

## I. RECOMMENDATIONS ADOPTED BY THE SUBSIDIARY BODY ON SCIENTIFIC, TECHNICAL AND TECHNOLOGICAL ADVICE

### XX/1. Progress towards the achievement of Aichi Biodiversity Targets 11 and 12

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, taking into account also any updated information on progress that is available at that time:

*The Conference of the Parties,*

*Welcoming* the continued progress towards the achievement of Aichi Biodiversity Target 11,

*Also welcoming* the Promise of Sydney and other commitments made by the members of the International Union for Conservation of Nature and other organizations at the World Parks Congress 2014, held in Sydney, Australia, particularly the commitment to accelerate the implementation of the Strategic Plan for Biodiversity 2011-2020,

1. *Acknowledges* with appreciation the support of partner organizations, donors, host Governments and the Executive Secretary for organizing regional capacity-building workshops and related activities on achieving Aichi Biodiversity Targets 11 and 12;

2. *Recognizes* that the achievement of Aichi Biodiversity Target 11 will contribute to the implementation of other Aichi Biodiversity Targets, the Sendai Framework for Disaster Risk Reduction 2015-2030,<sup>1</sup> relevant targets of the Sustainable Development Goals and Article 5 of the Paris Agreement,<sup>2</sup> as well as means for mitigation and adaptation to climate change;

3. *Notes* the considerable gap in the conservation status assessment of most taxonomic groups, and the general lack of information on species conservation plans;

4. *Invites* Parties, as appropriate and taking into account national circumstances:

(a) To undertake concerted efforts to implement actions identified in national biodiversity strategies and action plans and other relevant strategies and, as appropriate, address gaps identified through regional capacity-building workshops on achieving Aichi Biodiversity Targets 11 and 12;

(b) To pursue efforts to identify and explore options to protect areas of particular importance for biodiversity and ecosystem services, taking into account progress made in describing ecologically or biologically significant marine areas by the Convention on Biological Diversity and the Standards for the Identification of Key Biodiversity Areas adopted by the Council of the International Union for Conservation of Nature, as appropriate, and, in establishing new and/or expanding existing protected areas, or taking other effective area-based conservation measures, to give due consideration to areas that: (i) improve ecological representativeness; (ii) increase connectivity; (iii) promote the integration of protected areas into the wider landscape and seascape; (iv) protect the habitats of species, in particular threatened, endemic and migratory species, including through such mechanisms as important bird and marine mammal areas; (v) promote the integration of areas managed under collective action by indigenous peoples and local communities into the wider landscapes and seascapes, as appropriate; (vi) expand the coverage of areas important for biodiversity and ecosystem services; (vii) are identified as centres of origin or centres of genetic diversity; and (viii) have involved the full and effective participation and have received the prior informed consent of indigenous peoples and local communities

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<sup>1</sup> [General Assembly resolution 69/283](#), annex II.

<sup>2</sup> United Nations Framework Convention on Climate Change, Conference of the Parties, twenty-first session, decision 1/CP.21 (see [FCCC/CP/2015/10/Add.1](#)).

whose territories, areas and resources overlap wholly or partially with the proposed areas, in accordance with national legislation;

(c) To endeavour to undertake more systematic assessments of management effectiveness and biodiversity outcomes of protected areas, including, where possible, other effective area-based conservation measures, to improve the management effectiveness by addressing the gaps, and to provide, on a voluntary basis, information on the results to the Global Database on Protected Areas Management Effectiveness, maintained by the United Nations Environment Programme's World Conservation Monitoring Centre, as appropriate;

(d) To undertake or participate in, where relevant, national protected area governance assessments with a view to promoting, recognizing and improving governance diversity, efficiency and equity in protected area systems;

(e) To strengthen their efforts to complete the assessments of the conservation status of all taxonomic groups and habitats and develop and implement species and habitat conservation plans, in particular for threatened and endemic species;

5. *Invites* the International Union for Conservation of Nature and the World Conservation Monitoring Centre to work with Parties and other Governments to update the World Database on Protected Areas and also to contribute to the assessment of progress in the implementation of Aichi Biodiversity Target 11;

6. *Invites* Parties, other Governments, relevant partners, regional agencies, bilateral and multilateral funding agencies, in conjunction with the Secretariat of the Convention on Biological Diversity, taking into account information provided by, and in consultation with Parties and other Governments, and subject to the availability of resources:

(a) To undertake a review of experiences on:

(i) Protected areas and other effective area-based conservation measures, taking into account the work of the International Union for Conservation of Nature and other appropriate expert bodies;

(ii) Additional measures to enhance integration of protected areas and other effective area-based conservation measures into the wider land- and seascapes,

(iii) Mainstreaming of protected areas and other effective area-based conservation measures across sectors;

(iv) Effective governance models for management of protected areas, including equity, taking into account work being undertaken under Article 8(j);

(b) To explore the possibility of developing global or regional projects which could support national assessments of management effectiveness and equity in protected areas;

(c) To facilitate the completion of assessments of the conservation status of species, in particular threatened and endemic species, and enable their conservation, in accordance with established national processes;

(d) To facilitate support networks at the regional and subregional level, as appropriate, to build capacity and support the implementation of national actions identified in national biodiversity strategies and action plans and, as appropriate, through the regional workshops for the achievement of Aichi Biodiversity Targets 11 and 12, to promote the preparation, use and sharing of technical guidance, best practices, tools, lessons learned, and monitoring efforts;

7. *Requests* the Executive Secretary:

(a) To develop voluntary guidance on the elements listed in paragraph 6(a) above;

(b) To organize, subject to the availability of resources, a technical expert workshop to provide scientific and technical advice on definition, management approaches and identification of other effective area-based conservation measures and their role in achieving Aichi Biodiversity Target 11;

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

8. *Invites* the Global Environment Facility and its implementing agencies to facilitate the alignment of the development and implementation of protected area and other effective area-based conservation projects in its sixth and seventh replenishment cycles with the national actions identified in national biodiversity strategies and action plans and, as appropriate, through the regional workshops for the achievement of Targets 11 and 12, with a view to facilitating the systematic monitoring and reporting of the results of those projects as they contribute to the implementation of the national action plans for the achievement of Aichi Biodiversity Targets 11 and 12 and other related targets.

**XX/2. Scientific assessment of progress towards selected Aichi Biodiversity Targets***The Subsidiary Body on Scientific, Technical and Technological Advice*

*Requests* the Executive Secretary to develop proposals for the next scientific assessment of progress towards selected Aichi Biodiversity Targets for which least progress has been made, further to decisions X/2 and XII/1, taking into account information and priorities emerging from the nineteenth and twentieth meetings of the Subsidiary Body on Scientific, Technical and Technological Advice and the first meeting of the Subsidiary Body on Implementation, to identify those targets for which a scientific assessment would have the greatest potential to help achieve the relevant targets, and to submit those proposals to the Conference of the Parties at its thirteenth meeting.

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:

*The Conference of the Parties,*

*Recalling* decision XII/1, paragraph 6, in which it recognized that there had been encouraging progress towards meeting some elements of most Aichi Biodiversity Targets but, in most cases, this progress would not be sufficient to achieve the targets unless further urgent and effective action is taken to reduce the pressures on biodiversity and to prevent its continued decline,

*Noting* that such actions can be informed by a scientific assessment of progress towards the targets,

*Acknowledging* the role of the Subsidiary Body on Implementation in reviewing progress by Parties in the implementation of the Strategic Plan for Biodiversity 2011-2020, and the role of the Subsidiary Body on Scientific, Technical and Technological Advice in providing advice, and recognizing the complementary mandates of the Subsidiary Body on Scientific, Technical and Technological Advice and the Subsidiary Body on Implementation,

*Requests* the Executive Secretary, subject to the availability of resources, to prepare, in collaboration with members of the Biodiversity Indicators Partnership and other relevant partners, for the consideration of the Subsidiary Body on Scientific, Technical and Technological Advice at a meeting held prior to the fourteenth meeting of the Conference of the Parties, updated scientific assessments of progress towards Aichi Biodiversity Targets, focusing in particular on those targets on which the least progress has been made and making use of available data and the indicators listed in SBSTTA recommendation XX/13, as appropriate, as well as other information sources used for the fourth edition of the *Global Biodiversity Outlook*, and *also requests* the Executive Secretary to develop options to accelerate progress towards the achievement of those targets which have been identified as the least advanced.

**XX/3. Marine and coastal biodiversity: ecologically or biologically significant marine areas**

*The Subsidiary Body on Scientific, Technical and Technological Advice*

*Requests* the Executive Secretary:

(a) To develop options regarding procedures within the Convention to modify the description of areas, both within and beyond national jurisdiction, decided by the Conference of the Parties for inclusion in the repository, based on new information that has become available since the previous regional workshops on ecologically or biologically significant areas;

(b) To develop options to facilitate the process of description of new areas against the criteria for ecologically or biologically significant marine areas;

(c) To make a draft report on options available for peer-review by Parties for further refinement;

(d) To submit the final report to the Conference of the Parties for consideration at its thirteenth meeting, building on the work of the Subsidiary Body on Scientific, Technical and Technological Advice at its twentieth meeting.

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:

*The Conference of the Parties,*

*Recalling* decisions X/29, XI/17 and XII/22 on ecologically or biologically significant marine areas,

*Also recalling* that the United Nations Convention on the Law of the Sea sets out for its Contracting Parties the legal framework within which all activities in the oceans and seas must be carried out,

*Reiterating* the central role of the General Assembly of the United Nations in addressing issues relating to the conservation and sustainable use of biodiversity in marine areas beyond national jurisdiction,

1. *Welcomes* the summary reports prepared by the Subsidiary Body on Scientific, Technical and Technological Advice at its twentieth meeting and the reports of the regional workshops to facilitate the description of ecologically or biologically significant marine areas held in three regions: North-East Indian Ocean (Colombo, Sri Lanka, 22-27 March 2015); North-West Indian Ocean (Dubai, United Arab Emirates, 19-25 April 2015); and the Seas of East Asia (Xiamen, China, 13-18 December 2015), and expresses its gratitude to the Government of Japan (through the Japan Biodiversity Fund) and the European Commission for their financial support and to hosting countries and collaborating organizations involved in the organization of the regional workshops referred to above;

2. *Requests* the Executive Secretary to include the summary reports prepared by the Subsidiary Body on Scientific, Technical and Technological Advice at its twentieth meeting, annexed to the present draft decision, in the repository of ecologically or biologically significant marine areas, and to submit the summary reports to the United Nations General Assembly, in particular its Preparatory Committee established by General Assembly resolution 69/292: the Development of an international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, as well as Parties, other Governments and relevant international organizations in line with the purpose and procedures set out in decisions X/29, XI/17 and XII/22, and *also requests* the Executive Secretary to submit the reports to the Ad Hoc Working Group of the Whole on the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects;

3. *Encourages* Parties in the North-East Atlantic region to finalize the ongoing process for the description of areas meeting the criteria for ecologically or biologically significant marine areas in this region;

4. *Notes* with satisfaction that the summary reports on the description of areas meeting the criteria for ecologically or biologically significant marine areas have informed the United Nations General Assembly, the Food and Agriculture Organization of the United Nations, the International Maritime Organization, the Convention on the Conservation of Migratory Species of Wild Animals and the Intergovernmental Oceanographic Commission/Ocean Biogeographic Information System, as well as a number of regional and subregional processes, and *invites* competent organizations to make use of the information on ecologically or biologically significant marine areas in their relevant activities;

5. *Expresses* appreciation to those Parties that have initiated or completed national exercises to describe areas meeting the criteria for ecologically or biologically significant marine areas or other relevant compatible and complementary nationally or intergovernmentally agreed scientific criteria, and those that have participated in the regional workshops under the Convention to describe areas within their national jurisdiction meeting the criteria for ecologically or biologically marine significant areas, and *invites* Parties to provide information on any additional national exercises;

6. *Requests* the Executive Secretary, subject to the availability of financial resources, in line with paragraph 36 of decision X/29, paragraph 12 of decision XI/17 and paragraph 6 of decision XII/22, to continue to facilitate the description of areas meeting the criteria for ecologically or biologically significant marine areas through the organization of additional regional or subregional workshops where Parties wish workshops to be held;

[7. *Takes note* of the practical options for further enhancing scientific methodologies and approaches, including collaborative arrangements, for the description of areas meeting the criteria for ecologically or biologically significant marine areas, as contained in annex I to the present draft decision;]

[8. *Requests* the Executive Secretary to facilitate the implementation of the practical options, referred to in the above paragraph, and establish, following the guidance on the expert groups contained in the consolidated modus operandi of SBSTTA (decision VIII/10, annex III (h)), an informal advisory group for ecologically or biologically significant marine areas, in accordance with the terms of reference provided in annex II to the present draft decision, subject to available financial resources, and report on its progress and submit the outputs of its work after peer-review, for consideration to a meeting of the Subsidiary Body of Scientific, Technical and Technological Advice, prior to the fourteenth meeting of the Conference of the Parties;]

9. *Recalling* paragraph 24 of decision XI/17 and paragraph 15 of decision XII/22, *welcomes* the training manual on the use of traditional knowledge in the application of the criteria for ecologically or biologically significant marine areas, and *requests* the Executive Secretary, in collaboration with Parties, other Governments, donors, relevant organizations, and indigenous peoples and local communities to use this training manual in organizing training activities, as appropriate and subject to the availability of financial resources;

10. *Recalling* paragraph 11 of decision XII/22, *invites* Parties, other Governments and competent intergovernmental organizations to share their experiences in undertaking scientific and technical analysis of the status of marine and coastal biodiversity in areas within their respective jurisdictions or mandates, described as meeting the criteria for ecologically or biologically significant marine areas and contained in the repository of ecologically or biologically marine significant areas, through national reports and/or voluntary reports, and *requests* the Executive Secretary to make this information available through the clearing-house mechanism;

11. *Recalling* paragraph (d) of the annex to decision X/29, in which the Conference of the Parties endorsed guidance for the implementation of the programme of work on marine and coastal biodiversity, including the indicative list of activities for operational objective 2.4 of programme element 2 on marine and coastal living resources, *further encourages* Parties and *invites* other Governments and

intergovernmental organizations, within their respective jurisdiction and competence, to take measures to ensure conservation and sustainable use by implementing relevant tools, including area-based management tools such as MPAs, environmental impact assessments and strategic environmental assessments, and to share their experience in taking these measures, through national reports and/or voluntary reports, and *requests* the Executive Secretary to make this information available through the clearing-house mechanism;

12. *Invites* Parties, as appropriate, to consider designating national focal points for the programme of work on marine and coastal biodiversity in support of the Convention's national focal point, to facilitate effective and coordinated communication in support of the implementation of the Convention's programme of work on marine and coastal biodiversity.

#### *Annex I*

### **PRACTICAL OPTIONS FOR FURTHER ENHANCING SCIENTIFIC METHODOLOGIES AND APPROACHES, INCLUDING COLLABORATIVE ARRANGEMENTS, ON THE DESCRIPTION OF AREAS MEETING THE CRITERIA FOR ECOLOGICALLY OR BIOLOGICALLY SIGNIFICANT MARINE AREAS**

Some of the activities suggested below could be undertaken, on a voluntary basis, by Parties and other Governments, in collaboration with relevant organizations, facilitated by the Executive Secretary, and some are to be undertaken by the Executive Secretary, as specified, subject to available financial resources, in line with the purpose and procedures set out in decisions X/29, XI/17 and XII/22, in accordance with national legislation, for areas within national jurisdiction, and in accordance with international law, including the United Nations Convention on the Law of the Sea, for areas beyond national jurisdiction, as appropriate. The results of the activities, outlined below, to be undertaken by the Executive Secretary shall be submitted, after peer review, as appropriate, for consideration to the Subsidiary Body on Scientific, Technical and Technological Advice at a meeting held prior to the fourteenth meeting of the Conference of the Parties.

#### **1. Improving data compilation and synthesis and application of the EBSA criteria**

##### **1.1 Improving the scientific guidance for the application of the EBSA criteria**

Existing scientific guidance includes the training manual and modules for the description of EBSAs (UNEP/CBD/SBSTTA/16/INF/9, prepared in 2012) and the scientific and technical guidance on the use of biogeographic classification systems and the application of the scientific criteria for the EBSAs (UNEP/CBD/SBSTTA/14/INF/4, prepared in 2009). The Executive Secretary could improve existing guidance by incorporating the lessons learned from the EBSA regional workshops and national exercises on the description of EBSAs held thus far. In particular, more detailed guidance could be provided on the following: interpretation of each criterion, examples of how to apply the criteria; assessments/rankings of the regional significance of areas relative to each of the EBSA criteria; the issue of thresholds in determining the degree to which an area meets each of the criteria; expert evaluation; areas that meet multiple criteria; dealing with relatively small ecosystem features vs. very extensive oceanographic features; areas that are overlapping or nested within broader areas meeting the EBSA criteria; and different ecological and biological characteristics of areas meeting the EBSA criteria.

##### **1.2 Improving the systematic assessment of areas against the EBSA criteria**

Future applications of the EBSA criteria through appropriate processes could be supported by prior systematic assessments of areas at the national, regional or subregional scale undertaken by Parties and other Governments, in collaboration with relevant organizations.

### **1.3. Characterizing areas meeting the EBSA criteria**

The description of areas meeting the EBSA criteria could be enhanced by adding information on the characterization of areas meeting the EBSA criteria. This characterization could generally be related to the spatial and temporal dynamics of ecological and biological characteristics and the degree to which the boundaries are ecologically distinct within an area.

### **1.4. Improving data availability and accessibility**

A number of steps can be taken to improve the availability of relevant data and the ability of experts to make use of it, including:

#### For Parties and other Governments

(a) Coordinating with experts, relevant scientific institutions and regional organizations, e.g. through EBSA preparatory meetings, to provide scientific input to EBSA regional or subregional workshops and/or national exercises on the description of EBSAs;

(b) Making available, as appropriate, the direct online links to (or hardcopies of) respective scientific papers or reports, relevant to the scientific data/information, including the results of statistical analysis or modelling, submitted to the workshops;

(c) Involving various sectors, business communities and civil society who hold relevant scientific information, while also exploring ways and means to address their concerns related to data confidentiality;

(d) Facilitating the full and effective participation of indigenous peoples and local communities, in the description of areas meeting the EBSA criteria.

#### CBD Secretariat and relevant organizations

(e) Facilitating EBSA training opportunities, at least two to three months prior to the regional workshops, so that participants are fully aware of the types and range of data that would be useful to compile and so that the workshop organizers are aware of the types of information, including traditional knowledge, that could be available to the workshop;

(f) Engaging relevant United Nations/international organizations, regional seas organizations, regional fisheries bodies, large marine ecosystem programmes, or other relevant regional initiatives, and international networks of scientific institutions to better connect information sources;

### **1.5. Enhancing the use of the traditional, scientific, technical and technological knowledge of indigenous peoples and local communities**

Given the unique challenges associated with the use of traditional knowledge, more work should be done to identify effective ways of including that information. Training activities could be organized, targeting both the experts from indigenous peoples and local community and from scientific institutions prior to workshops at the relevant scale. This would build on the training manual on incorporating traditional knowledge into the description of EBSAs, as contained in document UNEP/CBD/SBSTTA/20/INF/21, as well as the relevant work by the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services.<sup>3</sup>

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<sup>3</sup> For example, the report from the Expert workshop on Indigenous and Local Knowledge Systems to IPBES, June 2013, Tokyo, as contained in document IPBES/2/INF/1.



## **2. Approaches for incorporating new information and new consideration of existing information in future description of areas meeting the EBSA criteria, including both scientific and traditional knowledge**

In support of incorporating new information and new consideration of existing information, a number of steps can be taken, including:

### Parties and other Governments

- (a) Exploring ways to make use of the national biodiversity clearing-house mechanism (CHM) and/or other relevant online portals for making available new scientific information related to existing and future description of areas meeting the EBSA criteria;
- (b) Undertaking a gap analysis with regard to available information on the geographic coverage as well as coverage of ecological and biological features of existing descriptions of areas meeting the EBSA criteria within their respective national jurisdiction;
- (c) Providing new scientific information as well as the results of the gap analyses as inputs to future national, regional or subregional workshops;
- (d) Facilitating the compilation of traditional knowledge related to the existing and future description of areas meeting the EBSA criteria, with the prior informed consent of indigenous peoples and local communities, where relevant;
- (e) Inviting relevant organizations, in particular scientific institutions, and individual experts to provide new information related to existing and future description of areas meeting the EBSA criteria;

### CBD Secretariat and relevant organizations

- (f) Updating existing scientific guidance and develop guidelines regarding new information collection, protocol for data quality control, and guidelines for gap analysis;
- (g) Facilitating relevant training opportunities, in partnerships with relevant United Nations/international organizations or initiatives, such as and the Ocean Biogeographic Information System of Intergovernmental Oceanographic Commission/UNESCO and the Global Ocean Biodiversity Initiative (GOBI).

## **3. Enhancing the EBSA repository and information-sharing mechanism**

The EBSA repository and information-sharing mechanism may be enhanced by the CBD Secretariat through a number of measures:

- (a) Including in the functionality of the EBSA repository and information-sharing mechanism multi-faceted filtering with the ability to search based on ecological or biological characteristics;
- (b) Applying cartographic methods to better visualize the information associated with the respective areas meeting the EBSA criteria on the map, by providing metadata, such as the characterization of ecological or biological features, ranking of different EBSA criterion, sources of information etc. Any additional precision in mapping should be in line with the original EBSA description, and facilitate better communication of the information in the EBSA description through publications and the EBSA website ([www.cbd.int/ebsa](http://www.cbd.int/ebsa));
- (c) Providing links to relevant information portals, such as the Ocean Biogeographic Information System (OBIS) of IOC/UNESCO or other relevant global/regional information portals related to areas described as meeting the EBSA criteria;
- (d) Facilitating access to more detailed information about each area meeting the EBSA criteria by linking the information-sharing mechanism with other databases and/or knowledge holders at

national and global levels (e.g., experts, referenced authors), respecting formal information-sharing agreements, as appropriate.

*Annex II*

**TERMS OF REFERENCE OF AN INFORMAL ADVISORY GROUP ON ECOLOGICALLY  
OR BIOLOGICALLY SIGNIFICANT MARINE AREAS**

**I. MANDATES**

1. The informal advisory group shall, in providing scientific and technical advice to the Executive Secretary, have the following objectives:

(a) Provide scientific and technical advice on matters relating to revising and further developing existing scientific guidance, particularly regarding information collection, protocol for data quality control and sharing, gap analysis, systematic assessment against the EBSA criteria, and improvement of EBSA repository functionalities;

(b) Provide scientific and technical advice regarding the potential need for organizing additional subregional/regional/global workshops, based on the analysis of new information and a gap analysis with regard to the geographic coverage as well as coverage of ecological and biological features of existing areas meeting the EBSA criteria in areas beyond national jurisdiction.

**II. COMPOSITION**

2. The Executive Secretary, in consultation with the Bureau of the Subsidiary Body on Scientific, Technical and Technological Advice, will select scientific and technical experts from the nominations submitted by Parties, other Governments and relevant organizations. The informal advisory group shall comprise up to 30 experts who are competent in the relevant field of expertise, with no more than 15 selected from a roster developed on the basis of nominations from Parties, with due regard to geographical representation, to gender balance and to the special conditions of developing countries, in particular the least developed countries, small island developing States, and countries with economies in transition, as well as a limited number of experts nominated by other Governments and by relevant organizations depending on the subject matter. The number of experts from other Governments and relevant organizations shall not exceed the number of experts nominated by Parties.

3. The informal advisory group members shall be selected for a two-year period. The term is renewable by the Executive Secretary in consultation with the Bureau of the Subsidiary Body on Scientific, Technical and Technological Advice. The Executive Secretary should ensure that changes in membership do not affect the continuity of the work.

4. The informal advisory group may also draw on existing expertise and liaise with relevant international, regional and national organizations, as appropriate, in the execution of its mandate.

**III. OPERATIONAL PROCEDURES**

5. The Secretariat will use available means of electronic communication to reduce the requirement for face-to-face meetings. Subject to the availability of financial resources, the informal advisory group will meet as needed to ensure timely provision of advice, and will, wherever possible, meet back-to-back with other relevant meetings.

6. The results of the activities outlined above by the informal advisory group shall be submitted, after peer-review, as appropriate, for consideration to the Subsidiary Body on Scientific, Technical and Technological Advice at a meeting held prior to a future meeting of the Conference of the Parties.

## Addendum

### SUMMARY REPORT ON THE DESCRIPTION OF AREAS MEETING THE SCIENTIFIC CRITERIA FOR ECOLOGICALLY OR BIOLOGICALLY SIGNIFICANT MARINE AREAS

#### BACKGROUND

1. Pursuant to decision X/29, paragraph 36, decision XI/17, paragraph 12 and decision XII/22, paragraph 6, the following three additional regional workshops were convened by the Executive Secretary of the Convention on Biological Diversity:

- (a) North-East Indian Ocean (Colombo, Sri Lanka, 23 to 27 March 2015);<sup>4</sup>
- (b) North-West Indian Ocean and Adjacent Gulf Areas (Dubai, United Arab Emirates, 20 to 25 April 2015);<sup>5</sup>
- (c) Seas of East Asia (Xiamen, China, 14 to 18 December 2015);<sup>6</sup>

2. Pursuant to decision XI/17, paragraph 12, summaries of the results of these regional workshops are provided in tables 1 to 3 below, respectively, while full descriptions of how the areas meet the criteria for ecologically or biologically significant marine areas (EBSAs) are provided in the annexes to the respective reports of the workshops (UNEP/CBD/SBSTTA/20/INF/22, UNEP/CBD/SBSTTA/20/INF/23 and UNEP/CBD/SBSTTA/20/INF/24).

3. In decision X/29, paragraph 26, the Conference of Parties noted that the application of the EBSA criteria is a scientific and technical exercise, that areas found to meet the criteria may require enhanced conservation and management measures, and that this can be achieved through a variety of means, including marine protected areas and impact assessment. It also emphasized that the identification of ecologically or biologically significant marine areas and the selection of conservation and management measures is a matter for States and competent intergovernmental organizations, in accordance with international law, including the United Nations Convention on the Law of the Sea.<sup>7</sup>

4. The description of marine areas meeting the criteria for ecologically or biologically significant marine areas does not imply the expression of any opinion whatsoever concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Nor does it have economic or legal implications; it is strictly a scientific and technical exercise.

#### Key to the tables

##### RANKING OF EBSA CRITERIA

##### Relevance

**H: High**

**M: Medium**

**L: Low**

**-: No information**

##### CRITERIA

- **C1:** Uniqueness or rarity
- **C2:** Special importance for life-history stages of species
- **C3:** Importance for threatened, endangered or declining species and/or habitats
- **C4:** Vulnerability, fragility, sensitivity, or slow recovery
- **C5:** Biological productivity
- **C6:** Biological diversity
- **C7:** Naturalness

<sup>4</sup> Report contained in UNEP/CBD/SBSTTA/20/INF/22.

<sup>5</sup> Report contained in UNEP/CBD/SBSTTA/20/INF/23.

<sup>6</sup> Report contained in UNEP/CBD/SBSTTA/20/INF/24.

<sup>7</sup> United Nations, *Treaty Series*, vol. 1833, No. 31363.

**Table 1. Description of areas meeting the EBSA criteria in the North-East Indian Ocean**

(Details are provided in the appendix to annex IV of the Report of the North-East Indian Ocean Regional Workshop to Facilitate the Description of Ecologically or Biologically Significant Marine Areas (EBSAs), UNEP/CBD/SBASTTA/20/INF/22)

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
	For key to criteria, see page 14						
<p><b>1. Shelf Break Front</b></p> <ul style="list-style-type: none"> <li>Location: The area is located between 9.683°N, 97.364°E and 6.089°N and 98.073°E, off the coast of Thailand, and covers 13,176 km<sup>2</sup>.</li> <li>In the Shelf Break Front, a hydrodynamic process generated by internal waves plays an important role in transporting water that is rich in inorganic nutrients into the Andaman Shelf Sea. This process creates an area of elevated phytoplankton production related to fish larvae abundance due to the intrusion of deep water over the shelf. At the shelf front and its surrounding areas, phytoplankton biomass and production are three times greater than in shelf flat water, and fish larvae abundance is two times greater. The high biological productivity of the “Shelf Break Front” provides substantial spawning and feeding grounds, supporting, in particular, a potential fishery ground.</li> </ul>	H	H	-	-	H	H	H
<p><b>2. Lower Western Coastal Sea</b></p> <ul style="list-style-type: none"> <li>Location: The centre of the area is 99.081°E and 7.213°N in coastal area of Thailand, covering 17,500 km<sup>2</sup> and including 643 km<sup>2</sup> of coastline.</li> <li>The area comprises diverse ecosystems covering 10 river mouths, 1,263 km<sup>2</sup> of mangroves, 80 km<sup>2</sup> of seagrass and 68 km<sup>2</sup> of coral reefs. All eleven species of seagrass in Thailand are found in the area. There are more than 269 species of corals and 96 species of reef fish. The area is also home to many endangered marine species, such as dugongs, sea turtles, whales, dolphins, whale sharks and manta rays.</li> </ul>	H	H	H	H	H	H	L
<p><b>3. Trang, Home of the Dugongs</b></p> <ul style="list-style-type: none"> <li>Location: The area is located off the south-western coast of Thailand and covers 1,619 km<sup>2</sup>. The area is centred at 99.349°E and 7.284°N.</li> <li>The area harbours the largest aggregation of dugongs in Thailand. There are about 150 dugongs in the area, with declining abundance. Over the past 10 years, there was an average of five dugong mortalities annually. This area is located within area no. 2 (above) but described separately as an individual area meeting the EBSA criteria as it focuses on the particular ecological importance of this system for dugongs.</li> </ul>	H	H	H	H	H	M	L
<p><b>4. The Southern Coastal and Offshore Waters between Galle and Yala National Park</b></p> <ul style="list-style-type: none"> <li>Location: The area extends along the south coast of Sri Lanka from Galle to the furthest extent of</li> </ul>	H	H	H	M	H	M	-

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
For key to criteria, see page 14							
<p>Yala National Park (terrestrial) of Sri Lanka and offshore to the start of the abyssal plain.</p> <ul style="list-style-type: none"> <li>This is an area of high primary productivity within the northern Indian Ocean. It encompasses two submarine canyons known for enhancing productivity off the southern coast of the island, hosts high numbers of blue whales throughout the year, supports a number of other species of marine megafauna, and covers a range of bathymetric contours ranging across the continental slope (important habitat for blue whales) to the abyssal plain. The region is of particular importance because it contains habitat supporting a year-round population of non-migratory blue whales. Furthermore, the area supports regular occurrences of 20 other cetacean species, five species of turtles, whale sharks, manta rays and four species of mobula ray. These include the critically endangered hawksbill, endangered green and loggerhead turtles, and vulnerable olive ridley and leatherback turtles. Furthermore, this area also supports other marine predators such as tuna, billfish species and a number of species of sharks, including the bull and silky sharks.</li> </ul>							
<p><b>5. Coastal and Offshore Area of the Gulf of Mannar</b></p> <ul style="list-style-type: none"> <li>Location: The area is located off the coast of Sri Lanka, from Thalaimannar (9° 05' N, 79° 42' E) in the north to the Kalpitiya peninsula (8° 03' N, 79° 42' E), including Puttalam Lagoon.</li> <li>The Gulf of Mannar is one of the most biologically diverse coastal regions in the world. It is also among the largest remaining feeding grounds for the globally endangered dugong. Five different species of endangered marine turtles, mammals, innumerable fish, mollusks and crustaceans are also found here. The Gulf of Mannar region supports a variety of habitats within the main ecosystems of coastal lagoons, seagrass beds and coral reefs. Due to the high productivity of the area, it is an important fishing ground both for India and Sri Lanka.</li> </ul>	H	M	H	H	-	H	L
<p><b>6. Trincomalee Canyon and Associated Ecosystems</b></p> <ul style="list-style-type: none"> <li>Location: The area is located between 81.17E 8.43N and 81.63E, 9.02N in nearshore waters adjoining the Trincomalee Harbour, in the Eastern Province of Sri Lanka. It covers 1,500 km<sup>2</sup>.</li> <li>Trincomalee is a multiple submarine canyon complex, the largest in the country, and one of the 20 largest submarine canyons in the world. Trincomalee Bay is unique and hosts one of the world's largest natural harbours connected to a deep canyon located on the east coast of Sri Lanka. Trincomalee Canyon and associated ecosystems are biologically rich and important areas, especially for globally endangered sperm whales and blue whales. Adjacent ecosystems include coral reef ecosystems.</li> </ul>	H	-	H	-	-	H	M
<p><b>7. Rasdhoo Atoll Reef</b></p> <ul style="list-style-type: none"> <li>Location: The area is located at the North-Eastern tip of Ari Atoll, Maldives, at 4°15'46"N, 72°59'29"E.</li> </ul>	H	H	H	H	H	-	M

