

## **Guidelines and template for the review of the draft monitoring framework for the post-2020 global biodiversity framework**

### ***I. Background***

1. The second meeting of the Open-ended Working Group<sup>1</sup> on the Post-2020 Global Biodiversity Framework invited the Subsidiary Body on Scientific, Technical and Technological Advice at its twenty-fourth meeting to, among other things, carry out a scientific and technical review of the updated goals and targets, and related indicators and baselines, of the draft global biodiversity framework. Under agenda item 3 the Subsidiary Body will consider this issue.
2. Tables 1 and 2, presents a draft monitoring framework for the 2050 Goals and the 2030 targets respectively. These tables are being made available for the purposes of peer review. In both tables' interim formulations of the proposed 2050 goals and milestones and the 2030 targets are provided for context. Review comments are not being sought on these parts of the post-2020 global biodiversity framework at this time. Columns A, B of the tables provide draft monitoring elements and indicators to be used at the global level to monitor progress in the implementation of the post-2020 global biodiversity framework. Further column C provides information on the baseline year for the indicator and on the frequency that the indicator is updated where known. Review comments are being sought on columns A, B and C only.

### ***II. Submitting Comments***

1. To ensure that your comments are given due consideration, please send them by e-mail to [secretariat@cbd.int](mailto:secretariat@cbd.int), at your earliest convenience but **no later than 25 July 2020**
2. When submitting comments, please adhere to the following guidelines as much as possible:
  - a. Please provide all comments in writing and in an MS Word or similar document format using the table provided below.
  - b. Please provide full contact information for the individual/Government/organization submitting the comments.
  - c. Please avoid commenting on issues related to grammar, spelling, or punctuation, unless it affects the overall meaning of the text, as the document will be edited as the final draft is prepared.
  - d. To facilitate the revision process please be as specific as possible in your comments. In areas where you feel additional or alternative text or information is required, please suggest, if possible, what this text may look like or what should be included.
  - e. If you refer to additional sources of information, please include these with your comments when possible or provide a complete reference or hyperlink.
  - f. Please focus your comments on columns A (monitoring elements), B (indicators) and C (Indicator baseline year and frequency of updates) of the tables 1 and 2.
  - g. If you are suggestion the inclusion of additional indicators please provide information on if the indicator is currently operational, the organization supporting its development, its

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<sup>1</sup> [CBD/WG2020/REC/2/1](https://www.cbd.int/doc/working-groups/2020/01/CBD-WG2020-REC-2-1.pdf)

baseline (i.e. the year data is first available) and how frequently the indicator is updated (i.e. monthly, yearly, every two years etc.).

- h. All review comments will be posted on the webpage<sup>2</sup> for the post-2020 global biodiversity framework in the interests of transparency
3. Should you have any questions regarding the review process, please contact [secretariat@cbd.int](mailto:secretariat@cbd.int).

### III. Template for Comments

4. Please use the review template below when providing comments.
5. The complete draft of the monitoring framework has been released in a portable document format (PDF). For tables 1, 2 and 3 column letters and row numbers have been provided as well as page numbers. Please use these as a reference as illustrated in the table below. General comments can be included in the table by referring to Page 0 and Line 0.

### TEMPLATE FOR COMMENTS

<b>Review comments on the draft monitoring framework for the post-2020 global biodiversity framework</b>				
<i>Contact information</i>				
<b>Surname:</b>	Stott			
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<i>Comments</i>				
<b>Table</b>	<b>Page</b>	<b>Column letter</b>	<b>Row number</b>	<b>Comment</b>
0	0	0	0	Please note that the column references provided on page 1 of this template (2f) do not match those in the Monitoring Framework. For clarity, the comments provided in this document refer to:  A Component B Monitoring Element C Indicator D Indicator baseline/frequency etc.
0	0	0	0	Although we note that goal/target wording is not within the remit of this peer review, we feel that more clarity is needed on the distinction between goals,

<sup>2</sup> <https://www.cbd.int/conferences/post2020>

				milestones and targets, in order to better define the relevant indicators for each. At present there is a fair amount of duplication between them.
0	0	0	0	We would recommend that further consideration of what is useful to do at a global and national level in terms of collation of data and indicators is needed. National indicators may provide more meaningful and suitable data for some elements. It would be difficult and expensive to implement all global indicators nationally. The requirements for use of indicators in national reporting and a global stock take needs to be clarified. A balance of global, regional and national indicators may be needed, including the identification of small number of headline indicators which could be used by all Parties and at the global level. Some of our comments reflect this uncertainty in application, regarding the use and availability of indicators at these different levels.
0	0	0	0	More rationalisation is needed on how well the indicators match the targets, and on the targets themselves. This is of particular concern where indicators are being proposed to measure multiple monitoring elements/targets. Clear linkage between indicator and monitoring element/target is needed, with clear primary indicator(s) per target/goal (or monitoring element). Many indicators seem only partially relevant. Many indicators are repeated and re-used between the goals and the targets. This needs simplification or the messages collated from the indicators will be incomprehensible. This also points to overlap and duplication between targets.
0	0	0	0	We note that marine is underrepresented across most targets, with many of the monitoring elements and indicators solely relevant to the terrestrial environment. This includes many of the indices such as Species Habitat Index and Species Protection Index. In addition, we would query the usefulness of the IUCN Red List for marine species and would suggest looking at the respective approaches across the UN Regional Seas Programs for useful, consistent approaches. We need to ensure that terrestrial and marine are sufficiently represented in a balanced monitoring framework.
0	0	0	0	An evaluation of how good the indicators are as a match to the target would be helpful (e.g. good, moderate, poor)
0	0	0	0	Hyperlinks to published indicators would be useful and make review easier.
0	0	0	0	Sustainable production & consumption. If you can get indicators right for production efficiency and pollution then they feed into indicators around sustainable production and if those are right you can use the same concepts when you look at consumption

