

I. RECOMMENDATIONS ADOPTED BY THE SUBSIDIARY BODY ON SCIENTIFIC, TECHNICAL AND TECHNOLOGICAL ADVICE AT ITS NINETEENTH MEETING

XIX/1. Further consideration of the implications of the findings of the fourth edition of the Global Biodiversity Outlook and related reports, including with respect to mainstreaming of biodiversity across sectors

The Subsidiary Body on Scientific, Technical and Technological Advice,

Emphasizing the importance of the integration of biodiversity into the agriculture, forests and fisheries, as well as other relevant sectors, including industry, tourism, health, planning, trade and finance, infrastructure, mining, energy, and into climate change adaptation and mitigation measures,

Recalling decision XII/2 C, in which Parties were invited to work with all relevant stakeholders, including through the United Nations Decade on Biodiversity, in the achievement of Aichi Biodiversity Target 1,

1. *Takes note* of the information contained in the note by the Executive Secretary on further consideration of the implications of the findings of the fourth edition of the *Global Biodiversity Outlook* and related reports, including with respect to mainstreaming and the integration of biodiversity across sectors;¹

2. *Recalling* decision XII/1 on the mid-term review of progress in the implementation of the Strategic Plan for Biodiversity 2011–2020 including the fourth edition of the *Global Biodiversity Outlook*, and actions to enhance implementation, in which the Conference of the Parties emphasized the need for enhanced efforts to achieve the Aichi Biodiversity Targets, in particular for those targets where least progress has been made, and *emphasizes* the need to strengthen implementation, including through technical and scientific cooperation, capacity-building support and an overall substantial increase in total biodiversity funding for the implementation of the Strategic Plan for Biodiversity 2011-2020;

3. *Recalling* decision IX/8 and paragraph 14 of the Strategic Plan for Biodiversity 2011-2020, *highlights* the importance of national biodiversity strategies and action plans, as well as other national planning instruments, as tools for mainstreaming biodiversity across all sectors of government and society and engaging all relevant stakeholders;

4. *Welcomes* the initiative by Mexico, as host country for the thirteenth meeting of the Conference of the Parties, to organize, in cooperation with the Executive Secretary and with the support of Switzerland, an international expert workshop on biodiversity mainstreaming in November 2015;

5. *Expresses its appreciation* to the Food and Agriculture Organization of the United Nations for its inputs into relevant considerations and in particular for preparing the information note on the contribution of FAO's five principles for sustainable agriculture to the implementation of Aichi Biodiversity Target 7;²

6. *Encourages* Parties to make use of existing tools and, recalling paragraph 13 of decision XI/2, to promote open data access to support the mainstreaming of biodiversity into policies and planning;

¹ UNEP/CBD/SBSTTA/19/2.

² UNEP/CBD/SBSTTA/INF/4/Rev.1.

7. *Requests* the Executive Secretary, subject to the availability of resources:

(a) To make use, as appropriate, of the information contained in the note by the Executive Secretary¹ and related information in preparing for relevant agenda items for the first meeting of the Subsidiary Body on Implementation and the twentieth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice;

(b) To arrange for the peer review of information documents UNEP/CBD/SBSTTA/19/INF/1, UNEP/CBD/SBSTTA/19/INF/4/Rev.1, UNEP/CBD/SBSTTA/19/INF/6, UNEP/CBD/SBSTTA/19/INF/15, UNEP/CBD/SBSTTA/19/INF/17, to revise them in collaboration with the Food and Agriculture Organization of the United Nations and other relevant organizations, taking into consideration relevant information on indigenous peoples and local communities, including experiences with the implementation of the Plan of Action on Customary Sustainable Use of Biological Diversity³ and relevant outcomes of the ninth meeting of the Ad Hoc Open-ended Working Group on Article 8(j) and Related Provisions, and to make them available to the Subsidiary Body on Scientific, Technical and Technological Advice at its twentieth meeting and to the Subsidiary Body on Implementation at its first meeting;

(c) To make use of the outcomes of the international expert workshop on biodiversity mainstreaming hosted by Mexico when preparing documentation on mainstreaming for the Subsidiary Body on Scientific, Technical and Technological Advice at its twentieth meeting and to the Subsidiary Body on Implementation at its first meeting;

(d) To consult the Food and Agriculture Organization of the United Nations, the World Tourism Organization, and other relevant organizations, in preparation for the thirteenth meeting of the Conference of the Parties;

(e) To prepare guidelines and compile best practices for how stakeholders can be more engaged to promote the integration of biodiversity across sectors, for consideration by the Subsidiary Body on Implementation at its first meeting;

8. *Also requests* the Executive Secretary, in preparing for agenda item 10 of the twentieth meeting of the Subsidiary Body, to prepare, in consultation with relevant organizations and stakeholders, including the secretariats of relevant conventions, key elements for a short-term action plan on ecosystem restoration, with a view to the submission of a recommendation from the Subsidiary Body to the Conference of the Parties at its thirteenth meeting;

9. *Noting* that additional guidance on relevant topics may emerge from the actions undertaken in response to the present recommendation and from further considerations by the Subsidiary Body on Scientific, Technical and Technological Advice at its twentieth meeting and the Subsidiary Body on Implementation at its first meeting, *recommends* that the Conference of the Parties at its thirteenth meeting, among other things:

(a) *Welcome* the 2030 Agenda for Sustainable Development⁴ and *note* that it provides a useful enabling framework for the implementation of the Strategic Plan for Biodiversity 2011-2020 and for the mainstreaming of biodiversity, and also *welcome* the Sendai Framework for Disaster Risk Reduction 2015-2030,⁵ and other relevant frameworks;

(b) *Invite* Parties to develop coherent and comprehensive policy frameworks that integrate biodiversity across sectors and to share their experiences, best practices and case studies in this regard through appropriate means, such as the clearing-house mechanism;

³ Decision XII/12 B, annex.

⁴ United Nations General Assembly resolution 70/1 of 25 September 2015 entitled “Transforming our world: the 2030 Agenda for Sustainable Development”.