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
For key to criteria, see page 14							
<ul style="list-style-type: none"> <li>Rasdhoos Atoll is among the few small atolls in Maldives with special ecological features. The atoll has four islands and three sandbanks. The channel between Rasdhoos Island and Madivaru Island is known as a famous diving site to spot hammerhead sharks, which can be seen in abundance throughout the year at depths of 25 to 60 metres. Since the atoll is isolated and surrounded by deep sea, it acts as a sanctuary for the juvenile fishes to grow in safety at its shallow atoll rim. For this reason the atoll is famous for its large number of reef fish and frequent visits by their predators like the hammerhead shark. Due to its rich biodiversity and unique value, the Environmental Protection Agency of Maldives has also included this atoll on its list of Environmentally Sensitive Areas.</li> </ul>							
<p><b>8. Baa Atoll</b></p> <ul style="list-style-type: none"> <li>Location: The area is located in the western chain of atolls in the central part of the Maldives, just north of Kaashidhoos Kandu channel.</li> <li>The unique biophysical system of Baa Atoll and its core area, Hanifaru Bay, seasonally concentrates plankton, attracting large numbers of planktivorous megafauna. The area is of world class importance for endangered reef manta rays. This atoll has been a focus of an Atoll Ecosystem Conservation project (AEC) co-funded by GEF. The AEC work examined taxa inventories and yielded 178 species of macrophytes, 173 species of coral, 350 species of fish, 115 species of hydrozoans, 182 species of other selected invertebrates, for a total of 998 species combined on all 29 sites. On the 18 sites with exhaustive inventories, 941 species were recorded. A map of biodiversity for the entire atoll was created combining point biological census data with habitat maps. Baa Atoll was declared a UNESCO Biosphere Reserve in 2011. A core area, Hanifaru Island, was designated a Maldives MPA in 2009.</li> </ul>	H	M	H	H	M	M	M
<p><b>9. Upwelling Zone of the Sumatra-Java Coast</b></p> <ul style="list-style-type: none"> <li>Location: The area runs along the western coast of Sumatra (Indonesia) to the southern coast of Java, where upwelling occurs seasonally, enhancing marine productivity in the area. This area extends beyond national jurisdiction off the coast of Sumatra-Java, based on the location of the seasonal upwelling.</li> <li>Wind-driven upwelling occurs in the coastal areas of Sumatra-Java during the southeast monsoon and is related to the <i>El Nino Southern Oscillation</i> (ENSO) and the Indian Ocean Dipole Mode (IODM). The upwelling zone is nutrient enriched, attracting fish and other marine animals to use this area as a feeding, spawning and nursery ground. The productive upwelled waters are expected to support high levels of marine biodiversity, including some endemic marine species such as sharks and rays, as well as new species that are still being discovered. The area supports an active pelagic fishery. This area off the Sumatra coast consists of a seismogenic zone in the subduction zone, the Sumatran Fault Zone, and the fracture zone contributing to earthquake and tsunami along the Sumatran margin. Corals in the area</li> </ul>	H	H	M	H	M	M	H

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
For key to criteria, see page 14							
recovered quickly from the 2004 tsunami, suggesting the importance of the area to longer-term coral health.							
<p><b>10. Olive Ridley Sea Turtle Migratory Corridor in the Bay of Bengal</b></p> <ul style="list-style-type: none"> <li>• Location: The area is located beyond national jurisdiction, in the Bay of Bengal.</li> <li>• The coast of the Indian state of Odisha is the world's largest nesting site for olive ridley turtles. The mouths of the Devi, Rushikulya and Bhitarkanika rivers hold the world's largest nesting congregation of this species. Satellite telemetry studies have demonstrated that the majority of turtles migrate north-south/south-north to and from Sri Lanka. However, beyond this point no pattern has been established. The congregation and nesting of the olive ridley turtles within the Indian EEZ are protected by the environmental laws/acts of the country, however, the corridors in which they move for feeding and mating are unprotected. A major segment of the olive ridley population visiting the Odisha coast is from southern Sri Lanka. Genetic studies confirmed the results from tagging and satellite telemetry studies and showed that there is no genetic difference between nesting populations in each of the mass nesting beaches. More significantly, the results revealed the distinctiveness of the population on the east coast of India and Sri Lanka, and suggested that this population is the ancestral source of contemporary global populations of olive ridley sea turtles.</li> </ul>	H	H	H	H	-	L	M

**Table 2. Description of areas meeting the EBSA Criteria in the North-West Indian Ocean and Adjacent Gulf Areas**

(Details are provided in the appendix to annex IV of the Report of the North-West Indian Ocean and Adjacent Gulf Areas Regional Workshop to Facilitate the Description of Ecologically or Biologically Significant Marine Areas (EBSAs), UNEP/CBD/SBSTTA/20/INF/23)

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
	For key to criteria, see page 2						
<p><b>1. South-west Waters of Abu Dhabi</b></p> <ul style="list-style-type: none"> <li>Location: The area is located to the south-west of Abu Dhabi Emirate, United Arab Emirates. The near-shore water is less than 15 metres deep and supports critical habitats of several important marine species.</li> <li>This area is rich in critical habitats, such as mangroves, seagrass beds, coral reefs, algal mats and salt flats. These habitats support an important spectrum of marine life, including seabirds and migratory waders, and a large population of critically endangered hawksbill turtles (<i>Eretmochelys imbricata</i>) and dugongs.</li> </ul>	M	H	H	M	M	M	M
<p><b>2. Marawah</b></p> <ul style="list-style-type: none"> <li>Location: The area is located at a distance of 120 km west of Abu Dhabi Island. The central location is N24.43153 E53.24341, and it includes islands as well as shallow areas.</li> <li>The area comprises a range of unique marine and coastal habitats, including sand flats, mangroves, seagrass beds and coral reefs. These are especially important to migratory and endangered species. The area supports the second-largest population of dugongs (<i>Dugong dugon</i>) in the world after Australia. The area provides crucial nurseries and spawning grounds for a wide variety of fish species and is regionally important as a foraging habitat for the critically endangered hawksbill turtle (<i>Eretmochelys imbricata</i>) and the endangered green turtle (<i>Chelonia mydas</i>). Furthermore, the islands within the protected area provide important nesting sites for hawksbill sea turtles and a number of migratory birds, including about 5 per cent of the world population of the vulnerable Socotra cormorant (<i>Phalacrocorax nigrogularis</i>).</li> </ul>	H	H	H	M	M	M	M
<p><b>3. Jabal Ali</b></p> <ul style="list-style-type: none"> <li>Location: The area is approximately 1.2 km from the Abu Dhabi-Dubai border, and 3.7 km from the Sheikh Zayed Highway (position 292020.0800 E, 2755066.7720 N). It extends on average 2.5 km into the Gulf, depending on the contour of the coastal line, and along approximately 15 km of the coastal area.</li> <li>The area covers a 2,185 ha shallow subtidal seabed, sloping gently offshore to depths up to 9 m. There is no accentuated bottom topography over most of the area, except some low ridges, which rise less than 2 m above the surrounding flat sea bed. The coastline is relatively straight, without major</li> </ul>	H	H	H	H	-	M	M



Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
	For key to criteria, see page 2						
headlands or embayments. It is characterized by sandy beaches continuing into low sand dunes. At least 291 species of flora and fauna can be observed in the area. It is the only remaining nesting site of the critically endangered hawksbill sea turtle ( <i>Eretmochelys imbricata</i> ) in Dubai.							
<p><b>4. Khor Kalba</b></p> <ul style="list-style-type: none"> <li>Location: the area is located in Kalba town in Sharjah Emirate, on the east coast of the United Arab Emirates (UAE). The area extends one nautical mile from the shoreline edge in the East.</li> <li>The area covers a mangrove forest over the banks of a natural creek extending almost 2km and hosting rich biodiversity. It is home to endemic subspecies of avifauna, and the only place in the United Arab Emirates where certain species of crabs and molluscs exist. This area is a habitat for a sub-species of Arabian collared kingfisher (<i>Todiramphus chloris</i>) called kalbaensis; it is the only occurrence location of the giant mud creeper (<i>Terebralia palustris</i>) and the giant mud crab (<i>Scylla serrate</i>). More than 300 species of birds are there, some of them breeding species, including <i>Himantopus himantopus</i> (up to 10 pairs), <i>Merops superciliosus</i> (summer visitor, less than 100 pairs), and <i>Hippolais rama</i> (c.10 pairs; the only proven breeding site in the Arabian peninsula). Winter visitors include <i>Ardeola grayii</i> (max. 10; the only regular site in the UAE), and <i>Merops superciliosus</i> is also common on autumn passage (max. 500 at roost, September). Sea turtles (hawksbill, green and loggerhead) feed in the creek on the island. The area is the oldest and largest mangrove forest in the UAE, and holds the largest mangroves in diameter and height in the UAE. The area is richer in above- and below-ground carbon storage than any other site in the UAE.</li> </ul>	H	M	M	M	M	H	H
<p><b>5. Sir Bu Na'air Island</b></p> <ul style="list-style-type: none"> <li>Location: The area is located in the Gulf, 65 km north of Abu Dhabi and 110 km north-west of Sharjah.</li> <li>The area is home to more than 300 nesting hawksbill turtles every year (largest nesting population in United Arab Emirates) with breeding seabirds that represent more than 1 per cent of the estimated global population and a very healthy coral reef system.</li> </ul>	H	H	H	H	-	M	M
<p><b>6. Sulaibikhat Bay</b></p> <ul style="list-style-type: none"> <li>Location: Sulaibikhat Bay - Kuwait Bay with a position at 29.337169E, 47.857175N.</li> <li>The area covers critical habitats in the Gulf, such as coral reefs, mangroves, seagrass and algal beds. These habitats have received most scientific attention due to their biological productivity, provision of nutrients and high biodiversity. Microbial mats associated with the vast areas of intertidal flats of Sulaibikhat Bay (Kuwait Bay) contribute far more to intertidal productivity than other sources, particularly in the absence of seagrass and mangroves. Microbial mats are important in the dynamics of</li> </ul>	H	H	M	M	H	H	L

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
For key to criteria, see page 2							
<p>intertidal and subtidal regions of Sulaibikhat Bay, supporting a wide variety of intertidal and subtidal macrofauna. In Sulaibikhat Bay alone they form the base of the food web for 82 macrofaunal species, 49 of which occur within the accessible upper intertidal region (14 crustaceans, 2 molluscs, 1 sipunculoid, 8 fish species and 24 avian species) and 33 subtidal fish and shellfish species, of which several are known to visit the intertidal region during high tide.</p>							
<p><b>7. Qaro and Umm Al-Maradem</b></p> <ul style="list-style-type: none"> <li>• Location: Qaro Island 28.817253E, 48.776904N; Umm Al-Maradem Island 28.679059E, 48.654322N</li> <li>• This area hosts 35 recorded species of Scleractinian corals from 12 families, with 27 species being hermatypic and eight species ahermatypic, and is considered to be important habitat for diverse species. Fish is the most diverse group of vertebrates found in the coral reefs, with a total of 124 recorded species. These reefs also offer a breeding site for turtles and provide food for species like seabirds and dolphins. The coral reef community suffers harsh environmental conditions, such as high temperatures and high salinity, which can affect the number of coral species in the area.</li> </ul>	H	H	H	M	H	H	M
<p><b>8. Nayband Bay</b></p> <ul style="list-style-type: none"> <li>• Location: The area is located in the northern part of the Gulf, extending from north-west to south-east along more than 90km of the mainland coastline of Iran, which includes Nayband marine-coastal national park.</li> <li>• The area is located on the northern coast of the Gulf. This area has a wide range of terrestrial and marine habitats, including coastal sand dunes, rocky, muddy and sandy shores, coral reefs, mangrove forests, seagrass beds, intertidal marshes and estuaries. It is the only coral reef area of the mainland coastal waters of the northern Gulf and is one of the most important nesting sites and feeding grounds in the area for hawksbill, green sea and olive ridley sea turtles. The area has a high diversity of marine and coastal habitats and represents a unique area within the northern Gulf.</li> </ul>	H	H	H	H	-	M	L

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
For key to criteria, see page 2							
<p><b>9. Qeshm Island and adjacent marine and coastal areas</b></p> <ul style="list-style-type: none"> <li>• Location: The area is located along 250 km of the mainland coast of Iran and extends from Tiab and Minab protected area in the north-east to the west end of Qeshm Island.</li> <li>• The area comprises Qeshm, Hormuz, Larak and Hengam islands, as well as more than 250 km of mainland coastal areas of Iran. It includes several protected areas, wetlands of international importance (Ramsar sites), biosphere reserves and important bird areas (IBAs). Qeshm Island and adjacent marine and coastal areas have a wide range of coastal and marine habitats, including coral reefs, mangrove forests, seagrass beds, estuaries, and rocky, muddy and sandy shores, including the largest mangrove forest of the Gulf and Oman Sea. The coral reefs of the area are the richest and are among the healthiest ecosystems in the Gulf. This area supports significant feeding, breeding and nursery grounds for sea turtles, waterbirds, dolphins, reef fishes, sharks, rays and skates.</li> </ul>	H	H	H	H	-	H	H
<p><b>10. Churna-Kaio Island Complex</b></p> <ul style="list-style-type: none"> <li>• Location: The area is located west of Karachi, and covers about 400 sq. km. It is a medium-sized island facing the Hub River Delta, and an islet, Kaio Island, located near the town of Gaddani. .</li> <li>• The area is known for high biodiversity because of its variety of habitats. It has a diversified coral assemblage around Churna and Kaio Islands whereas at the mouth of the River hub there are rich mudflats and oyster reefs. Churna–Kaio Islands Complex is known to be an important basking and feeding area for marine megafauna, including baleen whales, whale shark, mobulids and sunfishes.</li> </ul>	H	M	H	M	H	M	M
<p><b>11. Khorī Great Bank</b></p> <ul style="list-style-type: none"> <li>• Location: The area is located along southeast coast of Sindh province, Pakistan. It extends from the coast to offshore waters, covering an area of about 22,500 sq km, with a maximum depth of about 1,500 m.</li> <li>• The unique physical feature of the area is Indus Canyon, known as the Swatch. Khorī Great Bank is known to be rich in biodiversity, including cetaceans, sharks, fish and invertebrates. A number of species of cetaceans, including rough-toothed dolphin (<i>Steno bredanensis</i>) and Longman's beaked whales (<i>Indopacetus pacificus</i>), have been reported in this area. It is an important fishing ground, particularly for large sharks, whose population has dwindled over the past 15 years.</li> </ul>	H	H	H	L	M	H	H

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
For key to criteria, see page 2							
<p><b>12. Malan-Gwader Complex</b></p> <ul style="list-style-type: none"> <li>Location: The area extends over an area of about 8,750 sq. km, and is located along the Balochistan coast of Pakistan.</li> <li>The area is known for its rocky headland located at Malan, Ormara, Pasni and Gwader, in addition to the largest island of Pakistan, which is also located within the complex. This complex is specifically known for presence of population of a number of cetacean species including dolphins and whales. Arabian humpback whale (<i>Megaptera novaeangliae indica</i>), blue whales (<i>Balaenoptera musculus</i>) and Bryde's whale (<i>Balaenoptera edeni</i>) are regularly recorded from the complex. The area covers two Ramsar sites: Ormara Turtle Beaches and Astola (Haft Talar) Island, as well as a large lagoon.</li> </ul>	H	H	H	H	H	H	M
<p><b>13. Miani Hor</b></p> <ul style="list-style-type: none"> <li>Location: The area is a lagoon located about 95 km northwest of Karachi, Pakistan. It is 60 km long and 4 to 5 km wide, and connected to the sea through a 4 km wide mouth, located in the southeast of the lagoon.</li> <li>The area is known for high biodiversity with diversified mangrove flora and its rich population of both invertebrates and vertebrate animals. It is an important for migratory and non-migratory bird species as well as a resident population of Indo-pacific humpback dolphin (<i>Sousa plumbea</i>).</li> </ul>	H	H	M	H	H	H	M
<p><b>14. Arabian Sea Oxygen Minimum Zone</b></p> <ul style="list-style-type: none"> <li>Location: The area is in the Arabian Sea spreading along India, Pakistan, Iran, Oman and Yemen. It is also present in Gulf of Oman between Iran and Pakistan.</li> <li>The Arabian Sea is known to have a large oxygen minimum zone (OMZ) located between depths of 200 to 1000 m. Oxygen levels in this zone can be as low as 0.1 mg/l. The low oxygen zone contains nitrite maxima, suggesting active nitrate reduction and denitrification, which results in utilization of oxygen and thus oxygen-level drops. This low oxygen zone contains unique fauna predominantly consisting of lanternfishes (myctophids). Dominated by <i>Benthosema pterotum</i>, <i>B. fibulatum</i> and <i>Diaphus spp.</i> <i>Bolinichthy spp.</i>, the mesopelagic animals exhibit diurnal vertical migration. Myctophids are believed to form an important food for large predators, including large squids, ribbonfishes, tuna and billfish. The oxygen minimum zone of the Arabian Sea is a unique ecosystem, with distinctive biological features.</li> </ul>	H	-	L	L	H	M	H
<p><b>15. Indus Estuarine Area and Associated Creeks</b></p> <ul style="list-style-type: none"> <li>Location: The area is located in the south of Pakistan. The Indus River Delta forms where the Indus River flows into the Arabian Sea, creating a complex system of swamps, streams and mangrove forests. The delta covers an area of about 41,440 km<sup>2</sup> and is approximately 210 km across where it meets the</li> </ul>	H	H	M	H	H	M	M

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
For key to criteria, see page 2							
<p>sea.</p> <ul style="list-style-type: none"> <li>The Indus River discharges in the Arabian Sea through an elaborate system of creeks. This area has unique ecological and biological significance because of its variety of habitats and ecosystems. There are vast mudflats, which are important foraging areas for a variety of marine birds and also breeding and nesting grounds for a number of species of marine fishes and invertebrates. The lower reaches of the Indus River estuary has mangroves consisting of one species <i>Avicennia marina</i> and is considered to be the largest arid area mangrove forest of the world. The mangroves are known for their high biodiversity. The Indus estuarine area is an important area for migratory species of fish. The Indus estuarine area is known for its diversified bird fauna, which includes cranes, flamingos, pelicans, waders, coots, ducks, gulls and terns. The Indus estuary is inhabited by two cetaceans, i.e., the Indo-Pacific humpback dolphin (<i>Sousa chinensis</i>) and finless porpoise (<i>Neophocaena phocaenoides</i>).</li> </ul>							
<p><b>16. Sandspit/Hawks Bay and the Adjoining Backwaters</b></p> <ul style="list-style-type: none"> <li>Location: The area is located about 15 km southwest of Karachi, Pakistan. The backwaters of Sandspit are located at the extreme end of Manora Channel, on which Karachi Port is located.</li> <li>The coastline of Pakistan has a number of significant turtle-nesting beaches. They include the sandy beaches at Sandspit (Hawkes Bay), on the Karachi coast, which host the nesting of the green turtle (<i>Chelonia mydas</i>). Nesting takes place throughout the year, peaking from September to October. In the backwaters of Sandspit is a mangrove forest consisting of dense and sparse growth of <i>Avicennia marina</i>. The area is known to be a home for a variety of resident and migratory birds, especially flamingos, pelican, terns, gulls and a variety of waders.</li> </ul>	M	H	H	M	M	M	L

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
For key to criteria, see page 2							
<p><b>17. Angria Bank</b></p> <ul style="list-style-type: none"> <li>• Location: The area is a submerged plateau located some 105 km west of Malvan, Maharashtra State of India in the Arabian Sea (16°69'27.55" N, 72°06'19.15" E). It covers ca 1300 sq. km. It contains 350 sq. km of coral cover with a 5 km long buffer around this coral cover. About 5 km radius buffer area around the Angria Bank has been added to this area as many threatened migratory species, such as marine turtles, whales, dolphins and whale sharks, have been observed here.</li> <li>• The area, which contains the largest submerged coral reefs area of India, is unique due to its rich biodiversity, productivity and geological formation. Further, this site was reported with large aggregations of myctophids, which makes this bank an important fish spawning ground of the region. Various types of coral communities, such as brain corals, green corals, staghorn corals, plate corals and soft corals are present here, along with their associated fauna and flora, including big angel fishes, anemone fishes, groupers, snappers, barracudas, pipe fish, Murray eels, parrot fish, scorpion fish, trigger fishes, puffer fish, various algae species, sponges, echinoderms, crustaceans and starfishes. Further, several threatened species, such as marine turtles, whale sharks, whales and dolphins, have also been observed using this region as their foraging ground.</li> </ul>	H	M	H	H	H	-	H
<p><b>18. Socotra Archipelago</b></p> <ul style="list-style-type: none"> <li>• Location: The area is located between 53°0'E and 54°35'E and 12°5'N and 12°43'N at the junction between the Gulf of Aden and the north-western Indian Ocean.</li> <li>• The area includes the main island of Socotra, together with Samha, Darsa, Abd al Kuri and the small islets and rock outcrops Sabuniya and Kal Farun. The islands are separated from mainland Africa by a narrow strip of water known as the Socotra Passage, which is only 95 km wide, and from mainland Yemen by the 400 km wide Gulf of Aden. The islands support unusual coral communities and diverse assemblages of reef-associated fishes as well as megafauna including sharks, turtles, dolphins and whales. The islands are located at the epicentre of a highly productive upwelling region and the cross-road between three marine biogeographic provinces, which underpin the productivity and unique composition of the faunal assemblages. Species present include a mix of Arabian "endemics" and western Indian Ocean species, together with species characteristic of the wider Indo Pacific and rare species with restricted ranges (including Red Sea "endemics") and/or highly disjunct global distributions, and a globally significant element of hybridizing fishes. The fish biomass productivity ranks among the highest in the Indian Ocean.</li> </ul>	H	H	H	M	H	H	M

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
For key to criteria, see page 2							
<p><b>19. The Great Whirl and Gulf of Aden Upwelling Ecosystem</b></p> <ul style="list-style-type: none"> <li>• Location: The area includes waters mostly within the national jurisdictions of Somalia and Yemen. The area extends several hundred nautical miles offshore. This is thus a transboundary area involving north-west Somalia, the Gulf of Aden (Yemen) and especially the Socotra archipelago, and at a lesser extent Oman.</li> <li>• The system forms along the east coast of Somalia during the summer monsoon season when the Somali current turns northwards. The whole system then migrates northwards, until it reaches the southern coast of the Socotra Archipelago, where it arches out into the Indian Ocean and spreads between the islands and mainland Somalia into the Gulf of Aden. On reaching the Gulf of Aden, the systems merge with the upwelling along the south coast of Yemen, propagating a complex system of gyres and eddies. This large area encompasses the entire dynamic of the seasonal high productivity and related marine pelagic life associated with the Great Whirl, the Socotra Gyre and the North Socotra Warm Eddy. The confluence of the Great Whirl with the upwelling in the Gulf of Aden makes it one of the world's most productive regions in the world. The northwestern corner of the Indian Ocean is a highly dynamic and biodiverse region of the global oceans. Oceanic rossby waves and the seasonally reversing monsoonal winds drive an immense upwelling system during the summer months, known as the Great Whirl. It is the only major upwelling that occurs on the western boundary of an ocean. The Somali-Arabian sea upwelling system resulting from the Great Whirl and associated eddies increases planktonic productivity ten-fold in comparison with the surrounding oligotrophic water. This unique and complex feature supports rich meso-pelagic and pelagic ecosystems hosting plankton, fish, flag species of megafauna, especially sharks, cetaceans and turtles. The extreme environmental conditions create a uniquely season driven and transboundary pelagic ecosystem that has resulted in one of the most productive regions in the world.</li> </ul>	H	H	H	M	H	M	M
<p><b>20. Îles des Sept Frères et Godorya (Seven Brothers Islands and Godorya)</b></p> <ul style="list-style-type: none"> <li>• Location: The area is located on South-west between 12° 8' N, 43° 25' E and 12° 8' N, 43° 27.5' E; North-east 12° 29' N, 43° 27.5' E and 12° 29' N, 43° 1.9' E</li> <li>• This area covers the Seven Brothers and Ras Siyyan marine protected area (MPA), the largest MPA in Djibouti (400 km<sup>2</sup>). It includes four mangrove forests, a portion of coastal habitats and the Sept Frères archipelago. It has high benthic and pelagic marine biodiversity, a mosaic of coastal, insular and marine habitats, and is also an important nesting site for sea turtles and sea birds.</li> </ul>	H	H	H	M	H	M	M

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
	For key to criteria, see page 2						
<p><b>21. Southern Red Sea Islands</b></p> <ul style="list-style-type: none"> <li>Location: The southern part of the Red Sea specific to this area includes all of the islands of both Eritrea and Yemen as a single ecosystem.</li> <li>This is an area of high productivity and high endemism, providing a migratory corridor for megafauna and birds and a nesting and breeding ground for both turtles and birds. It provides habitat for vulnerable coral and mangrove that support diverse marine organisms. It has high levels of biological diversity and is an important area for life history stage of species.</li> </ul>	H	H	H	H	H	H	H
<p><b>22. Southern Red Sea Pelagic Ecosystems</b></p> <ul style="list-style-type: none"> <li>Location: The area is bounded approximately by the northern Eritrea border and the Bab Al-Mandab.</li> <li>This area has a high level of productivity (among the most productive in the Red Sea in terms of chlorophyll-a), which is likely due to the influx of nutrient-rich water from the Gulf of Aden. The high productivity of this area makes it an important habitat for a number of species, including cetaceans, whale sharks, manta and devil rays, and birds. The area is also an important migratory corridor between the Red Sea and the Gulf of Aden/Indian Ocean for various species. These features make the area biologically diverse.</li> </ul>	M	H	H	M	H	H	-
<p><b>23. Sanganeb Atoll/Shab Rumi</b></p> <ul style="list-style-type: none"> <li>Location: The area is located in the central Red Sea, close to the Red Sea's centre of biodiversity, at approximately 30km north-east of Port Sudan city, with location of 19° 42' N, 37° 26' E. <i>Shab Rumi</i> is an annular reef situated north of Sanganeb (19°56.3'N 37°24.2'E), off the Red Sea coast of Sudan. The area is located in the north-western Indo-pacific bio-geographic region.</li> <li>The Atoll encompasses an area of about 22km<sup>2</sup> (a rectangular block of 7.3km by 3.2km) and runs within 1km of the edge of the reef. The area of reef flat and shallow fore reef is approximately 2km<sup>2</sup>, and the area of enclosed lagoon is approximately 4.6km<sup>2</sup>. Shab Rumi is well known for large numbers of schooling threatened scalloped hammerhead and grey reef sharks (<i>Carcharhinus amblyrhynchos</i>). Sanganeb is a wonderful example (perhaps the best in the entire region) of the deep-water offshore reefs of the central Red Sea. Sanganeb Atoll/Shab Rumi contains one of the most unique reef structures in the Sudanese Red Sea, its steep slopes rising from a sea floor more than 800 m deep. It is characterized by a highly diverse coral fauna presenting 13 different bio-physiographic reef zones, each providing typical coral reef assemblages. The diverse population communities of flora and fauna are in a stable equilibrium with numerous endemic and endangered species such as sharks, bumphead parrotfish and groupers. A total of 86 coral species and over 251 species of fish have been recorded.</li> </ul>	H	M	H	H	M	H	H



Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
For key to criteria, see page 2							
<p><b>24. Dungonab Bay/Mukawar Island Area</b></p> <ul style="list-style-type: none"> <li>• Location: Dungonab Bay is located approximately 125 km north of Port Sudan, encompassing Mukawar Island, which is 30km offshore of Dungonab Peninsula. The area covers a distance of approximately 70 km along the coast.</li> <li>• The area contains extensive and diverse seagrass beds, a regionally important population of dugong, regionally or globally important nesting areas for marine turtles and seabirds, and seasonal aggregations of whale sharks and manta rays that are unique in the entire western Indian Ocean region. The area is known to be of particular significance for birds and is designated as an Important Bird Area. The eastern shore of Mukawar Island is a turtle nesting site of regional and possibly international significance.</li> </ul>	H	H	H	M	M	M	H
<p><b>25. Suakin Archipelago and Sudanese Southern Red Sea</b></p> <ul style="list-style-type: none"> <li>• Location: The area is situated in the southern waters of Sudan, which is on the extension of the continental shelf.</li> <li>• Shubuk is a very unusual barrier reef complex while the Suakin archipelago is one of several important island groups within the Red Sea. The reefs and islands within this archipelago substantially increase the area of reef habitat available within Sudanese coastal waters and within this part of the Red Sea, which is known to support particularly high species diversity. The extension of these reefs offshore also greatly increases the biogeographical span and diversity of reef habitats. Furthermore, the inaccessibility of these reefs and islands enhances their significance, as they provide areas distant from direct human impacts on the mainland coast and refuges for some of the Red Sea's important bird and turtle nesting sites. The Sudanese Red Sea coast is 750 km long and contains numerous uninhabited islands and submerged offshore reef structures. The combination of well-developed fringing coral reefs and offshore reef complexes and islands in the Shubuk region and the Suakin archipelago provides a high diversity of habitats that span a wide environmental gradient. It is these diverse ecosystems and environments that underpin the high biodiversity found within Sudanese waters. The Suakin Archipelago is of marked importance nationally and regionally.</li> </ul>	H	M	H	M	H	H	M

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
For key to criteria, see page 2							
<p><b>26. Wadi El-Gemal Elba</b></p> <ul style="list-style-type: none"> <li>• Location: The area covers waters between Marsa Alam city of Egypt and the Egyptian-Sudanese border, with a coastline of approximately 300km and a total area of some 5000 km<sup>2</sup>. The area is located within two protected areas, namely Wadi El Gemal-Hamata Protected Area and Gebel Elba National Park. The area also includes 20 offshore islands, from a few kilometres to more than 70km from the shoreline.</li> <li>• The area features high biological diversity and natural beauty. More than 200 species of hard and soft corals and at least 400 fish species have been recorded in the area. Endemic species are evident among various groups of fishes and invertebrates. At least seven species of seagrasses and two species of mangroves are found in the area (a substantial proportion of the total mangrove resources of Egypt). The largest stand of <i>Avicennia marina</i> extends 12 km, in a semi-continuous fringe, located at Hamata, and <i>Rhizophora muncronata</i> exists only at Shelatin. The area has the largest seagrass meadows along the Egyptian coast that provide food for green turtles (<i>Chelonia mydas</i>) and dugongs (<i>Dugong dugon</i>). At least two species of marine turtles (out of five recorded species), the green and hawksbill (<i>Eretmochelys imbricata</i>), nest on islands and mainland beaches. The area accommodates the largest nesting population of green turtles in Egypt, on the beaches of Zabarged Island—about 600 females estimated in 2008. More than 100 species of birds have been recorded in the area, including 15 species of seabirds. The largest global colony of sooty falcons exists in Wadi El Gemal Island, whereas the white eyed gulls represent about 30 of the world population. The area supports a conspicuous cetacean fauna (15 species), as documented by recent dedicated surveys. Pantropical spotted dolphins, <i>Stenella attenuata</i>, represent the largest component with large groups found mostly in offshore waters, followed by spinner dolphins, <i>Stenella longirostris</i>, also found offshore but with part of the population moving inshore daily at daybreak to seek shelter in protected reefs (such as Samadai and Sattayah) to rest. The area also supports a very small remnant population of dugongs, <i>Dugong dugon</i>, mostly confined to the small coastal “marsas” where seagrass meadows cover the shallow sandy bottom.</li> </ul>	H	H	M	L	L	H	M

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
For key to criteria, see page 2							
<p><b>27. Arabian Basin</b></p> <ul style="list-style-type: none"> <li>Location: The area is located entirely beyond national jurisdictions. The area is approximately bordered in the north by 64.46°E, 17.32°N; 67.36°E, 17.32°N; and in the south 67.36°E, 10.81°N; 64.46°E, 10.81°N.</li> <li>The area is located in waters over the abyssal plain. This area is a key feeding area for the Trindade petrel (<i>Pterodroma arminjoniana</i>), which in the Indian Ocean breeds on one single island, Round Island, off the north coast of Mauritius. The species is listed as vulnerable on the IUCN Red List, and an extensive, multi-year tracking dataset shows that birds travel into the Arabian Basin during migration (May-July) and following fledging (year round) to feed. A range of other marine mega-fauna may also occur here, including three species of turtle, five species of baleen whale, three species of toothed whale, and at least a dozen species of dolphins, though their exact distributions and abundance within the area are unknown.</li> </ul>	H	H	H	M	M	M	M
<p><b>28. Daymaniyat Islands</b></p> <ul style="list-style-type: none"> <li>Location: The Daymaniyat Islands are located off the region of Al Batinah, Oman.</li> <li>The Daymaniyat Islands are an outstanding area of national and regional ecological and biogocial importance. The islands host high densities of a variety of nesting seabirds, and up to 400 female hawksbill turtles nest annually, representing possibly the densest rookery in the world for this critically endangered species. The coral communities and reefs are among the best developed nationally and host at least one species that is endemic to Oman. Other species routinely found within the area include marine turtles, cetaceans and seabirds.</li> </ul>	M	H	H	H	H	M	H

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
For key to criteria, see page 2							
<p><b>29. Oman Arabian Sea</b></p> <ul style="list-style-type: none"> <li>• Location: The area is located off southern Oman between the Ra's al Hadd peninsula to the north and the Oman-Yemen border to the south, and extends several hundred kilometres offshore. This area includes three core areas off the central and southern coast of Oman.</li> <li>• It is situated at the heart of one of the five largest upwelling areas of the world, which occurs both coastally and up to 300 to 400 km offshore and influences the water column to a depth of about 250 m. The high primary productivity associated with the monsoon-driven upwelling in the Arabian Sea fuels the ecosystem of the wider region. It also creates conditions suitable for feeding by at least 20 species of cetaceans, including the world's most isolated whale, the endangered Arabian Sea humpback whale. Satellite tracking reveals preferred habitats of these whales as well as other taxa, such as endangered and critically endangered sea turtles. Shallow areas support important seagrass and macroalgae communities, and the unique co-existence of endemic macroalgae and coral communities. This unusual mix of tropical and neo-temperate species forms a community that is globally unique. One particular coral community represents perhaps the largest monospecific coral stand known on Earth, almost exclusively made up of an as yet undescribed species of cabbage coral. The unique conditions resulting from the south-west monsoon contribute to a high biodiversity of fish fauna, from the genetic, population and species level to the community and ecosystem levels. Demersal, pelagic and mesopelagic fishes all occur in relative abundance in the area compared to other parts of Oman. Birds are another important feature of the Arabian Sea, including some key populations of the regionally endemic near threatened Jouanin's petrel and vulnerable Socotra cormorant. In winter, the coastal wetlands host half a million birds or more, predominantly gulls, terns and shorebirds.</li> </ul>	H	H	H	H	H	H	M