				because that's simply looking at it from the other end (so use production indicators on the end of an MRIO). Indicators can be integrated with multiple targets to tell the 'story' of production- consumption.
0	0	A	0	Column A. Not clear whether these are intended to be sub-targets or more technical descriptions? Perhaps there is a need for both but they should not be mixed-up. Need for consistency - should just be descriptive categories without using directional adjectives (e.g. increase, prevent, sufficient)
0	0	B	0	Column B – The breakdown of components into monitoring elements seems to be associated with the availability of indicators. This does not therefore give a comprehensive picture. Needs a more systematic breakdown of components (e.g. terrestrial, inland water, marine ecosystems) and/or monitoring priorities. This will then show more clearly where there are gaps in monitoring and indicators. The rows should read from left to right – at the moment it seems to read from left and right into the middle and the monitoring elements are partly determined by the available indicators and not all aspects of the target are covered.
0	0	C	0	Column C. Clarify that this refers to available global indicators. It would also be useful to indicate if sub-global/national indicators are available (without giving all the details). This will be helpful especially where there are gaps in global indicators. This should also avoid confusion with regard to expectations for national level applications.
0	0	D	0	Column D lacks update frequency for many of these metrics.
1	0	0	0	There is discrepancy between table 1 in the draft monitoring framework for the post-2020 global biodiversity framework and table 1 in the post 2020 indicators document in terms of monitoring elements and indicators. For example trends in area of dry and sub-humid lands are not included in this table.
1	0	0	1-50	How will an aggregate % increase in area, connectivity and integrity be measured? Does % apply to each element?
1	2	C	1-14	It would be useful to have further clarity about the potential for country-level disaggregation of these indicators. Red List assessments could vary at different spatial scales.
1	2	C	3-4	Specific indicators for other terrestrial/ marine ecosystems should also be included.
1	2	B	5-12	Could other indicators for marine habitat types be identified, based on (non-seagrass related) essential ocean variables (EOVs) or the FAOs vulnerable marine ecosystems (VMEs). Has information from

				the European Habitats Directive been considered: <i>Sandbanks which are slightly covered by sea water all the time; Posidonia beds; Estuaries; Mudflats and sandflats not covered by seawater at low tide; and Lagoons.</i>
1	2	C	12	Is this indicator about extent?
1	2	A	15-28	Component A2 should refer to ecosystem integrity and connectivity in alignment with the other components for this goal.
1	2	B	15-28	<p>Ecosystem resilience is a missing monitoring element for component A2. Trends in ecosystem resilience should be included as a monitoring element as a state response to changes in ecosystem integrity.</p> <p>Despite connectivity identified as a component, it is not included as a monitoring element. The indicators identified to measure trends in fragmentation focus on landscape composition (extent and habitat loss), and not landscape configuration, as such they do not measure or provide indication of spatial arrangement or connectivity of habitats at landscape scale. This is also particularly important aspect when considering components A3 and A5.</p> <p>Missing monitoring elements relating to freshwater ecosystems. Potential indicators to add relating to the quality of freshwater ecosystems includes restoration of natural flows and proportion of waterbodies returned to natural state.</p>
1	2-3	C	15-28	For wetlands they propose using species as an indicator of the status of wetlands. This doesn't necessarily take into account changes in distribution of migrating species due to changes in climate. There may be changes in species distribution in relation to wetland creation/destruction that are not related to quality of the habitat.
1	2	B	16	Sustainability is a complex issue which brings in factors other than integrity – suggest delete. Farmland biodiversity can be a measure of integrity – indicators on species abundance may appear in several places in framework.
1	3	C	21	Not sure how useful Biodiversity Intactness Index is at assessing change over short (5-10 year) timescales?
1	3	C	24	Acidity is a pressure, not a measure of integrity.
1	3	B	22-26	Welcome the focus on trends in fragmentation and quality of mangroves and coral reefs. However we question as to why there is no specific mention of seagrass ecosystems.
1	3	C	24	We recommend the inclusion of additional indicators (i.e. new rows after row 24) within “Trends in fragmentation and quality of coral reefs” as included in the BIP Inf. Document. This recommends the

				<p>following indicators would include as a priority: 1) Fleshy algae cover and cover of other key benthic groups, 2) Reef fish abundance and biomass, as well as the following indicators for priority development: Red List of Ecosystems (coral reefs), Structural complexity and Carbonate budgets.</p> <p>NOTE: Fleshy algae cover, Cover of key benthic groups have global baselines and will be updated regularly from 2020 onwards.</p>
1	3	B/C	29-33	<p>The Species Protection Index is a terrestrial indicator. The Red List Index only available for five taxonomic groups (amphibians, birds, cycads, corals and mammals). The vast majority of marine species are not included.</p> <p>The UN Regional Seas Programs may provide useful, consistent approaches.</p>
1	3	C	30	Prevent extinctions is related to actions – not an outcome
1	3	C	33	Species protection index is related to actions – not an outcome
1	3	B	34	The goals refers to healthy and resilient species - resilience is a missing component.
1	4	C	34-35	We recommend the inclusion of an additional indicator (i.e. a new row after row 35) within “Trends in species abundance,” to include “Reef fish abundance and biomass”
1	3	A	34-35	A4 refers to health of species. Not sure what this means? Healthy/viable populations. Health of individuals – surely not? No indicators proposed
1	3-4	A	34-41	A4/A5 - Should species diversity also be included as a component relating to genetic diversity or health or species?
1	4	C	36	A5 – We propose the inclusion of the following indicator “Genetic scorecard for wild species” which has been developed by RBGE, Edinburgh University and Scottish Natural Heritage (SNH). It has been endorsed by the IUCN Conservation Genetics Group.
1	4	A	36-41	Nothing included for marine species within this or any of the indicators for maintaining genetic diversity.
1	4	C	37 (&41)	This is not clear – what is comprehensiveness ...
1	4	C	41	Conservation is an action – not outcome
1	4	C	42-49	All indicators, apart from 47, refer to protected areas – these are actions not outcomes.
1	4	B	42-49	The monitoring elements should specify specific critical ecosystems, and the associated indicators should cover ecosystems beyond KBAs and forests.
1	4	A	42-49	Components should also include reference to vulnerable ecosystems such as coral reefs.

