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Biodiversity and climate change

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Note by the Secretariat

I. Introduction

1. In its decision 16/22, the Conference of the Parties to the Convention on Biological Diversity requested the Executive Secretary of the Convention to compile views on options for enhanced policy coherence, including a potential joint work programme of the Rio conventions, for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice at a meeting held before the seventeenth meeting of the Conference of the Parties. It also requested the Executive Secretary to invite the heads of the other Rio conventions to collaborate on the organization of a technical information exchange in 2025 to further explore options to enhance cooperation and policy coherence to support the implementation of the Convention on Biological Diversity and the Kunming-Montreal Global Biodiversity Framework, and of the United Nations Framework Convention on Climate Change and the Paris Agreement.

2. In the same decision, the Conference of the Parties also requested the Executive Secretary to develop a supplement to the Voluntary Guidelines for the Design and Effective Implementation of Ecosystem-based Approaches to Climate Change Adaptation and Disaster Risk Reduction.

3. Section II below contains an analysis of options for enhancing policy coherence and cooperation across the Rio conventions based on a submissions of views, the considerations of the Joint Liaison Group of the Rio Conventions and the outcomes of the technical information exchange. Section III contains overall information on the supplement to the Voluntary Guidelines, the text of which is annexed to the draft decision proposed in section IV.

II. Enhancing policy coherence and cooperation across the Rio conventions

4. In response to decision 16/22, the Executive Secretary issued notification No. 2025-005 on 28 January 2025 to invite views on options for enhanced policy coherence, including a potential joint work programme of the Rio conventions, from Parties, other Governments and observers to the Convention, representatives of the United Nations Framework Convention on Climate Change and

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of the United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, and observers and other stakeholders in those processes. A total of 71 submissions were received, of which 11 were from Parties[1] and 60 were from observers.[2] A synthesis of the submissions received will be included in information document CBD/SBSTTA/27/INF/8, while the full text of the submissions can be viewed online.[3]

5. The heads of the Secretariats of the three Rio conventions met as the Joint Liaison Group on 29 May 2025 to discuss the request from the Conference of the Parties and other topics related to coherence and cooperation. The meeting resulted in a statement on synergies among the Rio convention in response to the call by the Secretary-General of the United Nations for suggestions for greater synergy in implementation, in the context of the UN80 Initiative, along with an accompanying overview of areas of collaboration for 2025–2026. The statement is included in information document CBD/SBSTTA/27/INF/8.

6. In collaboration with the Secretariats of the other Rio conventions, the Secretariat of the Convention on Biological Diversity organized a technical information exchange in Bonn, Germany, on 15 June 2025.[4] The event was held in a hybrid format and attended by 138 people representing Parties to the Convention and observers, the United Nations Framework Convention on Climate Change and the Convention to Combat Desertification. Speakers included representatives of the secretariats, financial mechanisms and science-policy interfaces of the Rio conventions, and the incoming presidency of the thirtieth session of the Conference of the Parties to the United Nations Framework Convention on Climate Change. The report of the technical information exchange is also included in information document CBD/SBSTTA/27/INF/8.

7. The options for enhancing policy coherence and cooperation across the Rio conventions are presented in subsections 1 to 9 below.

[1] Brazil, Canada, Colombia, European Union, Gambia, Japan, Mexico, New Zealand, Peru, South Africa and United Kingdom of Great Britain and Northern Ireland.

[2] Advisory Committee on Subnational Governments and Biodiversity and Advisory Committee on Local Governments and Biodiversity; Articulation of Indigenous Peoples, Cipó Platform and World-Transforming Technologies of Brazil; Ateliers pour la biodiversité; Australian Rainforest Conservation Society, Greenpeace International, Griffith University and Wild Heritage; Avaaz; British Academy; Bundesamt für Naturschutz and Deutsche Gesellschaft für Internationale Zusammenarbeit; Canadian Nursery Landscape Association; Center for International Environmental Law; Centre for International Sustainable Development Law and the Biodiversity Law and Governance Initiative; Colombian Platform for Children and Youth, Fundación Grothendieck, Student Platform for Engineering Education Development and Youth Network for the Sustainable Development Goals; Conservation Biology Institute; Conservation International; Convention on Biological Diversity Women's Caucus; Convention on the Conservation of Migratory Species of Wild Animals; Convention on Wetlands of International Importance especially as Waterfowl Habitat; Convention to Combat Desertification; Environmental Defense Fund and Indigenous Movement for Peace Advancement and Conflict Transformation Kenya; Fathom Science, OceanForesters, COILReef and Hasan Consultants; Finance for Biodiversity Foundation; Four Paws; Friends of the Earth International; Fundación Ambiente y Recursos Naturales; Fundación Edu-Residuos; Global Forest Coalition and Climate Land Ambition and Rights Alliance; Global Greens; Global Youth Biodiversity Network, on behalf of the Joint Youth Caucus; High Meadows Environmental Institute of Princeton University; Hot or Cool Institute; Institute of Zoology of the Zoological Society of London, York University, Radboud University and others; International Fertilizer Association; International Fund for Animal Welfare, Born Free, Whale and Dolphin Conservation, World Federation for Animals and Global Rewilding Alliance; International Institute for Sustainable Development; International Union for Conservation of Nature; International Union of Biological Sciences; Ipieca; Latin American Climate Lawyers Initiative; Nature Conservancy; Nepal Indigenous Nationalities Preservation Association; Ocean and Climate Platform; Ocean Visions; Office of the United Nations High Commissioner for Human Rights; Principles for Responsible Investment; Red Latinoamericana y Caribeña por un Sistema Financiero Sostenible; Royal Society for the Protection of Birds, on behalf of a number of non-governmental organizations; Soka Gakkai International, on behalf of the Human Rights and Biodiversity Working Group; students from Fatima Jinnah Women University; Third World Network; Transforma, on behalf of a number of Latin American and Caribbean civil society organizations; United Nations Development Programme; United Nations Entity for Gender Equality and the Empowerment of Women (UN-Women); United Nations Office for Disaster Risk Reduction; United States Council for International Business; University of Lethbridge; University of Oxford, on behalf of a group of academic and research organizations; Wetlands International; World Benchmarking Alliance, We Mean Business Coalition and Business for Nature; World Farmers' Organisation; World Wide Fund for Nature; and World Wide Fund for Nature-Brazil, on behalf of the Global Partnership on Forest and Landscape Restoration.

