



## Convention on Biological Diversity

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### CONFERENCE OF THE PARTIES TO THE CONVENTION ON BIOLOGICAL DIVERSITY

Fifteenth meeting – Part II  
Montreal, Canada, 7-19 December 2022  
Agenda item 9B

### DECISION ADOPTED BY THE CONFERENCE OF THE PARTIES TO THE CONVENTION ON BIOLOGICAL DIVERSITY

#### 15/5. Monitoring framework for the Kunming-Montreal Global Biodiversity Framework

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

1. *Adopts* the monitoring framework for the Kunming-Montreal Global Biodiversity Framework contained in annex I of the present decision;
2. *Decides* to use the period from 2011–2020, where data is available, as the reference period, unless otherwise indicated, for reporting and monitoring progress in the implementation of the Kunming-Montreal Global Biodiversity Framework, while noting that baselines, conditions and periods used to express desirable states or levels of ambition in goals and targets should, where relevant, take into account historical trends, current status, future scenarios of biodiversity and available information on the natural state;
3. *Also decides* to consider a review of the monitoring framework in order to finish its development at its sixteenth meeting, and thereafter keep the monitoring framework under review, as appropriate;
4. *Notes* the value of aligning national monitoring with the System of Environmental-Economic Accounting statistical standard in order to mainstream biodiversity in national statistical systems and to strengthen national monitoring systems and reporting as appropriate and according to their national priorities and circumstances;
5. *Encourages* Parties and invites other Governments, the Global Environment Facility, the Biodiversity Indicator Partnership, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services and other relevant organizations to support national, regional and global biodiversity monitoring systems, recognizing the need for enhanced international cooperation and capacity-building especially for developing countries;
6. *Invites* Parties and relevant organizations to support community-based monitoring and information systems and citizen science and their contributions to the implementation of the monitoring framework for the Kunming-Montreal Global Biodiversity Framework;
7. *Invites* the Statistical Commission, the Group on Earth Observations Biodiversity Observation Network, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, the Biodiversity Indicators Partnership and other relevant organizations to support the operationalization of the monitoring framework for the Kunming-Montreal Global Biodiversity Framework;

8. *Decides* to establish an ad hoc technical expert group, with a time-bound mandate until the sixteenth meeting of the Conference of the Parties, to advise on the further operationalization of the monitoring framework for the Kunming-Montreal Global Biodiversity Framework in accordance with the terms of reference contained in annex II to the present decision;

9. *Requests* the Subsidiary Body on Scientific, Technical and Technological Advice to review the outcomes of the Ad Hoc Technical Expert Group on Indicators established pursuant to paragraph 8 above, to complete the scientific and technical review of the monitoring framework and to report its findings for subsequent consideration by the Subsidiary Body on Implementation and by the Conference of the Parties at its sixteenth meeting;

10. *Decides* to consider the requirements for further work to fully implement and review the effectiveness of the monitoring framework for the Kunming-Montreal Global Biodiversity Framework at its sixteenth meeting;

11. *Requests* the Executive Secretary, in collaboration with the Ad Hoc Technical Expert Group on Indicators, and subject to the availability of resources, to convene moderated online discussions on the monitoring framework;

12. *Invites* the Ad Hoc Open-ended Working Group on Article 8(j) and Related Provisions to continue the development and operationalization of indicators related to traditional knowledge and indigenous peoples and local communities, and to report on this work to the Conference of the Parties;

13. *Request* the Secretariat to make information available on the progress and outcomes of this work to the Ad Hoc Technical Expert Group on Indicators;

14. *Requests* the Executive Secretary, subject to the availability of resources and in collaboration with relevant partners:

(a) To facilitate the development of guidance on the development of regional and national monitoring systems and on the implementation of the monitoring framework, including on capacity-building and development to support its implementation, taking into account the special needs, circumstances and priorities of developing countries, including the least developed countries, small island developing States, and countries with economies in transition, also taking into consideration the special situation of developing countries, including those that are most environmentally vulnerable, such as those with arid and semi-arid zones, coastal and mountainous area, in compiling and using the headline indicators, and component and complementary indicators when relevant, including in their national reports, national biodiversity strategies and action plans and other national planning processes;

(b) To facilitate the use of relevant tools, including the Data Reporting Tool (DaRT), to facilitate national reporting and the sharing of information between multilateral environment agreements;

15. *Invites* the Global Partnership on Plant Conservation, with the support of the Secretariat and subject to the availability of resources, to prepare a set of complementary actions related to plant conservation to support the implementation of the Kunming-Montreal Global Biodiversity Framework and other relevant decisions adopted at the fifteenth meeting of the Conference of the Parties, aligned with the Kunming-Montreal Global Biodiversity Framework and also based on previous experiences with the implementation of the Global Strategy for Plant Conservation as described in the fifth edition of the *Global Biodiversity Outlook*<sup>1</sup> and the 2020 Plant Conservation Report,<sup>2</sup> for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice.

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<sup>1</sup> Secretariat of the Convention on Biological Diversity (2020). *Global Biodiversity Outlook 5*. Montreal.

<sup>2</sup> Sharrock, S. (2020). *Plant conservation report 2020: A review of progress towards the Global Strategy for Plant Conservation 2011-2020*. Secretariat of the Convention on Biological Diversity, Montréal, Canada and Botanic Gardens Conservation International, Richmond, UK. Technical Series No. 95.

