SEPARATE OPINION OF JUDGE XUE

1. In reply to the questions put to it by the General Assembly, the Court, in my opinion, should have seized this opportunity to give a full account of the imperatives of the underlying principles set forth in Article 3 of the United Nations Framework Convention on Climate Change (hereinafter "Framework Convention" or "UNFCCC") in the global response to climate change, in particular the principle of sustainable development and the principle of common but differentiated responsibilities and respective capabilities (hereinafter the "principle of common but differentiated responsibilities"). In the Advisory Opinion, the Court recognizes them as guiding principles directly applicable to climate change but stops short of analysing in which way they provide guidance to the interpretation of the treaties, thus rendering them merely a nominal effect.

2. Climate change is one of the most complicated and difficult environmental issues that States have ever dealt with. Climate change appears to be an environmental issue under international law but, in essence, it is a question of development. Unlike other environmental problems, it cannot be tackled by a sectoral approach. To achieve the objective set up by the climate change treaties through limiting the increase of the global average temperature to 1.5°C above pre-industrial levels, global action on mitigation of anthropogenic greenhouse gas emissions (hereinafter "GHG emissions") will likely affect almost every economic sector of States and every aspect of our way of life. It is imperative for the Court to underscore why mitigation and adaptation measures must be done in an integral manner, taking into account economic, social, environmental and human rights considerations together, in the context of sustainable development and poverty eradication. Regrettably, the Court does not opine on this point.

3. I cannot concur with the Court's view that the principle of common but differentiated responsibilities does not establish new obligations; it is no more than a manifestation of the principle of equity (see paragraph 151 of the Advisory Opinion). Once the principle is identified by the Court as an applicable law, it must have its own substantive content. As the Court said about the principle of equity, the principle of common but differentiated responsibilities must likewise be regarded as "a general principle directly applicable as law" (*Continental Shelf (Tunisia/Libyan Arab Jamahiriya), Judgment, I.C.J. Reports 1982*, p. 60, para. 71). Indeed, grounded in historical justice and fairness, the principle of common but differentiated responsibilities lays down the foundation of international co-operation in combating global warming; major commitments of States parties set forth in the treaties in many aspects are differentiated on account of their level of development and national capabilities. This distinction between developed and developing countries by itself is not just about a criterion but a crucial factor for States to participate in a meaningful way in the global response to climate change.

4. In ascertaining the best available science for global action against climate change, the Advisory Opinion refers to the reports of the International Panel on Climate Change (hereinafter the "IPCC"). Although I agree with the general description of the scientific background as stated in the Advisory Opinion, I consider it of paramount importance to highlight the human activities identified by the IPCC as the major sources of GHG emissions because they directly bear on States' obligations at issue. Selection of scientific information on matters of such nature reflects a technical point of appreciation as well as a legal perspective.

5. In the following sections, I shall focus my discussion on two principles, namely the principle of sustainable development and the principle of common but differentiated responsibilities. To begin with, some important scientific findings of the IPCC will be briefly reviewed.

I. SCIENTIFIC FINDINGS AND THE CHARACTER OF THE ACTIVITIES IN QUESTION

6. It is generally agreed among States that the IPCC reports provide the best available science on the causes, nature and consequences of climate change. Based on years of review of the scientific research conducted by various United Nations bodies, specialized agencies, international, regional and national research institutions, and scientific societies, the IPCC reports confirm that human influence on the climate system is now an established fact. Consensus has been reached that

> "[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, lifestyle and patterns of consumption and production across regions, between and within countries, and among individuals (high confidence)." (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*"), p. 4.)

7. According to experts and scientists, three major, well-mixed GHGs that cause adverse effects to the climate system are: carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). By their research assessment, CO_2 may stay in the atmosphere for months to hundreds, even thousands, of years; CH_4 may stay for around 12 years; and N_2O for around 120 years. The IPCC concludes with very high confidence that concentrations of CO_2, CH_4 and N_2O in 2019 have increased, respectively, about 47 per cent, 56 per cent and 23 per cent since 1750 (IPCC, *Climate Change 2023: Synthesis Report*, pp. 42-43). With regard to their long-term effects, the IPCC warns that

> "[m]any climate-related risks are assessed to be higher than in previous assessments, and projected long-term impacts are up to multiple times higher than currently observed. Multiple climatic and non-climatic risks will interact, resulting in compounding and cascading risks across sectors and regions. Sea level rise, as well as other irreversible changes, will continue for thousands of years, at rates depending on future emissions (high confidence)." (*Ibid*., p. 68.)

8. Anthropogenic activities that lead to global warming appear in various forms. The IPCC's latest report reveals that in 2019, approximately 34 per cent of net global GHG emissions came from the energy sector, 24 per cent from industry, 22 per cent from agriculture, forestry and other land use, 15 per cent from transport and 6 per cent from buildings. The largest share and growth in gross GHG emissions occurred in CO_2 from fossil fuel combustion and industrial processes. More specifically, of the total anthropogenic CO_2 emissions, the combustion of fossil fuels was responsible for 81-91 per cent (IPCC, *Climate Change 2023: Synthesis Report*, pp. 4, 44; 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 (hereinafter "IPCC, 2021 contribution of Working Group I"), p. 676).