[3] Available at www.cbd.int/notifications/2025-005.

[4] See www.cbd.int/meetings/CC-OM-2025-01.

1. Alignment of national strategies and plans

8. A central theme was the imperative to align national strategies, in particular national biodiversity strategies and action plans, nationally determined contributions, national adaptation plans and land degradation neutrality targets. Alignment was not viewed as a mere administrative task but as a transformative process that strengthened environmental governance across sectors. Harmonizing the strategies was considered as a means to reducing duplication, ensuring a more efficient use of resources and supporting countries in meeting multiple international obligations simultaneously.

9. Participants in technical information exchange concluded that the alignment would enable Parties to integrate biodiversity and land considerations into climate plans, while also embedding climate resilience and restoration goals into biodiversity strategies. Participants noted that such integration could lead to greater coherence in policy formulation and implementation, minimizing conflict between sectoral policies and facilitating synergies across ministries. They also underscored the need for institutional coordination, recommending the establishment of interministerial committees or task forces to oversee the alignment process. Those bodies would play a critical role in ensuring cross-sectoral dialogue and cooperation.

10. The Joint Liaison Group viewed the alignment as central to achieving a "triple impact" that would simultaneously benefit biodiversity, climate and land. It pointed out that integrated land use planning and the harmonization of budgets and incentives at the national and subnational levels were crucial to operationalize the alignment.

2. Nature-based solutions and/or ecosystem-based approaches

11. Nature-based solutions and/or ecosystem-based approaches were consistently identified as pivotal instruments for operationalizing synergies across the Rio conventions. Those approaches were seen as practical, cost-effective and scalable strategies that delivered co-benefits for biodiversity conservation, climate change mitigation and adaptation, and land degradation neutrality.

12. The importance of mainstreaming nature-based solutions and/or ecosystem-based approaches into national planning instruments was emphasized. Parties and observers recognized that, by embedding such approaches into national biodiversity strategies and action plans, nationally determined contributions, national adaptation plans, and land degradation neutrality targets, Parties could manage ecosystems to achieve multiple goals. The need for practical toolkits and capacity-building programmes that provided countries with the technical expertise to design, implement and monitor the approaches effectively was noted.

13. A concern was the potential misuse of nature-based solutions and/or ecosystem-based approaches in market-based mechanisms, such as carbon or biodiversity offset schemes. There was widespread agreement that social and environmental safeguards must be in place to prevent those approaches from being co-opted into narrowly defined climate agendas that neglected biodiversity or displaced indigenous peoples and local communities. There was an emphasis on the need for rights-based approaches that upheld free, prior and informed consent; respected, preserved and maintained traditional knowledge; and ensured equitable benefit-sharing.

14. Many submissions further underscored that nature-based solutions and/or ecosystem-based approaches should form a central pillar of any future efforts for coherence and collaboration under the Rio conventions. They argued that a compatible framework could align the Convention to Combat Desertification land restoration agenda, Targets 2 (restoration) and 8 (climate change) of the Framework and the adaptation priorities of the United Nations Framework Convention on Climate Change, among other areas.

3. Planning, monitoring, reporting and review

15. Harmonizing planning, monitoring, reporting and review systems was identified as an essential step for enhancing coherence among the Rio conventions. Harmonized planning, monitoring,

reporting and review were described not only as a technical requirement but as a strategic tool to track progress, foster transparency, inform policy decisions and reduce reporting burdens.

16. Participants in the technical information exchange called for the development of harmonized reporting templates and shared indicators that captured the multiple benefits of actions across biodiversity, climate and land agendas. Such harmonization would enable countries to report once under multiple conventions, thereby improving efficiency and coherence. Digital tools and open-access data platforms were seen as critical to supporting integrated planning, monitoring, reporting and review systems, enabling real-time tracking of progress and facilitating cross-sectoral data-sharing.

17. Many Parties and observers stressed the importance of participatory monitoring approaches that involved civil society, indigenous peoples and local communities, women and youth. Such inclusive approaches not only enhanced data quality but also strengthened community ownership of environmental outcomes. However, several developing countries cautioned against the added complexity of integrated planning, monitoring, reporting and review systems, emphasizing the need for sustained capacity-building and international support.

4. Science-policy interface and evidence-based decision-making

18. The role of science in underpinning coherent policy responses was consistently highlighted. Scientific assessments, such as those produced by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services and the Intergovernmental Panel on Climate Change, were seen as foundational to aligning biodiversity, climate and land policies.

19. Many submitters recommended systematically embedding global scientific assessments within national policy cycles, to ensure that decisions were evidence-based. However, there was also recognition that global assessments must be adapted to local contexts. National science-policy platforms could therefore play a critical role in translating global findings into actionable knowledge for policymakers.

20. Institutionalized collaboration among the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, the Intergovernmental Panel on Climate Change and the Science-Policy Interface of the Convention to Combat Desertification was called for, including through joint workshops and thematic policy briefs. Furthermore, there was an emphasis on integrating traditional knowledge systems alongside scientific data. Such an approach must also fully recognize that traditional knowledge could provide valuable insights into ecosystem management and resilience, as well as the impacts of biodiversity loss, climate change and land degradation and drought on local livelihoods.

5. Knowledge management and capacity-building

21. It was underlined that effective knowledge management and capacity-building were prerequisites for achieving policy coherence. Integrated knowledge platforms that connect scientific, technical and traditional knowledge were viewed as essential tools for informing policy and implementation.