⁵ United Nations General Assembly resolution 69/283, annex II.

(c) *Encourage* Parties to engage in networking activities among different actors involved in relevant productive sectors, including the private and public sectors, in order to further mainstream biodiversity across relevant sectors;

(d) *Request* the Executive Secretary, subject to the availability of resources:

- (i) In collaboration with the Food and Agriculture Organization of the United Nations, the World Tourism Organization, and other relevant organizations, to support Parties in sharing experiences, best practices and case studies on mainstreaming biodiversity into sectors and in developing comprehensive policy guidance;
- (ii) To engage in relevant dialogues under the United Nations High-level Political Forum on Sustainable Development under the auspices of the United Nations Economic and Social Council;
- (iii) To continue to engage with indigenous peoples and local communities in the preparation of any communication products related to the *Global Biodiversity Outlook* which aim to demonstrate the contribution of indigenous peoples and local communities to the achievement of the Aichi Biodiversity Targets with a view to ensuring that the visions, practices and knowledge of indigenous peoples and local communities are fully taken into account;
- (iv) To present options to the Subsidiary Body at a meeting prior to the fourteenth meeting of the Conference of the Parties on how to make the best use of existing programmes of work to further enhance the implementation of the Convention in the light of mainstreaming needs and the Strategic Plan for Biodiversity 2011-2020.

XIX/2. Key scientific and technical needs related to the implementation of the Strategic Plan for Biodiversity 2011-2020 and related research

The Subsidiary Body on Scientific, Technical and Technological Advice,

Recalling its recommendation XVII/1,

1. *Takes note* of the information provided in the note by the Executive Secretary;⁶
2. *Notes* that some of the issues, such as training and work on technical and scientific cooperation and technology transfer, addressed in the note by the Executive Secretary⁶ may also be taken up by the Subsidiary Body on Implementation at its first meeting;
3. *Welcomes* the establishment of the Future Earth programme, *invites* its Science Committee, when developing and implementing its research agenda, to take into account the Strategic Plan for Biodiversity 2011-2020, and *requests* the Executive Secretary to collaborate with the Future Earth Secretariat, as appropriate, and taking into account the principles and provisions of the Convention;
4. *Recommends* that the Conference of the Parties at its thirteenth meeting, while recalling the key scientific and technical needs identified by the Subsidiary Body in recommendation XVII/1 and paragraphs 14 to 16 of decision XII/1 of the Conference of the Parties:
 - (a) *Welcome* the ongoing efforts of partner organizations to support Parties in addressing the scientific and technical needs related to the implementation of the Strategic Plan for Biodiversity 2011-2020;
 - (b) *Also welcome* the collaboration of Parties with relevant organizations to strengthen biodiversity monitoring systems;
 - (c) *Further welcome* the *Global Biodiversity Informatics Outlook*, and, recalling paragraph 3 of decision VIII/11, paragraph 13 of decision XI/2, and Action 6 of the capacity-building strategy for the Global Taxonomy Initiative (annex to decision XI/29), *invite* Parties and relevant organizations to further promote open access to biodiversity-related data and transparency in the development of derived metrics and, to this end, to consider, as appropriate, the voluntary guidance annexed to the present recommendation;
 - (d) *Request* the Executive Secretary:
 - (i) To continue collaboration with the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, the United Nations Environment Programme and other partners to promote the coordinated development of existing portals to facilitate access to policy support tools and methodologies, as well as to related case studies and evaluations of the use and effectiveness of such tools, taking into account the different capacities and capabilities of countries;
 - (ii) To collaborate with relevant organizations for compiling information on tools to support the implementation of the Strategic Plan for Biodiversity 2011-2020, including those areas in which gaps have been identified, in particular methods to assess motives for and barriers to behavioural change, social marketing strategies, engagement techniques and participatory processes and mechanisms to promote the development of social, moral and economic incentives, taking into account cultural and socioeconomic differences among countries and regions, for people to sustainably manage biodiversity and ecosystem services;

⁶ UNEP/CBD/SBSTTA/19/3.

- (iii) To invite Parties, especially developing countries, to provide information on their priorities and needs related to the implementation of Article 12 of the Convention and to compile this information to inform future work under the Convention;
- (iv) To develop, through the Liaison Group of Biodiversity-related Conventions and in collaboration with other relevant organizations, actions for an enhanced collaborative framework to guide the work of the conventions and their partners and to assist Parties in meeting Aichi Biodiversity Target 12, and to submit the actions to the Subsidiary Body at a meeting prior to the fourteenth meeting of the Conference of the Parties;
- (v) To report on the above to the Subsidiary Body on Scientific, Technical and Technological Advice at a meeting prior to the fourteenth meeting of the Conference of the Parties to the Convention on Biological Diversity;

5. *Encourages* Parties:

- (a) To further work to identify their biodiversity monitoring, assessment, project implementation, and research needs at the national level;
- (b) To strengthen in-country efforts to link science and policy, including through increased and enhanced communication between data providers and users, including decision makers, to improve decision-making;
- (c) To make full use of the clearing-house mechanism to share information, particularly, with regard to paragraph 4 of the voluntary guidance to improve the accessibility of biodiversity-related data and information;
- (d) To provide support for biodiversity monitoring, assessment, project implementation, and research;
- (e) To increase national, regional and global efforts related to the promotion of research programmes related to the objectives of the Convention, taking into account Article 12 of the Convention and Aichi Biodiversity Target 19;
- (f) To increase awareness of Global Taxonomy Initiative and to implement its Capacity Building Strategy (decision XI/29);
- (g) To support the development, with the assistance, as appropriate, of the international barcode of life network, of DNA sequence-based technology (DNA barcoding) and associated DNA barcode reference libraries for priority taxonomic groups of organisms, to promote the application of these techniques for the conservation and sustainable use of biodiversity, and to support related capacity-building activities, including relevant academic training, as appropriate, further to the Strategic Actions 3 and 4 of the capacity-building strategy for the Global Taxonomy Initiative;
- (h) To continue to promote awareness about the role of traditional knowledge systems and the collective actions of indigenous peoples and local communities to complement the scientific knowledge in support of the effective implementation of the Strategic Plan for Biodiversity 2011-2020;
- (i) To take into consideration the important work undertaken by indigenous peoples and local communities related to taxonomy.