9. Seen from the time span of historical cumulative net CO_2 emissions from 1850 to 2019, more than half (58 per cent) occurred between 1850 and 1989 and about 42 per cent between 1990 and 2019. Moreover, contributions of CO_2 emissions vary substantially across regions. In 2019, the global average per capita CO_2 emissions, excluding emissions from land use and land-use change and forestry, was 6.9 tonnes of carbon dioxide equivalent (hereinafter "tCO_2-eq"). Around 35 per cent of the global population live in countries emitting more than 9 tCO_2-eq per capita. Around 41 per cent live in countries emitting less than 3 tCO_2-eq per capita. A substantial part of this population lacks access to modern energy services. Least developed countries have much lower per capita emissions (1.7 tCO_2-eq) than the global average. The IPCC concludes that "[t]he 10% of households with the highest per capita emissions contribute 34-45% of global consumption-based household GHG emissions, while . . . the bottom 50% contribute 13-15%" (IPCC, *Climate Change 2023: Synthesis Report*, p. 44).

10. Specifically concerning cumulative CO_2 emissions from fossil fuel combustion and industrial processes (hereinafter "CO_2-FFI"), between 1850 and 2019, least developed countries contributed 0.4 per cent; the three developing regions (Africa, Asia and Pacific, and Latin America and Caribbean) together contributed 28 per cent; whereas developed countries contributed 57 per cent. Moreover, in 2019, average per capita CO_2-FFI emissions in the above-mentioned three regions (Africa, 1.2 tCO_2 per capita; Asia and Pacific, 4.4 tCO_2 per capita; Latin America and Caribbean, 2.7 tCO_2 per capita) remained less than half of that of developed countries (9.5 tCO_2 per capita). The IPCC reports that "[t]erritorial emissions from developing country regions continue to grow, mostly driven by increased consumption and investment, albeit starting from a low base of per capita emissions and with a lower historic contribution to cumulative emissions than developed countries (high confidence)" (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. 65).

11. The IPCC confirms that climate change has led to widespread adverse impacts including heatwaves, droughts, tropical cyclones, desertification, loss of biodiversity, land and forest degradation, glacial retreat, ocean acidification and salinization. It has caused substantial damages and increasingly irreversible losses to nature and people. According to the IPCC's reports, approximately 3.3 to 3.6 billion people live in contexts that are highly vulnerable to climate change. Global mean sea level increased by 0.20 m between 1901 and 2018. Increasing weather and climate extreme events have exposed millions of people to acute food insecurity and reduced water security, with the largest adverse impacts observed in Africa, Asia, Central and South America, least developed countries, small island developing States and the Arctic. Between 2010 and 2020, human mortality from floods, droughts and storms was 15 times higher in highly vulnerable regions, compared to regions with very low vulnerability. Economic damages from climate change have been detected in climate-exposed sectors, such as agriculture, forestry, fishery, energy and tourism. Individuals' livelihoods have been affected through the destruction of homes and infrastructure, and the loss of property, income, human health and food security, with adverse effects on gender and social equity (IPCC, *Climate Change 2023: Synthesis Report*, pp. 5-6 and 50).

12. The IPCC concludes with high confidence that 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. While finance, international co-operation and technology are critical enablers for accelerated climate action, current global financial flows for adaptation are insufficient for, and constrain implementation of, adaptation options. Increased finance would address rising climate risks while also averting some related losses

and damages, particularly in vulnerable developing countries (IPCC, *Climate Change 2023: Synthesis Report*, pp. 8, 24 and 111).

13. This recap of the IPCC's findings, in my view, covers some of the essential scientific information for the consideration of the two questions before the Court. While scientific inquiry continues, the current studies — at least at this stage — have sufficiently established certain basic facts.

14. First, it is now scientifically proven that anthropogenic GHG emissions, mainly caused by fossil fuel combustion, industrial processes, unsustainable agricultural practice and other land uses, and deforestation, have led to global warming, which has significant impacts on humankind and the planet. Their cumulative and adverse effects may have existed for decades or even centuries in the climate system.

15. Secondly, the level of GHG emissions varies greatly among regions, corresponding to the level of industrial development. Developed countries have contributed significantly to the total amount of global GHG emissions, while the contributions from least developed countries and small island developing States are minimal. With rapid economic development and the shifting of industrial activities from developed areas to other regions, GHG emissions in certain regions have increased at a fast pace since 1990, although their GHG emissions per capita remain relatively low.