1	4-5	C	42-50	In relation to protected areas, coverage of protected areas seems sensible, but there is nothing here about condition.
1	4	C	46-50	Species habitat index and Protected Area Representativeness Index are both terrestrial indicators and are the only metrics proposed in this framework. Further consideration needs to be given to assess the marine “protection of critical ecosystems”.
1	4	C	48	Should crop wild relatives be captured here – e.g. number of protected areas established to conserve CWR.
1	5&6	A, B, &C	51- 71	Components don't relate directly to the milestones. Indicators have only partial and indirect relationship to monitoring elements
1	5	A & B	51-63	B1 should recognise nature's contribution to climate change adaptation and mitigation, and climate regulation as well as disaster prevention. It is worth noting that the monitoring elements do link to climate change and as such the reference to this in the component should be improved. An additional component to include would be resilience for communities, livelihoods and ecosystems.
1	5	A & B	57	Indicators for ocean acidification could include <i>pH, pCO<sub>2</sub>, total alkalinity, salinity, pressure and temperature</i>
1	5	A/B/C	51 & 56	The ocean helps to regulate climate by a number of other complex biogeochemical and physical factors that affect heat and CO <sub>2</sub> uptake. It will be difficult to develop a single metric for this, but driving factors such as sea surface temperature and pH (covered in row 57) are relevant. Global reporting methodologies such as the Ocean Health Index which is already referred to for other indicators could be used here, to report on trends in sea surface temperature and sea level rise which will give an indication of how the ocean is being affected by climate and therefore its functioning in regulating climate and disaster prevention?  “Trends in habitat creation and maintenance” (row 51) could also be better phrased as this seems to only focus on creating habitats in new areas or maintaining, rather than potential to recover or restore fragmented habitats or where integrity has been lost. Suggest considering ‘creation, restoration (or recovery) and maintenance’.
1	5	C	54	Suspect change in RLI for pollinators is too slow to be useful in driving policy changes.
1	5	C	55	Possible indicators may include the deposition of pollutants that add excess nutrients (e.g. nitrogen) to soils, and which change their pH (these affect the abundance and health of native plant species and will

				affect the health/presence of organisms which rely on a diverse habitat to thrive).
1	5	C	56	Indicators for trends in regulation of climate appears to be too narrow and should be expanded to include further monitoring elements across systems (e.g. carbon stocks in forests, peatlands, soils, benthos, corals, mangroves etc.). This would link indicators for this components to monitoring elements proposed for target 7 (sub-component 7.1).
1	5	C	57	The SDG 14.3.1 indicator “Average marine acidity (pH) measured at agreed suite of representative sampling stations” could be used here to show trends in marine acidity. An existing <u>methodology has been developed by GOA-ON</u> that can be used to support implementation. OSPAR is also developing further indicators and benchmarks on ocean acidification to feed into the <u>5 year Quality Status Reporting</u> , but these indicators are still under development.
1	5	B	58-59	Monitoring element could also include ground water – salt water incursion for example.
1	5	B	61	Not clear how many of these elements could be measured (e.g. soil formation?) and, even if they could, what would they tell us about trends in global biodiversity?
1	5	B & C	62	Not clear how hazards and extreme events can be ‘regulated’ (column B) – is avoided better? Also not clear how numbers of deaths (column C) is linked to the role of biodiversity / nature.
1	5	B & C	62	If extreme events refers to natural disasters then this links to climate change adaptation and as such appropriate indicators should be included.
1	6	B	63	‘Detrimental organisms and biological processes’ need to be defined – does this refer to IAS or disease organisms or other things? Meaningless without definition.
1	6	B	64-67	Under component B2 the monitoring element for water are not included and in particular the previous monitoring element relating to water stress has now been removed, this is particularly relevant considering changing climate.
1	6	B	68 - 71	Although financial disclosure is mentioned in the milestone, it is not included in the monitoring element.
1	6	A	72	C1 is repeated at T12.1 on p22, row 140.
1	6	A & B	72-73	No reference to 2030 milestones in components or monitoring elements.  No reference in components or monitoring elements to (x)% increase in benefits.  No action verb in the component or element.

