applicable law.

(b) ***Duty to co-operate for the protection of the environment***

140. The duty to co-operate lies at the core of the Charter of the United Nations. Article 1 of the Charter commits States "[t]o achieve international co-operation in solving international problems of an economic, social, cultural, or humanitarian character". This obligation has been spelled out in the foundational "Declaration on 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) of 24 October 1970) (hereinafter the "Declaration on Friendly Relations"). The Court has held that "the adoption by States of this text affords an indication of their *opinio juris* as to customary international law" (*Military and Paramilitary Activities in and against Nicaragua (Nicaragua* v. *United States of America), Merits, Judgment, I.C.J. Reports 1986*, p. 101, para. 191). That observation also applies to the duty to co-operate in so far as it finds expression in many binding and non-binding instruments relating specifically to the environment. The duty to co-operate is a central obligation under the climate change treaties and other environmental treaties, as discussed below (see paragraphs 214-218 and 260-267). Other examples include Principle 24 of the Stockholm Declaration and Principle 7 of the Rio Declaration on Environment and Development (hereinafter the "Rio Declaration"), which both recognize co-operation as an essential element in the protection of the environment. In view of the related practice of States, the Court considers that the duty of States to co-operate for the protection of the environment is a rule whose customary character has been established (see *Climate Change, Advisory Opinion, ITLOS Reports 2024*, p. 110, para. 296; *MOX Plant (Ireland* v. *United Kingdom), Provisional Measures, Order of 3 December 2001, ITLOS Reports 2001*, p. 110, para. 82).

141. This duty to co-operate is intrinsically linked to the duty to prevent significant harm to the environment, because unco-ordinated individual efforts by States may not lead to a meaningful result. It also derives from the principle that the conservation and management of shared resources and the environment are based on shared interests and governed by the principle of good faith (see *Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, I. C.J. Reports 1996 (I)*, p. 264, para. 102; *Nuclear Tests (Australia* v. *France), Judgment, I.C.J. Reports 1974*, p. 268, para. 46).

142. For these reasons, the Court considers that the duty to co-operate for the protection of the environment forms part of customary international law and can also serve as a guiding principle for the interpretation of other rules. It forms part of the most directly relevant applicable law.

6. International human rights law

143. Participants expressed different views regarding the applicability and relevance of international human rights law for the questions posed. The Court must therefore determine whether international human rights law forms part of the most directly relevant applicable law.

144. The protection of the environment and the protection of human rights have been generally recognized as interdependent since at least the Stockholm Declaration of 1972 (see paragraphs 51-52 above and paragraph 388 below). The preamble to the Paris Agreement calls upon States, "when taking action to address climate change, . . . [to] consider their respective obligations on human rights". Regional human rights courts have also recognized the interrelationship between human rights obligations and rules concerning the protection of the natural environment (see African Court on Human and Peoples' Rights, *La LIDHO, Le MIDH, La FIDH & others* v. *Republic of Côte d'Ivoire, application 041/2016, judgment of 5 September 2023*, paras. 175-186; European Court of Human Rights, *Verein KlimaSeniorinnen Schweiz and Others* v. *Switzerland, Grand Chamber, judgment of 9 April 2024, application No. 53600/20*, paras. 436 and 542; Inter-American Court of Human Rights, *Case of La Oroya Population* v. *Peru, Preliminary Objections, Merits, Reparations and Costs, Judgment of 27 November 2023, Series C No. 511*, p. 54, para. 143), as have United Nations treaty bodies (see e.g. *Daniel Billy and others* v. *Australia (Torres Strait Islanders Petition)*, 21 July 2022, UN doc. CCPR/C/135/D/3624/2019).

145. In light of the above, the Court considers that the core human rights treaties, including the International Covenant on Economic, Social and Cultural Rights (hereinafter "ICESCR") of 16 December 1966 and the International Covenant on Civil and Political Rights

(hereinafter "ICCPR") of 16 December 1966, and the human rights recognized under customary international law form part of the most directly relevant applicable law.

7. Other principles

146. The Court must also determine whether certain other principles are part of the applicable law for the purposes of the present Advisory Opinion. Participants variously considered that the Court should address the principles of sustainable development, common but differentiated responsibilities and respective capabilities, equity, intergenerational equity, the precautionary approach or principle, and the "polluter pays" principle. Most of these principles are referred to in the UNFCCC as guiding the interpretation and implementation of the Convention and related instruments (preamble and Article 3).

(a) *Sustainable development*

147. The principle of sustainable development concerns the "need to reconcile economic development with protection of the environment" (*Gabčíkovo-Nagymaros Project (Hungary/Slovakia), Judgment, I.C.J. Reports 1997*, p. 78, para. 140). The climate change treaties describe sustainable development as a "principle" by which "the Parties shall be guided" in their actions to achieve the objective of the Convention and to implement its provisions (UNFCCC, Article 3, paragraph 4; Kyoto Protocol, Article 2, paragraph 1; and Paris Agreement, Article 2, paragraph 1). This principle has also been developed independently of treaties. For example, it plays a prominent role in the Rio Declaration (Principles 1, 4, 5, 7, 8, 9, 12, 20, 21, 22, 24 and 27) and is the focus of the Sustainable Development Goals which were adopted by the General Assembly in 2015 (General Assembly resolution 70/1 of 25 September 2015). Given its continuous and uncontested universal recognition, the Court considers that the principle of sustainable development guides the interpretation of certain treaties and the determination of rules of customary international law, including the duty to prevent significant harm to the environment and the duty to co-operate for the protection of the environment.

(b) *Common but differentiated responsibilities and respective capabilities*

148. The principle of common but differentiated responsibilities and respective capabilities is a core guiding principle for the implementation of the climate change treaties (see UNFCCC, Article 3, paragraph 1; Kyoto Protocol, Article 10; Paris Agreement, Article 2, paragraph 2, and Article 4, paragraph 3). In the view of the Court, the principle of common but differentiated responsibilities and respective capabilities reflects the need to distribute equitably the burdens of the obligations in respect of climate change, taking into account, *inter alia,* States' historical and current contributions to cumulative GHG emissions, and their different current capabilities and national circumstances, including their economic and social development. The principle of common but differentiated responsibilities and respective capabilities thus acknowledges, on the one hand, the historical responsibility of certain States and, on the other, that the measures which can be expected from all States with respect to addressing climate change are not the same.

149. The principle of common but differentiated responsibilities and respective capabilities has been affirmed by States in light of scientific findings on climate change. The IPCC recognized in its 1990 First Assessment Report that "[a] major part of emissions affecting the atmosphere at present originates in industrialized countries". This finding was endorsed in 1992 in the UNFCCC, whose preamble reads:

> "Noting that the largest share of historical and current global emissions of greenhouse gases has originated in developed countries, that per capita emissions in developing countries are still relatively low and that the share of global emissions originating in developing countries will grow to meet their social and development needs" (third preambular paragraph; see also Rio Declaration, Principle 7).

More recently, the IPCC has found that, as of 2019, approximately 58 per cent of the total amount of anthropogenic GHG emissions since the beginning of industrialization were emitted prior to 1990, whereas the remaining 42 per cent of such emissions were emitted between 1990 and 2019 (IPCC, 2023 Summary for Policymakers, p. 4, Statement A.1.3).

150. The Court thus notes that on one end of the spectrum are the most developed States which have contributed significantly to the overall amount of GHG emissions since the Industrial Revolution, and which have resources and the technical capacity to implement wide-ranging emission reductions. On the other end are those least developed States that have contributed only minimally to historical emissions and have only a limited capacity to transform their economies. In between are States that have progressed considerably in their development since the conclusion of the UNFCCC in 1992, in line with that instrument's expectation that "the share of global emissions originating in developing countries will grow to meet their social and development needs" (UNFCCC, third preambular paragraph), and some of which now contribute significantly to global GHG emissions and possess the capacity to engage in meaningful mitigation and adaptation efforts, as well as other States with significant resources and technical capabilities to contribute to addressing global climate change.

151. The principle of common but differentiated responsibilities and respective capabilities is a manifestation of the principle of equity (see paragraphs 152-154 below) and guides the interpretation of obligations under international environmental law beyond its express articulation in different treaties (see paragraphs 290-292 below; Rio Declaration, Principle 7). The principle of common but differentiated responsibilities and respective capabilities does not establish new obligations but is relevant for the interpretation of treaties and the determination of rules of customary law relating to the environment.

(c) ***Equity***

152. Many participants referred to equity, displaying different understandings of this concept. In the *Continental Shelf (Tunisia/Libyan Arab Jamahiriya)* case, in which the relevant special agreement relating to maritime delimitation called on the Court to take account of equitable principles, the Court affirmed that "[e]quity as a legal concept is a direct emanation of the idea of justice" and "the legal concept of equity is a general principle directly applicable as law" (*Judgment, I.C.J. Reports 1982*, p. 60, para. 71). At the same time, the Court held that the "[a]pplication of

equitable principles is to be distinguished from a decision *ex aequo et bono*" and noted that "when applying positive international law, a court may choose among several possible interpretations of the law the one which appears, in the light of the circumstances of the case, to be closest to the requirements of justice" (*ibid.*).

153. The function of equity as a legal principle is not to displace the law or to exceed its limits (equity *contra legem* and *extra legem*) but to derive an equitable solution as appropriate from the applicable law (equity *infra legem*). For example, as the Court observed in the *Fisheries Jurisdiction (United Kingdom* v. *Iceland)* case, in the context of a dispute under the law of the sea,

> "[i]t is not a matter of finding simply an equitable solution, but an equitable solution derived from the applicable law. As the Court stated in the *North Sea Continental Shelf* cases: '. . . it is not a question of applying equity simply as a matter of abstract justice, but of applying a rule of law which itself requires the application of equitable principles' (*I.C.J. Reports 1969*, p. 47, para. 85)." (*Fisheries Jurisdiction (United Kingdom* v. *Iceland), Merits, Judgment, I.C.J. Reports 1974*, p. 33, para. 78; see also *Frontier Dispute (Burkina Faso/Republic of Mali), Judgment, I.C.J. Reports 1986*, p. 633, para. 149.)

154. Equity in this sense is referred to in many treaties, and the Court has on several occasions taken equitable considerations into account (see e.g. *Continental Shelf (Libyan Arab Jamahiriya/Malta), Judgment, I.C.J. Reports 1985*, p. 51, para. 71; *Land, Island and Maritime Frontier Dispute (El Salvador/Honduras: Nicaragua intervening), Judgment, I.C.J. Reports 1992*, p. 514, para. 262; *Ahmadou Sadio Diallo (Republic of Guinea* v. *Democratic Republic of the Congo), Compensation, Judgment, I.C.J. Reports 2012 (I)*, p. 337, para. 33; *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua), Compensation, Judgment, I.C.J. Reports 2018 (I)*, p. 27, para. 35; *Armed Activities on the Territory of the Congo (Democratic Republic of the Congo* v. *Uganda), Reparations, Judgment, I.C.J. Reports 2022 (I)*, p. 52, paras. 106-107). Equity has the same function in the context of the obligations in respect of climate change, including those contained in the UNFCCC and the Paris Agreement.

(d) ***Intergenerational equity***

155. Many participants also invoked intergenerational equity. Although participants expressed different understandings of the concept, its relevance for the obligations in respect of climate change is undisputable. Article 3, paragraph 1, of the UNFCCC stipulates that "[t]he Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity". For its part, the preamble to the Paris Agreement states that because

> "climate change is a common concern of humankind, Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on . . . intergenerational equity".

These and other provisions echo 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" (*Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, I.C.J. Reports 1996 (I)*, p. 241, para. 29).

156. Intergenerational equity is an expression of the idea that present generations are trustees of humanity tasked with preserving dignified living conditions and transmitting them to future generations. The IPCC has underscored that the effects of global warming will cut across generations by noting that

> "[c]ontinued emissions will further affect all major climate system components, and many changes will be irreversible on centennial to millennial time scales and become larger with increasing global warming. Without urgent, effective, and equitable mitigation and adaptation actions, climate change increasingly threatens ecosystems, biodiversity, and the livelihoods, health and well-being of current and future generations (high confidence)" (IPCC, 2023 Summary for Policymakers, p. 24, Statement C.1.3).

157. In the Court's view, intergenerational equity is a manifestation of equity in the general sense and thus shares its legal significance as a guide for the interpretation of applicable rules. Accordingly, considerations of intergenerational equity must play a role *infra legem*, without displacing or exceeding the limits of the applicable law. Due regard for the interests of future generations and the long-term implications of conduct are equitable considerations that need to be taken into account where States contemplate, decide on and implement policies and measures in fulfilment of their obligations under the relevant treaties and customary international law.

(e) ***Precautionary approach or principle***

158. Many participants addressed the question of whether States are required to exercise precaution in their policies and measures regarding climate change. Principle 15 of the Rio Declaration provides that

> "[i]n order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."

The Court notes that, by virtue of Article 2 and Article 3, paragraph 3, of the UNFCCC, such measures should also be taken under the related climate change treaties.

(f) ***"Polluter pays" principle***

159. Some participants suggested that the principle referred to as "polluter pays" is part of the applicable law. This principle is not mentioned in the climate change treaties but is expressed in Principle 16 of the Rio Declaration, according to which

> "[n]ational authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment".

160. That recommendation has been followed by States in certain sector-specific treaties and various types of national legislation, mostly in the form of strict liability of private actors for specific hazardous activities. However, the principle "that the polluter should, in principle, bear the cost of pollution" is not envisaged or reflected in any of the climate change treaties. Nor has it been accepted that this principle applies directly in the relations between States without having been specified in a treaty (see *Case concerning the audit of accounts between the Netherlands and France in application of the Protocol of 25 September 1991 Additional to the Convention for the Protection of the Rhine from Pollution by Chlorides of 3 December 1976, Decision of 12 March 2004*, United Nations, *Reports of International Arbitral Awards*, Vol. XXV, p. 312, paras. 102-103; see also ILC Principles on the allocation of loss in the case of transboundary harm arising out of hazardous activities, *Yearbook of the International Law Commission*, 2006, Vol. II, Part Two, pp. 74-75, paras. 11-15). Accordingly, the Court does not consider that the "polluter pays" principle is part of the applicable law for the purposes of this Advisory Opinion. This does not preclude the possibility that forms of strict liability for hazardous acts and other kinds of acts that are not wrongful under international law are developing.

(g) *Conclusion*

161. For these reasons the Court concludes that the principles of sustainable development, common but differentiated responsibilities and respective capabilities, equity, intergenerational equity and the precautionary approach or principle are applicable as guiding principles for the interpretation and application of the most directly relevant legal rules.

8. Question of *lex specialis*

162. The Court now turns to the question of whether any of the rules identified above (see subsections 1-7, paragraphs 115-161) are excluded by virtue of the interpretative principle of *lex specialis* (see paragraph 114 above). This question concerns the relationship between the climate change treaties and other rules of international law.

163. Most participants expressed the view that while the climate change treaties may be the principal instruments relevant to answering the General Assembly's request, they form part of a broader set of rules that needs to be addressed by the Court. According to those participants, the climate change treaties do not constitute *lex specialis* in relation to other rules with respect to climate change. They refer, *inter alia*, to the preamble to General Assembly resolution 77/276 which clearly indicated that the list of instruments and rules contained in the preamble is not exhaustive. Other participants considered that the Court must focus exclusively on the climate change treaties, which constitute *lex specialis* in respect of other rules and principles, including those that are referred

to in the preamble to General Assembly resolution 77/276. In their view, the climate change treaties displace any other rules, as those treaties reflect a series of careful compromises which strike a balance among the main sets of competing considerations. According to these participants, the climate change treaties have priority over any other rule of a conventional or customary nature and cannot be superseded or altered by other sources of law.

164. When discussing the question whether the climate change treaties constitute *lex specialis*, many participants also focused on the related aspects of the relationship between the climate change treaties and other rules of international law. In that respect, various participants emphasized that, although climate change treaties are the primary source of State obligations, obligations arising from climate change treaties and obligations from other treaties and customary international law inform or support each other, or they invoked the principles of harmonious interpretation and systemic integration to that effect.

165. The Court notes at the outset that it is a generally recognized principle that, when several rules bear on a single issue, they should, to the extent possible, be interpreted so as to give rise to a single set of compatible obligations (Conclusions of the work of the ILC Study Group on the Fragmentation of International Law: Difficulties Arising from Diversification and Expansion of International Law, *Yearbook of the International Law Commission*, 2006, Vol. II, Part Two, Conclusion 4).

166. The principle of *lex specialis* is a maxim of interpretation that is used for determining which of several potentially applicable rules is to prevail or whether the rules simply coexist. It is generally accepted that, in some cases, a specific rule, or a specific set of rules, takes precedence over more general or less focused rules, while in other cases the specific rule should be seen as an elaboration of one or more general rules, the latter continuing to play an interpretative role in the background. The application of the *lex specialis* principle depends on the circumstances of each case. In the present proceedings, the different positions of participants mainly concern the question whether the set of rules contained in the climate change treaties generally takes precedence over other rules of international law.

167. The International Law Commission has explained that

> "[f]or the *lex specialis* principle to apply it is not enough that the same subject matter is dealt with by two provisions; there must be some actual inconsistency between them, or else a discernible intention that one provision is to exclude the other. Thus, the question is essentially one of interpretation." (Article 55, paragraph 4 of the commentary, ILC Articles on State Responsibility, p. 140.)

168. The Court cannot find any actual inconsistency between the provisions of the climate change treaties and other rules and principles of international law that may be relevant for the response to question *(a)*. On the contrary, the preambles of the UNFCCC and the Paris Agreement

themselves contain references to other rules and principles. The States parties to these treaties have thereby recognized that climate change constitutes a problem for whose solution other rules and principles also play a role.

169. Nor can the Court identify a discernible intention of the parties to the climate change treaties generally to displace other possibly applicable rules or principles. Such an intention may be established by the object and purpose of a treaty. However, the object and purpose of the climate change treaties does not contradict other rules or principles of international law or suggest that these treaties are intended generally to replace such other rules or principles. Even though the climate change treaties are the principal instruments addressing the global problem of climate change, it does not follow that they generally displace other rules and principles of international law.

170. There is, in particular, no indication that the climate change treaties are meant to apply while simultaneously excluding general customary international law or other treaty rules on the protection of the environment. The fact that the climate change treaties have been carefully negotiated and represent a calibrated set of interrelated rules does not, in and of itself, provide such an indication. States parties to the climate change treaties were aware of their normative context and could have expressed a possible intention to displace other rules and principles had they so wished.

171. For these reasons, the Court considers that the argument according to which the climate change treaties constitute the only relevant applicable law cannot be upheld and finds that the principle of *lex specialis* does not lead to a general exclusion by the climate change treaties of other rules of international law.

9. Conclusion

172. For the reasons given above (see paragraphs 113-171), the Court is of the view that the most directly relevant applicable law consists of the Charter of the United Nations, the UNFCCC, the Kyoto Protocol, the Paris Agreement, UNCLOS, the ozone layer treaties, the Biodiversity Convention, the Desertification Convention, the customary duty to prevent significant harm to the environment and the duty to co-operate for the protection of the environment, and international human rights law, as well as certain guiding principles for the interpretation of various applicable rules and principles (sustainable development, common but differentiated responsibilities and respective capabilities, equity, intergenerational equity, and the precautionary approach or principle).

173. The Court emphasizes that this list serves to determine only the applicable law which is most directly relevant for answering question *(a)* put to it by the General Assembly. It is without prejudice to other rules of international law that may also be relevant under various circumstances in the context of climate change. Such rules may be found, for example, in international trade law, international investment law, and international humanitarian law.

B. Obligations of States under the climate change treaty framework

1. General overview of the climate change treaties

174. The Court now turns to the obligations of States under the climate change treaty framework. As observed earlier (see paragraphs 116-121), the climate change treaty framework comprises three legally binding instruments concluded by States to address the problem of climate change caused by anthropogenic GHG emissions, namely the UNFCCC, the Kyoto Protocol and the Paris Agreement. In this section, the Court will examine the climate change treaties and certain relevant decisions of governing bodies thereunder, in order to identify and clarify the main obligations of States concerning the protection of the climate system and other parts of the environment from anthropogenic GHG emissions.

175. The Court recalls that participants made diverging submissions on the nature and scope of the legal obligations under the climate change treaty framework. At a general level, the Court observes that some participants argued that the climate change treaties establish "binding and onerous obligations on States to mitigate GHG emissions and adapt to their harmful effects", whereas others argued that the treaties were designed so as not to be onerous, or even, in some cases, binding. Another general point of disagreement between participants concerns whether certain obligations under the climate change treaties, in particular those under the Paris Agreement, are "obligations of conduct" or "obligations of result". The Court recalls that the distinction between obligations of conduct and obligations of result is a useful one which the Court has employed in the past (see *Dispute over the Status and Use of the Waters of the Silala (Chile* v. *Bolivia), Judgment, I.C.J. Reports 2022 (II)*, p. 644, para. 83; *Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, p. 77, para. 187; see also *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina* v. *Serbia and Montenegro), Judgment, I.C.J. Reports 2007 (I)*, p. 221, para. 430; see also paragraph 204). At the same time, the Court observes that the distinction is not necessarily an impermeable one, and that some obligations may exhibit characteristics of both obligations of conduct and obligations of result. Nor can it be maintained that one type of obligation is, *ipso facto*, more onerous than the other; the two types of obligations often coexist and seek to achieve the same objectives through different means. In this respect, the Court notes that not all provisions of a treaty readily lend themselves to classification as containing obligations of result or conduct, and each provision must be examined on its own terms in light of specific circumstances. The Court recalls that obligations of conduct in international environmental law entail an obligation to act with due diligence, requiring States parties "to use all the means at [their] disposal" with a view to fulfilling their international obligations (*Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, p. 56, para. 101; see paragraphs 132-139).

176. In identifying and clarifying the obligations under these treaties, the Court will apply the rules of interpretation to be found in Articles 31 to 33 of the Vienna Convention on the Law of Treaties, which also reflect customary international law (see e.g. *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (The Gambia* v. *Myanmar), Preliminary*

Objections, Judgment, I.C.J. Reports 2022 (II), p. 510, para. 87; *Question of the Delimitation of the Continental Shelf between Nicaragua and Colombia beyond 200 Nautical Miles from the Nicaraguan Coast (Nicaragua* v. *Colombia), Preliminary Objections, Judgment, I.C.J. Reports 2016 (I)*, p. 116, para. 33).

177. To recall, Article 31, paragraph 1, of the Vienna Convention on the Law of Treaties provides that "[a] treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose". Article 31, paragraph 2, sets out what is to be regarded as context. Article 31, paragraph 3, provides that there shall be taken into account, together with the context, any subsequent agreement between the parties regarding the interpretation or application of the treaty, any subsequent practice which establishes such an agreement, and any relevant rules of international law applicable in the relations between the parties (*Maritime Delimitation in the Indian Ocean (Somalia* v. *Kenya), Preliminary Objections, Judgment, I.C.J. Reports 2017*, p. 29, para. 64). These means of interpretation are to be considered by way of a single combined operation (see Articles 27 and 28, paragraph 8 of the commentary, ILC Draft Articles on the Law of Treaties, *Yearbook of the International Law Commission*, 1966, Vol. II, pp. 219-220).

178. In the process of interpretation, the Court will take into consideration the rules, principles, mechanisms and institutions established under the climate change treaties in order to identify and clarify the obligations of the parties. In this context, the key principles that permeate all three climate change treaties are those contained in Article 3 of the UNFCCC. These guiding principles are common but differentiated responsibilities and respective capabilities, the precautionary approach or principle, sustainable development, equity and intergenerational equity. The Court considered these principles in paragraphs 147 to 158 above. The Court recalls that, while these principles do not constitute standalone obligations within the climate change treaty framework, they guide the interpretation of the treaty obligations. In addition to these principles, the Court notes that under the climate change treaties, the duty to co-operate, identified above as an obligation under customary international law (see paragraphs 140-142 above), also serves as a guiding principle. Below, the Court addresses the specific manner in which these principles are incorporated in the climate change treaties.