16. Thirdly, climate change poses an unprecedented challenge and threat to all States. The effects and impacts of climate change, however, are experienced in markedly different ways among them. Developing countries, in particular least developed countries and small island developing States, are disproportionally affected. International co-operation, including financial assistance and transfer of technology from developed countries, is essential for these developing countries to tackle the threat of climate change in the context of their socio-economic development and efforts of poverty eradication.

17. Lastly, the global average temperature will continue to increase. The objective of the Framework Convention on temperature control, specified by the Paris Agreement, to limit temperature increase to 1.5℃ above pre-industrial levels, will unlikely be achieved unless effective mitigation and adaptation measures are taken at both national and global levels to ensure "deep, rapid and sustained" GHG emission reductions.

18. These scientific findings are the factual basis for the consideration of the obligations of States and the legal consequences arising therefrom.

II. THE ROLE OF THE PRINCIPLE OF SUSTAINABLE DEVELOPMENT IN THE GLOBAL RESPONSE TO CLIMATE CHANGE

19. Reduction of GHG emissions for the protection of the climate system, as mentioned above, essentially concerns the question of development. By the IPCC's definition, mitigation means "human intervention to reduce emissions or enhance sinks of greenhouse gases" (IPCC, 2021 contribution of Working Group I, p. 2239). Given the scientific findings discussed above, this "intervention" implies that to reduce GHG emissions, States need to shift their reliance on fossil

fuels, reconsider their approach to industrialization, change their unsustainable agricultural practices and readjust their consumption patterns. The impact of such shifts and changes is profound and far-reaching across all sectors of the economy and social development.

20. The relationship between the right to development and the right to environmental protection is not a new issue that only arises in the context of climate change. Both rights inherently bear on some fundamental human rights, such as the right to life, the right to development and the right to health. As the Court has stated before, "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). The interdependence between the vulnerability of human populations and that of ecosystems, underscored by the IPCC, in a way exacerbates the conflicting interests between development and environment in the context of climate change, as human rights protection hinges on both dimensions. Therefore, to promote human rights, socio-economic development must be pursued on a sustainable basis without causing significant damage to the environment.

21. Serious considerations of the relationship between environment and development at the international level took place at the first World Conference on the Human Environment held in Stockholm in 1972. When Western countries initiated the global action to address environmental problems, developing countries mostly responded with suspicion. Poverty-stricken, these countries were much concerned that this paradigm shift would unduly affect their right to development and reduce the availability of official development aid from the West.

22. The Stockholm Declaration adopted 26 principles, which recognized, among others, that economic and social development is essential for ensuring a favourable living and working environment for man and for creating conditions on earth that are necessary for the improvement of the quality of life (Principle 8). Between the right to development and the right to environmental protection, Principle 21 imparts a significant balance:

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

23. While taking care of the concern of developing countries to maintain their sovereign right over their natural resources for national development, the principle, nevertheless, evolves to be one of the most important principles of international environmental law — the principle of prevention of transboundary harm to the environment.

24. The principle of sustainable development did not appear in the Stockholm Declaration, but as a balancing norm, it was taking shape from there. In the ensuing years, numerous important documents on environment and development were adopted[1], among which the report of the World

[1] For example, UNEP Principles of Conduct in the field of the Environment for the Guidance of States in the Conservation and Harmonious Utilization of Natural Resources Shared by Two or More States of 1978; the World Charter for Nature adopted by the United Nations General Assembly, UN doc. A/RES/37/7, 28 October 1982; *Our Common Future*, the Brundtland Commission Report (1987).

Commission on Environment and Development (commonly known as the "Brundtland Commission Report") entitled "Our Common Future" is perhaps the most influential one. This is not because of its widely cited definition on sustainable development[2], but because of the impact of the report on the understanding of the principle. In proposing long-term environmental strategies for achieving sustainable development, the report suggested that States should not focus merely on the environmental problems in question, but also on their relations with various socio-economic areas, such as food security, population, energy, industry, urban development and biodiversity, thus bringing diverse dimensions into the environmental strategies.

25. The 1992 Rio Conference on Environment and Development provides a turning point for the principle of sustainable development in international law. The Framework Convention, in a legal form, fully reflects the integral approach suggested by the Brundtland Commission Report for the global action against the adverse effects of climate change.

26. Article 3 provides a number of principles, by which States parties shall be guided in the implementation of their obligations under the Convention. These principles are not hortatory but obligatory, in nature. The prescriptive term "shall", as interpreted by the Court, necessarily bears a mandatory connotation. These principles shall apply throughout the Framework Convention and to the subsequent agreements forming part of the climate change treaty régime. Paragraph 1 of Article 3 provides:

> "The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof."

27. Accordingly, global action against climate change must reflect both intergenerational equity as well as intragenerational equity. For intergenerational equity, it means that the current development model must shift to one that meets the needs of the present generation without compromising the ability of future generations to meet their own. That is to say, States parties, in taking mitigation measures, should be guided by the principle of sustainable development to change current unsustainable patterns of production and consumption so as to move over time towards sustainable development.