22. It was stated that capacity-building must extend beyond individual training to encompass institutional strengthening at the national and subnational levels, including by fostering cross-sectoral skills among government officials and supporting local governments in applying integrated data for decision-making. The Rio Conventions Joint Capacity-building Programme[5] had demonstrated progress in that area by providing thematic webinars and guidance tailored to national focal points and practitioners.

[5] See www.cbd.int/cb/joint-programme.

6. Resource mobilization

23. Adequate and coherent financing was widely recognized as a critical enabler of synergistic action. The inadequacy and fragmentation of current financial flows was highlighted, calling for transformative approaches to align resources with the objectives of all three Conventions.

24. It was noted that there was a need to align funding criteria and cycles across major environmental funds, such as the Global Environment Facility, the Green Climate Fund and the Adaptation Fund. Reforming environmentally harmful subsidies and redirecting financial incentives towards sustainable practices were emphasized as urgent priorities. Innovative financing mechanisms, including green bonds, debt-for-nature swaps and payments for ecosystem services, were proposed as complementary approaches, provided that robust safeguards were in place.

25. Ensuring equitable access to finance, in particular for developing countries and indigenous peoples and local communities, was another key focus. Participants highlighted barriers, such as complex application procedures and co-financing requirements, and advocated simplified processes and dedicated support mechanisms to enhance access.

7. Empowerment of indigenous peoples and local communities

26. It was recognized that indigenous peoples and local communities were indispensable partners in achieving a coherent implementation of the Rio conventions. The recognition of the rights of indigenous peoples and local communities, including under the United Nations Declaration on the Rights of Indigenous Peoples and human rights law, was viewed as non-negotiable.

27. Submitters highlighted the vital role of traditional knowledge in sustaining biodiversity and guiding nature-based solutions and/or ecosystem-based approaches. There was strong support for integrating indigenous peoples and local communities into governance structures, ensuring their participation in planning, decision-making and implementation processes. Community-based monitoring and information systems were identified as effective tools for strengthening local engagement and ensuring that grass-roots data fed into national and global reporting frameworks.

8. Whole-of-society approach

28. All agreed on the need for a whole-of-society approach to environmental governance. The approach recognized that transformative change required the active participation of all sectors and demographics.

29. Gender equality was emphasized as a cross-cutting priority, with recommendations for gender-responsive policies, indicators and budgeting. Youth inclusion was also seen as critical, with proposals for formal representation in national coordination mechanisms and targeted capacity-building initiatives to empower the next generation of environmental leaders.

30. Engaging the private sector was identified as essential for mobilizing resources and innovation; however, strong regulatory frameworks were required to ensure that private sector involvement resulted in genuine environmental and social benefits. Urban-nature linkages were also highlighted, with the integration of biodiversity and climate considerations into urban planning seen as vital for building resilient cities.

9. Ways forward

31. A multilevel road map for advancing policy coherence across the Rio conventions was proposed.

32. In the short term, there is a need to initiate pilot initiatives and technical dialogues that demonstrate the tangible benefits of integrated approaches. Mapping and diagnostic studies can help to identify gaps and overlaps in national and international policies, providing a foundation for more coherent planning. Work towards harmonizing planning, monitoring, reporting and review systems and building or strengthening regional capacity hubs would further enhance implementation. Strengthening the Joint Liaison Group with clearer mandates and resources is also a priority.

33. Over the medium term, the development of a phased joint work programme could provide a structured framework for addressing priority areas, such as nature-based solutions and/or ecosystem-based approaches and sustainable food systems, including ecosystem restoration. Establishing national coordination platforms that bring together focal points from all three Conventions would support the operationalization of coherence.

34. In the long term, institutionalizing policy coherence within national legal frameworks, planning instruments and budgetary processes is essential. Reforming financial systems to support sustained, multifocal investments and embedding inclusive governance mechanisms that empower indigenous peoples, local communities, women and youth as decision makers will be critical for success.

III. Supplement to the Voluntary Guidelines for the Design and Effective Implementation of Ecosystem-based Approaches to Climate Change Adaptation and Disaster Risk Reduction

35. In paragraph 17 of decision 16/22, the Conference of the Parties requested the Executive Secretary to develop a supplement to the Voluntary Guidelines for the Design and Effective Implementation of Ecosystem-based Approaches to Climate Change Adaptation and Disaster Risk Reduction providing voluntary guidance and tools based on good practices for the design, effective implementation and scaling up, as appropriate, of nature-based solutions and/or ecosystem-based approaches to climate change mitigation and adaptation to support the implementation of Targets 8 and 11, as well as other related targets, of the Framework, where appropriate, consistent with United Nations Environment Assembly resolution 5/5, noting Mother Earth-centric actions, as recognized by some countries, in line with different national circumstances, priorities and capabilities, including updating guidance for fit-for-purpose social and environmental safeguards, based on existing safeguards, for consideration by the Subsidiary Body before the seventeenth meeting of the Conference of the Parties.

36. The draft supplement was prepared through consultation with a range of representatives from Parties, United Nations entities, international organizations and representatives of indigenous peoples, local communities, women and youth through two online consultation sessions (both held on 19 March 2025)[6] and a three-day hybrid technical workshop (7–9 May 2025)[7] hosted by the United Nations Environment Programme World Conservation Monitoring Centre. With geographically balanced representation, the consultation sessions and the workshop were attended by experts and practitioners from a wide range of countries and organizations. Funding for the preparation of the supplement and the technical workshop was generously provided by the Deutsche Gesellschaft für Internationale Zusammenarbeit, the European Union and the Government of Canada.

37. The supplement contained in the annex to the draft recommendation provided below for consideration by the Subsidiary Body is intended to support practitioners and implementers in operationalizing nature-based solutions and/or ecosystem-based approaches to climate change mitigation and adaptation at the programme and project levels.

[6] See www.cbd.int/meetings/CC-OM-2025-02.
[7] See www.cbd.int/meetings/CC-WS-2025-01.

