Convention on Biological Diversity

SUBSIDIARY BODY ON SCIENTIFIC,
  TECHNICAL AND TECHNOLOGICAL ADVICE
Nineteenth meeting
Montreal, Canada, 2-5 November 2015
Item 3.4 of the provisional agenda*

INDICATORS FOR THE STRATEGIC PLAN FOR BIODIVERSITY 2011-2020

Note by the Executive Secretary

INTRODUCTION

1.   In decision XI/3 the Conference of the Parties to the Convention on Biological Diversity took note of an indicative list of indicators available for assessing progress towards the goals of the Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets. This list, which was recognized by the Conference of the Parties as a starting point for assessing progress in the achievement of the Strategic Plan, had been developed based on work undertaken by the first meeting of the Ad Hoc Technical Expert Group Meeting (AHTEG) on Indicators for the Strategic Plan for Biodiversity 2011-2020 held in High Wycombe, United Kingdom of Great Britain and Northern Ireland in 2011.

2.   The indicators framework noted in decision XI/3 served as a foundation for the preparation of the fourth edition of the *Global Biodiversity Outlook* and the Biodiversity Indicators Partnership has made use of it in the development of the Aichi Biodiversity Passport. Parties have made use of selected indicators in the development or updating of their national biodiversity strategies and action plans (NBSAPs), the preparation of their fifth national reports and the development of biodiversity monitoring programmes.

3.   In paragraph 20(b) of decision XII/1, the Conference of the Parties requested the Executive Secretary to convene a further meeting of the Ad Hoc Technical Expert Group (AHTEG) on Indicators for the Strategic Plan for Biodiversity 2011-2020 with the aim of identifying a small set of measurable potential indicators that could be used to monitor progress at the global level towards the Aichi Biodiversity Targets and to prepare guidance on the different types of indicators and approaches used to monitor progress in the implementation of the Strategic Plan for Biodiversity 2011-2020 at the regional, national and subnational levels.

4.   The Ad Hoc Technical Expert Group on Indicators for the Strategic Plan for Biodiversity 2011-2020 met in Geneva, Switzerland, from 14 to 17 September 2015, with generous support provided by the Government of Switzerland. Additional support for the preparation of background document was

---

* UNEP/CBD/SBSTTA/19/1.

provided by the European Union and the Government of the United Kingdom of Great Britain and Northern Ireland.[1]

5.   The present note draws primarily on the outcomes of the Ad Hoc Technical Expert Group. The first section of the document presents indicators to monitor progress at the global level towards the attainment of the Aichi Biodiversity Targets. Information on national approaches to assessing progress towards the Aichi Biodiversity Targets is presented in section II, while information related to ongoing indicators process is presented in section III. Section IV contains suggested recommendations.

I.   INDICATORS TO MONITOR PROGRESS AT THE GLOBAL LEVEL TOWARDS THE ATTAINMENT OF THE AICHI BIODIVERSITY TARGETS

6.   Since the indicators framework was noted by the Conference of the Parties in decision XI/3, it has been used at different scales and for different purposes. For example Parties have made use of it, to varying degrees, in their NBSAP development processes, the preparation of their fifth national reports and the development of biodiversity monitoring programmes. Further, the indicators framework has served as a foundation for the preparation of the fourth edition of the *Global Biodiversity Outlook* (GBO-4) and the Biodiversity Indicators Partnership has made use of it in the development of the Aichi Biodiversity Passport. Further, through the preparation of GBO-4 and the work of the Biodiversity Indicators Partnership, additional indicators have since been identified. These indicators have been used in either GBO-4 or its underlying technical studies,[2] a related paper published in *Science*,[3] or the Aichi Passport.[4] These different indicators enable progress towards each Aichi Biodiversity Target to be monitored at the global level by at least one indicator and supported the comprehensive assessment of progress towards the attainment of the Aichi Biodiversity Targets presented in GBO-4.

7.   The Ad Hoc Technical Expert Group (AHTEG) on Indicators for the Strategic Plan for Biodiversity 2011-2020 reviewed the indicative list of indicators, as noted in decision XI/3, together with additional indicators identified through the preparation of GBO-4 and the work of the Biodiversity Indicators Partnership, as well as indicators used or proposed by other organizations, including those being proposed by the United Nations system for the Sustainable Development Goals, noting that the latter may change in the light of the outcomes of the 47th Session of the United Nations Statistical Commission. Based on this review, the AHTEG developed a list of generic indicators which together would cover the issues addressed by the Aichi Biodiversity Targets and identified existing specific operational indicators as they relate to the generic indicators.

8.   The AHTEG further applied a number of criteria to the specific operational indicators to identify those which are currently available for use at the global level, suitable for communicating progress towards the Aichi Biodiversity Targets to policymakers and stakeholders, and also suitable to be disaggregated to the national level. A total of 38 specific operational indicators that meet these criteria were identified. However, a number of these specific operational indicators are based on the same data set and methodology. The AHTEG recommended that these indicators could be considered as a small set of measurable indicator as called for in decision XII/1. The indicators are listed in the annex to the present document.