*Annex I*

**MONITORING FRAMEWORK FOR THE KUNMING-MONTREAL GLOBAL BIODIVERSITY  
FRAMEWORK**

1. The monitoring framework is composed of the following groups of indicators for monitoring the implementation of the Kunming-Montreal Global Biodiversity Framework:

(a) Headline indicators (contained in table 1): a minimum set of high-level indicators, which capture the overall scope of the goals and targets of the Kunming-Montreal Global Biodiversity Framework to be used for planning and tracking progress as set out in decision 15/6. They are nationally, regionally and globally relevant indicators validated by Parties. These indicators can also be used for communication purposes;

(b) Global level indicators collated from binary yes/no responses in national reports. They are global indicators based on responses to yes/no questions to be included in the national reporting template. They will provide a count of the number of countries having undertaken specified activities;<sup>3</sup>

(c) Component indicators (contained in table 2): a list of optional indicators that, together with the headline indicators, cover components of the goals and targets of the Kunming-Montreal Global Biodiversity Framework which may apply at the global, regional, national and subnational levels;

(d) Complementary indicators (contained in table 2): a list of optional indicators for thematic or in-depth analysis of each goal and target which may be applicable at global, regional, national, and subnational levels;

(e) The monitoring framework may be supplemented by additional national and subnational indicators.

2. The indicators in the monitoring framework for the Kunming-Montreal Global Biodiversity Framework meet, or will be able to meet by 2025, the following criteria:

(a) The data and metadata related to the indicator are publicly available;

(b) The methodology underpinning the indicator is either published in a peer-reviewed academic journal or has gone through a scientific peer-review process and has been validated for national use;

(c) The data sources and indicators are compiled and regularly updated with a time lag of less than five years between updates, if possible;

(d) There is an existing mechanism for maintaining the indicator methodology and/or data generation, including, for example, by a member of the Biodiversity Indicators Partnership, an intergovernmental organization or a well-established scientific or research institution, providing nationally applicable guidance on the use of the indicator;

(e) Indicators are able to detect trends relevant to the components of the goals and targets of the Kunming-Montreal Global Biodiversity Framework;

(f) When possible, indicators are aligned with existing intergovernmental processes under the Statistical Commission, such as the Sustainable Development Goals, the Framework for the Development of Environment Statistics or the System of Environmental-Economic Accounting or utilize the existing work on essential biodiversity variables under the Group on Earth Observations Biodiversity Observation Network.

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<sup>3</sup> Binary indicators will be further developed by the Ad Hoc Technical Expert Group on Indicators for the Kunming-Montreal Global Biodiversity Framework (see table 1 in annex II to the present decision) and made available for consideration by the Conference of the Parties at its sixteenth meeting.

3. Headline indicators use methodologies agreed by Parties and are calculated at a national level based on national data from national monitoring networks and national sources, recognizing that in some cases headline indicators may need to draw on global datasets. If national indicators are not available, then the use of global indicators at a national level must be validated through appropriate national mechanisms. Headline indicators allow for consistent, standardized and scalable tracking of global goals and targets.

4. To facilitate the compilation and use of these headline, component and complementary indicators at the national level, enabled by effective national biodiversity monitoring systems and other information systems, capacity-building and development activities, technology and other support will be required. The Secretariat, together with organizations identified in the indicator metadata sheets as data providers, are invited to provide guidelines and information for the design or improvement and implementation of national monitoring systems to support the collection of data and the calculation of headline indicators. In this way, Parties will be able to effectively use the headline indicators, as well as component and complementary indicators, supported by adequate means of implementation, including capacity-building and development and technical and scientific cooperation to fill monitoring gaps, especially for developing countries.

5. In order to maximize uptake and minimize the reporting burden, the list of headline indicators comprises a small number of indicators which are intended to capture the overall scope of a goal or target in the Kunming-Montreal Global Biodiversity Framework. The headline indicators may not capture all components of a goal or a target but for analytical purposes can be complemented, as appropriate, with the component and complementary indicators.

**Table 1. Headline indicators for the Kunming-Montreal Global Biodiversity Framework**

<b>A. Goal/ Target<sup>4</sup></b>	<b>Headline indicators<sup>5</sup></b>
A	A.1 Red List of Ecosystems A.2 Extent of natural ecosystems A.3 Red List Index A.4 The proportion of populations within species with an effective population size > 500
B <sup>b</sup>	B.1 Services provided by ecosystems*
C <sup>b</sup>	C.1 Indicator on monetary benefits received* C.2 Indicator on non-monetary benefits*
D	D.1 International public funding, including official development assistance (ODA) for conservation and sustainable use of biodiversity and ecosystems D.2 Domestic public funding on conservation and sustainable use of biodiversity and ecosystems D.3 Private funding (domestic and international) on conservation and sustainable use of biodiversity and ecosystems*
1 <sup>b</sup>	A.1 Red List of Ecosystems A.2 Extent of natural ecosystems 1.1 Percentage of land and sea area covered by biodiversity-inclusive spatial plans*
2	2.2 Area under restoration*

<sup>4</sup> For goals or targets marked with <sup>b</sup>: a binary indicator was proposed for inclusion for this goal or target and will be further considered by the Ad Hoc Technical Expert Group.

<sup>5</sup> Indicators marked with an asterisk (\*): an agreed up-to-date methodology does not exist for this indicator. The Ad Hoc Technical Expert Group will work with partners to guide the development of these indicators.