IV. Recommendations

38. The Subsidiary Body may wish to adopt a recommendation along the following lines:

The Subsidiary Body on Scientific, Technical and Technological Advice,

Recalling decisions VII/15 of 20 February 2004, IX/16 of 30 May 2008, X/33 of 29 October 2010, XIII/4 of 13 December 2016, 14/5 of 29 November 2018, 15/30 of 19 December 2022 and 16/22 of 1 November 2024 of the Conference of the Parties to the Convention on Biological Diversity,[1] as well as the critical role of biodiversity and ecosystem functions and services in climate change mitigation, adaptation and disaster risk reduction,

1. *Welcomes* the draft supplement to the Voluntary Guidelines for the Design and Effective Implementation of Ecosystem-based Approaches to Climate Change Adaptation and Disaster Risk Reduction,[2] as contained in the annex to the draft decision below;

2. *Takes note* of the synthesis of submissions, the statement of the Joint Liaison Group of the Rio Conventions and the report of the technical information exchange on enhancing policy coherence and cooperation across the Rio conventions contained in document CBD/SBSTTA/27/INF/8;

3. *Notes* the relevance of work conducted under the United Arab Emirates-Belém work programme on indicators for measuring progress achieved towards the targets referred to in paragraphs 9–10 of decision 2/CMA.5 of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement to the monitoring framework for the Kunming-Montreal Global Biodiversity Framework;[3]

4. *Recognizes* that a consistent approach to monitoring the implementation of the Kunming-Montreal Global Biodiversity Framework[4] and the Paris Agreement[5] would reduce reporting burdens and improve synergies;

5. *Invites* the Conference of the Parties to the United Nations Framework Convention on Climate Change[6] to take the monitoring framework for the Kunming-Montreal Global Biodiversity Framework into account when considering indicators for measuring progress towards the global goal on adaptation;[7]

6. *Recommends* that, at its seventeenth meeting, the Conference of the Parties adopt a decision along the following lines:

The Conference of the Parties,

Reaffirming paragraph 8 of decision X/33 of 29 October 2010 and paragraph 3 of decision 16/22 of 1 November 2024,

Recognizing that biodiversity loss, climate change, desertification and land degradation are inseparable and interdependent challenges requiring coherent and urgent action in an integrated manner to achieve the goals of the Kunming-Montreal Global Biodiversity Framework[8] and the Paris Agreement,[9] as well as the voluntary land degradation neutrality

[1] United Nations, *Treaty Series*, vol. 1760, No. 30619.
[2] Decision 14/5, annex; see also CBD Technical Series No. 93 for complementary information.
[3] Decision 15/5, annex I.
[4] Decision 15/4, annex.
[5] United Nations, *Treaty Series*, vol. 3156, No. 54113.
[6] Ibid., vol. 1771, No. 30822.
[7] See Paris Agreement, Article 7.
[8] Decision 15/4, annex.
[9] United Nations, *Treaty Series*, vol. 3156, No. 54113.

targets under the United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa,[10] and the Sustainable Development Goals,

1. *Welcomes The Thematic Assessment Report on Interlinkages among Biodiversity, Water, Food and Health* ("nexus assessment") of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services at its eleventh session;

2. *Encourages* Parties, other Governments, indigenous peoples and local communities, relevant organizations and stakeholders to take steps to promote and implement a synergistic and holistic approach for biodiversity and the other nexus elements, including climate change, as appropriate;

3. *Acknowledges* advisory opinion AO-32/25 of 29 May 2025 of the Inter-American Court of Human Rights concerning the climate emergency and human rights and the advisory opinion of 23 July 2025 of the International Court of Justice concerning the obligations of States in respect of climate change, in both of which the inextricable links between climate change and biodiversity loss are highlighted and the need for urgent action under the Convention on Biological Diversity[11] is recognized for the long-term well-being and resilience of people in the face of a changing climate;

4. *Recognizes* that the achievement of the mission, goals and targets of the Kunming-Montreal Global Biodiversity Framework is not possible without urgent and effective action on climate change in line with the Paris Agreement;

5. *Adopts* the supplement to the Voluntary Guidelines for the Design and Effective Implementation of Ecosystem-based Approaches to Climate Change Adaptation and Disaster Risk Reduction contained in the annex to the present decision;

6. *Urges* Parties, when undertaking actions to ensure the achievement of Targets 8 and 11 of the Framework, with the full and effective participation of indigenous peoples and local communities:

(a) To identify and maximize potential synergies through their national biodiversity strategies and action plans and relevant national targets, ensure synergies with other national planning processes, including nationally determined contributions, national adaptation plans and land degradation neutrality targets, as appropriate, and promote positive impacts and minimize or avoid negative impacts on biodiversity, in particular for vulnerable ecosystems and other ecosystems that are irreplaceable and for communities that directly depend on biodiversity;

(b) To use the tools and information available under the Convention, including the Voluntary Guidelines for the Design and Effective Implementation of Ecosystem-based Approaches to Climate Change Adaptation and Disaster Risk Reduction[12] and its supplement;

7. *Encourages* Parties, other Governments and relevant organizations, taking domestic priorities, circumstances and capabilities into account, to make use of the Voluntary Guidelines and its supplement when designing and implementing nature-based solutions and/or ecosystem-based approaches for climate change mitigation, adaptation and disaster risk reduction, recognizing the co-benefits for biodiversity and livelihoods;

8. *Encourages* Parties, and invites other Governments, financial institutions, relevant organizations and stakeholders, in particular through the private sector, consistent

[10] Ibid., vol. 1954, No. 33480.
[11] Ibid., vol. 1760, No. 30619.
[12] Decision 14/5, annex; see also CBD Technical Series No. 93 for complementary information.

with Article 20 of the Convention, to scale up investments for climate change mitigation, adaptation and disaster risk reduction, including through the conservation and sustainable use of biodiversity, ecosystem restoration and sustainable infrastructure;