179. The principle of common but differentiated responsibilities and respective capabilities is a cardinal principle of the climate change treaty framework, which is incorporated in several provisions of the climate change treaties (see UNFCCC, preamble, Article 3, paragraphs 1 and 2, and Article 4; Kyoto Protocol, Article 10; Paris Agreement, Article 2, paragraph 2, and Article 4, paragraphs 3, 4 and 19; see also paragraphs 148-151 above). While the UNFCCC and the Paris Agreement establish obligations on all parties, they recognize that such obligations may differ depending on parties' economic situations, their historic contribution to anthropogenic GHG emissions and their capabilities to adapt to and mitigate the adverse impacts of climate change. For instance, Article 3, paragraph 1, of the UNFCCC states that "developed country Parties should take the lead in combating climate change and the adverse effects thereof", and Article 3, paragraph 2, of the UNFCCC states that full consideration should be given to "[t]he specific needs and special circumstances of developing country Parties". Likewise, Article 4, paragraph 3, of the Paris Agreement provides that each party's NDCs must reflect its differing national circumstances and capabilities. The Kyoto Protocol's approach of requiring quantified emission limitation and reduction

commitments from developed country parties and other parties undergoing the process of transition to a market economy, but not from developing countries, is an application of the principle of common but differentiated responsibilities and respective capabilities.

180. The Court observes that the climate change treaties also incorporate the precautionary approach or principle (see paragraph 158 above). Article 3, paragraph 3, of the UNFCCC, provides that "[w]here there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures". The principle is incorporated into the Kyoto Protocol and Paris Agreement by reference (see Paris Agreement, third preambular paragraph; Kyoto Protocol, fourth preambular paragraph ("Being guided by Article 3 of the [UNFCCC]")). The Court has previously had occasion to acknowledge the possible relevance of the precautionary approach or principle in international environmental law and in the interpretation and application of treaties pertaining to environmental protection (*Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, p. 71, para. 164), and will take into account this approach or principle in interpreting and applying parties' obligations under the climate change treaties.

181. The principle of sustainable development is also incorporated in the climate change treaties as a guiding principle (Article 3, paragraph 4, of the UNFCCC; see also Article 10 of the Kyoto Protocol, Article 3 of the Paris Agreement and paragraph 147 above). As with the other principles, the Court observes that the principle of sustainable development does not in itself create specific rights and obligations for States, but informs the interpretation of the obligations under the climate change treaties.

182. Furthermore, the climate change treaties incorporate the concepts of equity and intergenerational equity. Article 3, paragraph 1, of the UNFCCC stipulates that "[t]he Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity". Both the Kyoto Protocol and the Paris Agreement are guided by these principles (see Paris Agreement, third preambular paragraph; Kyoto Protocol, fourth preambular paragraph). Additionally, these treaties contain further provisions concerning equity, such as Article 2, paragraph 2, of the Paris Agreement which states that the Agreement "will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities, in light of different national circumstances". In the context of obligations under the climate change treaty framework, the Court considers that equity and intergenerational equity are thus to be taken into account in the interpretation of the relevant treaties (see paragraphs 152-157 above).

183. The Court observes that the duty to co-operate is also identified as a principle within the climate change treaty framework and that several provisions of the UNFCCC, the Kyoto Protocol and the Paris Agreement implement this principle in different ways (UNFCCC, preamble, Article 3, paragraph 5, Article 4, paragraph 7, and Articles 5, 6 and 9; Kyoto Protocol, Articles 10, 11 and 12; Paris Agreement, Articles 5, 6, 7 and 8, Article 9, paragraph 1, Article 10, paragraphs 2 and 6, Articles 11 and 12, and Article 13, paragraphs 9 and 10). The content of the duty to co-operate under each treaty is considered below.

184. In interpreting their obligations under the climate change treaties, States also need to have recourse to the relevant decisions of the governing bodies of these treaties, which are the COP of the UNFCCC, the COP serving as the meeting of the Parties (hereinafter the "CMA") to the Kyoto Protocol and the CMA to the Paris Agreement. The Court observes that in certain circumstances the decisions of these bodies have certain legal effects. First, when the treaty so provides, the decisions of COPs may create legally binding obligations for the parties. This is the case with Article 4, paragraph 8, of the Paris Agreement which stipulates that,

> "[i]n communicating their nationally determined contributions, all Parties shall provide the information necessary for clarity, transparency and understanding in accordance with decision 1/CP.21 and any relevant decisions of the Conference of the Parties serving as the meeting of the Parties to this Agreement".

Second, decisions of these bodies may constitute subsequent agreements under Article 31, paragraph 3 *(a)*, of the Vienna Convention on the Law of Treaties, in so far as such decisions express agreement in substance between the parties regarding the interpretation of the relevant treaty, and thus are to be taken into account as means of interpreting the climate change treaties (see Conclusion 11, paragraph 38 of the commentary, ILC Conclusions on subsequent agreements and subsequent practice in relation to the interpretation of treaties, *Yearbook of the International Law Commission*, 2018, Vol. II, Part Two, pp. 73-74).

185. Thus, as indicated above (see paragraph 174), and in accordance with the meaning and scope of the questions (see paragraphs 98-100), the Court will identify the obligations of States under each treaty, in so far as they relate directly to the protection of the climate system and other parts of the environment from anthropogenic GHG emissions. In this regard, the Court observes that it is not required to address each and every obligation of the parties under the climate change treaties. Indeed, an exercise which mechanically lists the various obligations, procedural and substantive, would not assist the General Assembly, whose request in question *(a)* focuses on the obligations of States "under international law" generally. Therefore, the Court will focus its inquiry on the main obligations of States under each treaty pertaining to the obligation to protect the climate system from anthropogenic GHG emissions, which it considers may be grouped broadly into obligations of mitigation, adaptation and co-operation.

186. Accordingly, the Court is of the view that it need not address in detail provisions that exclusively deal with the institutional, methodological or procedural framework within which parties perform their treaty obligations, such as provisions addressing voting procedures, the composition of bodies established under the treaties, or participatory rights relating to those bodies. The Court is nevertheless aware of the important role of the institutional and procedural framework of the climate change treaties in the effective realization of the object and purpose of these treaties.

2. Relationship between the UNFCCC, the Kyoto Protocol and the Paris Agreement

187. Participants expressed divergent views on the relationship between the three treaties that comprise the United Nations climate change treaty framework. On this issue, the Court observes that some participants expressed the view that the *lex posterior* rule, reflected in Article 30 of the Vienna

Convention on the Law of Treaties, governs the relationship between the three climate change treaties. In this regard, it was argued that States' obligations under the Paris Agreement have replaced their obligations under the UNFCCC and the Kyoto Protocol, and that under the *lex posterior* and *lex specialis* maxims, there is a general presumption that the Paris Agreement should prevail over the other instruments in the United Nations climate change framework in the case of norm conflict.

188. The Court recalls that Article 30 of the Vienna Convention on the Law of Treaties, which governs the rights and obligations of States parties to successive treaties relating to the same subject-matter, provides in relevant part as follows:

> "2. When a treaty specifies that it is subject to, or that it is not to be considered as incompatible with, an earlier or later treaty, the provisions of that other treaty prevail.
>
> 3. When all the parties to the earlier treaty are parties also to the later treaty but the earlier treaty is not terminated or suspended in operation under article 59, the earlier treaty applies only to the extent that its provisions are compatible with those of the later treaty."

189. The Court observes that paragraphs 2 and 3 of Article 30 do not apply to the situation at hand. Paragraph 2 concerns situations where a later treaty specifies that it is "subject to" or "is not to be considered as incompatible with" an earlier or later treaty. Paragraph 3 concerns situations where "all the parties to the earlier treaty are parties also to the later treaty", which is not the situation that exists, since not all parties to the UNFCCC are also parties to the Kyoto Protocol and Paris Agreement. Moreover, with respect to the applicability of the *lex posterior* rule under customary international law, the Court observes that it is only where the treaties are incompatible, i.e. their obligations cannot be complied with simultaneously, that the later-in-time obligation will supersede the earlier obligation. The mere fact that the treaties regulate the same subject-matter does not necessarily constitute a conflict or result in one superseding the other.

190. The Court will ascertain the relationship between the treaties comprising the climate change treaty framework by assessing the compatibility of their obligations. This determination involves an interpretation of the three treaties to be carried out by applying the rules of treaty interpretation codified in Articles 31 to 33 of the Vienna Convention on the Law of Treaties.

191. Commencing its assessment with the UNFCCC, the foundational treaty to address climate change, the Court observes that the treaty itself contains provisions relevant to its relationship with the Kyoto Protocol and the Paris Agreement. Article 2 of the UNFCCC recognizes the authority of the COP of the UNFCCC to adopt "related legal instruments" in order to achieve its purposes. Article 2 further provides that the related legal instruments shall operate "in accordance with the relevant provisions of the [UNFCCC]". Additionally, Article 17 of the UNFCCC provides that "[t]he Conference of the Parties may, at any ordinary session, adopt protocols to the Convention".

192. As regards the Kyoto Protocol, the Court notes that the preamble states that the Protocol is "[i]n pursuit of the ultimate objective of the [UNFCCC] as stated in its Article 2". In addition to this recognition of its relationship to the UNFCCC, the Court observes that the Kyoto Protocol strengthened the commitments for developed countries contained in Article 4, paragraph (2) *(a)* and *(b)*, of the UNFCCC, and for other parties included in UNFCCC's Annex I, by stipulating quantified emission reduction and limitation obligations (Article 3). The Kyoto Protocol is a legally binding international agreement which operationalizes obligations under the Framework Convention by committing certain developed country parties to limit and reduce GHG emissions in accordance with agreed individual targets. The Kyoto Protocol contains its own entry into force clause and has its own participation criteria, although all parties to the Protocol are required to be parties to the UNFCCC.

193. Unlike the Kyoto Protocol, the Paris Agreement is not a protocol to the UNFCCC under Article 17 of the Framework Convention. Rather, the Paris Agreement is the outcome of a process established by decision 1/CP.17 dated 11 December 2011 of the COP to the UNFCCC (see decision 1/CP.17, Establishment of an Ad Hoc Working Group on the Durban Platform for Enhanced Action, 11 December 2011, UN doc. FCCC/CP/2011/9/Add.1). This decision, referred to as the Durban mandate for the Paris Agreement, called for the development of "a protocol, another legal instrument or an agreed outcome with legal force under the Convention applicable to all Parties" (*ibid.*, p. 2, para. 2).

194. The preamble to the Paris Agreement states that the Agreement is adopted "[i]n pursuit of the objective of the [UNFCCC], and being guided by its principles". Articles 2 and 4 of the Paris Agreement are key to determining its relationship with the UNFCCC. Article 2, paragraph 1, states that "[t]his Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change", and goes on to establish a temperature goal for the States parties to achieve. Article 4, paragraph 1, requires the States parties to aim to reach global peaking of GHG emissions "as soon as possible". These commitments and objectives, in the Court's view, are in furtherance of the UNFCCC's "ultimate objective" of "stabilization of the greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system" (UNFCCC, Article 2).

195. In the view of the Court, there is no incompatibility between the three climate change treaties. On the contrary, they are mutually supportive, with the Kyoto Protocol and Paris Agreement providing greater specification to the general obligations contained in the UNFCCC. Indeed, the UNFCCC being a "framework convention", and in view of the general character of the obligations contained therein, the subsequent decisions by the parties — including decisions adopting protocols and agreements under the UNFCCC — are intended to interpret or give substance to obligations in the UNFCCC, and not to abrogate or to modify them. Notwithstanding these observations, should there appear to be conflicts between the treaties, the Court is of the view that these should be resolved by applying the rules of treaty interpretation (see also paragraphs 310-311 below).

3. Obligations of States under the UNFCCC

196. The Court now turns to the obligations of parties under the UNFCCC and observes that the UNFCCC provides a general framework for addressing the problem of climate change caused by anthropogenic GHG emissions. In this connection, the UNFCCC addresses the full range of GHGs, with the exception of those already controlled by the Montreal Protocol (see UNFCCC, Article 4).

197. The "ultimate objective" of the UNFCCC, as set out in Article 2, is to achieve "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system", and to ensure that "[s]uch a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner". In the Court's view, this provision sets the objective "in the light of which the other [t]reaty provisions are to be interpreted and applied" (see *Oil Platforms (Islamic Republic of Iran* v. *United States of America), Preliminary Objection, Judgment, I.C.J. Reports 1996 (II)*, p. 814, para. 28).

198. In pursuit of its "ultimate objective", Article 3 of the UNFCCC calls on the parties to take into account principles such as common but differentiated responsibilities and respective capabilities, the specific needs and special circumstances of developing country parties, sustainable development and co-operation, and precautionary measures in their implementation of the Framework Convention.

199. A key feature of the Framework Convention is the distinction it draws between "developed country Parties" and "developing country Parties", which are subject to differing obligations. The Framework Convention accomplishes this by providing for specific additional obligations on certain developed country parties and other parties listed in Annex I (hereinafter "Annex I parties"). While Article 4, paragraph 1, contains "commitments" for all parties, based on their "common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances", Article 4, paragraph 2, requires Annex I parties to take the lead in combating climate change by adopting policies and measures to mitigate climate change by limiting their GHG emissions and enhancing their GHG sinks and reservoirs. Furthermore, Article 4, paragraph 3, requires developed country parties and other parties included in Annex II (hereinafter "Annex II parties") — which comprise a subset of parties contained in Annex I — to provide financial assistance and technology transfers to developing country parties. The Court will analyse these "commitments" applicable to the various categories of parties in order to determine whether they constitute "obligations of States under international law" within the meaning of question *(a)*, and, if so, the nature and scope of such obligations.

(a) *Mitigation obligations under the UNFCCC*

200. The Court considers that mitigation lies at the heart of the UNFCCC's objective, which is to stabilize GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. The Framework Convention seeks to achieve its mitigation objective in two ways: first, by limiting anthropogenic GHG emissions by sources,

and second, by preserving and enhancing sinks and reservoirs of GHGs (Article 4, paragraph 2 *(a)*). In this regard, the Court notes that a source is "any process or activity which releases a greenhouse gas, an aerosol or a precursor of a greenhouse gas into the atmosphere"; a sink is a process, activity or mechanism that removes GHGs from the atmosphere; and a reservoir is part of the climate system that enables GHGs to be stored (Article 1).

201. The main obligations under the Framework Convention concerning mitigation are to be found in Article 4, which reads in relevant part as follows:

> "1. All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, shall:
>
> *(a)* Develop, periodically update, publish and make available to the Conference of the Parties, in accordance with Article 12, national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, using comparable methodologies to be agreed upon by the Conference of the Parties;
>
> *(b)* Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change;
>
> . . . . . .
>
> *(j)* Communicate to the Conference of the Parties information related to implementation, in accordance with Article 12."

202. The Court considers that Article 4, paragraph 1, contains legally binding obligations. The ordinary meaning of the terms of the provision, including the use of the word "shall", indicates the intention of the parties to establish legally binding obligations. The context, including the establishment of a procedure for the implementation of the commitments in Article 10, paragraph 2, read with Article 12, paragraph 1, also serves to indicate that the commitments are legally binding. This interpretation is, moreover, consistent with the object and purpose of the UNFCCC as reflected in Article 2. The practice of the parties subsequent to the adoption of the UNFCCC also establishes their agreement as to this interpretation. For instance, non-Annex I parties submit biennial reports containing updates of their national inventories of GHG emissions, and Annex I parties make annual submissions of national inventory reports which contain detailed information and updates on all GHG emissions and removals.

203. The Court observes that certain obligations under Article 4, paragraph 1, such as those to develop, update, publish and make available national inventories of anthropogenic GHG emissions and removals by sinks, as set out in Article 4, paragraph 1 *(a),* and to formulate and publish national programmes, as prescribed by Article 4, paragraph 1 *(b)*, and the obligation to communicate information to the COP, as required by Article 4, paragraph 1 *(j)*, are obligations of result. These obligations require the parties to bring about a particular result and, in this instance, they also prescribe certain actions, conduct or means specifically determined by the obligation to bring about the result. Other obligations under Article 4, paragraph 1, are obligations of conduct because they do not require parties to bring about a particular result but rather require parties to use their best efforts to achieve certain results relating to mitigation. The obligation to co-operate in the development and diffusion of technologies and practices "that control, reduce or prevent anthropogenic emissions of greenhouse gases" (Article 4, paragraph 1 *(c)*) is an example of such an obligation.

204. As the Court observed in *Gabčíkovo-Nagymaros Project (Hungary/Slovakia)*, parties to a treaty may accept "obligations of conduct, obligations of performance, and obligations of result" under the same instrument (*Judgment, I.C.J. Reports 1997*, p. 77, para. 135). In the Court's view, the legal obligations under Article 4, paragraph 1, are interconnected obligations of conduct and result.

205. The Court now turns to Article 4, paragraph 2, of the Framework Convention, which reads in relevant part as follows:

> "2. The developed country Parties and other Parties included in annex I commit themselves specifically as provided for in the following:
>
> *(a)* Each of these Parties shall 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)* [E]ach of these Parties shall communicate . . . detailed information on its policies and measures referred to in subparagraph *(a)* above, as well as on its resulting projected anthropogenic emissions by sources and removals by sinks of greenhouse gases . . ., with the aim of returning individually or jointly to their 1990 levels these anthropogenic emissions of carbon dioxide and other greenhouse gases[.]
>
> . . . . . .
>
> *(e)* Each of these Parties shall:
>
> (i) coordinate as appropriate with other such Parties, relevant economic and administrative instruments developed to achieve the objective of the Convention; and

> (ii) identify and periodically review its own policies and practices which encourage activities that lead to greater levels of anthropogenic emissions of greenhouse gases not controlled by the Montreal Protocol than would otherwise occur[.]"

For the same reasons outlined in respect of commitments under Article 4, paragraph 1, the Court is of the view that the commitments in Article 4, paragraph 2, establish legally binding obligations for Annex I parties.

206. The Court observes that Article 4, paragraph 2, sets forth a number of distinct but interrelated obligations. First, it provides that each Annex I party "shall adopt" national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic GHG emissions and protecting and enhancing its GHG sinks and reservoirs (Article 4, paragraph 2 *(a)*). Second, Annex I parties are obliged to periodically communicate detailed information on such policies and measures, as well as on their resulting projected anthropogenic emissions by sources and removals by sinks of GHGs with the aim of returning individually or jointly to their 1990 levels (Article 4, paragraph 2 *(b)*). Third, there is an obligation on Annex I parties to co-ordinate as appropriate with other such parties, relevant economic and administrative instruments developed to achieve the objective of the Convention (Article 4, paragraph 2 *(e)* (i)). Finally, the Annex I parties are obliged to identify and periodically review their own policies and practices which lead to greater levels of anthropogenic GHG emissions (Article 4, paragraph 2 *(e)* (ii)).

207. Having identified the mitigation obligations of all parties (see Article 4, paragraph 1) and the mitigation obligations of Annex I parties (see Article 4, paragraph 2), the Court finds it necessary to recall that all obligations identified above are legally binding upon the parties to which they pertain, regardless of whether the obligation in question is one of result or one of conduct. As the Court has observed (see paragraph 175 above), the distinction between obligations of conduct and obligations of result is not necessarily a strict one.

208. It must be stressed that both types of obligations may result in the responsibility of a State for breach of the relevant obligation. While the issue of responsibility is addressed further under question *(b)* (see Part V below), the Court finds it useful here to note that, in the case of an obligation of conduct, a State acts wrongfully if it fails to use all means at its disposal to bring about the objective envisaged under the obligation, but will not act wrongfully if it takes all measures at its disposal with a view to fulfilling the obligation even if the desired objective is ultimately not achieved. In the case of an obligation of result, a State acts wrongfully if it fails to bring about the result required under the obligation. At the same time, it cannot be said that an obligation of result, such as an obligation to "adopt national policies and take corresponding measures on the mitigation of climate change", will be met merely by the adoption of any policies and the taking of corresponding measures. To comply with this obligation of result, the policies so adopted and the measures so taken must be such that they are able to achieve the required goal. In other words, the adoption of a policy, and the taking of related measures, as a mere formality is not sufficient to discharge the obligation of result.

(b) ***Adaptation obligations under the UNFCCC***

209. The Court observes that adapting to the adverse effects of climate change is, along with mitigation, a major area of action for parties under the Framework Convention. Adaptation is defined by the IPCC as "the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities" (IPCC 2023 Glossary, p. 120; see paragraph 86 above).

210. Several provisions of the Framework Convention refer to obligations relating to adaptation. For instance, Article 4, paragraph 1 *(b)*, of the Framework Convention provides that all parties are to "[f]ormulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to . . . facilitate adequate adaptation to climate change". Article 4, paragraph 1 *(e)*, establishes an obligation for parties to

> "[c]ooperate in preparing for adaptation to the impacts of climate change; develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas, particularly in Africa, affected by drought and desertification, as well as floods".

Article 4, paragraph 1 *(f)*, requires parties to "[t]ake climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions". It also calls on parties to "employ appropriate methods, for example impact assessments, formulated and determined nationally", with a view to minimizing adverse effects that adaptation projects or measures could have on the economy, on public health or on the quality of the environment. These provisions, like all provisions in Article 4, paragraph 1, are introduced with the term "shall" and are legally binding in nature.

211. While the aforementioned obligations pertain to all parties, Article 4, paragraph 4, of the UNFCCC provides that Annex II parties "shall" assist the developing country parties that are particularly vulnerable to the adverse effects of climate change in meeting the costs of adaptation to those adverse effects. This is a legally binding obligation on all parties that are listed in Annex II.

212. Article 4, paragraph 8, of the Convention obliges parties to give full consideration, in implementing their commitments, to

> "what actions are necessary under the Convention, including actions related to funding, insurance and the transfer of technology, to meet the specific needs and concerns of developing country Parties arising from the adverse effects of climate change and/or the impact of the implementation of response measures".

It also lists categories of countries that may be particularly affected (Article 4, paragraph 8 *(a)* to *(i)*). The Court observes that funding, insurance and the transfer of technology are three adaptation measures identified in Article 4, paragraph 8. Article 4, paragraph 9, further requires that "Parties

shall take full account of the specific needs and special situations of the least developed countries in their actions with regard to funding and transfer of technology".

213. The Court considers that the phrases "give full consideration" and "take full account" in paragraphs 8 and 9, respectively, have the effect of giving parties some discretion in the implementation of their commitments under Article 4. However, this discretion does not detract from their character as legally binding obligations. In this regard, the Court notes that there exists an institutional framework, consisting of, *inter alia*, the COP and a subsidiary body for compliance, which serves to clarify the obligations under the UNFCCC. To this end, several decisions of the COP are intended to aid in the implementation of parties' obligations under the UNFCCC and provide clarification and specification to obligations under Article 4, paragraphs 8 and 9 (see e.g. decision 3/CP.3, Implementation of Article 4, paragraphs 8 and 9, of the Convention, 11 December 1997, UN doc. FCCC/CP/1997/7/Add.1, p. 32; decision 5/CP.4, Implementation of Article 4.8 and 4.9 of the Convention (decision 3/CP.3 and Articles 2.3 and 3.14 of the Kyoto Protocol), 14 November 1998, UN doc. FCCC/CP/1998/16/Add.1, p. 17; decision 12/CP.5, Implementation of Article 4, paragraphs 8 and 9, of the Convention and matters relating to Article 3, paragraph 14, of the Kyoto Protocol, 4 November 1999, UN doc. FCCC/CP/1999/6/Add.1, p. 32; decision 5/CP.7, Implementation of Article 4, paragraph 8 and 9, of the Convention (decision 3/CP.3 and Article 2, paragraph 3, and Article 3, paragraph 14, of the Kyoto Protocol), 10 November 2001, UN doc. FCCC/CP/2001/13/Add.1, p. 32; and decision 1/CP.10, Buenos Aires programme of work on adaptation and response measures, 17-18 December 2004, UN doc. FCCC/CP/2004/10/Add.1, p. 2) (see paragraph 184 above).