9.   The AHTEG recommended that the indicators should be subjected to peer-review and revised in the light of the comments from that process.

---

[1] For further information on the meeting, including background documentation, see the meetings webpage (https://www.cbd.int/doc/?meeting=ID-AHTEG-2015-01).

[2] See https://www.cbd.int/gbo4/

[3] Tittensor etal. 2014. A mid-term analysis of progress towards international biodiversity targets. Science 10 October 2014: 346 (6206), 241-244. Note that this study identified a number of indicators, which were not used in the analysis because the time series did not conform to criteria required for statistical extrapolation. These indicators which were excluded for issues related to their time series have been included in the annex to this report.

[4] The Aichi Passport is accessible from http://www.bipindicators.net/resource/aichipassport

10.   With regard to Aichi Biodiversity Target 20, the AHTEG recognized that the Financial Reporting Framework (annex II to decision XII/3) contains sufficient information to enable assessing progress towards this target and therefore did not list any specific indicator for this target.

11.   Important progress has been made in the development and use of indicators to assess the implementation of the Strategic Plan and progress towards the Aichi Biodiversity Targets since the adoption of decision XI/3. Significant advances in science and innovations in data management and analysis create new opportunities for the development of indicators, including methods to reduce bias and the use of modelling to fill gaps and scenario techniques to develop projections. Many important contributions to the development and use of indicators have been made by international organizations, networks and partnerships. Such contributions offer opportunities for further collaboration and continued support for work on indicators to track status and trends of biodiversity and related issues.

12.   Despite the progress that has been made, the ability to assess progress towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and the attainment of the Aichi Biodiversity Targets continues to be variable. Some targets (or their elements) currently lack relevant and robust indicators or suitable data and/or methods at the global scale.

13.   The data sets underpinning many of the indicators identified by the AHTEG could also be improved in terms of their spatial and thematic coverage. For example the indicators for Aichi Biodiversity Targets 5 to 15 rely primarily on a relatively small set of common variables. Efforts to improve the spatial and temporal resolution of standardized observations could greatly enhance our ability to assess progress towards these targets. Both data and indicator methodologies should be freely accessible,[5] to facilitate their use, including by aggregating and disaggregating relevant data, and to promote continued improvements in quality through peer-review.

14.   Indicators are communication tools whose interpretation requires context and an understanding of caveats. Assessments of status and trends in biodiversity and related issues and assessments of progress towards biodiversity targets should therefore seek to complement indicator-based information with other lines of evidence including case studies, expert opinion, stakeholder views and consultations.

15.   Indicators for monitoring progress towards the Aichi Biodiversity Targets could be used in a number of different contexts including for reporting by Parties to various biodiversity-related instruments, communicating with policymakers and other stakeholders, mainstreaming the Aichi Biodiversity Targets within other international process, or in support of evidence-based decision-making. Similarly indicators can also help to generate avenues for the harmonization of reporting between different international agreements.

16.   Advances in technologies, such as remote sensing, suggest that our ability to monitor the status of biodiversity and the impacts of our actions will continue to improve over time. For example a number of organizations have ongoing work on indicators. One promising area of work in this regard seeks to use modelling approaches and "big data" integration techniques to bring together historical, recent and ongoing in situ species observations with remote sensing to generate indicators of biodiversity change that can be used in tracking trends and in future scenarios. Similarly, advances in satellite technologies have the potential to generate biodiversity information on a global scale rapidly and effectively, while improvements in species sampling techniques, particularly with regard to genetic diversity, also promise to improve our understanding of species diversity at the ecosystem level.

17.   Given these ongoing developments, monitoring progress towards the attainment of the Aichi Biodiversity Targets needs to be viewed as an ongoing process. As new indicators and sources of information become available the Convention needs to be prepared to draw upon these in its assessment. Relatedly, there is a need for monitoring and reporting processes to be streamlined in order to avoid duplication of efforts between different processes and to ensure stronger links between the scientific

---

[5] In line with decisions VIII/11 (para. 3); XI/29 (annex, action 6); XII/2 (para. 13). See also document UNEP/CBD/SBSTTA/19/3.

processes generating information and indicators and their use in policy. However indicators will still require interpretation and all have limitations in terms of the information that they can provide. As such assessments of status and trends in biodiversity and related issues should be complemented with other lines of evidence, including case studies, expert opinion, stakeholder views and consultations in order to provide as complete a picture as possible of biodiversity-related issues.