1	6	A & B	74-76	<p>No reference in the component or monitoring element to fair and equitable sharing of benefits.</p> <p>No reference in the component or monitoring elements to the 2030 milestones.</p> <p>No component or monitoring element on IPLC and aTk.</p> <p>No action verb in the component or monitoring element.</p> <p>Missing a component on utilisation. Components suggested as being on Access, Utilisation, Benefit Sharing. Benefits are not necessarily shared purely for access to genetic resources. Benefits are usually shared following utilisation of the genetic resources.</p>
1	6	C	74-76	<p>Indicators are missing from the ‘sharing of the benefits’ component. This includes an indicator which captures ABS mechanisms other than the NP.</p> <p>Indicators proposed for the ‘access to GR’ component could also be applied to show trends in this component too.</p>
1	6-7	A, B & C	77-85	<p>In Target 18 – capacity building and tech transfer is seen as a financial resource (indicator is dollar value of CB and TT). Here they are seen as a separate resource. This is a discrepancy.</p> <p>There are relevant indicators listed for T18 that are not listed here.</p> <p>There is no monitoring element on the identification of means of implementation (which is in the target). Should have a monitoring element on finance plans. Number of countries with a finance plan for implementation would be a way identifying financial resources.</p>
1	5	A	B1 & B2	There seem to be big gaps in Terrestrial vs marine.
1	6	A	C2	Access to Genetic Resources under the ITPGR through the multilateral system could be included? It should be do-able through the WIEWS data that FAO collate.
1	7	A	D2	Surprised this hasn’t been related to the CHM.
2	0	0	0	The draft targets at present, in particular T1.2 and T1.4. are not capturing issues related to the degradation or decreased in condition of benthic habitats. Impacted habitats can only be allowed to recover by decreasing pressures or complete reduction of human activities. This is particularly relevant for offshore and Deepsea habitats where the degradation and rate of change on the health and condition of habitats could be taking place without

				<p>being noticed for long periods of time, and therefore having lasting detrimental consequences for some highly vulnerable ecosystems. This could be the case for the recovery of habitats from activities such as deep-sea mining and other non-fisheries activities on those countries without strong regulatory framework.</p> <p>A suggestion could be to add the word ‘recover’ under the targets or to add a line on trends on benthic</p>
2	8	A	1	T1.1 Spatial planning does not necessarily imply effective planning for conservation or sustainable use.
2	8	C	1	SDG indicator 6.5.2 only applies to transboundary area and to cooperation – not conservation
2	8	0	1-5	This target seems to overlap indicators with Goal A which mainly relate to extent. Not clear what is being added here.
2	8	C	2	SDG indicator 14.2.1 does not refer to area coverage.
2	8	B	3-5	Dependent on information available from national reports.
2	8-9	A	6-22	Changes in extent are due to losses and gains – i.e. net change
2	9	B	12 Trends in extent and rate of change of mangroves	Other coastal habitats could be included such as saltmarshes and similar systems
2	9	C	14	We recommend the inclusion of additional indicators (i.e. new rows after 14) within “Trends in extent and rate of change of coral reefs” to include the following indicators, in line with the ICRI Recommendation and the BIP Inf. document: Fleshy algae cover and cover of other key benthic groups; Fish abundance and biomass.
2	9	B	16-18	Saltmarsh and other coastal habitats are not specifically referenced here, and therefore unlikely that consideration would be given to specific indicators. Deep-sea habitats are also missing here. See general comment about lack of representation of marine habitats.
2	9	C	18	Unsure about this selection of indicators for this target, not sure about the rational and links to health. It seems like the Ocean health Index covers socioeconomic aspects but what’s potentially missing is bringing in aspects of disaster risk reduction from coral reefs.
2	9	A	23	Not clear how this is differentiated for T1.2
2	9	C	23	Does the ecoregion intactness index sufficiently cover priority or important ecosystems – this could be a gap?
2	9	B	25	This monitoring element should be expanded to capture the recovery of other vulnerable ecosystems in addition to coral reefs.

2	9-10	A	23-29	The component “restoration of degraded ecosystems” and the associated monitoring elements should also reflect that restoration is a process, and account for recovery and the ecological response times of different ecosystems to restoration activity. As such the monitoring element should state “trends in the area.....restored or under active recovery/ restoration”.
2	9	C	24	This is a measure of degradation not restoration. Indicator should focus on area restored
2	9	C	25	Indicator gap: Trend in the area of degraded corals restored. To note that ICRI has an active work stream on coral reef restoration (see <a href="https://www.icriforum.org/reef-restoration-ad-hoc-committee/">https://www.icriforum.org/reef-restoration-ad-hoc-committee/</a> ) and sees value in further discussions to see how to fill this gap.
2	10	B	30-34	Ecosystem resilience is a missing monitoring element.
2	10	C	30-34	Clarity on whether physical or functional connectivity is being measured is essential here. Many of these indicators are proxies rather than direct measurement of either.
2	10	A	32	RLI is an very indirect measure of connectivity. A subset focused on migratory species (row 33) is much better.
2	10-12	A&B	35-52	All components should have separate monitoring elements for terrestrial/freshwater and oceans.
2	10-12	A/B/C	All rows relating to Target 2	This is over-complex and needs simplification.
2	11	C	39-42	Assessments approaches for MPAS developed under Habitats Directive, such as Surface area of marine habitat and population size inside Natura 2000 network, Short-term trend of marine habitat area in good condition inside Natura 2000 network (last 12 years/two report cycles could be used to assess the T2.2 goals
2	11	C	43-45	PARC-Representativeness is a terrestrial indicator. Could use OSPAR indicator here instead for ecological representativeness. <a href="https://www.ospar.org/work-areas/bdc/marine-protected-areas/guidance-for-the-development-and-management-of-the-ospar-network">https://www.ospar.org/work-areas/bdc/marine-protected-areas/guidance-for-the-development-and-management-of-the-ospar-network</a>
2	11-12	B=C	46	PAME does not give a comprehensive assessment of management effectiveness. Could use OSPAR indicator here management effectiveness. <a href="https://www.ospar.org/work-areas/bdc/marine-protected-areas/guidance-for-the-development-and-management-of-the-ospar-network">https://www.ospar.org/work-areas/bdc/marine-protected-areas/guidance-for-the-development-and-management-of-the-ospar-network</a>
2	11-12	B & C	46-48	The suggested indicators do not adequately address equitable management. The suggested monitoring elements and indicators should also capture the inclusion of IPLCs.