<b>A. Goal/ Target<sup>4</sup></b>	<b>Headline indicators<sup>5</sup></b>
3	3.1 Coverage of protected areas and other effective area-based conservation measures
4	A.3 Red list Index A.4 The proportion of populations within species with an effective population size > 500
5	5.1 Proportion of fish stocks within biologically sustainable levels
6 <sup>b</sup>	6.1 Rate of invasive alien species establishment
7	7.1 Index of coastal eutrophication potential 7.2 Pesticide environment concentration*
8 <sup>b</sup>	-
9 <sup>b</sup>	9.1 Benefits from the sustainable use of wild species* 9.2 Percentage of the population in traditional occupations*
10	10.1 Proportion of agricultural area under productive and sustainable agriculture 10.2 Progress towards sustainable forest management
11	B.1 Services provided by ecosystems*
12 <sup>b</sup>	12.1 Average share of the built-up area of cities that is green/blue space for public use for all
13 <sup>b</sup>	C.1 Indicator on monetary benefits received* C.2 Indicator on non-monetary benefits*
14 <sup>b</sup>	-
15 <sup>b</sup>	15.1 Number of companies reporting on disclosures of risks, dependencies and impacts on biodiversity*
16 <sup>b</sup>	-
17 <sup>b</sup>	-
18	18.1 Positive incentives in place to promote biodiversity conservation and sustainable use 18.2 Value of subsidies and other incentives harmful to biodiversity that have been eliminated, phased out or reformed
19	D.1 International public funding, including official development assistance (ODA) for conservation and sustainable use of biodiversity and ecosystems D.2 Domestic public funding on conservation and sustainable use of biodiversity and ecosystems D.3 Private funding (domestic and international) on conservation and sustainable use of biodiversity and ecosystems*
20	-
21	21.1 Indicator on biodiversity information for monitoring the Kunming-Montreal Global Biodiversity Framework
22 <sup>b</sup>	-
23 <sup>b</sup>	-

**Table 2. Proposed indicators for the Kunming-Montreal Global Biodiversity Framework**

<b>Goal/ Target</b>	<b>Headline indicator</b>	<b>Component indicator</b>	<b>Complementary indicator</b>
A	A.1 Red List of Ecosystems A.2 Extent of natural ecosystems A.3 Red List Index A.4 The proportion of populations within species with an effective population size > 500	Ecosystem Intactness Index Ecosystem Integrity Index Species Habitat Index Biodiversity Habitat Index Protected Connected (Protconn) index Parc connectedness EDGE Living Planet Index Change in the extent of water-related ecosystems over time	Forest area as a proportion of total land area Forest distribution Tree cover loss Grassland and savannah extent Mountain Green Cover Index Peatland extent and condition Permafrost thickness, depth and extent Continuous global mangrove forest cover Trends in mangrove forest fragmentation Trends in mangrove extent Live coral cover Hard coral cover and composition Global coral reef extent Global seagrass extent (Seagrass Cover and composition) Global saltmarsh extent Kelp canopy extent Macroalgal canopy cover and composition Cover of key benthic groups Fleshy algae cover Wetland Extent Trends Index Change in the extent of inland water ecosystems over time Forest Fragmentation Index Forest Landscape Integrity Index Biomass of selected natural ecosystems

Goal/ Target	Headline indicator	Component indicator	Complementary indicator
			<p>Biodiversity Habitat Index</p> <p>Global Vegetation Health Products</p> <p>Bioclimatic Ecosystem Resilience Index (BERI)</p> <p>Relative magnitude of fragmentation (RMF)</p> <p>Ecosystem Intactness Index</p> <p>Biodiversity Intactness Index</p> <p>Ocean Health Index</p> <p>Extent of physical damage indicator to predominant seafloor habitats physical damage</p> <p>Wetland Extent Trends Index</p> <p>River Fragmentation Index</p> <p>Dendritic Connectivity Index</p> <p>Percentage of threatened species that are improving in status according to the Red List</p> <p>Number of threatened species by species group</p> <p>Wild bird index</p> <p>Mean Species Abundance (MSA)</p> <p>Species Protection Index</p> <p>Changes in plankton biomass and abundance</p> <p>Fish abundance and biomass</p> <p>Genetic scorecard for wild species</p> <p>Species richness/Changes in local terrestrial diversity (PREDICTS)</p> <p>Marine species richness</p> <p>Comprehensiveness of conservation of socioeconomically as well as culturally valuable species</p>

Goal/ Target	Headline indicator	Component indicator	Complementary indicator
			<p>Number of plant and animal genetic resources for food and agriculture secured in either medium- or long-term conservation facilities</p> <p>Proportion of local breeds classified as being at risk of extinction</p> <p>Red List Index (wild relatives of domesticated animals)</p> <p>CMS Connectivity Indicator</p> <p>Species Status Index</p> <p>Intact Wilderness</p> <p>Expected Loss of Phylogenetic diversity</p> <p>Proportion of populations maintained within species</p> <p>Free flowing rivers</p>
B <sup>b</sup>	B.1 Services provided by ecosystems*	<p>Red List Index (for utilized species)</p> <p>Living Planet Index (for used species)</p>	<p>Levels of poverty in biodiversity dependent communities</p> <p>Ecological footprint</p> <p>Number of certified forest areas under sustainable management with verified impacts on biodiversity conservation</p> <p>Expected loss of phylogenetic diversity</p> <p>Red List Index (pollinating species)</p> <p>Green status index (pollinators)</p> <p>Air quality index</p> <p>Air pollution emissions account</p> <p>Zoonotic disease in wildlife</p> <p>Climatic impact index</p> <p>Ocean acidification</p> <p>Level of water stress: freshwater withdrawal as a proportion of available freshwater resources</p>