II. NATIONAL APPROACHES TO ASSESSING PROGRESS TOWARDS THE AICHI BIODIVERSITY TARGETS

18.   Assessing national progress towards the Aichi Biodiversity Targets is key to monitoring the implementation of the Strategic Plan for Biodiversity 2011-2020. From the information contained in the fifth national reports to the Convention on Biological Diversity, the results of a survey distributed to Parties on this issue and follow up interviews, it is evident that a variety of approaches are used by countries to assess national progress towards the global Aichi Biodiversity Targets. These approaches can be divided into four general categories: quantitative indicators, expert opinion, stakeholder consultation, and case studies.[6]

19.   These different approaches are not exclusive of one another. Using one approach does not preclude the use of another. In fact most Parties, in their fifth national reports, have used combinations of these different approaches to assess progress towards the Aichi Biodiversity Targets and their national biodiversity targets. Each approach has inherent strengths and limitations. These strengths and limitations depend on the national context and priorities, and the most appropriate approach or combination of approaches will vary between countries.

20.   Approximately 40 per cent of reporting Parties have included an explicit assessment of progress towards the Aichi Biodiversity Targets. These assessments generally use a scale or rating system which classifies progress towards each target into a category (for example, no progress, some progress, on track to reach target). The methodology used to undertake these assessments was frequently not clear from the national reports. However, it is apparent that most Parties have considered different sources of information, including indicators, the types of actions taken, expert opinion and published literature among other things. Further, those national reports which do not contain an explicit assessment of progress towards the Aichi Biodiversity Targets often contain narrative descriptions of progress towards the Aichi Biodiversity Targets. These do not assign a specific metric to indicate progress towards the target but rather list the types of activities taken, planned actions or refer to changes in biodiversity trends.

21.   The information from the national reports suggests that most Parties are making pragmatic use of information by drawing on multiple sources of information and making the best use of these in reaching a conclusion regarding progress towards the Aichi Biodiversity Targets. The approaches used by Parties vary with national circumstances and priorities and therefore what is useful for one Party may not be effective for others. It is important to note, that even with the limited information that is available in some countries, most Parties have included information in their national reports which enables assessments of progress to be made at least towards some Aichi Biodiversity Targets, though sometimes with a high degree of uncertainty.

22.   With regard to the use of indicators in the fifth national reports, while most Parties make use of at least a few indicators, how they are used is highly variable. Some reports have referred to, and made use of, comprehensive sets of indicators, however most have used them in a less systematic way. Further, even those reports that have made extensive use of indicators often have gaps where certain targets or elements of targets do not have indicators.

23.   Many of the indicators used in the fifth national reports are not necessarily specific to biodiversity or solely related to monitoring the implementation of the Strategic Plan for Biodiversity 2011-2020.

---

[6] For further information see UNEP/CBD/ID/AHTEG/2015/1/INF/2.

Given this, it is clear that monitoring the implementation of the Strategic Plan for Biodiversity 2011-2020 or associated national targets does not need to solely make use of indicators specifically developed for biodiversity and that indicators developed for other purposes can provide valuable information. Further, given the breadth of issues addressed by the Strategic Plan, using indicators developed for other processes offers a cost effective means of making use of ongoing monitoring initiatives and can also help to mainstream biodiversity across different domains.

24.   The use of global indicators for national level monitoring could be enhanced by affording Parties and national experts the opportunity of peer-reviewing, validating and supplementing national level data used in regional or global indicators. This would require greater transparency and accessibility of both the methods and the data sets used in global indicators, including the free and open access to underlying data. Such actions would help to increase both understanding and ownership of the indicators.

25.   In many countries the capacity for developing and implementing monitoring and indicator systems is limited. Increasing opportunities for sharing experiences and knowledge transfer between those working on indicators, at both national global levels, would help to address this challenge. Similarly enhanced capacity-building in relation to the mobilization of national data, improving data management systems and developing cost-effective monitoring programmes would also help to overcome this challenge. Tools that would allow countries to undertake analyses of national disaggregations of global data sets would enhance their utility and facilitate the feeding of nationally-held data and national level indicators to those global data sets, thus creating benefits both for national and global analyses.

26.   Guidance is also needed on best practice in using indicators and other sources of evidence to promote consistency in reporting and assessment approaches. Such guidance should address criteria and categories to be used in assessment of progress and transparency about the sources of evidence used (quantitative indicators, case studies, expert opinion, stakeholder views and consultation), resolution of conflicting lines of evidence and assignment of overall confidence in the assessment. Similarly, actions to promote coherence between national institutions involved in policy development, planning and implementation, and monitoring and assessment across different sectors is required.

27.   It is important to note that many of the fifth national reports refer to proposed indicators or processes to develop indicators in the future. This is most often raised in relation to the implementation and monitoring of updated national biodiversity strategies and action plans. As such, there may be opportunities to enhance national monitoring and assessment systems.