(c) ***Obligations of co-operation and assistance under the UNFCCC***

214. The Court observes that the UNFCCC establishes an obligation for parties to co-operate in different areas regarding "the development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases" (Article 4, paragraph 1 *(c)*) and "the conservation and enhancement, as appropriate, of sinks and reservoirs of all greenhouse gases, including biomass, forests and oceans as well as other terrestrial, coastal and marine ecosystems" (Article 4, paragraph 1 *(d)*), as well as in relation to "adaptation to the impacts of climate change" (Article 4, paragraph 1 *(e)*). The Convention also requires co-operation in, and promotion of, "scientific, technological, technical, socioeconomic and other research" (Article 4 , paragraph 1 *(g)*, and Article 5), "exchange of relevant scientific, technological, technical, socioeconomic and legal information" (Article 4, paragraph 1 *(h)*), and co-operation "in education, training and public awareness related to climate change" (Article 4, paragraph 1 *(i)*), including by facilitating "[p]ublic participation in addressing climate change and its effects and developing adequate responses" (Article 6 *(a)* (iii)).

215. The Court considers that international co-operation is indispensable in the field of climate change, and that the customary duty to co-operate for the protection of the environment is reflected in several provisions of the climate change treaties, including the UNFCCC (see paragraphs 140-141 above and 260-267 below).

216. The rationale for co-operation in the UNFCCC may be found in the treaty's preamble, which provides that "the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response" (sixth preambular paragraph). The Court considers that paragraph 1 *(c)*, *(d)*, *(e)*, *(g)*, *(h)* and *(i)*, and paragraphs 3 to 5 of Article 4 of the UNFCCC give precise content and scope to the duty to co-operate. In the implementation of these provisions, all parties must co-operate in good faith in order to achieve the objective of each provision.

217. In Article 4, paragraphs 3 to 5, the Framework Convention provides for certain obligations for "developed country Parties and other developed Parties included in annex II" to provide financial assistance, technology transfers and other forms of support to developing country parties, especially those countries that are particularly vulnerable to the adverse effects of climate change, to assist them in meeting their commitments under the UNFCCC.

218. The duty to co-operate is an obligation of conduct, the fulfilment of which is assessed against a standard of due diligence (see paragraphs 280-300 below). Good faith co-operation in this context would entail taking into account the guidance provided by the COP decisions pertaining to financial transfers, technology transfers and capacity-building. The guidelines, frameworks and mechanisms adopted by COP decisions aid in the effective implementation of the UNFCCC's provisions. In the view of the Court, a case-by-case determination of the adequacy of current financial and technology transfer commitments is to be made by the application of the principle of good faith, which governs the duty of co-operation (see paragraph 141).

4. Obligations of States under the Kyoto Protocol

219. The Court now turns to consider the Kyoto Protocol to the UNFCCC. The Kyoto Protocol has concretized certain obligations under the UNFCCC by requiring quantified emission reduction commitments for Annex I parties listed in Annex B of the Protocol. In particular, it has established commitments for these parties to limit and reduce their GHG emissions in accordance with agreed individual targets over a first commitment period from 2008 to 2012 (Article 3, paragraph 1). A second commitment period for some States from 2013 to 2020 was adopted by the Doha Amendment to the Kyoto Protocol on 8 December 2012, and entered into force on 31 December 2020. At present, no additional commitment period beyond 2020 has been set.

220. The Kyoto Protocol specifies and strengthens the mitigation obligations under the UNFCCC. It sets binding GHG emission reduction targets for 37 developed States and economies in transition and for the European Union, which are listed in its Annex B. Over the first commitment period, which ran from 2008 to 2012, the States and entities in Annex B that were parties to the Kyoto Protocol were required to reduce emissions by an average of 5 per cent below their levels of emissions in 1990 (Article 3, paragraph 1). The Protocol also establishes a system to monitor progress made by States and entities in Annex B.

221. In the absence of a further commitment period, several participants submitted that the Kyoto Protocol is no longer relevant and need not be addressed by the Court in these proceedings. Indeed, the Protocol is not listed amongst the instruments enumerated in the *chapeau* to the questions posed by the General Assembly to which the Court was requested to have "particular regard" in formulating its reply. However, the Court notes that the absence of a new commitment period does not deprive the Kyoto Protocol of its legal effect (see paragraph 120 above). The Kyoto Protocol remains in force and its provisions may still serve as, *inter alia*, (i) interpretative aids for the identification of obligations under the climate change treaty framework and (ii) substantive provisions to assess the compliance of Annex B parties with applicable emission reduction targets, i.e. to determine whether a State, during the relevant commitment period, has complied with its emission reduction commitments. Thus, non-compliance with emission reduction commitments by a State may constitute an internationally wrongful act.

5. Obligations of States parties under the Paris Agreement

222. The Court now turns to address the obligations of States parties to the Paris Agreement.

223. The Court observes that the submissions of most participants in these proceedings centred on the Paris Agreement, which was stated to represent the most comprehensive treaty addressing the problem of climate change. Indeed, the Agreement is the most recent legally binding universal instrument addressing the issue of climate change and its provisions set out obligations relating to mitigation, adaptation, finance, technology development and transfer, transparency of action and support, and capacity-building. The object and purpose of the Paris Agreement, reflected in its Article 2, paragraph 1, is to "strengthen the global response to the threat of climate change" 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."

The Court considers that the aim of "[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 above pre-industrial levels" represent an important concretization of the Framework Convention's overall objective of averting dangerous concentrations of GHGs in the atmosphere. Article 2, paragraph 1, of the Paris Agreement confirms this relationship by stating that the temperature goal is aimed at "enhancing the implementation of the [Framework] Convention,

including its objective". Indeed, the preamble to the Paris Agreement makes clear that the Agreement is concluded "[i]n pursuit of the objective of the Convention, [and] being guided by its principles". Given the aims of the Agreement contained in Article 2, paragraph 1 *(a)* to *(c)*, as well as the Agreement's relationship with the Framework Convention, the Court considers that the obligations under the Paris Agreement that are relevant for the purposes of the Court's inquiry may be grouped together as obligations of mitigation, adaptation and co-operation, including in the fields of capacity-building and transfers of finance and technology.

(a) ***General observations***

224. As a general matter, the Court notes that while the Paris Agreement provides for limiting the global average temperature increase to well below 2°C above pre-industrial levels as a goal and 1.5°C as an additional effort, 1.5°C has become the scientifically based consensus target under the Paris Agreement. At the twenty-sixth COP, which was the third CMA to the Paris Agreement, parties "[r]ecognize[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 efforts to limit the temperature increase to 1.5°C*" (see decision 1/CMA.3, Glasgow Climate Pact, 13 November 2021, UN doc. FCCC/PA/CMA/2021/10/Add.1, p. 4, para. 21 (emphasis added)). Subsequently, at the fifth CMA, parties to the Paris Agreement reiterated this resolve and encouraged all parties to submit

> "ambitious, economy-wide emission reduction targets, covering all greenhouse gases, sectors and categories and aligned with limiting global warming to 1.5°C, as informed by the latest science, in the light of different national circumstances" (decision 1/CMA.5, Outcome of the first global stocktake, 13 December 2023, UN doc. FCCC/PA/CMA/2023/16/Add.1, p. 7, para. 39).

In the Court's view, these decisions express the agreement in substance between the parties regarding the interpretation of Articles 2 and 4 of the Paris Agreement, and thus constitute subsequent agreements in relation to the interpretation of the Paris Agreement within the meaning of Article 31, paragraph 3 *(a)*, of the Vienna Convention on the Law of Treaties (see paragraph 184 above). Accordingly, the Court considers the 1.5°C threshold to be the parties' agreed primary temperature goal for limiting the global average temperature increase under the Paris Agreement. The Court adds that this interpretation is consistent with Article 4, paragraph 1, of the Paris Agreement, which requires that mitigation measures be based on the "best available science" (see paragraph 74 above).

225. As noted above, the temperature goal in the Paris Agreement is intended to promote the overall object and purpose of the climate change treaty framework, namely "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system" (UNFCCC, Article 2). The Court considers that the Framework Convention's overall objective constitutes the object and purpose of the Paris Agreement, with the temperature goal providing a means for achieving this object and purpose.

226. The Court notes at this juncture that Article 2 of the Paris Agreement, which contains the aforementioned temperature goal, states that "[t]his Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances". There are several references to the principle of common but differentiated responsibilities and respective capabilities in the Agreement, indicating the key role that the principle plays in the interpretation of the provisions of the Agreement (see third preambular paragraph, and Article 2, paragraph 2, Article 4, paragraph 3, and Article 4, paragraph 19). However, it is observed that this principle, which also features in the Framework Convention and COP decisions, has been formulated differently in the Paris Agreement through the addition of the phrase "in the light of different national circumstances". In the view of the Court, the additional phrase does not change the core of the principle of common but differentiated responsibilities and respective capabilities; rather, it adds nuance to the principle by recognizing that the status of a State as developed or developing is not static. It depends on an assessment of the current circumstances of the State concerned. The use of the terms "will be implemented to reflect" in Article 2 generates an expectation that the Paris Agreement will be implemented by the parties in a manner that will reflect their common but differentiated responsibilities and respective capabilities in the light of different national circumstances.

227. Furthermore, the Paris Agreement contains provisions requiring developed States parties to provide support — in the form of financial resources (see Article 9), technology transfers (see Article 10) and capacity-building actions (see Article 11) — to developing States parties with respect to their mitigation and adaptation responsibilities. These provisions reflect a duty to co-operate.

228. The Court also notes that the Paris Agreement contains several obligations of conduct and obligations of result which are mutually supportive. As observed earlier, with regard to obligations of conduct under the customary duty to prevent significant harm to the environment, parties are required to act with due diligence (see paragraph 135 above). That is so because "[t]he notions of obligations 'of due diligence' and obligations 'of conduct' are connected" (*Responsibilities and obligations of States with respect to activities in the Area, Advisory Opinion, 1 February 2011, ITLOS Reports 2011*, p. 41, para. 111).

229. Thus, the compliance of parties with their obligations of conduct under the Paris Agreement is assessed on the basis of whether the party in question exercised due diligence and employed best efforts by using all the means at its disposal in the performance of that obligation (see *Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, pp. 55-56, para. 101).

(b) ***Mitigation obligations under the Paris Agreement***

230. The Court recalls that mitigation involves human intervention to reduce emissions or enhance carbon sinks (see paragraph 85 above). The Court notes that the mitigation obligations of States parties under the Paris Agreement are set out in Article 4. Paragraph 1 of that Article states that, in order to achieve the temperature goal set forth in Article 2, "Parties aim to reach a global

peaking of greenhouse gas emissions as soon as possible . . . and to undertake rapid reductions thereafter", so as to achieve net zero emissions by balancing anthropogenic GHG emissions and their removal by sinks by the second half of the century.

231. The Court observes that the achievement of the temperature goal set out in Article 2, which is referenced in Article 4, paragraph 1, as well as the aim to reach a global peaking of GHG emissions as soon as possible, are obligations addressed to all parties as a whole. Thus, the temperature goal contained in Article 2 and referenced in Article 4, paragraph 1, constitutes, in addition to the object and purpose of the Agreement, the "context" relevant for the interpretation of other obligations found elsewhere in the Paris Agreement, such as the mitigation obligations under Article 4. As noted by several participants in their response to the question put by a Member of the Court, this context, together with the ordinary meaning of the terms of the Agreement, as well as its object and purpose play an important role in the interpretation of the other provisions of the Agreement, including Article 4.

232. Article 5 of the Paris Agreement elaborates on the means of achieving the net balance between GHG emissions and carbon sinks contemplated in Article 4, paragraph 1, providing that "Parties should take action to conserve and enhance, as appropriate, sinks and reservoirs of greenhouse gases . . ., including forests". The Paris Agreement thus reinforces the obligations relating to the promotion and enhancement of carbon sinks and reservoirs set forth in Article 4 of the UNFCCC.

233. To achieve its objectives, the Paris Agreement establishes obligations concerning NDCs whereby parties outline and communicate their climate actions. Under Article 4, paragraph 2, of the Agreement each party is obligated to prepare, communicate and maintain the successive NDCs that it intends to achieve. The Court will now consider the specific mitigation obligations under the Paris Agreement.

(i) Obligation to prepare, communicate and maintain nationally determined contributions

234. The individual mitigation obligations of States are principally reflected in Article 4, paragraph 2, of the Paris Agreement which reads: "Each Party shall prepare, communicate and maintain successive nationally determined contributions that it intends to achieve. Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions." Both sentences in Article 4, paragraph 2, establish legally binding obligations upon States. The use of the prescriptive term "shall", as well as the reference to "[e]ach Party" in the first sentence and "Parties" in the second sentence, make plain that this provision sets forth two binding legal obligations which must be performed by parties individually.

235. In respect of the obligation contained in the first sentence of Article 4, paragraph 2, the Court observes that the obligation to prepare, communicate and maintain successive NDCs is procedural in nature and an obligation of result. Another obligation of result pertaining to the preparation, communication and maintenance of NDCs is found in Article 4, paragraph 9, of the

Paris Agreement, which provides that "[e]ach Party shall communicate a nationally determined contribution every five years". Similarly, Article 4, paragraph 13, provides that "Parties shall account for their nationally determined contributions", and Article 4, paragraph 12, provides that parties "shall" register them.

236. Given these obligations of result, the failure to prepare, communicate and maintain successive NDCs, to account for them and to register them would constitute a breach of the above-mentioned obligations. As the Court has observed in connection with the obligation to "adopt national policies and take corresponding measures", the mere formal preparation, communication and maintenance of successive NDCs is not sufficient to comply with the obligations under Article 4 (see paragraph 208 above). The content of the NDCs is equally relevant to determine compliance.

(ii) Content of nationally determined contributions

237. The Court now turns to the question whether the content of the NDCs is left to the discretion of each party under the scheme of the Paris Agreement. The Court recalls that some participants argued in their written and oral submissions that the content of NDCs is "self-defined" or subject to the "discretion" of the parties.

238. Whether, and the extent to which, NDCs are discretionary depends on the interpretation of Article 4, which is to be undertaken in good faith, on the basis of the ordinary meaning of the terms in Article 4, in their context and in light of the object and purpose of the Paris Agreement.

239. The Court observes that Article 4, paragraph 2, is silent on the question of the content of NDCs and the discretion afforded to each party to determine their NDCs. The provision neither sets forth requirements for the content of NDCs, nor indicates that the parties have an unfettered discretion in their preparation.

240. However, the Court notes that Article 4, paragraph 3, of the Paris Agreement sets out certain expectations and standards that apply to parties in preparing their NDCs. It reads:

> "Each Party's successive nationally determined contribution will represent a progression beyond the Party's then current nationally determined contribution and reflect its highest possible ambition, reflecting its common but differentiated responsibilities and respective capabilities, in the light of different national circumstances."

While Article 4, paragraph 3, uses the term "will", rather than the prescriptive term "shall" in relation to the content of NDCs, the Court considers that the provision is not to be read as merely hortatory, as suggested by some participants. Rather, the term "will" is used here in a prescriptive sense, reflecting the expectation that "successive nationally determined contributions will represent a progression" and "reflect [a party's] highest possible ambition", without prescribing precisely what

constitutes a progression, or what reflects a party's highest possible ambition. In these proceedings, it falls on the Court to shed light on the meaning and scope of the terms contained in Article 4, paragraph 3, thereby clarifying for parties their obligations relating to the content of their NDCs.

241. First, that "[e]ach Party's successive nationally determined contribution will represent a progression" beyond that party's current NDCs means that a party's NDCs must become more demanding over time. The existence of such standards in setting NDCs is also informed by Article 4, paragraph 2 *(a)*, of the UNFCCC, which requires developed countries to take mitigation measures, and by the customary duty to prevent significant harm to the environment, which requires States to exercise due diligence, including with respect to activities such as setting NDCs (see paragraphs 135-139 above).

242. Second, a party's NDCs must reflect "its highest possible ambition". While this term is not defined in the Paris Agreement, the Court considers that the level of ambition to be reflected in a party's NDCs has not been left entirely to the discretion of the parties. The provision, when interpreted in its context and in light of its object and purpose and the customary obligation to prevent significant harm to the environment, reveals that the content of a party's NDCs must, in fulfilment of its obligations under the Paris Agreement, be capable of making an adequate contribution to the achievement of the temperature goal. In the present instance, the relevant context is to be found, *inter alia*, in Article 3, which sets the expectation that parties are to "undertake and communicate ambitious efforts as defined in Articles 4, 7, 9, 10, 11 and 13 with the *view to achieving the purpose of this Agreement as set out in Article 2*" (emphasis added). This provision reveals the necessity for the ambition contained in a party's NDC to relate to the object and purpose of the Agreement set out in Article 2, i.e. to hold the increase in the global average temperature to below 1.5°C, which the Court has interpreted to be the primary temperature goal under the Agreement (see paragraph 224 above).

243. Additionally, Article 4, paragraph 9, provides that the NDCs must be "informed by the outcomes of the global stocktake referred to in Article 14". In this regard, the outcome of the first global stocktake, as adopted in decision 1/CMA.5 at COP 28, makes clear that "despite overall progress on mitigation, adaptation and means of implementation and support, Parties are not yet collectively on track towards achieving the purpose of the Paris Agreement and its long-term goals" (decision 1/CMA.5, 13 December 2023, UN doc. FCCC/PA/CMA/2023/16/Add.1, p. 3, para. 2). It also recognizes 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" (*ibid.*, p. 5, para. 27).

244. Further context is to be found in the transparency and content obligations prescribed under Article 4. Paragraph 8 of that Article provides that, in communicating their NDCs, parties "shall provide the information necessary for clarity, transparency and understanding in accordance with decision 1/CP.21 and any relevant decisions of the Conference of the Parties serving as the meeting

of the Parties to this Agreement". Paragraph 13 of Article 4 requires Parties to account for their NDCs and to do so in a manner that promotes "environmental integrity, transparency, accuracy, completeness, comparability and consistency" and ensures "the avoidance of double counting". In the Court's view, such transparency and accountability provisions would be meaningless if the parties had unfettered discretion in setting their NDCs.

245. In light of the above, the Court considers that the discretion of parties in the preparation of their NDCs is limited. As such, in the exercise of their discretion, parties are obliged to exercise due diligence and ensure that their NDCs fulfil their obligations under the Paris Agreement and thus, when taken together, are capable of achieving the temperature goal of limiting global warming to 1.5°C above pre-industrial levels, as well as the overall objective of the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system".

246. The Court recalls that the standard of due diligence varies depending on a range of factors (*Responsibilities and obligations of States with respect to activities in the Area, Advisory Opinion, 1 February 2011, ITLOS Reports 2011*, p. 43, para. 117). In the current context, because of the seriousness of the threat posed by climate change, the standard of due diligence to be applied in preparing the NDCs is stringent (see paragraph 138 above). This means that each party has to do its utmost to ensure that the NDCs it puts forward represent its highest possible ambition in order to realize the objectives of the Agreement.

247. The obligation to prepare and communicate NDCs capable of realizing the objectives of the Agreement applies to all parties to the Paris Agreement (see paragraph 234 above). However, consistent with the varying character of due diligence and the principle of common but differentiated responsibilities and respective capabilities, the standard to be applied when assessing the NDCs of different parties will vary depending, *inter alia*, on historical contributions to cumulative GHG emissions, and the level of development and national circumstances of the party in question. The Court recognized the relationship between the legal concept of due diligence and the national circumstances of a State in its Judgment in the case concerning *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina* v. *Serbia and Montenegro)*, where it noted that due diligence "calls for an assessment *in concreto*" and may vary depending on the circumstances of the State in question and its capacity to influence the salient acts or events (*I.C.J. Reports 2007 (I)*, p. 221, para. 430). There thus exists a link between the concept of due diligence and the principle of common but differentiated responsibilities and respective capabilities in light of different national circumstances (see paragraphs 137 above and 290-292 below).

248. This is confirmed by the Paris Agreement. Article 4, paragraph 4, provides that developed country parties "should continue taking the lead by undertaking economy-wide absolute emission reduction targets", whereas developing country parties are expected to "continue enhancing their mitigation efforts, and are encouraged to move over time towards economy-wide emission reduction or limitation targets in the light of different national circumstances". However, the obligation to prepare and communicate NDCs capable of realizing the objectives of the Paris Agreement applies

to all parties to the Agreement. This is confirmed by the "Paris Rulebook decision", which requires each party to provide information together with its NDCs on how it considers the NDCs fair and ambitious in light of its national circumstances, including in relation to "[f]airness considerations" and "equity" (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, p. 11, Annex I, paragraph 6 *(a)* and *(b)*), and how each party has addressed progression, highest possible ambition, common but differentiated responsibilities and respective capabilities in light of different national circumstances (*ibid.*, Annex I, paragraph 6 *(c)* and *(d)*).

249. In light of the foregoing, the Court concludes that, rather than being entirely discretionary as some participants argued, NDCs must satisfy certain standards under the Paris Agreement. All NDCs prepared, communicated and maintained by parties under the Paris Agreement must, when taken together, be capable of realizing the objectives of the Agreement which are set out in Article 2.

(iii) Implementation of nationally determined contributions and domestic mitigation measures

250. The Court now turns to the obligation contained in the second sentence of Article 4, paragraph 2, which provides that "Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of" their successive NDCs. Participants submitted a variety of views on this provision, with some arguing that Article 4, paragraph 2, does not establish legally binding obligations upon parties.

251. The obligation that parties "shall pursue domestic mitigation measures" is substantive in nature. The obligation is incumbent on "[p]arties", which must be read as "all parties", thus creating individual obligations for each party to the Agreement. Moreover, and as noted by most participants, the obligation to pursue domestic mitigation measures is an obligation of conduct and not an obligation of result (see *Responsibilities and obligations of States with respect to activities in the Area, Advisory Opinion, 1 February 2011, ITLOS Reports 2011*, p. 41, para. 110).

252. Accordingly, since the domestic mitigation obligations under Article 4, paragraph 2, establish an obligation of conduct, parties are required to act with due diligence in taking necessary measures to achieve the objectives set out in their successive NDCs. Thus, a party's compliance with its obligations to pursue domestic mitigation measures under Article 4, paragraph 2, is to be assessed on the basis of whether the party exercised due diligence in its efforts and in deploying appropriate means to take domestic mitigation measures, including in relation to activities carried out by private actors. Indeed, as ITLOS observed, the "obligation of due diligence is particularly relevant in a situation in which the activities in question are mostly carried out by private persons or entities" (*Climate Change, Advisory Opinion, ITLOS Reports 2024*, p. 90, para. 236).

253. What is required of parties under Article 4, paragraph 2, is not a guarantee that communicated NDCs will be achieved, but rather that they will make best efforts to obtain such a result. The Court considers that the obligation to "pursue domestic mitigation measures" that aim to achieve the objectives of their NDCs requires States to be proactive and pursue measures that are reasonably capable of achieving the NDCs set by them. These measures may include putting in place a national system, including legislation, administrative procedures and an enforcement mechanism, and exercising adequate vigilance to make such a system function effectively, with a view to achieving the objectives in their NDCs (see paragraph 136 above).

254. It bears recalling in this regard that the standard of due diligence varies depending on the particular circumstances to which the standard applies. These circumstances include the obligation in question, the level of scientific knowledge, the risk of harm and the urgency involved (see paragraphs 134-138 above). In the present instance, the Court considers that the standard of due diligence attaching to the obligation to pursue domestic mitigation measures is stringent on account of the fact that the best available science indicates that the "[r]isks and projected adverse impacts and related losses and damages from climate change escalate with every increment of global warming (very high confidence)" (IPCC, 2023 Summary for Policymakers, p. 14, Statement B.2) (see paragraphs 138 above and 258-259 below).