9. *Invites* the Coalition of Finance Ministers and its institutional partners to further integrate biodiversity and climate change into its work programme, including through the development of tools and guidance to support the implementation of the Framework;

10. *Invites* the United Nations Environment Programme, in line with its forthcoming global environmental data strategy, to include the indicators used under the United Arab Emirates Framework for Global Climate Resilience and the monitoring framework for the Kunming-Montreal Global Biodiversity Framework as the basis for monitoring biodiversity and climate change;

11. *Requests* the Executive Secretary, subject to the availability of resources, to develop dissemination tools and facilitate capacity-building on the use of the Voluntary Guidelines and its supplement;

12. *Also requests* the Executive Secretary, subject to the availability of resources and avoiding the duplication of efforts, in collaboration with the Joint Liaison Group of the Rio Conventions, to further pursue enhancing policy synergies and cooperation with the United Nations Framework Convention on Climate Change and the United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, including on capacity-building, and increasing awareness and understanding of nature-based solutions and/or ecosystem-based approaches, as a complement to the long-term strategic framework for capacity-building and development.[13]

Annex

Supplement to the Voluntary Guidelines for the Design and Effective Implementation of Ecosystem-based Approaches to Climate Change Adaptation and Disaster Risk Reduction

I. Key messages

1. Nature-based solutions and/or ecosystem-based approaches provide many tangible benefits that directly support the achievement of global environmental, climate and development goals and targets, including Targets 8 (on minimizing the climate impacts of climate change on biodiversity and building resilience) and 11 (on restoring, maintaining and enhancing nature's contributions to people) of the Kunming-Montreal Global Biodiversity Framework.[14] The effective implementation of those approaches enhances synergies across the Rio conventions, as well as other environmental and social priorities, including those of the biodiversity-related multilateral environmental agreements and the Sustainable Development Goals.

2. Embedding nature-based solutions and/or ecosystem-based approaches into climate action budgets, spatial governance and national and subnational development plans enhances policy coherence. Looking forward, post-2030 strategies that are ambitious, rights-based and

[13] Decision 15/8, annex I.
[14] Decision 15/4, annex.

long-term in vision can help to ensure the continued central contribution of ecosystem health and integrity to resilience, while increasing equity.

3. Fit-for-purpose social and environmental safeguards, including frameworks for applying and monitoring them, are essential for promoting the multiple benefits offered by nature-based solutions and/or ecosystem-based approaches, while avoiding or minimizing social and environmental risks.

4. Nature-based solutions and/or ecosystem-based approaches are most effective when there is broad and sustained engagement and support from stakeholders. Planning, design, implementation, governance and monitoring efforts that foster whole-of-government and whole-of-society participation will help to ensure success. This is most effective when grounded in respect for diverse world views and knowledge systems, which may favour either an intrinsic or a human-centred value of nature. Inclusive, rights-based design and governance are built on key principles, such as free, prior and informed consent,[15] gender equality and respect for traditional knowledge, cultures and practices. Adaptive monitoring frameworks will support ownership, accountability and long-term impact.

5. The Voluntary Guidelines for the Design and Effective Implementation of Ecosystem-based Approaches to Climate Change Adaptation and Disaster Risk Reduction[16] and the present supplement could be usefully complemented by regionally and culturally tailored toolkits, which may be ecosystem- or sector-specific. User-friendly, actionable toolkits could offer guidance on various topics, such as safeguards, design standards, co-benefit evaluation and institutional readiness.

II. Introduction

6. Nature-based solutions and/or ecosystem-based approaches form part of effective and coherent responses to interdependent crises, including biodiversity loss, climate change and disaster risk.[17] They are recognized as actions that can be taken to tackle societal, economic and environmental challenges under, inter alia, the Convention on Biological Diversity, the United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, the United Nations Framework Convention on Climate Change, the United Nations Environment Assembly, the United Nations Office for Disaster Risk Reduction, the Intergovernmental Panel on Climate Change and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. When well designed, they can support resilience and restore ecological integrity while advancing societal well-being.

7. The Voluntary Guidelines were adopted at the fourteenth meeting of the Conference of the Parties, in 2018. A more detailed version was published in 2019 as CBD Technical Series No. 93. They provide clear guidance on how to integrate ecosystem-based approaches into climate change adaptation and disaster risk reduction effectively. Much of the guidance, including the principles and safeguards, is also broadly applicable to climate change mitigation and other societal challenges. Since 2019, there have been substantial developments in international policy and scientific understanding, notably the adoption of the Kunming-Montreal Global Biodiversity Framework in 2022. The present supplement is aimed at

[15] "Free, prior and informed consent" refers to the tripartite terminology of "prior and informed consent", "free, prior and informed consent" and "approval and involvement".
[16] Decision 14/5, annex; see also CBD Technical Series No. 93 for complementary information.
[17] Decision X/33 on biodiversity and climate change contains guidance for Parties on the implementation of ecosystem-based approaches for climate change mitigation and adaptation.

complementing the Voluntary Guidelines and relevant decisions,[18] responding to the new developments and paying particular attention to climate change mitigation, which is not covered in the Voluntary Guidelines.

8. In its resolution 5/5 of 2 March 2022, the United Nations Environment Assembly defined nature-based solutions as actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems that address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services, resilience and biodiversity benefits.

9. Ecosystem-based mitigation can be defined as the use of ecosystems for their carbon storage and sequestration service to aid climate change mitigation through ecosystem management activities that reduce greenhouse gas emissions and enhance carbon removals from the atmosphere. In decision X/33, Parties and other actors were invited to follow specific guidance for different ecosystems.