Goal/ Target	Headline indicator	Component indicator	Complementary indicator
			<p>Proportion of bodies of water with good ambient water quality</p> <p>Eflow index</p> <p>Change in the quality of inland water ecosystems over time</p> <p>Change in the quality of coastal water ecosystems over time</p> <p>Level of erosion</p> <p>Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population</p> <p>Intact wilderness</p> <p>Biofuel production</p> <p>Maximum fish catch potential</p> <p>Population involved in hunting and gathering</p> <p>Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale</p> <p>Forestry Production &amp; Trade (Wood Fuel)</p> <p>Trends in the legal trade of medicinal plants</p> <p>Visitor management assessment</p> <p>Number of formal and nonformal education programmes transmitting spiritual and cultural values in the UNESCO World Network of Biosphere Reserves</p> <p>Number of mixed sites (having both natural and cultural Outstanding Universal Values), cultural landscapes (recognized as combined works of nature and people) and natural sites with cultural values including those supporting local and indigenous knowledge and practices</p>

Goal/ Target	Headline indicator	Component indicator	Complementary indicator
			<p>inscribed on the UNESCO World Heritage List and UNESCO World Network of Biosphere Reserves</p> <p>Index of Linguistic Diversity - Trends of Bilingual diversity and numbers of speakers of indigenous languages</p> <p>Index of development of the standard-setting framework for the protection and promotion of culture, cultural rights and cultural diversity</p> <p>Cultural vitality index</p> <p>UNESCO Culture 2030 (multiple indicators)</p> <p>Processes and tools to monitor the implementation of a right to a healthy environment (e.g. included in NBSAPs and reported in national reports)</p> <p>Red List Index (for internationally traded species)</p>
C <sup>b</sup>	<p>C.1 Indicator on monetary benefits received*</p> <p>C.2 Indicator on non-monetary benefits*</p>		<p>Number of users that have provided information relevant to the utilization of genetic resources to designated checkpoints</p> <p>Total number of internationally recognized certificates published in the ABS Clearing-House</p> <p>Number of checkpoint communiqués published in the ABS Clearing-House</p> <p>Number of internationally recognized certificates of compliance for non-commercial purposes</p> <p>Integration of biodiversity into national accounting and reporting systems, defined as implementation of the System of Environmental-Economic Accounting</p>
D	<p>D.1 International public funding, including official development assistance (ODA) for</p>		<p>Finance mobilized for capacity-building</p>

Goal/ Target	Headline indicator	Component indicator	Complementary indicator
	<p>conservation and sustainable use of biodiversity and ecosystems</p> <p>D.2 Domestic public funding on conservation and sustainable use of biodiversity and ecosystems</p> <p>D.3 Private funding (domestic and international) on conservation and sustainable use of biodiversity and ecosystems*</p>		<p>Financial and technical assistance provided in dollars (including through South-South, North-South and triangular cooperation)</p> <p>Finance mobilized for promoting the development, transfer, dissemination and diffusion of technology</p> <p>Number of scientists per population</p> <p>Joint scientific papers published (in Ocean Biodiversity Information System (OBIS)) by sector</p> <p>Nationally maintained research vessels</p> <p>Proportion of total research budget allocated to research in the field of marine technology</p> <p>Volume of official development assistance flows for scholarships by sector and type of study</p> <p>Global imports of information and communication technology (ICT) goods as presented by bilateral trade flows by ICT goods categories</p> <p>Total amount of funding for developing countries to promote the development, transfer, dissemination and diffusion of environmentally sound technologies</p>
1 <sup>b</sup>	<p>A.1 Red List of Ecosystems</p> <p>A.2 Extent of natural ecosystems</p> <p>1.1 Percent of land and sea area covered by biodiversity-inclusive spatial plans*</p>	<p>Priority retention of intact / wilderness areas</p>	<p>Number of countries using natural capital accounts in planning processes</p> <p>Percentage of spatial plans utilizing information on key biodiversity areas</p> <p>Habitat patches located within marine protected areas or integrated coastal zone management (ICZM)</p> <p>Other spatial management plans (not captured as ICZM or marine spatial planning)</p> <p>Number of countries using ocean accounts in planning processes</p>

Goal/ Target	Headline indicator	Component indicator	Complementary indicator
			Proportion of transboundary basin area with an operational arrangement for water cooperation Percent of total land area that is under cultivation Extent of natural ecosystems by type Number of countries implementing national legislation, policies or other measures regarding FPIC related to conservation Ecosystem Integrity Index
2	2.2 Area under restoration	Extent of natural ecosystems by type  Maintenance and restoration of connectivity of natural ecosystems	Habitat distributional range Index of Species Rarity Sites, High Biodiversity Areas, Large Mammal Landscapes, Intact Wilderness and Climate Stabilization Areas Increase in secondary natural forest cover Annual tropical primary tree cover loss Forest Landscape Integrity Index Global Ecosystem Restoration Index Free flowing rivers Percentage of cropped landscapes with at least 10 per cent of natural land Bioclimatic Ecosystem Resilience Index (BERI) Priority retention of intact / wilderness areas Status of key biodiversity areas Biodiversity Habitat Index Red List Index Red List of Ecosystems Living Planet Index Species habitat Index