2	11-12	C	46 & 51	As drafted components T2.4 and T2.6 currently comprise the same indicator, and as such “conservation effectiveness” is not adequately measured.
2	11	C	43-45	We recommend the inclusion of an additional indicator (i.e. new row after row 45) within “Trends in ecological representativeness of areas conserved” to address [percentage/ area] of coral reefs included in effectively managed MPAs and OECMs.
2	12	A		Transboundary co-operation is missing from this target – this could be measured by information about numbers of transboundary action plans for species or habitats. CMS may be a source.
2	12	C	53	RLI is a very slow response measure – suggest something which is more sensitive would be helpful.
2	12	C	53-54	Trends in in-situ conservation measures should be included too?
2	12	B	54 (target 3)	Monitoring element: ‘trends in species recovery programmes’ – this is a bit vague and unclear how you would measure it apart from what IUCN does already.
2	12	B	55	Reducing HWC by X% amount - Capacity-building and use of participatory approaches to support the implementation of management plans reducing HWC – this should perhaps be factored in as an additional monitoring element.
2	12	B	55	This is a challenging area to develop an indicator for given the wide range of species and locations involved in HWC. Trends may relate to a genuine reduction or resolution of conflict but could also be linked to declining wild populations (populations reduced illegally would result in fewer instances of conflict).
2	12	B & C	56	We suspect this indicator is likely to be challenging a) to measure volumes of illegally harvested or traded specimens and b) to express that as a proportion of equivalent legal trade. If data depend on seizures of illegal goods then these conflate 3 elements – enforcement effort, enforcement effectiveness and actual levels of illegal trade – but we accept these are probably the only data available and are used as the basis for the World Wildlife Crime report <a href="https://www.unodc.org/unodc/en/data-and-analysis/wildlife.html">https://www.unodc.org/unodc/en/data-and-analysis/wildlife.html</a> .
2	13	B	59 & 63	Without any definition of ‘safe’ it is difficult to identify suitable indicators. Safe could / should be defined as ensuring harvests are within safe ecological limits and are ‘safe’ (i.e. no not threaten) non-target organisms. These could be separate monitoring elements. This would then enable the indicators on lines 110-111 to be inserted here. Reference to addressing safety to human health (and reduced zoonosis risk) require further assessment.

2	13	B	62 & 65	Whilst the monitoring elements suggested (biological resources used within limits or quotas) could be assessed for some taxa (eg with reference to trade within CITES export quotas) this will not necessarily mean that the trade is sustainable – because the established limits might have been set on poor science or set based on other reasons. Accept these elements may work better for fish (row 58).
2	13	B	63 & 66	Likely to be challenging to gather data (except on international trade?) to provide meaningful trends. Needs input from FAO/OIE/CAC.
2	13	B	64-65	The non-consumptive uses of biodiversity, such as wildlife tourism, should be reflected in the monitoring elements.
2	14	B	67	This element could be measured with regard to number of Parties which have undertaken horizon scanning exercise (in the last x years?).
2	14/15	A	All elements	Clarity is needed on how different elements that are action / process related or outcome related will be brought together to give an overall assessment of progress on the target. This was a real problem with Aichi Target 9 (amongst others) and is very likely to remain a problem as this is laid out here.
2	15/16	A/B	All elements	This seems a very eclectic set of things to have identified. It may be the art of the possible, but it does not feel strategic. Thresholds for harm from different substances in different ecosystems may be different, so these indicators need to be very carefully set out.
2	15	A/B	77-80 (inclusive)	T5.4 and T5.5 Components and Monitoring Elements refer to the “impacts” of alien species. This is perhaps the most important element to monitor, but presents some issues as it is so complex and interlinked with success/status quo measures for the indigenous ecosystem.
2	15	B	81	The indicator mixes together impacts from two completely different pollutants – nitrogen and plastic. “plastic debris density (SDG indicator 14.1.1)” should be moved from this section and placed in rows 89 or 90, which deal with pollution from plastic.
2	15	B	81-85	T6.1 - Waste management should be one of the monitoring elements, including recycling rates and sound management of chemicals, in line with SDG 12.4.
2	15-16	C	81 & 89	The methodology of the proposed index of coastal eutrophication is not currently something the UK can deliver at the national scale. Where possible indicators should be based on existing monitoring methods and approaches.
2	15	C	81-96	Difficult to decipher what the actual indicators are and they don't add anything when compared with target 14 indicators.