(c) ***Adaptation obligations under the Paris Agreement***

255. The Court observes that adaptation is one of the core objectives of the Paris Agreement, which aims to increase the parties' "ability to adapt to the adverse impacts of climate change and foster climate resilience" (Article 2, paragraph 1 *(b)*). Additionally, paragraph 4 of Article 7 of the Paris Agreement provides that "Parties recognize that the current need for adaptation is significant and that greater levels of mitigation can reduce the need for additional adaptation efforts, and that greater adaptation needs can involve greater adaptation costs". This provision reflects the understanding that parties share, and provides the context for other standard-setting provisions contained in Article 7, but does not itself create any standards or legally binding obligations. Other provisions that provide context in relation to adaptation obligations are Article 7, paragraph 2, in which parties "recognize that adaptation is a global challenge", Article 7, paragraph 5, in which parties "acknowledge that adaptation action should follow a country-driven, gender-responsive, participatory and fully transparent approach", and Article 7, paragraph 6, in which parties "recognize the importance of support for and international cooperation on adaptation efforts". These provisions do not prescribe obligations of a legally binding character for the parties, but reflect a common understanding of the parties as to the nature of the problem being addressed. In the Court's view, these provisions provide context for the interpretation of other provisions containing obligations.

256. The Court finds that specific obligations pertaining to adaptation are contained in Article 7, paragraph 9, of the Paris Agreement, which provides that "[e]ach Party shall, as appropriate, engage in adaptation planning processes and the implementation of actions, including

the development or enhancement of relevant plans, policies and/or contributions". This provision, introduced with the terms "[e]ach Party shall", imposes a legally binding obligation upon the parties to undertake adaptation planning actions.

257. While Article 7, paragraph 9, does not provide for any specific actions that parties must take, the provision does specify the types of actions and processes that parties may take to meet their obligations under this provision. These include: the "implementation of adaptation actions, undertakings and/or efforts" (Article 7, paragraph 9 *(a)*); the formulation and implementation of national adaptation plans (Article 7, paragraph 9 *(b)*); the assessment of climate change impacts and vulnerability, with a view to formulating nationally determined prioritized actions, taking into account vulnerable people, places and ecosystems (Article 7, paragraph 9 *(c)*); monitoring, evaluating and learning from adaptation plans, policies, programmes and actions (Article 7, paragraph 9 *(d)*); and building the resilience of socio-economic and ecological systems, including through economic diversification and the sustainable management of natural resources (Article 7, paragraph 9 *(e)*).

258. The Court considers that the fulfilment of adaptation obligations of parties is to be assessed against a standard of due diligence. It is therefore incumbent upon parties to enact appropriate measures (examples of which are provided in Article 7, paragraph 9) that are capable of "enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change" (Article 7, paragraph 1). In this connection, parties must use their best efforts, in line with the best available science, with a view to achieving the aforementioned objectives. In this regard, the Court observes that the IPCC noted in 2023 that adaptation is a particularly pressing challenge in responding to climate change and that adaptation options exist that are effective in reducing climate risks in certain contexts, such as restoration of ecosystems, the creation of early warning systems, and resilience-enhancing infrastructure (see IPCC, *Climate Change 2023: Synthesis Report*, pp. 55-56, section 2.2.3). These options, as well as others such as regenerative farming, crop diversification, weatherproofing of buildings, and managing land to reduce wildfire risk, implemented by parties through the deployment of appropriate measures and the exercise of best possible efforts, could, in the Court's view, meet the adaptation obligations of parties under Article 7, paragraph 9, of the Paris Agreement.

259. Finally, the Court observes that the adaptation obligations under the Paris Agreement complement the mitigation obligations in preventing and reducing the harmful consequences of climate change. This interlinkage is explicitly recognized in Article 7, paragraph 4, of the Paris Agreement, which states that "greater levels of mitigation can reduce the need for additional adaptation efforts".

(d) ***Obligations of co-operation, including financial assistance, technology transfer and capacity-building under the Paris Agreement***

260. Many participants in these proceedings submitted that the duty to co-operate, which is reflected in Article 12 of the Paris Agreement, plays an important role in the implementation of the

climate change treaties. The Court notes that the Paris Agreement establishes obligations of co-operation with respect to specific issue areas, such as adaptation, and loss and damage (Article 7, paragraphs 6 and 7; Article 8, paragraph 4). Additionally, Article 12 establishes an obligation to "cooperate in taking measures, as appropriate, to enhance climate change education, training, public awareness, public participation and public access to information".

261. As observed earlier in respect of the obligation to co-operate under the UNFCCC (see paragraphs 214-218), such obligations exist for States both under conventional international law, including Articles 7, 9 and 12 of the Paris Agreement, and customary international law. These coexisting obligations inform each other and, in the present instance, the Court considers that the customary duty to co-operate for the protection of the environment (see paragraphs 140-142 above) reinforces the treaty-based co-operation obligations under the Paris Agreement (see also paragraphs 301-308 below). Indeed, State co-operation is a paramount principle in solving global problems and "it is by co-operating that the States concerned can jointly manage the risks of damage to the environment" (*Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, p. 49, para. 77).

262. Participants made specific submissions on the scope of the obligation to co-operate through the provision of financial assistance, such as providing debt relief to developing parties. The Court notes that States are free to select the means of co-operating, as long as such means are consistent with the obligations of good faith and due diligence. The Court, therefore, does not see it as necessary to highlight one form of co-operation over another. The Court considers, however, that the principal forms of co-operation prescribed by the Paris Agreement are financial assistance, technology transfers and capacity-building. These will be examined below.

(i) Financial assistance

263. Several participants stressed the importance of accessible, fair and transparent climate finance for developing countries, arguing that developed States must provide financial resources and transfer technology to assist developing countries with their mitigation and adaptation obligations.

264. The Court observes that the Paris Agreement establishes obligations for developed States to provide financial resources to developing States, for both mitigation and adaptation. Article 4, paragraph 5, of the Paris Agreement generally requires support to be provided to developing States parties for the implementation of their mitigation obligations, recognizing that enhanced support for developing countries will allow for higher ambition. Article 9 of the Paris Agreement provides that "[d]eveloped country Parties shall provide financial resources to assist developing country Parties with respect to both mitigation and adaptation". The use of the term "shall" to introduce the obligation indicates the legally binding character of that provision. Moreover, the phrase "in continuation of their existing obligations under the Convention" is to be interpreted as a restatement of the obligation of developed country parties to provide financial resources to developing country

parties, as stipulated in Article 4, paragraph 3, of the Framework Convention. In addition to the obligations on mobilization and provision of climate finance, the Paris Agreement sets up a régime on information on climate finance in Article 9, paragraphs 5 to 7, which includes legally binding obligations for developed parties to communicate information on projected climate finance.

265. While the Paris Agreement does not specify the amount or level of financial support that must be provided, the Court considers that, in line with the customary rules of treaty interpretation, this obligation must be interpreted in light of other provisions in the Agreement, including the collective temperature goal provided for in Article 2 (see paragraph 224 above). Accordingly, parties are to implement their obligations under Article 9 in a manner and at a level that allows for the achievement of the objectives listed in Article 2. This level can be evaluated on the basis of several factors, including the capacity of developed States and the needs of developing States.

(ii) Technology development and transfer and capacity-building

266. There are several provisions of the Paris Agreement that refer to technology development and transfer. These include Article 10, paragraph 2, which incorporates an obligation for parties to "strengthen cooperative action on technology development and transfer". Article 10, paragraph 6, also requires that financial support must be provided to developing country parties for the purpose of enabling technology transfer and development.

267. Article 11 of the Paris Agreement governs capacity-building activities and encourages co-operation amongst parties to build the capacity of developing countries to implement the Agreement, in particular that of least developed countries and small island developing States. In the view of the Court, the most relevant obligations concerning capacity-building are contained in the following provisions: Article 11, paragraph 4, which requires that a party, whether developed or developing, that enhances the capacity of a developing country party "shall" fulfil the procedural obligation to communicate the relevant capacity-building actions and measures regularly; Article 11, paragraph 5, which requires that

> "[c]apacity-building activities shall be enhanced through appropriate institutional arrangements to support the implementation of this Agreement, including the appropriate institutional arrangements established under the Convention that serve this Agreement".

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268. For all these reasons, the Court considers that the climate change treaties establish stringent obligations upon States to ensure the protection of the climate system and other parts of the environment from anthropogenic GHG emissions. The UNFCCC sets the overall objective of "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent

dangerous anthropogenic interference with the climate system", without providing any specific, legally binding, quantitative goals for the achievement of that objective. Under the UNFCCC, and based on the principle of common but differentiated responsibilities and respective capabilities, all parties have an obligation to develop and report on national policies, programmes and measures to address climate change (Article 4, paragraph 1), while developed country parties and other parties identified in Annex I have additional obligations to, *inter alia*, adopt policies and take corresponding measures to limit emissions of GHGs and protect and enhance carbon sinks and reservoirs (Article 4, paragraph 2). Moreover, all parties have adaptation obligations prescribed under Article 4, paragraph 1, and developed country parties identified in Annex II, which are a subset of parties identified in Annex I, have an additional obligation to assist developing country parties in meeting the costs of adaptation (Article 4, paragraph 4). The Framework Convention also sets forth differentiated co-operation obligations regarding the development of technologies to prevent and reduce emissions of GHGs.

269. For its part, the Kyoto Protocol establishes legally binding, quantitative emissions targets for the parties listed in Annex B in pursuit of the overall objective of the UNFCCC. While there is no active commitment period at present, the treaty remains in force and relevant, including as a means for assessing the compliance of parties with their commitments during the first commitment period.

270. Most recently, the Paris Agreement sets an objective of primarily holding the increase in the global average temperature to 1.5°C above pre-industrial levels (Article 2). This "temperature goal" is a specification and quantification of the overall objective set in the UNFCCC. The salient features of the Agreement are its obligations pertaining to mitigation (Articles 3 to 6), adaptation (Article 7), loss and damage (Article 8), and co-operation in the form of finance, technology and capacity-building support (Articles 9 to 11). To comply with their mitigation obligations, all parties must take measures, in fulfilment of their obligations under the Paris Agreement, that make an adequate contribution to achieving the collective temperature goal; these measures must be reflected in parties' NDCs which must be adjusted to be more demanding every five years; and these NDCs must, when taken together, be capable of achieving the temperature goal and the purposes of the Agreement. While the scope and content of measures contained in the NDCs may vary in accordance with the means available to parties and their capabilities, parties do not enjoy unfettered discretion in the preparation of their NDCs. Each party has a due diligence obligation to do its utmost to ensure that the NDCs it puts forward represent its highest possible ambition in order to realize the objectives of the Agreement (Article 4, paragraph 2). Consequently, parties have an obligation to undertake best efforts to achieve the content of their NDCs.

C. Obligations of States under customary international law relating to climate change

271. The Court will now determine how (1) the customary duty of States to prevent significant harm to the environment and (2) the customary duty of States to co-operate for the protection of the environment are to be interpreted and applied in respect of climate change. It will then address (3) the relationship between obligations arising from treaties and those arising from customary law with regard to climate change.

1. Duty to prevent significant harm to the environment

272. The duty to prevent transboundary environmental harm was first recognized as a principle of international law in the *Trail Smelter (United States of America/Canada)* arbitration award, which stated that

> "no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence" (*Decision of 11 March 1941*, United Nations, *Reports of International Arbitral Awards*, Vol. III, p. 1965).

The Court itself then stated in *Corfu Channel (United Kingdom* v. *Albania)* that it is "every State's obligation not to allow knowingly its territory to be used for acts contrary to the rights of other States" (*Merits, Judgment, I.C.J. Reports 1949*, p. 22). The Court thereafter recognized that

> "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" (*Legality of the Threat and Use of Nuclear Weapons, Advisory Opinion, I.C.J. Reports 1996 (I)*, p. 242, para. 29),

and that the principle of prevention, as a rule of customary environmental law, obliges States

> "to use all the means at [their] disposal in order to avoid activities which take place in [their] territory, or in any area under [their] jurisdiction, causing significant damage to the environment of another State" (*Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, p. 56, para. 101; see paragraph 132 above; 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, I.C.J. Reports 2015 (II)*, p. 706, para. 104).

273. The duty to prevent significant harm to the environment also applies to the climate system, which is an integral and vitally important part of the environment and which must be protected for present and future generations (see paragraphs 73-74 above). Taking into account the above observations (see paragraphs 132-139), the Court will now address more specifically certain elements of the obligation of prevention under customary international law in the context of "protection of the climate system and other parts of the environment from anthropogenic emissions of greenhouse gases". The main elements of this duty are *(a)* the environmental harm to be prevented and *(b)* due diligence as the required standard of conduct.

(a) ***Risk of significant harm to the environment, including to the climate system***

274. For the duty to prevent to arise, there must be a risk of significant harm to the environment (*Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, pp. 55-56, 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, I.C.J. Reports 2015 (II)*, p. 711, para. 118, and p. 737, para. 217; *Dispute over the Status and Use of the Waters of the Silala (Chile* v. *Bolivia), Judgment, I.C.J. Reports 2022 (II)*, p. 648, para. 99). The Court has recognized that what constitutes a risk of significant environmental harm depends on the environmental context in which an activity is to be carried out (*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. 720-721, para. 155). States are subject to the duty to prevent significant harm either where no harm has yet been caused but the risk of future significant harm exists, or where some harm has already been caused and there exists a risk of further significant harm.

275. Whether an activity constitutes a risk of significant harm depends on "both the probability or foreseeability of the occurrence of harm and its severity or magnitude" and should therefore be "determined by, among other factors, an assessment of the risk and level of harm combined" (*Climate Change, Advisory Opinion, ITLOS Reports 2024*, p. 91, para. 239, and p. 137, para. 397). It is necessary to take into account the risks which current activities might pose in the future, including in the long term. In any case, the degree of a given risk of harm is always an important element for the application of the due diligence standard: the higher the probability and the seriousness of possible harm, the more demanding the required standard of conduct.

276. The Court is of the view that a risk of significant harm may also be present in situations where significant harm to the environment is caused by the cumulative effect of different acts undertaken by various States and by private actors subject to their respective jurisdiction or control, even if it is difficult in such situations to identify a specific share of responsibility of any particular State. States must assess the possible cumulative effects of their acts and the planned activities under their jurisdiction or control. Although such "activities may not be environmentally significant if taken in isolation, . . . they may produce significant effects if evaluated in interaction with other activities" (*Climate Change, Advisory Opinion, ITLOS Reports 2024*, p. 128, para. 365).

277. The Court notes the assessment by the IPCC that the risk of significant harm to the climate system results from the cumulative impact of various human activities (see paragraphs 77-83 above). That risk is distinct in the sense that, unlike the instances of transboundary harm, anthropogenic climate change is inherently a consequence of activities undertaken within the jurisdiction or control of all States, although individual States' historical and current contributions differ significantly. It is the sum of all activities that contribute to anthropogenic GHG emissions over time, not any specific emitting activity, which produces the risk of significant harm to the climate system. This does not mean that individual conduct leading to emissions cannot give rise to the obligation to prevent significant transboundary harm even if such activity is environmentally insignificant in isolation.

However, it means that the risk associated with climate change is a consequence of a combination of activities by different States, and that States need to avert the risk through a co-ordinated and co-operative response.

278. The determination of "significant harm to the climate system and other parts of the environment" must take into account the best available science, which is currently to be found in the reports of the IPCC. These reports identify harms associated with climate change as including sea level rise, extreme weather events and severe consequences for ecosystems and biodiversity (see IPCC, *Climate Change 2023: Synthesis Report*, pp. 46-51, section 2.1.2; see Part II.B above). Informed by the best available science and based on the above considerations, the Court considers that the adverse effects of climate change, including rising temperature levels, sea level rise, negative effects on ecosystems and biological diversity, and extreme weather events, indicate that the accumulation of GHG emissions in the atmosphere is causing significant harm to the climate system and other parts of the environment. The question whether any specific harm, or risk of harm, to a State constitutes a relevant adverse effect of climate change must be assessed *in concreto* in each individual situation or case.

279. Accordingly, the Court considers that the diffuse and multifaceted nature of various forms of conduct which contribute to anthropogenic climate change does not preclude the application of the duty to prevent significant harm to the climate system and other parts of the environment. This duty arises as a result of the general risk of significant harm to which States contribute, in markedly different ways, through the activities undertaken within their jurisdiction or control.

(b) ***Due diligence as the required standard of conduct***

280. The Court reaffirms that States must fulfil their duty to prevent significant harm to the environment by acting with due diligence. Due diligence is a standard of conduct whose content in a specific situation derives from various elements, including the circumstances of the State concerned, and which may evolve over time (see *Gabčíkovo-Nagymaros Project (Hungary/Slovakia), Judgment, I.C.J. Reports 1997*, p. 77, para. 140). The following elements are particularly relevant when it comes to determining what due diligence requires from a State in a particular situation, including in the context of climate change.

(i) Appropriate measures

281. The Court recalls that due diligence requires a State 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" (*Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, p. 56, para. 101). This means that States must

> "put in place a national system, including legislation, administrative procedures and an enforcement mechanism necessary to regulate the activities in question, and . . . exercise adequate vigilance to make such a system function efficiently, with a view to achieving the intended objective" (*Climate Change, Advisory Opinion, ITLOS Reports 2024*, p. 89, para. 235).

282. As far as climate change is concerned, such appropriate rules and measures include, but are not limited to, regulatory mitigation mechanisms that are designed to achieve the deep, rapid, and sustained reductions of GHG emissions that are necessary for the prevention of significant harm to the climate system. Adaptation measures reduce the risk of significant harm occurring and are therefore also relevant for assessing whether a State is fulfilling its customary obligations with due diligence. These rules and measures must regulate the conduct of public and private operators within the States' jurisdiction or control and be accompanied by effective enforcement and monitoring mechanisms to ensure their implementation.

(ii) Scientific and technological information

283. The Court considers that the availability of, and the need to acquire and analyse scientific and technological information is another important factor. Scientific information may provide the necessary evidence to assess the probability and seriousness of possible harm, informing the required standard of due diligence. Thus, where there is generally recognized scientific evidence that it is highly probable that significant harm will occur, the standard of due diligence will be more demanding for all States (see paragraph 138 above). Due diligence also requires States to actively pursue the scientific information necessary for them to assess the probability and seriousness of harm, in conformity with the common but differentiated responsibilities and respective capabilities principle. On the other hand, where a State lacks the capacity to access and properly act on relevant scientific information, including when a State lacks necessary resources, failure to take appropriate preventive measures may not constitute a lack of due diligence.

284. The standard of due diligence may also become more demanding in the light of new scientific or technological knowledge. The Court is aware that scientific research on climate change is well developed. In this regard, reports by the IPCC constitute comprehensive and authoritative restatements of the best available science about climate change at the time of their publication (see paragraphs 74, 77-83 and 277-279 above).

285. As concerns technical knowledge, the Court notes that States need to pursue technical co-operation and knowledge-sharing initiatives. This reflects both the scientific complexity of climate change and its status as an issue of common concern. Adaptation and mitigation measures available to States — and their ability to contribute to the prevention of significant harm — depend on the

sharing of information. This also serves to minimize the possibility that a particular adaptation or mitigation measure itself poses a risk of significant transboundary harm.

286. Further, the availability of technological means to prevent or mitigate relevant harm influences what can reasonably be expected of a State. Where a risk can be addressed with readily available technologies, States are expected to use them. However, when technologies pose further risks, States are expected to use them with prudence and caution. In that context, the cost of the relevant technologies may be a crucial factor in determining what can reasonably be expected of a State, depending on its capabilities.

(iii) Relevant international rules and standards

287. The Court's finding that "[i]n order to evaluate environmental risks, current standards must be taken into consideration" also applies to the determination of the required due diligence in respect of climate change (see *Gabčíkovo-Nagymaros Project (Hungary/Slovakia), Judgment, I.C.J. Reports 1997*, p. 77, para. 140; *Climate Change, Advisory Opinion, ITLOS Reports 2024*, p. 107, para. 285). Current standards may arise from binding and non-binding norms. Such standards may therefore not only be contained in treaties and in customary international law, but they may also be reflected in certain decisions of the COPs to the climate change treaties and in recommended technical norms and practices, as appropriate.

288. Several participants emphasized the role of COP decisions. Apart from the relevance of such decisions in connection with the interpretation and implementation of climate change treaties (see paragraph 184 above), the Court considers that COP decisions may also be relevant for the identification of customary international law, in so far as they reflect State practice and if they express an *opinio juris* of States. Whether a particular COP decision has such legal significance can only be determined *in concreto*.

289. The general duty to prevent significant harm to the environment consists of substantive elements (e.g. the obligation to take appropriate measures) and procedural elements (e.g. the obligation to notify and consult), through both of which States fulfil their duty of due diligence in preventing significant transboundary environmental harm (see *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. 706, para. 104). However, as the Court has observed, there is "a functional link, in regard to prevention, between the two categories of obligations" which "does not prevent . . . States parties from being required to answer for those obligations separately" (see *Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, p. 49, para. 79).

(iv) Different capabilities

290. The Court considers that the obligation of a State "to use all the means at its disposal" to prevent significant harm to the environment (*Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, p. 56, 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, I.C.J. Reports 2015 (II)*, p. 706, para. 104) implies that the capabilities of a State are a key factor, as reflected in the principle of common but differentiated responsibilities and respective capabilities, for the determination of the applicable standard of due diligence in a particular situation. In the view of the Court, when determining the appropriate measures to be adopted by a State, the principle of common but differentiated responsibilities and respective capabilities must be taken into account.

291. Accordingly, as the ILC has noted with respect to general international law, it is "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" (see commentary to Article 3, ILC Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, *Yearbook of the International Law Commission*, 2001, Vol. II, Part Two, p. 155, para. 17). Similarly, in the context of UNCLOS, ITLOS has recognized that the implementation of the obligation to prevent harm to the marine environment "requires a State with greater capabilities and sufficient resources to do more than a State not so well placed" (*Climate Change, Advisory Opinion, ITLOS Reports 2024*, p. 92, para. 241). Implementing the obligation of due diligence requires even the latter State to take all the means at its disposal to protect the climate system in accordance with its capabilities and available resources. This understanding finds expression in the common but differentiated responsibilities and respective capabilities principle, which is implicit in many rules of international environmental law (see paragraphs 148-151 above).

292. While developed States, in the context of climate change, must take more demanding measures to prevent environmental harm and must satisfy a more demanding standard of conduct, the standard required in each case ultimately depends on the specific situation of each State, namely "all the means at its disposal" (see *Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, p. 56, para. 101). The difference between the respective capabilities of States, as one of the factors which determines the diligence required, cannot therefore merely result from a distinction between developed and developing countries, but must also depend on their respective national circumstances. The multifactorial and evolutive character of the due diligence standard entails that, as States develop economically and their capacity increases, so too are the requirements of diligence heightened. Finally, the reference to available means and capabilities cannot justify undue delay or a general exemption from the obligation to exercise due diligence.

(v) Precautionary approach or principle and respective measures

293. Scientific information regarding the probability and the seriousness of possible harm informs the required standard of due diligence (see paragraph 283 above). States are required to

take appropriate measures to prevent significant harm where reliable scientific evidence of a risk of significant harm exists. However, States should also not refrain from or delay taking actions of prevention in the face of scientific uncertainty. According to Principle 15 of the Rio Declaration, where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation (see also Article 3, paragraph 3, of the UNFCCC).

294. The Court agrees with the conclusion reached by ITLOS that "where there are plausible indications of potential risks", a State "would not meet its obligation of due diligence if it disregarded those risks" and, in that sense, the "precautionary approach is also an integral part of the general obligation of due diligence" under the duty to prevent significant harm to the environment (*Responsibilities and obligations of States with respect to activities in the Area, Advisory Opinion, 1 February 2011, ITLOS Reports 2011*, p. 46, para. 131). Based on the above, the Court considers that the precautionary approach or principle, where applicable, guides States in the determination of the required standard of conduct in fulfilling their customary duty to prevent significant harm.

(vi) Risk assessment and environmental impact assessment

295. The duty to exercise due diligence in preventing significant harm to the environment requires States to take not only substantive measures, but also certain procedural steps. These procedural obligations are distinct from the obligations to take substantive measures to prevent risks.

296. The Court has noted with respect to a proposed industrial activity affecting a shared resource in a transboundary context that "due diligence, and the duty of vigilance and prevention which it implies, would not be considered to have been exercised, if a party . . . did not undertake an environmental impact assessment of the potential effects" of activities that "may have a significant adverse impact in a transboundary context" (*Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, p. 83, para. 204). The Court has recognized with respect to such situations that "it may now be considered a requirement under general international law to undertake an environmental impact assessment" (*ibid.*) and that the "[principle] underlying" this obligation applies not only to industrial activities but "generally to proposed activities which may have a significant adverse impact in a transboundary context" (*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. 706, para. 104).