28. For intragenerational equity, one of the crucial issues for world development is the persistent gap between developed and developing worlds. Climate change has aggravated the inequality between the rich and the poor and severely constrained the ability of developing countries, in particular least developed countries and small island developing States, to pursue sustainable development goals and to eradicate poverty. Therefore, paragraph 1 of Article 3 explicitly provides that "the developed country Parties should take the lead in combating climate change and the adverse effects thereof". This legal obligation of developed countries will be discussed in detail in the following section.

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[2] The report defines the concept of sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

29. Paragraph 4 of Article 3 further specifies the principle of sustainable development. It states that

> "[t]he Parties have *a right to, and should, promote sustainable development*. Policies and measures to protect the climate system against human-induced change should be appropriate for the specific conditions of each Party and should be integrated with national development programmes, taking into account that economic development is *essential* for adopting measures to address climate change." (Emphasis added.)

30. This provision reaffirms the right to development. This right, definitely, is not absolute. It must be exercised on a sustainable basis. Accordingly, climate policies and measures must be integrated with national development agendas. In this regard, two conditions are required. First, climate policies and measures must be appropriate for the specific national conditions of each State and, second, sustainable economic development will strengthen the capabilities of a State to adopt measures to address climate change. At the world level, the ultimate goal for the global action against climate change is to promote through international co-operation a supportive and open international economic system that would lead to sustainable economic growth and development in all States, in particular developing countries (Article 3, paragraph 5, of the UNFCCC).

31. Article 4 constitutes an essential part of the Framework Convention. States parties undertake legal obligations thereunder to fulfil certain commitments. Several provisions under Article 4, paragraph 1, reflect the principle of sustainable development, for example, paragraph 1 *(c)*, *(d)*, *(e)* and *(f)*.

32. Article 4, paragraph 1 *(c)*, provides that States parties shall promote and co-operate to develop technologies, practices and processes that control, reduce and prevent GHG emissions in the sectors of energy, transport, industry, agriculture, forestry and waste management. Apparently, the key element of the provision is not whether such an obligation is one of conduct or one of result, as discussed in the present Opinion, but what States parties are required to do under this provision, certainly with the aim of achieving a result. The thrust of the obligation is the duty to promote and co-operate in technology development across various sectors that will produce a synergized result: GHG emission reductions in economic development. To promote sustainable development thus becomes a concrete obligation for States parties.

33. Paragraph 1 *(d)* requires States parties to promote sustainable management in the conservation and enhancement of sinks and reservoirs of GHG emissions. This is the other side of mitigation according to the IPCC definition of the term. Apart from creating sinks and reservoirs for the purpose of protection of the climate system, conservation and enhancement of biomass, forests and oceans have long-term effects on the sustainability of economic and social development.

34. On the obligations of adaptation under Article 4, paragraph 1 *(e)*and *(f)*, the Advisory Opinion basically recites what is provided in the Article without analysing in which way the implementation of these obligations should be guided by the principles laid down in Article 3.

35. Paragraph 1 *(e)* states that States parties shall

> "[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".

This obligation emphasizes international co-operation and integrated planning for adaptation. To build up agricultural resilience by developing drought-resistant crops or improving irrigation systems, for example, requires integrated planning and long-term environmental strategy. Evidently, the duty of due diligence should be applied in the context of sustainable development.

36. Under paragraph 1 *(f)*, States parties shall

> "[t]ake climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions, and employ appropriate methods, for example impact assessments, formulated and determined nationally, with a view to minimizing adverse effects on the economy, on public health and on the quality of the environment, of projects or measures undertaken by them to mitigate or adapt to climate change".

This provision fully reflects the three dimensions underlining the principle of sustainable development, namely economic considerations, social considerations and environmental considerations. What the Court should point out is that, in adopting this integrated approach, GHG emission reduction, by virtue of this treaty provision, has become one additional and specific factor that States parties are obligated to take into account in their national development plan and actions.

37. At the turn of the twenty-first century, a series of United Nations initiatives were launched to address global development challenges, which exerted great impact on the transformation of the development patterns and enriched the substantive elements of the principle of sustainable development[3]. For sustainable development, States acknowledge that efforts should be made to promote

> "the integration of the three components of sustainable development — economic development, social development and environmental protection — as interdependent and mutually reinforcing pillars. Poverty eradication, changing unsustainable patterns of production and consumption and protecting and managing the natural resource base of economic and social development are overarching objectives of and essential requirements for sustainable development."[4]

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[3] Major events include the World Millennium Summit that adopted the United Nations Millennium Declaration with eight objectives for development policy at both international and national levels, also called the Millennium Development Goals ("MDGs"), UN doc. A/RES/55/2 (18 Sept. 2000); the World Summit on Sustainable Development of 2002 held at Johannesburg, whose aim is to "reinvigorate the global commitment to sustainable development", UN doc. A/RES/55/199, 20 December 2000. See Nico Schrijver, *The Evolution of Sustainable Development in International Law: Inception, Meaning and Status*, Hague Academy of International Law, 2008, pp. 88-99.