2	15-16	C	81-96	<p>The following SDG indicators may be relevant for this target:</p> <ul style="list-style-type: none"> <li>- Indicator 6.3.1: Proportion of domestic and industrial wastewater flows safely treated;</li> <li>- Indicator 6.3.2: Proportion of bodies of water with good ambient water quality;</li> <li>- Indicator 11.6.1: Proportion of municipal solid waste collected and managed in controlled facilities out of total municipal waste generated, by cities.</li> </ul>
2	15	A	86	<p>There is a wide range of evidence demonstrating impact of chemicals (that are not biocides) on biodiversity, e.g. POPs, EDCs, pharmaceuticals. Chemicals are a major type of pollution and missing from here.</p>
<b>2</b>	<b>15</b>	<b>A</b>	86	<p>Please amend component wording from “Reduction of pollution from biocides” to “Reduction of pollution from pesticides and biocides”. This is because not all pesticides are biocides.</p>
2	15	B	86	<p>Please merge monitoring element on row 86 “Trends in levels of pollution from excess Pesticides” and row 87 “Trends in levels of pollution from excess Herbicides”. This is because the term pesticides includes herbicides.</p> <p>Please also remove the word “excess” from the monitoring element. This is because unlike nutrients, pesticides are not an essential chemical for biota to live.</p>
2	15	C	88	<p>It is unclear how pollution from other biocides can be measured – it is a very broad category.</p>
2	16	C	88	<p>It is not clear what ‘other biocides’ refers to, can an alternative description, like ‘toxin’, be used instead? Does ‘biocide’ include toxic pollutants (e.g. mercury and cadmium)? These may only be toxic at high concentrations, or only to top predators (and humans) – and may never be lethal.</p>
2	16	C	89	<p>Remove reference to eutrophication – as this is dealt with in row 81</p>
2	16	B	89	<p>The monitoring elements should read “trends in levels of pollution from marine plastic” to make it consistent with other pollutants</p>
2	16	A	96	<p>Is there a table formatting error, under what target and component is the monitoring element “trends in the levels of hazardous waste” located.</p>
2	16	A	96	<p>Please add a component T6.5 “reduction of level Persistent Bioaccumulative and Toxic (PBT) chemicals (incl. Persistent Organic Pollutants (POPs) and mercury)”. PBT chemicals include Persistent Organic Pollutants (POPs). POPs are a high priority group of chemical as they are persistent, bio accumulative, toxic, and have a propensity toward long-range transport. POPs are covered under the UN</p>

				Stockholm Convention. Mercury is covered under the UN Minamata Convention
2	16	B/C	97-102	Should include an indicator to measure the application or use of nature-based solutions or ecosystem-based approaches. This could be terms of area or financial investments, noting the potential overlaps with other targets.
2	16	B	97	The monitoring element should be GHGs not just carbon stocks
2	16	C	97	Noting links with UNFCCC reporting the most useful input to the indicators is utilising national GHG inventories/NDC reporting on Land use, land use change and forestry (LULUCF) which can provide information on carbon stock changes in different ecosystems. And while it primarily applies to terrestrial ecosystem (can include some coastal wetland habitats), with reference to the Wetlands Guidance some of the key coastal blue carbon habitats could be included here to produce useful indicator of changing carbon stocks.
2	16	C	98	The following indicators may be considered for climate change adaption, subject to available data: <ul style="list-style-type: none"> <li>- % uptake of adaptive agricultural crops and methods, and aquaculture practices (technologies);</li> <li>- number of early warning systems, mitigation strategies, public forecasts accessible to all people (relating to preparedness in relation to extreme events because of climate change);</li> <li>- % of reduced loss of assets of coastal communities and infrastructures due to extreme weather events (would be an important indicator for the adaptation potential of NbS in coastal environments). These measurement indicators would vary depending on system of measure from baseline levels e.g., - % of infrastructure damaged after extreme event, % of protected areas damaged after extreme events, % agricultural land damaged after extreme event;</li> <li>- prevalence of moderate or severe food insecurity in the population after extreme weather events or through time (i.e., chronic climate change);</li> <li>- average income from sustainable crop and/or livestock production, sustainable marine and freshwater fisheries, and/or eco-tourism of small-scale per household after extreme weather events, or through time;</li> <li>- % of population with access to enough and clean drinking water under extreme events, or through time;</li> <li>- % of people's years lost or deaths due to vector borne diseases of various demographic groups within the population after extreme weather events.</li> </ul>
2	16	C	98	Noting links with using UNFCCC report outputs for CBD indicators, an indicator for this could be number of countries/NDCs that include nature based solutions

				for climate change adaptation as reported in national adaptation communications.
2	16-17	B	98-100	Re the “trends” in biodiversity’s contribution to CC adaptation and disaster risk reduction (monitoring elements) – is it possible to assess biodiversity’s contribution, as opposed to trends in disaster risk reduction as a result of other factors?
2	17	A	101-102	The wording of component T7.2 should refer to safeguarding biodiversity or addressing safeguards, rather than “avoiding negative impacts on biodiversity”.
2	17	B	101	Is it enough for biodiversity to be considered in the “design” of mitigation, adaptation etc. projects? Should go further, extending this to the implementation and outcome of projects.
2	17	C	101-102	In terms of monitoring elements, if this target is looking to ensure biodiversity is not negatively affected by NbS or EbA, then a direct measurement of biodiversity [net] gain should be an indicator.
2	17	C	101	These indicators relating to NDCs would be better in component T7.1.
2	17-19	A	103-116	“Ensuring benefits” component and associated monitoring elements) entirely missing.
2	17-19	B/C	103-113 (target 8)	There is only limited reference to bycatch and it is specific to albatross and large petrel with no reference to sharks. This target is relevant to sustainable fisheries management and so RFMO data could help for sustainable fisheries management as well as for bycatch.
2	19	B & C	110-111	These indicators are useful, but they are about reducing extinction risk as a by-product (as by-catch) of other harvesting regimes. Accordingly, they are more appropriate as a monitoring element in new Target 4 as a contribution to T4.3, ensuring harvests are ‘safe’ for non-target species. Recommend using there instead as new lines 66 bis & ter.
2	19	C	115	In what way is this indicator linked directly to the sustainable management of wild species? The indicator is more likely to be linked to agriculture or use of managed ecosystems. This indicator does not inform the monitoring element, or the components.
2	19	C	116	In what way is this indicator linked directly to the sustainable management of wild species? The indicator is more likely to be linked to agriculture or use of managed ecosystems. This indicator does not inform the monitoring element or the component.
2	20	B	120	Looking for trends in soil quality is challenging. Some real clarity on what is wanted is needed here.
2	20	C	121	RLI pollinators is likely to be a coarse measure that does not change very frequently.
2	20		117-126	No attempt is made to provide an indicator to measure ‘productivity gaps’ in the draft Target – without further clarity on what is meant by this term