III.   ONGOING INDICATOR PROCESSES

28.   Under the Convention on Biological Diversity there are a number of ongoing indicator and monitoring processes related to different programmes of work or thematic areas. These include:

(a)   *Articles 8(j) and 10(c)* - Community-based monitoring and information systems are important complementary sources of knowledge that can inform local, national and global policy and decision-making, monitoring and reporting, and the relevance of such approaches is increasingly being recognized. Indigenous peoples and local communities can play an important role in validating data products derived from remote sensing and other sources. Traditional knowledge, combined with the use of new technologies enabling indigenous peoples and local communities to map and monitor biodiversity and contribute to information systems in support of local governance and planning, can help to generate important information for monitoring the implementation of the Strategic Plan for Biodiversity 2011-2020. At the same time, the development of indicators previously agreed for Aichi Biodiversity Target 18 is being pursued in collaboration with relevant organizations and partners. They include:

   (i)   Status and trends of linguistic diversity and numbers of speakers of indigenous languages (decision VII/30 and VIII/15);

   (ii)   Status and trends in the practice of traditional occupations (decision X/43);

(iii)   Status and trends in land-use change and land tenure in the traditional territories of indigenous and local communities (decision X/43);

(iv)   Trends in which traditional knowledge and practices are respected through their full integration, safeguards and the full and effective participation of indigenous and local communities in the national implementation of the Strategic Plan. (XI/3).

(b)   *Resource mobilization* – In decision XII/3, the Conference of the Parties adopted a revised Financial Reporting Framework. The framework is intended for use by Parties for providing baseline information and reporting on their contribution to reach the global financial targets, under Aichi Biodiversity Target 20, as adopted by the Conference of the Parties to the Convention at its twelfth meeting, in accordance with Article 20;

(c)   *Global Strategy for Plant Conservation (GSPC)* – The Global Strategy for Plant Conservation includes a set of targets which complement those in the Strategic Plan for Biodiversity 2011-2020. The mid-term assessment of progress in the implementation of GSPC relied on a number proxies, process indicators and bundles of empirical evidence. There is now ongoing work to further develop and consolidate a few indicators for GSPC in order to improve future assessments. The planned activities to accomplish this include facilitating access, by relevant national experts, including focal points, to global data sets with a view to enabling both to draw national information from those data sets and to contribute to their improvement, as well as the development of indicators for the Global Strategy for Plant Conservation, including by engaging and consulting members of the Global Partnership for Plant Conservation.

29.   In addition to the different processes under the Convention on Biological Diversity, there are also a number of ongoing efforts among different members of the United Nations System which have the potential to develop additional indicators relevant to the monitoring of the Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets. These processes include:

(d)   *Sustainable Development Goals (SDGs)* – The United Nations Statistical Commission has created an Inter-agency and Expert Group on SDG Indicators (IAEG-SDGs) to develop proposals for a global indicators framework for the sustainable development goals. The framework and indicators are to be adopted by the Statistical Commission at its 47th session in 2016. Given the multiple linkages between the Aichi Biodiversity Targets and the SDGs there are opportunities for the two processes to make use of the same indicators. This would not only make an effective use of available information but also help to clearly identify the ways in which the SDGs and the Aichi Biodiversity Targets complement each other;

(e)   *United Nations Convention to Combat Desertification (UNCCD)* – In 2013 UNCCD adopted a monitoring and evaluation approach for land degradation consisting of, among other things, a set of six progress indicators. Following a review of the global data sets for these indicators, it was determined that the only indicators with appropriate data sets, and which should therefore be considered mandatory for reporting, were trends in land cover, trends in land productivity or function of the land and trends in carbon stocks above and below ground (to be measured in terms of soil organic carbon stocks). Further, there is ongoing work on combining these three indicators into a single indicator of land degradation. These indicators are to be considered for adoption by the twelfth session of the Conference of the Parties to UNCCD to be held from 12 to 23 October 2015. These indicators are relevant to the work of the Convention on Biological Diversity and as no biodiversity indicator related to land degradation has been identified, there is a potential role for the Convention on Biological Diversity in the work of UNCCD;[7]

(f)   *Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)* – During the third session of the Plenary of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services in Bonn, from 12 to 17 January 2015, a number of issues related to indicators were considered. Given the close relationship between IPBES and the Convention on

---

[7] For further information see UNEP/CBD/ID/AHTEG/2015/1/INF/5.

Biological Diversity these developments have a potential bearing on the Convention's work on indicators.[8] As part of IPBES's data and information management plan (deliverables 1 (d) and 4 (b)) the task force on knowledge and data will give advice during the scoping and delivery of the Platform assessments. This includes providing advice on data quality and on the identification and use of common methodologies, measures and indicators, where appropriate. Among the high priority activities of the task force are the establishment of standards and guidelines for managing information and data, and the identification of possible indicators and metrics to be used in the Platform's products. Further, the regional and subregional assessments of biodiversity and ecosystems services that IPBES will be undertaking (deliverable 2 (b)) also have implications with regard to the development of indicators and the work of the Convention. The overall scope of the regional and subregional assessments is to assess the status and trends of biodiversity, ecosystem functions and ecosystem services and their interlinkages, the implications for quality of life as well as the effectiveness of responses, including the Strategic Plan for Biodiversity 2011–2020 and its Aichi Biodiversity Targets and the national biodiversity strategies and action plans developed under the Convention.