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
For key to criteria, see page 2							
<p><b>30. Shatt Al-Arab Delta</b></p> <ul style="list-style-type: none"> <li>Location: The area is located at the northern end of an elongate shallow sea forming a southwesterly triangular semi-island at the Iraqi Southern border at Faw city and extends northwesterly to form the marine territorial border with Kuwait at Knor Abdulla, ending in Knor Al-Zubair canal. The southern end of the river constitutes the border between Iraq and Iran down to the mouth of the river as it discharges into the Gulf. It has a length of 200 km. It varies in width from about 232 m at Basra to 800 m at its mouth.</li> <li>The Shatt al-Arab Delta is formed by the confluence of the Euphrates and the Tigris rivers in the town of al-Qurnah in the Basra Governorate of southern Iraq. This area contains numerous unique marine, coastal and tidal habitats, including muddy intertidal areas. This area, and especially the coastal waters of Khor Abdulla on the opposite side of the Kuwaiti Bubiyan island, serve as incubation and hatchery areas for many fishes and other economically important marine and brackish water crustaceans and mollusks, as well as other invertebrate groups. The Shatt al-Arab Delta exerts a unique impact on the entire Gulf.</li> </ul>	H	H	-	H	H	H	M
<p><b>31. Makran/Daran-Jiwani Area</b></p> <ul style="list-style-type: none"> <li>Location: The area is a transboundary coastal area between Iran and Pakistan that extends from Ganz in Pakistan to Tang headland in Iran.</li> <li>The extensive sandy coasts of the area are particularly important as nesting grounds for both olive ridley and green sea turtles. The mugger crocodile (<i>Crocodylus palustris</i>) has its western-most distribution in riverine and estuarine waters of the area. The eastern part of Chabahar Bay has the only known coral reef in the northern Oman Sea. Finless porpoises have been recorded from Gwater and Chabahar Bay. Jiwani headland and adjacent areas are known for high biodiversity of marine invertebrates as well as cetaceans. The coastal waters of the area are known for high catches of fishes and lobsters. The area is also rich in diversity of shorebirds.</li> </ul>	H	H	H	H	H	-	M

**Table 3. Description of areas meeting the EBSA criteria in the East Asian Seas**

(Details are provided in the appendix to annex V of the Report of the CBD Regional Workshop to Facilitate the Description of Ecologically or Biologically Significant Marine Areas (EBSAs) in the Seas of East Asia, UNEP/CBD/SBSTTA/INF/24)

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
	For key to criteria, see page 2						
<p><b>1. Hainan Dongzhaigang Mangrove National Natural Reserve</b></p> <ul style="list-style-type: none"> <li>Location: The area is located in the northeast of the Meilan district, Haikou City (110°30'–110°37' E, 19°51'–20°01' N). It covers 5400 ha.</li> <li>The area covers an important coastal mangrove ecosystem and has most of the typical original natural mangroves in China. The area also has very rich biodiversity, especially various marine and coastal species, for example, mangrove forests, waterfowl, phytoplankton and zooplankton. This estuary and coastal mudflat ecosystem is on the edge of boreal tropics, and is also an important habitat for wintering birds.</li> </ul>	M	H	H	H	-	H	M
<p><b>2. Shankou Mangrove National Nature Reserve</b></p> <ul style="list-style-type: none"> <li>Location: The area is located on either side of the Shatian Peninsula, southeast of Hepu County, Guangxi Zhuang Autonomous Region of China. It is centred at 21°28'N, 109°43'E. It covers a total area of 8,000 hectares and stretches along the coast for some 50 km.</li> <li>There are 14 species of mangrove and large populations of benthic diatoms, fish, shellfish, birds and insects in this area, and it has become one of the most typical coastal mangrove areas in China.</li> </ul>	M	-	H	M	M	M	M
<p><b>3. Nanji Islands Marine Reserve</b></p> <ul style="list-style-type: none"> <li>Location: The area has a total coverage of 201.06 km<sup>2</sup>, including land area of 11.13 km<sup>2</sup>. It is located at 121°05'E and 27°27'N.</li> <li>The area contains a high level of biodiversity, including 427 species of shellfish and 178 species of macro-benthic algae. It is known as “a kingdom of shells and algae”. There are also 459 species of micro-algae, 397 species of fish, 257 species of crustaceans and 158 species of other marine creatures. Among these, nine species are listed as endangered or vulnerable species by IUCN.</li> </ul>	H	M	M	L	M	H	M
<p><b>4. Cold Seeps</b></p> <ul style="list-style-type: none"> <li>Location: The area is located in the southwest Taiwan Basin at 21°12'N, 118°30'E; 21°12'N, 120°17'E; 22°19', 118°30'E; and 22°19', 120°17'E, and at a depth of 2900m-3000m. The area covers approximately 14,000 km<sup>2</sup>.</li> <li>The deep-sea ecosystems of this area are unique not only for their communities of diverse bacteria,</li> </ul>	H	M	L	M	H	L	H

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
For key to criteria, see page 2							
<p>mussels, clams, hairy crabs and shrimps, but also for their habitats formed mainly by calcite, aragonite, dolomite, pyrite and authigenic minerals, including siderite, barite, gypsum, and natural sulphur, which support a high biomass of bacteria, mussels, clams, hairy crabs and shrimps.</p>							
<p><b>5. Muan Tidal Flat</b></p> <ul style="list-style-type: none"> <li>• Location: The area is located in the south-western coastal area of the Korean peninsula, from 35° 04'20"N to 35° 07'52"N and from 126° 21'2"E to 126° 27'9"E. It covers about 42 km<sup>2</sup>.</li> <li>• The area maintains its pristine condition with well-developed substrate for supporting numerous migratory waterbird species and fisheries resources. The sediments characteristically contain 30-40% clay content. The area has high value for conservation as there are many globally endangered and protected species that hatch, nurse and feed in the area. This is a particularly rich feeding area for waterbirds. Some 29,000 winter waterbirds belonging to 48 species have been observed. In addition, 47 species of halophyte are distributed in Muan tidal flat. The diversity of benthic animals is also very high. The tidal flat has been a protected area since 2001 and was designated as a Ramsar site in 2008.</li> </ul>	H	H	H	L	H	H	M
<p><b>6. Intertidal Areas of East Asian Shallow Seas</b></p> <ul style="list-style-type: none"> <li>• Location: This area encompasses 20 individual sites that form the basis of a Flyway-wide network within the East Asian seas. The sites are located in Japan, Republic of Korea, China, Vietnam, Thailand, Malaysia, Indonesia, Philippines and Myanmar.</li> <li>• The intertidal zones of shallow coastal seas in East Asia are critically important for the survival of many migratory waterbird species that are dependent on these areas for different stages of their life cycle, mostly obviously during the migration periods, when some sites form critical bottlenecks, particularly in the Yellow Sea ecoregion (China, Republic of Korea, Democratic People's Republic of Korea), as well as for breeding and non-breeding populations. Different species have different migratory strategies that depend on a network of sites throughout the Flyway, to be able to complete their migration. Intertidal mudflats and sandflats have been disappearing at an alarming rate in recent decades (60 per cent for the Yellow Sea in 50 years) leaving migratory waterbirds dependent on an ever-decreasing number of sites. As a consequence the populations of migratory waterbirds have declined precipitously, with up to 30 species endangered or critically endangered, and depending on a handful of sites, often unprotected, for their survival. All remaining intertidal areas of the East Asian Seas are of vital importance to saving migratory waterbirds dependent on them.</li> </ul>	H	H	H	H	M	M	M

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
For key to criteria, see page 2							
<p><b>7. Lembeh Strait and Adjacent Waters</b></p> <ul style="list-style-type: none"> <li>• Location: The Lembeh Strait lies between Minahasa Peninsula in northern Sulawesi and Lembeh Island, North Sulawesi Province of Indonesia. Lembeh Strait is surrounded by the Pacific Ocean in the north, mainland Sulawesi in the west, Lembeh Island in the east and Moluccas Sea in the south. The area is located at 125°09' – 125°18' E and 27°08' – 27°25' N. Lembeh Strait is 22 km long and 2 km wide.</li> <li>• Lembeh reefs and its surrounding waters are among the richest and most diverse in marine biota in Indonesia. Lembeh Strait is bordered by almost continuous fringing reefs while further offshore it is surrounded by deep, clear water. Lembeh Strait shows habitat heterogeneity and is rich in many different species, including endemic, rare and vulnerable species. Live coral cover ranging from 12.2 to 60.7%, and a total of 193 corals species belonging to 68 genera have been recognized from this area. However, the habitat is completely open and featureless, consisting of volcanic sand and plains bordered in the shallows by a few small coral patches. Various new species from this area have been described, such as hermit crabs, shrimps, snails, octopuses, cuttlefishes, sea slugs, fishes, corals and zooplanktons. Many new species have been recorded from this area, including Indonesian coelacanth (<i>Latimeria menadoensis</i>). In addition, Lembeh Strait and adjacent waters are known for abundant resources of tuna fisheries, estimated to amount to 587,000 tonnes.</li> </ul>	H	H	H	H	L	H	L
<p><b>8. Redang Island Archipelago and Adjacent Area</b></p> <ul style="list-style-type: none"> <li>• Location: Redang Island is located about 45 km or 24.28 nautical miles to the northeast of Kuala Terengganu. Redang Island has a surface area of about 2,483.58 ha — the largest of nine islands within the Redang Island archipelago. The archipelago area is approximately within the coordinates of 5° 43' 28.92N, 102° 59' 04.53"E and 5° 49' 10.49"N, 103° 03' 02.82E.</li> <li>• The coral reefs in Pulau Redang are among the best on the East coast of Malaysia and are generally in good condition. A study by Reef Check Malaysia in 2014 shows that the reefs around Redang islands are considered to be in "Good" condition, with live coral cover of 58.13 per cent, which is slightly above the average (56.38 per cent) for reefs within the Sunda Shelf region. The diversity of fish and invertebrates is average. Based on recent marine biological studies, Redang Island is believed to be the seed-source for most of the marine biodiversity of the eastern part of Peninsular Malaysia. The beaches in Terengganu offer nesting sites for the hawksbill turtle (<i>Eretmochelys imbricata</i>), the leatherback turtle (<i>Dermochelys coriacea</i>) and the endangered green turtle (<i>Chelonia mydas</i>). There are 36 turtle nesting sites on the beaches of Terengganu, out of a total of 78 nesting sites in Malaysia. Turtle landings occur at virtually every beach in Terengganu, but nesting is concentrated at Pulau Redang; Pulau</li> </ul>	M	H	H	H	-	M	L



Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
For key to criteria, see page 2							
Perhentian; Penarik; Rantau Abang; Paka; Geliga and Kijal.							
<p><b>9. Southern Straits of Malacca</b></p> <ul style="list-style-type: none"> <li>Location: This area covers the waters and beaches from the Negeri Sembilan to the Riau Archipelago, Indonesia. The area encompasses the existing marine protected area, turtle-nesting and inter-nesting area, and turtle-feeding ground. The northern boundary of the area is 101.6°E 2.42°N, and the southern boundary is 104.98°E 0.57°N.</li> <li>The area is unique because it is a shallow, narrow water mass sandwiched between Sumatera Island and Peninsular Malaysia, and linked with the Straits of Singapore and Riau Archipelago. It is an important foraging and inter-nesting habitat for one of the few viable populations of hawksbill turtles. The beaches of Negeri Sembilan and Melaka are home to the highest nesting population of hawksbill turtle and in the adjacent area, Sungai Linggi provides a crucial habitat for endangered painted terappins and river terappins. It harbours diverse marine resources within its seagrass bed, estuaries and mangroves.</li> </ul>	H	H	H	H	M	M	L
<p><b>10. Nino Konis Santana National Park</b></p> <ul style="list-style-type: none"> <li>Location: The area is located at 8°27'00"S and 127°20'00"E and covers 1,236 km<sup>2</sup>.</li> <li>This area is rich in marine biodiversity, including sharks, coral trout (<i>Plectropomus</i> species), and the highly threatened Napoleon wrasse (<i>Cheilinus undulatus</i>) as well as other types of marine species that are densely concentrated around coral reefs in the area. The area also has a high level of productivity due to strong ocean mixing, which raises both nutrient concentrations in the area and supports the high level of biodiversity.</li> </ul>	M	M	H	M	M	H	M
<p><b>11. The Upper Gulf of Thailand</b></p> <ul style="list-style-type: none"> <li>Location: The area is centered at N13° 2' 39.994", E100° 27' 50.783. The area covers 9,565 km<sup>2</sup>, along 400 km of the coastline. The area covers the coastal area of Chon Buri, Chacheangsao, Samut Prakarn, Bangkok, Samut Sakhon, Samut Songkram and Phetchaburi provinces of Thailand.</li> <li>The area is characterized by a range of habitats and a high level of biodiversity. The area contains mangrove forests, macrobenthic fauna, phytoplankton and zooplankton, as well as fish, birds (mangrove birds and migratory birds) and endangered marine species, such as hawksbill turtles (<i>Eretmochelys imbricate</i>), green turtles (<i>Chelonia mydas</i>), Irrawaddy dolphins (<i>Orcaella brevirostris</i>), finless porpoises (<i>Neophocaena phocaenoides</i>), Indo-Pacific humpback dolphins (<i>Sousa chinensis</i>), Indo-Pacific bottlenose dolphin (<i>Tursiops aduncus</i>) and Bryde's whales (<i>Balaenoptera edeni</i>). The coastal water of this area serves as feeding ground, mating ground and nursing ground for Bryde's</li> </ul>	M	H	H	M	M	M	L

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
	For key to criteria, see page 2						
whales.							
<p><b>12. Halong Bay-Catba Limestone Island Cluster</b></p> <ul style="list-style-type: none"> <li>Location: The marine waters of Halong bay-Catba Limestone Island Cluster are situated in the nearshore area of the North-east Tonkin Gulf near Haiphong city, Vietnam. It includes Baitulong Bay National Park, Halong Bay World Natural Hetitage, Catba National Park, Catba Biosphere Reserve and Marine Park, as well as Longchau islands. Its total area is about 15.783 ha, with 9.658 ha in marine area.</li> <li>The marine waters of Halong Bay-Catba Limestone Island Cluster is a highly unique set of 2400 limestone islands and islets that are associated with special island fringing reefs. It contains a remarkable diversity of coastal and marine habitats and ecosystems, including coral reefs, seagrass beds, mangroves, sandy and coral beaches, hard and soft bottom and substrata, tidal marshes, karst saline lakes, embayments, coastal bays, karst caves, underwater karst valleys, karst funnels, karst wells, channel stones and shallow-water areas. It also has a high diversity of species, including phytoplankton, zooplankton, mollusca, crustacean, marine fish, reptiles, snakes, sea turtles and mammals.</li> </ul>	H	H	H	H	M	H	M
<p><b>13. Tioman Marine Park</b></p> <ul style="list-style-type: none"> <li>Location: The Tioman Marine Park archipelago consists of nine islands, which are the largest of the 42 marine park islands of Peninsular Malaysia. It is located at 104° 11' E and 02° 47' N. The archipelago is 19km in length and 11km wide, and covers 25,115 hectares of sea area.</li> <li>The coral reefs in Tioman Marine Park are some of the best on the east coast of Malaysia. A study conducted in 2014 showed that this area's coral was in good condition, with 60 per cent live coral cover, 26 per cent in excellent condition and 37 per cent in good condition. A total of 326 species of coral reef fish from 55 families were observed from coral reefs in Tioman Marine Park. Tioman island subtidal seagrass meadows provide good refuge for dugong traveling between islands on the east coast of Peninsular Malaysia. Some rare and important species have been observed, such as the Black Stripe Coris (<i>Coris pictoides</i>), two rare and undescribed gobies (<i>Gobiidae</i>) <i>Amblyeleotris</i> sp. and the rare perch <i>parapercis</i> sp. in addition seventeen species that are categorized to be rare worldwide were found in Tioman. With its high biological diversity, Tioman is believed to be the seed-source for most of the marine biodiversity of the eastern part of Malaysia.</li> </ul>	H	H	H	M	M	H	M
<p><b>14. Koh Rong Marine National Park</b></p> <ul style="list-style-type: none"> <li>Location: The area is located at at 10°35'7.49"N, 103°17'55.36"E. It encompasses approximately 78 km<sup>2</sup> around the Koh Rong Archipelago, which lies 25 km off the coastal town of Sihanoukville,</li> </ul>	L	M	H	H	M	M	M

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
	For key to criteria, see page 2						
<p>Cambodia.</p> <ul style="list-style-type: none"> <li>The area is located around a large island in the Gulf of Thailand off the Cambodian mainland. The island has about 43 km of coastline with 23 beaches of varying length and composition. The area contains coral reefs and seagrass habitats, and supports regionally significant populations of several marine mammals, including the dugong, the false killer whale (<i>Pseudorca crassidens</i>), a long-beaked form of common dolphin (<i>Delphinus capensis tropicalis</i>), pantropical spotted dolphin (<i>Stenella attenuata</i>), dwarf spinner dolphin (<i>S. Longirostris roseiventris</i>), Indo-Pacific bottlenose dolphin (<i>Tursiops aduncus</i>), and Indo-Pacific humpback dolphin. It also supports three globally threatened species of sea turtles, namely the green turtle (<i>Chelonia mydas</i>), the hawksbill (<i>Eretmochelys imbricata</i>) and the leatherback (<i>Dermochelys coriacea</i>).</li> </ul>							
<p><b>15. Lampi Marine National Park</b></p> <ul style="list-style-type: none"> <li>Location: The area is located in Boke Pyin Township of Tanintharyi Division in Myanmar.</li> <li>This area is one of the 43 protected areas of Myanmar and its only national marine park. It is located in the Myeik Archipelago, which comprises more than 800 islands distributed along 600km of coastline in the Andaman Sea. The area contains a number of ecologically important habitats, including mangrove forests, coral reefs and seagrasses, which serve as critical habitats for molluscs, crustaceans, echinoderms and fishes, as well as threatened species such as the green turtle and the dugong that feed on seagrass and a variety of birds that feed in the intertidal zone and sublittoral zone.</li> </ul>	M	H	H	M	M	H	L
<p><b>16. Raja Ampat and Northern Bird's Head</b></p> <ul style="list-style-type: none"> <li>Location: The area is located in the northwestern part of Papua in eastern Indonesia. Situated near the Equator in Southeast Asia, this area is at the heart of the Coral Triangle and encompasses myriad small islands and coral reefs. Raja Ampat consists of four main islands and hundreds of other small islands, located at the western side of the Bird's Head Seascape. The boundary of the globally outstanding area of Raja Ampat and Northern Bird's Head covers two adjacent areas within the Bismarck Solomon Seas Ecoregion.</li> <li>The Bird's Head Seascape is one of the world's most important biodiversity hotspots, covering a high diversity of geographical features, habitats and marine species. Situated in the heart of the Coral Triangle, it is the global epicenter of tropical shallow-water marine biodiversity, with over 600 coral species and 1,638 reef fish species. The area is known for particularly significant diverse reef habitat and species richness, providing foraging ground for tuna as well as breeding habitats for leatherback turtles. The local eddies and turbulence in Raja Ampat, generated by strong current flow, lead to good</li> </ul>	H	H	H	M	H	H	H

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
	For key to criteria, see page 2						
larval connectivity among the reefs, which contributes to high coral reef resilience. The importance for life history stages of various threatened species like turtles and cetaceans as well as high endemism, together with the above features, makes this a globally important area.							
<p><b>17. Atauro Island</b></p> <ul style="list-style-type: none"> <li>• Location: The area is located about 27 km north of the city of Dili, Timor-Leste, and measures about 144 km<sup>2</sup> in area.</li> <li>• This area is a home of marine megafauna in the ocean strait between Atauro and Timor-Leste. Atauro Island is a small island surrounded by a pristine marine area. A study shows that Atauro Island hosts high biodiversity, with a new species called Humann's Fairy-wrasse (<i>Cirrhilabrus humanni</i>) found around Atauro Island towards Alor Island, Indonesia. Atauro marine area is also considered a hotspot for dugong populations living and migrating within Indian and the Pacific Ocean.</li> </ul>	M	M	M	M	M	H	L
<p><b>18. Sulu-Sulawesi Marine Ecoregion</b></p> <ul style="list-style-type: none"> <li>• Location: The Sulu-Sulawesi Marine Ecoregion (SSME) is located between 15° N / 116° E and 0° N / 127° just above the equator. It covers 1,003,526 km<sup>2</sup>.</li> <li>• The area is situated at the apex of the Coral Triangle region in the Indo-West Pacific, at the global centre of marine biodiversity. It is an area of maximum coral and tropical reef fish diversity, based on numerous scientific studies. The SSME is home to coral reefs, seagrass meadows and mangrove forests, which in turn support fishes, sea turtles, dolphins, whales, sharks, rays, and other less-known but equally important marine flora and fauna.</li> </ul>	H	H	H	H	H	H	L

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
For key to criteria, see page 2							
<p><b>19. Benham Rise</b></p> <ul style="list-style-type: none"> <li>Location: The area is bounded to the North and East by the West Philippine Basin, and to the West and South by the island of Luzon. It is enclosed by the coordinates 123° 30' E to 126° 00' E longitude and 17° 42' N to 15° 36' N latitude.</li> <li>The area is a relatively pristine 13-million-hectare undersea plateau off the eastern coast of Luzon Island. It is of critical ecological importance, including for offshore mesophotic coral reef biodiversity and for the sustainability of fisheries. Aside from being an important source of biodiversity and contributing to the resiliency of threatened ecosystems, it also forms part of the only known spawning area of the Pacific bluefin tuna, <i>Thunnus orientalis</i>. In addition, recent studies suggest that the interaction of the western boundary currents with the Benham Rise can lead to enhanced biological productivity.</li> </ul>	H	H	H	M	-	M	H
<p><b>20. Eastern Hokkaido</b></p> <ul style="list-style-type: none"> <li>Location: The area is located between 42.9°N and 45.4°N latitude, and between 144.3°E and 145.8°E longitude. The area covers rocky shores around Shiretoko Peninsula; coastal and lagoonal areas along Nemuro Straits; rocky habitats around Nemuro Peninsula, Habomai Islands and Shikotan Island; and rocky shores and estuaries along the eastern Pacific coast.</li> <li>The area covers the most pristine natural ecosystems of Japan. The marine ecosystem here is strongly influenced by the cold Oyashio currents and winter ice cover, making this area home to marine species specially adapted to a cold climate. The area contains various types of ecosystems, including brackish estuaries and a lagoon, intertidal flats, rocky intertidal shores, seagrass beds and kelp forests.</li> </ul>	H	H	M	H	H	M	H
<p><b>21. Southwest Islands</b></p> <ul style="list-style-type: none"> <li>Location: The area is located between 23.9°N and 28.7°N latitude, and between 122.8°E and 130.2°E longitude. It comprises Amami Island, Okinawa Island, Kerama Islands, Miyako Islands and Yaeyama Islands.</li> <li>The southwest islands of Japan, including Amami Islands, Okinawa Islands, Miyako Islands and Yaeyama Islands, belong to the subtropical region, characterized by the occurrence of fringing, barrier and atoll reefs. In most areas, mangrove and seagrass beds occur within the reef, and the continuous seascape by these habitats hosts a wide variety of associated flora and fauna, including many endemic species.</li> </ul>	H	H	H	H	H	H	H
<p><b>22. Inland Sea Areas of Western Kyushu</b></p>	H	H	H	M	M	H	M

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
	For key to criteria, see page 2						
<ul style="list-style-type: none"> <li>Location: The area is located between 31.9°N and 33.2°N latitude, and between 129.9°E and 130.7°E longitude. It covers the Ariake Sea, Amakusa and Yatsushiro Sea (Nagasaki, Saga, Kumamoto and Kagoshima Prefectures).</li> <li>This area is unique due to their large tidal amplitude. Extensive mud flats appear at inner parts of the waters in Ariake Sea and Yatsushiro Sea. In these intertidal flats, many benthic organisms belonging to diverse taxa occur, as do many endemic species. The outer coastal areas of this area hosts a variety of intertidal and subtidal habitats, including rocky shores, seaweed and seagrass beds, and temperate coral communities.</li> </ul>							
<p><b>23. Southern Coastal Areas of Shikoku and Honshu Islands</b></p> <ul style="list-style-type: none"> <li>Location: The area is located between 32.7°N and 35.4°N latitude, and between 132.2°E and 139.9°E longitude. It covers southwestern Shikoku Island (Kochi and Ehime Prefectures), Southern Kii Peninsula (Wakayama Prefecture), Shima Peninsula (Mie Prefectures), Izu Peninsula (Shizuoka Prefecture), Boso Peninsula (Chiba Prefecture) and Izu Shichito Islands.</li> <li>This area is heavily influenced by the Kuroshio current, which characterizes the benthic flora and fauna of these regions. Open coastal areas are mostly rocky shore, whereas semi-enclosed bays behind the exposed capes are suitable habitats for soft-bottom benthic organisms, including seagrass beds. Temperate coral communities are also observed in most of these areas.</li> </ul>	H	H	M	H	H	H	M
<p><b>24. South Kyushu including Yakushima and Tanegashima Islands</b></p> <ul style="list-style-type: none"> <li>Location: The area is located between 30.1°N and 31.8°N latitude, and between 130.3°E and 131.2°E longitude. It covers Tanegashima Island, Yakushima Island, Kinko Bay and surrounding coastal areas (Kagoshima Prefecture).</li> <li>The area is located at the southernmost part of the temperate zone. The southern limits of many temperate marine species are found around this region. The area comprises a variety of habitats, including rocky intertidal shores and subtidal seaweed beds at exposed coasts, seagrass beds at the inner part of the bay, and temperate coral reefs in Tanegashima and Yakushima Islands.</li> </ul>	M	M	M	M	M	H	M
<p><b>25. Ogasawara Islands</b></p> <ul style="list-style-type: none"> <li>Location: The area is located between 27.8°N and 26.5°N latitude, and between 142.0°E and 142.3°E longitude.</li> <li>The Ogasawara Islands host a variety of endemic species. In 2011, the whole area was declared a UNESCO World Heritage Site. Located in the subtropical climate region, the coastal sea areas have</li> </ul>	H	H	H	L	H	H	H

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
	For key to criteria, see page 2						
well-developed coral reefs specific to oceanic islands, and the islands are also known as important breeding grounds for seabird colonies.							
<p><b>26. Northern Coast of Hyogo, Kyoto, Fukui, Ishikawa and Toyama Prefectures</b></p> <ul style="list-style-type: none"> <li>• Location: The area is located between 35.4°N and 37.6°N latitude, and between 134.5°E and 137.4°E longitude. It covers adjacent waters of Takeno coast and Maruyama River mouth, Wakasan Bay, Echizen and Kaga coasts, outer coast of Noto Peninsula, and Nanao Bay and southern Toyama Bay.</li> <li>• The northern coast of the middle of Honshu Island is largely affected by the warm Tsugaru Current. The tidal range is very small compared to other parts of the Pacific coast, inhibiting the development of intertidal flats and rocky shores. However, the area is diverse in topography, including sand flats, exposed rocky coast, complex rias coast, semi-closed inner bay, and most notably, a deep bottom in Toyama Bay, which causes local upwelling and highly productive zones around the coast.</li> </ul>	M	H	M	M	H	M	M
<p><b>27. Ryukyu Trench</b></p> <ul style="list-style-type: none"> <li>• Location: This area is located south of Ryukyu Islands, with a location between 26.6°N, 130.1°E and 22.7°N, 122.9°E.</li> <li>• It corresponds to the intersection of the Philippine plate and Eurasian plate. The Ryukyu Trench contains important chemosynthetic ecosystems in the slope at depths of 5,802-5,808m, 1,400–1,500 m and 636–812 m, which are home to six endemic species. Studies have suggested that the fauna of this trench are distinct from the fauna of other trenches.</li> </ul>	H	H	M	H	L	L	H
<p><b>28. West Kuril Trench, Japan Trench, Izu-Ogasawara Trench and North of Mariana Trench</b></p> <ul style="list-style-type: none"> <li>• Location: This area is located between 42.1°N, 146.8°E and 23.2°N, 141.1°E.</li> <li>• Ocean trenches (area exceeding water depths of 6000 m) are unique habitats. Trench habitats are especially well developed in the western Pacific region, from the Kuril to the Mariana trenches. The uniqueness of the biota inhabiting in this region has been recognized in many scientific articles. In some areas, chemosynthetic ecosystems are developing, and species living in such ecosystems have been known to be associated with only one or two seepages. Thus the species in the trench are endemic, very rare, vulnerable and prone to extinction. Fortunately, the naturalness of this trench environment is well-preserved, thus far, because it is extremely remote.</li> </ul>	H	H	M	H	L	L	H

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
	For key to criteria, see page 2						
<p><b>29. Nankai Trough</b></p> <ul style="list-style-type: none"> <li>Location: This area is located at south of Honshu Island, Japan, between 35.1°N, 138.8°E and 29.5°N, 130.4°E.</li> <li>The area is located along the convergent boundary between the Philippine Sea and Eurasian plates. This area is associated with great earthquakes along the subduction zone. Many chemosynthetic communities have been recognized in a wide depth range from 270 to 4,800 m due to the existence of numerous methane seeps. Although species richness is not as high as the productive areas, the occurrences of endemic species are high in this region: more than 50% of the total number of species in this region is endemic. The seepage fields harbour higher diversity of the endobenthic invertebrates such as the vesicomid clams.</li> </ul>	H	H	M	H	-	H	L
<p><b>30. Sagami Trough and Island and Seamount Chain of Izu-Ogasawara</b></p> <ul style="list-style-type: none"> <li>Location: This area is located in the western Pacific, South of Honshu Island, Japan, between 35.8°N, 141.6°E and 26.5°N, 138.6°E.</li> <li>This area includes the Tokyo Submarine Canyon and the submarine canyons that drop steeply from Sagami and Suruga bays as well as the Sagami Trough, spanning 330 km between Sagami Bay, the Boso Peninsula, and Ohshima, and extend to the south to Myojin-sho, the Suiyo Seamount, the Mokuyo Seamount and the Kaikata Seamount. These seamounts are often tectonically active, and many chemosynthetic vent communities area developing in this area.</li> </ul>	H	H	H	H	H	-	H
<p><b>31. Convection Zone East of Honshu</b></p> <ul style="list-style-type: none"> <li>Location: The area is located in the east of the northern part of Honshu Island, Japan, between 41.2°N, 145.3°E and 35.9°N, 140.8°E.</li> <li>This is the area where the Oyashio Current (cold current) and the Kuroshio Current (warm current) mix. Such a complex front structure forms eddies of both warm and cold water. In addition, Tsugaru Current (warm current) flows in off the Sanriku coast, resulting in a very complex oceanographic features. Primary production is high in this area, and zooplankton, especially krill, is also rich. Consequently, pelagic fishes and mammals are present in very high in densities, as the area provides key feeding areas for these higher trophic-level animals. This area is also important as a feeding area of seabirds.</li> </ul>	H	H	H	L	H	H	L
<p><b>32. Bluefin Tuna Spawning Area</b></p> <ul style="list-style-type: none"> <li>Location: This area is located in the upper reaches of the Kuroshio warm current, which flows off southern Japan, extending between 130.7 °E - 122.5°E and 23.0°N- 30.1 °N.</li> <li>The waters of the Kuroshio Current's subtropical zone from the Nansei (Okinawa) Islands, where the</li> </ul>	M	H	H	H	M	H	M



Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
For key to criteria, see page 2							
Kuroshio Current flows north to the waters off the coast of southern Kyushu, are connected to the Coral Triangle and provide a major spawning area for bluefin tuna.							
<p><b>33. Kyushu Palau Ridge</b></p> <ul style="list-style-type: none"> <li>• Location: The area starts from southeast off Cape Toi located in the southeast side of Kyushu Island, with southern extension near to Palau. It separates Shikoku and west Mariana Basins and Philippine Basin. It is located between 31.1°N - 17.0°N and 137.1°E- 132.4°E.</li> <li>• Kyushu-Palau Ridge is an ocean floor feature. It comprises a chain of many extinct volcanos mostly below sea level. 213 fish species were found in this area, 14 of which were new to science. A unique deep-sea butterfly fish has also been discovered from this area. This area was found to be the spawning ground of the white spotted conger eel.</li> </ul>	H	H	-	-	-	H	H
<p><b>34. Kuroshio Current South of Honshu</b></p> <ul style="list-style-type: none"> <li>• Location : This area is located from the south and southeastern coast of Kyushu Island, south of Shikoku Island and south of Honshu Island, Japan, between 35.9°N, 141.8°E and 30.0°N, 129.9°E.</li> <li>• The Kuroshio warm current runs in parallel to coasts of Kyushu Island, Shikoku Island and Honshu Island. This area consists of the waters of the Kuroshio Current's subtropical zone from the waters off the southern coast of Kyushu Island where the current turns into follow currents off the Boso Peninsula, and the waters on the inside (landward side) of these. Once the Kuroshio Current goes eastward, it will become weaken and merged with the convex area off east Honshu (please refer to the area no. 35 below). This area is high in biodiversity because the oceanographic setting is complex. It hosts a particularly important spawning ground for commercially important fish and squid species. This area is also used as a reproductive area of finless porpoise. Three endangered fish species have been reported from this area.</li> </ul>	H	H	M	L	H	H	L
<p><b>35. Northeastern Honshu</b></p> <ul style="list-style-type: none"> <li>• Location: The area covers intertidal and subtidal bottoms of Mutsu Bay coast, coast of Ogawahara lagoons, and Sanriku rias coast of Japan. It is located at between 38.2°N and 41.6°N, and between 140.6°E and 142.2°E.</li> <li>• The area is known as a highly productive marine area. The area is influenced by three different types of currents, such as cold Oyashio, warm Kuroshio and Tsugaru currents. Diverse marine biota in this area includes both cold-temperature and warm-temperature adapted species. The area covers various types of coastal habitats including tidal flats, lagoons and rocky intertidal shore in intertidal zone, and seagrass beds and seaweed beds (dominated by kelps and sargassums) in subtidal waters.</li> </ul>	H	H	H	H	H	M	H

Location and brief description of areas	C1	C2	C3	C4	C5	C6	C7
	For key to criteria, see page 2						
<p><b>36. Hydrothermal Vent Community on the Slope of the South West Islands</b></p> <ul style="list-style-type: none"> <li>• Location: Western slope of the South West Islands, which is on the western side of the Okinawa Trough.</li> <li>• Many chemosynthetic ecosystem sites harbouring both hydrothermal vent and seepage communities have been found in this area. The number of macro- and megafaunal species in the area is the highest among the several deep-sea chemosynthetic regions. The occurrence of endemic species is also high in this region: 68% of the species are endemic to this area. This area still possesses its natural landscape and environment due to its inaccessibility.</li> </ul>	H	H	-	H	H	H	H

**XX/4. Voluntary specific workplan on biodiversity in cold-water areas within the jurisdictional scope of the Convention**

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:

*The Conference of the Parties,*

*Recalling* paragraph 4 of decision XI/20, in which it urged Parties to advocate and contribute to effective carbon dioxide emission reductions by reducing anthropogenic emissions from sources and through increasing removals of greenhouse gases by sinks under the United Nations Framework Convention on Climate Change,<sup>8</sup> including the Paris Agreement,<sup>9</sup> and noting also the relevance of the Convention on Biological Diversity and other instruments,

1. *Notes* that cold-water areas sustain ecologically important and vulnerable habitats, such as cold-water corals and sponge fields, which play important functional biological and ecological roles, including supporting rich communities of fish as well as suspension-feeding organisms such as sponges, bryozoans and hydroids, some of which may be undergoing change due to the combined and cumulative effects of multiple stressors, including both global stressors, in particular ocean acidification, and local stressors;

2. *Welcomes* the scientific compilation and synthesis on biodiversity and acidification in cold-water areas,<sup>10</sup> and *takes note* of the key findings of this synthesis, as summarized in annex I;<sup>11</sup>

3. *Adopts* the voluntary specific workplan for biodiversity in cold-water areas within the jurisdictional scope of the Convention contained in annex II to the present decision as an addendum to the programme of work on marine and coastal biodiversity, which can be used as a flexible and voluntary framework for action;

4. *Encourages* Parties, other Governments and competent intergovernmental organizations, where applicable, within their respective jurisdictions and mandates and in accordance with national circumstances, to implement the activities contained in the workplan and further strengthen current efforts at the local, national, regional and global levels to:

(a) Avoid, minimize and mitigate the impacts of global and local stressors, and especially the combined and cumulative effects of multiple stressors;

(b) Maintain and enhance the resilience of ecosystems in cold-water areas in order to contribute to the achievement of Aichi Biodiversity Targets 10, 11 and 15, and thereby enable the continued provisioning of goods and services;

(c) Identify and protect areas capable of acting as refugia sites and adopt, as appropriate, other area-based conservation measures, in order to enhance the adaptive capacity of cold-water ecosystems;

(d) Enhance understanding of ecosystems in cold-water areas, including by improving the ability to predict the occurrence of species and habitats and to understand their vulnerability to different types of stressors, as well as to the combined and cumulative effects of multiple stressors;

(e) Enhance international and regional cooperation in support of national implementation, building on existing international and regional initiatives and creating synergies with various relevant areas of work within the Convention;

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<sup>8</sup> United Nations, *Treaty Series*, vol. 1771, No. 30822.