				or its relevance to the framework (and how it might be measured), we suggest that it is not a helpful component of the Target.
2	21	C	127	(As for table 1) Nature based solutions for Air Quality are difficult to envisage, as mitigation to human activities are generally needed to reduce the impact of this stressor. However, possible indicators may include the deposition of pollutants that add excess nutrients (e.g. nitrogen) to soils, and which change their pH (these affect the abundance and health of native plant species and will affect the health/presence of organisms which rely on a diverse habitat to thrive).
2	21	A	127-131	<p>The components disregard NBS/ecosystem-based approaches and only reflects air quality, hazards/extreme events/freshwater etc. – it is unclear how the components that are listed link back to both concepts, in particular for monitoring elements (column B) relating to hazardous and extreme events (row 128).</p> <p>For all 3 components, how can the contribution of NbSs and ecosystem approaches be assessed separately from other contributing factors?</p> <p>Not clear how hazards/extreme events differs from disaster risk reduction in Target 7.</p>
2	21	A	129-131	T10.3 includes the additional elements of location and timing. It's unclear what these mean.
2	21-22	A	132	This component applies to access only. Should it include an indicator relating to the number and length of visits to green/blue spaces, and measure of diversity/age/gender of those making visits? People can have access but not use it.
2	22	A	133-139	<p>Component T11.2 is very broadly framed and hugely increases the scope of this target beyond benefits of green spaces with potentially significant overlaps with other targets. Biodiversity and health is an important issue and there will need to be further discussion (at OEWG-3) about how this is addressed within the goals and targets.</p> <p>For the moment we note there is a large gap in the indicators for this component and, irrespective of where this element is eventually positioned in the framework, we encourage further exploration of the opportunities for filling these gaps.</p>
2	22	C	140	Only the Plant Treaty has been mentioned - there are a number of other MLA's relating to ABS.
2	22	A & B	140	<p>T12.1 is repeated at Row G72 for Goal C.</p> <p>No reference to 2030 milestones in components or monitoring elements.</p>

				<p>No reference in components or monitoring elements to (x) benefits.</p> <p>No action verb in the component or element.</p>
2	22-25	A & B	140-151	<p>No reference to 2030 milestones in components or monitoring elements.</p> <p>No reference in components or monitoring elements to (X) benefits.</p> <p>No component or monitoring element on utilisation of genetic resources.</p>
2	24	B	146	<p>The monitoring element does not match the component. The element refers to access whereas the component refers to use. Suggest changing the word ‘access’ to ‘utilisation’. This same monitoring element, if left unchanged, refers to benefits from access. Benefits typically follow utilisation and not simply from access.</p> <p>Final point on this monitoring element. Consideration of moving it to the component T12.1, page 22, column B.</p> <p>No monitoring element that covers monetary or non-monetary benefits.</p>
2	24-25	B	150-151	<p>The monitoring element at page 24, row 150, appears to be nugatory as traditional knowledge associated with the use of genetic resources should result in benefit generation, as covered in the monitoring element at page 25, row 151.</p>
2	24/25	-	152-3, 157, 158	<p>General points:</p> <p>The indicators document suggests that all indicators are “to be determined” (pp.86-89) but the monitoring framework includes 3 indicators (rows 152-3 and 157).</p> <p>Rows 152 and 157 specify different baselines for the same indicator (SDG15.9.1).</p> <p>Non-governmental entities (including businesses) are not clearly included here, except under “other accounts” (row 158), but are identified as key actors in the most recent draft of the LTAM action plan.</p>
2	25-27	B & C	152-161	<p>Monitoring “Trends” through “number of countries” (as in the currently suggested indicators) does not monitor the degree or quality of actions taken. This means it will not necessarily measure improvement in practices of valuation, assessment and decision-making without detailed reporting from Parties.</p>

2	25	B	152	“Policies and planning at all levels” partially duplicates “policies and regulations” (row 159) and these could be streamlined, for example including row 159 alongside 152-156, or row 159.
2	25	B	152	Should this read “biodiversity values” for consistency with monitoring elements?
2	25	B	153	Mechanisms in place to enhance policy coherence of sustainable development” (SDG17.4) appears under “planning processes”. It could be applied more widely to the monitoring elements of components T13.1 and T13.3 (cross-cutting 152-161) or could be narrowly applied to the elements about EIAs and SEIAs in T13.3 (160-161), or to development and poverty reduction strategies (154-155).
2	26	C	157	Note that the UN SEEA-EEA is under revision. There is a specific workstream to review accounting for biodiversity. It will be important to understand the outcomes of the review when considering this indicator. [ <a href="https://seea.un.org/content/accounting-biodiversity">https://seea.un.org/content/accounting-biodiversity</a> ]
2	26	B	157	Further detail on “other accounts”, particularly its scope, would be beneficial, for example to specify participation factors outside the public sector.
2	26	C	158	No indicator is suggested – possible option could be ‘ <i>Number of companies publishing sustainability reports including biodiversity information</i> ’ or ‘ <i>Number of financial institutions using biodiversity metrics to guide investment and risk management</i> ’?
2	27	B	159 - 161	Biodiversity considerations” may not be consistent with language of “biodiversity values”.
2	27	A	161	Inconsistency of language between “strategic environmental assessments” (T13.3) and “strategic environmental impact assessments” (row 161). Could components be streamlined to consider SEIAs and EIAs together?
2	27	A	162-166	None of the currently proposed indicators get close to measuring biodiversity impact (T14.1). But some measure pressures, and even possibly relate these at very broad ecosystem level. There are ways of linking production and consumption to biodiversity impacts. We would suggest the use of SCP-HAT <sup>i</sup> as an indicator here – see below for details.
2	27	C	162	Ecological Footprint: link to biodiversity is tenuous (this is more about how much it is possible to produce in your country and total consumption). The metric is also heavily weighted by carbon. Possibly appropriate for high level look at production vs consumption but isn't easily broken down into supply chains or to inform change.
2	27	C	163	Proxy for intensity of production, measures changes in production due to land conversion on harvest. Would need to make assumptions about biodiversity linked to land use change to extrapolate biodiversity