[4] Res. 60/1. 2005 World Summit Outcome adopted by the United Nations General Assembly on16 September 2005, UN doc. A/RES/60/1 (24 Oct. 2005), para. 48.

38. What should be mentioned in the present context is that, in September 2015 — right before the convening of the twenty-first Conference of the Parties to the UNFCCC in Paris in December 2015, during which the Paris Agreement on climate change was adopted — the United Nations Sustainable Development Summit was held in New York, and adopted unanimously by all 193 Member States the *2030 Agenda for Sustainable Development* with 17 goals (hereinafter "SDGs") to be achieved. Among the areas to be addressed are poverty, inequality, climate change and environmental degradation. Thus the global sustainable development agenda is coherently linked with the global mitigation efforts against climate change.

39. The principle of sustainable development also permeates the substantive provisions of the Paris Agreement. In the Preamble, the "intrinsic relationship that climate change actions, responses and impacts have with equitable access to sustainable development and eradication of poverty" is emphasized. The Preamble also recognizes that sustainable lifestyles and sustainable patterns of consumption and production play an important role in addressing climate change.

40. For the purpose of enhancing the implementation of the Framework Convention, the Paris Agreement in Article 2 sets up three objects for the global response to climate change. First, to limit the global average temperature increase to 1.5°C above pre-industrial levels so as to significantly reduce the risks and impacts of climate change. Second, to increase the ability to adapt to climate change and foster climate resilience and low GHG emissions development, in a manner that does not threaten food production. Third, to provide climate finance with a view to moving towards low GHG emissions and climate-resilient development.

41. The two substantive articles of the Paris Agreement, namely Articles 2 and 4, provide that the global response to climate change, including the efforts to achieve the long-term temperature goal set out therein, must be carried out on the basis of equity and in the context of sustainable development and efforts to eradicate poverty. That is to say, as a matter of principle, mitigation and adaptation measures must take various economic, social and environmental interests into account so such measures will be integrated into sustainable development and enhance the efforts of poverty eradication.

42. Instead of imposing obligations on developed States to meet quantified mitigation targets as prescribed in the Kyoto Protocol (Annex I States parties), the Paris Agreement adopts a new mechanism for all States parties — nationally determined contributions (hereinafter "NDCs") — to deal with climate change, whereby every State party, irrespective of its development level, developed or developing, shall prepare, communicate and maintain successive NDCs that it intends to achieve. Pursuant to Article 4, paragraph 3, the NDCs must meet two conditions. One, every NDC shall reflect a State's highest possible ambition in GHG emission reduction. Second, successive NDCs will represent a progression of reduction ambition; each one should be more ambitious than the previous ones.

43. In interpreting Article 4, paragraph 2, of the Paris Agreement, the Court draws a distinction between the two obligations prescribed by the provision, namely the obligation to prepare, communicate and maintain successive NDCs and the obligation to pursue domestic mitigation measures for the purpose of achieving the objective of its NDCs. In its view, the first obligation is procedural in nature and an obligation of result, while the second is an obligation of conduct (see paragraphs 234-254 of the Advisory Opinion). By virtue of this distinction, a failure to fulfil the obligation to prepare, communicate and maintain successive NDCs constitutes a breach of Article 4,

paragraph 2, while the standard of due diligence applies to the obligation to pursue domestic mitigation measures, which means that a State is required to deploy adequate means to exercise best possible efforts, and to do the utmost to comply with its obligation.

44. Due diligence generally applies as a standard for the assessment of compliance. It needs to be applied together with substantive obligations. In the context of climate change, domestic mitigation measures provide the means by which the objectives of the NDCs can be realized. Such measures must therefore be pursued in accordance with other obligations under the Agreement and must be done, as required under Article 4, paragraph 1, in the context of sustainable development and efforts to eradicate poverty. As is noted above, mitigation is not solely about temperature control. It concerns, first and foremost, human activities and the capabilities of States to manage such activities in light of their specific national circumstances. In which way and to what extent the duty of due diligence is considered discharged in a State's pursuit of domestic mitigation measures must be assessed with other considerations. That is where the principle of sustainable development comes into play. In other words, due diligence must be assessed in the context of the environmental strategies where various economic and social development interests are considered.

45. Some participants in the proceedings questioned whether the content of NDCs under Article 4, paragraph 2, is left entirely to the discretion of each State party and what kind of obligation it entails. The Court observes that the provision is silent on the point but rejects the assumption that the content of NDCs is non-obligatory and left entirely to the discretion of each State party. In its view, NDCs must satisfy certain standards and, when taken together, are capable of contributing to the achievement of the objectives of the Paris Agreement as set out in Article 2 thereof.