Annex

**VOLUNTARY GUIDANCE TO IMPROVE THE ACCESSIBILITY OF
BIODIVERSITY-RELATED DATA AND INFORMATION**

1. **Promote open data access through policy incentives.** Reluctance to share scientific data from research remains a significant cultural barrier to biodiversity data access. Government regulation and

incentives can stimulate an open access culture by, for example, requiring publication of all data acquired through publicly-funded research projects, using an open data licence to enable reuse with as few restrictions as possible.

2. **Promote the use of common data standards.** Biodiversity data are truly accessible only if they are expressed using commonly accepted information standards, enabling the integration and discovery of data sets from many different types of biodiversity evidence – including, for example, specimens from natural history collections, field observations and remote-sensed data. Governments can take the lead by insisting that all biodiversity data from public monitoring and research programmes use standards endorsed by such bodies as Biodiversity Information Standards (www.tdwg.org).

3. **Invest in the digitization of natural history collections.** Natural history museums and herbaria contain a wealth of information documenting biodiversity from the earliest days of exploration of the natural world to recent collection activities. While millions of specimens are already digitized and accessible to researchers via the Internet, many collections remain undigitized or only partially accessible electronically. Investment in digitization, using public funds or leveraging donations from the private sector or charitable foundations, will yield returns by reducing the time needed for researchers to access data and information from dispersed institutions.

4. **Establish national biodiversity information facilities.** Effective access to biodiversity data and information requires national coordination to promote and facilitate the sharing of data by diverse stakeholders, using appropriate standards and best practices on such issues as data quality. This may be most effectively achieved through a mandate to an appropriate national institution to coordinate such activity among biodiversity data holders and users in the country. An inclusive governance structure for such “biodiversity information facilities” will help achieve neutrality for the coordinating unit and overcome reluctance to share data among particular institutions. GBIF provides guidance on establishing such units based on its model of “participant nodes”.

5. **Enhance national capacity in biodiversity informatics.** Improved access to biodiversity data and information requires a base of professionals in relevant institutions familiar with the tools and best practices required to generate, manage, publish and use digital data. Governments can build and enhance such capacity by supporting training programmes and workshops operated by various national, regional and global networks, and by developing projects through funded capacity enhancement programmes operated by GBIF and other networks.

6. **Engage the public in biodiversity observation through citizen science networks.** Data derived from observations of the natural world by volunteer “citizen scientists” are becoming an increasingly important source of evidence for research and policy on biodiversity. Support for such initiatives, including processes to validate and curate the resulting data, and inclusion of volunteer networks in national biodiversity information facilities, helps both to increase public awareness of biodiversity (supporting Aichi Target 1) and to broaden the evidence base for research and decisions.

7. **Encourage data sharing from the private sector.** Biodiversity data generated in the course of environmental impact assessments (EIAs) are potentially valuable sources of evidence for reuse in research and subsequent development decisions. The primary (species-level) data underlying EIAs often remains hidden from view even when the consultant reports are published, and are rarely shared in formats that would make them accessible for future use. National and subnational regulators can help unlock such data by requiring developers to publish them using standard open data formats, as part of the planning approval process.

8. **Develop national platforms for data discovery, visualization and use.** For mobilized data to have maximum impact, Governments may wish to develop web platforms and means of data visualization that meet national needs and priorities. Data shared by institutions in a country can be “harvested” simultaneously by national, regional and global portals, while national portals can also “repatriate” data relating to the country’s biodiversity shared from overseas institutions. This can help to show the value of data sharing to national stakeholders and research users, as well as providing an educational platform for

citizens to understand more about their country's biodiversity. Collaborative networks on regional and global scales can help countries to identify and apply appropriate technologies to develop such platforms.

9. **Analyse data and information gaps to prioritize new data mobilization.** Improving access to biodiversity data and information is a cumulative process and will never mobilize all potential sources of evidence. Governments can prioritize investments in data mobilization activities by using emerging tools and methodologies to identify gaps, based on taxonomic, temporal and spatial coverage, or policy needs, such as thematic assessments on biodiversity and ecosystem services.

10. **Engage with and support regional and global networks for data mobilization and access.** The transnational nature of biodiversity and ecosystems makes it impossible for any one country to improve access to relevant biodiversity data and information without engaging with data-sharing initiatives on regional and global scales. Engagement with and investment in such networks bring common benefits that would not arise from purely national investments. On a global scale, continued support from Governments for networks such as GBIF, the Ocean Biogeographic Information System (OBIS) and Group on Earth Observations Biodiversity Observation Network (GEO-BON) will help these benefits to consolidate and grow for all Parties.

XIX/3. Tools to evaluate the effectiveness of policy instruments for the implementation of the Strategic Plan for Biodiversity 2011-2020

The Subsidiary Body on Scientific, Technical and Technological Advice,

Recalling Article 25, paragraph 2(b), of the Convention,

Emphasizing the importance of evaluating the effectiveness of measures undertaken to implement the Strategic Plan for Biodiversity 2011-2020 to achieve continuous learning and improvement of implementation efforts towards the full implementation of the Strategic Plan and the achievement of the Aichi Biodiversity Targets by 2020,

Acknowledging that the regional and global assessments of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) are expected to include information on and analysis of the effectiveness of policy instruments and measures to implement the Strategic Plan for Biodiversity 2011-2020 and *noting*, in this regard, the need to avoid duplication of work,

Noting that the Subsidiary Body on Implementation may also consider ways to improve the review of implementation of the Convention,

Recommends that the Conference of the Parties at its thirteenth meeting:

(a) Encourage Parties to undertake evaluations of the effectiveness of measures undertaken to implement the Strategic Plan for Biodiversity 2011-2020, to document this experience, including the methodologies applied, to identify lessons learned, and to provide this information to the Executive Secretary, including through their sixth national report;

(b) Request the Executive Secretary, subject to availability of resources, to compile and analyse this information provided by Parties and make it available for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice and the Subsidiary Body on Implementation as appropriate.