<sup>9</sup> United Nations Framework Convention on Climate Change, Conference of the Parties, twenty-first session, decision 1/CP.21 (see [FCCC/CP/2015/10/Add.1](#)).

<sup>10</sup> [UNEP/CBD/SBSTTA/20/INF/25](#).

<sup>11</sup> [UNEP/CBD/SBSTTA/20/4](#).

5. *Invites* Parties, other Governments and research and funding organizations to promote, as appropriate and within their competencies, and in accordance with national circumstances, activities to address research and monitoring needs identified in annex III to the present decision;

6. *Requests* the Executive Secretary, in collaboration with Parties, other Governments and relevant organizations, to facilitate, promote and support the implementation of the workplan contained in annex II to the present decision by, among other things, facilitating capacity-building activities, subject to available financial resources, and the sharing of information on experiences and lessons learned from the implementation of the workplan, including through collaboration with the Food and Agriculture Organization of the United Nations, the International Maritime Organization, the International Seabed Authority, regional seas organizations, regional fisheries management bodies and other relevant organizations.

### *Annex I*

## **KEY MESSAGES FROM THE SCIENTIFIC COMPILATION AND SYNTHESIS ON BIODIVERSITY AND OCEAN ACIDIFICATION IN COLD-WATER AREAS<sup>12</sup>**

### **Cold-water biodiversity and ecosystems**

1. Cold-water areas sustain ecologically important habitats, including cold-water corals and sponge fields. The associated biodiversity of cold-water coral habitats is best understood, while the work on the functional ecology and biodiversity of cold-water sponge fields is expanding.
2. Cold-water coral habitats are typically more biodiverse than surrounding seabed habitats and support characteristic animal groups. For example, cold-water coral reefs support rich communities of suspension-feeding organisms, including sponges, bryozoans and hydroids.
3. Cold-water coral habitats can play important functional roles in the biology of fish. New evidence shows that some fish are found in greater numbers in cold-water coral habitats and some species use cold-water coral reefs as sites to lay their eggs.

### **Pressures and threats to biodiversity in cold-water areas**

4. Ocean acidification has increased by ~26% in H<sup>+</sup> ion concentration since pre-industrial times. Increased releases of CO<sub>2</sub> due to the burning of fossil fuels and other human activities are leading to increases in sea surface temperatures and ocean acidification.
5. The saturation state of carbonate in seawater varies by depth and region. The saturation state is typically lower in polar and deep waters due to lower temperatures. When carbonate becomes undersaturated calcium carbonate, which many organisms use to form shells and skeletons, it will dissolve if it is not protected by a covering of living tissue.
6. The increase in stratification from increased temperatures can lead to reduced ocean mixing, which can also disrupt export of surface carbon to greater depths. Increased ocean temperature contributes to deoxygenation by decreasing oxygen solubility at the surface and enhancing stratification. This leads to a decrease in the downward oxygen supply from the surface, meaning that less oxygen is available for organism respiration at depth, and areas with lowered oxygen levels may expand.
7. The combination of ocean acidification, increases in ocean temperature and deoxygenation can lead to significant changes in organism physiology and habitat range in cold-water areas. Ocean acidification is detrimental to many marine species, with impacts on their physiology and long-term fitness. Shoaling of the aragonite saturation horizon will also leave many calcifying species in potentially corrosive seawater. Increases in temperature can impact the physiology of many organisms directly, and

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<sup>12</sup> Based on [UNEP/CBD/SBSTTA/20/INF/25](#).

indirectly lead to increasing deoxygenation and expansion of low oxygen zones. This can lead to community shifts, changes in nitrogen cycling, and modification of habitat ranges.

8. Destructive fishing practices can significantly impact vulnerable marine ecosystems. Many cold-water ecosystems have slow growth rates, and recovery from impacts may take decades to hundreds or even thousands of years. Decreases in biodiversity, biomass and habitats (through destruction or alteration) could entail consequences for broader biogeochemical cycles.

9. There are potential impacts on marine biodiversity and ecosystems in the deep-sea from marine mining exploration and exploitation. Impacts may include habitat destruction, ecotoxicology, changes to habitat conditions, discharge of nutrient enriched deep-water to surface communities and potential displacement or extinction of local populations, in addition to point source mining impacts, understanding the consequences of mine tailings disposal over wide areas is particularly important.

10. Hydrocarbon exploitation can impact cold-water biodiversity on different geographic scales. While drill cuttings can cover and disturb local benthos around platforms, major oil spill accidents would have the potential to result in environmental impacts at great depths and/or through the water column over many hundreds of square kilometres.

11. Deep-sea sediments accumulate plastic microfibres and other pollutants. The abundance of plastic microfibres in some deep-sea sediments was found to be four times higher than at the surface, meaning that the deep sea could be a significant sink of microplastics.

12. Invasive species can cause species extirpation and damage to ecosystem services. Major pathways to marine bioinvasion are discharged ballast water and hull fouling.

13. Bioprospecting has increased rapidly over the last decade, and can often occur in the deep ocean, where extremophiles are found. These areas often have very specific environmental conditions, and bioprospecting in these areas can risk damage to the habitat if an organism is deemed of high interest.

#### **Global monitoring of ocean acidification**

14. Global monitoring of ocean acidification is increasing, while there is a need for further development of predictive models. A well-integrated global monitoring network for ocean acidification is crucial to improve understanding of current variability and to develop models that provide projections of future conditions. Emerging technologies and sensor development increase the efficiency of this evolving network. There is a need for greater cross-sectoral partnership between government, industry and academia to facilitate establishing globally integrated monitoring system.

15. Seawater pH shows substantial natural temporal and spatial variability. The acidity of seawater varies naturally on a diurnal and seasonal basis, on local and regional scales, and as a function of water depth and temperature. Only by quantifying these changes is it possible to understand the conditions to which marine ecosystems are subjected currently. This will, in turn, increase understanding of how marine ecosystems will change in a future climate.

#### **Resolving uncertainties**

16. Greater understanding of the interaction between species within food webs is needed. Whether an impact of climate change on one organism will impact the fitness of other organisms is poorly understood at present. Mesocosm experiments, where communities are subjected to projected future conditions can help to address this.

17. Impacts of ocean acidification need to be studied on different life stages of cold-water organisms. Early life stages of a number of organisms may be at particular risk from ocean acidification, with impacts including decreased larval size, reduced morphological complexity, and decreased calcification. Further work needs to be done on different life stages of many cold-water organisms.

18. Existing variability in organism response to ocean acidification needs to be investigated further, to assess the potential for evolutionary adaptation. Multi-generational studies with calcifying and

non-calcifying algal cultures show that adaptation to high CO<sub>2</sub> is possible for some species. Such studies are more difficult to conduct for long-lived organisms or for organisms from the deep sea. Even with adaptation, community composition and ecosystem function are still likely to change.

19. Research on ocean acidification increasingly needs to involve other stressors, such as temperature and deoxygenation, as will occur under field conditions in the future. Acidification may interact with many other changes in the marine environment on both local and global scales. These “multiple stressors” include temperature, nutrients, and oxygen. In situ experiments on whole communities (using natural CO<sub>2</sub> vents or CO<sub>2</sub> enrichment mesocosms) provide a good opportunity to investigate the impacts of multiple stressors on communities in order to increase understanding of future impacts.

#### **Initiatives to address knowledge gaps in ocean acidification impacts and monitoring**

20. There are a growing number of national and international initiatives to increase understanding of future impacts of climate change. Through linking national initiatives to international coordinating bodies, addressing global knowledge gaps and monitoring will become more effective.

#### **Existing management and need for improvement**

21. The legal and policy landscape relating to addressing impacts to cold-water biodiversity includes largely sectoral global and regional instruments. While instruments related to integrated management approaches exist, they do not presently cover the entirety of cold-water ecosystems comprehensively.

22. Reducing CO<sub>2</sub> emissions remains the key action for the management of ocean acidification and warming. Additional management options, such as reducing stressors at the national and regional levels, can be used to help marine ecosystems adapt and buy time to address atmospheric CO<sub>2</sub> concentrations.

23. Our understanding of the impacts of individual stressors is often limited, but we have even less understanding of the impacts that a combination of these stressors will have on cold-water marine organisms and ecosystems and the goods and services they provide. There is a pressing need to understand the interactions and potentially combined and cumulative effects of multiple stressors.

24. Because individual stressors interact, managing each activity largely in isolation will be insufficient to conserve marine ecosystems. Multiple stressors must be managed in an integrated way, in the context of the ecosystem approach.

25. Scientific studies suggest that priority areas for protection should include areas that are resilient to the impacts of climate change and thus act as refuges for important biodiversity. In cold-water coral reefs, this may include important reef strongholds (reef areas likely to be less impacted by acidification by being located at depths above the aragonite saturation horizon), or areas important for maintaining reef connectivity and gene flow, which may be crucial for coral species to adapt to the changing conditions.

26. Management strategies should also protect representative habitats. Representative benthic habitats that are adjacent or connected to impacted areas can act as important refuges and source habitat for benthic species.

27. There is an urgent need to identify refugia sites nationally, regionally and globally. Efforts to describe and identify ecologically or biologically significant marine areas (EBSAs), including through the work on EBSAs under the Convention on Biological Diversity and the work on VMEs under the Food and Agriculture Organization of the United Nations, may help regional and global efforts to identify the location of habitats that may be resilient to the impacts of acidification and ocean warming, or that may help in maintaining gene flow and connectivity.

28. Cold-water biodiversity supports economies and well-being, and thus all stakeholders have a role in its management. Awareness-raising and capacity-building at all levels are important for future management effectiveness.

*Annex II*

**VOLUNTARY SPECIFIC WORKPLAN ON BIODIVERSITY IN COLD-WATER AREAS  
WITHIN THE JURISDICTIONAL SCOPE OF THE CONVENTION**

**Context and scope**

1. This workplan has been developed pursuant to paragraph 16 of decision XII/23. It builds upon the elements of a workplan on physical degradation and destruction of coral reefs, including cold-water corals (decision VII/5, annex I, appendix 2). It should be implemented on a voluntary basis as part of the programme of work on marine and coastal biodiversity (decision VII/5, annex I).
2. The workplan will support the achievement of Aichi Biodiversity Targets in marine and coastal areas, addressing in particular Aichi Biodiversity Target 10. The scope of the workplan is cold-water areas in the deep and open ocean, including both benthic and pelagic areas. These areas support a diverse range of marine species and habitats, including deep-water coral and sponge grounds that play important biological and ecological roles in the world's oceans. There is increasing evidence that cold-water areas are being significantly affected by direct human pressures and as well as wider impacts of global climate change and ocean acidification.
3. The workplan should be implemented alongside efforts to reduce anthropogenic emissions from sources and through increasing removals of greenhouse gases by sinks under the United Nations Framework Convention on Climate Change.

**Objectives**

4. The objectives of the workplan are the following:
  - (a) To avoid, minimize and mitigate the impacts of global and local stressors, and especially the combined and cumulative effects of multiple stressors;
  - (b) To maintain and enhance the resilience of ecosystems in cold-water areas in order to contribute to the achievement of Aichi Biodiversity Targets 10, 11 and 15, and thereby enable the continued provisioning of goods and services;
  - (c) To identify and protect areas capable of acting as refugia sites, and adopt, as appropriate, other area-based conservation measures, in order to enhance the adaptive capacity of cold-water ecosystems;
  - (d) To enhance understanding of ecosystems in cold-water areas, including by improving the ability to predict the occurrence of species and habitats and to understand their vulnerability to different types of stressors as well as the combined and cumulative effects of various stressors;
  - (e) To enhance international and regional cooperation in support of national implementation, building on existing international and regional initiatives and creating synergies with various relevant areas of work within the Convention.

**Activities**

5. Parties are encouraged to take the following actions, in accordance with national and international laws and using the best available scientific information:
  - 5.1 Assess needs and develop integrated policies, strategies and programmes related to biodiversity in cold-water areas:
    - (a) Integrate issues related to biodiversity in cold-water areas into national biodiversity strategies and action plans (NBSAPs);

(b) Assess the management and regulatory actions in place nationally and regionally to address the combined and cumulative effects of multiple stressors on cold-water biodiversity, and develop and enhance national mechanisms for inter-agency coordination and collaboration in implementing cross-sectoral regulatory approaches, including the consolidation of existing national initiatives;

(c) Assess the degree to which local stressors (such as destructive fishing practices, marine mining, hydrocarbon exploitation, anthropogenic noise, shipping, pollution and bioprospecting) are addressed by existing sectoral regulations, and adjust regulatory frameworks to address these stressors, where appropriate;

(d) Integrate long-term climate-related impacts on cold-water biodiversity into the assessment of local stressors;

(e) Ensure close coordination among national and subnational governments, and facilitate the involvement of indigenous peoples and local communities;

(f) Develop regional strategies to address common stressors, complementing national strategies.

5.2 Strengthen existing sectoral and cross-sectoral management to address stressors to cold-water biodiversity, including from overfishing and destructive fishing practices, pollution, shipping, seabed mining, by taking the following actions, as appropriate, and in accordance with national and international laws and circumstances:

(a) Strengthen fisheries management approaches, including the application of the ecosystem approach to fisheries, at national and regional scales, including through regional fishery bodies, to address unsustainable fishing practices, including overfishing, illegal, unreported and unregulated fishing and destructive fishing practices, and ensure effective enforcement, using relevant guidelines of the Food and Agriculture Organization of the United Nations, such as the FAO Code of Conduct for Responsible Fisheries and the International Guidelines for the Management of Deep-sea Fisheries in the High Seas;

(b) Avoid, minimize and mitigate land-based and sea-based pollution, deoxygenation, and introduction of invasive species through ballast water and biofouling to prevent adverse impacts on cold-water ecosystems and species, including through the implementation of instruments, tools and guidelines by the International Maritime Organizations (IMO) and other relevant global and regional organizations;

(c) Avoid, minimize or mitigate adverse impacts related to hydrocarbon extraction in areas that are known to contain cold-water coral and sponge reefs and other sensitive cold-water biodiversity;

(d) Avoid, minimize or mitigate adverse impacts of seabed mining on cold-water biodiversity, in accordance with the instruments, tools and guidelines of the International Seabed Authority with regard to mining in the deep seabed beyond national jurisdiction;

(e) Avoid, minimize or mitigate impacts from undersea cables in areas that are known or highly likely to contain vulnerable cold-water coral and sponge reefs.

5.3 Develop and apply marine protected areas and marine spatial planning in order to reduce the impacts of local stressors, and especially the combined and cumulative effects of multiple stressors, on cold-water biodiversity in the context of the ecosystem approach and national development planning:

(a) Increase spatial coverage and management effectiveness of marine protected areas and other area-based conservation measures in cold-water areas;



(b) Identify and prioritize, as appropriate, in conservation, protection and management approaches, specific types of cold-water areas such as:

- Ecologically or biologically significant marine areas (EBSAs), vulnerable marine ecosystems (VMEs) and particularly sensitive sea areas (PSSAs) in cold-water areas;
- Cold-water areas identified in vulnerability assessments using ecological and socioeconomic criteria;
- Habitats that have not been affected by the impacts of ocean acidification or ocean warming, and can thus serve as refugia sites;
- Healthy cold-water coral reefs, sponge reefs and other cold-water marine ecosystems, in order to prevent their degradation by human-induced stressors;
- Areas with healthy cold-water coral communities that are at depths above the aragonite saturation horizon;
- Habitats that are important for maintaining connectivity, gene pool size and diversity, and gene flow;
- Representative benthic habitats across the range of ecosystems, including those adjacent to degraded areas.

5.4 Expand and improve monitoring and research on biodiversity in cold-water areas to improve fundamental knowledge of how, and over what time scales, climate change and other human-induced stressors will impact the long-term viability of, and ecosystem services provided by, cold-water biodiversity, habitats and ecosystems, including through activities outlined in annex III, with a focus on activities that:

(a) Improve understanding of biodiversity in cold-water areas, including species identification, species distribution, community composition and taxonomic standardization, to provide baseline information for assessing the effects of climate change and other human-induced stressors;

(b) Assess the socioeconomic implications of the ongoing and predicted future pressures on cold-water biodiversity;

(c) Improve understanding of how climate change, acidification and other human-induced stressors will impact the physiology, health and long-term viability of cold-water organisms, habitats and ecosystems;

(d) Improve monitoring of environmental conditions in cold-water habitats to understand variability in carbonate chemistry;

(e) Develop or expand upon predictive model research to determine how projected climate change will impact cold-water biodiversity over different time scales.

5.5 Improve coordination and collaboration in research, information sharing and capacity-building to address policy and management needs, and to increase public awareness:

(a) Develop research collaboration as part of national programmes, including sharing of information relevant to cold-water biodiversity and opportunities for scientific collaboration and capacity-building, addressing the research needs identified in annex III;

(b) Develop a coordination strategy to leverage the efforts of various science organizations that actively research cold-water biodiversity, including through initiatives such as the Global Ocean Acidification Observing Network (GOA-ON) and the International Atomic Energy Agency's Ocean Acidification International Coordination Centre (OA-ICC), and provide a platform for information sharing between these initiatives in support of the work of the Convention;

(c) Improve knowledge-sharing among various actors and provide opportunities for participation in assessment, monitoring and research;

(d) Develop and implement targeted education and awareness campaigns for diverse stakeholders on the socioeconomic value of cold-water biodiversity and ecosystems, and the role of various stakeholders in increasing the resilience of cold-water biodiversity by reducing direct stressors;

(e) Collaborate with indigenous peoples and local communities, fishers, civil society and members of the public to improve information available for assessment, monitoring and validation of predictive models, including through application of traditional knowledge, fisher's knowledge and citizen science;

(f) Raise awareness among policymakers of key scientific findings related to cold-water biodiversity, and facilitate incorporation of the activities of this workplan into relevant national strategies and action plans, as well as relevant research and monitoring programmes at the global, regional and national levels.

5.6 Identify and provide sustainable sources of financing at the national, regional and global levels to enable the actions outlined in this workplan:

(a) Secure, through national budget systems (for example environment, climate-change adaptation funds), the necessary financial resources to implement measures to enhance knowledge about the resilience of biodiversity in cold-water areas, and to support the prioritization of the monitoring and research needs in annex III;

(b) Apply comprehensive and diverse financing schemes for management of stressors impacting biodiversity in cold-water areas;

(c) Remove key bottlenecks and improve access to funding through capacity-building and streamlining of funding processes.

### *Annex III*

## **MONITORING AND RESEARCH NEEDS FOR SUPPORTING THE IMPLEMENTATION OF THE VOLUNTARY SPECIFIC WORKPLAN ON BIODIVERSITY IN COLD-WATER AREAS WITHIN THE JURISDICTIONAL SCOPE OF THE CONVENTION**

1. Improve understanding of biodiversity in cold-water areas to provide baseline information used for assessing the effects of climate change and other human-induced stressors:

- 1.1 Support the ongoing research on biodiversity in cold-water areas to fill in gaps in fundamental knowledge of species identification, species distribution, and community composition, including taxonomic standardization;
- 1.2 Identify key habitat providers and their functional role within ecosystems to understand which organisms may be a priority in conservation and management;
- 1.3 Understand the biodiversity that key cold-water habitats support globally, and assess the gaps in current knowledge;
- 1.4 Map biodiversity and coral viability along natural gradients of carbonate saturation in order to identify the main predictors of coral biodiversity and health, assess changes

related to carbonate saturation state, locate hotspots of biodiversity and endemism, and help validate predictive models and improve understanding of how acidification affects ecosystem function and viability.

2. Assess the socioeconomic implications of current and predicted future pressures on cold-water biodiversity:

- 2.1 Enhance understanding of the ecosystem goods and services of cold-water areas;
- 2.2 Investigate connectivity (genetic and transfer of mobile species) between cold-water areas at multiple scales;
- 2.3 Investigate flow-on effects to ecosystems and ecosystem services that have significant environmental, social, cultural and economic impacts.

3. Conduct research to assess how climate change and other human-induced stressors will impact the physiology, health and long-term viability of cold-water organisms, habitats and ecosystems:

- 3.1 Carry out controlled laboratory experimentation, where feasible, on key individual species (ecosystem engineers, keystone species) to understand their metabolic, physiological and behavioural responses, their tolerance limits/thresholds to ocean acidification, potential interactive effects of warming and deoxygenation and to human-induced stressors;
- 3.2 Implement experiments using mesocosms in the field to understand fundamental ecological responses to ocean acidification, including how acidification may alter plankton productivity, larval ecology, food webs and the competitive interactive strength of taxa;
- 3.3 Assess experimental designs for ocean acidification biodiversity research at the individual, population and ecosystem level to identify best practices;
- 3.4 Identify the adaptive (or evolutionary) capacity of species with regard to single and multiple stressors, to assess the long-term resilience of key ecosystems and their continued provisioning of goods and services;
- 3.5 Conduct long-term experiments to assess whether organism survival comes with hidden energetic, structural or reproductive costs over a longer period;
- 3.6 Conduct experiments to assess whether larval stages are more susceptible to potential impacts at different life stages of organisms, and whether this impacts the long-term fitness of key species;
- 3.7 Incorporate broader assessments of ecological, physiological and microbiological impacts of acidification into research to consider wider impacts on individuals, species and ecological interactions.

4. Improve monitoring of environmental conditions in cold-water habitats to understand variability in carbonate chemistry:

- 4.1 Develop or expand upon existing physicochemical water chemistry monitoring programmes in cold-water areas to better understand the natural spatial and temporal variability of ocean carbon chemistry;
- 4.2 Integrate physicochemical water chemistry monitoring within national jurisdictions into international programmes, such as the Global Ocean Acidification Observation Network (GOA-ON) and initiatives such as the Global Ocean Observing System (GOOS);
- 4.3 Support the development of technology for the rapid and economical assessment of seawater carbonate chemistry;

- 4.4 Integrate carbonate chemistry sampling into marine monitoring programmes, where possible.
5. Develop or expand upon predictive model research to determine how projected climate change will impact cold-water biodiversity over different time scales:
  - 5.1 Improve ocean carbonate models to understand the temporal and three-dimensional spatial changes in carbonate saturation state and its main drivers, including changing atmospheric CO<sub>2</sub> conditions and ocean currents;
  - 5.2 Document existing gaps in data knowledge on national, regional global scales that limit the predictive power of models;
  - 5.3 Couple ocean carbonate chemistry mapping and oceanographic models to biophysical and ecological information to predict the temporal and spatial variability of acidification impacts in order to help identify areas under the greatest threat and possible refugia;
  - 5.4 Optimize habitat modelling to predict key habitats and biodiversity occurrence from seawater carbonate chemistry, oceanographic and water mass modelling and larval dispersal.

**XX/5. Addressing impacts of marine debris and anthropogenic underwater noise on marine and coastal biodiversity**

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:

*The Conference of the Parties*

**Impacts of anthropogenic underwater noise on marine and coastal biodiversity**

1. *Takes note* of the updated report entitled “Scientific synthesis of the impacts of underwater noise on marine and coastal biodiversity and habitats”,<sup>13</sup> and *invites* Parties, other Governments and relevant organizations to make use of this information, as appropriate, within their competencies, and in accordance with national legislation and international agreements;

2. *Recalls* decision XII/23, in particular paragraph 3, and *invites* Parties, other Governments and competent organizations, including the International Maritime Organization, the Convention on the Conservation of Migratory Species of Wild Animals,<sup>14</sup> the International Whaling Commission, other relevant stakeholders, and indigenous peoples and local communities, as appropriate, within their competencies, and in accordance with national legislation and international laws, to further collaborate and share their experiences on the application of measures, in line with the precautionary approach, in line with the preamble to the Convention, to avoid, minimize and mitigate the significant adverse impacts of anthropogenic underwater noise on marine and coastal biodiversity, including the measures specified in paragraph 3 of the same decision, and *requests* the Executive Secretary, subject to the availability of resources, to continue his work on the compilation, synthesis and dissemination of these experiences, including scientific research on the adverse impacts of underwater noise on marine and coastal biodiversity, and, based on scientifically identified needs, to develop and share, in collaboration with Parties, other Governments and relevant organizations, practical guidance and toolkits on measures to avoid, minimize and mitigate these impacts, and to make this compilation, as well as the guidance and toolkits referred to above, available for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice at a future meeting held prior to the fourteenth meeting of the Conference of the Parties;

**Addressing impacts of marine debris on marine and coastal biodiversity**

3. *Recalling* the G7 Action Plan to Combat Marine Litter, *takes note* of the report of the Expert Workshop to Prepare Practical Guidance on Preventing and Mitigating the Significant Adverse Impacts of Marine Debris on Marine and Coastal Biodiversity and Habitats<sup>15</sup> and *also takes note* of the ongoing work under the United Nations Environment Assembly on marine litter and microplastics;

4. *Also takes note* of the voluntary practical guidance on preventing and mitigating the impacts of marine debris on marine and coastal biodiversity and habitats, as contained in the annex to the present decision;

5. *Urges* Parties and *encourages* other Governments, relevant organizations, industries, other relevant stakeholders, and indigenous peoples and local communities, to take appropriate measures, in accordance with national and international law and within their competencies, to prevent and mitigate the potential adverse impacts of marine debris on marine and coastal biodiversity and habitats, taking into account the voluntary practical guidance contained in the annex to the present decision, and incorporate issues related to marine debris in the mainstreaming of biodiversity into different sectors;

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<sup>13</sup> [UNEP/CBD/SBSTTA/20/INF/8](#).

<sup>14</sup> United Nations, *Treaty Series*, vol. 1651, No. 28395.

<sup>15</sup> [UNEP/CBD/SBSTTA/20/INF/7](#).

6. *Invites* Parties and other Governments to consider, where appropriate, extended producer responsibility for providing response measures where there is damage or sufficient likelihood of damage to marine and coastal biodiversity and habitats from marine debris;

7. *Urges* Parties, and *encourages* other Governments and relevant international organizations to develop and implement measures, policies and instruments to prevent the discard, disposal, loss or abandonment of any persistent, manufactured or processed solid material in the marine and coastal environment;

8. *Invites* competent intergovernmental organizations, including the International Maritime Organization, the Food and Agriculture Organization of the United Nations, the United Nations Environment Programme and regional seas organizations and other competent bodies, within their mandates, to take appropriate measures, and to assist Parties and other Governments in taking appropriate measures to prevent and mitigate the potential adverse impacts of marine debris on marine and coastal biodiversity and habitats, taking into account the voluntary practical guidance contained in the annex to the present decision;

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

(a) To facilitate collaboration among Parties, other Governments and relevant organizations, including the International Maritime Organization, the Food and Agriculture Organization of the United Nations, the United Nations Environment Programme, the United Nations Division on Ocean Affairs and the Law of the Sea, regional seas organizations and other competent bodies, including in the framework of regional action plans on marine litter, on the application of measures within the respective jurisdictions of Parties and other Governments and the mandates of intergovernmental organizations, to prevent and mitigate the impacts of marine debris on marine and coastal biodiversity and habitats, including those in the voluntary practical guidance contained in the annex to the present draft decision, by facilitating the sharing of experiences, information, toolkits and best practices;

(b) To facilitate the provision of capacity-building opportunities to developing countries, in particular the least developed countries and small island developing States, as well as countries with economies in transition, for the implementation, in areas within national jurisdiction, of measures to prevent and mitigate the impacts of marine debris on marine and coastal biodiversity and habitats, including those in the voluntary practical guidance contained in the annex to the present draft decision.

#### *Annex*

### **VOLUNTARY PRACTICAL GUIDANCE ON PREVENTING AND MITIGATING THE IMPACTS OF MARINE DEBRIS ON MARINE AND COASTAL BIODIVERSITY AND HABITATS**

#### **Marine debris and its impacts on marine and coastal biodiversity and habitats**

1. Marine debris is usually defined as any persistent, manufactured or processed solid material discarded, disposed of, lost or abandoned in the marine and coastal environment. This includes materials transported into the marine environment from land by rivers, drainage or sewage systems or winds. Marine debris originates from a range of sea- and land-based sources.

2. Marine debris incurs socioeconomic costs, threatens human health and safety, and impacts marine organisms. It is broadly documented that entanglement in, or ingestion of, marine debris can have negative consequences on the physical condition of marine animals and may lead to their death. Ingestion of plastics is also of concern as it may provide a pathway for the transport of harmful chemicals into the food web. Additionally, marine debris is known to damage, alter or degrade habitats (for example, by smothering) and to be a possible vector for the transfer of alien species.

3. Negative effects include alteration of the biological and ecological performance of individuals, external injuries or death. Determining the effect of ingesting marine debris on an individual organism can be difficult, and the consequences of ingestion are still not fully understood. Species that show a high

incidence of debris ingestion or entanglement may be susceptible to population-level effects. This could have negative consequences for small populations, particularly those that are endangered and/or exposed to multiple stressors. Identifying the impacts of marine debris at the ecosystem level should include the evaluation of the loss of ecosystem services that can be attributed to this stressor.

4. Microplastics<sup>16</sup> are likely to increase in abundance, and are a persistent pollutant that is present in all marine habitats. The trophic transfer of microplastics through benthic and pelagic food webs may facilitate the transfer and accumulation of both plastics and toxic chemicals. There is evidence of transfer of chemical additives from ingested plastics into tissue. There is also concern that the ingestion of microplastics, as well as macro- and mesoplastics, can cause physical effects, such as internal abrasion, blockage and injury, and may also provide a pathway for the uptake of harmful chemicals (for example, additives contained in plastic products) by marine organisms.

5. Marine debris can also serve as a vector for the transport of invasive alien species and may facilitate the dispersal of pathogens. Debris in the sea can be rapidly colonized by microbes to form a biofilm on the surface, effectively becoming an artificial microbial substrate. Debris can also be transported via animals through ingestion and subsequent egestion.

6. The considerable gaps in knowledge of the sources, distribution and quantity of marine debris items, and their impacts on marine and coastal biodiversity and habitats, is limiting the ability to address the problem effectively. There is a lack of information on the amount of debris entering the marine environment and degradation or fragmentation rates for debris under a range of conditions. There is limited information available for the physical and chemical consequences of debris on marine species through ingestion/uptake.

#### **Approaches for preventing and mitigating the impacts of marine debris on marine and coastal biodiversity and habitats**

7. The following general approaches are suggested for preventing and mitigating the impacts of marine debris on marine and coastal biodiversity and habitats:

(a) There should be a focus on preventing the discard, disposal, loss or abandonment of any persistent, manufactured or processed solid material in the marine and coastal environment;

(b) Measures to prevent and mitigate the significant adverse impacts of marine debris, should, as appropriate, use existing platforms and tools for cooperation, which will enhance synergies and capitalize on the progress made in these forums (such as the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities,<sup>17</sup> the Global Partnership on Marine Litter (GPML) and the Regional Seas Conventions and Action Plans);

(c) A broad range of available instruments and policy responses, including economic incentives, market-based instruments and public private partnerships, can be used to support action aimed at preventing and mitigating the impacts of marine debris.