III. Principles and safeguards

10. The Voluntary Guidelines are underpinned by a set of 10 principles and nine safeguards. The principles serve as high-level standards to guide planning and implementation. They are framed as actions that promote: (a) resilience and adaptive capacity; (b) inclusivity and equity; (c) success at multiple scales; and (d) effectiveness and efficiency. The safeguards are aimed at preventing harm to people and to nature, facilitating transparency and promoting multiple benefits. The principles and safeguards, designed for ecosystem-based adaptation and disaster risk reduction, are also broadly applicable to nature-based solutions and/or ecosystem-based approaches to climate change mitigation. The present supplement updates the guidance on fit-for-purpose social and environmental safeguards by integrating some additional principles and safeguards for climate change mitigation and strengthening the safeguards for indigenous peoples and local communities. Together, the principles and safeguards are an essential part of the inclusive, participative approaches to design and implementation described throughout the present text.

1. Additional principles and safeguards for climate change mitigation

11. When climate change mitigation is a key objective, additional principles and safeguards are necessary to ensure that the actions to be undertaken meet both climate and nature goals. The additions are focused on multiple benefits, urgency, mitigation hierarchy, additionality, permanence and leakage (see the table below).

2. Strengthening safeguards for indigenous peoples and local communities

12. Building on the principles and safeguards laid out in the Voluntary Guidelines, and consistent with section C of the Framework, two areas deserve further attention:

(a) *Respect for different value systems.* Nature itself is assigned an intrinsic value and rights, including within legal frameworks, under a Mother Earth-centric world view.[19,20] The view is rooted in a common indigenous perspective that sees humans as part of nature and does not privilege them above other parts of an ecosystem. While existing safeguards, frameworks and standards often address the rights and traditional knowledge of indigenous peoples and local communities, they do not directly address Mother Earth-centric world views. This aspect

[18] Decisions XII/20, 14/5, 15/4 and 16/22.
[19] Cristina Espinosa, "The advocacy of the previously inconceivable: a discourse analysis of the Universal Declaration of the Rights of Mother Earth at Rio+20", *The Journal of Environment and Development*, vol. 23, No. 4 (December 2014).
[20] Haydn Washington and others, "Why ecocentrism is the key pathway to sustainability", *The Ecological Citizen*, vol. 1, No. 1 (2017).

could be further developed, as appropriate, in diverse national contexts and in ways that are supportive of human rights;

(b) *Respect for human rights.* Human rights-based approaches are essential to the legitimacy, integrity and effectiveness of nature-based solutions and/or ecosystem-based approaches. This is already embedded in the existing safeguards, but further strengthening in line with the Framework is recommended. Ensuring accountability, building trust and supporting flexible, inclusive implementation are also critical to successful scaling up. To address concerns around the recognition of nature's intrinsic value and the distribution of benefits and burdens, the rights of indigenous peoples and local communities must be fully integrated into project design, implementation and governance. This will involve giving attention to free, prior and informed consent. It will also include attention to customary rights, cultural protection, participatory decision-making, participatory implementation, transparent communication and equitable benefit-sharing. Wherever solutions are proposed that would affect existing rights-holders, the guidance outlined in the present supplement is relevant.

IV. Overarching considerations

13. The considerations below are intended to complement those presented in the Voluntary Guidelines in relation to the stepwise approach to design and implementation.

1. Scaling up

14. Good practices for the scaling-up of nature-based solutions and/or ecosystem-based approaches to climate change mitigation, adaptation and disaster risk reduction include:[21,22]

(a) Building a common understanding of the approaches, including clarity on the costs and benefits (social, environmental and economic) of different choices;

(b) Developing more insight into the factors that enable success and the barriers to scaling, through systematic monitoring, evaluation and reporting on effectiveness and efficiency;

(c) Adopting integrated approaches for scaling up, combining policy, finance and safeguard measures, and including regional planning;

(d) Applying fit-for-purpose safeguards, standards and guidelines;

(e) Enabling locally led actions and scaling up existing local initiatives, with safeguards tailored to risk and setting.

(a) Integrating traditional knowledge and the efforts of indigenous peoples and local communities

15. Integrating traditional knowledge, innovations and practices can be crucial for the successful design, implementation and scaling up of nature-based solutions and/or ecosystem-based approaches. Key actions include:

(a) The meaningful inclusion of indigenous peoples and local communities at the design stage and throughout project implementation, ensuring the co-creation of actions to be taken and enabling ownership at the local level. This consideration builds upon principle 4 of the Voluntary Guidelines;

[21] United Nations Environment Programme, *Nature-based Solutions: Opportunities and Challenges for Scaling Up* (Nairobi, 2022).

[22] European Environment Agency, *Scaling Nature-based Solutions for Climate Resilience and Nature Restoration* (Publications Office of the European Union, 2023).

(b) Addressing land tenure rights and access to natural resources and recognizing the role of indigenous peoples and local communities in managing biodiversity and ecosystem services. Many indigenous peoples and local communities face unclear and unrecognized tenure despite having customary land- or sea-use rights, which undermines their ability to implement actions that address biodiversity and climate concerns and build resilience within their traditional territories. If the issue is left unaddressed, outside interventions can exacerbate land dispossession.[23] These considerations build upon safeguard 9 of the Voluntary Guidelines;

(c) Seeking advice on the best approaches to build bridges between different science and knowledge systems. Much traditional knowledge is passed on orally and is context-specific. For this reason, inclusion of such knowledge alongside with scientific findings needs care and attention to data sovereignty.[24] Data sovereignty policies can provide frameworks for the ethical use of data to advance collective indigenous well-being and self-determination.[25]

(b) Mainstreaming nature-based solutions and/or ecosystem-based approaches

16. Nature-based solutions and/or ecosystem-based approaches can only deliver their full transformative potential when mainstreamed into appropriate governance and policy frameworks and underpinned by inclusive planning, monitoring and accountability systems. When operationalizing the Framework, Governments can ensure that the approaches are embedded through coherent land- and sea-use planning, climate-biodiversity budget alignment and spatial strategies. Governments can, and increasingly do, integrate these approaches into national biodiversity strategies and action plans, land degradation neutrality targets, national adaptation plans and nationally determined contributions, also with a view to fostering collaboration and integrated policy and planning approaches across the Rio conventions. Enhanced collaboration among the responsible ministries will help to leverage synergies and avoid the duplication of efforts.