XIX/4. Indicators for the Strategic Plan for Biodiversity 2011-2020

The Subsidiary Body on Scientific, Technical and Technological Advice,

Recalling decision XI/3 and paragraph 20(b) of decision XII/1,

1. *Welcomes* the report of the Ad Hoc Technical Expert Group on Indicators for the Strategic Plan for Biodiversity 2011-2020⁷ and thanks the European Union and the Governments of Switzerland and the United Kingdom of Great Britain and Northern Ireland for their financial support;
2. *Takes note* of the proposed list of generic and specific indicators for the Strategic Plan for Biodiversity 2011-2020 identified by the Ad Hoc Technical Expert Group and contained in the annex to the report of its meeting;⁷
3. *Notes* that indicators may be used for a variety of purposes at the national, regional and global levels, including:
 - (a) Informing and supporting decision-making;
 - (b) Communicating with policymakers and other stakeholders, including those unfamiliar with the Strategic Plan;
 - (c) Mainstreaming the Aichi Biodiversity Targets within other international processes, including, in particular, the Sustainable Development Goals, by facilitating the integration of biodiversity in other processes through shared indicators or (dis/aggregated) elements of indicators;
 - (d) Reporting by Parties;
 - (e) Enabling the Conference of the Parties and its subsidiary bodies to review progress in the implementation of the Strategic Plan for Biodiversity 2011-2020;
 - (f) Providing a knowledge base for developing future plans and targets under the Convention on Biological Diversity and other multilateral environmental agreements;
4. *Notes* that the list of global indicators for the Strategic Plan will be kept under review, enabling, inter alia, the future incorporation of other relevant indicators, including those developed in the context of the Sustainable Development Goals and other Conventions and processes;
5. *Also notes* that the list of global indicators will provide (a) a framework to assess progress towards the Aichi Biodiversity Targets and (b) a flexible framework for Parties to adapt to their national priorities and circumstances, bearing in mind that Parties have different approaches to monitoring the implementation of the Strategic Plan for Biodiversity 2011-2020;
6. *Further notes* that many indicators rely on a small number of essential biodiversity variables and that further efforts are required to improve the monitoring of these variables;
7. *Welcomes* the important contributions to indicator development by the members of the Biodiversity Indicators Partnership and other relevant organizations and processes, as well as initiatives on community-based monitoring and information systems, and *encourages* further collaboration and continued support for work on indicators, taking into account, as appropriate, the outcomes of the meeting of the Ad Hoc Technical Expert Group and its further considerations;
8. *Invites* the Biodiversity Indicators Partnership to develop technical guidance on the indicators for which such guidance has not already been developed, including a description of the indicator methodology, underlying data sets, relevance and feasibility of use at the national level, to make this guidance available, and to facilitate access to this information through the clearing house-mechanism;

⁷ UNEP/CBD/SBSTTA/19/INF/5.

9. *Invites* those institutions that compile global indicators to promote the free and open access to underlying data and methodologies and to facilitate national disaggregation of underlying data, and methodologies, where appropriate, taking into account the voluntary guidance to improve the accessibility of biodiversity-related data and information (annex to recommendation XIX/2);

10. *Requests* the Executive Secretary:

1. To continue to collaborate with (i) the Inter-agency and Expert Group on the Sustainable Development Goals indicators under the United Nations Statistical Commission, in order to reflect the multiple links between the Strategic Plan for Biodiversity 2011-2020 and its Aichi Targets, and the Sustainable Development Goals; (ii) the United Nations Convention to Combat Desertification (UNCCD) on the further operationalization of the three land-based progress indicators (trends in land cover, trends in land productivity or functioning of the land, and trends in carbon stock above and below ground) set out in UNCCD decision XX/COP.12;⁸ (iii) the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES); (iv) the other biodiversity-related conventions and the United Nations Framework Convention on Climate Change; and (v) the International Indigenous Forum on Biodiversity Working Group on Indicators, in order to promote synergies regarding assessments of the Aichi Biodiversity Targets;

2. To facilitate peer review, inter alia, by the focal points of the Convention and its Protocols, the secretariats of the biodiversity-related conventions and members of the Biodiversity Indicators Partnership, of the proposed list of global indicators, including information on the source of the indicator and its underlying data, using the following criteria: availability of the indicator; its use in the *Global Biodiversity Outlook*; its suitability for communication; possibility for aggregation or disaggregation of data used;

3. To update and revise the proposed list of global indicators for the Strategic Plan for Biodiversity 2011-2020 in the light of the peer review and any comments made during the nineteenth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice and taking into account the outcomes of the forty-seventh session of the United Nations Statistical Commission and submit the results to the Subsidiary Body on Scientific, Technical and Technological Advice at its twentieth meeting with a view to preparing a recommendation for consideration by the Conference of the Parties at its thirteenth meeting;

4. To develop guidance on the use of national indicators and approaches to monitor progress towards the Aichi Biodiversity Targets, in collaboration with the Biodiversity Indicators Partnership, drawing upon, as appropriate, the report of the Ad Hoc Technical Expert Group and the documentation prepared for it, and to make this information available through the clearing house-mechanism.

⁸ Decision number to be added, based on ICCD/COP(12)/L.1, entitled "[Leveraging of synergies among the Rio conventions and promoting partnerships with other international agencies and bodies](#)".