Goal/ Target	Headline indicator	Component indicator	Complementary indicator
3	3.1 Coverage of protected areas and other effective area-based conservation measures	<p>Protected area coverage of key biodiversity areas</p> <p>Protected Area Management Effectiveness (PAME)</p> <p>ProtConn</p> <p>Protected Area Connectedness Index (PARC-Connectedness)</p> <p>Red List of Ecosystems</p> <p>Connectivity Indicator</p> <p>The number of protected areas that have completed a site-level assessment of governance and equity (SAGE)</p> <p>Species Protection Index</p>	<p>Protected area downgrading, downsizing and degazettement (PD)</p> <p>Status of key biodiversity areas</p> <p>IUCN Green List of Protected and Conserved Areas</p> <p>Number of hectares of UNESCO designated sites (natural and mixed World Heritage sites and Biosphere Reserves)</p> <p>Protected area and other effective area-based conservation measures management effectiveness (MEPCA) indicator</p> <p>Protected Area Isolation Index (PAI)</p> <p>Protected Areas Network metric (ProNet)</p> <p>Extent to which protected areas and other effective area-based conservation measures cover key biodiversity areas that are important for migratory species</p> <p>Coverage of protected areas and other effective area-based conservation measures and traditional territories (by governance type)</p> <p>Ramsar Management Effectiveness Tracking Tool (R-METT)</p> <p>Percentage of biosphere reserves that have a positive conservation outcome and effective management</p> <p>Extent of indigenous peoples and local communities' lands that have some form of recognition</p> <p>Species Protection Index</p> <p>Number of countries implementing national legislation, policies or other measures regarding free, prior and informed consent related to conservation</p> <p>Red List of Ecosystems</p>

Goal/ Target	Headline indicator	Component indicator	Complementary indicator
			Proportion of terrestrial, freshwater and marine ecological regions which are conserved by protected areas or other effective area-based conservation measures
4	A.3 Red list Index A.4 The proportion of populations within species with an effective population size > 500	Living Planet Index Number of plant and animal genetic resources secured in medium or long-term conservation facilities Trends in effective and sustainable management of human-wildlife conflict and coexistence Green Status of Species Index Conservation status of species listed in the CITES Appendices has stabilized or improved	Species threat abatement and restoration metric Changing status of evolutionary distinct and globally endangered species (EDGE Index) Percentage of threatened species that are improving in status Number of CMS daughter agreements Proportion of local breeds classified as being at risk of extinction Red List Index (wild relatives of domesticated animals) Rate of invasive alien species establishment
5	5.1 Proportion of fish stocks within biologically sustainable levels	Red List Index for used species Living Planet Index for used species Sustainable use of wild species	Sustainable watershed and inland fisheries index Red List Index (for internationally traded species and for migratory species) Marine Stewardship Council Fish catch Total catch of cetaceans under the International Convention for the Regulation of Whaling By-catch of vulnerable and non-target species Degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing Proportion of legal and illegal wildlife trade consisting of species threatened with extinction Illegal trade by CITES species classification

Goal/ Target	Headline indicator	Component indicator	Complementary indicator
			<p>Number of countries incorporating trade in their national biodiversity policy</p> <p>Proportion of terrestrial, freshwater and marine ecological regions which are conserved by protected areas or other effective area-based conservation measures</p> <p>Implementation of measures designed to minimize the impacts of fisheries and hunting on migratory species and their habitats</p> <p>Number of MSC Chain of Custody Certification holders by distribution country</p> <p>Trends of trade and commercialization in biodiversity-based products that is sustainable and legal (in line with BioTrade Principles and/or CITES requirements)</p>
6 <sup>b</sup>	6.1 Rate of invasive alien species establishment	<p>Rate of invasive species impact and rate of impact</p> <p>Rate of invasive alien species spread</p> <p>Number of invasive alien species introduction events</p>	<p>Number of invasive alien species in national lists as per the Global Register of Introduced and Invasive Species</p> <p>Trends in abundance, temporal occurrence, and spatial distribution of non-indigenous species, particularly invasive, non-indigenous species, notably in risk areas (in relation to the main vectors and pathways of spreading of such species)</p> <p>Red List Index (impacts of invasive alien species)</p>
7	<p>7.1 Index of coastal eutrophication potential</p> <p>7.2 Pesticide environment concentration*</p>	<p>Fertilizer use</p> <p>Proportion of domestic and industrial wastewater flow safely treated</p> <p>Floating plastic debris density (by micro and macro plastics)</p> <p>Red List Index (impact of pollution)</p>	<p>Trends in loss of reactive nitrogen to the environment.</p> <p>Trends in nitrogen deposition</p> <p>Municipal solid waste collected and managed</p> <p>Hazardous waste generation</p> <p>Trends in the amount of litter, including microplastics, in the water column and on the seafloor</p> <p>Index of coastal eutrophication;</p> <p>Plastic debris density</p>

Goal/ Target	Headline indicator	Component indicator	Complementary indicator
			Red List of Ecosystems Underwater noise pollution Name, amount/ volume/ concentration of highly hazardous pesticides by type (per land/marine area) Pesticide use per area of cropland
8 <sup>b</sup>	-	Total climate regulation services provided by ecosystems and by ecosystem type (System of Environmental Economic Accounts) Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015–2030 which include biodiversity National greenhouse inventories from land use and land-use change BERI	Above-ground biomass stock in forest (tonnes/ha) National greenhouse inventories from land use and land-use change Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies Number of least developed countries and small island developing States with nationally determined contributions, long-term strategies, national adaptation plans, strategies as reported in adaptation communications and national communications Index of coastal eutrophication Carbon stocks and annual net greenhouse gas emissions, by land-use category, split by natural and non-natural land cover
9 <sup>b</sup>	9.1 Benefits from the sustainable use of wild species 9.2 Percentage of the population in traditional occupations	Number of people using wild resources for energy, food or culture (including firewood collection, hunting and fishing, gathering, medicinal use, craft making, etc.) Red List Index (species used for food and medicine) Living Planet Index for used species	Proportion of fish stocks within biologically sustainable levels Degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing Number of MSC Chain of Custody Certification holders by distribution country Spawning stock biomass (related to commercially exploited species)