297. The Court therefore considers that the requirement to undertake an environmental impact assessment (hereinafter "EIA") in cases of proposed industrial activities in a transboundary context is an expression of a more general rule requiring the assessment of risks to the environment. Since customary international law does not "specify the scope and content of an environmental assessment" (*Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, p. 83,

para. 205) and given the multifaceted and contextual character of the due diligence standard, any EIA for the purpose of preventing significant harm to the climate system needs to take the specific character of the respective risk into account.

298. The Court recalls that

> "[d]etermination of the content of the environmental impact assessment should be made in light of the specific circumstances of each case . . .:
>
> > 'it is for each State to determine in its domestic legislation or in the authorization process for the project, the specific content of the environmental impact assessment required in each case, having regard to the nature and magnitude of the proposed development and its likely adverse impact on the environment as well as to the need to exercise due diligence in conducting such an assessment'" (*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, citing *Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), I.C.J. Reports 2010 (I)*, p. 83, para. 205).

The Court is of the view that the risks posed by climate change have certain features that may affect the appropriateness of certain forms of environmental risk assessment. It may therefore be reasonable for States to conduct their assessments of the risk caused by GHG emissions by way of general procedures covering different forms of activities. Such general procedures do not exclude that possible specific climate-related effects must be assessed as part of EIAs at the level of proposed individual activities, e.g. for the purpose of assessing their possible downstream effects. While the Court is aware that the cumulative and diffuse nature of GHG emissions may involve some difficulty in risk assessment, it considers it important that all States provide for and conduct EIAs with respect to particularly significant proposed individual activities contributing to GHG emissions to be undertaken within their jurisdiction or control, on the basis of the best available science. Such specific climate-related assessments could identify previously unknown information about possibilities for reducing the quantity of GHG emissions by relevant proposed individual activities.

(vii) Notification and consultation

299. Due diligence in preventing significant harm to the environment sometimes also implies an obligation of States to notify and consult in good faith with other States with respect to risks of adverse effects of their conduct. This obligation exists where planned activities within the jurisdiction or control of a State create a risk of significant harm, and notification and consultation is necessary to determine the appropriate measures to prevent that risk (see *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. 706, para. 104). The Court considers that, given the specific character of the processes leading to climate

change, notification and consultation are particularly warranted when an activity significantly affects collective efforts to address harm to the climate system, such as the implementation of policy changes in relation to the exploitation of resources linked to GHG emissions, or with respect to information that is necessary for meaningful co-operation among States to address the adverse effects resulting from GHG emissions.

(viii) Conclusion

300. Having considered certain elements of the due diligence standard (see paragraphs 280-299 above), the Court notes that their proper application in a specific situation may be a complex operation due to the variable and evolving nature of the standard. However, the Court considers that the relevant elements, individually and in combination, provide guidance for the identification of an appropriate standard of conduct for different situations. The Court is therefore of the view that the question whether a risk of significant harm exists and whether or how a relevant element of the obligation to exercise due diligence to protect the environment applies in a particular situation should be determined objectively.

2. Duty to co-operate

301. The Court recalls that the duty of States to co-operate for the protection of the environment has a customary character (see paragraphs 140-142 above). The Court emphasized the importance of co-operation in the context of a resource shared by a limited number of States, when it observed that

> "the obligation[] to co-operate [is] an important complement to the substantive obligations of every riparian State. In the Court's view, '[t]hese obligations are all the more vital' when . . . the shared resource at issue 'can only be protected through close and continuous co-operation between the riparian States' (*Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, p. 51, para. 81)." (*Dispute over the Status and Use of the Waters of the Silala (Chile* v. *Bolivia), Judgment, I.C.J. Reports 2022 (II)*, p. 649, para. 101.)

302. This observation applies even more to the climate system, which is a resource shared by all States. Accordingly, in its advisory opinion on climate change, ITLOS characterized co-operation as "a fundamental principle in the prevention of pollution of the marine environment" by the emission of GHGs (*Climate Change, Advisory Opinion, ITLOS Reports 2024*, p. 110, para. 296; see also paragraphs 350-351 below). Co-operation between States is the very foundation of meaningful international efforts with respect to climate change.

303. The Court considers that the principles discussed above (paragraphs 146-161), which form part of the law applicable to the present request, are relevant in giving substance to the duty to co-operate. For example, sustainable development is furthered through close and continuous co-operation in the context of climate change. The Court has also held that "[o]ne of the basic principles governing the creation and performance of legal obligations, whatever their source, is the principle of good faith. Trust and confidence are inherent in international co-operation" (*Nuclear*

Tests (Australia v. *France), Judgment, I.C.J. Reports 1974*, p. 268, para. 46; see also *Border and Transborder Armed Actions (Nicaragua* v. *Honduras), Jurisdiction and Admissibility, Judgment, I.C.J. Reports 1988*, p. 105, para. 94). Co-operation between States is governed by the principle of good faith, be it under a treaty or under the customary duty to co-operate (see *Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, p. 67, para. 145) (see paragraph 141 above).

304. The Court is of the view that the specific character of climate change requires States to take individual measures in co-operation with other States. The climate change treaties encourage and provide for certain forms of such co-operation (see paragraphs 214-218 and 260-267 above). While States have obligations to make individual contributions to collective efforts under the duty to prevent significant harm to the environment, the interpretation and fulfilment of their substantive obligations under that duty must also take account of the situation of other States and, as far as possible, be fulfilled in co-operation with other States. The duty to co-operate requires sustained and continuous forms of co-operation, of which treaties and their coordinated forms of implementation are a principal expression. While States are not required to conclude treaties, they are required to make good faith efforts to arrive at appropriate forms- of collective action. In the field of climate change, this requires agreement on forms of bona fide co-operation, such as those contained in the Paris Agreement. However, this does not mean that States discharge their duty to co-operate only by the conclusion and fulfilment of treaties (see *Climate Change, Advisory Opinion, ITLOS Reports 2024*, pp. 85-86, para. 223; see also paragraph 314 below).

305. The duty to co-operate takes on a special importance in the context of the need to reach a collective temperature goal (see, in the context of treaty obligations, paragraphs 224-229 above). States must co-operate to achieve concrete emission reduction targets or a methodology for determining contributions of individual States, including with respect to the fulfilment of any collective temperature goal. The duty to co-operate is applicable to all States, although its level may vary depending on additional criteria, first and foremost the common but differentiated responsibilities and respective capabilities principle.

306. The Court recognizes that the duty to co-operate leaves States some discretion in determining the means for regulating their GHG emissions. However, this discretion cannot serve as an excuse for States to refrain from co-operating with the required level of due diligence or to present their effort as an entirely voluntary contribution which cannot be subjected to scrutiny. The duty to co-operate is founded on the recognition of the interdependence of States, requiring more than the transfer of finance or technology, in particular efforts by States to continuously develop, maintain and implement a collective climate policy that is based on an equitable distribution of burdens and in accordance with the principle of common but differentiated responsibilities and respective capabilities.

307. The climate change treaties do not address the question whether further treaty-based obligations are necessary owing to the increased urgency of the climate crisis. The customary duties

of States to co-operate and to prevent significant harm to the environment constitute a legal standard for determining whether any existing forms of co-operation, including treaties and their implementation, still serve their purpose and whether further collective action must be undertaken, including the establishment of further treaty-based obligations.

308. Climate change is a common concern. Co-operation is not a matter of choice for States but a pressing need and a legal obligation.

3. Relationship between obligations arising from treaties and from customary international law relating to climate change

309. The Court now turns to the relationship between obligations arising from treaties and from customary international law relating to climate change.

310. The Court recalls that treaty rules and rules of customary international law, as norms belonging to two sources of international law, retain a separate existence (*Military and Paramilitary Activities in and against Nicaragua (Nicaragua* v. *United States of America), Merits, Judgment, I.C.J. Reports 1986*, p. 95, para. 178). However, when several norms bear on a single issue they should, to the extent possible, be interpreted so as to give rise to a single set of compatible obligations (see paragraph 165 above).

311. Treaties, in particular multilateral environmental treaties, need to be interpreted by taking into account any relevant rules of international law that are applicable in the relations between the parties (Article 31, paragraph 3 *(c)*, of the Vienna Convention on the Law of Treaties). Such rules include rules of customary international law. As the Court has confirmed, treaties are to be "interpreted and applied within the framework of the entire legal system prevailing at the time of the interpretation" (*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).

312. Conversely, treaties may play a role in the identification and determination of the content of rules of customary international law. The Court has held that treaty provisions may "shed light on the content of customary international law" (*Jurisdictional Immunities of the State (Germany* v. *Italy: Greece intervening), Judgment, I.C.J. Reports 2012 (I)*, p. 128, para. 66) and "multilateral conventions may have an important role to play in recording and defining rules deriving from custom, or indeed in developing them" (*Continental Shelf (Libyan Arab Jamahiriya/Malta), Judgment, I.C.J. Reports 1985*, pp. 29-30, para. 27). Moreover, treaties may "g[i]ve expression . . . to principles already present in customary international law", and these customary principles may even "develop[] under the influence of the [treaty], to such an extent that a number of rules contained in the [treaty] . . . acquire[] a status independent of it" (*Military and Paramilitary Activities in and against Nicaragua (Nicaragua* v. *United States of America), Merits, Judgment, I.C.J. Reports 1986*, pp. 96-97, para. 181). This is even more likely where the relevant customary and treaty rules "flow from a common fundamental principle" (*ibid.*).

313. Concerning specifically the interplay between different rules for the protection of the environment, the Court emphasized, almost thirty years ago, that

> "[o]wing to new scientific insights and to a growing awareness of the risks for mankind — for present and future generations — of pursuit of . . . interventions [with nature] at an unconsidered and unabated pace, new norms and standards have been developed, set forth in a great number of instruments during the last two decades. Such new norms have to be taken into consideration, and such new standards given proper weight, not only when States contemplate new activities but also when continuing with activities begun in the past" (*Gabčíkovo-Nagymaros Project (Hungary/Slovakia), Judgment, I.C.J. Reports 1997*, p. 78, para. 140).

Accordingly, the climate change treaties establish standards that may enable or facilitate the identification and application of the diligence that is due in specific instances. The Court also considers that the obligations arising from the climate change treaties, as interpreted herein, and State practice in implementing them inform the general customary obligations, just as the general customary obligations provide guidance for the interpretation of the climate change treaties (see, with regard to the duty to co-operate, *Climate Change, Advisory Opinion, ITLOS Reports 2024*, pp. 110-111, paras. 297-299).

314. As it is difficult to determine in the abstract the extent to which the climate change treaties and their implementation practice influence the proper understanding of the relevant customary obligations and their application, the Court considers that, at the present stage, compliance in full and in good faith by a State with the climate change treaties, as interpreted by the Court (see paragraphs 174-270 above), suggests that this State substantially complies with the general customary duties to prevent significant environmental harm and to co-operate. This does not mean, however, that the customary obligations would be fulfilled simply by States complying with their obligations under the climate change treaties (see *Climate Change, Advisory Opinion, ITLOS Reports 2024*, pp. 85-86, para. 223). While the treaties and customary international law inform each other, they establish independent obligations that do not necessarily overlap.

315. It follows from the above that the customary obligations of any State which is not a party to one or more of the climate change treaties at present find expression, at least in part, in the general practice of States which is in accordance with their obligations under the climate change treaties, as interpreted herein (see paragraphs 174-270 above). Customary obligations are the same for all States and exist independently regardless of whether a State is a party to the climate change treaties. On this basis, the Court considers that it is possible that a non-party State which co-operates with the community of States parties to the three climate change treaties in a way that is equivalent to that of a State party, may, in certain instances, be considered to fulfil its customary obligations through practice that comports with the required conduct of States under the climate change treaties. However, if a non-party State does not co-operate in such a way, it has the full burden of demonstrating that its policies and practices are in conformity with its customary obligations.

D. Obligations of States under other environmental treaties

316. Obligations of States to protect the climate system encompass their conduct with respect to all the components of the climate system. There are also other international instruments which contribute to the protection of one or more of the components of the climate system, as defined by the IPCC and the UNFCCC (see paragraph 75 above), as well as the interactions between those components. The legal framework established by these instruments forms part of the protection of the climate system under international law and thus are relevant to the Court's analysis under question *(a)*. The Court considers that this is the case for the instruments referenced in General Assembly resolution 77/276, namely the Ozone Layer Convention, the Montreal Protocol, the Biodiversity Convention and the Desertification Convention (see paragraphs 125-130 above).

317. Numerous other instruments and mechanisms were mentioned by the participants, including the Carbon Offsetting and Reduction Scheme for International Aviation, established under the auspices of the International Civil Aviation Organization (hereinafter "ICAO"), as well as various regional instruments. As noted above (see paragraph 130), for the purposes of the present Advisory Opinion, the Court is not called upon to address all treaties that are applicable and may be relevant for the protection of the climate system. The Court nevertheless emphasizes the importance of the role played by certain international organizations, such as ICAO, in regulating GHG-emitting activities in their respective fields. In so far as the States parties to these instruments have obligations thereunder that are relevant for the protection of the climate system, they must have due regard to these obligations when taking measures to ensure the protection of the climate system and other parts of the environment.

318. The Court will therefore consider, in turn, the relevant obligations in the Ozone Layer Convention, the Montreal Protocol, the Biodiversity Convention and the Desertification Convention.

1. Ozone Layer Convention and Montreal Protocol

319. In its preamble, the UNFCCC recalls the 1985 Convention for the Protection of the Ozone Layer and the 1987 Montreal Protocol. The ozone layer is part of the atmosphere, which is a component of the climate system. The Court notes that the IPCC has indicated that addressing ozone depletion can contribute to mitigating climate change (IPCC, 2022 contribution of Working Group III, Statement E.6.4).

320. Article 2 of the Ozone Layer Convention contains a general obligation to protect "human health and the environment against adverse effects resulting or likely to result from human activities which modify or are likely to modify the ozone layer". To that end, "the Parties shall, in accordance with the means at their disposal and their capabilities", take measures to co-operate and "[a]dopt appropriate legislative or administrative measures".

321. The Montreal Protocol, which supplements the Ozone Layer Convention, recognizes in its preamble "that world-wide emissions of certain substances can significantly deplete and otherwise modify the ozone layer in a manner that is likely to result in adverse effects on human health and the environment".

322. The meetings of the parties to the Montreal Protocol have played an important role in the implementation of States' obligations under this instrument. The nineteenth meeting of the parties led to the Montreal Declaration, which expressly recognized "the importance of accelerating the recovery of the ozone layer in a way that also addresses other environmental issues, notably climate change" (Montreal Declaration, UNEP, Report of the Nineteenth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal, 17-21 September 2007), UN doc. UNEP/OzL.Pro.19/7, Annex IV).

323. States parties to the Montreal Protocol are under an obligation to phase out, according to a fixed schedule, the production and consumption of all the main ozone-depleting substances, including certain GHGs, through control measures.

324. The obligations incumbent upon States parties to the ozone layer treaties complement those set forth in the climate change treaties, to the extent that the States concerned are also parties to those instruments. This is reflected in, *inter alia*, Article 4, paragraph 1 *(a)*, of the UNFCCC, and in Article III of the Kigali Amendment. The Court therefore considers that the obligations under the ozone layer treaties are relevant to the protection of the climate system, and in particular to the preservation of the atmosphere as one of its components. Accordingly, they are obligations that contribute to ensuring the protection of the climate system as a whole.

2. Convention on Biological Diversity

325. The preamble to the Biodiversity Convention affirms that "the conservation of biological diversity is a common concern of humankind", and that Article 1 of the Convention sets out 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". The Court also recalls that the biosphere is one of the components of the climate system comprising

> "all ecosystems and living organisms, in the atmosphere, on land (terrestrial biosphere) or in the oceans (marine biosphere), including derived dead organic matter, such as litter, soil organic matter and oceanic detritus" (see IPCC, 2021, *Climate Change 2021: The Physical Science Basis*, Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change; see paragraph 75 above).

326. Biodiversity is defined by the Biodiversity Convention as comprising "the variability among living organisms" and "the ecological complexes of which they are part". This includes diversity of ecosystems (see paragraph 127 above). Ecosystems, in turn, are defined in Article 2 as including the "non-living environment" in so far as it interacts with life to form a functional unit.

327. Under Article 3 of the Biodiversity Convention, States parties to the Convention have 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. This provision reflects the customary rule of prevention of significant harm to the environment. The Court observes that, in certain instances, ecosystem protection measures may simultaneously operate as climate change mitigation or adaptation measures. The Court further notes that Article 5 of the Biodiversity Convention establishes the obligation of the States parties to co-operate, as far as possible and as appropriate, in areas beyond national jurisdiction and on other matters of mutual interest, for the conservation and sustainable use of biological diversity.

328. The Court observes that, under Article 6 *(a)* of the Convention, each State party must, in accordance with its particular conditions and capabilities, "[d]evelop national strategies, plans or programmes for the conservation and sustainable use of biological diversity". According to Article 6 *(b)*, States must "[i]ntegrate, 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". Such strategies and plans may encompass measures for mitigation of and/or adaptation to climate change, particularly where they relate to the conservation of vulnerable ecosystems. The Court notes that the Conference of the Parties to the Convention established the Kunming-Montreal Global Biodiversity Framework in its decision of 19 December 2022, with a view to achieving a balanced and enhanced implementation of all obligations under of the Convention, including its three objectives (see paragraph 325 above). In this context, the Framework encourages States parties to "[m]inimize the impact of climate change and ocean acidification on biodiversity and increase its resilience through mitigation, adaptation, and disaster risk reduction actions" (decision 15/4, Kunming-Montreal Global Biodiversity Framework, 19 December 2022, UN doc. CBD/COP/DEC/15/4, Annex, p. 10, target 8).

329. The Court further notes that, pursuant to Article 7 *(c)* of the Biodiversity Convention, States parties are required, as far as possible and as appropriate, to identify and monitor processes and categories of activities that have, or are likely to have, significant adverse impacts on the conservation and sustainable use of biological diversity. Where such significant adverse effects have been identified pursuant to Article 7, States parties have an obligation, as far as possible and as appropriate, under Article 8 (l), to regulate or manage the relevant processes and categories of activities, including those which contribute to anthropogenic GHG emissions. In this regard, the obligations incumbent upon States parties to the Biodiversity Convention complement those set forth in climate change treaties, in so far as the States concerned are also parties to those instruments.

330. The Court considers that these obligations under the Biodiversity Convention are relevant to the protection of the climate system, and in particular to the preservation of the biosphere as one of its components, as they are aimed at the conservation and sustainable use of biological diversity, and the prevention of adverse impacts thereon. Accordingly, they are obligations that contribute to ensuring the protection of the climate system as a whole.

3. United Nations Convention to Combat Desertification

331. The preamble to the Desertification Convention affirms the important "contribution that combating desertification can make to achieving the objectives of the United Nations Framework Convention on Climate Change" (see paragraph 128 above). The link between desertification, land degradation, drought and climate change has been highlighted by intergovernmental scientific bodies (IPCC, 2019, Summary for Policymakers, *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*, pp. 7-8, subsection A.2, and pp. 15-16, subsection A.5; see also Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), "Assessment Report on Land Degradation and Restoration" (2018), pp. 13, 27 and 31).

332. Desertification is defined 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". Desertification, land degradation and drought affect the geosphere and the biosphere, which are interrelated parts of the climate system, as defined in Article 1, paragraph 3, of the UNFCCC.

333. Under Article 4, paragraph 2 *(a)*, of the Desertification Convention, States parties are required to adopt "an integrated approach addressing the physical, biological and socio-economic aspects of the processes of desertification and drought". The physical aspects to be addressed in such an integrated approach include climate variability and climate change. Moreover, in accordance with Article 4, paragraph 2 *(d)*, States parties must promote "cooperation among affected country Parties in the fields of environmental protection and the conservation of land and water resources, as they relate to desertification and drought". They must take account of climate change as one of the physical aspects of desertification and drought. Article 6 of the Convention imposes obligations on developed country parties to support affected developing country parties in their efforts to combat desertification and mitigate the effects of drought, including through the provision of financial resources. Finally, Article 8 of the Desertification Convention requires States parties to encourage the co-ordination of their actions and commitments undertaken in the framework of the Desertification Convention, the UNFCCC and the Biodiversity Convention.

334. The obligations incumbent upon parties to the Desertification Convention complement those established under the climate change treaties, in so far as the States concerned are also parties to those instruments. In giving effect to their obligations under the Desertification Convention, such States parties contribute to the protection of the climate system as a whole, and in particular to the preservation of the geosphere and the hydrosphere, as well as their interactions with other components of the climate system. In this regard, the Court considers that the States parties to the Desertification Convention, by complying with their obligations thereunder, contribute to the protection of the climate system and other parts of the environment.

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335. The Court considers that the environmental treaties addressed in this section, the climate change treaties and the relevant obligations under customary international law inform each other (see paragraphs 309-315). States parties must therefore take their obligations under these environmental treaties into account when implementing their obligations under the climate change treaties and under customary international law, just as they must take their obligations under the climate change treaties and under customary international law into account when implementing their obligations under these environmental treaties.

E. Obligations of States under the law of the sea and related issues

336. The Court notes that, while some participants dispute the relevance of UNCLOS, most of the participants that referred to it consider it to be relevant for this Advisory Opinion, since anthropogenic GHG emissions also have deleterious effects on the marine environment, which represents over 70 per cent of the planet and over 95 per cent of the biosphere. These participants consider UNCLOS to be a treaty that can be interpreted in an evolutive manner to address new or emerging issues, including those related to climate change. Many participants noted that Part XII of UNCLOS, which concerns the protection and preservation of the marine environment, is of particular importance in these proceedings.

337. The Court recalls that, on 21 May 2024, ITLOS rendered its advisory opinion regarding the obligations of States parties to UNCLOS to *(a)* prevent, reduce and control pollution of the marine environment in relation to the deleterious effects that result or are likely to result from climate change and which were caused by anthropogenic GHG emissions into the atmosphere, and *(b)* to protect and preserve the marine environment in relation to the effects of climate change (see paragraph 123 above). Although the questions put to the Court in the present request for an advisory opinion are broader than those put to ITLOS, the Court considers that there are issues common to the two requests.

338. The Court observes in this regard that, since its establishment, ITLOS has developed a considerable body of jurisprudence on UNCLOS, both in contentious and advisory proceedings. Although the Court is not obliged, in the exercise of its judicial functions, to model its own interpretation of UNCLOS on that of ITLOS, it considers that, in so far as it is called upon to interpret the Convention, it should ascribe great weight to the interpretation adopted by the Tribunal. In the view of the Court, "[t]he point here is to achieve the necessary clarity and the essential consistency of international law, as well as legal security" (*Ahmadou Sadio Diallo (Republic of Guinea* v. *Democratic Republic of the Congo), Merits, Judgment, I.C.J. Reports 2010 (II)*, p. 664, para. 66).

1. Obligations of States under the United Nations Convention on the Law of the Sea

339. The Court notes that one of the purposes of UNCLOS is the protection and preservation of the marine environment, which is the subject of Part XII of the Convention. In this regard, as part of its answer to question *(a)*, the Court will examine whether the States parties to UNCLOS have an

obligation to ensure the protection of the climate system and other parts of the environment from anthropogenic GHG emissions. The Court will first address the question whether anthropogenic GHG emissions fall within the definition of marine pollution under Article 1, paragraph 1, subparagraph 4, of the Convention, which provides that

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

340. Based on this definition, the Court is of the view that anthropogenic GHG emissions constitute "substances or energy" introduced by humans, either "directly or indirectly" "into the marine environment", and that such introduction results or is likely to result in "deleterious effects". Accordingly, anthropogenic GHG emissions may be characterized as pollution of the marine environment within the meaning of UNCLOS (see *Climate Change, Advisory Opinion, ITLOS Reports 2024*, pp. 65-71, paras. 161-179). The Court therefore considers that Part XII of UNCLOS on the protection of the marine environment is applicable in the context of anthropogenic GHG emissions and is thus relevant to answering question *(a)* before the Court in the present advisory proceedings.