#### **Priority actions for mitigating and preventing the impacts of marine debris on marine and coastal biodiversity and habitats**

8. For land-based sources of marine debris, the following actions are suggested:

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<sup>16</sup> Microplastic is defined as pieces or fragments of plastic smaller than 5 mm (JRC Scientific and Technical Reports. 2010. Marine Strategy Framework Directive Task Group 10 Report Marine Litter. EUR 24340 EN – 2010). The breakdown of these items results in numerous tiny plastic fragments, which are called secondary microplastics. Other microplastics that can be found in the marine environment are categorized as primary microplastics due to the fact that they are produced either for direct use, such as for industrial abrasives, or cosmetics or for indirect use, such as pre-production pellets or nurdles (OSPAR Commission, Regional Action Plan for Prevention and Management of Marine Litter in the North-East Atlantic, OSPAR Agreement 2014-1).

<sup>17</sup> A/51/116, annex II.

- (a) Identify baseline data on the main land-based sources, quantities and impacts of marine debris;
- (b) Promote structural economic changes that would reduce the production and consumption of plastics, increase production of environmentally friendlier materials, and support the development of alternative materials, increase recycling and reuse, and support an enabling environment for these changes through capacity-building, regulations and standards, and cooperation between industry, governments and consumers;
- (c) Support research aimed at developing technology to better understand the environmental impacts of plastics on the marine environment, to design new or improved biodegradable products and to assess cost-effective production on a commercial scale;
- (d) Promote and disseminate best practices in resource-efficient and closed product-to-waste cycles, taking into account the following:
- (i) Supporting the design of products that are long-lasting and reused, repairable, re-manufacturable and recyclable with the most effective use of resources;
  - (ii) Limiting superfluous consumption by enabling consumers to make responsible, well-informed decisions and discouraging inappropriate disposal behaviour;
  - (iii) Promoting adequate collection and separation of different types of waste to maximize return rates of high-quality materials;
  - (iv) Promoting recycling over incineration and landfilling;
  - (e) Promote best practices along the whole plastics manufacturing and value chain from production to transport, such as aiming for zero loss;
  - (f) Assess whether different sources of microplastics and different products and processes that include both primary and secondary microplastics<sup>18</sup> are covered by legislation, and strengthen, as appropriate, the existing legal framework so that the necessary measures are applied, including through regulatory and/or incentive measures to eliminate the production of microplastics that have adverse impacts on marine biodiversity;
  - (g) Improve the waste management systems of countries through the sharing of best practices as well as identifying and addressing loopholes that contribute to the generation of marine debris.

9. For sea-based sources of pollution, the following actions are suggested, within the respective jurisdictions of Parties and other Governments and the mandates of intergovernmental organizations:

- (a) Develop approaches, in collaboration with the International Maritime Organization, to optimize waste delivery to port reception facilities and to ensure that waste is disposed of properly;
- (b) Identify options to address key waste items from the fishing industry and aquaculture that could contribute to marine debris, and implement activities, including pilot projects, as appropriate, and good practice examples, such as deposit schemes, voluntary agreements and end-of-life recovery, in collaboration with the Food and Agriculture Organization of the United Nations and the United Nations Environmental Programme (UNEP);
- (c) Promote and disseminate best practices in relation to all relevant aspects of waste management within the fishing sector (including, for example, waste management on board, waste management at harbours, operational losses/net cuttings, deposit schemes and extended producer responsibility) in collaboration with Food and Agriculture Organization of the United Nations and the International Maritime Organization;

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<sup>18</sup> Ibid.



(d) Apply guidelines on best practices (for example, 1991 FAO Voluntary Guidelines for the marking of fishing gear; 1995 FAO Code of Conduct for Responsible Fisheries, 2011 FAO International Guidelines for bycatch management and reduction of discards) to reduce the input of abandoned, lost or discarded fishing gear from commercial and recreational fishing, as appropriate;

(e) Foster partnerships with international and regional organizations, port authorities and non-governmental organizations, to encourage the implementation of initiatives for containing, utilizing and/or processing marine litter, such as passive “fishing for litter” schemes, to collect litter caught in fishing nets during normal fishing activities;

10. With regard to information exchange, knowledge-sharing, awareness-building, capacity-building, and socioeconomic incentives, the following actions are suggested:

(a) Promote and undertake education activities on marine debris in partnership with civil society groups, including activities related to prevention and promotion of sustainable consumption and production;

(b) Promote outreach and education activities leading to individual behaviour change that can reduce the generated amount of debris entering the environment;

(c) Establish a collaborative platform for sharing experiences and exchange of information on good clean-up practice in beaches and coastal environments, pelagic and surface sea areas, ports, marinas and inland waterways, in cooperation with relevant local stakeholders; develop best practices on environmental friendly clean-up technologies and methods; and promote the “adopt a beach” system;

(d) Identify and promote curricula for marine-related education, including both professional seafarers and the recreational sector (for example, diving and sailing schools), in order to increase awareness, understanding and respect for the marine environment and secure commitment to responsible behaviour at personal, local, national and global level;

(e) Develop and implement socioeconomic incentives to prevent the introduction of waste into the environment, such as levies for the sale of plastic bags and/or banning single-use plastic bags, in particular for coastal communities and coastal tourist resorts;

(f) Collaborate, based on existing eco-labels, with international environmental certification schemes on information exchange and inclusion of the management and prevention of marine debris in their criteria, in accordance with the rules of the multilateral trading system;

11. For integrated management and coordination, the following actions are suggested, within the respective jurisdictions of Parties and other Governments and the mandates of intergovernmental organizations:

(a) Support the development and implementation of national or regional action plans to prevent or mitigate the impacts of marine debris on coastal and marine biodiversity and habitats, also by drawing upon existing action plans and guidance in certain regions (such as the Caribbean, North-East Atlantic, Mediterranean and Baltic Sea regions) taking into account existing Regional Action Plans (RAPs) of the Regional Sea Conventions;

(b) Mainstream marine debris consideration into existing and newly developed regulatory frameworks and develop necessary legislative and institutional framework that will put sustainable waste management into practices, including through the promotion of extended producer responsibility and waste management infrastructure;

(c) Mainstream existing legislation to integrate marine debris issues and targets, in line with existing packaging and waste regulations;

(d) Set in place quantifiable and operational targets for avoiding or minimizing marine debris and for preventing and mitigating their impacts on marine and coastal biodiversity and habitats;

(e) Define the role of marine debris prevention strategies within the context of cross-sectoral and area-based management tools based on the ecosystem approach.

12. For addressing knowledge gaps and research needs, the following actions are suggested:

(a) Support and promote, as appropriate, harmonized approaches to monitoring, analysis and reporting based on standardized methodologies, taking into account existing monitoring guidance for marine litter, such as the European Union Monitoring Guidance for Marine Litter in European Seas;

(b) Ensure access to, sharing and utilization of technology to support marine debris monitoring, particularly in developing countries, in particular the least developed countries and small island developing States, as well as countries with economies in transition;

(c) Develop and promote means to identify sources, pathways and distribution of marine debris to understand individual and population-level effects of marine debris on marine species;

(d) Investigate and promote the best available techniques as well as research and develop additional techniques in wastewater treatment plants to prevent microparticles entering the marine environment;

(e) Promote research on the potential trophic transfer of marine microdebris in food webs to determine whether there is a bioaccumulation effect for plastics and harmful chemicals;

(f) Develop and strengthen the use of citizen science schemes that address the monitoring and enforcement of environmental standards on marine debris;

(g) Undertake socioeconomic research to better understand the social factors which may contribute to the production of marine debris, the impacts of marine debris on various coastal and maritime sectors and communities, and consumer preferences, perceptions and attitudes that can help to inform targeted outreach programmes designed according to local/cultural context;

(h) Develop a risk assessment of impact of debris on marine and coastal species and ecosystems, and identify potential hotspots of gear loss and their associated biodiversity impacts;

(i) Develop monitoring strategies, taking account the following needs:

(i) To evaluate possible population-level impacts that consider in a coordinated way the migration routes and the distribution of species and populations;

(ii) To include species life stages and the specific vulnerability to marine debris (for example, monitoring of juveniles to quantify the burden on adults);

(iii) To address sublethal effects while taking into account that a broad range of interacting natural and human factors determines the survival and reproductive success of individual animals;

(iv) To take into account that, in the case of highly endangered species, direct harm caused by marine debris on one individual can easily have an effect on the entire population;

(j) Apply modelling as a useful tool for marine debris management and mitigation. It can be used with spatial mapping to estimate debris distribution, encounter rates between debris and species, and support the production of global risk assessments, especially for threatened species.

## **XX/6. Marine spatial planning and training initiatives**

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:

### *The Conference of the Parties*

#### **Marine spatial planning**

1. *Welcomes* the report of the Expert Workshop to Provide Consolidated Practical Guidance and a Toolkit for Marine Spatial Planning, held in Montreal, Canada, from 9 to 11 September 2014,<sup>19</sup> and *expresses its gratitude* to the European Commission for its financial support;

2. *Recognizes* that marine spatial planning that may benefit a participatory tool to facilitate the application of the ecosystem approach, expedite progress towards achieving Aichi Biodiversity Targets in marine and coastal areas, in particular Targets 6, 8, 10, 11 and 12, and support mainstreaming biodiversity into public policies related to human and economic development;

3. *Encourages* Parties and *invites* other Governments, as appropriate and taking into account national circumstances, to apply marine spatial planning to marine and coastal areas within their jurisdiction or enhance existing marine spatial planning initiatives in these areas, and:

(a) To take into account the above-mentioned report of the Expert Workshop and other technical guidance from relevant international and regional organizations and agreements in the implementation of marine spatial planning,

(b) To promote full and effective participation of indigenous peoples and local communities in the development and implementation of marine spatial planning, in accordance with national legislation;

(c) To link closely to existing efforts to implement integrated marine and coastal area management, marine protected areas and other effective area-based conservation measures, as well as strategic environmental assessments, environmental impact assessments, pollution management, fisheries management, and management of other economic activities, including tourism;

(d) To engage with relevant stakeholders and sectors as well as indigenous peoples and local communities in the development and implementation of marine spatial planning;

(e) To strengthen the application and further development of the ecosystem approach in marine spatial planning, including the use of ecological, economic and social spatial data and knowledge as well as regional cooperation;

(f) To share their experiences through the clearing-house mechanism of the Convention and other information-sharing mechanisms;

4. *Recalls* decision XI/18 C and decision XII/23, in particular paragraph 18, *requests* the Executive Secretary, subject to the availability of resources, and *invites* relevant organizations, in particular the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization, the United Nations Environment Programme, the Food and Agriculture Organization of the United Nations, the International Maritime Organization, regional seas conventions and action plans, and regional fisheries management bodies, to support the national implementation of marine spatial planning, as appropriate, within their competencies, in accordance with national legislation, through collaboration on, among other things, the following activities:

(a) Further consolidate and complement existing guidance on marine and spatial planning, building upon the results of the workshop referred to in paragraph 1 above, through online communication, expert workshops, compilation of case studies, informal interaction among experts and/or expert peer review;

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<sup>19</sup> See [UNEP/CBD/SBSTTA/20/INF/6](#).

(b) Develop linkages with other work under the Convention or other relevant international/regional agreements and programmes;

(c) Explore opportunities to test guidance and best practices and to facilitate capacity development opportunities, including through capacity development workshops as well as through on-the-ground implementation;

(d) Compile national, subregional or regional experiences in the implementation of marine spatial planning, in collaboration with Parties and other Governments, and disseminate them through the clearing-house mechanism of the Convention and relevant online information-sharing mechanisms;

5. *Requests* the Executive Secretary, subject to the availability of resources, to report on progress in the collaboration referred to in paragraph 4 above to the Subsidiary Body on Scientific, Technical and Technological Advice at a meeting held prior to the fourteenth meeting of the Conference of the Parties;

6. *Recalls* paragraph 19 of decision XII/23, and *requests* the Executive Secretary, subject to available financial resources:

(a) To invite Parties, other Governments and relevant organizations, initiatives and stakeholders including the Food and Agriculture Organization of the United Nations, the Intergovernmental Oceanographic Commission, the International Maritime Organization, the International Seabed Authority, the United Nations Environment Programme, regional seas conventions and action plans, regional fisheries bodies, indigenous peoples and local communities, to submit, as appropriate, information on national, regional and subregional experiences and lessons learned in the application of marine spatial planning or other measures for enhanced conservation and management, in support of achieving Aichi Biodiversity Targets, in particular Targets 6, 10, 11, and 12, in marine and coastal areas;

(b) To compile and synthesize submissions by Parties, other Governments and relevant organizations and stakeholders, along with additional scientific and technical information;

(c) To submit the compilation/synthesis referred to in subparagraph 6(b) above, for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice at a future meeting held prior to the fourteenth meeting of the Conference of the Parties;

7. *Recalling* paragraph 76 of decision X/29 and subparagraph 1(b) of decision XI/24 and *recognizing* the importance of building linkages among existing efforts on various area-based conservation measures within the framework of cross-sectoral and integrated marine spatial planning and implementation in support of achieving Aichi Biodiversity Targets, in particular Targets 6, 10, 11, and 12, *requests* the Executive Secretary, subject to available financial resources, drawing on the existing work by the Executive Secretary, in partnership with relevant organizations, and pursuant to paragraph 10 of decision XI/24:

(a) To compile national experiences and lessons learned on the development, and effective and equitable management, of ecologically representative and well connected systems of marine protected areas and other effective area-based conservation measures, and their integration into the wider landscapes and seascapes, as an input to an expert workshop;

(b) To organize an expert workshop to consolidate scientific and technical information on various approaches for, and their effectiveness in, assessing the contribution to the achievement of Target 11 of marine protected areas and other effective area-based conservation measures as well as their integration into the wider landscapes and seascapes, also considering the implementation of target 5 of Sustainable Development Goal 14;

(c) To submit the compilation of information referred to in subparagraph 6(a) and the report of the expert workshop referred to in subparagraph 6(b) above for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice at a future meeting held prior to the fourteenth meeting of the Conference of the Parties;

8. *Recalling* paragraph 25 of decision XI/17, *invites* Parties, indigenous peoples and local communities, relevant organizations and scientific groups, to provide information and experiences regarding criteria for socially or culturally significant marine areas and for their conservation and sustainable use both in their own right, and, in particular, where they coincide with areas meeting the criteria for ecologically or biologically significant areas or other similar criteria, and *requests* the Executive Secretary to compile this information and make it available through the clearing-house mechanism;

#### **Capacity-development and partnership activities**

9. *Welcomes* the capacity-building and partnership activities being facilitated by the Executive Secretary through the Sustainable Ocean Initiative at the national, regional and global levels in collaboration with Parties and relevant organizations, and *expresses its gratitude* to the Governments of Japan, France and the Republic of Korea and many other partners for providing financial and technical support for the implementation of activities related to the Sustainable Ocean Initiative;

10. *Invites* Parties, other Governments and relevant organizations to cooperate for the timely and effective implementation of capacity development activities through the Sustainable Ocean Initiative;

#### **Facilitating the monitoring of progress in the implementation of Target 6**

11. *Welcomes* the report of the Expert Meeting on Improving Progress Reporting and Working Towards Implementation of Aichi Biodiversity Target 6, held in Rome from 9 to 11 February 2016,<sup>20</sup> and *encourages* Parties, other Governments, the Food and Agriculture Organization of the United Nations and regional fishery bodies to consider the results of this meeting as a basis for their collaboration and cooperation towards accelerating and monitoring the progress in the implementation of Target 6, in line with the decision on mainstreaming biodiversity in fisheries.<sup>21</sup>

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<sup>20</sup> [UNEP/CBD/SBSTTA/20/INF/27](#).

<sup>21</sup> As per Subsidiary Body on Scientific, Technical and Technological Advice recommendation XX/15.

**XX/7. Invasive alien species***The Subsidiary Body on Scientific, Technical and Technological Advice*

1. *Welcomes* the report of the expert meeting on alien species in wildlife trade, experiences in the use of biological control agents and development of decision support tools for management of invasive alien species;<sup>22</sup>

2. *Notes* the progress of the entry into force of the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention).

The Subsidiary Body recommends that the Conference of the Parties adopt a decision along the following lines:

*The Conference of the Parties,*

*Recalling* its provisions related to Article 8(h) of the Convention and existing standards, guidelines and recommendations under the international regulatory framework relevant to invasive alien species,

*Also recalling* decisions VI/23\* and X/2 and Aichi Biodiversity Target 9,

**Additional ways and means to address the risks associated with trade in wildlife**

*Recognizing* that the Guidance on Devising and Implementing Measures to Address the Risks Associated with the Introduction of Alien Species as Pets, Aquarium and Terrarium Species, and as Live Bait and Live Food, is an effective tool to address the risks associated with the trade in wildlife;

*Also recognizing* the need to supplement the existing Guidance mentioned above to consider unintentional introductions of invasive alien species, through "hitchhikers" or contaminants, and materials associated with the trade in live alien species, such as packing material, substrate or food;

1. *Encourages* Parties, other Governments and relevant organizations, consumers and traders to make use of the Guidance annexed to decision XII/16 to address, mutatis mutandis, the risks associated with trade in wildlife;

2. *Encourages* Parties and other Governments to review, as necessary, their national regulatory framework in order to develop and implement measures to ensure the safe import and prevention of spread of wildlife species and associated materials (such as packaging material and food) that can be pathways of introduction for invasive species, making use of appropriate risk analysis processes, as well as tools such as horizon scanning, which could consider drivers of trade, future trade patterns and potentially invasive alien species that may enter through trade;

3. *Encourages* actors in trade and industry to apply the voluntary measures indicated in the Guidance annexed to decision XII/16, mutatis mutandis, when trade in wildlife takes place, for example the use of labelling on consignments of live alien species to identify it as a potential hazard for biodiversity and the proper identification of species with the scientific name, taxonomic serial number or its equivalent;

4. *Encourages* Parties, other Governments and relevant organizations, including research organizations, to explore, develop and apply ways and means to promote changes in the

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<sup>22</sup> UNEP/CBD/SBSTTA/20/INF/31.

\* One representative entered a formal objection during the process leading to the adoption of decision VI/23 and underlined that he did not believe that the Conference of the Parties could legitimately adopt a motion or a text with a formal objection in place. A few representatives expressed reservations regarding the procedure leading to the adoption of decision VI/23 (see UNEP/CBD/COP/6/20, paras. 294-324).

behaviour of individuals so as to reduce the risks to biodiversity associated with legal trade, and prevent instances of illegal trade, in wildlife, including through engagement with the social sciences and the use of social media in targeted awareness campaigns, and through cooperation with wildlife trade organizations;

5. *Requests* the Executive Secretary, subject to the availability of resources, in collaboration with member organizations of the inter-agency liaison group on invasive alien species, to prepare draft supplemental guidance to incorporate unintentional introductions as mentioned in the fourth preambular paragraph above, to the existing Guidance on Devising and Implementing Measures to Address the Risks Associated with the Introduction of Alien Species as Pets, Aquarium and Terrarium Species, and as Live Bait and Live Food, for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice prior to the fourteenth meeting of the Conference of the Parties;

6. *Invites* the members of the Global Invasive Alien Species Information Partnership and other organizations that manage databases pertaining to trade in wild animals and plants, in collaboration with Parties and other Governments, to further develop mechanisms to exchange information on the identification of potential invasive alien species and their vectors in trade, and to facilitate the exchange of this information among Parties, other Governments and relevant organizations;

#### **Reducing the risk associated with trade in invasive alien species sold via e-commerce**

7. *Encourages* Parties, and *invites* other Governments, relevant international organizations, consumers and e-commerce traders, as appropriate, with a view to reducing the risk associated with trade in invasive alien species sold via e-commerce:

(a) To promote greater awareness among consumers, e-commerce traders and other stakeholders about the risks of biological invasions, and the relevant international standards and national regulations through, among other things, e-commerce market places and related social media;

(b) To review the risk of biological invasions, and associated sanitary and phytosanitary risks, posed by some forms of distance selling and, as appropriate, endeavour to develop suitable measures and guidance to minimize the risks of introduction of invasive alien species, consistent with international obligations;

(c) To consider using, or promoting the use of, the Single Window approach of the United Nations Centre for Trade Facilitation and Electronic Business in order to facilitate reporting on the trade in regulated live species via e-commerce;

(d) To collaborate with e-commerce traders in the development of new necessary measures to reduce the risk of potentially invasive alien species arising from e-commerce, which could further support compliance with existing national trade regulations pertaining to invasive alien species;

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

(a) To explore with the World Customs Organization, as well as member organizations of the inter-agency liaison group on invasive alien species, the need for tools or guidance for Parties that may assist national customs authorities in facilitating the necessary control of live alien species via e-commerce, building on the national experience of legislation related to the Convention on International Trade in Endangered Species of Wild Fauna and Flora and its enforcement, and to develop such tools or guidance, where appropriate;

(b) To report on progress in the development of any such tools or guidance to the Subsidiary Body on Technical, Technological and Scientific Advice at a meeting held prior to the fourteenth meeting of the Conference of the Parties;

**Reducing the risk of invasive alien species moving with sea containers**

9. *Welcomes* the revised IMO/ILO/UNECE Code of Practice for Packing of Cargo Transport Units and the recommendations of the Commission on Phytosanitary Measures at its tenth session that are related to prevention and minimization of the risk of invasive alien species spreading with sea containers;

10. *Invites* Parties and other Governments:

(a) To communicate and raise awareness about the risk of invasive alien species spread via sea containers, particularly with stakeholders involved in the packing or movement of sea containers;

(b) To make use of and raise awareness of the relevant parts of the Code of Practice for Packing of Cargo Transport Units, as appropriate;

(c) To collect information, as appropriate, on the movement of invasive alien species attached to sea containers, in addition to those with the cargo transported within the sea containers, and to share such information with the view to analysing, as appropriate and in accordance with national legislation, the potential risk of invasive alien species spread via sea containers and take proportionate actions to mitigate this risk;

**Biological control of invasive alien species**

*Recognizing* that classical biological control can be an effective measure to manage already established invasive alien species, that the use of biological control agents could also present direct and indirect risks to non-target organisms and ecosystems, and that these risks should be addressed by applying the precautionary approach, in line with the preamble of the Convention and appropriate procedures, including comprehensive risk analysis,

11. *Encourages* Parties, other Governments and relevant organizations, when using classical biological control to manage already established invasive alien species, to apply the precautionary approach and appropriate risk analysis, including the elaboration of contingency plans, taking into account the summary of technical considerations annexed to the present decision as appropriate;

12. *Encourages* Parties and invites other Governments, where applicable, to engage subnational governments and consult and inform potentially impacted countries when planning and carrying out a classical biological control programme targeting specific invasive alien species;

13. *Invites* Parties, other Governments, and as appropriate, standard-setting bodies recognized by the World Trade Organization, and other relevant organizations:

(a) To adapt, improve or further develop tools, including decision support tools, for better development and application of biological control programmes against invasive alien species, including prioritization based on impact, feasibility and likelihood of success of biological control, and the selection of the biological control agents;

(b) To compile this information and make it available through the clearing-house mechanism of the Convention and other means;

14. *Requests* the Executive Secretary, subject to the availability of resources, to further collaborate with the International Plant Protection Convention, the World Organisation for Animal Health, the Food and Agriculture Organization of the United Nations, other members of the inter-agency liaison group on invasive alien species and other relevant organizations, such as the International Organization for Biological Control, to identify options for supplementing risk assessment and risk management standards for the use of biological control agents against invasive alien species, including in aquatic environments, and to report on progress to the



Subsidiary Body on Technical, Technological and Scientific Advice at a meeting held prior to the fourteenth meeting of the Conference of the Parties;

#### **Decision support tools**

15. *Also requests* the Executive Secretary, further to decisions IX/4 A, X/38, XI/28 and XII/17 and subject to the availability of resources, in collaboration with partner organizations and interested or concerned Parties:

(a) To continue to compile or develop and maintain decision support tools in a coordinated manner with the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, making use of the scoping report for a thematic assessment on invasive alien species to facilitate implementation and make those tools available through the clearing-house mechanism of the Convention;

(b) To develop technical guidance for conducting cost-benefit and cost-effectiveness analysis for the management of invasive alien species for consideration by the Subsidiary Body on Technical, Technological and Scientific Advice at a meeting held prior to the fourteenth meeting of the Conference of the Parties;

(c) To develop guidance on invasive alien species management that takes into consideration the impacts of climate change, natural disasters and land-use change on the management of biological invasions;

16. *Invites* Parties and other Governments to consider the balance between the environmental, social and economic costs and benefits related to invasive alien species and remedial actions, in decision making on introduction, eradication, containment, mitigation or control of invasive alien species, making use, as appropriate, of the report on methodological assessment of scenarios and models of biodiversity and ecosystem services;

17. *Also invites* Parties and other Governments to adopt a participatory process by identifying and engaging indigenous peoples and local communities and relevant stakeholders from an early stage, and to develop and use participatory decision support tools to increase transparency in decision-making;

#### **Achieving Aichi Biodiversity Target 9**

18. *Welcomes* the work done by the experts of the Invasive Species Specialist Group of the International Union for Conservation of Nature to develop methodologies for prioritizing the pathways of introduction of invasive alien species as presented in the note by the Executive Secretary,<sup>23</sup> *invites* Parties and other Governments to apply these methods, and *invites* the International Union for Conservation of Nature to complete its work on developing these methodologies, and to present them to a future meeting of Subsidiary Body on Scientific, Technical and Technological Advice;

19. *Invites* Parties and other Governments to submit information on:

(a) Experiences, best practices and lessons learned in their work, including information on progress in implementation;

(b) Gaps in achieving Aichi Biodiversity Target 9, especially on the application of methods for pathway analysis and prioritization of invasive alien species;

20. *Requests* the Executive Secretary, subject to the availability of resources, to make the information requested in paragraph 19 above available through the clearing-house mechanism and other means and to report on progress to the Subsidiary Body on Technical, Technological

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<sup>23</sup> UNEP/CBD/SBSTTA/20/INF/5.

and Scientific Advice at a meeting held prior to the fourteenth meeting of the Conference of the Parties;

21. *Encourages* Parties, other Governments and relevant organizations to cooperate with the private sector in order to address invasive alien species, and *invites* the private sector to consider contributing to the achievement of Aichi Biodiversity Target 9 in their corporate practices;

22. *Invites* Parties, other Governments, other organizations and the scientific community, recalling decision XII/17, paragraphs 6(a)-(n), to continue developing strategies and take actions to achieve Aichi Biodiversity Target 9, and to continue investing resources in the development and circulation of new knowledge on alien species and pathways, particularly through relevant existing tools, such as the Global Invasive Species Database of the International Union for Conservation of Nature, the Invasive Alien Species Pathways tool (under development) and the Global Register of Introduced and Invasive Species implemented within the Global Invasive Alien Species Information Partnership, as appropriate.

#### *Annex*

### **SUMMARY OF TECHNICAL CONSIDERATIONS FOR THE USE OF BIOLOGICAL CONTROL AGENTS TO MANAGE INVASIVE ALIEN SPECIES**

#### **Classical biological control**

1. For the purpose of this summary, classical biological control is the control of invasive alien species by biological control agents or host-specific natural enemies. Such natural enemies from the country of origin of the invasive alien species targeted for control are identified, and subjected to risk assessment against direct and indirect non-target impacts, in line with national law and international standards. If the results of the risk assessment are acceptable, the biological control agents are imported, further tested and released to control the invasive alien species. The biological control agents are expected to establish permanently from the founder population released, and to reproduce and spread, causing suppression or weakening of the target organism. Successful classical biological control assists mitigation of the negative impacts of invasive alien species and may expedite the restoration of biodiversity but rarely leads to the complete eradication of a target species. Biological control should be carried out as part of an integrated management approach in the context of clear goals for conservation and restoration.

#### **Precautionary approach and risk assessment and management**

2. Risk assessment, reflecting the precautionary approach, of candidate biological control agents against direct and indirect non-target impacts, prior to any release decision, is key for the success of classical biological control programmes.

3. Risk assessment affords a clear understanding of the risks and allows improvements to be understood and adopted. Internationally harmonized guidance, such as that provided in the International Standards for Phytosanitary Measures (ISPMs) related to the pest risk analysis process (including ISPM 2, 3, 11), provides readily available guidance for this purpose.

4. [Consistent with existing standards, guidelines or recommendations recognized by the World Trade Organization, risk assessments should consider the following elements:

(a) The potential for direct and indirect non-target impacts on the ecosystems, habitats, native species, and related human health and safety, in the area where the biological control agents are planned to be released and could establish;

(b) The potential for indirect non-target impacts on the ecosystems, ecosystem functions and services, human health and safety, and social, economic and culture values in the

areas where the biological control agents are planned to be released, and in areas in which they might spread;

(c) The potential influence of climate and its current and future variability and other sources of environmental variation on the establishment, spread and impact of the biological control agent;

(d) The risks to ecosystem functions and services, social, economic and cultural issues, including the values and priorities of indigenous peoples and local communities.]

5. When considering the risks as well as costs and benefits of a proposed release of a biological control agent, the risks and costs of inaction or comparative risks from other approaches, such as the use of chemicals or toxins to reduce an invasive alien species population, should also be considered and assessed.

6. The following procedures should be considered to minimize risks to biological diversity and human health and ensure maximum potential for success:

(a) Quarantine infrastructure of sufficient standard and appropriate standard operating procedures should be available to ensure that the agents can be safely imported, tested and cleaned of any diseases and parasites before any releases are made;

(b) Host selection and host specificity testing and efficacy studies of biological control agents should take place either in the country of origin or in an appropriately registered quarantine facility within the country of introduction;

(c) Qualified taxonomists, including experts in phylogenetic analysis, should be involved in the selection and testing to correctly identify all potential biocontrol agents and the species undergoing the testing;

(d) Shipments of live biological control agents conform to applicable national (origin, destination and transit countries) and international regulations, and permits for the import of live organisms include appropriate labelling. This is generally a requirement of all shipping and courier companies;

(e) International regulations, procedures and agreements, such as the Nagoya Protocol to the extent it applies, should be followed in research and development regarding biological control agents.

7. [Social factors should be addressed, including any alternative views regarding the control of the target alien species, as well as providing clear, simple information to the community regarding the costs, benefits and timelines for the use of biological control in order to build public understanding and support.]

### **Planning and implementation of biological control programmes**

8. The following planning and implementation measures should be taken into account:

(a) Carrying out biological control programmes in the context of clear environmental conservation and restoration goals and as part of an integrated management approach, consistent with the precautionary approach and by undertaking appropriate risk analysis, and the Ecosystem Approach and its 12 principles;

(b) Availability of substantial initial investments for exploration, risk analysis and quarantine facilities, as well as sustainable long-term funding to support mass rearing and redistribution of biological control agents and post-release monitoring and surveillance;

(c) Full engagement by the State authority for the management of pests and pathogens and of appropriate State regulators responsible for release decisions, including consultation and collaboration across sectors, such as the agricultural, environmental, health sectors and border services, as well as between the private and public sector;

(d) Engagement of all relevant stakeholders, at the cross-jurisdictional, cross-sectoral, and community levels, regarding their varying views on goals, collaborative sharing of knowledge, experience, distribution of benefits and costs, and capacity development.

9. Countries planning to release biological control agents are urged to inform potentially impacted countries and, if they might be affected by a release, consult with them at an early stage in the planning process and prior to any release. Notification and consultation with the potentially impacted countries are necessary in order to inform them of potential benefits and risks, and to promote consultation and participation of potentially affected countries, in the decision processes, as well as to ensure the development of effective and beneficial biological control methods.

#### **Post-release monitoring, emergency plan and rapid response**

10. Post-release monitoring allows for rapid detection and measurement of any predicted, unpredicted direct or indirect negative impacts of the agents on biodiversity or agriculture and can assist emergency planning and rapid response. All biological control programmes should incorporate long-term monitoring and evaluation of impacts (positive or negative) using standardized and cost-effective methodologies.

11. Sharing post-release monitoring information widely, including with potentially impacted countries and other experts, can support the improvement of biological control programmes elsewhere and the approaches adopted in the face of climate variability, fluctuations and changes.

#### **Decisions on release of biological control agents**

12. [For decisions regarding biological control programmes, participatory decision-making is an essential factor for engaging support and success. This includes the communication of information on risks and options for their management. This process is most usefully initiated at the early stage of the development of a biological control programme to ensure that the interests of all relevant stakeholders, including cultural interests, are considered in view of the conservation goals set for the specific programme.]

13. The provision of relevant scientific information for potentially impacted countries prior to the approval of the release of biological control agents is necessary in order to support regional consultation and the sharing of relevant knowledge, and allows relevant stakeholders to contribute to the decision-making process and prepare for any potential negative impacts.

#### **Capacity development**

14. Technical and scientific cooperation to develop capacities in classical biological control, including scientific understanding, the regulatory process, and the training of skilled staff, is crucial for the success of biological control programmes.