46. Given the nature of anthropogenic GHG emissions, the reason why Article 4, paragraph 2, is silent on the content of NDCs is not hard to understand. GHG emissions largely come from daily production and consumption activities. Domestic mitigation measures are expected to tackle them. Drastic emission reductions at the national level will inevitably affect various economic sectors, some of which may be essential for certain States' economies and social development. It is unrealistic to expect States to quickly change their production patterns or shift the current land uses without due regard to the present and long-term economic and social consequences for their population and society at large. Domestic situations differ considerably, especially between the developed and developing worlds. Even for developed countries, the economy-wide absolute emission reduction targets set out in Article 4, paragraph 4 — urgent as they are for combating climate change — have to be left to each State to consider what domestic mitigation measures are appropriate to take and how to implement them at a certain pace. The situation with developing countries, especially least developed countries and small island developing States, is of a different nature. The adverse effects of climate change exacerbate their existing development-based economic and social inequalities and vulnerabilities, further weakening their capabilities to adapt to climate change. Without international co-operation, including climate finance and the transfer of technology from developed countries, their basic right to sustainable development is in limbo.

47. In rejecting the argument that the content of the NDCs is discretionary, the Court considers that a stringent standard of due diligence should apply in preparing the NDCs, which 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. In practice, however, it underscores that "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" (see paragraphs 246-247). This interpretation, in my view, does not fully convey what exactly this stringent standard of due diligence requires.

48. Article 3 of the Paris Agreement provides that,

> "[a]s 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."

49. This article informs that the essential elements for determining national ambition in emission reductions are embraced in the relevant articles mentioned therein. These articles relate to mitigation, adaptation, provision of climate finance, technological co-operation, capacity-building and transparency. A careful perusal of these articles reveals that the essential issue with the content of NDCs is not about how diligently a State party should act in preparing the content of their NDCs, but on what basis the NDCs could reflect their highest possible ambition. Among various criteria, sustainability is a frequent reference with regard to mitigation and adaptation measures. For example, Article 7, paragraph 5, provides that

> "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".

This integrated and holistic approach specifies all the necessary elements contained in the principle of sustainable development, highlighting human rights and scientific considerations in the global action against climate change.

50. Evidently, the principle of sustainable development is fully embraced in the climate change treaty régime. As a global agenda, a synergy of the global response to climate change and SDGs of the United Nations should be pursued. Regrettably, this imperative is missing in the Opinion.

III. THE COMMON BUT DIFFERENTIATED RESPONSIBILITIES PRINCIPLE AND CLIMATE JUSTICE

51. In pursuit of the objective of the Framework Convention, the principle of common but differentiated responsibilities plays a crucial role in addressing the development gap between developed and developing countries, which poses an inherent obstacle to the global response to climate change.

52. In accordance with the UNFCCC, States parties undertake common but differentiated responsibilities in the global response to climate change. Some of the obligations under the treaty régime apply to all States parties, regardless of their development status, while developed States

carry differentiated responsibilities in respect of mitigation, finance and transfer of technology to developing States. This legal principle is supported by the best available science as reflected in the IPCC reports. Accordingly, the UNFCCC notes 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).

Although in the past three decades since the 1992 Rio Conference, GHG emissions originating from developing countries have expectedly grown, the IPCC has affirmed that the per capita emission of developed countries remains much higher than that of developing countries.

53. As an underlying principle, Article 3, paragraph 1, of the UNFCCC provides that "the developed country Parties should take the lead in combating climate change and the adverse effects thereof". For developing countries, paragraph 2 states that

> "[t]he specific and special circumstances of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change, and of those Parties, especially developing country Parties, that would have to bear a disproportionate or abnormal burden under the Convention, should be given full consideration".

54. These general principles are duly reflected in the substantive provisions of the Framework Convention, the Kyoto Protocol and the Paris Agreement.

55. In accordance with the Framework Convention, developed country parties and other parties included in Annex I undertake a series of obligations, including quantified mitigation targets, financial and technological assistance to developing countries, and assistance to the particularly vulnerable countries for adaptation (see Article 4, paragraphs 2, 3 and 4 of the Framework Convention). Article 4, paragraph 7, provides, *inter alia*, that

> "[t]he extent to which developing country Parties will effectively implement their commitments under the Convention will depend on the effective implementation by developed country Parties of their commitments under the Convention related to financial resources and transfer of technology and will take fully into account that economic and social development and poverty eradication are the first and overriding priorities of the developing country Parties".

56. With regard to the developing countries, Article 4, paragraph 8, stipulates that,

> "[i]n the implementation of the commitments in this Article, the Parties shall give full consideration to what actions are necessary under the Convention, including actions related to funding, insurance and the transfer of technology, to meet the specific need and concerns of developing country Parties arising from the adverse effects of climate change and/or the impact of the implementation of response measures".