XIX/5. Work of the Subsidiary Body on Scientific, Technical and Technological advice in the light of the 2014-2018 Work Programme of the Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services and relationship with the Subsidiary Body on Implementation

The Subsidiary Body on Scientific, Technical and Technological Advice,

Recalling the intention as outlined in the multi-year programme of work of the Conference of the Parties to 2020⁹ to undertake a final assessment of the implementation of the Strategic Plan for Biodiversity 2011-2020 and achievement of the Aichi Biodiversity Targets to inform the discussion on the follow-up to the Strategic Plan for Biodiversity 2011- 2020,

Acknowledging that the deliverables of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, in particular its methodological, thematic, regional and global assessments are expected to contribute to this final assessment,

1. *Emphasizes* the importance of the timely delivery of the Platform's assessments in order to maximize their contribution to the work under the Convention;

2. *Welcomes* the close collaboration between the Secretariats of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services and the Convention with regard to facilitating the implementation of the 2014-2018 work programme of the Platform and the work under the Convention in a coherent and efficient manner;

3. *Requests* the Executive Secretary, when developing a proposal on guidelines for the sixth national report as requested by the Conference of the Parties in its decision XII/1, paragraph 9(a), for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice at its twentieth meeting and the Subsidiary Body on Implementation at its first meeting:

(a) To take into account the lessons learned from the fourth and fifth national reports;

(b) To take into account the technical considerations on the timing, form and content of the sixth national report as contained in paragraphs 47-51 of the note by the Executive Secretary;¹⁰

(c) To include in the proposal:

(i) An item on the experiences of Parties in the use of tools to evaluate the effectiveness of specific measures undertaken to implement the Strategic Plan for Biodiversity 2011-2020;

(ii) Consideration of mainstreaming of biodiversity concerns within and across sectors, including cross-cutting policy frameworks on biodiversity and evaluation of their effectiveness, best practices and lessons learned;

(d) To circulate a draft proposal for comments and take into account comments made by Parties and observers;

4. *Also requests* the Executive Secretary to facilitate the review and testing by Parties of the voluntary online tool that is being developed by the Executive Secretary for the sixth national reporting process, including by facilitating interoperability with national clearing-house mechanisms and report on progress to the Subsidiary Body on Implementation;

5. *Recommends* that the Conference of the Parties at its thirteenth meeting:

⁹ Decision XII/31.

¹⁰ "Work of the Subsidiary Body on Scientific, Technical and Technological Advice in the light of the 2014-2018 work programme of the Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services and relationship with the Subsidiary Body on Implementation" (UNEP/CBD/SBSTTA/19/9).

- (a) Initiate the preparation for a fifth edition of the *Global Biodiversity Outlook*, which:
- (i) Should provide:
 - a. A concise final report on the implementation of the Strategic Plan for Biodiversity 2011-2020;
 - b. A basis for the follow-up to the Strategic Plan for Biodiversity 2011-2020, to be considered by the Conference of the Parties at its fifteenth meeting;
 - (ii) Should include:
 - a. A target-by-target analysis of progress towards the achievement of the Aichi Biodiversity Targets, based on a transparent and replicable methodology;
 - b. An analysis of the contribution of progress towards the Aichi Biodiversity Targets to the Sustainable Development Goals;
 - (iii) Should draw upon:
 - a. The sixth national reports;
 - b. Information from global indicators;
 - c. The thematic, regional and global assessments of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services and any relevant scenario analysis and modelling of biodiversity and ecosystem services undertaken as part of these assessments;
 - d. Information from the other biodiversity-related conventions and Rio conventions and other relevant organizations;
 - e. Information provided by indigenous peoples and local communities, including information on the contributions of collective actions to the implementation of the Strategic Plan for Biodiversity 2011-2020;
 - f. Additional relevant information presented by Parties;
 - (iv) Should be developed in a manner that avoids duplication with other processes;
- (b) Invite the secretariats of the Platform and the other biodiversity-related conventions to collaborate on a joint communication strategy for the fifth edition of the *Global Biodiversity Outlook* and relevant deliverables of the Platform;
- (c) Request the Executive Secretary to prepare:
- (i) A workplan and proposed budget for the preparation of the fifth edition of the *Global Biodiversity Outlook*;
 - (ii) A joint communication strategy with the secretariats of the Platform and biodiversity-related conventions on the fifth edition of the *Global Biodiversity Outlook* and relevant deliverables of the Platform;
- (d) Request the Subsidiary Body on Scientific, Technical and Technological Advice, in accordance with decision XII/25, paragraph 5(b), to prepare a list of requests for the second work programme of the Platform, based on information compiled by the Executive Secretary, for approval of the Conference of the Parties at its fourteenth meeting;

6. *Noting* the complementary roles of the Subsidiary Body on Scientific, Technical and Technological advice and the Subsidiary Body on Implementation, also noting that the Subsidiary Body on Implementation, at its first meeting, will consider its modus operandi, recognizes the opportunity that the establishment of the Subsidiary Body on Implementation presents to give new impetus to the review of progress on action taken in implementing the Convention, its Protocols and the Strategic Plan for Biodiversity 2011-2020, and to provide Parties with guidance to support their implementation.

XIX/6. Biodiversity and human health

The Subsidiary Body on Scientific, Technical and Technological Advice recommends that the Conference of the Parties, at its thirteenth meeting, adopt a decision along the following lines:

Recalling decision XII/21,

Welcoming the memorandum of understanding signed between the Secretariat of the Convention on Biological Diversity and the World Health Organization,

Taking note of the publication by the World Health Organization and the Secretariat of the Convention of *Connecting Global Priorities: Biodiversity and Human Health, a State of Knowledge Review*,

Recognizing that biodiversity and human health are interlinked in various ways, including the following:

(a) Biodiversity gives rise to benefits for human health, including directly as a source of foods, nutrition, traditional medicines and biomedical discovery, and indirectly as a source of clothes, heating and shelter, by underpinning ecosystem functioning and resilience and the provision of essential ecosystem services and by providing options for adapting to changing needs and circumstances;

(b) Biodiversity may be related to adverse health effects, notably through infectious agents;

(c) A number of drivers of change may affect both biodiversity and health;

(d) Health sector interventions can have both positive and negative impacts on biodiversity and that biodiversity-related interventions can have both positive and negative impacts on human health,

Noting that better consideration of health-biodiversity linkages could contribute to improving many aspects of human health, including nutrition, reducing the global burden of infectious as well as non-communicable diseases, and improving mental health and well-being,