Goal/ Target	Headline indicator	Component indicator	Complementary indicator
			<p>Number of plant and animal genetic resources for food and agriculture secured in medium- or long-term conservation facilities</p> <p>Volume of production per labour unit by classes of farming/pastoral/ forestry enterprise size</p>
10	<p>10.1 Proportion of agricultural area under productive and sustainable agriculture</p> <p>10.2 Progress towards sustainable forest management</p>	<p>Area of forest under sustainable management: total forest management certification by the Forest Stewardship Council and the Programme for the Endorsement of Forest Certification</p> <p>Average income of small-scale food producers, by sex and indigenous status</p>	<p>Agrobiodiversity Index</p> <p>Changes in soil organic carbon stocks</p> <p>Red List Index (wild relatives of domesticated animals)</p> <p>Red List Index (pollinating species)</p> <p>Proportion of local breeds classified as being at risk of extinction</p> <p>Proportion of land that is degraded over total land area</p>
11	B.1 Services provided by ecosystems*	<p>Number of deaths, missing persons and directly affected persons, attributed to disasters per 100,000 population</p> <p>Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services</p> <p>Annual mean levels of fine particulate matter (e.g., PM2.5 and PM10) in cities</p> <p>Proportion of bodies of water with good ambient water quality</p> <p>Level of water stress</p>	<p>Air emission accounts</p> <p>Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management</p> <p>Proportion of population using safely managed drinking water services</p> <p>Mortality rate attributed to household and ambient air pollution (SDG indicator 3.9.1)</p>

Goal/ Target	Headline indicator	Component indicator	Complementary indicator
12 <sup>b</sup>	12.1 Average share of the built-up area of cities that is green/blue space for public use for all	Recreation and cultural ecosystem services provided	
13 <sup>b</sup>	C.1 Indicator on monetary benefits received C.2 Indicator on non-monetary benefits	Number of permits or their equivalents for genetic resources (including those related to traditional knowledge) by type of permit	<p>Total number of transfers of crop material from the Multilateral System of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) received in a country</p> <p>Total number of permits, or their equivalent, granted for access to genetic resources</p> <p>Total number of internationally recognized certificates of compliance published in the ABS Clearing-House</p> <p>Number of countries that require prior informed consent that have published legislative, administrative or policy measures on access and benefit-sharing in the ABS Clearing-House</p> <p>Number of countries that require prior informed consent that have published information on access and benefit-sharing procedures in the ABS Clearing-House</p> <p>Number of countries that have adopted legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits</p> <p>Estimated percentage of monetary and non-monetary benefits directed towards conservation and sustainable use of biodiversity</p>
14 <sup>b</sup>	-	Number of countries with Implementation of the System of Environmental-Economic Accounting	<p>Human Appropriation of Net Primary Production (HANPP)</p> <p>CO2 emission per unit of value added</p> <p>Change in water-use efficiency over time</p>

Goal/ Target	Headline indicator	Component indicator	Complementary indicator
15 <sup>b</sup>	15.1 Number of companies reporting on disclosures of risks, dependencies and impacts on biodiversity*	Indicator based on the Task Force for Nature-related Financial Disclosures	Species threat abatement and restoration metric Number of companies publishing sustainability reports
16 <sup>b</sup>	-	Food waste Index Material footprint per capita Global environmental impacts of consumption Ecological footprint	Extent to which (a) global citizenship education and (b) education for sustainable development, including gender equality and human rights, are mainstreamed at all levels in: (i) national education policies; (ii) curricula; (iii) teacher education; and (iv) student assessments Recycling rate Life cycle Impact assessment (LCIA) e.g. LIME; Life-cycle impact assessment method based on endpoint modelling Levels of poverty in developing communities
17 <sup>b</sup>	-		Number of countries that have the necessary biosafety legal and administrative measures in place Number of countries that implement their biosafety measures Number of countries that have the necessary measures and means for detection and identification of products of biotechnology Number of countries that carry out scientifically sound risk assessments to support biosafety decision-making Number of countries that establish and implement risk management measures Percentage of Parties to the Cartagena Protocol on Biosafety implementing the relevant provisions of the Protocol

Goal/ Target	Headline indicator	Component indicator	Complementary indicator
			<p>Number of countries with legal and technical measures for restoration and compensation</p> <p>Percentage of Parties to the Nagoya – Kuala Lumpur Supplementary Protocol on Liability and Redress</p> <p>Percentage of countries with systems in place for restoration and compensation of damage to conservation and sustainable use of biological diversity</p> <p>Number of countries that establish and implement risk management measures</p> <p>Number of countries with mechanisms to facilitate the sharing of and access to information on potential adverse impacts of biotechnology on biodiversity and human health</p>
18	<p>18.1 Positive incentives in place to promote biodiversity conservation and sustainable use</p> <p>18.2 Value of subsidies and other incentives harmful to biodiversity that have been eliminated, phased out or reformed</p>	Value of subsidies and other incentives harmful to biodiversity, that are redirected, repurposed or eliminated	<p>Number of countries with biodiversity-relevant taxes</p> <p>Number of countries with biodiversity-relevant charges and fees</p> <p>Number of countries with biodiversity-relevant tradable permit schemes</p> <p>Trends in potentially environmentally harmful elements of government support to agriculture (producer support estimate)</p> <p>Trends in the number and value of government fossil fuel support measures</p> <p>Amount of fossil-fuel subsidies per unit of gross domestic product (production and consumption)</p>
19	D.1 International public funding, including official development assistance (ODA) for conservation and sustainable use of biodiversity and ecosystems		Amount of funding provided through the Global Environment Facility and allocated to the biodiversity focal area