This provision particularly applies to small island developing States, least developed countries and other States vulnerable to the adverse effects of climate change (Article 4, paragraphs 8, 9 and 10).

57. The Paris Agreement, for the purpose of enhancing the implementation of the Framework Convention, has adopted a different mitigation mechanism — the NDCs with the aim to strengthen the global response to climate change. By virtue of the principle of common but differentiated responsibilities, the Paris Agreement, nevertheless, makes clear that

> "[d]eveloped 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*." (Article 4, paragraph 4, emphasis added.)

58. Moreover, Article 9 of the Agreement provides that "[d]eveloped 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*." (Emphasis added.)

59. In order to promote transparency to build mutual trust and confidence for the effective implementation of the Paris Agreement, Article 13, paragraph 9, requires that "[d]eveloped country Parties shall . . . provide information on financial, technology transfer and capacity-building support provided to developing country Parties under Articles 9, 10 and 11".

60. For least developed countries and small island developing States, they are not obliged to prepare and communicate strategies, plans and actions for low GHG emissions development, though they may choose to do so.

61. This is the legal framework in which the global action against the adverse effects of climate change is being set up and conducted.

62. In the Advisory Opinion, two observations made by the Court with regard to the principle of common but differentiated responsibilities deserve some comments. On the burden sharing of the obligations in respect of climate change, the Court first refers to a spectrum of States. On one end of the spectrum are the most developed States that have contributed significantly to the overall amount of GHG emissions since the Industrial Revolution, and have resources and the technical capacity to implement wide-ranging emission reductions. On the other end are those least developed States that have contributed minimally to historical emissions and have a limited capacity to transform their economies. In between are the States that have progressed considerably in their development since the conclusion of the UNFCCC in 1992, some of which now contribute significantly to global GHG emissions and possess the capacity to engage in meaningful mitigation and adaptation efforts (see paragraph 150 of the Advisory Opinion). This statement is misleading and confusing; the description distorts the foundational structure of the treaty régime on climate change.

63. From a legal point of view, what the term "meaningful" implicates cannot be found in the provisions of the Paris Agreement. Indeed, by adopting the NDCs mechanism, the Paris Agreement has enhanced the common obligation of all States parties, including developing countries, in the

global reductions of GHG emissions. That mechanism, however, is not particularly designed for, or directed at, some developing States. It has no effect on the present distinction between developed and developing States.

64. States in between in the "spectrum", according to the criteria of the International Monetary Fund and the World Bank, are over 110 developing States, with nearly 40 developed States on one end of the spectrum and 44 least developed countries on the other. Without any specific and credible criteria, this new division of the developing countries has no legal basis in the treaties, which may be perceived as a deviation from the current burden sharing of obligations between developed and developing countries under the UNFCCC, the Kyoto Protocol and the Paris Agreement.

65. Referring to Article 4, paragraph 3, of the Paris Agreement, the Court further observes that the principle of common but differentiated responsibilities has been formulated differently in the Paris Agreement with an additional phrase "in the light of different national circumstances". It considers that the phrase adds nuance to the principle by recognizing that the status of a State as developed or developing is not static. It suggests that the matter depends on an assessment of the current circumstances of the State concerned (see paragraph 226 of the Advisory Opinion). Regrettably, this interpretation of Article 4, paragraph 3, is likely to further weaken the role of the principle of common but differentiated responsibilities in the climate change treaty régime.

66. To begin with, the additional phrase presents nothing new to the principle of common but differentiated responsibilities, because that element has already been incorporated in the Framework Convention. The *chapeau* of Article 4 of the Convention stipulates that all Parties shall fulfil their obligations provided therein by "taking into account their common but differentiated responsibilities and *their specific national and regional development priorities, objectives and circumstances*" (emphasis added). This element appears in other provisions of the Framework Convention as well, for example, in Article 3, paragraph 3. Moreover, the said phrase is not intended to redefine the distinction between developed and developing countries as classified by the United Nations. As mentioned earlier, that distinction is duly reflected in Article 4, paragraph 4, of the Paris Agreement. While developed States are required to undertake economy-wide absolute emission reduction targets in a timely manner, developing countries are "encouraged to move over time" to reach those targets. Lastly, as the phrase "respective capabilities" in the principle, all States parties must carry out their responsibilities in the light of their national circumstances, regardless of their status. This applies to the NDCs as well as to the mitigation and adaptation measures.

67. The distinction between developed and developing countries reflects the level of development of States. Indeed, the status of a State as developed or developing is not static but may be changed by its social and economic advancement indexes. However, unless otherwise expressly provided, individual changes of States in their social and economic development do not negate the distinction of developed and developing countries that underlies the legal structure of the climate change treaty régime. In this regard, three considerations are important.