341. On this basis, the Court will consider, in turn, the most relevant obligations of States under UNCLOS to ensure the protection of the climate system.

342. The Court observes that, under Article 192 of UNCLOS, "States have the obligation to protect and preserve the marine environment". In the view of the Court, the obligation under Article 192 consists of a positive obligation to take measures to protect and preserve the marine environment and a negative obligation not to degrade it (see *Climate Change, Advisory Opinion, ITLOS Reports 2024*, p. 133, para. 385, and pp. 133-134, para. 387).

343. Considering the seriousness of the threat posed by climate change and in view of the high risks of serious and irreversible harm to the marine environment from anthropogenic GHG emissions, the standard of due diligence to be applied when complying with the obligation to protect and preserve the marine environment is stringent (see paragraph 138 above). As ITLOS has recognized, the standard of due diligence has to be "more severe for the riskier activities" (*Responsibilities and obligations of States with respect to activities in the Area, Advisory Opinion, 1 February 2011, ITLOS Reports 2011*, p. 43, para. 117; *Climate Change, Advisory Opinion, ITLOS Reports 2024*, p. 91, para. 239). The Court agrees that Article 192 therefore requires States parties to take measures "as far-reaching and efficacious as possible" to protect and preserve the marine environment and "to prevent or reduce the deleterious effects of climate change and ocean acidification on the marine environment" (*Climate Change, Advisory Opinion, ITLOS Reports 2024,* p. 138, para. 399). Such measures must be adopted in accordance with the obligations incumbent upon States under the UNFCCC and the Paris Agreement, in so far as the States concerned are parties to those instruments (*ibid.*, p. 134, para. 388).

344. The Court also observes that the sovereign right of States parties under Article 193 of UNCLOS "to exploit their natural resources pursuant to their environmental policies" is subject to "their duty to protect and preserve the marine environment" (*Climate Change, Advisory Opinion, ITLOS Reports 2024*, pp. 72-73, para. 187, and p. 132, para. 380).

345. Article 194, paragraph 1, of UNCLOS provides that

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

346. States parties are under an obligation to take all necessary measures to reduce and control pollution, with the ultimate aim of preventing its occurrence altogether, although they are not required to ensure an immediate cessation of marine pollution caused by anthropogenic GHG emissions (see *Climate Change, Advisory Opinion, ITLOS Reports 2024*, p. 77, para. 199).

347. In the view of the Court, the above obligation is one of conduct. The standard of due diligence required of States in implementing all measures necessary to prevent, reduce and control marine pollution is stringent. These may include legislative measures, administrative procedures, and enforcement mechanisms necessary to regulate the activities concerned (see *Climate Change, Advisory Opinion, ITLOS Reports 2024*, p. 89, para. 235). In addition, in the view of the Court, it is not necessarily sufficient for States parties to fulfil their obligations under the UNFCCC and the Paris Agreement in order to satisfy the obligation laid down by Article 194, paragraph 1, of UNCLOS. The Court considers that what constitutes a "necessary measure" within the meaning of Article 194, paragraph 1, of UNCLOS should be assessed according to objective criteria, taking into account the best available science, international rules and standards relating to climate change, and the available means and capabilities of the States concerned, including their different national circumstances (see *ibid.*, pp. 79-80, paras. 206-207, and pp. 91-92, para. 241).

348. Article 194, paragraph 2, of UNCLOS provides that

> "States shall take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment, and that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the areas where they exercise sovereign rights in accordance with this Convention".

349. The Court considers that the term "activities" in Article 194, paragraph 2, encompasses activities which produce GHG emissions. The standard of due diligence to be applied when complying with the obligation under Article 194, paragraph 2, is stringent (see paragraphs 138 and 343 above).

350. The Court now turns to Article 197 of the Convention, which reads as follows:

> "States shall co-operate on a global basis and, as appropriate, on a regional basis, directly or through competent international organizations, in formulating and elaborating international rules, standards and recommended practices and procedures consistent with this Convention, for the protection and preservation of the marine environment, taking into account characteristic regional features."

351. The obligation to co-operate under Article 197 is an obligation of conduct which requires States to act with due diligence. The Court considers that this obligation is of a continuing nature and it requires States parties, *inter alia*, to make ongoing efforts to formulate and elaborate rules, standards and recommended practices and procedures. The adoption of treaties for the protection of the climate system, such as the UNFCCC or the Paris Agreement, does not release States parties from this requirement under UNCLOS (see *Climate Change, Advisory Opinion, ITLOS Reports 2024*, pp. 113-114, para. 311). Moreover, the Court agrees with ITLOS that Article 197 does not exhaust the obligation to co-operate under Section 2 of Part XII of UNCLOS. In the view of the Court, States are also required to co-operate under Articles 200 and 201 of the Convention to promote studies, undertake research programmes, encourage the exchange of information and data, and to establish appropriate scientific criteria for regulations (*ibid.*, para. 312).

352. Article 206 of UNCLOS provides that,

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

353. The Court considers that, in the context of climate change and in view of the impact of anthropogenic GHG emissions on the marine environment, Article 206 of UNCLOS requires States parties, as far as practicable, to conduct EIAs when there are reasonable grounds for believing that planned activities under their jurisdiction or control which emit GHGs may cause substantial pollution or significant and harmful changes to the marine environment. This obligation also extends to activities with an impact on areas beyond national jurisdiction (see *Responsibilities and obligations of States with respect to activities in the Area, Advisory Opinion, 1 February 2011, ITLOS Reports 2011*, pp. 50-52, paras. 145-150).

354. The Court considers that UNCLOS, the climate change treaties and other relevant environmental treaties, as well as the relevant obligations under customary international law, inform each other (see paragraphs 309-315). States parties must therefore take their obligations under UNCLOS into account when implementing their obligations under the climate change treaties and

other relevant environmental treaties and under customary international law, just as they must take their obligations under the climate change treaties and other relevant environmental treaties and under customary international law into account when implementing their obligations under UNCLOS.

2. Obligations of States in relation to sea level rise and related issues

355. The Court notes that many participants voiced strong concerns about sea level rise and its implications, especially for the stability of maritime zones. They contend that sea level rise should not have the effect of diminishing the maritime entitlements of States. They argue that existing baselines, maritime entitlements, maritime delimitations and statehood should be preserved, notwithstanding the physical effects of sea level rise, including coastal recession. They further contend that the complete submergence of their territory should not deprive them of their maritime entitlements.

356. The Court notes that the IPCC has described sea level rise as "unavoidable" and has concluded with a high level of confidence that, as a result, the risks for coastal ecosystems, people and infrastructure will continue to increase (IPCC, 2023 Summary for Policymakers, p. 15, Statement B.2.2).

357. Scientific data demonstrate that sea level rise is likely to have adverse consequences for States, particularly small island States and low-lying coastal States, potentially leading to the forced displacement of populations within their territory or across borders, as well as affecting the territorial integrity of States and their permanent sovereignty over their natural resources. In the Court's view, since these principles are closely connected with the right to self-determination, sea level rise is not without consequences for the exercise of this right.

358. The Court observes that UNCLOS contains provisions requiring States parties to establish and give due publicity to charts or lists of geographical co-ordinates that show the outer limit of their maritime zones. Concerning the territorial sea, Article 16, paragraph 1, stipulates that the

> "baselines for measuring the breadth of the territorial sea determined in accordance with articles 7, 9 and 10, or the limits derived therefrom, and the lines of delimitation drawn in accordance with articles 12 and 15 shall be shown on charts of a scale or scales adequate for ascertaining their position".

According to Article 16, paragraph 2, a State "shall give due publicity to such charts or lists of geographical co-ordinates and shall deposit a copy of each such chart or list with the Secretary-General of the United Nations". Regarding the exclusive economic zone, Article 75, paragraph 1, of UNCLOS establishes that the outer limit lines of the exclusive economic zone must be shown on charts of a scale or scales adequate for ascertaining their position. Article 75, paragraph 2, establishes that the coastal State must give due publicity to such charts or lists of geographical co-ordinates and deposit a copy of each such chart or list with the Secretary-General of the United Nations. Similarly, concerning the continental shelf, Article 84, paragraph 1, of UNCLOS

determines that the outer limit lines of the continental shelf must be shown on charts of a scale or scales adequate for ascertaining their position. Article 84, paragraph 2, stipulates that "[t]he coastal State shall give due publicity to such charts or lists of geographical co-ordinates". The coastal State must also "deposit a copy of each such chart or list with the Secretary-General of the United Nations and, in the case of those showing the outer limit lines of the continental shelf, with the Secretary-General of the Authority".

359. The Court further notes that once the breadth of maritime zones measured from the baselines has been duly established and the State has given due publicity to the charts or lists of geographical co-ordinates in accordance with UNCLOS, particularly Article 16, paragraphs 1 and 2, Article 75, paragraph 2, and Article 84, paragraph 2, there is no provision in the Convention requiring States parties to update them. Similarly, the Court observes that UNCLOS does not contain provisions requiring States parties to update normal baselines that have been marked (Article 5), or to update charts or lists of geographical co-ordinates showing straight (Article 16) or archipelagic baselines, once they have been marked, published and deposited in accordance with the Convention (Article 47, paragraphs 8 and 9).

360. The Court notes that, outside the present proceedings, many States have expressed the view that there is no obligation to update the charts or lists of geographical co-ordinates showing the baselines of their maritime zones once they have been duly established, in conformity with UNCLOS. Such views have been expressed, *inter alia*, within the framework of the United Nations as well as in regional and cross-regional declarations, such as, among others, the 2021 Declaration of the Pacific Islands Forum on Preserving Maritime Zones in the Face of Climate Change-Related Sea-Level Rise, supported in 2022 by the member States of the Organization of African, Caribbean and Pacific States. The Court considers that this practice is relevant for the purposes of the interpretation of UNCLOS.

361. The Court is aware of the work undertaken by the ILC on sea level rise in relation to international law since 2018. The final report of the Study Group on sea level rise in relation to international law, adopted by the ILC at its seventy-sixth session (2025), shows a convergence of views among States across all regions in support of the absence of an obligation of States parties to UNCLOS to update charts or lists of geographical co-ordinates relating to their maritime zones once they have been duly established, in conformity with UNCLOS (*Official Records of the General Assembly, Eightieth Session, Supplement No. 10* (UN doc. A/80/10), Report of the International Law Commission on its work at its Seventy-sixth Session, p. 11, para. 36; and Annex I, Final Report of the Study Group on sea level rise in relation to international law).

362. The Court considers that the provisions of UNCLOS do not require States parties, in the context of physical changes resulting from climate-change related sea level rise, to update their charts or lists of geographical co-ordinates that show the baselines and outer limit lines of their maritime zones once they have been duly established in conformity with the Convention. For this reason, States parties to UNCLOS are under no obligation to update such charts or lists of geographical co-ordinates.

363. Several participants argued that sea level rise also poses a significant threat to the territorial integrity and thus to the very statehood of small island States. In their view, in the event of the complete loss of a State's territory and the displacement of its population, a strong presumption in favour of continued statehood should apply. In the view of the Court, once a State is established, the disappearance of one of its constituent elements would not necessarily entail the loss of its statehood.

364. The Court has already emphasized that climate change is a common concern of humankind, one of the adverse effects of which is sea level rise. The Court has also affirmed that, in the context of climate change, States have a customary obligation to co-operate (see paragraphs 140-142 and 301-308). Moreover, it has recalled that the duty to co-operate lies at the core of the Charter of the United Nations, in particular Article 1 thereof, which states the purpose of the organization and commits States to "achiev[ing] international cooperation in solving international problems of an economic, social, cultural, or humanitarian character" (see paragraph 115). In the Court's view, sea level rise poses challenges in several respects, including of an economic, social, cultural and humanitarian character. It thus finds that the duty to co-operate assumes particular significance in this context, requiring States to take, in co-operation with one another, appropriate measures to address the adverse effects of this serious phenomenon. Such a duty of co-operation is founded on the recognition of the interdependence of States and the ensuing need for solidarity among peoples (see paragraph 308 above). In this regard, co-operation in addressing sea level rise is not a matter of choice for States but a legal obligation.

365. The Court concludes from the foregoing that the legal obligation to co-operate requires States, in the context of sea level rise, to work together with a view to achieving equitable solutions, taking into account the rights of affected States and those of their populations.

3. Other relevant instruments

366. The Court notes that some participants in the proceedings referred to other treaties concerning the protection of the marine environment as being among the most relevant to answering question *(a)*.

367. As noted above (see paragraph 173), for the purposes of the present Advisory Opinion, the Court is not called upon to address all treaties that may be relevant for the protection of the climate system. In this regard, while not seeking to draw up an exhaustive list of treaties relevant to climate change, the Court emphasizes that its examination of the obligations of States under UNCLOS is without prejudice to the applicability of other sources of obligations, be they universal, regional or bilateral, which may apply to the States parties to relevant instruments. The Court considers that, in fulfilling their obligations under certain other instruments, such as the 1973 International Convention for the Prevention of Pollution from Ships (commonly known as "MARPOL") and its Annex VI, adopted under the auspices of the IMO, States parties contribute to the protection of the climate system. In this regard, the Court emphasizes the importance of the role played by certain international organizations, such as the IMO, in regulating GHG-emitting activities within their respective fields.

368. The Court also notes that several participants referred to 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 (commonly known as the "BBNJ Agreement"). This agreement, adopted on 19 June 2023, has not yet entered into force. It serves as an implementing agreement of UNCLOS. In pursuit of its aim to ensure the conservation and sustainable use of marine biological diversity in areas beyond national jurisdiction, the BBNJ Agreement includes provisions relating to the establishment of area-based management tools, including marine protected areas. These provisions reflect the States parties' objectives to, *inter alia*,

> "[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" (Article 17 *(c)*).

Pending its entry into force, signatory States and States parties to this agreement are under the obligation, as reflected in Article 18 of the Vienna Convention on the Law of Treaties, not to act in a manner inconsistent with its object and purpose, as defined therein.

F. Obligations of States under international human rights law

369. The Court recalls that the *chapeau* to the questions put to it by the General Assembly requests the Court to have "particular regard" to the ICCPR, the ICESCR, as well as to the rights recognized in the Universal Declaration of Human Rights. The resolution also "[e]mphasiz[es] the importance of" the Convention on the Rights of the Child (fifth preambular paragraph).

370. Participants that addressed the obligations of States under international human rights law expressed different views on the question whether international human rights law, in and of itself, imposes obligations on States relating to climate change. Most participants argued that such obligations exist, while some maintained that international human rights law does not, in and of itself, impose self-standing obligations to protect the climate system and other parts of the environment.

371. The Court notes that States have obligations under international human rights law to respect, protect and ensure the enjoyment of human rights of individuals and peoples. Human rights are focused on the protection of individuals and peoples and are not limited to specific fields of activity. In order to respond to the question posed by the General Assembly, the Court will first consider the adverse effects of climate change on the enjoyment of human rights. The Court will then address the question of the right to a clean, healthy and sustainable environment as a human right. It will proceed to examine the territorial scope of the application of international human rights law. In light of these considerations, the Court will turn to the obligations of States under international human rights law to protect the climate system and other parts of the environment.

1. Adverse effects of climate change on the enjoyment of human rights

372. Participants are generally of the view that the adverse effects of climate change hinder the full enjoyment of human rights.

373. The environment is the foundation for human life, upon which the health and well-being of both present and future generations depend (see *Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, I.C.J. Reports 1996 (I)*, p. 241, para. 29). The Court thus considers that the protection of the environment is a precondition for the enjoyment of human rights, whose promotion is one of the purposes of the United Nations as set out in Article 1, paragraph 3, of the Charter.

374. The Court further recalls that the preamble to the Paris Agreement states that

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

375. Anthropogenic GHG emissions have an adverse impact on the climate system and other parts of the environment. The IPCC has underscored the interdependence between the vulnerability of human populations and that of ecosystems (see IPCC, *Climate Change 2023: Synthesis Report*, pp. 97-99, section 4.3; 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 (hereinafter "IPCC, 2022 contribution of Working Group II"), pp. 9-13; see also paragraph 73 above). The degradation of the climate system and of other parts of the environment impairs the enjoyment of a range of rights protected by human rights law.

376. The Court is thus of the view that the adverse effects of climate change, including, *inter alia*, the impact on the health and livelihoods of individuals through events such as sea level rise, drought, desertification and natural disasters, may significantly impair the enjoyment of certain human rights. The Court will consider some of these rights, without attempting to be exhaustive.

377. The adverse effects of climate change may impair the enjoyment of the right to life in various ways. The right to life is recognized in Article 3 of the Universal Declaration on Human Rights. It is enshrined in human rights treaties, such as in Article 6 of the ICCPR, which provides that "[e]very human being has the inherent right to life" and in Article 6 of the Convention on the Rights of the Child, which recognizes that "every child has the inherent right to life". Respect, protection and fulfilment of this right may depend on measures taken by States parties to these instruments to preserve the environment and protect it against the adverse effects of climate change

caused by anthropogenic GHG emissions. The Human Rights Committee has observed that "environmental degradation can compromise effective enjoyment of the right to life, and that severe environmental degradation can . . . lead to a violation of the right to life" (*Teitiota* v. *New Zealand*, 24 October 2019, doc. CCPR/C/127/D/2728/2016, para. 9.5). In its General Comment No. 36 on the right to life, the Committee also stated that

> "[e]nvironmental degradation, climate change and unsustainable development constitute some of the most pressing and serious threats to the ability of present and future generations to enjoy the right to life. The obligations of States parties under international environmental law should thus inform the content of article 6 of the Covenant, and the obligation of States parties to respect and ensure the right to life should also inform their relevant obligations under international environmental law. Implementation of the obligation to respect and ensure the right to life, and in particular life with dignity, depends, inter alia, on measures taken by States parties to preserve the environment and protect it against harm, pollution and climate change caused by public and private actors." (General comment No. 36 on Article 6: right to life, 30 October 2018, UN doc. CCPR/C/GC/36, para. 62, footnotes omitted.)

378. The Court considers that conditions resulting from climate change which are likely to endanger the lives of individuals may lead them to seek safety in another country or prevent them from returning to their own. In the view of the Court, States have obligations under the principle of non-refoulement where there are substantial grounds for believing that there is a real risk of irreparable harm to the right to life in breach of Article 6 of the ICCPR if individuals are returned to their country of origin (see Human Rights Committee, *Teitiota* v. *New Zealand*, 24 October 2019, UN doc. CCPR/C/127/D/2728/2016, para. 9.11).

379. In the view of the Court, climate change also threatens the ability of individuals to enjoy the right to health. The "right of everyone to the enjoyment of the highest attainable standard of physical and mental health" is protected by Article 12 of the ICESCR. The Committee on Economic, Social and Cultural Rights has underscored that this right requires States, *inter alia*, to refrain from unlawfully polluting air, water and soil (Committee on Economic, Social and Cultural Rights, 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. 34). The Human Rights Council has emphasized that the adverse effects of climate change have a range of implications for the effective enjoyment of human rights, including the right to the enjoyment of the highest attainable standard of physical and mental health (Human Rights Council, resolution 53/6 of 12 July 2023, seventeenth preambular paragraph). Furthermore, WHO has identified that climate change potentially poses "the greatest threat to global health in the 21st century" (see WHO, Health, environment and climate change, Report by the Director-General, seventy-first World Health Assembly, 9 April 2018, doc. A71/10, paras. 3-7). There is thus a close link between the right to health and the environmental conditions in which an individual lives. Consequently, States are responsible for promoting environmental conditions that ensure the enjoyment of the right to health. This right is also protected by Article 25 of the Universal Declaration of Human Rights, and Article 24, paragraph 1, of the Convention on the Rights of the Child which affirms "the right of the child to the enjoyment of the highest attainable standard of health".

380. In the Court's view, there is a close connection between the environment and the right to an adequate standard of living, which, for its part, encompasses access to food, water and housing, as set out in Article 11 of the ICESCR and Article 25 of the Universal Declaration of Human Rights. The Human Rights Council has emphasized that climate change can interfere with individuals' effective enjoyment of these rights (Human Rights Council, resolution 53/6 of 12 July 2023, preamble; resolution 50/9 of 7 July 2022, preamble).

381. In the view of the Court, the enjoyment of the right to privacy, family and home, protected by Article 17 of the ICCPR, is also likely to be hindered by the adverse effects of climate change. The Court considers that a State's failure to implement timely and adequate adaptation measures to address the adverse impacts of climate change may violate the right to privacy, family and home (see *Daniel Billy and others* v. *Australia (Torres Strait Islanders Petition)*, 21 July 2022, UN doc. CCPR/C/135/D/3624/2019, paras. 8.9-8.12).

382. Climate change may also impair the enjoyment of the rights of women, children and indigenous peoples (see Joint Statement on "Human Rights and Climate Change", Committee on the Elimination of All Forms of Discrimination against Women, Committee on Economic, Social and Cultural Rights, Committee on the Protection of the Rights of All Migrant Workers and Members of their Families, Committee on the Rights of the Child and Committee on the Rights of Persons with Disabilities, 16 September 2019, para. 3; see also Human rights and climate change, Human Rights Council resolution 53/6 of 12 July 2023; Human Rights Council, Report of the Office of the United Nations High Commissioner for Human Rights on the relationship between climate change and human rights, 15 January 2009, UN doc. A/HRC/10/61, paras. 42 *et seq.*). As recalled above, the preamble to the Paris Agreement provides that parties should, when taking action to address climate change, respect, promote and consider the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations as well as gender equality (see paragraph 374).

383. The Committee on the Elimination of Discrimination against Women has stated that mitigation and adaptation measures with respect to climate change "should be designed and implemented in accordance with the human rights principles of substantive equality and non-discrimination, participation and empowerment, accountability and access to justice, transparency and the rule of law" (General recommendation No. 37 on the gender related dimensions of disaster risk reduction in the context of climate change, 7 March 2018, UN doc. CEDAW/C/GC/37, para. 14).

384. The Court further notes that the Office of the United Nations High Commissioner for Human Rights has observed that extreme weather events and heightened water scarcity are already major contributors to malnutrition, as well as infant and child mortality and morbidity (see Human Rights Council, Report of the Office of the United Nations High Commissioner for Human Rights on the relationship between climate change and human rights, 15 January 2009, UN doc. A/HRC/10/61, para. 48), and the IPCC has found that women and indigenous peoples may be more severely affected by the impacts of climate change (IPCC, 2007, *Climate Change 2007:*

Impacts, Adaptation and Vulnerability, Contribution of Working Group II to the Fourth Assessment Report of the IPCC, p. 398; IPCC, 2022 contribution of Working Group II, Water, Technical Summaries B.3.5, B.4.1, B.4.4, B.5 and B.7; IPCC, 2023 Summary for Policymakers, p. 31, Statement C.5.3, and p. 15, Statement B.2.4). The Court therefore considers that the enjoyment of human rights by such groups is at risk of being affected by the adverse effects of climate change.

385. Finally, the Court notes that the application of international human rights law in relation to the adverse effects of climate change has been addressed in decisions of regional human rights courts (see, *inter alia*, Inter-American Court of Human Rights, *Advisory Opinion OC-32/25 of 29 May 2025, Series A No. 32*; European Court of Human Rights, *Verein KlimaSeniorinnen Schweiz and Others* v. *Switzerland, Grand Chamber, judgment of 9 April 2024, application No. 53600/20*; Inter-American Court of Human Rights, *Case of La Oroya Population* v. *Peru, Preliminary Objections, Merits, Reparations and Costs, Judgment of 27 November 2023, Series C No. 511*), and national courts.

386. Based on all the above, the Court considers that the adverse effects of climate change may impair the effective enjoyment of human rights.

2. Right to a clean, healthy and sustainable environment

387. The Court notes that a number of participants discussed the existence of a right to a clean, healthy and sustainable environment.