IV.   SUGGESTED RECOMMENDATION

The Subsidiary Body on Scientific, Technical and Technological Advice may wish to:

(a)   *Welcome* the report of the Ad Hoc Technical Expert Group on Indicators for the Strategic Plan for Biodiversity 2011-2020 (UNEP/CBD/SBSTTA/19/INF/5) and thank the European Union and the Governments of Switzerland and the United Kingdom of Great Britain and Northern Ireland for their financial support to the Ad Hoc Technical Expert Group on Indicators for the Strategic Plan for Biodiversity 2011-2020;

(b)   *Welcome* the important contributions to indicator development by the members of the Biodiversity Indicators Partnership, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), the Group on Earth Observations Biodiversity Observation Network (GEOBON), and the United Nations Convention to Combat Desertification (UNCCD), among others, and encourage further collaboration and continued support for work on indicators, in particular in relation to those Aichi Biodiversity Targets that cannot currently be assessed with indicators;

(c)   *Take note* of the updated list of indicators for the Strategic Plan for biodiversity 2011-2020 identified by Ad Hoc Technical Expert Group and annexed to this recommendation;

(d)   *Agree* that the updated list of indicators for the Strategic Plan should be kept under review with a view to enabling the future incorporation of other relevant indicators, including those developed by other Conventions and processes, in particular indicators expected to be agreed for the Sustainable Development Goals;

(e)   *Note* that the updated list of indicators provides a flexible framework for Parties to adapt to their national priorities and circumstances, and *note* that Parties have different approaches to monitoring the implementation of the Strategic Plan for Biodiversity 2011-2020;

(f)   *Invite* IPBES to consider the updated list of indicators, as appropriate, when undertaking assessments of the Aichi Biodiversity Targets;

(g)   *Encourage* the Biodiversity Indicators Partnership to review its membership, as necessary, in the light of the updated list of indicators;

(h)   *Encourage* those institutions who are compiling global indicators to promote the free and open access to underlying data and methodologies and to make national disaggregation of underlying data, and methodologies easily available where appropriate;

(i)   *Request* the Executive Secretary:

---

[8] For further information see UNEP/CBD/SBSTTA/19/9.

(i)   To make the updated list of indicators available for peer-review;

(ii)   To update and revise the list of indicators for the Strategic Plan for Biodiversity 2011-2020 in the light of the peer-review and any comments made during the nineteenth meeting of the of the Subsidiary Body on Scientific, Technical and Technological Advice and to make the revised list of indicators available to the twentieth meeting of the of the Subsidiary Body on Scientific, Technical and Technological Advice;

(iii)   To provide to the twentieth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice an update on progress in the identification of indicators for the Sustainable Development Goals;

(j)   *Further request* the Executive Secretary, in collaboration with the members of the Biodiversity Indicators Partnership and other organizations developing indicators, to develop technical guidance on the indicators for which such guidance has not already been developed.

Annex

INDICATORS FOR THE STRATEGIC PLAN FOR BIODIVERSITY 2011-2020[9]

The table below illustrates the relationship between the Aichi Biodiversity Targets and the generic and specific operational indicators.[10] In many cases the identified indicators are relevant to the several Aichi Biodiversity Targets; however each indicator has only been included in the table once in order to limit the size of the table, with each indicator listed according to the Aichi Biodiversity Target to which it is most relevant. The indicators in grey shading are those which are available today (or under active development), easy to communicate and which can be disaggregated to develop national indicators. These indicators would constitute a small set of indicators.

Aichi Biodiversity Target	Generic Indicator	Specific Operational Indicator
Target 1 - By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably	Trends in awareness and attitudes to biodiversity	Biodiversity Barometer
		Online interest in biodiversity (Google Trends)
		Percentage of students of a given age (eg 15-year olds) enrolled in secondary school demonstrating at least a fixed level of knowledge across a selection of topics in environmental science and geoscience (proposed indictor for SDG target 4.7)
	Trends in public engagement with biodiversity	Civil membership to biodiversity-relevant NGOs
Target 2 - By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	Trends in incorporation of measures of stock and flow of natural capital into national accounting	Number of countries implementing natural resource accounts, excluding energy, within the System of Environmental-Economic Accounting (SEEA)
	Trends in number of countries that have assessed values of biodiversity, in accordance with the Convention	Number of countries with national economic ecosystem assessments and sub-national assessments
		Progress towards national targets established in accordance with Aichi Biodiversity Target 2 of the Strategic Plan for Biodiversity 2011-2020 (proposed indictor for SDG target 15.9)
	Trends in integration of biodiversity and ecosystem service values into sectoral and development policies	Integration of biodiversity in national development plans, poverty reduction strategies or other key development plans
Target 3 - By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic condition	Trends in the number and value of incentives, including subsidies, harmful to biodiversity, removed, reformed or phased out	Trends in the number and value of incentives, including subsidies, harmful to biodiversity, removed, reformed or phased out
		Trends in potentially harmful elements of government support to agriculture (produced and consumer support estimates)
		Agricultural Export Subsidies / OECD producer support estimate (PSE) (proposed indictor for SDG target 2.b)
	Trends in development and application of incentives that promote biodiversity conservation and sustainable use	Number of countries with and national instruments on biodiversity-relevant taxes, charges and fees
		Number of countries with national instruments on payments for ecosystem services schemes
		Number of countries with national instruments on REDD plus schemes