(c) Raising awareness and building capacity

17. Communicating the multiple benefits of nature-based solutions and/or ecosystem-based approaches to a wide audience is crucial to uptake and sustainability. It is also essential to opening avenues for funding. Understanding the information and communication needs of diverse stakeholder groups will help to ensure effective outreach, build a common knowledge base, raise awareness and strengthen capacities in accordance with the long-term strategic framework for capacity-building and development.[26] Many organizations, partnerships, initiatives and coalitions are working on awareness-raising and capacity-building or on offering platforms for knowledge exchange.[27]

[23] Laura Notess and others, *The Scramble for Land Rights: Reducing Inequity between Communities and Companies* (Washington, D.C, World Resources Institute, 2018).
[24] See www.gida-global.org/care.
[25] Stephanie Russo Caroll, Tahu Kukutai and Maggie Walter, "Indigenous data sovereignty" in *The Indigenous World 2021*, 35th edition, Dwayne Mamo and others, eds., (International Work Group for Indigenous Affairs, 2021).
[26] Decision 15/8, annex I.
[27] Initiatives such as the NBSAP Accelerator Partnership, the Nationally Determined Contributions Partnership, the National Adaptation Plan Global Network, the Enhancing Nature-based Solutions for an Accelerated Climate Transformation Partnership, the Friends of Ecosystem-based Adaptation network and the Partnership for Environment and Disaster Risk Reduction, as well as their respective members, facilitate capacity-building, in particular for developing countries, and help to increase awareness and understanding of the impacts of climate change on biodiversity, including by sharing lessons learned from the implementation of nature-based solutions and/or ecosystem-based approaches.

2. Stepwise approach to design and implementation

18. The Voluntary Guidelines present a stepwise approach designed for adaptation and disaster risk reduction objectives. Some additional considerations for each step, including for initiatives towards climate change mitigation, are highlighted below.

Step A: understanding the social-ecological system

19. In the context of climate change mitigation, it is important to explore several issues when defining the challenge to be tackled and setting objectives for a new initiative:

(a) In order to assess the mitigation potential, the history of the target social-ecological system, the drivers of ecosystem change and the rate of greenhouse gas emissions from ecosystem loss or degradation must be identified. Such an assessment will feed into an estimate of emission reductions and removals from possible activities that will be undertaken in step D;

(b) With regard to the social context, the dependence of local jobs, industries, livelihoods and cultures on natural and managed ecosystems, the destruction of ecosystems, barriers to ecosystem restoration and the aspirations of the local population must all be considered;

(c) In order to identify the market and non-market approaches, existing policy or agreements on how and with whom the benefits are shared, including any monetization of carbon emission reductions and removals, would be needed. In addition, the carbon rights and land and sea tenure must be recognized and respected, as well as the local attitudes towards payments for ecosystem services.

Step B: assessing vulnerabilities and risks

20. Step B is focused on the vulnerability of nature and people to climate change and hazardous events. Engaging early with traditional knowledge holders and including their knowledge into climate vulnerability and risk assessments, with full respect for knowledge and data sovereignty, are essential.

21. Social and environmental safeguards are crucial tools to supporting the understanding and reduction of risks. Environmental safeguards include addressing the risk of reversals of emission reductions and removals that may result from extreme events or slower onset climate impacts.

Step C: identifying options for nature-based solutions and/or ecosystem-based approaches

22. To reflect the Framework, step C will need to accommodate effective, equitable and scalable nature-based solutions and/or ecosystem-based approaches. The potential multiple benefits derived from each envisaged option should be identified. Key actions for identifying climate change mitigation options specifically could involve: (a) identifying broad options for action, based on step A; (b) exploring specific options selected in similar geographical areas (e.g. through case studies); and (c) working with the multi-stakeholder group concerned to identify favoured options.

Step D: prioritizing, appraising and selecting options

23. Some additional criteria should be considered when prioritizing and appraising options for action with a climate change mitigation objective (key action (a) of the Voluntary Guidelines). The criteria may include: the position in the mitigation hierarchy; mitigation

potential; resilience to climate change; and capacity to implement over the long term.[28,29] If there is a choice between the protection of threatened intact ecosystems and the restoration of lost or degraded ecosystems, the mitigation hierarchy would prioritize protection. Relatively simple methods can be used to derive a first estimate of mitigation potential for many options. The Intergovernmental Panel on Climate Change distinguishes tier 1 data and methods (default global values), tier 2 (country-specific) and tier 3 (more detailed models, more local data). Current understanding of ecosystem resilience to climate change (step B) is a factor in assessing the long-term viability of each option in delivering mitigation benefits. The capacity to implement will depend on existing skills and knowledge, training opportunities and access to the financial and other resources needed to enable implementation through time.

Step E: project design, implementation and scaling up

24. Alongside the key actions specified in the Voluntary Guidelines, nature-based solutions and/or ecosystem-based approaches will also be more successful when diverse knowledge systems are acknowledged and incorporated. It may be especially helpful to integrate traditional knowledge into design and implementation.[30] When climate change mitigation benefits are intended, attention to the carbon-focused safeguards detailed in the table below is needed at the design and implementation stages.

25. One clear pathway to scaling up is the inclusion of nature-based solutions and/or ecosystem-based approaches in nationally determined contributions, national adaptation plans, land degradation neutrality targets and other national plans. A first step is to quantify the potential for benefits, including for climate change mitigation, adaptation and disaster risk reduction, often through spatial analysis and planning.