## **XX/8. Synthetic biology**

*The Subsidiary Body on Scientific, Technical and Technological Advice,*

*Having considered* the information submitted by Parties, other Governments, relevant organizations and stakeholders, the outcomes of the Open-ended Online Forum on Synthetic Biology and the Ad Hoc Technical Expert Group (AHTEG) on Synthetic Biology, as well as the comments from the peer-review process, *notes* that:

(a) The following is the outcome of the deliberations of the AHTEG on Synthetic Biology from 21 to 25 September 2015 on an operational definition: “synthetic biology is a further development and new dimension of modern biotechnology that combines science, technology and engineering to facilitate and accelerate the understanding, design, redesign, manufacture and/or modification of genetic materials, living organisms and biological systems”;

(b) In deliberations regarding synthetic biology, the AHTEG on Synthetic Biology arrived at a common understanding that the term “components” refers to parts used in a synthetic biology process (for example, a DNA molecule), and the term “products” to the resulting output of a synthetic biology process (for example, a chemical substance);

(c) The AHTEG on Synthetic Biology discussed that organisms, components and products of synthetic biology fall within the scope of the Convention and its three objectives, and that the conservation and sustainable use of biodiversity, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources may be affected, both positively and negatively, by living organisms resulting from synthetic biology, as well as by non-living components and products of synthetic biology;

(d) Living organisms developed through current applications of synthetic biology are similar to living modified organisms as defined in the Cartagena Protocol on Biosafety, whereas non-living components (such as a DNA molecule) and products/outputs of synthetic biology (such as a chemical substance) do not fall under the scope of the Cartagena Protocol but may be regulated under other processes;

(e) The general principles and methodology for risk assessment under the Cartagena Protocol and existing biosafety frameworks provide a good basis for risk assessment regarding living organisms developed through current and near future applications of synthetic biology, but such methodologies may need to be updated and adapted for current and future developments and applications of synthetic biology;

(f) The sharing of experience and information among Parties is crucial and needs to be encouraged, including information on actual risk assessments and gaps in existing national, regional and/or international instruments to regulate the organisms, components or products derived from synthetic biology techniques;

(g) Scientific and technological developments and information in the field of synthetic biology need to be reviewed regularly to ensure that regulatory oversight and risk assessment methodologies remain up to date;

(h) Coordination is needed among current and future processes under the Convention and its Protocols, including with the AHTEG on Risk Assessment and Risk Management and the AHTEG on Socio-economic Considerations under the Cartagena Protocol, as appropriate;

(i) Cooperation and the establishment of synergies are needed with other United Nations and international organizations, whose mandates are relevant to synthetic biology.

### **Recommendation to the Conference of the Parties**

1. 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:

*The Conference of the Parties*

(a) *Reaffirms* decision XII/24, in which it urged Parties and invited other Governments to take a precautionary approach, in accordance with decision XI/11, paragraph 4;

(b) *Commends* the work of the Online Forum and the AHTEG on Synthetic Biology, and *welcomes* the conclusions and recommendations of the AHTEG as a basis for further discussion;

(c) *Acknowledges* that the outcome of the deliberations of the AHTEG on Synthetic Biology on the operational definition is “synthetic biology is a further development and new dimension of modern biotechnology that combines science, technology and engineering to facilitate and accelerate the understanding, design, redesign, manufacture and/or modification of genetic materials, living organisms and biological systems”, and *notes* that additional work is required, in particular on the inclusion and exclusion criteria;]

[(c *alt*) *Deems it appropriate*, for the purpose of facilitating scientific and technical deliberations under the Convention and its Protocols, to use the operational definition as proposed by the AHTEG on Synthetic Biology that, “synthetic biology is a further development and new dimension of modern biotechnology that combines science, technology and engineering to facilitate and accelerate the understanding, design, redesign, manufacture and/or modification of genetic materials, living organisms and biological systems”];]

(d) *Takes note* of the conclusion of the AHTEG on Synthetic Biology that living organisms developed through current applications of synthetic biology, or that are currently in the early stages of research and development, are similar to living modified organisms as defined in the Cartagena Protocol;

(e) *Notes* that the general principles and methodologies for risk assessment under the Cartagena Protocol and existing biosafety frameworks provide a good basis for risk assessment regarding living organisms developed through current applications of synthetic biology, or that are currently in the early stages of research and development, but such methodologies may need to be updated and adapted for current and future developments and applications of synthetic biology;

(f) *Also notes* that it is not clear, given the current stage of knowledge, whether or not some organisms of synthetic biology, which are currently in the early stages of research and development, would fall under the definition of living modified organisms under the Cartagena Protocol, and *further notes* that there are cases in which there may be no consensus on whether the result of a synthetic biology application is “living” or not;

(g) *Invites* Parties, in accordance with their applicable domestic legislation or national circumstances, to take into account, as appropriate, socio-economic, cultural and ethical considerations when identifying the potential benefits and potential adverse effects of organisms, components and products resulting from synthetic biology techniques in the context of the three objectives of the Convention;

(h) *Encourages* Parties and *invites* other Governments and relevant organizations, in the context of the three objectives of the Convention [and taking into account, as appropriate, socio-economic, cultural and ethical considerations];

- (i) To conduct research on the benefits and adverse effects of organisms, components and products of synthetic biology on biodiversity, with a view to filling knowledge gaps and identifying how those effects relate to the objectives of the Convention and its Protocols;
- (ii) To promote and enable public and multi-stakeholder dialogues and awareness-raising activities on the potential benefits and potential adverse effects of organisms, components and products of synthetic biology on biodiversity, involving all relevant stakeholders and with the full and effective engagement of indigenous peoples and local communities;
- (iii) To cooperate in the development of guidance and capacity-building activities with a view to assessing the potential benefits and potential adverse effects of organisms, components

and products of synthetic biology and, if necessary, updating and adapting current methodologies for risk assessment of living modified organisms to organisms resulting from synthetic biology, as appropriate;

(i) *Invites* Parties, other Governments, relevant organizations and indigenous peoples and local communities to submit to the Executive Secretary information and supporting documentation on:

- (i) Research, cooperation and activities noted in paragraph (h) above;
- (ii) Evidence of benefits and adverse effects of synthetic biology vis-à-vis the three objectives of the Convention;
- (iii) Experiences in conducting risk assessments of organisms, components and products of synthetic biology, including any challenges encountered, lessons learned and implications for risk assessment frameworks;
- (iv) Examples of risk management and other measures that have been put in place to avoid or minimize the potential adverse effects of organisms, components and products of synthetic biology, including experiences of safe use and best practices for the safe handling of organisms developed through synthetic biology;
- (v) Regulations, policies and guidelines in place or under development which are directly relevant to synthetic biology;

(j) *Decides* to extend the mandate of the current AHTEG on Synthetic Biology in accordance with the terms of reference attached hereto and also to contribute to the completion of the assessment as requested in paragraph 2 of decision XII/24;

(k) *Also decides* to extend the open-ended online forum to support the work of the AHTEG on Synthetic Biology, and invites Parties, other Governments, indigenous peoples and local communities and relevant organizations to continue nominating experts to take part in the open-ended online forum;

(l) *Requests* the Subsidiary Body on Scientific, Technical and Technological Advice to review the recommendations of the AHTEG on Synthetic Biology and make further recommendation to the Conference of the Parties including on the analysis using the criteria set out in paragraph 12 of decision IX/29;

(m) *Requests* the Executive Secretary, subject to the availability of resources:

- (i) Continue to facilitate moderated discussions under the open-ended online forum on synthetic biology through the Biosafety Clearing-House, and to continue to invite Parties, other Governments, indigenous peoples and local communities and relevant organizations to nominate experts to take part in the forum;
- (ii) To make the information received through paragraph (i) above available online;
- (iii) To compile and synthesize the results of the work referred to in the paragraphs above and make them available for further discussion through the online forum and the Ad Hoc Technical Expert Group;
- (iv) To convene moderated online discussions under the open-ended online forum and, subject to the availability of funds, a face-to-face meeting of the AHTEG on Synthetic Biology with the terms of reference annexed to the present decision, and submit the report of the AHTEG to peer review by Parties for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice at a meeting held prior to the fourteenth meeting of the Conference of the Parties;
- (v) To cooperate and establish synergies with other United Nations and international organizations whose mandates are relevant to synthetic biology;

(vi) To promote the full and effective engagement of indigenous peoples and local communities in future activities relating to synthetic biology under the Convention;

(n) *Welcomes* the recommendation of the Conference of the Parties serving as the meeting of the Parties to the Cartagena Protocol on Biosafety, in its decision BS-VII/12, on a coordinated approach on the issue of synthetic biology, including its work on risk assessment and risk management [as well as socio-economic considerations, as appropriate], and *invites* the Conference of the Parties serving as the meeting of the Parties to the Cartagena Protocol on Biosafety to take into account in its future deliberations relevant information resulting from the processes under the Convention;

(o) [*Invites* the Conference of the Parties serving as the meeting of the Parties to the Nagoya Protocol to clarify, if and how, the use of digital sequence information on genetic resources relates to access and benefit-sharing.]

#### *Annex*

### **TERMS OF REFERENCE FOR THE AD HOC TECHNICAL EXPERT GROUP ON SYNTHETIC BIOLOGY**

1. Building on the previous work of the Online Forum and AHTEG, and drawing upon relevant information submitted by Parties, other Governments, relevant organizations and indigenous peoples and local communities through paragraph (i) above, as well as information made available through the online forum and by the Secretariat, the AHTEG on Synthetic Biology shall, in coordination with other bodies of the Convention and its Protocols:

(a) Review recent technological developments within the field of synthetic biology to assess if the developments could lead to impacts on biodiversity and the three objectives of the Convention, including unexpected and significant impacts;

(b) Identify any living organisms already developed or currently under research and development through techniques of synthetic biology which do not fall under the definition of living modified organisms under the Cartagena Protocol;

(c) Further analyse evidence of benefits and adverse effects of organisms, components and products of synthetic biology vis-à-vis the three objectives of the Convention, and gather information on risk management measures, safe use and best practices for safe handling of organisms, components and products of synthetic biology;

(d) In order to avoid or minimize any potential negative effects on the conservation and sustainable use of biodiversity, evaluate the availability of tools to detect and monitor the organisms, components and products of synthetic biology;

(e) [Propose elements to the Conference of the Parties serving as the meeting of the Parties to the Nagoya Protocol to facilitate the clarification of, if and how, the use of digital sequence information on genetic resources relates to access and benefit-sharing;]

(f) Provide, for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice at a meeting held prior to the fourteenth meeting of the Conference of the Parties, recommendations on the basis of its deliberations to facilitate future discussions and actions on synthetic biology under the Convention, as well as an analysis against the criteria set out in paragraph 12 of decision IX/29 to contribute to the completion of the assessment requested in paragraph 2 of decision XII/24 by the Subsidiary Body on Scientific, Technical and Technological Advice;

2. Subject to the availability of funds, the AHTEG shall meet at least once face-to-face prior to the fourteenth meeting of the Conference of the Parties and make use of online tools to facilitate its work, as appropriate.



## **XX/9. Implications of the IPBES assessment on pollinators, pollination and food production for the work of the Convention**

### *The Subsidiary Body on Scientific, Technical, and Technological Advice*

1. *Welcomes* the Summary for Policymakers<sup>24</sup> of the thematic assessment on pollinators, pollination and food production approved by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services at its fourth session, in Kuala Lumpur, on 26 February 2016, as well as the full assessment report that was accepted by the Plenary;

2. *Acknowledges* the ongoing work of the Ad Hoc Technical Expert Group on Risk Assessment and Risk Management in the preparation of the “Guidance on Risk Assessment of Living Modified Organisms”, as a tool for evaluating the potential adverse effects that living modified organisms could have on pollinators in consistency with the Cartagena Protocol on Biosafety;

3. *Requests* the Executive Secretary to bring the present recommendation to the attention of the Conference of the Parties serving as the meeting of the Parties to the Cartagena Protocol on Biosafety,

4. *Also requests* the Executive Secretary, in cooperation with Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services and Food and Agriculture Organization of the United Nations to prepare a regional report for Africa on pollinators and pollination, drawing upon the Assessment and relevant work under the International Pollinators Initiative, and make the findings available for peer review prior to the thirteenth meeting of the Conference of the Parties.

The Subsidiary Body recommends that the Conference of the Parties at its thirteenth meeting adopt a decision along the following lines:

#### *The Conference of the Parties,*

*Recalling* decision III/11, annex III, decision V/5, annex I, and decision VI/5, annex II,

*Highlighting* the essential role of the abundance and diversity of pollinators, especially wild pollinators as well as managed pollinators, for food production, nutrition and human well-being, the need to address threats to pollinators and pollination, and *recognizing* the contribution of pollinators to the Sustainable Development Goals, especially Goals 2, 3, 8 and 15,

*Recognizing* the potential to enhance and secure crop production by increasing the abundance and diversity of pollinators through protection of the plants and habitats on which they depend for foraging and nesting,

*Noting* the relevance of the conservation and sustainable use of pollinators for the mainstreaming of biodiversity in the food and agriculture sectors,

*Noting also* the importance of pollinators and pollination for all terrestrial ecosystems, including those beyond agricultural and food production systems, and *recognizing* pollination as a key ecosystem function that is central to the conservation and sustainable use of biodiversity,

*Aware* of the trade-offs and synergies that exist between pollinator management options and other elements of agricultural systems,

1. *Welcomes* the Summary for Policymakers of the thematic assessment on pollinators, pollination and food production approved by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services at its fourth session, in Kuala Lumpur, on 26 February 2016, as well as the full assessment report that was accepted by the Plenary;

2. *Endorses* the key messages of the Assessment;

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<sup>24</sup> The Summary for Policymakers is available in all official languages of the United Nations at: <http://www.ipbes.net/work-programme/pollination>.

3. *Encourages* Parties, other Governments, relevant United Nations and other organizations, as well as multilateral environment agreements, and stakeholders to use, as appropriate, the Assessment, in particular the examples of responses outlined in table SPM.1, to help guide their efforts to improve conservation and management of pollinators, address drivers of pollinator declines, and work towards sustainable food production systems and agriculture;

4. *Welcomes* the tools and guidance developed by the Food and Agriculture Organization of the United Nations and partners under the International Initiative for the Conservation and Sustainable Use of Pollinators, including those for the rapid assessment of pollinators' status, the economic valuation of pollination, the determination of the risk of pesticides, the evaluation of pollination deficit, the evaluation of pollinator-friendly practices, and policy mainstreaming;

5. *Encourages* businesses involved in the development, manufacturing and sale of pesticides, as appropriate, to take into account the findings of the Assessment in their activities, including in developing and revising risk assessments of products, applying the precautionary approach in line with the preamble to the Convention and be fully transparent in releasing the results of all toxicity studies consistent with applicable international, regional and national standards and frameworks;

6. *Encourages* Parties, and *invites* other Governments and other relevant organizations and stakeholders, taking into account national circumstances and as appropriate:

#### **POLICIES AND STRATEGIES**

(a) To integrate consideration of issues related to the conservation and sustainable use of pollinators in agriculture and forestry policies, national biodiversity strategies and action plans, national adaptation strategies for climate change, national action programmes for combating desertification and other relevant national policies plans, and programmes, taking into account the values of pollinators and pollination, inter alia, to promote the implementation of the actions below, to improve the management of pollinators, to address drivers of pollinator declines and to reduce the crop yield gaps due to pollination deficit;

#### **PROMOTING POLLINATOR-FRIENDLY HABITATS**

(b) To promote diversity of habitats and production systems in the landscape through, inter alia, support to ecologically based agriculture (including organic agriculture) and diversified agricultural systems (such as forest gardens, home gardens, agroforestry, crop rotation and mixed cropping and livestock systems), and through conservation, management and restoration of natural habitats, to enhance the extent and connectivity of pollinator-friendly habitat;

(c) To promote conservation, management and restoration of patches of natural and semi-natural habitats on farms, and in urban and other developed areas, as appropriate, to maintain floral resources and nesting sites for pollinators;

(d) To promote cropping systems and conservation, management and restoration of grasslands and rangelands that enhance the availability of floral resources and nesting sites over time and space;

#### **IMPROVING THE MANAGEMENT OF POLLINATORS, AND REDUCING RISK FROM PESTS, PATHOGENS AND INVASIVE SPECIES**

(e) To enhance the floral diversity available to pollinators using mainly native species and reduce the dependence of managed pollinators on nectar-replacements, thereby improving pollinator nutrition and immunity to pests and diseases;

(f) To promote genetic diversity within populations of managed pollinators;

(g) To improve hygiene and control of pests (including the *Varroa* mite and the Asiatic wasp, *Vespa velutina*) and pathogens in managed pollinator populations;

(h) To monitor and manage the movement of managed pollinator species, sub-species and breeds where appropriate, among countries, and as appropriate within countries, to limit the spread of parasites and pathogens to managed and wild pollinator populations, and to prevent the introduction of potentially invasive pollinator species outside their native ranges;

(i) To prevent or minimize the risk of introducing invasive alien species harmful to wild and managed pollinators and the plant resources on which they depend;

#### **REDUCING RISK FROM PESTICIDES, INCLUDING HERBICIDES**

(j) To develop and implement national and as appropriate regional pesticide risk reduction strategies and to avoid or reduce the use of pesticides harmful for pollinators, for example, by adopting Integrated Pest Management practices and biocontrol, taking into account the International Code of Conduct on Pesticide Management of the Food and Agriculture Organization of the United Nations and the World Health Organization;

(k) Where pesticides pose a risk to pollinators, to improve pesticide application practices, including technologies to reduce drift, to reduce exposure of pollinators;

(l) To promote weed management strategies that take into account the need for pollinator forage, nutrition and nesting sites;

(m) [Improve, as appropriate, risk assessment procedures for pesticides and living modified organisms, where necessary, to better take into account possible impacts, including sublethal and indirect effects, on both wild and managed pollinators, including inter alia a wider range of pollinator taxa, beyond honeybees and managed bumblebees, and toxicological studies, in risk assessment protocols, applying the precautionary approach in line with the preamble of the Convention, consistent with international obligations and taking into account climate variations and cumulative effects;]

(n) To avoid or minimize the synergistic effects of pesticides with other drivers that have been proven to pose serious or irreversible harm to pollinators;

#### **ENABLING POLICIES AND ACTIVITIES**

(o) To promote education and public awareness of the value of pollinators and of the habitats that support them, and of the need to reduce threats to these species and their habitats;

(p) To integrate consideration of issues related to the conservation and sustainable use of pollinators, including wild pollinators, into agricultural extension services, using approaches, as appropriate, such as farmer field schools;

(q) To develop and implement incentives for farmers and indigenous peoples and local communities to protect pollinators and pollinator habitats, for example through benefit-sharing schemes, including payments for pollinator services schemes, and remove or reduce perverse incentives [consistent with international obligations][in compliance with the multilateral rules of the World Trade Organization], such as causing the destruction of pollinator habitats, overuse of pesticides and simplification of agricultural landscapes and production systems;

(r) To promote and support access to data and use of decision support tools, including, where appropriate, land-use planning and zoning, to enhance the extent and connectivity of pollinator habitats in the landscape, with the participation of farmers and local communities;

(s) To protect and promote traditional knowledge, innovations and practices, protect traditional and established land rights and tenure, as appropriate, and to promote biological and

cultural diversity, and the links between them,<sup>25</sup> for the conservation and sustainable use of pollinators including diverse farming systems;

### RESEARCH, MONITORING AND ASSESSMENT

(t) To enhance monitoring of the status and trends of all pollinators, pollinator-friendly habitats and pollinator community structure as well as the identification of potential pollinator deficits using consistent and comparable methodologies;

(u) To build taxonomic capacity on pollinators;

(v) To assess the benefits of pollinators and pollination, taking into account the economic value to agriculture and food production and the value to conservation and sustainable use of biodiversity, as well as cultural and other values;

(w) To undertake research on the socioeconomic implications of pollinator decline in the agricultural sector;

(x) To promote and share further research to address gaps in knowledge identified in the Assessment, as appropriate and in accordance with national legislation, including the effects of the partial loss of pollinators on crop production, and potential impacts of pesticides, in particular neonicotinoids and other systemic pesticides, taking into account their possible cumulative effects, and of living modified organisms, on pollinator populations, under field conditions, including differential impacts on managed and wild pollinators, and on social versus solitary pollinators, and the impacts on pollination of both crop and non-crop plants over both the short and long term, and under different climatic conditions;

(y) To promote further research to identify practical ways that pollinator-friendly practices can be integrated into farming systems as part of efforts to increase production and mainstreaming of biodiversity into agricultural production systems;

(z) To promote further research to identify risks to pollination under climate change and potential adaptation measures, including the potential loss of keystone species and their effect on ecosystem resilience;

(aa) To promote further research and analysis on pest management, taking into account the impact of drivers of pollinator decline, to support development of more feasible and sustainable alternatives;

7. *Invites* Parties, other Governments and relevant organizations to provide the Executive Secretary with information on relevant national initiatives and activities to promote the conservation and sustainable use of pollinators and *requests* the Executive Secretary, subject to the availability of resources, to compile this information, including information in the national reports, for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice at a meeting held prior to fourteenth meeting of the Conference of the Parties;

8. *Encourages* academic and research bodies, and relevant international organizations and networks to promote further research to address gaps in knowledge identified in the Assessment, including the issues identified in paragraph 6, subparagraphs (t) to (aa), above, to expand research to cover a wider variety of pollinators and to support coordinated global regional and national monitoring efforts and build relevant taxonomic capacity, especially in developing countries, where there have been fewer research and monitoring efforts to date;

9. *Requests* the Executive Secretary, subject to the availability of resources, together with the Food and Agriculture Organization of the United Nations, and in collaboration with other partners, to review the implementation of the International Initiative on the Conservation and

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<sup>25</sup> Identified in the Assessment as “biocultural diversity”.

Sustainable Use of Pollinators and prepare a draft updated and streamlined plan of action, including capacity-building, based on the Assessment and including the most recent knowledge, for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice at a meeting held prior to fourteenth meeting of the Conference of the Parties;

10. *Also requests* the Executive Secretary, subject to the availability of resources, in partnership with relevant organizations and indigenous peoples and local communities, to compile and summarize information on pollinators and pollination relevant to the conservation and sustainable use of biodiversity in all ecosystems, beyond their role in agriculture and food production for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice at a meeting held prior to fourteenth meeting of the Conference of the Parties;

11. *Further requests* the Executive Secretary to bring the present decision to the attention of the Food and Agriculture Organization of the United Nations and its Commission on Genetic Resources for Food and Agriculture;

12. *Noting* that the amount of information on the status and trends of pollinators and pollination varies among regions, with significant gaps in data, and also limitations in capacity for the identification, monitoring and management of pollinators, in many developing countries, in particular the least developing countries, and small island developing States, and in countries with economies in transition, *requests* the Executive Secretary, in cooperation with the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, the Food and Agriculture Organization of the United Nations, and other relevant organizations, subject to the availability of resources and avoiding duplication of efforts:

(a) To promote, as a priority, efforts to address data gaps and capacity for monitoring the status and trends of pollinators and pollination in developing countries, in particular Africa;

(b) To identify and develop proposals for strengthening capacity related to pollinators and pollination, and supplementary regional assessments, in particular for Africa, to be integrated into the updated and streamlined plan of action of the International Initiative on the Conservation and Sustainable Use of Pollinators referred to in paragraph (9) above;

13. *Invites* the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services to give due attention to the theme of pollinators and pollination in the ongoing regional/subregional assessments on biodiversity and ecosystem services, and the thematic assessment on land degradation and restoration and in the work of the task force on capacity-building;

14. *Encourages* Parties, other Governments and organizations in a position to do so, to support capacity-building and technical and scientific cooperation, to address the gaps and limitations referred to in paragraph 12, inter alia building upon relevant traditional and local knowledge;

15. *Requests* the Executive Secretary, subject to the availability of resources, to compile information on best practices, tools and lessons learned related to the monitoring and management of pollinators and pollination and make them available through the clearing-house mechanism and other means.

## XX/10. Biodiversity and climate change

### *The Subsidiary Body on Scientific, Technical, and Technological Advice*

1. *Takes note* of the following reports, and the summary information provided in the note prepared by the Executive Secretary on biodiversity and climate change:<sup>26</sup>

(a) Synthesis report on experiences with ecosystem-based approaches to climate change adaptation and disaster risk reduction;<sup>27</sup>

(b) Managing ecosystems in the context of climate change mitigation: A review of current knowledge and recommendations to support ecosystem-based mitigation actions that look beyond terrestrial forests;<sup>28</sup>

(c) Relationships between the Aichi Targets and land-based climate mitigation;<sup>29</sup>

(d) Guidance on enhancing positive and minimizing negative impacts on biodiversity of climate change adaptation activities;<sup>30</sup>

(e) Voluntary guidelines to support the integration of genetic diversity into national climate change adaptation planning;<sup>31</sup>

2. *Takes note* of the synthesis report on further advice on possible indicators and potential mechanisms to assess contributions and impacts of actions on reducing emissions from deforestation and forest degradation, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries on biodiversity<sup>32</sup> and the note by the Executive Secretary entitled “Further information on the potential contribution of REDD+ to the Strategic Plan for Biodiversity 2011-2020”;<sup>33</sup>

3. *Encourages* Parties, other Governments and relevant organizations to increase and share, through relevant means and platforms, knowledge on ecosystem-based approaches to climate change adaptation, mitigation and disaster risk reduction, as well as contributions to, and impacts on, biodiversity of actions aimed at reducing emissions from deforestation and forest degradation, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries, including alternative policy approaches, such as joint mitigation and adaptation approaches for the integral management of forests, and to make use of this knowledge to better inform decision-making;

4. *Welcomes* the decision of the Intergovernmental Panel on Climate Change to elaborate special reports on (a) the impacts of global warming of 1.5 degrees Celsius above pre-industrial levels (b) climate change, desertification, land degradation, sustainable land management, food security and greenhouse gas fluxes in terrestrial ecosystems which may include both adaptation and mitigation, and (c) climate change and oceans and the cryosphere;

5. *Invites* the Intergovernmental Panel on Climate Change, when elaborating its special report on the impacts of global warming of 1.5 degrees Celsius above pre-industrial levels, to include consideration of the impacts on biodiversity and ecosystem functions and services, and of the contribution of the conservation and sustainable use of biodiversity, and of ecosystem restoration, to efforts to keep global warming within a limit of 1.5 degrees Celsius;

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<sup>26</sup> [UNEP/CBD/SBSTTA/20/10](#).

<sup>27</sup> [UNEP/CBD/SBSTTA/20/INF/2](#).

<sup>28</sup> [UNEP/CBD/SBSTTA/20/INF/3](#).

<sup>29</sup> [UNEP/CBD/SBSTTA/20/INF/29](#).

<sup>30</sup> [UNEP/CBD/SBSTTA/20/INF/1](#).

<sup>31</sup> [UNEP/CBD/SBSTTA/20/INF/4](#).

<sup>32</sup> [UNEP/CBD/SBSTTA/20/10/Add.1](#).

<sup>33</sup> [UNEP/CBD/SBSTTA/20/INF/30](#).

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

*The Conference of the Parties,*

*Reaffirming* paragraph 8 of decision X/33,

*Recognizing* that cooperation among the biodiversity, climate change adaptation, mitigation and disaster reduction communities results in a greater ability to design interventions that deliver multiple benefits,

*Also recognizing* the potential for synergies provided by the 2030 Agenda for Sustainable Development,<sup>34</sup> the Sendai Framework for Disaster Risk Reduction 2015-2030,<sup>35</sup> the Strategic Plan for Biodiversity 2011-2020 and the Paris Agreement under the United Nations Framework Convention on Climate Change,<sup>36</sup>

*Further recognizing* the need for the full and effective participation of indigenous peoples and local communities including through prior informed consent, and the need to pay particular attention to their differentiated needs in order to avoid detrimental impacts on their livelihoods and cultures,

*Recognizing* that gender-responsive approaches and engagement of the youth are critical to ensure the success and sustainability of climate change adaptation, mitigation and disaster risk reduction policies, programmes and projects,

*Also recognizing* the need for improved scientific information concerning the climate change adaptation of the protected areas networks, their functionality and connectivity,

*Noting* resolution XII.11 of the Conference of the Contracting Parties to the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) at its twelfth session, entitled “Peatlands, climate change and wise use: Implications for the Ramsar Convention”, which highlights the role of peatlands in climate change not only in adaptation but also in mitigation,<sup>37</sup>

*Taking note* of the following reports and the summary information provided in the note by the Executive Secretary on biodiversity and climate change:<sup>38</sup>

(a) Synthesis report on experiences with ecosystem-based approaches to climate change adaptation and disaster risk reduction;<sup>39</sup>

(b) Managing ecosystems in the context of climate change mitigation: A review of current knowledge and recommendations to support ecosystem-based mitigation actions that look beyond terrestrial forests;<sup>40</sup>

(c) Relationships between the Aichi Targets and land-based climate;<sup>41</sup>

(d) Guidance on enhancing positive and minimizing negative impacts on biodiversity of climate change adaptation activities;<sup>42</sup>

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<sup>34</sup> [General Assembly resolution 70/1, annex.](#)

<sup>35</sup> [General Assembly resolution 69/283, annex II.](#)

<sup>36</sup> United Nations Framework Convention on Climate Change, Conference of the Parties, twenty-first session, decision 1/CP.21 (see [FCCC/CP/2015/10/Add.1](#)).

<sup>37</sup> See [http://www.ramsar.org/sites/default/files/documents/library/cop12\\_res11\\_peatlands\\_e.pdf](http://www.ramsar.org/sites/default/files/documents/library/cop12_res11_peatlands_e.pdf).

<sup>38</sup> [UNEP/CBD/SBSTTA/20/10.](#)

<sup>39</sup> [UNEP/CBD/SBSTTA/20/INF/2.](#)

<sup>40</sup> [UNEP/CBD/SBSTTA/20/INF/3.](#)

<sup>41</sup> [UNEP/CBD/SBSTTA/20/INF/29.](#)

<sup>42</sup> [UNEP/CBD/SBSTTA/20/INF/1.](#)

(e) Voluntary guidelines to support the integration of genetic diversity into national climate change adaptation planning;<sup>43</sup>

1. *Welcomes* the Paris Agreement under the United Nations Framework Convention on Climate Change,<sup>44</sup> in particular the articles related to biodiversity;<sup>45</sup>

2. *Encourages* Parties and other Governments, when developing their Nationally Determined Contributions and, where appropriate, implementing associated domestic measures, to fully take into account the importance of ensuring the integrity of all ecosystems, including oceans, and the protection of biodiversity, and to integrate ecosystem-based approaches therein, involving the national focal points to the Convention on Biological Diversity in this work and ensuring that information, tools and guidance developed under the Convention on Biological Diversity are used;

3. *Recognizes* that ecosystem-based approaches can be technically feasible, politically desirable, socially acceptable, economically viable and beneficial and that implementation and investment into these approaches are, in general, increasing at the international and national levels;

4. *Encourages* Parties, other Governments and relevant organizations to integrate ecosystem-based approaches to climate change adaptation and mitigation into their strategic planning across sectors;

5. *Emphasizes* the importance of marine protected areas, coastal resource management and marine spatial planning in protecting and building the resilience of marine and coastal ecosystems, communities and infrastructure against the impacts of climate change;

6. *Takes note* of alternative policy approaches, such as joint mitigation and adaptation approaches for the integral and sustainable management of forests, and the potential role of these approaches in the conservation of biological diversity and disaster risk reduction;

7. *Also takes note* of the potential for synergies between climate change adaptation and mitigation measures in the conservation of biological diversity and disaster risk reduction in all ecosystems;

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

(a) To address the loss of, and impacts on, biodiversity and, where appropriate, related social, environmental and economic impacts associated with climate change and disasters, considering the costs of inaction, and the value of investing in actions in a timely manner in order to reduce biodiversity loss and other negative impacts;

(b) To take into consideration the status of biodiversity and its vulnerability to current and future climate change impacts when planning and implementing ecosystem-based approaches to climate change adaptation, mitigation and disaster risk reduction activities, and to minimize and, where possible, avoid activities that may increase the vulnerability and reduce the resilience of biodiversity and ecosystems;

(c) To consider, throughout the development and implementation of ecosystem-based approaches to climate change adaptation and mitigation, potential multiple benefits and trade-offs;

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<sup>43</sup> [UNEP/CBD/SBSTTA/20/INF/4](#).

<sup>44</sup> United Nations Framework Convention on Climate Change, Conference of the Parties, twenty-first session, decision 1/CP.21 (see [FCCC/CP/2015/10/Add.1](#)).

<sup>45</sup> The reference to the importance of ensuring the integrity of all ecosystems as contained in the preamble of the Paris Agreement; Article 5, which calls upon Parties to take action to conserve and enhance sinks and reservoirs of greenhouse gases; Article 7, which recognizes the role of adaptation in protecting livelihoods and ecosystems; Article 8 relating to loss and damage, including resilience of livelihoods, communities and ecosystems.