---

[9] Indicators recommended by the Ad Hoc Technical Expert Group on Indicators for the Strategic Plan for Biodiversity 2011-2020 at its meeting in Geneva, Switzerland (14 to 17 September 2015). The Ad Hoc Technical Expert Group further recommended that the indicators should be peer-reviewed and further updated in the light of developments of other indicators processes.

[10] Indicators being proposed by the United Nations system for the Sustainable Development Goals have been included in the table. Changes to these may be required in the light of the outcomes of the 47th Session of the United Nations Statistical Commission.

		Number of countries with national instruments on biodiversity relevant tradable permit schemes (e.g. ITQs for fisheries)
		Number of countries with national instruments on biodiversity offset schemes
Target 4 - By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.	Trends in population and extinction risk of utilized species, including species in trade	Red List Index (impacts of utilization)
		Percentage of Category 1 nations in CITES
		Ratio between detected illegal trafficking and legal trade in wildlife and wildlife products (proposed indictor for SDG target 15.7)
	Trends in ecological footprint and/or related concepts	Ecological footprint
		Material efficiency/productivity (proposed indictor for SDG target 8.4)
		Number of countries with SCP National Action Plans or SCP mainstreamed as a priority or target into national policies (proposed indictor for SDG target 12.1)
		Material Footprint (MF) and MF per capita (proposed indictor for SDG target 12.1)
	Ecological limits assessed in terms of sustainable production and consumption	Human appropriation of net primary productivity
		Human appropriation of fresh water (water footprint)
		Percentage of change in water use-efficiency over time (proposed indictor for SDG target 6.4)
	Trends in biodiversity of cities (decision X/22)	Number of cities applying and reporting on the Cities Biodiversity Index
		Efficient land use (by enhancing inclusive and sustainable urbanization) (ratio of land consumption rate to population growth rate at comparable scale) (proposed indictor for SDG target 11.3)
	Trends in extent to which biodiversity and ecosystem service values are incorporated into organizational accounting and reporting	Percentage of businesses reporting on environmental issues making specific references to biodiversity, natural capital and/or ecosystem functions and services
Target 5 - By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.	Trends in extent of forest	Trends in forest extent (tree cover)
		Forest area as a percentage of total land area (proposed indictor for SDG target 15.1)
	Trends in extent of natural habitats other than forest	Percentage of change in wetlands extent over time (proposed indictor for SDG target 6.6)
		Natural habitat extent (land area minus urban and agriculture)
	Trends in fragmentation of forest and other natural habitats	
	Trends in degradation of forest and other natural habitats	Biodiversity Habitat Index
		Local Biodiversity Intactness Index
		Trends in land degradation (proposed indictor for SDG target 15.3)
	Trends in extinction risk and populations of habitat specialist species in each major habitat type	Red List index for forest specialists
		Living Planet Index for forest specialists
		Species Habitat Index
Target 6 - By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based	Trends in certified sustainable fisheries	Trends in fisheries certified by the Marine Stewardship Council
		Proportion of fish stocks within biologically sustainable levels (proposed indictor for SDG target 14.4)

approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.	Trends in proportion of depleted, target and bycatch species with recovery plans	
	Trends in population and extinction risk in target and bycatch species	Red List Index (harvested aquatic species)
		Red List Index (impacts of fisheries)
		Living Planet Index (trends in target and bycatch species)
	Trends in destructive fishing practices	Global effort in bottom trawling
		Progress by countries in the implementation of international instruments aiming to combat IUU fishing (proposed indictor for SDG target 14.6)
	Trends in proportion of fish stocks outside safe biological limits	Proportion of fish stocks within biologically sustainable levels (proposed indictor for SDG target 14.4)
	Trends in catch per unit effort	Estimated fisheries catch and fishing effort (Sea Around us)
		Percentage of catches that are subject to a catch documentation scheme or similar traceability system as a percentage of the total catches that are less than x tons and traded in major markets (proposed indictor for SDG target 14.b)
Target 7 - By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	Trends in proportion of area of agriculture under sustainable practices	Areas of agricultural land under organic production
		Areas of agricultural land under conservation agriculture
		Percentage of agricultural area under sustainable agricultural practices (proposed indictor for SDG target 2.4)
	Trends in extinction risk and populations of agro-ecosystem associated species	Wild Bird Index for farmland birds / Living Planet Index (farmland specialists)
	Trends in proportion of production of aquaculture under sustainable practices	Proportion of Aquaculture under certified sustainable production
		Productivity of aquaculture in utilizing natural resources (land, water and wild stock) (proposed indictor for SDG target 14.7)
	Trends in proportion of area of forest production under sustainable practices	Proportion of area of forest production under FSC and PEFC certification
		Sustainable Forest Management Index (proposed indictor for SDG target 15.2)
	Trends in extinction risk and populations of forest-specialist species in production forest	
Target 8 - By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity	Trends in pollutants	Trends in emissions NOX, SOX, POPS
		Trends in Pesticide use
		Trends in CFC emissions (chlorofluorocarbons (CFCs) in ODP
		Floating Plastic Debris (Particles/Km2) (proposed indictor for SDG target 14.1)
		Mean levels of exposure to ambient air pollution (population weighted) (proposed indictor for SDG target 3.9)
		Number of deaths from air, water and soil pollution and contamination (proposed indictor for SDG target 3.9)
	Trends in extinction risk and populations driven by pollution	Red List Index (impacts of pollution)
	Trends in ecosystems affected by pollution	Water Quality Index for Biodiversity
	Trends in nutrient levels	Trends in Nitrogen deposition

		Loss of reactive nitrogen to the environment
		Trends in global surplus of nitrogen
		Nitrogen use efficiency composite indicator - reflects the N input, the N output, the output/input ratio, and the N surplus/deficit (proposed indictor for SDG target 14.1)
		Index of Coastal Eutrophication (ICEP) (proposed indictor for SDG target 14.1)
		Percentage of water bodies with good ambient water quality (proposed indictor for SDG target 6.3)
Target 9 - By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.	Trends in identification and prioritisation of IAS	
	Trends in identification and prioritization of IAS pathways	
	Trends in the distribution and populations of IAS	
	Trends in eradication of priority IAS	Trends in invasive alien species vertebrate eradications
		Adoption of national legislation relevant to the prevention or control of invasive alien species (proposed indictor for SDG target 15.8)
	Trends in extinction risk and populations driven by IAS impacts	Red List Index (impacts of invasive alien species)
	Trends in impacts of IAS on ecosystems	
	Trends in the numbers of invasive alien species introduction and establishment events	Trends in the numbers of invasive alien species introduction events
	Trends in implementation of policy responses preventing the introduction and establishment of IAS	Trends in adoption of national legislation for prevention of invasive alien species
Target 10 - By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.	Trends in extent and condition of coral reefs	Trends in proportion of live coral cover
	Trends in extinction risk and populations of coral and coral-reef dependent species	Red List Index (reef-building coral species)
	Trends in pressures on coral reefs	Loss of marine biodiversity caused by ocean acidification (proposed indictor for SDG target 14.3)
	Trends in responses to reduce pressures on coral reefs	
	Trends in extent and condition of other vulnerable ecosystems impacted by climate change or ocean acidification	
	Trends in species extinction risk and populations or condition of other vulnerable ecosystems impacted by climate change or ocean acidification	Climatic Impact Index for birds
		Red List Index (impacts of climate change)
	Trends in pressures on other vulnerable ecosystems impacted by climate change or ocean acidification	
	Trends in responses to reduce pressures on other vulnerable ecosystems impacted by climate change or ocean acidification	
Target 11 - By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and	Trends in area of terrestrial and inland water areas conserved	% terrestrial and inland water areas covered by protected areas
	Trends in area of coastal and marine areas conserved	% marine and coastal areas covered by protected areas
		Coverage of protected areas (marine and coastal) (proposed indictor for SDG target 14.5)

ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	Trends in areas of particular importance for biodiversity conserved	Protected area coverage of Key Biodiversity Areas (including Important Bird and Biodiversity Areas, Alliance for Zero Extinction sites)
		Protected Area Overlays with Biodiversity (proposed indictor for SDG target 15.1)
	Trends in areas of particular importance for ecosystem services conserved	
	Trends in ecological representativeness of areas conserved	Protected area coverage of terrestrial, marine and freshwater ecoregions
		Species protection index
		Protected Area Representativeness Index
	Trends in effectiveness and/or equitability of management of conserved areas	Management effectiveness of protected areas
		Trends in protected area funding
	Trends in connectivity and integration of conserved areas	Protected Area Connectedness Index
	Trends in policy responses promoting conserved area connectivity	Land-/Seascape Connectivity Index
Target 12 - By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	Trends in number of extinctions	Number of species extinctions
	Trends in extinctions prevented	Number of extinctions prevented by conservation action
	Trends in extinction risk and populations of species	Red List Index (proposed indictor for SDG target 15.5)
		Living Planet Index
		Species Habitat Index
		Species Protection Index for species in decline
		Local biodiversity intactness index
		Funds towards species protection
Target 13 - By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.	Trends in genetic diversity of cultivated plants	Ex-situ crop collections enrichment index (proposed indictor for SDG target 2.5)
	Trends in genetic diversity of farmed and domesticated animals (SDG 2.5)	Number/percentage of local breeds classified as being at-risk, not-at-risk, and unknown-levels of risk of extinction
		Trends in numbers of local breeds at risk (proposed indictor for SDG target 2.5)
	Trends in extinction risk and populations of wild relatives	Red List Index (wild relatives)
		Species Habitat Index (wild relatives)
	Trends in protected area coverage of wild relatives (to be resolved)	Species Protection Index (wild relatives)
	Trends in genetic diversity of socio-economically as well as culturally valuable species	
	Trends in development and implementation of strategies for minimizing genetic erosion and safeguarding genetic diversity	Level of implementation of global plan of actions on genetic resources for food and agriculture
Target 14 - By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local	Trends in safeguarded ecosystems that provide essential services	Wetland extent
	Trends in extinction risk and populations of species that provide essential services	Red List Index (species used for food and medicine; pollinating species)
		Living Planet Index (utilised species)
		Species Habitat Index (species that provide essential services)