388. The close relationship between human beings and the environment was recognized in 1968 in General Assembly resolution 2398 (XXIII) (see paragraph 51 above) and in 1972 in the Stockholm Declaration, Principle 1 of which proclaimed that

> "[m]an is both creature and moulder of his environment, which gives him physical sustenance and affords him the opportunity for intellectual, moral, social, and spiritual growth . . . Both aspects of man's environment, the natural and the man-made, are essential to his well-being and to the enjoyment of basic human rights — even the right to life itself."

Moreover, Principle 1 of the Rio Declaration stated that "[h]uman beings . . . are entitled to a healthy and productive life in harmony with nature".

389. In 1994, the Commission on Human Rights recognized the link between environmental degradation and human rights (Ksentini Report, 6 July 1994, UN doc. E/CN.4/Sub.2/1994/9, Chap. V, pp. 42-57, paras. 161-234). The Court recalls that human rights have been recognized to be indivisible, interdependent and interrelated (see Declaration and Programme of Action, World Conference on Human Rights, Vienna, 1993, para. 5). The Court thus considers that the effective enjoyment of a number of human rights cannot be fully realized if those who hold them are unable to live in a clean, healthy and sustainable environment.

390. The Court notes that several regional human rights instruments recognize, in variously worded provisions, the right to a clean, healthy and sustainable environment. The African Charter on Human and Peoples' Rights provides in Article 24 that "[a]ll peoples shall have the right to a general satisfactory environment favourable to their development". Similarly, Article 38 of the Arab Charter on Human Rights states that "[e]veryone shall have the right to an adequate standard of living for himself and his family, ensuring well-being and a decent life . . . and a right to a safe environment". The Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights (Protocol of San Salvador) likewise affirms in Article 11 that "[e]veryone shall have the right to live in a healthy environment".

391. The importance of the right to a clean and healthy environment is underscored by the fact that over one hundred States have, in variously worded provisions, enshrined this right in their constitutions or domestic legislation (Human Rights Council, Right to a healthy environment: good practices, Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, 30 December 2019, UN doc. A/HRC/43/53, Annex II). Several regional and national courts have, in this context, pronounced on the right to a clean, healthy and sustainable environment. During the universal periodic review of the Human Rights Council, many States addressed the manner in which they implement the right to a clean, healthy and sustainable environment.

392. The General Assembly "[r]ecognizes the right to a clean, healthy and sustainable environment as a human right" in its resolution 76/300 of 28 July 2022 (para. 1), which is evidence of the acceptance of this right. Indeed, this resolution, adopted with 161 votes in favour, 8 abstentions and no votes against, notes that "a vast majority of States have recognized some form of the right to a clean, healthy and sustainable environment through international agreements, their national constitutions, legislation, laws or policies" (twentieth preambular paragraph) and that this right is "related to other rights" (para. 2). In this sense, the resolution affirms the "importance of a clean, healthy and sustainable environment for the enjoyment of all human rights" (eighteenth preambular paragraph) and demonstrates the significance that States attach to this right (see also Human Rights Council resolution 48/13, The human right to a clean, healthy and sustainable environment, 8 October 2021).

393. Based on all of the above, the Court is of the view that a clean, healthy and sustainable environment is a precondition for the enjoyment of many human rights, such as the right to life, the right to health and the right to an adequate standard of living, including access to water, food and housing. The right to a clean, healthy and sustainable environment results from the interdependence between human rights and the protection of the environment. Consequently, in so far as States parties to human rights treaties are required to guarantee the effective enjoyment of such rights, it is difficult to see how these obligations can be fulfilled without at the same time ensuring the protection of the right to a clean, healthy and sustainable environment as a human right. The human right to a clean, healthy and sustainable environment is therefore inherent in the enjoyment of other human rights. The Court thus concludes that, under international law, the human right to a clean, healthy and sustainable environment is essential for the enjoyment of other human rights.

3. Territorial scope of human rights treaties

394. The Court will now consider the question of the territorial scope of certain universal human rights treaties that are relevant to answering question *(a)*. The question of the territorial scope of universal human rights treaties must be addressed in light of each instrument's specific provisions. This Court has previously recognized the applicability of human rights treaties when a State exercises jurisdiction outside its territory.

395. Article 2, paragraph 1, of the ICCPR provides that "[e]ach State Party to the present Covenant undertakes to respect and to ensure to all individuals within its territory and subject to its jurisdiction the rights recognized in the present Covenant".

396. In its Advisory Opinion on the *Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory*, the Court considered that Article 2, paragraph 1, of the ICCPR could be construed "as covering both individuals present within a State's territory and those outside that territory but subject to that State's jurisdiction" (*I.C.J. Reports 2004 (I)*, p. 179, para. 108). It observed that, while the jurisdiction of States is primarily territorial, it may sometimes be exercised outside national territory. The Court further considered that, given the object and purpose of the ICCPR, when a State party exercises its jurisdiction outside its national territory, that State should be bound to comply with the provisions of the ICCPR (*ibid.*, para. 109).

397. The Court notes that this interpretation of Article 2, paragraph 1, of the ICCPR is consistent with the practice of the Human Rights Committee, which has found the ICCPR to be applicable where a State exercises its jurisdiction on foreign territory (see *Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory, Advisory Opinion, I.C.J. Reports 2004 (I)*, p. 179, para. 109). This interpretation is in line with the *travaux préparatoires* of the ICCPR, which, according to the Court, demonstrate that the drafters of the ICCPR "did not intend to allow States to escape from their obligations when they exercise jurisdiction outside their national territory" (*ibid.*); rather, they "only intended to prevent persons residing abroad from asserting, vis-à-vis their State of origin, rights that do not fall within the competence of that State, but of that of the State of residence" (*ibid.*).

398. In this regard, the Court concluded that the ICCPR is "applicable in respect of acts done by a State in the exercise of its jurisdiction outside its own territory" (*Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory, Advisory Opinion, I.C.J. Reports 2004 (I)*, p. 180, para. 111).

399. The Court reiterated these findings in its 2005 Judgment concerning *Armed Activities on the Territory of the Congo (Democratic Republic of the Congo* v. *Uganda)* (*I.C.J. Reports 2005*, p. 243, para. 216) and in its Advisory Opinion of 19 July 2024 on the *Legal Consequences arising from the Policies and Practices of Israel in the Occupied Palestinian Territory, including East Jerusalem* (para. 99).

400. As regards the ICESCR, the Court has observed that it "contains no provision on its scope of application", adding that

> "[t]his may be explicable by the fact that this Covenant guarantees rights which are essentially territorial. However, it is not to be excluded that it applies both to territories over which a State party has sovereignty and to those over which that State exercises territorial jurisdiction. Thus Article 14 makes provision for transitional measures in the case of any State which 'at the time of becoming a Party, has not been able to secure in its metropolitan territory or other territories under its jurisdiction compulsory primary education, free of charge'." (*Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory, Advisory Opinion, I.C.J Reports 2004 (I)*, p. 180, para. 112.)

401. Furthermore, with respect to the Convention on the Rights of the Child, the Court has observed that Article 2 thereof provides that "States Parties shall respect and ensure the rights set forth in the . . . Convention to each child within their jurisdiction" and concluded that this Convention was therefore applicable "within the Occupied Palestinian Territory" (*Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory, Advisory Opinion, I.C.J. Reports 2004 (I)*, p. 181, para. 113).

402. In the context of the present advisory proceedings, the Court need not determine the specific circumstances under which a State can be regarded as exercising its jurisdiction outside its own territory, since any such determination depends on the provisions of each treaty. The Court emphasizes, in this regard, that the scope of human rights treaty law and that of customary law are distinct.

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403. Taking into account the adverse effects of climate change on the enjoyment of human rights, the Court considers that the full enjoyment of human rights cannot be ensured without the protection of the climate system and other parts of the environment. In order to guarantee the effective enjoyment of human rights, States must take measures to protect the climate system and other parts of the environment. These measures may include, *inter alia*, taking mitigation and adaptation measures, with due account given to the protection of human rights, the adoption of standards and legislation, and the regulation of the activities of private actors. Under international human rights law, States are required to take necessary measures in this regard.

404. The Court is of the view that international human rights law, the climate change treaties and other relevant environmental treaties, as well as the relevant obligations under customary international law, inform each other (see paragraphs 309-315 above). States must therefore take their obligations under international human rights law into account when implementing their

obligations under the climate change treaties and other relevant environmental treaties and under customary international law, just as they must take their obligations under the climate change treaties and other relevant environmental treaties and under customary international law into account when implementing their human rights obligations.

V. QUESTION *(B)* PUT TO THE COURT: LEGAL CONSEQUENCES ARISING FROM STATES' ACTS AND OMISSIONS THAT CAUSE SIGNIFICANT HARM TO THE CLIMATE SYSTEM AND OTHER PARTS OF THE ENVIRONMENT

405. The Court now turns to question *(b)*, which reads in the relevant part as follows: "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 . . .?" As observed earlier (see paragraphs 104-106), the Court considers that this question concerns the legal consequences arising for States that have breached any of the obligations identified in relation to question *(a)*. As the Court noted above (see paragraph 104), the term "legal consequences" in question *(b)* is to be understood as referring to the legal consequences arising from internationally wrongful acts of States, which are to be ascertained on the basis of the primary rules and the customary rules on State responsibility. The rules and principles governing injuries arising out of acts not prohibited by international law do not fall within the scope of question *(b)* and are thus not addressed by the Court.

406. Additionally, it bears repeating that it is not the Court's task in this Opinion to establish the individual responsibility of a State or group of States for the damage caused to the climate system (see paragraphs 107-110 above); such responsibility can only be established on a case-by-case basis. In the Court's view, in respect of question *(b)*, the object of this Opinion is to provide a reply that sets out the general legal framework that governs the responsibility of States for their failure to comply with their obligations "to ensure the protection of the climate system and other parts of the environment from anthropogenic emissions of greenhouse gases". Put differently, the Court's task is to identify, in a general manner, the legal framework under which the conduct of States can be assessed in order to determine whether a State, or a group of States, is responsible for a breach of its obligations pertaining to the protection of the climate system; whether a State, or group of States, can invoke the responsibility of another State or group of States in breach; and the remedies that are available to the injured State or States in case of such a breach.

A. Applicable law

407. The Court considers that the obligations to which question *(b)* applies are the obligations provided for under the various treaties, in particular the climate change treaties, and rules of customary international law considered under question *(a)*. The rules on State responsibility under customary international law are also applicable to the determination of legal consequences for States that, by their actions or omissions, have breached those obligations. In this regard, the Court recalls

that it has previously relied on the ILC Articles on State Responsibility which in many respects are reflective of the customary rules on State responsibility (see e.g. *Legal Consequences of the Separation of the Chagos Archipelago from Mauritius in 1965, Advisory Opinion, I.C.J. Reports 2019 (I)*, pp. 138-139, para. 177; *Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory, Advisory Opinion, I.C.J. Reports 2004 (I)*, p. 195, para. 140).

408. With regard to primary obligations under the climate change treaty framework, the Court observes that it has identified a number of legal obligations under the UNFCCC, the Kyoto Protocol and the Paris Agreement in respect of the protection of the climate system from anthropogenic GHGs (see paragraphs 268-270 above). In the absence of special rules to the contrary, the responsibility of a party may be engaged under the rules on State responsibility if there is any breach of the obligations identified in question *(a)*.

409. With regard to obligations under customary international law, the Court observes that the most significant primary obligation for States in relation to climate change is the obligation to prevent significant harm to the climate system and other parts of the environment (see paragraphs 132-139 above), which applies to all States, including those that are not parties to one or more of the climate change treaties. Under this obligation, as well as under other obligations of conduct identified under question *(a)*, a State does not incur responsibility simply because the desired result is not achieved; rather, responsibility is incurred if the State fails to take all measures which were within its power to prevent the significant harm. In this connection, the notion of due diligence, which calls for an assessment *in concreto*, is the relevant standard for determining compliance (see paragraph 137 above). Thus, a State that does not exercise due diligence in the performance of its primary obligation to prevent significant harm to the environment, including to the climate system, commits an internationally wrongful act entailing its responsibility.

410. The Court observes that participants in these proceedings are divided in their views as to whether the general rules on State responsibility apply in the context of climate change or whether the legal consequences arising from a breach of States' obligations identified under question *(a)* are solely or primarily governed by the climate change treaty framework. The disagreement between the participants concerns the question whether the customary rules on State responsibility are excluded by virtue of the application of *lex specialis* in respect of the legal consequences for breaches of obligations to protect the climate system and other parts of the environment. This disagreement is different from the arguments made by participants on the issue whether the primary rules of international law found in the climate change treaties constitute *lex specialis* in respect of the obligations found under customary or other rules of international law (see paragraph 163 above). This question is not resolved by the conclusion of the Court that the primary obligations under the climate change treaties do not constitute *lex specialis* in respect of the obligations of States under other rules of international law (see paragraphs 164-171 above).

411. In this respect, the Court recalls its conclusion, with regard to question *(a)*, that the application of the *lex specialis* maxim does not result in a general exclusion by the climate change treaties of other primary rules of international law (see paragraph 171 above). With regard to the question of applicability of the rules on State responsibility under question *(b)*, the Court notes that those rules "do not vary with the nature of the wrongful act in question in the absence of a clearly expressed *lex specialis*" (*Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina* v. *Serbia and Montenegro), Judgment, I.C.J. Reports 2007 (I)*, p. 209, para. 401). It follows that the rules on State responsibility under general international law do not apply where and to the extent that the conditions for the existence of an internationally wrongful act or the content or implementation of the international responsibility of a State are governed by special rules of international law. In order for the *lex specialis* maxim to apply, there must be "some actual inconsistency . . . or else a discernible intention that one provision is to exclude the other" (see Article 55, paragraph 4 of the commentary, ILC Articles on State Responsibility, p. 140; see also paragraph 167 above). Whether States derogated from the general rules on State responsibility by agreeing on special rules is a matter of interpretation for each supposedly special régime.

412. Therefore, the Court considers that a discernible intention to establish *lex specialis*, varying or excluding the application of the general rules on State responsibility, must be found in the climate change treaty framework itself (see paragraphs 162-171 above). Such an interpretation must take into account the object and purpose of the instrument being interpreted. Not only must these special rules and their operation be clear from the interpretation of the relevant instrument, but it is also for the special rules to determine the extent of exclusion.

413. Participants submitted two main arguments for the proposition that the climate change treaty framework constitutes *lex specialis* in respect of State responsibility. The first concerns the procedural mechanisms contained in Articles 8 and 15 of the Paris Agreement, which relate to "loss and damage" and "compliance", respectively. The second concerns Article 14 of the UNFCCC, which establishes a dispute settlement mechanism under that treaty and which has been incorporated into both the Kyoto Protocol (Article 19) and the Paris Agreement (Article 24). The Court will examine each of these mechanisms in order to ascertain whether they constitute *lex specialis*.

414. The Court recalls that Article 8 of the Paris Agreement, which establishes a loss and damage mechanism, reads in relevant part as follows:

> "2. The Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts shall be subject to the authority and guidance of the Conference of the Parties serving as the meeting of the Parties to this Agreement and may be enhanced and strengthened, as determined by the Conference of the Parties serving as the meeting of the Parties to this Agreement.
>
> 3. *Parties should enhance understanding, action and support*, including through the Warsaw International Mechanism, *as appropriate*, *on a cooperative and facilitative*

> *basis* with respect to loss and damage associated with the adverse effects of climate change." (Emphasis added.)

The Court observes that Article 8 encourages parties to the Agreement to adopt a co-operative and facilitative approach with respect to loss and damage associated with the adverse effects of climate change, including recourse to the mechanism established under that provision. The provision does not, however, address issues of liability or compensation of parties for such loss and damage, since the expression "as appropriate, on a cooperative and facilitative basis" emphasizes co-operation rather than compensation or liability.

415. This interpretation is confirmed by paragraph 51 of the COP decision that adopted the Paris Agreement, which states that "Article 8 of the Agreement does not involve or provide a basis for any liability or compensation" (decision 1/CP.21, 12 December 2015, UN doc. FCCC/CP/2015/10/Add.1, p. 8, para. 51). Moreover, the fact that the fund for responding to loss and damage is limited to "provid[ing] complementary and additional support" confirms the intention of the parties not to base the contributions of funds on State responsibility (see decision 5/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, 6 December 2023, UN doc. FCCC/PA/CMA/2023/16/Add.1, Annex I, Governing Instrument of the Fund, p. 39, para. 7). Accordingly, the Court does not find in Article 8 of the Paris Agreement any clearly expressed *lex specialis* that would exclude the application of the general rules on State responsibility.

416. Turning now to Article 15 of the Paris Agreement, the Court observes that paragraph 1 of that Article establishes the Paris Agreement Implementation and Compliance Committee (PAICC), which has the power to facilitate implementation of and promote compliance with the Agreement. However, the Court observes that this compliance mechanism does not have the power to settle disputes or provide for remedies. In the Court's view, the mechanism does not have the capacity to determine State responsibility. This interpretation is confirmed by Article 15, paragraph 2, which provides that the PAICC is a "transparent, non-adversarial and non-punitive" mechanism. Accordingly, the Court does not find in Article 15 of the Paris Agreement any clearly expressed *lex specialis* that would exclude the application of the general rules on State responsibility.

417. The dispute settlement scheme under Article 24 of the Paris Agreement further confirms the conclusion that the loss and damage mechanism and the PAICC were not designed as a special régime to address disputes relating to the breach of the provisions of the Paris Agreement. Article 24 of the Paris Agreement provides that "[t]he provisions of Article 14 of the [Framework] Convention on settlement of disputes shall apply *mutatis mutandis* to this Agreement". To recall, Article 14 of the UNFCCC is a compromissory clause that provides, *inter alia*, for the settlement of disputes concerning the interpretation or application of the UNFCCC by this Court or through arbitration. Since Article 14 of the UNFCCC and Article 24 of the Paris Agreement are silent on any special rules to be applied by the bodies seised under this compromissory clause, the Court considers that the rules to be applied by this Court or any potential arbitral tribunal in the event of a breach of the provisions of the climate change treaties are the general rules on State responsibility under customary international law.

418. The Court, therefore, finds that the text, context, and object and purpose of the climate change treaties do not support the proposition that the parties intended to exclude the general rules on State responsibility. In particular, the Court finds no evidence in Articles 8 and 15, or in the procedural mechanisms thereunder, of any discernible intention on the part of the parties to the Paris Agreement to derogate from the customary international law rules on State responsibility for breaches of treaty obligations.

419. The Court further recalls that several States, when becoming parties to the climate change treaties, entered declarations affirming the continued application of the customary international law rules on State responsibility. In the Court's view, these declarations support the interpretation that the climate change treaties do not derogate from or displace general international law of State responsibility. This interpretation also finds support in the majority of the replies to a question posed by a Member of the Court.

420. Therefore, the Court concludes that responsibility for breaches of obligations under the climate change treaties, and in relation to the loss and damage associated with the adverse effects of climate change, is to be determined by applying the well-established rules on State responsibility under customary international law.

B. Determination of State responsibility in the climate change context

421. The Court recalls that climate change is a highly complex and multifaceted phenomenon involving possible responsibilities for multiple States over long periods of time. The unprecedented nature and scale of harm resulting from climate change give rise to particular issues in relation to the application of the customary rules on State responsibility. That is so because concentrations of GHG emissions are not produced by a single activity or group of activities identifiable or associated with a certain State or States. Moreover, it is the collective and aggregate effects of GHGs, anthropogenic as well as from natural sources, that cause damage to the climate system. While, in general, all States both contribute to these emissions and are adversely affected by climate change, it is to be recalled that States have contributed to significantly different degrees to the concentration of GHGs in the atmosphere and are affected differently by the effects of climate change. The Court finds it necessary to address, as part of its reply to the General Assembly, some of the issues raised by these special features of climate change to the application of the customary rules on State responsibility.

422. Chief amongst these issues are questions relating to attribution and causation, which require clarification in view of the special features of climate change. Indeed, the need for such clarifications is self-evident given that, under the rules on State responsibility, only an action or omission attributable to a State can give rise to international responsibility. Moreover, in cases where reparation is claimed, it must be shown that the damage for which reparation is claimed has been factually and legally caused by a State.

423. A related issue that arises in the context of climate change is that of temporality, since the breach of an obligation identified in question *(a)* does not necessarily occur through one, temporally contained, action or omission. Participants expressed diverging views on the issue of temporality. The Court observes that the issue has two distinct, albeit intertwined, aspects: *first*, the temporal scope of the international obligations of States pertaining to the protection of the climate system from anthropogenic GHG emissions; *second*, the temporal scope of a breach of those international obligations by States. With respect to the latter, some participants sought to rely on the rules on State responsibility concerning acts having a continuing character (ILC Articles on State Responsibility, Article 14) and composite acts (*ibid.*, Article 15) to address challenges of precisely determining the critical date for the identification of a breach of States' obligations to protect the climate system. As observed earlier, the issue of the temporal scope of the obligations, and the related issue of breach of those obligations, comprise elements of an *in concreto* assessment for the determination of State responsibility (see paragraph 97 above), which is beyond the scope of this Advisory Opinion.

424. In contrast, the Court observes that general questions of attribution and causation, which require clarification on account of the diverging views of the participants, do not necessitate an individualized assessment of State conduct. Thus, the Court will address below certain issues raised in these proceedings regarding the applicability and operation of the respective rules.

1. Questions relating to attribution

425. At the outset, the Court wishes to clarify that the term "attribution" was used in these proceedings in different senses. While attribution in the field of climate science refers to "the process of evaluating the relative contributions of multiple causal factors to a change or event with an assessment of confidence" (IPCC, 2021, *Climate Change 2021: The Physical Science Basis*, Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, Annex VII, Glossary, p. 2219), attribution in the context of determining State responsibility denotes "the operation of attaching a given action or omission to a State" under international law. (see Article 2, paragraph 12 of the commentary, ILC Articles on State Responsibility, p. 36). Attribution in the latter sense is one of the elements necessary for finding an internationally wrongful act, and all international claims may be said to require attribution to establish the responsibility of a particular State under international law.

426. Some participants expressed the view that the application of the rules on State responsibility is difficult in the context of climate change, since the emission of GHGs as such is not an internationally wrongful act and difficulties arise for its attribution. They also asserted that the plurality of responsible and injured States makes attribution difficult, if not impossible. Other participants submitted that there is no difficulty in applying the general legal framework for attribution reflected in Articles 4 to 11 of the ILC Articles on State Responsibility, and that the conduct attributable to States includes the adoption of laws, policies and programmes, including decisions, that promote fossil fuel production and consumption; and failure to adequately regulate the GHG emissions under the State's jurisdiction or control.

427. In considering the alleged difficulties in attributing actions or omissions to a State, the Court emphasizes at the outset that attribution is to be based on criteria determined by international law. In the Court's view, the "well-established rule of international law" that "the conduct of any organ of a State must be regarded as an act of that State" (*Armed Activities on the Territory of the Congo (Democratic Republic of the Congo* v. *Uganda), Judgment, I.C.J. Reports 2005*, p. 242, para. 213, citing *Difference Relating to Immunity from Legal Process of a Special Rapporteur of the Commission on Human Rights, Advisory Opinion, I.C.J. Reports 1999 (I)*, p. 87, para. 62) is applicable in the context of climate change. Failure of a State to take appropriate action to protect the climate system from GHG emissions — including through fossil fuel production, fossil fuel consumption, the granting of fossil fuel exploration licences or the provision of fossil fuel subsidies — may constitute an internationally wrongful act which is attributable to that State. The Court also emphasizes that the internationally wrongful act in question is not the emission of GHGs per se, but the breach of conventional and customary obligations identified under question *(a)* pertaining to the protection of the climate system from significant harm resulting from anthropogenic emissions of such gases.