- (d) To develop education and awareness-raising programmes for the general public on the importance of the ecosystem functions and services provided by biodiversity for climate change adaptation, mitigation and disaster risk reduction;
- (e) To raise awareness, particularly among decision makers in relevant sectors and at different levels of government, about ecosystem-based approaches to climate change adaptation, mitigation and disaster risk reduction;
- (f) To recognize the role of protected areas and other effective area-based conservation measures as cost-effective instruments for adaptation and mitigation of climate change as well as disaster risk reduction, and that increased investment for management and conservation will have positive economic, social and environmental effects;
- (g) To develop and implement ecosystem-based approaches to climate change adaptation, mitigation and disaster risk reduction that are based on reliable available science and better take into account indigenous, local and traditional knowledge and practices;
- (h) To promote the wide use of ecosystem-based approaches where appropriate, including in marine and coastal and urban areas and in agricultural landscapes;
- (i) To systematically assemble and analyse evidence to assess the effectiveness of ecosystem-based approaches to climate change adaptation and mitigation, including through development of improved monitoring and evaluation methods, noting that such methods are best developed and applied early in the planning phase;
- (j) To make use of existing tools and guidance on ecosystem-based approaches to climate change adaptation, mitigation and disaster risk reduction and, where appropriate, to further develop and refine these tools and guidance;
- (k) To ensure that ecosystem-based approaches to climate change adaptation, mitigation and disaster risk reduction activities maximize co-benefits to people and biodiversity;
- (l) To promote platforms for the exchange of experiences and sharing of best practices, including those of indigenous peoples and local communities on ecosystem-based approaches to climate change adaptation and mitigation in a holistic and integrated manner;
- (m) To investigate the need to integrate climate change adaptation best practices, strategies and methodologies into conservation planning frameworks, in consideration of species and ecosystems responses, and vulnerability to past and future anthropogenic climate change;
- (n) To share and disseminate knowledge and experiences on matters referred to in the present paragraph through, inter alia, the clearing-house mechanism;

9. *Recalls* paragraph 5 of decision IX/16, in which it encouraged Parties, other Governments, donors and relevant organizations to provide financial and technical support to capacity-building activities, including through raising public awareness, so as to enable developing countries, especially least developed countries, small island developing States and countries with economies in transition, to implement activities related to the impacts of climate change, and of the positive and negative impacts of climate change mitigation and adaptation activities on biodiversity;

10. *Requests* the Executive Secretary to prepare, subject to the availability of resources, in collaboration with relevant organizations, voluntary guidelines for the design and effective implementation of ecosystem-based approaches to climate change adaptation and disaster risk reduction, for consideration by the Subsidiary Body on Scientific Technical and Technological Advice prior to the fourteenth meeting of the Conference of the Parties;

11. *Also requests* the Executive Secretary to ensure that the voluntary guidelines consider existing guidance, including that developed under the Convention on Biological Diversity, the United Nations Convention to Combat Desertification and the United Nations Framework Convention on Climate Change, and include information on:

- (a) Tools for assessing the effectiveness of ecosystem-based approaches to climate change adaptation and disaster risk reduction at various scales;
- (b) The design and implementation of ecosystem-based approaches to climate change adaptation and disaster risk reduction at different scales, including at the subnational and local levels;
- (c) Trade-offs in the provision of various ecosystem services and limits to ecosystem-based approaches for climate change adaptation and disaster risk reduction;
- (d) Tools and indicators for monitoring the effectiveness of ecosystem-based approaches to climate change adaptation and disaster risk reduction;
- (e) Options for integrating alternative policy approaches into ecosystem-based approaches to climate change adaptation, mitigation and disaster risk reduction;
- (f) Integrating knowledge, technologies, practices and efforts of indigenous peoples and local communities related to addressing and responding to climate change and impacts on the biodiversity;
- (g) Information on methods making use of ecosystem-based approaches to climate change adaptation and disaster risk reduction in combination with hard infrastructure;

12. *Further requests* the Executive Secretary to further promote synergies with the Secretariat of the United Nations Framework Convention on Climate Change, ensuring that this includes increasing knowledge and sharing of information, guidance and tools developed under the Convention on Biological Diversity relating to the impacts of climate change on biological diversity and the role of ecosystems for climate change adaptation, mitigation and disaster risk reduction, with a view to identifying possible solutions;

13. *Requests* the Executive Secretary to further enhance synergies between the work of the Convention on ecosystem restoration, ecosystem-based approaches to climate change adaptation and mitigation and the work on land degradation neutrality and sustainable land management under the United Nations Convention to Combat Desertification and ensure coherence with relevant approaches under other United Nations bodies.

**XX/11. Sustainable use of biodiversity: bushmeat and sustainable wildlife management: information in response to decision XII/18, paragraph 13**

*The Subsidiary Body on Scientific, Technical and Technological Advice*

1. *Takes note* of the progress report on sustainable wildlife management;<sup>46</sup>
2. *Also takes note* of the results of the Symposium on “Beyond enforcement: Communities, governance, incentives, and sustainable use in combating illegal wildlife trade”, held in South Africa in February 2015, the workshop on “Sustainable use and bushmeat trade in Colombia: operationalizing the legal framework in Colombia”, held in Leticia, Colombia, in October 2015, as well as the road map<sup>47</sup> on the role of bushmeat in food security and nutrition presented to the XIV World Forestry Congress in Durban, South Africa, in September 2015;

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:

*The Conference of the Parties,*

*Concerned* with the continued decline of certain wildlife species due to extensive destruction and degradation of natural habitats, fragmentation and the loss of landscape connectivity, as well as other threats, including illegal exploitation and illegal wildlife trade, unsustainable use of wildlife products and resources, climate change, illegal land conversion, pollution, and invasive alien species, that impact negatively on the survival and regeneration of wild species, as well as on sustainable development and human well-being,

*Mindful* that wildlife loss has consequences for vital ecological processes that support biodiversity, and serious socioeconomic, food security, nutrition and health related impacts, affecting customary sustainable use and the culture, spirituality and identity of indigenous peoples and local communities,

*Noting* the need for sound wildlife management programmes that build upon an understanding of biological and ecological factors, and effective and equitable programmes, recognizing the importance of the human dimension, not only in terms of human needs and benefit-sharing, including custodianship and the historical rights of indigenous peoples and local communities to access wildlife, in accordance with national legislation, but also with respect to generating and sharing incentives for wildlife conservation and sustainable use,

*Also noting* the potential for enhanced policy harmonization on wildlife conservation, sustainable use and trade contributing to the implementation of the 2030 Agenda for Sustainable Development,<sup>48</sup> in particular on Targets 15.7 and 15.c under Goal 15, United Nations General Assembly resolution 69/314, and the Strategic Plan for Biodiversity 2011-2020,

*Recognizing* that considerable work has been done under the Convention on ways to improve the sustainability of wildlife management, including the harvesting of bushmeat, notes that the issue of sustainable use of wildlife intersects with other sectors, and that a strategic and broad approach is needed to address these issues,

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<sup>46</sup> [UNEP/CBD/SBSTTA/20/11](#).

<sup>47</sup> Robert Nasi and John E. Fa. “[The role of bushmeat in food security and nutrition](#)”. Paper presented at the XIV World Forestry Congress, Durban, South Africa, 7-11 September 2015.

<sup>48</sup> [General Assembly resolution 70/1](#) of 25 September 2015 on “Transforming our world: the 2030 Agenda for Sustainable Development”.

*Reaffirming* the role of the Collaborative Partnership on Sustainable Wildlife Management in facilitating coordinated work on the sustainable use of biodiversity and enhancing synergies among its members,

1. *Encourages* Parties and other Governments, as well as relevant organizations, to consider and implement, as appropriate, the road map<sup>49</sup> for better governance towards a more sustainable bushmeat sector, presented to the XIV World Forestry Congress in Durban, South Africa, in September 2015, and *invites* Parties to make use of the road map when developing and implementing their national biodiversity strategies and action plans;

2. *Encourages* Parties and other Governments to integrate existing guidance and recommendations of the Convention related to the sustainable use of wildlife, into plans and strategies for development cooperation agencies, to enhance the mainstreaming of the conservation and sustainable use of biodiversity in relevant sectors;

3. *Invites* Parties to include in their sixth national reports to the Convention on Biological Diversity information on the use of rights-based management systems and the transfer of these rights and associated management to indigenous peoples and local communities with regard to sustainable wildlife management;

4. *Also invites* Parties to work with indigenous peoples and local communities to provide training and capacity-building in sustainable wildlife management, including exchanging information and skills at various levels;

5. *Requests* the Executive Secretary, in collaboration with other members of the Collaborative Partnership on Sustainable Wildlife Management, subject to the availability of resources:

(a) To further elaborate technical guidance for better governance towards a more sustainable bushmeat sector, with a view to supporting Parties' implementation of the Strategic Plan for Biodiversity 2011-2020, building on the road map<sup>49</sup> on the role of bushmeat in food security and nutrition and the results of the Symposium on "Beyond enforcement: Communities, governance, incentives, and sustainable use in combating illegal wildlife trade", held in South Africa in February 2015, as well as the workshop on "Sustainable use and bushmeat trade in Colombia: operationalizing the legal framework in Colombia", held in Leticia, Colombia, in October 2015, taking into account the perspective and knowledge of indigenous peoples and local communities in customary sustainable use of biodiversity;

(b) To jointly scope and organize a Wildlife Forum event, facilitating the involvement of Parties, other Governments and relevant stakeholders, including indigenous peoples and local communities, to consider and define the priorities for work with respect to sustainable wildlife use and management, taking into account previous work on this matter, including the Addis Abba Principles and Guidelines for the Sustainable Use of Biodiversity;

(c) To enhance synergies with the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services with regard to the re-scoping of the assessment on sustainable use of biodiversity;

(d) To continue to support efforts by Parties to combat illicit trafficking in wildlife, in line with United Nations General Assembly resolution 69/314, adopted in July 2015, and to enhance institutional capacities on wildlife conservation and law enforcement, with relevant law enforcement bodies such as the members of the International Consortium on Combating Wildlife Crime;

(e) To report on progress to the Subsidiary Body on Scientific, Technical and Technological Advice and the Working Group on Article 8(j) and related provisions at a meeting held prior to the fourteenth meeting of the Conference of the Parties.

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<sup>49</sup> Robert Nasi and John E. Fa. "[The role of bushmeat in food security and nutrition](#)". Paper presented at the XIV World Forestry Congress, Durban, South Africa, 7-11 September 2015.

## XX/12. Ecosystem restoration

*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:

*The Conference of the Parties,*

*Recalling* Article 8(f) and decisions XI/16 and XII/19,

*Aware* that Parties have identified ecosystem restoration needs in their national biodiversity strategies and action plans and in other national, regional and global strategies and/or plans, and that a number of ecosystem restoration activities are under way with support from various organizations and Governments, and *noting* that many degraded ecosystems are still in need of restoration,

*Welcoming* the progress made in the implementation of the Forest Ecosystem Restoration Initiative, supported by the Korea Forest Service of the Republic of Korea,

*Underlining* that the effective implementation of ecosystem restoration helps to achieve not only many of the Aichi Biodiversity Targets, but also several Sustainable Development Goals,<sup>50</sup> ecosystem-based adaptation and combating desertification, mitigating the effects of drought and supporting mitigation under the United Nations Framework Convention on Climate Change,<sup>51</sup> land degradation neutrality under the United Nations Convention to Combat Desertification,<sup>52</sup> the wise use of wetlands under the Ramsar Convention on Wetlands,<sup>53</sup> the four Global Objectives on Forests of the United Nations Forum on Forests, commitments under the Convention on the Conservation of Migratory Species of Wild Animals,<sup>54</sup> the Bonn Challenge of the Global Partnership on Forest and Landscape Restoration and the objectives of many other initiatives,

*Noting* that restoration needs to be carried out in ways that balance social, economic and environmental objectives, and that the engagement of all relevant stakeholders, for example land owners, and indigenous peoples and local communities is crucial at all stages of the restoration process especially as regards the participation of women, *recognizing* that women are powerful agents of change and their leadership is critical in community revitalization and renewable natural resource management,

*Recalling* the urgency to enhance efforts to achieve targets related to restoration by 2020,

*Noting* the deliverable 3(b)(i): thematic assessment on land degradation and restoration currently being undertaken by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services due to be completed in 2018,

1. *Adopts* the short-term action plan on ecosystem restoration, as contained in the annex to the present decision, as a flexible framework and adaptable to national circumstances and legislation for immediate action towards achieving Aichi Biodiversity Targets 5, 12, 14 and 15, and Targets 4 and 8 of the Global Strategy for Plant Conservation, and other internationally agreed goals and targets, and in particular targets identified in national biodiversity strategies and action plans or other relevant strategies and plans;

2. *Urges* Parties and *encourages* other Governments and relevant organizations, including indigenous peoples and local communities, to promote, support and take actions on ecosystem restoration

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<sup>50</sup> See [General Assembly resolution 70/1](#), annex.

<sup>51</sup> United Nations, *Treaty Series*, vol. 1771, No. 30822.

<sup>52</sup> *Ibid.*, vol. 1954, No. 33480.

<sup>53</sup> *Ibid.*, vol. 996, No. 14583.

<sup>54</sup> *Ibid.*, vol. 1651, No. 28395.

inter alia by making use, as appropriate, of the short-term action plan on ecosystem restoration as a flexible framework according to national circumstances;

3. *Encourages* Parties, when developing and implementing ecosystem restoration action plans and when updating national biodiversity strategies and action plans, to take into account existing goals and commitments on restoration, including those promoted under other relevant processes, and to include them in their national biodiversity strategies and action plans;

4. *Invites* Parties in a position to do so and other donors, such as international finance agencies, including the Global Environment Facility and regional development banks, to provide support for ecosystem restoration activities, as well as monitoring processes integrated as appropriate into programmes and initiatives for sustainable development, food, water and energy security, job creation, climate change mitigation, adaptation, disaster risk reduction, and poverty eradication;

5. *Encourages* Parties to consider ecosystem restoration in reef and coastal ecosystems in the action plans, where relevant, to ensure that marine environments are sustained;

6. *Invites* Parties to provide, on a voluntary basis, information on their activities and results from the implementation of the action plan, and *requests* the Executive Secretary to compile the submissions and make them available through the clearing-house mechanism;

7. *Encourages* relevant organizations and indigenous peoples and local communities to promote the implementation of ecosystem restoration, which is crucial for reaching the Aichi Biodiversity Targets and enhancing the provision of ecosystem services and to support Parties in their efforts to implement the short-term action plans on ecosystem restoration;

8. *Invites* Parties and relevant organizations to give due consideration to community-based initiatives on ecosystem restoration in the context of the Convention's Plan of Action on Customary Sustainable Use of Biological Diversity;<sup>55</sup>

9. *Requests* the Executive Secretary to communicate the present decision to the Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services so that it can be taken into account in the preparation of the deliverable 3(b)(i): thematic assessment on Land Degradation and Restoration;

10. *Requests* the Executive Secretary, subject to the availability of resources, to support the efforts of Parties in making use of the short-term action plan on ecosystem restoration by:

(a) Enabling capacity-building and supporting the use of tools in collaboration with relevant partners and initiatives, including by implementing the Forest Ecosystem Restoration Initiative in collaboration with the Forest and Landscape Restoration Mechanism of the Food and Agriculture Organization of the United Nations and other initiatives covering other non-forest ecosystems;

(b) Updating the information on guidance, tools and initiatives relating to ecosystem restoration<sup>56</sup> and making it available through the clearing-house mechanism.

#### *Annex*

### **SHORT-TERM ACTION PLAN ON ECOSYSTEM RESTORATION**

#### **I. OBJECTIVES AND PURPOSE**

1. The *overall objective* of this action plan is to promote restoration of degraded natural and semi-natural ecosystems, including in urban environments, as a contribution to reversing the loss of

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<sup>55</sup> Contained in [decision XII/12](#), annex.

<sup>56</sup> [UNEP/CBD/SBSTTA/20/INF/35](#).

biodiversity, recovering connectivity, improving ecosystem resilience, enhancing the provision of ecosystem services, mitigating and adapting to the effects of climate change, combating desertification and land degradation, and improving human well-being while reducing environmental risks and scarcities.

2. The *purpose* of the action plan is to help Parties, as well as any relevant organizations and initiatives, to accelerate and upscale activities on ecosystem restoration. It aims to support timely achievement of the Strategic Plan for Biodiversity 2011-2020, in particular Aichi Biodiversity Targets 14 and 15. Aichi Biodiversity Target 14 aims to restore and safeguard, by 2020, ecosystems that provide essential services, Target 15 calls for the restoration of at least 15 per cent of degraded ecosystems by 2020. The action plan can also contribute to the achievement of objectives and commitments under other conventions, including the United Nations Framework Convention on Climate Change, the United Nations Convention to Combat Desertification, the Ramsar Convention on Wetlands, the Convention on the Conservation of Migratory Species of Wild Animals, and the United Nations Forum on Forests, as well as the 2030 Agenda for Sustainable Development and the Sendai Framework for Disaster Risk Reduction 2015-2030.

3. The *specific objectives* of this action plan are to help Parties as well as relevant organizations and initiatives to:

(a) Promote, support and accelerate action in the planning, implementation and monitoring of ecosystem restoration activities at all levels;

(b) Identify and formalize regional, national and local targets, policies and actions for ecosystem restoration;

(c) Identify and communicate the benefits of ecosystem restoration to generate public awareness, support and involvement.

## II. SCOPE AND SCALE

4. Ecological restoration refers to the process of managing or assisting the recovery of an ecosystem that has been degraded, damaged or destroyed as a means of sustaining ecosystem resilience and conserving biodiversity. Degradation is characterized by a decline or loss of biodiversity or ecosystem functions. Degradation and restoration are context-specific and refer to both the state of ecosystems and to ecosystem processes.

5. The action plan aims to facilitate ecosystem restoration across all types of habitat, biomes and ecosystems, including forests, grasslands, croplands, wetlands, savannas and other terrestrial and inland water ecosystems, marine and coastal ecosystems, and, as appropriate, urban environments. The activities can be applied at the national, regional, subnational and site levels within a land- and seascape perspective. Actions intended to reduce, mitigate or reverse direct drivers of degradation, restore ecosystem conditions and processes may be undertaken on a range of scales within a mosaic of land uses, for a range of purposes and with different actors. Actions on the national or regional scale are necessary to provide an enabling institutional framework.

6. The action plan provides options for actions that can be undertaken in the short term. However, restoration involves sustained activities over the medium and long term. Therefore, the actions identified in this plan should be undertaken in the context of the 2050 Vision of the Strategic Plan for Biodiversity and the 2030 Agenda for Sustainable Development.

7. The action plan can be applied to: (a) cases where ecosystems are already under ongoing restoration; (b) degraded ecosystems have already been identified and considered for restoration; (c) degraded ecosystems which have not yet been considered for restoration. The action plan can also contribute to the enhancement of ecosystem functions.

### III. PRINCIPLES

8. Ecosystem restoration is a complement to conservation activities, and provides many benefits both inside and outside of protected areas, which brings multiple benefits. Priority should be given to conserving biodiversity and preventing the degradation of natural habitats and ecosystems by reducing pressures and maintaining ecological integrity and provision of ecosystem services (see guidance for integrating biodiversity considerations into ecosystem restoration in appendix I). Ecosystem restoration is not a substitute for conservation, nor is it a conduit for allowing intentional destruction or unsustainable use.

9. Ecosystem restoration activities should be consistent with the provisions of the Convention. In particular, the 12 principles of the Ecosystem Approach of the Convention are highly relevant for guiding ecosystem restoration activities.<sup>57</sup> The United Nations Declaration on the Rights of Indigenous Peoples<sup>58</sup> and other guidance that may be relevant in particular situations includes, the Addis Ababa Principles and Guidelines for the Sustainable use of Biodiversity,<sup>59</sup> the Akwé: Kon guidelines,<sup>60</sup> the Tkarihwaí:ri Code of Ethical Conduct,<sup>61</sup> and the Plan of Action on Customary Sustainable Use of Biological Diversity.<sup>62</sup>

10. Ecosystem restoration activities should be planned at various scales and implemented using the best available science and traditional knowledge. The prior and informed consent and full and effective participation of indigenous peoples and local communities and women, as well as the engagement of other relevant stakeholders are important considerations at all stages of the processes. Communication, education and public awareness are also important to consider at all stages so that the benefits and costs of ecosystem restoration activities are widely understood.

### IV. KEY ACTIVITIES OF THE ACTION PLAN

11. The plan comprises four main groups of activities that could be undertaken, as a menu of options, on a voluntary basis, by Parties and other Governments, in collaboration with relevant organizations, in accordance with national legislation, circumstances and priorities. The four main groups of activities are:

- (a) Assessment of opportunities for ecosystem restoration;
- (b) Improving the institutional enabling environment for ecosystem restoration;
- (c) Planning and implementation of ecosystem restoration activities;
- (d) Monitoring, evaluation, feedback and disseminating results.

12. An iterative process may be required with feedback among and within these four main groups of activities (see indicative timeline in appendix II).

#### A. Assessment of opportunities for ecosystem restoration

13. To ensure that restoration activities are implemented in areas requiring restoration and that are high priority taking into account ecological, economic, social and institutional realities, it is useful to implement broad-scale ecosystem assessments, including mapping, or to make use of existing assessments. These assessments can be undertaken at various levels according to national circumstances and adjusted in the light of more detailed assessments that result from the site-level activities in step C. The following actions may be considered, and, as appropriate, taken:

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<sup>57</sup> <https://www.cbd.int/ecosystem/>

<sup>58</sup> [General Assembly resolution 61/295](#).

<sup>59</sup> [Decision VII/12](#), annex II.

<sup>60</sup> [Decision VII/16 F](#).

<sup>61</sup> [Decision X/42](#), annex.

<sup>62</sup> [Decision XII/12 B](#), annex.



1. **Assess the extent, type, degree and location of degraded ecosystems** at regional, national, and local scales as well as the drivers of ecosystem degradation. Take into account current restoration activities and initiatives, and how these integrate biodiversity considerations.
2. **Identify and prioritize geographical areas** where restoration would contribute most significantly to achieving national level targets contributing to the Aichi Biodiversity Targets (such as priority areas for the conservation of biodiversity areas that provide essential ecosystem services, and areas that would enhance the integrity of protected areas and their integration into wider land- and seascapes).
3. **Involve local populations and relevant stakeholders.** Identify and obtain the, prior and informed consent and full and effective participation of indigenous peoples and local communities and involve relevant stakeholders in the process, including consideration for gender balance, in the identification of priority areas for restoration.
4. **Assess the potential costs and multiple benefits of ecosystem restoration at relevant scales.** Benefits may include those linked to biodiversity and ecosystem services, and socioeconomic benefits, such as water and food security, carbon capture and sequestration, jobs and livelihoods, health benefits, and disaster risk reduction (e.g. fire and erosion control, and coastal protection). Identify opportunities for maximizing co-benefits and for reducing or eliminating conflicts among co-benefits. Costs of inaction may also be significant. Capitalize on the potential for ecosystem restoration to provide ecosystem services using nature-based solutions and developing green infrastructure.
5. **Assess the relevant institutional, policy, and legal frameworks** and identify financial and technical resources, as well as gaps, for implementing ecosystem restoration. Analyse opportunities for innovative approaches to restoration, including financial ones.
6. **Identify options to reduce or eliminate the drivers of the loss of biodiversity and the degradation of ecosystems at various scales.** Utilize pre-degradation baselines where appropriate and consult with experts and stakeholders, including indigenous peoples and local communities to determine baselines and other requirements, such as: resources; behavioural changes; incentive mechanisms; addressing perverse incentives; adopting sustainable land, water, forest, fisheries and agriculture management practices; diversifying land tenure; and recognizing resource rights. Assess areas where the implementation of sustainable productive practices could contribute to ecosystem restoration and to prevent land degradation.

#### **B. Improving the institutional enabling environment for ecosystem restoration**

14. In order to facilitate the implementation of ecosystem restoration actions, the further development of the enabling institutional framework for ecosystem restoration should be considered. This includes providing legal, economic and social incentives, and appropriate planning mechanisms, and fostering cross-sectoral collaboration, to promote restoration and for reducing ecosystem degradation. This work may be informed by the assessments undertaken in step A, and, especially A5, and could be undertaken in parallel with the planning and implementation activities undertaken in step C. The following actions may be considered, and undertaken as appropriate:

1. **Review, improve or establish legal, policy and financial frameworks for the restoration of ecosystems.** This may include, as appropriate, laws, regulations, policies and other requirements for protecting and restoring habitats, as well as improving ecosystem functions. It may require a certain proportion of land, coast or sea to be maintained in its natural state.
2. **Review, improve or establish a legal and policy framework for land tenure,** and for recognizing the rights of indigenous peoples and local communities.
3. **Review, improve or establish terrestrial and marine spatial planning processes** and zoning activities in the framework of integrated management.

4. **Consider the need for safeguard measures** to reduce risks of displacing habitat loss and degradation as well as other risks to biodiversity and indigenous peoples and local communities (see Principles and appendix I).
5. **Review, improve or establish targets, policies and strategies for ecosystem restoration.** These activities would normally be reflected in national biodiversity strategies and action plans, and/or national plans for sustainable development, climate change mitigation and adaptation and land management. Setting targets can demonstrate political commitment and help to increase public awareness, support and engagement. Existing targets established under other relevant processes may also be taken into account.
6. **Develop accounting processes** that take into account the values of natural, semi-natural, ecosystems, and of the functions and services they deliver.
7. **Promote economic and financial incentives** and eliminate, phase out or reform incentives harmful to biodiversity in order to reduce the drivers of ecosystem loss and degradation, and to foster ecosystem restoration, including through sustainable productive activities.
8. **Develop plans for resource mobilization.** Create a framework for mobilizing resources to support ecosystem restoration, from national, bilateral and multilateral sources, such as the Global Environment Facility, leveraging national budgets, donors and partners, including the private sector, indigenous peoples and local communities and non-governmental organizations, to implement the action plans and to fill gaps identified through assessments in step A. Public funds and instruments can be used to leverage private funding through such methods as, inter alia, risk guarantees, payment for ecosystem services, green bonds, and other innovative financial approaches.
9. **Promote and support capacity-building and training and technology transfer** for the planning, implementation and monitoring of ecosystem restoration so as to improve the effectiveness of restoration programmes.

### C. **Planning and implementation of ecosystem restoration activities**

15. Restoration activities should be planned on the basis of priorities identified in step A and implementation facilitated by actions in step B. Actions would benefit from consultation with stakeholders and experts from various disciplines to assist with all phases of project work (assessment, planning, implementation, monitoring and reporting). Capacity-building for stakeholders, including legal and legislative support for the rights of women and indigenous peoples and local communities, may be required. The following actions may be considered, and undertaken as appropriate:

1. **Identify the most appropriate measures for conducting ecosystem restoration**, based on the best available evidence and taking into account ecological appropriateness, scale of measures linked to the processes to be restored cost-effectiveness, and support to indigenous peoples' and community conserved territories and areas, and respect for their traditional customary knowledge and practices. Emphasis should be given to restoration approaches and activities that allow people to maintain and/or establish sustainable livelihoods.
2. **Consider how ecosystem restoration activities can support the ecological and economic sustainability** of agriculture and other production activities, as well as climate change mitigation and adaptation, and disaster risk reduction, and enhance ecosystem services, including for urban areas. Restoration may be mainstreamed into land- and seascape planning. The expected effects of restoration activities on the ecological function of adjacent lands and waters should be considered, for example through environmental impact assessments and strategic environmental assessments. Potential future environmental changes, such as those resulting from climate change, should be taken into account.

3. **Develop ecosystem restoration plans with clear and measurable objectives and goals** for expected environmental, economic and social outcomes. In addition to goals and objectives, plans could include the extent and lifetime of the project, the feasibility of mitigating degrading forces, budget and staff requirements, and a coherent plan for monitoring project implementation and efficacy. Project goals may include the desired future condition of the areas being restored, and the expected ecological and socioeconomic attributes of the reference ecosystem(s). In addition, project goals could explicitly specify ecological and socioeconomic targets (e.g., biomass of vegetation, jobs), and for each target an action (e.g., reduce, increase, maintain), quantity (e.g., 50 per cent), and timeframe (e.g., five years). Objectives could then be developed with an appropriate monitoring programme to detail the specific steps required to fulfil the goals.
4. **Develop explicit implementation tasks, schedules, and budgets.** Anticipated details of implementation, including site preparation, installation, or follow-up activities, may be considered. In addition, performance standards could be explicitly stated, along with a preliminary and adaptable list of questions to be addressed through monitoring and the proposed protocols that will be used to examine project success at specified intervals during restoration. Monitoring and evaluation may benefit from the establishment of standards for data collection, management and retention, analyses, and sharing of lessons learned.
5. **Implement the measures outlined in the ecosystem restoration plan** to conserve, manage sustainably, and, restore degraded ecosystems and landscape units in the most effective and coordinated manner possible, making use of existing science and technology and traditional knowledge.

#### **D. Monitoring, evaluation, feedback, and disseminating results**

16. Monitoring activities should begin during the earliest phases of project development to enable ecosystem conditions and socio-economic effects to be measured against a reference model. Effective monitoring may include extensive planning prior to initiation of restoration activities, including establishing baselines, using biological indicators, and setting clear and measurable restoration objectives based on these indicators. Remote sensing may also be a cost-effective monitoring technique in some ecosystems that can easily be repeated. Monitoring results and the lessons learned on the outcomes of activities in steps B and C may be documented, analysed and used to support adaptive management. The following actions may be considered, and undertaken as appropriate:

1. **Assess the efficacy and effects of implementing the ecosystem restoration plan**, including the success of ecosystem restoration activities and the environmental and socioeconomic costs and benefits. This may be done in close collaboration with relevant stakeholders including indigenous peoples and local communities and be based on the questions and analysis set out in the monitoring section of the restoration plans in step C4.
2. **Adjust plans, expectations, procedures, and monitoring through adaptive management** based on monitoring results and lessons learned and promote continuity beyond the project end.
3. **Share lessons learned** from planning, financing, implementing and monitoring ecosystem restoration plans in collaboration with stakeholders to demonstrate the practices and areas that provide multiple benefits of ecosystem restoration, identify unintended consequences, and improve outcomes of future restoration efforts.

#### **V. SUPPORTING GUIDANCE, TOOLS, ORGANIZATIONS AND INITIATIVES RELATING TO ECOSYSTEM RESTORATION**

17. Relevant guidance and tools developed under the Convention, and those developed by partner organizations and initiatives, as well as relevant organizations and initiatives are provided, for example, in information document UNEP/CBD/SBSTTA/20/INF/35 and the United Nations Environment Programme's Rapid Response Assessment *Dead Planet, Living Planet - Biodiversity and Ecosystem*

*Restoration for Sustainable Development*<sup>63</sup> among others, and will be made available in the clearing-house mechanism.

## VI. ACTORS

18. This action plan is addressed to all relevant stakeholders, including national, subnational and municipal governments, Parties to the Rio conventions and other multilateral environmental agreements, donor agencies, including the Global Environment Facility, the World Bank and regional development banks, private and corporate donors, pension funds and business consortia, as well as other relevant international bodies and organizations, land owners and land managers, indigenous peoples and local communities, and civil society and citizens.

### *Appendix I*

#### **GUIDANCE FOR INTEGRATING BIODIVERSITY CONSIDERATIONS INTO ECOSYSTEM RESTORATION**

- Address the drivers of biodiversity loss, including land-use change, fragmentation, degradation and loss, over-exploitation, pollution, climate change, and invasive alien species. Ecosystem restoration generally costs more than avoiding degradation, and the loss of some species and ecosystem services might not be recoverable. Further, natural habitats act as refugia for species that can offer restoration opportunities to other areas.
- Avoid the afforestation of grasslands and ecosystems with naturally low tree cover.
- Determine how natural and traditional disturbance regimes (e.g., under fire or grazing) which may be important for ecosystem structure and functioning could be part of restoration activities. Make use of research on the functions of species in ecosystems and the links between ecosystem functions and services. Due consideration should be given to the restoration and recovery of species directly providing ecosystem services and functions, such as seed dispersal, pollination, and maintaining the food web (such as key predators) and nutrient flows.
- Priority may be given to the restoration of habitats important for the reproduction and recovery of species.
- Take into consideration the fact that natural regeneration may allow a degraded area to recover on its own after drivers of fragmentation, degradation and loss have been removed or reduced. If active restoration is required, such as removing invasive alien species, reintroducing native plants and animals, and revitalizing soils and hydrological processes, this will generally require greater resources over a greater period of time.
- If ecosystem restoration is being aided by planting and reintroduction, make use of native site-adapted species, giving attention to genetic variation within and among native species, their life histories and the consequences of their interactions with each other and with their environment.
- Site-based actions could be taken in the context of integrated land- and seascape management practices. For example: priority may be given to restoring ecosystem services within a mosaic of land uses; or promoting landscape connectivity and biodiversity conservation through ecosystem restoration in proximity to species refugia (e.g., protected areas, key biodiversity areas, important bird and biodiversity areas, and Alliance for Zero Extinction sites) creating buffer zones, or connectivity corridors between them.

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<sup>63</sup> Nellemann, C., E. Corcoran (eds). 2010. *Dead Planet, Living Planet – Biodiversity and Ecosystem Restoration for Sustainable Development*. A Rapid Response Assessment. United Nations Environment Programme, GRID-Arendal. [www.grida.no](http://www.grida.no).

- Prevent the introduction of those alien species which threaten ecosystems, habitats or species: if the use of alien species is being considered, for example to initially stabilize severely degraded soils, this should, in particular, be guided by sound science and the precautionary approach in line with the preamble of the Convention in order to avoid loss of habitat and species due to invasive alien species.

*Appendix II*

**INDICATIVE TIMELINE FOR SHORT-TERM ACTIONS ON ECOSYSTEM RESTORATION**

<b>KEY ACTIVITIES</b>	<b>ONE TO THREE YEARS</b>	<b>THREE TO SIX YEARS</b>
Step A. Assessment of opportunities for ecosystem restoration	Identify current restoration activities and initiatives and how they integrate biodiversity considerations. Identify significantly degraded ecosystems, and areas with the most restoration potential for achieving national biodiversity targets, in collaboration with stakeholders.	Ongoing assessments, including of the potential costs and the multiple benefits. Identify and secure resources for restoration. Identify options to reduce or eliminate drivers of biodiversity loss.
Step B. Improving the institutional enabling environment for ecosystem restoration	Assess targets, policies and strategies, incentive measures, spatial planning tools and processes, and consider the need for safeguard measures. Review legal, policy and financial frameworks to inform actions in step C.	Implement relevant tools, processes and measures. Evaluate adequacy of resources; seek and secure further resources as needed.
Step C. Planning and implementation of ecosystem restoration activities	Prioritize restoration opportunities based on step A and develop restoration plans with clear and measurable objectives. Prioritize most relevant tools, processes and measures for planning and implementation. Enhance existing restoration activities.	Implement restoration plans facilitated by actions in step B.
Step D. Monitoring, evaluation, feedback, and disseminating results	Share experiences from current activities and initiatives to support adaptive management and promote continuity.	Monitor results and report on lessons learned from activities in steps B and C to support adaptive management and improve outcomes of future restoration efforts.