68. First, necessity of classification. The distinction of developed and developing States is not drawn on the basis of legal analysis. Classification of development levels of States is subject to a range of economic, social, human and institutional development indicators or indexes, which are set out by such institutions as the United Nations, the International Monetary Fund or the World Bank. This distinction has significant implications for the development planning, policymaking, international aid and global development agenda. For those States described as being "in between":

if they are still regarded as developing countries, their obligations under the climate change treaties should remain the same, notwithstanding their development progress. That is to say, while their common responsibility to take emission reductions in accordance with their obligations under the treaties are strengthened by their increasing economic growth and capabilities, these States are not bound by the provisions that apply solely to developed States.

69. More importantly, the principle of common but differentiated responsibilities, as a manifestation of equity, reflects certain policy considerations for the global action against climate change. Given the largest share of historical and current global GHG emissions originate in developed countries and the financial resources and technological capability these States command, it would not be fair and just to impose the same obligations on developed and developing States alike. As in many other areas, the distinction serves as a basis for international co-operation.

70. Second, development dilemma for developing countries. As is recognized in the Preamble of the UNFCCC and in the IPCC reports, per capita emissions in developing countries are still relatively low and the share of global emissions originating in developing countries will grow to meet their social and development needs. In the past decades, even when some developing countries have made rapid progress in their economic and social development, their gross domestic product (GDP) per capita as well as GHG emissions per capita, two essential indicators for assessing development levels, remain much lower than those of developed countries. It is likely that these countries will face increasing difficulties to maintain their highest ambition of GHG emission reductions while being able to meet their growing development needs.

71. This dilemma between GHG emission reduction targets and development needs exists generally among developing countries, but is particularly acute for least developed countries and small island developing States. The reason why the UNFCCC places so much emphasis on the specific needs and special circumstances of developing countries, especially those that are particularly vulnerable to the adverse effects of climate change and those that would have to bear a disproportionate or abnormal burden under the Convention, is that without international co-operation from developed States, including finance and transfer of technology, those developing countries will not be able to deal with the dilemma between the need to adapt to the adverse effects of climate change and the need of poverty eradication and development.

72. Third, climate justice. Climate change is a contemporary issue of development in international law but has its roots in the past.

73. By the 1970s, when the Stockholm Conference was convened, developed countries were largely approaching the end of their industrialization and were confronted with environmental problems. Because of that, environmental protection became an important agenda for them both at home and on the international plane. With increasing environmental standards, the manufacturing industries of developed countries gradually moved abroad, mostly to developing countries where environmental protection was weak. That tendency was intensified during the economic globalization process that began in the 1990s.

74. The IPCC reports found that cheap labour costs and cheap raw materials have led to a net emission transfer and outsourcing of carbon-intensive production from developed to developing economies via global trade. Although net emissions transferred between developing and developed

countries have declined since 2006, it is mainly because of the improving carbon intensity of traded products rather than a decline in trade volume, not to mention that developing economies' emission intensity still tends to be higher than that of developed economies due to less efficient technologies and a carbon-intensive fuel mix. In short, the IPCC concludes that "[d]eveloped [c]ountries tend to be net CO_2 emission importers, whereas developing countries tend to be net emission exporters (high confidence)" (IPCC, 2022 contribution of Working Group III, pp. 65 and 245). It would not be in conformity with the principle of equity if this transfer of GHG emissions between developed and developing countries is not duly taken into account.

75. In the proceedings, many participants point to another stark reality of injustice — the dire situation of small island developing States and least developed countries, which are disproportionally affected by sea level rise, coastal erosion, land degradation, severe natural disasters and extreme weather events. According to the IPCC reports, the adoption of low-emission technologies lags in most developing countries, particularly in the least developed countries, in part because of limited finance, technology development and transfer, and capacity. Moreover, current global financial flows are insufficient for, and constrain implementation of, adaptation options, especially in developing countries (high confidence) (see paragraph 12 above). To achieve climate justice, the specific needs and circumstances of these vulnerable groups of States and peoples must be addressed in accordance with the principle of common but differentiated responsibilities.

76. This point, regrettably, is not sufficiently addressed in the relevant part of the Advisory Opinion, particularly when question *(b)* is considered. Rules of State responsibility for transboundary environment damage may answer some of the problems but clearly are not sufficient to address the concern of small island developing States; sea level rise constitutes one important aspect of their concern, but not all.

77. Moreover, the Advisory Opinion fails to point out that, for peoples and individuals of the present and future generations affected by the adverse effects of climate change, the ultimate solution to guarantee them a clean, healthy and sustainable climate lies in a supportive and open international economic system that would lead to sustainable economic growth and development in all States based on international co-operation between developed and developing States.

78. In conclusion, the underlying principles set forth in the Framework Convention are the cornerstones of the climate change treaty régime. Any departure from them will undermine the international co-operation in the global action against climate change. As legal principles, they provide important guidance in the interpretation and application of the provisions of the climate change treaties for the achievement of the objective of the Framework Convention and the temperature goals set up by the Paris Agreement.

(Signed) XUE Hanqin.

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