428. Some participants also argued that the conduct of private actors resulting in emissions of GHGs is not attributable to States. In relation to private actors, the Court observes that the obligations it has identified under question *(a)* include the obligation of States to regulate the activities of private actors as a matter of due diligence. Therefore, attribution in this context involves attaching to a State its own actions or omissions that constitute a failure to exercise regulatory due diligence. In such circumstances, the question of attributing the conduct of private actors to a State does not arise. The legal standard to assess compliance with the obligation to regulate, as well as the nature of the actions or omissions that lead to attribution, has been set out by the Court in several cases (*Pulp Mills on the River Uruguay (Argentina* v. *Uruguay), Judgment, I.C.J. Reports 2010 (I)*, pp. 79-80, para. 197; *United States Diplomatic and Consular Staff in Tehran (United States of America* v. *Iran), Judgment, I.C.J. Reports 1980*, p. 31, para. 63). Thus, a State may be responsible where, for example, it has failed to exercise due diligence by not taking the necessary regulatory and legislative measures to limit the quantity of emissions caused by private actors under its jurisdiction.

429. The Court further notes that some participants submitted that it is difficult to invoke responsibility in the context of climate change given that the wrongful conduct is cumulative in nature, involving different States over a period of time, and involving a plurality of States that cause injury to a plurality of injured States. In this respect, the Court observes that while climate change is caused by cumulative GHG emissions, it is scientifically possible to determine each State's total contribution to global emissions, taking into account both historical and current emissions. For instance, since the adoption of the UNFCCC, States are required to communicate information on their emissions. The 2023 IPCC report includes data on cumulative net emissions by region, and other studies include data on current and historical emissions that can be attributed to individual States (IPCC, *Climate Change 2023: Synthesis Report*, p. 45; European Commission, Joint Research Centre Science for Policy Report, *CO_2 Emissions of all World Countries*, 2022, p. 5). Indeed, other courts and tribunals have considered the link between GHG emissions and climate change, the link

between climate change and adverse effects suffered by litigants, the link between such harm and the actions or omissions of a particular State, and the attributability of responsibility for such adverse effects. It is important to recall at this stage that what constitutes a wrongful act is not the emissions in and of themselves but actions or omissions causing significant harm to the climate system in breach of a State's international obligations.

430. The Court acknowledges that the fact that multiple States have contributed to climate change may indeed increase the difficulty of determining whether and to what extent an individual State's breach of an obligation identified in question *(a)* has caused significant harm to the climate system. However, the Court considers that, in principle, the rules on State responsibility under customary international law are capable of addressing a situation in which there exists a plurality of injured or responsible States. Such a situation was recognized by the Court in its Judgment concerning *Armed Activities on the Territory of the Congo (Democratic Republic of the Congo* v. *Uganda)*, where it observed that "in certain situations in which multiple causes attributable to two or more actors have resulted in injury . . . responsibility for part of such injury should [be] allocated among [the] actors" (*I.C.J. Reports 2022 (I)*, pp. 49-50, para. 98). While the Court's observations were not made in the context of climate change, they are of general import and show that the rules on State responsibility are capable of addressing situations where damage is caused by multiple States engaging in wrongful conduct, and that the responsibility of a single State for damage may be invoked without invoking the responsibility of all States that may be responsible.

431. Therefore, in the climate change context, the Court considers that each injured State may separately invoke the responsibility of every State which has committed an internationally wrongful act resulting in damage to the climate system and other parts of the environment. And where several States are responsible for the same internationally wrongful act, the responsibility of each State may be invoked in relation to that act.

432. Thus, the Court considers that the rules on State responsibility admit the possibility of determining the responsibility of States in the climate change context. Factual questions arising in the context of attribution and apportionment of responsibility are to be resolved on a case-by-case basis.

2. Questions relating to causation

433. The Court begins by observing that causation of damage is not a requirement for the determination of responsibility as such. For a finding of State responsibility, what is required is an internationally wrongful act and its attribution to a State, whether the act causes harm or not. Causation or causality is a legal concept that plays a role in determining reparation. Since reparation implies the existence of damage, causation must be established between the wrongful act of a State — or group of States — and particular damage suffered by the injured State or, in the case of a breach of obligations under international human rights law, by the injured individuals.

434. Causation of harm was raised by many participants, with some arguing that causation is impossible to establish in the present context due to the diffuse nature of climate change. Other participants submitted that causation between a wrongful act and damage should be presumed in the context of climate change.

435. The Court finds neither of these positions convincing. As it has previously observed, "the fact that the damage was the result of concurrent causes is not sufficient to exempt [a State] from any obligation to make reparation" (*Armed Activities on the Territory of the Congo (Democratic Republic of the Congo* v. *Uganda), Reparations, Judgment, I.C.J. Reports 2022 (I)*, p. 49, para. 97). At the same time, causation cannot be presumed and is a necessary element for reparation to be accorded (*ibid.*, p. 48, para. 93).

436. The existing legal standard for establishing causation, which has been developed in the jurisprudence of the Court, is capable of being applied to the establishment of causation between the internationally wrongful act of non-compliance with States' obligations to protect the climate system from harm caused by anthropogenic GHG emissions and the damage suffered by States as a result of such a wrongful act. This standard requires the existence of "a sufficiently direct and certain causal nexus between the wrongful act . . . and the injury suffered by the Applicant" *(Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua), Compensation, Judgment, I.C.J. Reports 2018 (I)*, p. 26, para. 32; *Armed Activities on the Territory of the Congo (Democratic Republic of the Congo* v. *Uganda), Reparations, Judgment, I.C.J. Reports 2022 (I)*, p. 48, para. 93). Moreover, as the Court has observed, the "causal nexus" between the wrongful act and the damage in question is not static in nature, and "may vary depending on the primary rule violated and the nature and extent of the injury" (*Armed Activities on the Territory of the Congo (Democratic Republic of the Congo* v. *Uganda), Reparations, Judgment, I.C.J. Reports 2022 (I)*, p. 48, para. 93). Accordingly, the Court is of the view that the standard of "a sufficiently direct and certain causal nexus" between an alleged wrongful action or omission and the alleged damage is flexible enough to address the challenges arising in respect of the phenomenon of climate change.

437. In terms of the operation of this legal standard in the climate change context, the Court observes that causation involves two distinct elements. *First*, whether a given climatic event or trend can be attributed to anthropogenic climate change; and *second*, to what extent damage caused by climate change can be attributed to a particular State or group of States. While the second element must be established *in concreto* in respect of specific claims brought by States in respect of damage, in many cases the first element may be addressed by recourse to science. The scientific evidence adduced in these proceedings establishes that significant harm to the climate system and other parts of the environment has been caused as a result of anthropogenic GHG emissions (see paragraph 277 above). For example, the IPCC's 2023 Synthesis Report includes data clearly linking the human contribution to climate change to observed increases in heatwaves, flooding and drought (p. 48, figure 2.3). As for establishing causality between damage caused and an internationally wrongful act, the Court has observed in the past that

> "[i]n cases of alleged environmental damage, particular issues may arise with respect to the existence of damage and causation. The damage may be due to several concurrent causes, or the state of science regarding the causal link between the wrongful act and the damage may be uncertain. These are difficulties that must be addressed as and when they arise in light of the facts of the case at hand and the evidence presented to the Court.

> Ultimately, it is for the Court to decide whether there is a sufficient causal nexus between the wrongful act and the injury suffered." (*Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua), Compensation, Judgment, I.C.J. Reports 2018 (I)*, p. 26, para. 34.)

438. In light of the foregoing, the Court concludes that while the causal link between the wrongful actions or omissions of a State and the harm arising from climate change is more tenuous than in the case of local sources of pollution, this does not mean that the identification of a causal link is impossible in the climate change context; it merely means that the causal link must be established in each case through an *in concreto* assessment while taking into account the aforementioned elements outlined by the Court.

3. *Erga omnes* character of the underlying obligations

439. The Court now turns to the question whether the character of certain obligations identified under question *(a)* results in any special legal consequences for States. A number of participants in these proceedings maintained that the Court has already found that some obligations implicated by climate change are obligations *erga omnes*, including most notably, certain international human rights obligations.

440. The Court observes that certain rules of international law relating to global common goods, such as the climate system, may produce *erga omnes* obligations (see Conclusion 17, paragraph 3 of the commentary, ILC Conclusions on identification and legal consequences of peremptory norms of general international law (*jus cogens*), *Yearbook of the International Law Commission*, 2022, Vol. II, Part Two, p. 66). In the present context, the Court considers that all States have a common interest in the protection of global environmental commons like the atmosphere and the high seas. Consequently, States' obligations pertaining to the protection of the climate system and other parts of the environment from anthropogenic GHG emissions, in particular the obligation to prevent significant transboundary harm under customary international law, are obligations *erga omnes*. In the treaty context, the Court recalls that the UNFCCC and Paris Agreement acknowledge that climate change is "a common concern of humankind" (UNFCCC, first preambular paragraph; Paris Agreement, eleventh preambular paragraph), requiring "a global response" (Paris Agreement, Article 2). They seek to protect the essential interest of all States in the safeguarding of the climate system, which benefits the international community as a whole. As such, the Court considers that the obligations of States under these treaties are obligations *erga omnes partes*.

441. As the Court has observed in the past, obligations *erga omnes* are "[b]y their very nature . . . the concern of all States" (*Barcelona Traction, Light and Power Company, Limited (New Application: 1962) (Belgium* v. *Spain), Second Phase, Judgment, I.C.J. Reports 1970*, p. 32, para. 33). The Court has also previously found that treaties protecting common interests imply, with respect to some provisions, the existence of obligations *erga omnes partes* (*Application of the Convention on the Prevention and Punishment of the Crime of Genocide (The Gambia* v. *Myanmar), Preliminary Objections, Judgment, I.C.J. Reports 2022 (II)*, pp. 515-516, para. 107; see also *Questions relating to the Obligation to Prosecute or Extradite (Belgium* v. *Senegal), Judgment, I.C.J.*

Reports 2012 (II), p. 449, para. 68; *Barcelona Traction, Light and Power Company, Limited (New Application: 1962) (Belgium* v. *Spain), Second Phase, Judgment, I.C.J. Reports 1970*, p. 32, para. 33). As a result, all States parties have a legal interest in the protection of the main mitigation obligations set forth in the climate change treaties and may invoke the responsibility of other States for failing to fulfil them.

442. The Court recalls that under the rules on State responsibility, "[a]ny State other than an injured State is entitled to invoke the responsibility of another State . . . if . . . the obligation breached is owed to the international community as a whole" (ILC Articles on State Responsibility, Article 48, paragraph 1 *(b)*). It follows that responsibility for breaches of such obligations, such as climate change mitigation obligations, may be invoked by any State when such obligations arise under customary international law. When such obligations arise under the climate change treaties, all parties to the treaty may invoke such responsibility, since every party is deemed to have a legal interest in the protection of these obligations. As observed by the Court in *Questions relating to the Obligation to Prosecute or Extradite (Belgium* v. *Senegal)*,

> "[t]he common interest in compliance with the relevant obligations under the [treaty] implies the entitlement of each State party to the [treaty] to make a claim concerning the cessation of an alleged breach by another State party" (*Judgment, I.C.J. Reports 2012 (II)*, p. 450, para. 69).

443. There is, however, a difference between the position of injured States or specially affected States on the one hand, and that of non-injured States on the other, as concerns the availability of remedies. While a non-injured State may pursue a claim against a State in breach of a collective obligation, it may not claim reparation for itself. Rather, it may only make a claim for cessation of the wrongful act and assurances and guarantees of non-repetition, as well as for the performance of the obligation of reparation in the interest of the injured State or of the beneficiaries of the obligation breached. These legal consequences are addressed below.

C. Legal consequences arising from wrongful acts

444. It is well established that every internationally wrongful act of a State entails the international responsibility of that State. In the present context, the internationally wrongful act may range from breaches of treaty obligations, such as the procedural obligation of a State to prepare, communicate or implement NDCs under Article 4 of the Paris Agreement, to breaches of obligations under customary international law, such as the failure of a State to regulate emissions of GHGs under its duty to exercise due diligence to prevent significant harm, or its failure to conduct EIAs.

445. The Court cannot, in the context of these advisory proceedings, specify precisely what consequences are entailed by the commission of an internationally wrongful act of breaching obligations to protect the climate system from the anthropogenic GHG emissions, since such consequences depend on the specific breach in question and on the nature of the particular harm. As a general observation, the Court notes that breaches of States' obligations under question *(a)* may

give rise to the entire panoply of legal consequences provided for under the law of State responsibility. These include obligations of cessation and non-repetition, which are consequences that apply irrespective of the existence of harm, as well as the consequences requiring full reparation, including restitution, compensation and/or satisfaction. The Court also notes that breaches of States' obligations do not affect the continued duty of the responsible State to perform the obligation breached. The Court will address each of these in turn below.

1. Duty of performance

446. The breach by a State of its international obligations does not extinguish its underlying duty of performance. States have a continuing duty to perform their obligations despite their breaches thereof (see *Gabčíkovo-Nagymaros Project (Hungary/Slovakia), Judgment, I.C.J. Reports 1997*, p. 68, para. 114). For instance, States have a continuing duty to preserve and improve the absorption capacity of reservoirs and sinks, notwithstanding any breaches of those obligations under the climate change treaties. Similarly, in the case of a State party setting an inadequate NDC under Article 4 of the Paris Agreement, a competent court or tribunal could order that State to perform its obligations by adopting an NDC consistent with its obligations under the Paris Agreement.

2. Duty of cessation and guarantees of non-repetition

447. Under customary international law, a State responsible for an internationally wrongful act is under an obligation to cease that act if it is continuing and if the breached obligation is still in force (*Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory, Advisory Opinion, I.C.J. Reports 2004 (I)*, pp. 201-202, para. 163 (3) (A)-(C)). In this context, the Court is of the view that the obligation to put an end to the wrongful act may require a State to revoke all administrative, legislative and other measures that constitute an internationally wrongful act of that State.

448. The duty of cessation may also require States to employ all means at their disposal to reduce their GHG emissions and take other measures in a manner, and to the extent, that ensures compliance with their obligations. Additionally, in appropriate circumstances, a responsible State could be required to offer appropriate assurances and guarantees of non-repetition (see ILC Articles on State Responsibility, Article 30 *(b)*).

3. Duty to make reparation

449. As noted above, reparation implies the existence of damage which must be demonstrated by the injured State or, in the case of a breach of an obligation under international human rights law, by the injured individuals. Therefore, to establish reparation, causation must be established between the wrongful act of a State — or group of States — and particular damage suffered by the injured State, or, in the case of human rights law, by the injured individuals.

450. Article 31 of the ILC Articles on State Responsibility provides that a responsible State is under an obligation to make full reparation for the damage caused by the internationally wrongful act (see also *Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory, Advisory Opinion, I.C.J. Reports 2004 (I)*, p. 198, para. 152). As stated by the Permanent Court of International Justice in the *Factory at Chorzów* case, reparation must "wipe out all the consequences of the illegal act and reestablish the situation which would, in all probability, have existed if that act had not been committed" (*Merits, Judgment No. 13, 1928, P.C.I.J., Series A, No. 17*, p. 47). "[F]ull reparation" can be achieved by restitution, compensation, satisfaction or a combination thereof. The appropriate nature and quantum of reparations cannot be assessed in the abstract and depends on the circumstances of a particular case.

(a) ***Restitution***

451. The Court observes that the remedy of restitution, which involves the re-establishment of the situation that existed before the wrongful act was committed, may prove difficult or unfeasible in the case of environmental harm, since such harm is often not easily reversible. Nonetheless, the Court considers that, in the circumstances of climate change caused by emissions of GHGs, restitution may take the form of reconstructing damaged or destroyed infrastructure, and restoring ecosystems and biodiversity. Whether or not these special forms of restitution are appropriate as reparation for damage suffered by States in relation to climate change is to be determined on a case-by-case basis. Such determinations cannot be made in the abstract.

(b) ***Compensation***

452. In the event that restitution should prove to be materially impossible, responsible States have an obligation to compensate. The Court observes that compensation, as a form of reparation, has the function of addressing the losses incurred as a result of the internationally wrongful act. Compensation corresponds to the financially assessable damage suffered by the injured State or its nationals. The Court is not requested in this Advisory Opinion to indicate reparation for specific States or to identify such States individually, nor to proceed to the quantification of compensation to be paid by specific States or a plurality of States. However, the Court considers that it is within the scope of this Opinion, in the context of setting out the applicable legal framework for State responsibility, to consider whether compensation could be owed for significant harm caused by climate change, if a sufficiently direct and certain causal nexus can be shown between the wrongful acts of one or more States and the resulting harm.

453. The Court has previously had occasion to confirm that environmental damage is compensable under international law, and that compensation will be due for both damage caused to the environment, "in and of itself" — which may include "indemnification for the impairment or loss of environmental goods and services in the period prior to recovery" — and expenses incurred by injured States as a consequence of such damage (*Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica* v. *Nicaragua), Compensation, Judgment, I.C.J. Reports 2018 (I)*, pp. 28-29, paras. 41-43). With respect to the valuation of the damage caused to the environment, the Court has held that

> "the absence of adequate evidence as to the extent of material damage will not, in all situations, preclude an award of compensation for that damage. For example, in the *Ahmadou Sadio Diallo* case, the Court determined the amount of compensation due on the basis of equitable considerations" (*ibid.*, pp. 26-27, para. 35).

454. Therefore, where there is uncertainty with respect to the exact extent of the damage caused, compensation in the form of a global sum, within the range of possibilities indicated by the evidence and taking into account equitable considerations, may be awarded on an exceptional basis (see *Armed Activities on the Territory of the Congo (Democratic Republic of the Congo* v. *Uganda), Reparations, Judgment, I.C.J. Reports 2022 (I)*, p. 52, para. 106). In the climate change context, reparations in the form of compensation may be difficult to calculate, as there is usually a degree of uncertainty with respect to the exact extent of the damage caused.

(c) ***Satisfaction***

455. Whether satisfaction is warranted for a violation by a State or States of obligations regarding the emission of GHGs, and what form that satisfaction could take, will depend on the nature and circumstances of the breach. It is possible for satisfaction to take the form of expressions of regret, formal apologies, public acknowledgments or statements, or education of the society about climate change. In the past, the Court has also recognized that a formal declaration by an international court or tribunal of the wrongfulness of State conduct is a potential form of satisfaction (*Corfu Channel (United Kingdom* v. *Albania), Merits, Judgment, I.C.J. Reports 1949*, p. 35).

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456. Before concluding, the Court recalls that it has been suggested that these advisory proceedings are unlike any that have previously come before the Court. At the same time, as the Court concluded earlier, the questions put to it by the General Assembly are legal ones (see paragraph 40), and the Court, as a court of law, can do no more than address the questions put to it through and within the limits of its judicial function; this is the Court's assigned role in the international legal order. However, the questions posed by the General Assembly represent more than a legal problem: they concern an existential problem of planetary proportions that imperils all forms of life and the very health of our planet. International law, whose authority has been invoked by the General Assembly, has an important but ultimately limited role in resolving this problem. A complete solution to this daunting, and self-inflicted, problem requires the contribution of all fields of human knowledge, whether law, science, economics or any other. Above all, a lasting and satisfactory solution requires human will and wisdom — at the individual, social and political levels — to change our habits, comforts and current way of life in order to secure a future for

ourselves and those who are yet to come. Through this Opinion, the Court participates in the activities of the United Nations and the international community represented in that body, with the hope that its conclusions will allow the law to inform and guide social and political action to address the ongoing climate crisis.

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457. For these reasons,

THE COURT,

(1) Unanimously,

Finds that it has jurisdiction to give the advisory opinion requested;

(2) Unanimously,

Decides to comply with the request for an advisory opinion;

(3) As regards question *(a)* put by the General Assembly:

A. Unanimously,

Is of the opinion that the climate change treaties set forth binding obligations for States parties to ensure the protection of the climate system and other parts of the environment from anthropogenic greenhouse gas emissions. These obligations include the following:

(a) States parties to the United Nations Framework Convention on Climate Change have an obligation to adopt measures with a view to contributing to the mitigation of greenhouse gas emissions and adapting to climate change;

(b) States parties listed in Annex I to the United Nations Framework Convention on Climate Change have additional obligations to take the lead in combating climate change by limiting their greenhouse gas emissions and enhancing their greenhouse gas sinks and reservoirs;

(c) States parties to the United Nations Framework Convention on Climate Change have a duty to co-operate with each other in order to achieve the underlying objective of the Convention;

(d) States parties to the Kyoto Protocol must comply with applicable provisions of the Protocol;

(e) States parties to the Paris Agreement have an obligation to act with due diligence in taking measures in accordance with their common but differentiated responsibilities and respective capabilities capable of making an adequate contribution to achieving the temperature goal set out in the Agreement;

(f) States parties to the Paris Agreement have an obligation to prepare, communicate and maintain successive and progressive nationally determined contributions which, *inter alia*, when taken together, are capable of achieving the temperature goal of limiting global warming to 1.5°C above pre-industrial levels;

(g) States parties to the Paris Agreement have an obligation to pursue measures which are capable of achieving the objectives set out in their successive nationally determined contributions; and

(h) States parties to the Paris Agreement have obligations of adaptation and co-operation, including through technology and financial transfers, which must be performed in good faith;

B. Unanimously,

Is of the opinion that customary international law sets forth obligations for States to ensure the protection of the climate system and other parts of the environment from anthropogenic greenhouse gas emissions. These obligations include the following:

(a) States have a duty to prevent significant harm to the environment by acting with due diligence and to use all means at their disposal to prevent activities carried out within their jurisdiction or control from causing significant harm to the climate system and other parts of the environment, in accordance with their common but differentiated responsibilities and respective capabilities;

(b) States have a duty to co-operate with each other in good faith to prevent significant harm to the climate system and other parts of the environment, which requires sustained and continuous forms of co-operation by States when taking measures to prevent such harm;

C. Unanimously,

Is of the opinion that States parties to the Vienna Convention for the Protection of the Ozone Layer and to the Montreal Protocol on Substances that Deplete the Ozone Layer and its Kigali Amendment, the Convention on Biological Diversity and the United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, have obligations under these treaties to ensure the protection of the climate system and other parts of the environment from anthropogenic greenhouse gas emissions;

D. Unanimously,

Is of the opinion that States parties to the United Nations Convention on the Law of the Sea have an obligation to adopt measures to protect and preserve the marine environment, including from the adverse effects of climate change and to co-operate in good faith;

E. Unanimously,

Is of the opinion that States have obligations under international human rights law to respect and ensure the effective enjoyment of human rights by taking necessary measures to protect the climate system and other parts of the environment;

(4) As regards question *(b)* put by the General Assembly:

Unanimously,

Is of the opinion that a breach by a State of any obligations identified in response to question *(a)* constitutes an internationally wrongful act entailing the responsibility of that State. The responsible State is under a continuing duty to perform the obligation breached. The legal consequences resulting from the commission of an internationally wrongful act may include the obligations of:

(a) cessation of the wrongful actions or omissions, if they are continuing;

(b) providing assurances and guarantees of non-repetition of wrongful actions or omissions, if circumstances so require; and

(c) full reparation to injured States in the form of restitution, compensation and satisfaction, provided that the general conditions of the law of State responsibility are met, including that a sufficiently direct and certain causal nexus can be shown between the wrongful act and injury.

Done in French and in English, the French text being authoritative, at the Peace Palace, The Hague, this twenty-third day of July, two thousand and twenty-five, in two copies, one of which will be placed in the archives of the Court and the other transmitted to the Secretary-General of the United Nations.

(Signed) IWASAWA Yuji,
President.

(Signed) Philippe GAUTIER,
Registrar.

Vice-President SEBUTINDE appends a separate opinion to the Advisory Opinion of the Court; Judge TOMKA appends a declaration to the Advisory Opinion of the Court; Judges YUSUF, XUE and BHANDARI append separate opinions to the Advisory Opinion of the Court; Judges BHANDARI and CLEVELAND append a joint declaration to the Advisory Opinion of the Court;

Judge NOLTE appends a declaration to the Advisory Opinion of the Court; Judge CHARLESWORTH appends a separate opinion to the Advisory Opinion of the Court; Judges CHARLESWORTH, BRANT, CLEVELAND and AURESCU append a joint declaration to the Advisory Opinion of the Court; Judge CLEVELAND appends a declaration to the Advisory Opinion of the Court; Judge AURESCU appends a separate opinion to the Advisory Opinion of the Court; Judge TLADI appends a declaration to the Advisory Opinion of the Court.

(Initialled) I.Y.

(Initialled) Ph.G.