Noting also that recognition of the health benefits of biodiversity reinforces the rationale for the conservation and sustainable use of biodiversity and thus contributes to the implementation of the Strategic Plan for Biodiversity 2011-2020 and to the achievement of the Aichi Biodiversity Targets,

Acknowledging that health-biodiversity linkages are related to the 2030 Agenda for Sustainable Development and to the Sustainable Development Goals,¹¹

Recognizing that the health benefits of biodiversity are influenced by socioeconomic factors and may be specific to local ecosystems and cultures, that men and women often have different roles in the management of natural resources and family health, and that poor and vulnerable communities, women and children are often particularly directly dependent on biodiversity and ecosystems for food, medicines, clean water, and other health related services,

Highlighting the importance of traditional knowledge as well as conventional scientific knowledge in realizing the health benefits of biodiversity,

Re-emphasizing the value of the “One Health” approach to addressing the cross-cutting issue of biodiversity and human health, as an integrated approach consistent with the ecosystem approach (decision V/6),

1. *Takes note* of the key messages contained in the summary of *Connecting Global Priorities: Biodiversity and Human Health, a State of Knowledge Review*,¹²

¹¹ General Assembly resolution 70/1, annex.

¹² UNEP/CBD/SBSTTA/6/Add.1.

2. *Invites* Parties and other Governments, to consider using the *State of Knowledge Review* and its key messages, as appropriate, to promote the understanding of health-biodiversity linkages with a view to maximizing health benefits, addressing trade-offs, and where possible, addressing common drivers for health risks and biodiversity loss;

3. *Invites* Parties and other Governments to make use of the information contained in the annex to the present decision, as appropriate and taking into account national circumstances, to achieve the objective stated in paragraph 2 above;

4. *Invites* Parties, other Governments and relevant organizations to carry out activities, as appropriate and taking into account national circumstances, inter alia:

(a) To facilitate dialogue between agencies responsible for biodiversity and those responsible for health and other relevant sectors, across all levels of government;

(b) To consider relevant health-biodiversity linkages in developing and updating relevant national policies, strategies, plans, and accounts including health strategies, such as national environmental health action plans, national biodiversity strategies and action plans, and sustainable development and poverty eradication strategies;

(c) To strengthen national monitoring capacities and data collection, including integrated surveillance capacities and early warning systems, that enable health systems to anticipate, prepare for and respond to public health threats resulting from ecosystem change;

(d) To consider health-biodiversity linkages in environmental impact assessments, risk assessments and strategic environmental assessments, as well as in health impact assessments, social and economic valuation and the evaluation of trade-offs;

(e) To address, monitor and evaluate any unintended and undesirable negative impacts of biodiversity interventions on health and of health interventions on biodiversity;

(f) To identify opportunities for and promote healthy lifestyles and sustainable production and consumption patterns and associated behavioural change, that would benefit biodiversity and human health through, inter alia, the promotion of public health campaigns;

(g) To develop interdisciplinary education, training, capacity-building and research programmes on health-biodiversity linkages, using integrative approaches, at various levels and different spatial and temporal scales, and communities of practice on biodiversity and health;

(h) To consider the need to strengthen the capacity of health, environment and other relevant ministries, agencies and organizations to address health-biodiversity linkages in order to support preventative approaches to health and promote the multiple dimensions of health and well-being;

(i) To integrate relevant biodiversity concerns into national public health policies, with particular emphasis on the needs of indigenous peoples and local communities;

5. *Encourages* Parties, other Governments and relevant organizations:

(a) To develop integrated metrics, indicators and tools to facilitate the analysis, evaluation, monitoring and integration of biodiversity into health strategies, plans and programmes and vice-versa;

(b) To develop and compile toolkits, including good practice guides, aimed at raising awareness and enhancing co-benefits of biodiversity and health, including in the context of the implementation of the 2030 Agenda for Sustainable Development and Sustainable Development Goals;¹³

¹³ General Assembly resolution 70/1, annex.

6. *Also encourages* Parties, other Governments, relevant organizations and funding agencies to promote and support further research on health-biodiversity linkages and related socioeconomic considerations, including, inter alia, on the following issues:

(a) The relationships between biodiversity, ecosystem degradation and infectious disease emergence, including the effects of ecological community structure and composition, habitat disturbance and human-wildlife contact, and the implications for land use and ecosystem management;

(b) The interlinkages between dietary diversity, health and diversity of crops, livestock and other components of biodiversity in agricultural ecosystems, as well as marine and inland water ecosystems;

(c) The linkages between the composition and diversity of the human microbiome, and biodiversity in the environment, and implications for the planning, design, development and management of human settlements;

(d) The significance for health of marine biodiversity, including for food security, and the consequences of multiple stressors on marine ecosystems (including pathogens, chemicals, climate change and habitat degradation);

(e) The contribution of biodiversity and the natural environment, including protected areas, in promoting mental health, particularly in urban areas;

(f) The significance of soil biodiversity for health;

(g) Linkages between migratory species and their corridors and human health;

(h) Linkages between invasive alien species and human health;

7. *Invites* Parties, other Governments, and relevant organizations to provide information on the implementation of the present decision to the Executive Secretary;

8. *Decides to consider* biodiversity and human health interlinkages when addressing the follow-up to the Strategic Plan for Biodiversity 2011–2020 and the Aichi Biodiversity Targets;

9. *Requests* the Executive Secretary, subject to the availability of resources:

(a) To collaborate with the World Health Organization and other relevant organizations, to promote and facilitate implementation of the present decision, including through wide dissemination of the *State of Knowledge Review* in the official languages of the United Nations, the development of toolkits and good practice guides (including on One Health) and support to capacity-building, as well as of the tasks set out in paragraph 9 of decision XII/21;

(b) To compile and analyse information received in the implementation of the present decision, including information provided further to paragraph 7 above;

(c) To submit a report to the Subsidiary Body on Scientific, Technical and Technological Advice at a meeting prior to the fourteenth meeting of the Conference of the Parties.