**XX/13. Fifth edition of the *Global Biodiversity Outlook*, national reporting and indicators for assessing progress towards the Aichi Biodiversity Targets**

*The Subsidiary Body on Scientific, Technical and Technological Advice,*

*Recognizing* the importance of the scientific quality, completeness and transparency of national reporting to enable a credible global assessment of progress,

1. *Notes* that the guidelines for the preparation of the sixth national reports will be considered by the Subsidiary Body on Implementation at its first meeting, *welcomes* the draft resource manual for the sixth national reports, and *requests* the Executive Secretary to reflect the comments made during the twentieth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice when finalizing the resource manual;

2. *Requests* the Executive Secretary to continue to engage with the process under the United Nations Statistical Commission to develop indicators for the Sustainable Development Goals and to seek to align the proposed indicators with the work of the Convention;

3. *Also requests* the Executive Secretary, in consultation with the members of the Ad Hoc Technical Expert Group on Indicators for the Strategic Plan for Biodiversity 2011-2020 and partners of the Biodiversity Indicators Partnership, to update the list of indicators contained in the note by the Executive Secretary on the fifth edition of the *Global Biodiversity Outlook*, national reporting and indicators for assessing progress towards the Aichi Biodiversity Targets<sup>64</sup> in the light of the comments made during the twentieth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice applying the criteria contained in recommendation XIX/4, and to make the updated list of indicators available through the clearing-house mechanism of the Convention on Biological Diversity prior to the thirteenth meeting of the Conference of the Parties;

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

*The Conference of the Parties*

**Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services**

1. *Welcomes* the decision of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services at its fourth plenary meeting, in February 2016, to undertake a global assessment on biodiversity and ecosystem services, foreseen to be concluded by May 2019, and *re-emphasizes* the importance of this global assessment for analysing progress towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets;

2. *Also welcomes* the completion and acceptance of the methodological assessment of scenarios and models of biodiversity and ecosystem services by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, and the approval of the Summary for Policy Makers by the Plenary of the Platform, and *recognizes* the high relevance of this assessment for work under the Convention on Biological Diversity, and, in particular, the fifth edition of the *Global Biodiversity Outlook*;

3. *Encourages* Parties, and invites other Governments, relevant organizations, the scientific community, stakeholders and indigenous peoples and local communities to further develop and use scenarios and models to support decision-making and the evaluation of policies, and to contribute to the further development of scenarios and models as described by the Summary for Policymakers on models and scenarios of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services;

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<sup>64</sup> [UNEP/CBD/SBSTTA/20/13](#).

4. *Recognizes* the importance of matching scenarios to the needs of particular policy or decision contexts, including for exploring post-2020 policy scenarios, and to consider improving, and more widely applying, participatory and cross-scale scenario methods in order to enhance the relevance and use of regional, sectoral and thematic scenarios for biodiversity and ecosystem services;

5. *Encourages* Parties, and invites other Governments and relevant organizations, including funding organizations, to support efforts to develop human and technical capacity for scenario development and modelling needs and to promote open and transparent access to scenario and modelling tools, as well as the data required for their development and testing;

6. *Invites* the scientific community:

(a) To address key gaps in methods for modelling the impacts of drivers and policy interventions on biodiversity and ecosystem services that have been identified in the methodological assessment of scenarios and models of biodiversity and ecosystem services;

(b) To develop practical and effective approaches to evaluating and communicating levels of uncertainty associated with scenarios and models, as well as tools for applying those approaches to assessments and decision-making;

7. *Requests* the Executive Secretary and *invites* the secretariats of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services and the Intergovernmental Panel on Climate Change to foster further enhanced collaboration between the scientific communities related to the these bodies working on scenarios and models, as well as collaboration with communities working on biodiversity monitoring and data, and the policy community;

#### **Indicators**

8. *Recalls* decision XI/3 and paragraph 20(b) of decision XII/1;

9. *Takes note of* the report of the Ad Hoc Technical Expert Group on Indicators for the Strategic Plan for Biodiversity 2011-2020, and *expresses* its thanks to the European Union and the Governments of Switzerland and the United Kingdom of Great Britain and Northern Ireland for their financial support;

10. *Endorses* the updated list of indicators for the Strategic Plan for Biodiversity 2011-2020 contained in the annex to the present draft decision;<sup>65</sup>

11. *Notes* that the list of global indicators provides a framework for assessing progress towards the Aichi Biodiversity Targets at the global level;

12. *Emphasizes* that the list of indicators provides a flexible framework for Parties to adapt, as appropriate, to their national priorities and circumstances, and *decides* that the list of indicators should be kept under review, enabling, inter alia, the future incorporation of other relevant indicators;

13. *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 for Biodiversity;

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<sup>65</sup> Prepared in accordance with Subsidiary Body on Scientific, Technical and Technological Advice recommendation XX/13.

(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 aggregated or disaggregated 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;

14. *Encourages* Parties:

(a) To use a variety of approaches, according to national circumstances, in assessing progress towards national implementation of the Strategic Plan for Biodiversity 2011-2020, including quantitative indicators, expert opinion, stakeholder consultation and case studies, clearly documented in order to record uncertainty, contradictory evidence and gaps in knowledge to enable comparable assessments to be undertaken;

(b) To consider the use of a small subset of indicators from the global list that are identified as being available today, easy to communicate, and for which national data are available, including proposed indicators for the Sustainable Development Goals where relevant;

15. *Invites* biodiversity-related conventions as well as intergovernmental organizations and non-governmental organizations to make use of the list of global indicators and to contribute to the further development of the indicators, inter alia, through the Biodiversity Indicators Partnership;

16. *Emphasizes* the advantages of aligning the indicators for the Strategic Plan for Biodiversity 2011-2020 and those of the Sustainable Development Goals and other relevant processes, *notes* that shared indicators must be reviewed to determine the degree to which they are suitable for each use, and *stresses* the role of the Biodiversity Indicators Partnership in this regard;

17. *Notes* the report on National Indicators and Approaches to Monitor Progress towards the Aichi Biodiversity Targets;<sup>66</sup>

18. *Also notes* the potential role of the existing mechanism established by the Food and Agriculture Organization of the United Nations for reporting on the Code of Conduct for Responsible Fisheries in assessing progress towards Aichi Biodiversity Target 6, *welcomes* the report of the Expert Meeting on Improving Progress Reporting and Working Towards Implementation of Aichi Biodiversity Target 6<sup>67</sup> which includes a framework of actions and indicators to accelerate, monitor and report on progress towards the achievement of Aichi Biodiversity Target 6, *invites* Parties, other Governments, the Food and Agriculture Organization of the United Nations and regional fishery bodies to consider the results of this meeting, and *invites* the Food and Agriculture Organization of the United Nations, in collaboration with the Executive Secretary, to further develop this framework;

19. *Invites* the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services and, in particular, its Knowledge, Information and Data Task Force and its regional and global assessments to contribute to and make the best use of biodiversity indicators, including through the Biodiversity Indicators Partnership, for the regional and global assessments

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<sup>66</sup> [UNEP/CBD/SBSTTA/20/INF/34](#).

<sup>67</sup> [UNEP/CBD/SBSTTA/20/INF/27](#).



in order to maximize synergy, ensure relevance to policy and reduce the multiplicity of global indicators;

20. *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, including in the preparation of the fifth edition of the *Global Biodiversity Outlook*;

21. *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;

22. *Invites* data holders and institutions to improve the accessibility of data and documentation, to further enhance data generation and to work in close collaboration with research, observation and indicator communities to fill gaps in data collection and provision, including through community-based monitoring efforts and citizen science;

23. *Recalls* recommendation XIX/2 of the Subsidiary Body on Scientific, Technical and Technological Advice, and *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;<sup>68</sup>

24. *Recalls* decision XI/3, in which it recognized the need to strengthen technical and institutional capacities and to mobilize adequate financial resources for the development and application of indicators and monitoring systems, especially for developing country Parties, in particular the least developed countries, small island developing States and countries with economies in transition.

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<sup>68</sup> [Recommendation XIX/2](#), annex.

**XX/14. New and emerging issues**

*The Subsidiary Body on Scientific, Technical and Technological Advice,*

*Recalling* decision IX/29, in which it provided guidance on the procedure for the identification of new and emerging issues and on the review of proposals, in particular its paragraph 8, in which it requested the Executive Secretary to call for submissions of new and emerging issues following each meeting of the Conference of the Parties,

*Noting* the submissions made in response to the invitation to propose new and emerging issues,

*Underlining* the importance of universal membership in the Convention on Biological Diversity and the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization for the achievement of their objectives,

*Recommends* that the Conference of the Parties decide not to add a new and emerging issue to the agenda of the Subsidiary Body on Scientific, Technical and Technological Advice.

**XX/15. Mainstreaming of biodiversity across sectors including agriculture, forests, fisheries and aquaculture**

*The Subsidiary Body on Scientific, Technical and Technological Advice,*

*Recalling* its recommendation XIX/1, which includes elements related to mainstreaming,

*Aware* that the Subsidiary Body on Implementation at its first meeting will be discussing strategic action to enhance implementation of the Convention and the Strategic Plan for Biodiversity 2011-2020 with a focus on mainstreaming for biodiversity,

*Also aware* of the close linkages between mainstreaming in agriculture, forestry, fisheries and aquaculture sectors to the broader issues to be taken up by the Subsidiary Body on Implementation at its first meeting, and with a view to removing duplication, *requests* the Subsidiary Body on Implementation to collate the recommendations on mainstreaming from both subsidiary bodies and integrate them into a single document containing a single set of recommendations for consideration by the Conference of the Parties at its thirteenth meeting,

1. *Recognizes* that, in addition to agriculture, forestry, fisheries and aquaculture and tourism, other sectors, including energy, urban and regional planning, infrastructure, manufacturing industry and mining also impact biodiversity, and *recommends* that the Conference of the Parties at its thirteenth meeting consider addressing, at a subsequent meeting, the mainstreaming of biodiversity into these other sectors as well as addressing any further work on mainstreaming;

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

*The Conference of the Parties,*

*Recalling* Articles 6(b) and 10 of the Convention,

*Also recalling* paragraph 19 of United Nations General Assembly resolution 65/161 of the 2011-2020 United Nations Decade on Biodiversity and its contribution to the achievement of the Strategic Plan for Biodiversity 2011-2020,

*Further recalling* paragraph 7(c) of decision XII/1, in which Parties noted that the attainment of most of the Aichi Biodiversity Targets will require the implementation of a package of actions, typically including: legal or policy frameworks; socioeconomic incentives aligned with such frameworks; public and stakeholder engagement; monitoring; and enforcement; while ensuring the coherence of policies across sectors and corresponding government ministries,

*Recognizing* the following:

(a) The opportunities that arise from an integrated and mutually supportive implementation of the 2030 Agenda for Sustainable Development,<sup>69</sup> the Strategic Plan for Biodiversity 2011-2020,<sup>70</sup> the 10-year strategic plan and framework to enhance implementation of the United Nations Convention to Combat Desertification (2008-2018),<sup>71</sup> and the Reviewed Strategic Framework 2010-2019 of the Food and Agriculture Organization of the United Nations<sup>72</sup> for the achievement of internationally agreed goals and targets;

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<sup>69</sup> General Assembly resolution 70/1 of 25 September 2015 on “Transforming our world: the 2030 Agenda for Sustainable Development”, annex.

<sup>70</sup> Strategic Plan for Biodiversity 2011-2020, [Conference of the Parties decision X/2](#), annex.

<sup>71</sup> United Nations Convention to Combat Desertification, Conference of the Parties, eighth session, Madrid, 3-14 September 2007 (see [ICCD/COP\(8\)/16/Add.1](#), decision 3/COP.8).

<sup>72</sup> Conference of FAO, Thirty-eighth Session, Rome, 15-22 June 2013, C 2013/7.

(b) The role and relevance of the Cartagena Protocol on Biosafety and the Nagoya Protocol on Access and Benefit-sharing, as well as the International Treaty on Plant Genetic Resources for Food and Agriculture, in contributing to sustainable food systems and agriculture;

(c) That agriculture, forestry, fisheries and aquaculture depend heavily on biodiversity and its components, as well as on the ecosystem functions and services that they underpin, that these sectors also impact on biodiversity through various direct and indirect drivers, and that the consequent loss of biodiversity can impact these sectors negatively, potentially threatening food security and the provision of ecosystem functions and services that are vital to humanity;

*Recalling* decision V/6 and decision VII/11, in which it recommended that Parties and other Governments promote the application of the ecosystem approach in all sectors with potential impacts on biodiversity and ecosystems,

*Recognizing* that the mainstreaming of biodiversity across forests, agriculture, fisheries and aquaculture, among other sectors, is essential for halting the loss of biodiversity and achieving the Aichi Biodiversity Targets,

*Also recognizing* that the benefits from agriculture, forestry fisheries to biodiversity conservation can be significant beyond biodiversity for food and agriculture,

*Recalling* that relevant guidance in this regard is provided in the programmes of work under the Convention, in particular the programmes of work on agricultural biodiversity, forest biodiversity and marine and coastal biodiversity,

*Noting* the relevance of the Plan of Action on Customary Sustainable Use of Biological Diversity<sup>73</sup> in enabling indigenous peoples and local communities to further address biodiversity considerations in agriculture, forests, fisheries and aquaculture,

*Recognizing* that fundamental changes in consumption and production patterns to ensure sustainable production methods, as well as mutually supportive policy, legal, technical and financial measures in the agriculture, forests, fisheries and aquaculture among other sectors, are critical to meeting the 2030 Agenda for Sustainable Development,

*Further recognizing* that of Sustainable Development Goal 15, target 9, calls for integration of ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts,

*Also recognizing* that the ecosystem services generated in protected areas and other effective area-based conservation measures contribute to the productivity of many sectors, including agriculture, forests, fisheries and aquaculture, and that collaboration with these sectors is required in order to increase connectivity in protected area systems and to avoid or minimize potential adverse impacts of these sectors on protected areas,

*Taking into account* the report and the conclusions of the International Expert Workshop on Biodiversity Mainstreaming<sup>74</sup> held in Mexico City from 17 to 19 November 2015, and *expressing* appreciation to the Government of Mexico for hosting the workshop and Switzerland for its support,

1. *Urges* Parties, and *invites* other Governments to strengthen their efforts to mainstream conservation and sustainable use of biodiversity within and across various sectors, including agriculture, forestry, fisheries and aquaculture, at all levels and scales, including by

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<sup>73</sup> [Decision XII/12, annex.](#)

<sup>74</sup> [UNEP/CBD/SBSTTA/20/INF/52.](#)

involving relevant stakeholders and by taking into account relevant standards and best practice guidance related to biodiversity in these sectors;

2. *Encourages* Parties and *invites* other Governments, as appropriate:

(a) To reduce and reverse biodiversity loss, through the implementation, as appropriate, of sectoral and cross-sectoral strategies and integrated landscape and seascape management that foster sustainable practices, identify potential measures to contribute to the health and resilience of ecosystems and consider spatial and regional approaches as well as appropriate measures to promote the conservation and restoration of areas of particular importance for biodiversity and ecosystem services, habitats of threatened species, and recovery of endangered species;

(b) To engage with the public and private sectors to promote sustainable consumption, behavioural changes in production and consumption patterns, and to reduce resource waste at all stages of production and consumption in food systems, including through educational and public awareness campaigns;

25. (c) To create and strengthen cross-sectoral coordination mechanisms that enable biodiversity mainstreaming across agriculture, forestry, fisheries and aquaculture and other sectors, and to establish milestones for the mainstreaming of biodiversity in national agendas;

(d) To enhance monitoring of the use of natural resources, such as land, soil and water in all sectors, including agriculture, forests, fisheries and aquaculture, among others, and to improve public access to monitoring data;

[(e) To make use of voluntary certification schemes for sustainably produced goods and services, including in public procurement, as appropriate and in accordance with multilateral trade rules, and, together with relevant organizations, to promote the further development of certification schemes, encouraging that the three pillars of sustainable development be reflected in certification criteria, taking into account the specificities of developing countries;]

3. *Urges* Parties and *invites* other Governments to use, as appropriate, existing guidance relating to the Food and Agriculture Organization's Sustainability Assessment of Food and Agriculture Systems Guidelines and the Policy Support Guidelines for the Promotion of Sustainable Production Intensification and Ecosystem Services;<sup>75</sup> *takes note* of the voluntary guidance on Building a Common Vision for Sustainable Food and Agriculture,<sup>76</sup> and *encourages* Parties and *invites* other Governments to apply this guidance, as appropriate;

4. *Takes note* of the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security,<sup>77</sup> endorsed by the Committee on World Food Security and *encourages* Parties and *invites* other Governments to make use of this guidance, as appropriate, to promote secure tenure rights and equitable access to land, fisheries and forests;

5. *Takes note* also of the global plans of action adopted by the Commission on Genetic Resources for Food and Agriculture and endorsed by the Conference of the Food and Agriculture Organization of the United Nations on plant, animal and forest genetic resources;

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<sup>75</sup> Food and Agriculture Organization of the United Nations, *Integrated Crop Management, Vol.19-2013*.  
<http://www.fao.org/ag/ca/CA-Publications/ICM19.pdf>

<sup>76</sup> [UNEP/CBD/SBSTTA/20/INF/54](http://www.unep.org/cbd/sbstta/20/inf/54).

<sup>77</sup> Food and Agriculture Organization of the United Nations, 2012. Available at <http://www.fao.org/docrep/016/i2801e/i2801e.pdf>.

## Agriculture

6. *Recognizes* the importance of biodiversity to food security and nutrition and its role in human health and well-being, including through the production of food, fibers, biofuels, and medicinal plants, as well as through their contribution to ecosystem processes and mitigation and adaptation to climate change;

7. *Also recognizes* that agriculture depends on biodiversity, as well as on the ecosystem functions and services that it underpins, but also recognizes that some agricultural and rangeland management practices maintain habitats in a variety of agricultural areas that support biodiversity;

8. *Further recognizes* that there are currently many unsustainable agricultural practices that can have significant impacts on biodiversity and habitats;

9. *Recognizes* Sustainable Development Goal 2 which refers to ending hunger, achieving food security, and improving nutrition and promoting sustainable agriculture, and its targets 4 and 5, which refer to sustainable food production systems, and the maintenance of the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species;

10. *Recalls* that, in decision IX/1, it was agreed that the programme of work on agricultural biodiversity, including its three international initiatives on the conservation and sustainable use of pollinators, sustainable use of soil biodiversity and biodiversity for food and nutrition continues to provide a relevant framework for achieving the objectives of the Convention;

11. *Also recalls* that one of the conclusions of the fourth edition of the *Global Biodiversity Outlook*<sup>78</sup> and its supporting assessments that addressing the pressures on biodiversity resulting from food systems will be crucial in the success of the Strategic Plan for Biodiversity 2011–2020,<sup>79</sup> and that urgent action to achieve sustainable food systems is needed;

12. *Notes* that the growing demand for food and agricultural commodities will increase the pressures on biodiversity unless those pressures are appropriately addressed;

13. *Encourages* Parties to recognize the importance of the traditional knowledge of indigenous peoples and local communities for the sustainability of agriculture and to promote community and family farming, alongside agroecology, that is aligned with the world view (cosmovisión) of indigenous peoples and local communities, which upholds diversification and ecological rotation that promotes sustainable production and improving nutrition;

14. *[Encourages* Parties and *invites* other Governments to develop and/or enforce, as appropriate, clear legal frameworks for land use that secure conservation and sustainably use biodiversity and national habitats;]

15. *[Also encourages* Parties and *invites* other Governments to develop, as appropriate, policy frameworks for land use that reflect the national biodiversity objectives, that guide decision making at various scales and levels of governance to, inter alia, promote sustainable increases in the productivity [and diversification of production] of existing agricultural land and rangeland while enhancing ecosystem functions and services, including those services that contribute to agricultural production (such as pollination, pest control, water provision and erosion control), while also protecting, restoring and sustainably using biodiversity natural habitats and promoting connectivity in the landscape;]

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<sup>78</sup> <https://www.cbd.int/gbo4/>.

<sup>79</sup> [Decision X/2, annex.](#)

16. [*Encourages* Parties and *invites* other Governments to promote and support, as appropriate, the sustainable and ecological intensification and diversification of agriculture and agro-ecological approaches, including the enhanced use of a diverse range of well-adapted crops and livestock, and their varieties and breeds, and of associated biodiversity in agricultural systems, including pollinators, pest-control organisms and soil organisms that promote nutrient cycling, thereby reducing or replacing the need for chemical inputs;]

17. *Also encourages* Parties and *invites* other Governments, as appropriate to use an appropriate mix of regulatory and incentive measures aligned with national biodiversity objectives, including the elimination, phasing out and reform of incentives harmful to biodiversity in order, inter alia, to reduce habitat loss, degradation and fragmentation and to increase the efficiency of use of water, fertilizer and pesticides and to avoid their inappropriate use, and to encourage public and private sources of finance to be channelled into practices that improve the sustainability of production while reducing biodiversity loss, and to promote and support the restoration of ecosystems that provide essential services in a way that provides for the needs of indigenous peoples and local communities, does not cause harm to other ecosystems, and consistent with national legislation and international obligations;

18. *Further encourages* Parties and *invites* other Governments, to reduce loss and waste at all stages of production and consumption in the food system, including reducing post-harvest losses;

19. *Encourages* Parties and *invites* other Governments and stakeholders to promote lessons learned and best practices from various sectors, such as campaigns to reduce food waste, and promote sustainable consumption, production and supply chains;

20. *Also encourages* Parties and *invites* other Governments to maintain genetic diversity of resources for food and agriculture and their landraces and wild relatives as a key pathway to achieving sustainable productivity and nutritional gains, in particular in centres of genetic diversity;

21. *Further encourages* Parties and *invites* other Governments, as appropriate, to support agricultural development models that are consistent with the Reviewed Strategic Framework 2010-2019 of the Food and Agriculture Organization of the United Nations<sup>80</sup> and apply, as appropriate, the voluntary principles for responsible investment in agriculture and food systems approved by the Committee on World Food Security in October 2014,<sup>81</sup> noting in particular the importance of small-scale family farming, and pastoralism in view of its dominance in terms of food security and nutrition, poverty reduction, social equity in farming and biodiversity conservation efforts;

22. *Welcomes* the private sector initiatives to eliminate deforestation from the production of agricultural commodities and operations across their supply chains, *encourages* more companies to adopt and implement similar commitments, and *invites* Parties, as appropriate, to support these companies to achieve their initiatives;

23. *Welcomes* the assessment on pollinators, pollination and food production carried out by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services and *notes* the relevance of decision XIII/--.<sup>82</sup>

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<sup>80</sup> Conference of FAO, Thirty-eighth Session, Rome, 15-22 June 2013, C2013/7.

<sup>81</sup> <http://www.fao.org/3/a-ml291e.pdf>.

<sup>82</sup> As per Subsidiary Body recommendation XX/9 on the IPBES assessment on pollinators, pollination and food production.

24. *Notes* the preparation of the “TEEB for Agriculture and Food Interim Report”<sup>83</sup> and of the first “State of the World’s Biodiversity for Food and Agriculture” report by the Food and Agriculture Organization of the United Nations;

25. *Invites* the Food and Agriculture Organization of the United Nations, its Commission on Genetic Resources for Food and Agriculture and its Committee on Agriculture:

(a) To further support the development and implementation of measures, guidance and tools to promote the mainstreaming of biodiversity in the crop, livestock and food and nutrition sectors, with a view to supporting member countries in the transition to sustainable food and agricultural systems;

(b) To consider developing a global plan of action on the basis of the State of the World’s Biodiversity for Food and Agriculture report;

(c) To provide information on progress to relevant bodies under the Convention;

26. *Encourages* Parties and *invites* other Governments to implement the International Treaty on Plant Genetic Resources for Food and Agriculture and the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization, in a mutually supportive manner;

### **Forests**

27. *Recognizes* the role of forest biodiversity for the maintenance of ecosystem functions that contribute to sustainable development, poverty eradication and human well-being, including through the provision of food, feed, clean water, wood, fibre, fuel, medicine, recreation, as well as the mitigation and adaptation to climate change;

28. *Also recognizes* that there remain forests managed under practices that are not sustainable, with significant negative impacts on biodiversity and habitats;

29. *Further recognizes* Sustainable Development Goal 15 and its target 2 which refers to sustainable management of all types of forests, halting deforestation, restoring degraded forests and substantially increasing afforestation and reforestation;

30. *Notes* Economic and Social Council resolution 2015/33 on the international arrangement on forests beyond 2015, which emphasizes the economic, social and environmental contributions of all types of forests to the achievement of the 2030 Agenda for Sustainable Development, and in which the Council acknowledged the progress made by countries and stakeholders towards sustainable forest management, taking into account different visions, approaches, models and tools to achieve sustainable development;

31. *Also notes* United Nations General Assembly resolution 62/98, which describes sustainable forest management, and refers to its seven thematic elements, adopted by the United Nations Forum on Forests;

32. *Further notes* the elements of the Durban Declaration,<sup>84</sup> from the XIV World Forestry Congress, which promote the need for a deeper understanding of the integral role of biodiversity in forest ecosystem functioning;

33. *Notes* the Voluntary Guidelines for the Sustainable Management of Natural Tropical Forests, the 2009 ITTO/IUCN guidelines for the conservation and sustainable use of biodiversity in tropical timber production forests, as well as other relevant tools and guidelines

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<sup>83</sup> [UNEP/CBD/SBI/INF/18](http://www.unep.org/cbd/sbi/inf/18).

<sup>84</sup> [http://www.fao.org/fileadmin/user\\_upload/wfc2015/Documents/Durban\\_Declaration\\_1.pdf](http://www.fao.org/fileadmin/user_upload/wfc2015/Documents/Durban_Declaration_1.pdf).



prepared by member organizations of the Collaborative Partnership on Forests to operationalize sustainable forest management, ensuring the conservation and sustainable use of biodiversity;

34. *Encourages* Parties and *invites* other Governments to give due consideration to biodiversity when implementing actions set out in Article 5 of the Paris Agreement<sup>85</sup> of the United Nations Framework Convention on Climate Change;

35. *Also encourages* Parties and *invites* other Governments, as well as relevant stakeholders, including indigenous peoples and local communities, to make use of the United Nations forest instrument,<sup>86</sup> and to contribute to the preparation of the 2017-2030 Strategic Plan of the international arrangement on forests, under the United Nations Forum on Forests, ensuring that due consideration is given to biodiversity, with a view to promoting a coherent and coordinated approach to support the achievement of forest-related multilateral commitments and goals, including the Aichi Biodiversity Targets;

36. *Further encourages* Parties and *invites* other Governments to strengthen efforts to enhance the awareness of all stakeholders and their involvement in the development and implementation of policies and strategies for sustainable forest management, including on measures for the conservation, restoration and sustainable use of biodiversity, recognizing the importance of the practices of indigenous peoples and local communities and the role of natural regeneration in living systems;

37. *Encourages* Parties and *invites* other Governments to strengthen participation of indigenous peoples and local communities as part of a strategy for forest protection, sustainable use of biodiversity and the welfare and livelihoods of these communities;

38. *Also encourages* Parties and *invites* other Governments to create enabling conditions and incentivize the adoption of sustainable forest management practices in the forest sector, and *encourages* forest enterprises and forest owners to appropriately integrate sustainable use, conservation and restoration of biodiversity into the development and use of forest management plans, certification schemes or other voluntary mechanisms;

39. *Further encourages* Parties and *invites* other Governments to develop or enhance monitoring of the impacts of forest activities on biodiversity and to verify progress, through different monitoring methodologies, such as forest monitoring systems that demonstrate the integral health of forest ecosystems;

40. *Encourages* Parties and *invites* other Governments to strengthen their efforts to establish and maintain and/or develop well-managed and connected national or regional forest protected area networks, giving priority to existing ones, and, where appropriate, to apply spatial and land-use planning tools to identify areas of particular importance to the sustainable use and conservation of forest biodiversity, including in buffer zones;

41. *Invites* the Food and Agriculture Organization of the United Nations and its Committee on Forestry to further support the development and implementation of measures, guidance and tools to promote the mainstreaming of biodiversity in the forest sector and to consider, on a regular basis, ways and means to further enhance contributions to the Aichi Biodiversity Targets and relevant Sustainable Development Goals;

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<sup>85</sup> United Nations Framework Convention on Climate Change, Conference of the Parties, twenty-first session, decision 1/CP.21 (see FCCC/CP/2015/10/Add.1).

<sup>86</sup> See General Assembly resolution 70/199 of 22 December 2015.

### Fisheries and aquaculture

42. *Recognizes* that healthy marine, coastal and inland waters ecosystems and biodiversity are essential to achieving sustainable increases and improved resilience in the provision of food and livelihoods;

43. *Also recognizes* that there are currently a number of fisheries that are not sustainably managed and aquaculture operations and practices with significant negative impacts on biodiversity and habitats;

44. *Further recognizes* Sustainable Development Goal 14 and its targets 2, 4 and 6, which refer to sustainable management and restoration of marine ecosystems, to effective regulation of harvesting, and to prohibition of certain forms of perverse incentives in fisheries, respectively;

45. *Recalls* decision XI/18, *encourages* fisheries management organizations to further consider biodiversity-related matters in fisheries management in line with the ecosystem approach, including through inter-agency collaboration and with the full and meaningful participation of indigenous peoples and local communities;

46. *Also recalls* decisions X/29 and XI/18, in which it emphasized the importance of collaborating with the Food and Agriculture Organization of the United Nations, regional fisheries bodies and the regional seas conventions and action plans with regard to addressing biodiversity considerations in sustainable fisheries and aquaculture;

47. *Recognizes* that various relevant international instruments, including the United Nations Convention on the Law of the Sea,<sup>87</sup> the 1993 FAO Compliance Agreement,<sup>88</sup> the 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks,<sup>89</sup> with respect to their Contracting Parties, and the 1995 FAO Code of Conduct for Responsible Fisheries,<sup>90</sup> together with accompanying guidelines and plans of actions, represent, for their Contracting Parties, a comprehensive global framework for fisheries policy and management and support mainstreaming of biodiversity in fisheries and aquaculture;

48. *Encourages* Parties, and *invites* other Governments and relevant organizations to use available instruments to achieve Aichi Biodiversity Target 6;

49. *Recalls* paragraph 55 of decision X/29, *encourages* Parties and *invites* other Governments to ratify the FAO Agreement on Port States Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, adopted in 2009, which provides a means of addressing such fishing activities;

50. *Also recalls* decisions X/29, XI/17 and XII/22, and *calls for* further collaboration and information-sharing among the Secretariat of the Convention on Biological Diversity, the Food and Agriculture Organization of the United Nations, and regional fishery bodies regarding the use of scientific information on areas meeting the criteria for ecologically or biologically significant marine areas and vulnerable marine ecosystems in support of achieving various Aichi Biodiversity Targets;

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<sup>87</sup> United Nations, *Treaty Series*, vol. 1833, No. 31363.

<sup>88</sup> <http://www.fao.org/docrep/meeting/003/x3130m/X3130E00.htm>.

<sup>89</sup> United Nations, *Treaty Series*, vol. 2161, No. 37924.

<sup>90</sup> <http://www.fao.org/docrep/005/v9878e/v9878e00.htm>.

51. *Urges* Parties and *invites* other Governments to use, as appropriate, existing guidance related to the ecosystem approach to fisheries and aquaculture;

52. *Encourages* Parties and *invites* other Governments to improve synergies in managing pressures in marine and freshwater environments, including through the implementation of the Priority Actions to Achieve Aichi Biodiversity Target 10 for Coral Reefs and Closely Associated Ecosystems;<sup>91</sup>

53. *Urges* Parties and *invites* other Governments to establish, if necessary, or strengthen existing mechanisms of governance of fisheries, and take biodiversity considerations, in particular the precautionary approach, in line with the preamble of the Convention, fully into account when designing and implementing policies for fishing capacity management and reduction, including measures and regulations with a view to promoting the conservation and recovery of endangered species;

54. *Also urges* Parties and *invites* other Governments to provide access for small-scale artisanal fishers to marine resources and, if appropriate, markets;

55. *Encourages* competent intergovernmental organizations to further strengthen collaboration regarding marine biodiversity and fisheries;

56. *Welcomes* the ongoing cooperation between the Food and Agriculture Organization of the United Nations, the International Union for Conservation of Nature and the Executive Secretary, to improve reporting and support for the implementation of Aichi Biodiversity Target 6;

57. *Invites* the Food and Agriculture Organization of the United Nations and the Committee on Fisheries to consider and further support the development and implementation of measures, guidance and tools for promoting and supporting the mainstreaming of biodiversity in the fisheries and aquaculture sectors;

58. *Requests* the Executive Secretary and *invites* the Food and Agriculture Organization of the United Nations to compile, in collaboration, the experiences in mainstreaming biodiversity in fisheries, including through the ecosystem approach to fisheries, and make this compilation available prior to the Conference of the Parties at its fourteenth meeting;

#### **Further work**

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

(a) To strengthen collaboration with the Food and Agriculture Organization of the United Nations and other relevant partners in all areas relevant to the implementation of the present decision;

(b) To transmit the present decision for the attention of the Conference and Committees on Agriculture, Fisheries and Forestry and the Commission on Genetic Resources for Food and Agriculture of the Food and Agriculture Organization of the United Nations, the Committee on World Food Security, the United Nations Forum on Forests and other relevant bodies;

(c) To prepare and disseminate to Parties, in collaboration with the Food and Agriculture Organization of the United Nations and other relevant partners, further guidance on the concept of “sustainability” in food and agriculture with regard to biodiversity, and to promote and strengthen support for relevant information-sharing and technology transfer among Parties, in particular for developing countries, building on existing initiatives, where feasible, such as the

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<sup>91</sup> See [decision XII/23](#).

Satoyama Initiative, consistent with decisions X/32 and XI/25, and consistent with international obligations;

(d) To make existing guidance and tools relevant to addressing biodiversity considerations in relevant sectors, including agriculture, forestry, fisheries and aquaculture available through the clearing-house mechanism of the Convention;

(e) To develop, as appropriate and subject to the availability of resources, messaging approaches on biodiversity mainstreaming for specific target groups related to these sectors, as part of the delivery on the global communication strategy and messaging approaches as set out in decision XII/2;

60. *Invites* the Food and Agriculture Organization of the United Nations, in cooperation with other relevant partners, to support the implementation of the present draft decision;