communities, and the poor and vulnerable.	Trends in benefits from ecosystem services	Wellbeing indicator for the environment
		Mountain Green Cover Index (proposed indictor for SDG target 15.4)
		Percentage of change in wetlands extent over time (proposed indictor for SDG target 6.6)
		Percentage of water bodies with good ambient water quality (proposed indictor for SDG target 6.3)
		a) Percentage of people with ownership or secure rights over agricultural land (out of total agricultural population), by sex; and (b) Share of women among owners or rights-bearers of agricultural land", by type of tenure (proposed indictor for SDG target 1.4 and 5.a
	Trends in restoration of ecosystems that provide essential services	
	Trends in the degree to which ecosystem services provides for the needs of women, indigenous and local communities, and the poor and vulnerable	Inadequate access to food – average dietary energy supply adequacy
		Percentage of population using safely managed drinking water services (proposed indictor for SDG target 15.4)
Target 15 - By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.	Trends in ecosystem resilience	
	Trends in carbon stocks within ecosystems	Trends in forest carbon stocks (proposed indictor for SDG target 15.2)
		Trends in carbon sequestration rate or avoided emissions
	Trends in proportion of degraded ecosystems restored	Trends in land degradation (proposed indictor for SDG target 15.3)
		Global ecosystem restoration index
Target 16 - By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.	Trends in the implementation of the Nagoya Protocol	Number of permits or their equivalents made available to the Access and Benefit-sharing Clearing-house established under the Nagoya Protocol and number of Standard Material Transfer Agreements, as communicated to the Governing Body of the International Treaty (proposed indictor for SDG target 15.6)
Target 17 - By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan	Trends in adoption and implementation of national biodiversity strategies and action plans, as policy instruments including development, comprehensiveness, adoption and implementation	Number of countries with developed or revised NBSAPs
		Number of countries with NBSAPs adopted as policy instruments
		Number of national action plans related to multi-lateral environmental agreements that support accelerated investment in actions that eradicate poverty and sustainably use natural resources (proposed indictor for SDG target 1.b)
Target 18 - By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation	Trends in land-use change and land tenure in the traditional territories of indigenous and local communities (B) (decision X/43)	% of women, men indigenous peoples and local communities with secure rights to land property and natural resources measured by : • % with legally documented or recognized evidence of tenure and • % who perceive their rights recognized and protected (proposed indictor for SDG target 1.4)
		a) Percentage of people with ownership or secure rights over agricultural land (out of total agricultural population), by sex; and (b) Share of women among

and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels		owners or rights-bearers of agricultural land, by type of tenure (proposed indictor for SDG target 1.4)
	Trends in the practice of traditional occupations (decision X/43)	
	Trends in which traditional knowledge and practices are respected through their full integration, safeguards and the full and effective participation of indigenous and local communities in the national implementation of the Strategic Plan	
	Trends of linguistic diversity and numbers of speakers of indigenous languages (decision VII/30 and VIII/15)	Global Index of Linguistic Diversity and language threat level.
Target 19 - By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.	Number of maintained species inventories being used to implement the Convention	Species represented in the barcode of life data system
		Growth in species occurrence records accessible through GBIF
		Species Status Information Index
		Proportion of known species assessed through the IUCN Red List
	Trends in coverage of comprehensive policy-relevant sub-global assessments including related capacity building and knowledge transfer, plus trends in uptake into policy	Growth in ocean science capacity, technology and knowledge, as well as cooperation between countries and regions (proposed indictor for SDG target 14.a)
		Growth in scientific ocean acidification cooperation (proposed indictor for SDG target 14.3)
Target 20 - By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.	Trends in the mobilization of financial resources	Information provided through the financial reporting framework, adopted by decision XII/3 (https://chm.cbd.int/search/financial-reporting)

_____