Step F: effective monitoring and evaluation mechanisms

26. Nature-based solutions and/or ecosystem-based approaches aim to result in multiple benefits that help to address several societal challenges. Monitoring and evaluation frameworks will therefore need to encompass the multiple intended impacts, as well as track any negative impacts. In a mitigation context, the requirements for assessing carbon benefits are more stringent when the results are intended to be monetized than when they are not. Multiple carbon standards and protocols are available, though they do not cover all types of nature-based solutions and/or ecosystem-based approaches.[31] Governments that deploy actions to reduce emissions from deforestation and forest degradation in developing countries (REDD-plus) are expected to develop safeguard information systems that transparently communicate how safeguards are being addressed and respected and summaries of information that update the status of each country's approach to safeguards under the United Nations Framework Convention on Climate Change.

[28] Sara M. Leavitt and others, *Natural Climate Solutions Handbook: A Technical Guide for Assessing Nature-Based Mitigation Opportunities in Countries*, 2nd ed. (Arlington, The Nature Conservancy, 2021).
[29] United Nations Environment Programme, *Nature-based Solutions for Climate Change Mitigation* (Nairobi and Gland, 2021).
[30] Nathalie Seddon and others, "Understanding the value and limits of nature-based solutions to climate change and other global challenges", *Philosophical Transactions Royal Society B*, vol. 375, No. 1794 (March 2020).
[31] World Business Council for Sustainable Development, "Carbon standards for natural climate solutions (NCS) credits", associated technical paper for the report *Nature-based Solutions in strategies for Net Zero, Nature Positive and addressing Inequality* (November 2022).

Additional principles and safeguards focused on climate change mitigation actions

Theme	*Principle*	*Safeguard*
Multiple benefits	Prioritize approaches that address multiple societal challenges, seeking benefits for biodiversity, ecosystem services, resilience and human well-being (see also principle 10 of the Voluntary Guidelines). Prioritize the protection, restoration and management of ecosystems and species important for the full carbon cycle and contributing to climate change adaptation. Ensure a balanced mix of approaches across communities and diverse ecosystems.	**Planning for multiple benefits** Climate change mitigation actions should be prioritized and designed taking their ability to deliver multiple benefits into account. This may involve: (a) Assessing the benefits, risks and trade-offs of selected actions across multiple societal challenges; (b) Undertaking spatial prioritization that incorporates an analysis of the social and environmental risks and benefits of the proposed actions; (c) Over larger areas, aiming to balance among actions that prioritize several benefits, communities and ecosystems, so that all efforts are not directed to high-carbon ecosystems; (d) Communicating to stakeholders the trade-offs among various benefits when comparing proposed actions, as part of participative decision-making processes.
Urgency	Consider the pressing urgency of the climate crisis, represented by the rapidly diminishing remaining global carbon emissions budget,[32] together with the longevity of greenhouse gases in the atmosphere. Actions that reduce emissions or enhance removals in the short term are more valuable than those with results that materialize over a longer time frame. Avoid the trap of prioritizing speed over resilience (see "permanence" below).	**Projection of carbon outcomes through time** Climate change mitigation actions should be selected using an assessment of the expected results of the nature-based solution and/or ecosystem-based approach. Cost per ton of carbon should be considered and, together with resilience considerations, may, for example, lead to favouring natural regeneration over planting.
Mitigation hierarchy	First tackle any ongoing loss of carbon stocks in natural habitats. Only when this is addressed, take action to restore historical damage. This principle is closely connected with the urgency principle and multiple benefits principles above. Emissions from the destruction of a natural ecosystem are near-instantaneous, while the carbon removals resulting from the full restoration of an equivalent area of the same ecosystem will typically take many years.	**Following the mitigation hierarchy** Climate change mitigation actions should be selected in a manner consistent with the mitigation hierarchy. Where there is a choice between reducing emissions through preventing the loss or degradation of natural ecosystems (e.g. deforestation) and emissions removals through restoring natural ecosystems, to follow the mitigation hierarchy is to avoid further negative impacts before restoring degraded ecosystems. Carbon accounting and crediting systems that respect this principle should be chosen.
Additionality	Account only for carbon emission reductions or removals that would not have otherwise occurred (i.e. new climate benefits resulting from the activity).	**Ensuring additionality** Climate change mitigation actions should be designed on the basis of a stringent assessment of additionality, following accepted carbon standards. The net reduction of carbon stocks in all organic carbon pools (above ground and below ground in the case of terrestrial ecosystems) should be prevented.

[32] Robin D. Lamboll and others, "Assessing the size and uncertainty of remaining carbon budgets", *Nature Climate Change*, vol. 13 (December 2023).

Theme	*Principle*	*Safeguard*
Permanence	Prioritize activities where the emission reductions or removals are likely to be long-lasting, taking social and ecological factors into account.	**Promoting permanence** Climate change mitigation actions should have long-lasting results. They should protect, maintain and restore biodiversity and ecological integrity (ecosystem condition, composition, structure and function). Actions should be designed to reduce the risk of reversals (i.e. Cancun safeguard f),[33] which typically means tackling the underlying drivers of ecosystem degradation and barriers to ecosystem restoration or sustainable management. Actions should be designed for climate resilience, for example, when planting, local, climate-resilient native species should be prioritized. Monitoring systems should be able to assess any reversals, and carbon accounting or crediting systems should include buffers to cater for the remaining risk of reversals.
Leakage	Avoid displacement ("leakage") of emissions to another location. Leakage can include local, national and international leakage.	**Avoiding leakage** Climate change mitigation actions should be designed to avoid leakage. Solutions include: (a) Locating mitigation activities in well-governed landscapes and as part of an integrated spatial plan (see Target 1 of the Kunming-Montreal Global Biodiversity Framework); (b) Working collaboratively with actors dependent on land-use change to develop alternative livelihoods and economic pathways that do not lead to leakage or to rebound effects; (c) Undertaking carbon accounting at a jurisdictional scale or within a nested scheme, to integrate local and domestic leakage into overall results; (d) Estimating the remaining risk of leakage on the local, domestic and international scales; (e) Deducting projected remaining leakage from the carbon results in accounting or crediting schemes.

[33] Decision 1/CP.16, appendix I, of the Conference of the Parties to the United Nations Framework Convention on Climate Change.