Annex

Information on health-biodiversity linkages

(a) *Water supply and sanitation:* In water supply and sanitation policies and programmes, including the planning and design of water-related infrastructure, take into account the role of terrestrial and inland water ecosystems as “green infrastructure” in regulating the quantity, quality and supply of freshwater and flood regulation, protect these ecosystems, and address the drivers of their loss and degradation, including land-use change, pollution and invasive species;

(b) *Agricultural production*: Enhance the diversity of crops, livestock and other components of biodiversity in agricultural ecosystems to contribute to sustainable production increases and to the reduced use of pesticides and other chemical inputs, with benefits for human health and the environment, noting the relevance in this respect of the programme of work on agricultural biodiversity (decision V/5), and of the international initiative on pollinators (decision VIII/23 B);

(c) *Food and nutrition*: Promote the diversity and sustainable use of crops and livestock diversity and wild foods, including from marine and inland water sources, to contribute to human nutrition and dietary diversity, including by making available information on the nutritional value of diverse foods, with a view to improving human health, and promoting sustainable diets, including through appropriate information and public awareness activities, recognition of traditional, national and local food cultures, and the use of social and economic incentives throughout the supply chain, noting the relevance in this respect of the cross-cutting initiatives on biodiversity for food and nutrition (decision VIII/23 A);

(d) *Human settlements*: In urban planning, design, development and management, take into account the important role of biodiversity in providing physiological benefits, in particular the role of vegetation in improving air quality and counteracting the heat-island effect, and in fostering interchange between environmental microbes and the human microbiome;

(e) *Ecosystem management and infectious diseases*: Promote an integrated (“One Health”) approach to the management of ecosystems, associated human settlements and livestock, minimizing unnecessary disturbance to natural systems and so avoid or mitigate the potential emergence of new pathogens and manage the risk of transmission of pathogens between humans, livestock and wildlife in order to reduce the risk and incidence of infectious diseases, including zoonotic and vector-borne diseases;

(f) *Mental health and well-being*: Promote opportunities for interactions between people, especially children, and nature, to provide benefits for mental health, to support cultural well-being and encourage physical activity in green and biodiverse spaces, particularly in urban areas;

(g) *Traditional medicines*: Protect traditional medical knowledge, innovations and practices of indigenous peoples and local communities, promote the sustainable use, management and trade of plants and animals used in traditional medicine, and promote safe and culturally sensitive practices, and the integration and sharing of knowledge and experiences, based on prior and informed consent, and the fair and equitable sharing of benefits between traditional medical practitioners and the broader medical community;

(h) *Biomedical discovery*: Conserve biodiversity in terrestrial, inland water, coastal and marine areas; protect traditional knowledge, especially in areas of high importance for biodiversity and ecosystem services; and promote access to genetic resources and the fair and equitable sharing of benefits arising from their utilization consistent with Article 8(j) and with the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity;

(i) *Impacts of pharmaceutical products*: Avoid the overuse, and unnecessary routine use, of antibiotic and antimicrobial agents, both in human medicine and veterinary practice, to reduce harm to beneficial and symbiotic microbial diversity and to reduce the risk of antibiotic resistance; better manage the use and disposal of endocrine-disrupting chemicals to prevent harm to people, biodiversity and ecosystem services; and reduce the inappropriate use of non-steroidal anti-inflammatory drugs that threaten wildlife populations;

(j) *Species and habitat conservation*: In implementing policies to protect species and habitats, including protected areas, and other methods aimed at conservation and sustainable use, consider, in compliance with national legislation, improving access to, and customary sustainable use of, wild foods and other essential resources by indigenous peoples and local communities, especially poor and resource-dependent communities;

(k) *Ecosystem restoration*: Consider human health when carrying out ecosystem restoration activities and, where necessary, take measures to promote positive health outcomes and remove or mitigate negative health outcomes;

(l) *Climate change and disaster risk reduction*: In the analysis and implementation of ecosystem-based adaptation, mitigation and disaster risk reduction measures, prioritize measures that jointly contribute to human health and to the conservation of biodiversity and of vulnerable ecosystems, and that support the health, well-being, safety and security of vulnerable human populations, and build resilience.

XIX/7. Climate-related geoengineering

The Subsidiary Body on Scientific, Technical and Technological Advice,

Recalling decisions X/33 and XI/20 and the information contained in Technical Series No. 66 of the Convention on Biological Diversity,¹⁴

Noting that the Intergovernmental Panel on Climate Change in its Fifth Assessment Report has not addressed, in detail, the impacts of climate-related geoengineering techniques on biodiversity and ecosystems,

1. *Takes note* of the updated report on climate-related geoengineering in relation to the Convention on Biological Diversity¹⁵ and the information contained in the note by the Executive Secretary on climate-related geoengineering,¹⁶

2. *Recommends* that the Conference of the Parties at its thirteenth meeting adopt a decision along the following lines:

The Conference of the Parties

(a) *Reaffirms* paragraph 8, in particular its subparagraph (w), of decision X/33, and decision XI/20;

(b) *Recalls* paragraph 11 of decision XI/20, in which the Conference of the Parties noted that the application of the precautionary approach as well as customary international law, including the general obligations of States with regard to activities within their jurisdiction or control and with regard to possible consequences of those activities, and requirements with regard to environmental impact assessment, may be relevant for geoengineering activities but would still form an incomplete basis for global regulation;

(c) *Recalling* paragraph 4 of decision XI/20, in which the Conference of the Parties emphasized that climate change should primarily be addressed by reducing anthropogenic emissions by sources and by increasing removals by sinks of greenhouse gases under the United Nations Framework Convention on Climate Change, noting also the relevance of the Convention on Biological Diversity and other instruments, and *also recalling* paragraphs 8 (j)-(t) of decision X/33, and paragraph 5 of decision XII/20, *reaffirms* its encouragement to Parties to promote the use of ecosystem-based approaches to climate change adaptation and mitigation;

(d) *Notes* that very few Parties responded to the invitation to provide information on measures they have undertaken in accordance with decision X/33, paragraph 8(w), and further invites other Parties, where relevant, to provide such information;

(e) *Also notes* that more transdisciplinary research and sharing of knowledge among appropriate institutions is needed in order to better understand the impacts of climate-related geoengineering on biodiversity and ecosystem functions and services, socio-economic, cultural and ethical issues and regulatory options;

(f) *Recognizes* the importance of taking into account sciences for life and the knowledge, experience and perspectives of indigenous peoples and local communities when addressing climate-related geoengineering and protecting biodiversity.