Goal/ Target	Headline indicator	Component indicator	Complementary indicator
	<p>D.2 Domestic public funding on conservation and sustainable use of biodiversity and ecosystems</p> <p>D.3 Private funding (domestic and international) on conservation and sustainable use of biodiversity and ecosystems*</p>		<p>Foreign direct investment, official development assistance and South-South cooperation</p> <p>Amount and composition of biodiversity-related finance reported to the OECD Creditor reporting system</p> <p>Dollar value of financial and technical assistance (including through North-South, South-South and triangular cooperation) committed to developing countries</p> <p>Dollar value of all resources made available to strengthen statistical capacity in developing countries</p> <p>Amount of biodiversity-related philanthropic funding</p> <p>Proportion of total research budget allocated to research in the field of marine technology</p> <p>Total amount of approved funding for developing countries to promote the development, transfer, dissemination and diffusion of environmentally sound technologies</p> <p>Number of countries (and number of instruments) with payments for ecosystem services (PES) programmes</p> <p>Number of countries that have (a) assessed values of biodiversity in accordance with the Convention, (b) identified and reported funding needs, gaps and priorities, (c) developed national financial plans for biodiversity, (d) been provided with the necessary funding and capacity-building to undertake the above activities</p>
20	-		
21	21.1 Indicator on biodiversity information for the monitoring the Kunming-Montreal Global Biodiversity Framework	<p>Species Status Index</p> <p>Extent to which (a) global citizenship education and (b) education for sustainable development, including gender equality and human rights, are</p>	<p>Growth in number of records and species in the Living Planet Index database</p> <p>Growth in species occurrence records accessible through the Global Biodiversity Information Facility</p>

Goal/ Target	Headline indicator	Component indicator	Complementary indicator
		<p>mainstreamed at all levels in: (i) national education policies, (ii) curricula, (iii) teacher education and (iv) student assessments</p>	<p>Growth in marine species occurrence records accessible through the Ocean Biodiversity Information System (OBIS)</p> <p>Proportion of known species assessed through The IUCN Red List of Threatened Species™</p> <p>Number of assessments on the IUCN Red List of Threatened Species™</p> <p>World Association of Zoos and Aquariums (WAZA) bio-literacy survey (Biodiversity literacy in global zoo and aquarium visitors)</p> <p>Species Status Information Index</p>
22 <sup>b</sup>	-	<p>Proportion of total adult population with secure tenure rights to land, (a) with legally recognized documentation, and (b) who perceive their rights to land as secure, by sex and type of tenure</p>	<p>Percentage of positions in national and local institutions, including: (a) the legislatures; (b) the public service; and (c) the judiciary, compared to national distributions, by sex, age, persons with disabilities and population groups</p> <p>Number of countries with systems to track and make public allocations for gender equality and women’s empowerment</p> <p>Proportion of total agricultural population with ownership or secure tenure rights over agricultural land, by sex; and share of women among owners or rights-bearers of agricultural land, by type of tenure</p> <p>Number of countries where the legal framework (including customary law) guarantees women’s equal rights to land ownership and/or control</p> <p>Number of protected areas that have completed a site-level assessment of governance and equity (SAGE)</p> <p>Trends in number of environmental human rights defenders killed annually, disaggregated by country and</p>

Goal/ Target	Headline indicator	Component indicator	Complementary indicator
			<p>gender; and number of indigenous environmental human rights defenders killed</p> <p>Land tenure of indigenous peoples and local communities by sex and type of tenure</p> <p>Proportion of population who believe decision-making is inclusive and responsive, by sex, age, disability and population group</p>
23 <sup>b</sup>	-	<p>Proportion of seats held by women in (a) national parliaments and (b) local governments</p> <p>Indicator on national implementation of the Gender Plan of Action</p> <p>Proportion of total adult population with secure tenure rights to land, (a) with legally recognized documentation; and (b) who perceive their rights to land as secure, by sex and type of tenure</p>	<p>Percentage of positions in national and local institutions, including: (a) the legislatures; (b) the public service; and (c) the judiciary, compared to national distributions, by sex, age, persons with disabilities and population groups</p> <p>Proportion of total agricultural population with ownership or secure rights over agricultural land, by sex; and share of women among owners or rights-bearers of agricultural land, by type of tenure</p> <p>Number of countries with systems to track and make public allocations for gender equality and women's empowerment</p> <p>Number of protected areas that have completed a site-level assessment of governance and equity (SAGE)</p> <p>Percentage of population who believe decision-making is inclusive and responsive, by sex, age, disability and population group</p> <p>Proportion of countries where the legal framework (including customary law) guarantees women's equal rights to land ownership and/or control</p>

*Annex II*

**TERMS OF REFERENCE FOR THE AD HOC TECHNICAL EXPERT GROUP ON INDICATORS FOR THE KUNMING-MONTREAL GLOBAL BIODIVERSITY FRAMEWORK**

1. The Ad Hoc Technical Expert Group on Indicators will work:

(a) To provide technical advice on remaining and unresolved issues relating to the monitoring framework for the Kunming-Montreal Global Biodiversity Framework, as outlined by the Conference of the Parties at its fifteenth meeting, and to prioritize work on the following elements leading up to the sixteenth meeting of the Conference of the Parties:

- (i) Support the work to address critical gaps to improve the monitoring framework, in particular on headline indicators that do not have an existing methodology, and advise on their implementation at the national level. Attention should be paid to fill gaps under Goals B, C and D and Targets 2, 13 and 14 to 22, given the imbalance in available headline indicators and their interlinkages across the goals and targets of the Kunming-Montreal Global Biodiversity Framework;
- (ii) Support the identification of important aspects related to the disaggregation and aggregation for each headline indicator, as applicable, including any methodological improvements as appropriate;
- (iii) Identify gaps in terms of the operationalization of each headline indicator, the management of data flows and advise on implementation at the national level;
- (iv) Keep the list of binary, component and complementary indicators under review;
- (v) Advise on the wording of questions to construct binary indicators to be used in national reports building upon table 1 below;

(b) To provide guidance to Parties on the use of indicators in national planning and reporting, including by reviewing how indicators are proposed for capture in the Online Reporting Tool for national reporting;

(c) To provide guidance to Parties on ways to fill temporal and spatial data gaps, including through the use of big data, citizen science, community-based monitoring and information systems, remote sensing, modelling and statistical analysis, and other forms of data and other knowledge systems, recognizing the specific challenges faced by developing country Parties to develop and access information tools;

(d) To provide advice on the existing capacity, gaps and needs in terms of capacity development, technology transfer and financing needs related to the monitoring of the Kunming-Montreal Global Biodiversity Framework.

2. The Ad Hoc Technical Expert Group will take into account:

(a) Previous work and experience under the Convention and other relevant programmes of work concerning indicators and monitoring;

(b) Statistical standards and development under the Statistical Commission or other statistical offices;

(c) Previous work and experience with other relevant global, regional, national and subnational monitoring frameworks, multilateral environment agreements, and knowledge systems;

(d) Recent developments and information on issues related to the indicators, their metadata and baselines.

3. The Ad Hoc Technical Expert Group will be composed of 30 technical experts nominated by Parties, including experts on statistics and experts in relevant social and natural sciences, and up to 15 representatives nominated by observer organizations and other relevant organizations. The Executive Secretary, in consultation with the Bureau of the Subsidiary Body on Scientific, Technical and Technological Advice, will select experts from the nominations submitted by Parties and organizations with due regard to representation of different areas of technical expertise, and ensuring balance in expertise on all aspects of the goals and targets of the Kunming-Montreal Global Biodiversity Framework, also taking into account geographical representation, and the representation of indigenous peoples and local communities, women's and youth groups, and major stakeholders, gender balance and the special conditions of developing countries, in particular the least developed countries and small island developing States, and countries with economies in transition, also taking into consideration the special situation of developing countries that are most environmentally vulnerable, such as those with arid and semi-arid zones, coastal and mountainous area.
4. The Ad Hoc Technical Expert Group will nominate two co-chairs from among the selected experts.
5. The Chair of the Subsidiary Body on Scientific, Technical and Technological Advice will be invited to participate, ex officio, in the Ad Hoc Technical Expert Group.
6. The Ad Hoc Technical Expert Group may also invite other experts, as appropriate, to contribute their expertise and experiences on specific issues related to the terms of reference of the Ad Hoc Technical Expert Group.
7. The Ad Hoc Technical Expert Group will primarily conduct its work electronically and, subject to the availability of resources, will also meet physically, if possible, at least twice during the intersessional period.
8. The Ad Hoc Technical Expert Group should be established and start its work immediately after approval by the Conference of the Parties at its fifteenth meeting and report on its work to the Subsidiary Body on Implementation and the Subsidiary Body on Scientific, Technical and Technological Advice at meetings held prior to the sixteenth meeting of the Conference of the Parties.

**Table 1. Global scale indicators to be considered for further development by the Ad Hoc Technical Expert Group and collated from binary (yes/no) reporting from countries through national reports**

*Note: This table is being shared with the Ad Hoc Technical Expert Group as an indication of the types of binary indicators that might be considered. This text has not been agreed or negotiated. It is being shared for information only.*

1. Goal/ Target	2. Global indicator derived from binary reporting
B	Number of countries with national constitution or legislation recognizing and implementing and monitoring a right to a healthy environment
1	Number of countries using terrestrial and marine spatial planning to identify areas of high biodiversity importance in national development planning
6	Number of countries adopting relevant national legislation and adequately resourcing the prevention or control of invasive alien species
8	Number of countries with nationally determined contributions, long-term strategies, national adaptation plans and adaptation communications that reflect biodiversity
9	Number of countries with legal instruments to regulate the use and trade of wild species, and respecting customary sustainable use by indigenous peoples and local communities

1. Goal/ Target	2. Global indicator derived from binary reporting
12	Number of countries with urban sustainability plans referring to green and/or blue spatial management
13 / C	Number of countries that have operational legislative, administrative or policy frameworks which relate to Target 13
14	Number of countries with national targets for integrating biodiversity values into policies, regulations, planning, development processes, poverty reduction strategies and accounts at all levels, ensuring that biodiversity values are mainstreamed across all sectors and integrated into assessments of environmental impacts
15	Number of countries taking legal, administrative or policy measures to ensure that Target 15 is achieved
16	Number of countries developing, adopting or implementing policy instruments aimed at supporting the shift to sustainable consumption and production (SDG Indicator 12.1.1)
17	Number of countries with capacity and measures in place related to Target 17
22	Number of countries recognizing the legal rights of indigenous peoples and local communities, environmental human rights defenders, women, youth and persons with disabilities with respect to their traditional territories, cultures and practices
23	Number of countries where the legal framework (including customary law) guarantees women's equal rights to land ownership and/or control