¹⁴ *Geoengineering in Relation to the Convention on Biological Diversity: Technical and Regulatory Matters*, available at www.cbd.int/doc/publications/cbd-ts-66-en.pdf.

¹⁵ UNEP/CBD/SBSTTA/19/INF/2.

¹⁶ UNEP/CBD/SBSTTA/19/7.

XIX/8. Forest biodiversity: role of international organizations in supporting the achievement of the Aichi Biodiversity Targets

The Subsidiary Body on Scientific, Technical and Technological Advice

1. *Takes note* of the information contained in the note by the Executive Secretary on the role of relevant international organizations in supporting the achievement of the forest-related Aichi Biodiversity Targets¹⁷ and in the information note on the contributions of Collaborative Partnership on Forests member organizations to the achievement of the forest-related Aichi Biodiversity Targets;¹⁸

2. *Welcomes* the contribution of the members of the Collaborative Partnership on Forests to efforts to achieve the Aichi Biodiversity Targets, in particular with regard to forests;

3. *Requests* the Executive Secretary, working with the Secretariat of the United Nations Forum on Forests and the other members of the Collaborative Partnership on Forests, to contribute to the preparation of the Strategic Plan 2017-2030 of the international arrangement on forests and the related work plan of the Collaborative Partnership on Forests with a view to promoting consistency with the Strategic Plan for Biodiversity 2011-2020, and to further enhancing the achievement of the forest-related Aichi Biodiversity Targets in the context of the 2030 Agenda for Sustainable Development;¹⁹

4. *Recommends* that the Conference of the Parties adopt a decision along the following lines:

The Conference of the Parties,

Noting the strong congruence among the forest-related Aichi Biodiversity Targets, the four global objectives on forests, REDD+²⁰ activities and guidance, and the forest-related Sustainable Development Goals, and *emphasizing* that their achievement is important for the implementation of the 2050 vision of the Strategic Plan for Biodiversity, as well as for the 2030 Agenda for Sustainable Development,¹⁹ recognizing also alternative policy approaches, such as the joint mitigation and adaptation approach for the integral and sustainable management of forests, noted in decision XII/20, paragraph 4,

Stressing the need to enhance coherence, cooperation and synergies among forest-related agreements, and their processes and initiatives, both at the policy and implementation levels,

(a) *Welcomes* the resolution of the Economic and Social Council of the United Nations on the international arrangement on forests beyond 2015,²¹ which strengthens the international arrangement and extends it to 2030;

(b) *Also welcomes* the 2030 Agenda for Sustainable Development¹⁹ and, in particular, the forest-related targets under Sustainable Development Goals 6 and 15;

(c) *Notes* other initiatives to reduce forest loss and encourages Parties and all relevant stakeholders to take part, as appropriate, in their implementation, as a contribution to the achievement of the forest-related Aichi Biodiversity Targets;

¹⁷ UNEP/CBD/SBSTTA/19/8.

¹⁸ UNEP/CBD/SBSTTA/19/INF/3.

¹⁹ General Assembly resolution 70/1, annex.

²⁰ REDD+ is used as a shorthand for “reducing emissions from deforestation and forest degradation, conservation of forest carbon stocks, sustainable management of forests and enhancement of forest carbon stocks in developing countries”, consistent with paragraph 70 of decision 1/CP.16 of the United Nations Framework Convention on Climate Change (UNFCCC). The acronym REDD+ is used for convenience only, without any attempt to pre-empt ongoing or future negotiations under UNFCCC.

²¹ Council resolution 2015/33 of 22 July 2015.

(d) *Invites* the United Nations Forum on Forests, in developing the Strategic Plan 2017-2030 of the international arrangement on forests, to take into account the forest-related Aichi Biodiversity Targets, with a view to promoting a coordinated approach to the achievement of the forest-related multilateral commitments and goals;

(e) *Also invites* the members of the Collaborative Partnership on Forests, in preparing the 2017-2030 work plan of the Partnership, to consider ways and means of further enhancing their individual and collective contributions to the Aichi Biodiversity Targets and support a coordinated approach to the achievement of the forest-related multilateral commitments and goals, such as the following:

- (i) Sharing experiences and related information on the implementation of the forest-related Aichi Biodiversity Targets;
- (ii) Identifying actions by which they could provide useful support to countries, including for the implementation of the Strategic Plan 2011-2020 and the Aichi Biodiversity Targets, taking into account the different visions, approaches, models and tools to improve the integrated management of forests, including the development of technical capacity;
- (iii) Examining their respective roles in order to leverage the comparative advantages of each of the members and to further enhance their joint contributions;
- (iv) Improving monitoring of and reporting on progress, including the harmonization of indicators and reporting processes;
- (v) Improving knowledge management, including through open data platforms and interoperability to facilitate the sharing and synthesis of information;

(f) *Encourages* Parties, when developing and implementing their forest policy in the context of the Aichi Biodiversity Targets and the other forest-related multilateral commitments and goals to take into account, as appropriate (i) other land uses, including agriculture, (ii) climate change mitigation and adaptation, and (iii) disaster risk reduction, and to give due consideration to the conservation and sustainable use of natural forests and native vegetation and avoiding the potential negative impacts of afforestation of non-forest biomes;

(g) *Requests* the Executive Secretary to strengthen collaboration with the members of the Collaborative Partnership on Forests, including the Secretariat of the United Nations Forum on Forests, as well as other relevant organizations and initiatives, to fully respond to the requests of the Conference of the Parties in paragraph 21 of decision XII/6, to support the implementation of the present decision, and to report on progress to the Subsidiary Body on Scientific, Technical and Technological Advice or the Subsidiary Body on Implementation, as appropriate, at a meeting prior to the fourteenth meeting of the Conference of the Parties.