				impact (T14.1). Data quite hard to collect and measure.
2	27	C	164	Don't see how this is related to supply chains or production, these are measures of total consumption, doesn't align with 2030 target on biodiversity? Based on material flow - works well for raw products but less well for processed products.
2	27-30	C	162-179	This is a difficult area and needs careful construction of metrics that are focused on biodiversity impact rather than proxies. This is an emerging area. It feels that there are too many metrics and elements here. Rows 174, 177 & 179 – real questions on whether this is a suitable metric.
2	28	C	167 - 174	Indicators could include an assessment of industrial emissions (to air and water), and track the progress to achieving legally binding targets, and/or total annual breaches of permitted emissions/releases
2	28	C	167 - 174	Indicators could include specific reference to track progress towards adopting sustainable/low nitrogen agriculture practices – e.g. ones that reduce emissions of ammonia to air, or nitrates to ground water/runoff.
2	28	C	172	Is duplicated 14.2 (also in line 162).
2	29	C	173	Important for transparency but open to inconsistencies and bias. It is not possible to obtain further information from this as to the implementation of reporting or improvements in sustainability.
2	29	C	174 177	Selective use of certification schemes for certain commodities may not be indicative of overall trends. A broader approach - looking at trade and sustainability as a whole is recommended. Useful to break down by sector or commodity. FSC/PEFC indicators looks at sustainable management of forests but excludes forest risk commodities (i.e. commodities which drive deforestation) with regard to monitoring wider trends in deforestation.
2	29	C	175	There are no indicators identified for trends in circular economy. There are two indicators used for circular economy: <ol style="list-style-type: none"> <li>1. Resource productivity</li> <li>2. Carbon emissions including consumption side emissions</li> </ol>
2	29	C	176	Question on indicators for waste management: is the generation of haz-waste a necessarily bad if it's treated appropriately. Generation of waste is not a metric of how waste is managed. If it's a measurement of circular economy, then why not look at all waste, especially as monitoring element is 'trends in waste management'.
2	30	A	180	A component of promoting sustainable consumption patterns is missing so that it is about just about peoples' responsibilities for their choices but facilitating making these choices through availability

				of information on the lifecycle of the product, education and fiscal/policy measures.
2	30	A	180-184	Advice pertaining to T14 also applicable here, particularly the possible use of MRIO (multi-regional input-output models – see end note).
2	30	C	182 & 183	These lines duplicate each other within the same monitoring element.
2	32	A, B	All relevant	The components T16.1, T16.2 and T16.3 already loosely fall into the following categories respectively: i) adopting a regulatory framework ii) doing scientific risk assessments iii) post release monitoring and sharing information. All of the indicators fit nicely under these categories except for the one in Column C row 196 (see below)
2	31	C	184	if this target addresses sustainable consumption at an individual/household level, the appropriate indicator would be household/domestic recycling rates; in this case it would fit better to be addressed under the pollution target 6.
2	31	C	185	if this target addresses sustainable consumption at an individual/household level, food loss index should be moved to the target 14 as it normally takes place at the production, storage, processing and distribution stages in the food value chain
2	32	A	194	Replace ‘prevent’ with ‘regulate’ and make T16.1 about adopting the correct legal and administrative measures for regulation of LMOs
2	32	C	194-204	If just repeating metrics between elements of the same target they are clearly not going to be able to distinguish trends for the different monitoring elements. Better to decide which is useful for each and simplify.
2	32	C	196	Move this indicator to T16.3. This indicator is more to do with post release monitoring and sharing information than having a regulatory framework in place
2	33	A & B	205 - 207	The monitoring elements at 205-206 and 207 introduce use of incentives for biodiversity conservation and sustainable use. This requirement is not stipulated in T17 or the component at T17.1. The components and the monitoring elements do not cover the requirement for incentives which are neutral, which is encapsulated within the Target wording.
2	33 - 34	B	205 - 210	There are no monitoring elements which identify trends in redirecting, repurposing or reforming of incentives.
2	33	A	208	T17.2 covers incentives and subsidies most harmful to biodiversity. Neither the component nor the monitoring element mention reduction of most harmful subsidies. This is a requirement under the target wording.

2	33	B	208	Monitoring element at row 208 identifies subsidies harmful to biodiversity. This is not a requirement under T17.2 which talks only of most harmful
2	33	B	208	The monitoring element at T208 should separate out value and number to give a better reflection on the trend i.e. lowering the number of subsidies will not necessarily have the same impact if the value of subsidies goes up.
2	33 -34	B	208 -210	There is no monitoring element which reduces the most harmful subsidies, which would be in line with the Target wording and component (T17.2)
2	34	B	211	Although a national determination of funding needs is an important part of implementation, this component is not reflected in current target language. It would be better as a monitoring element for Goal D
2	34 -36	C	211-225	The indicators go beyond the monitoring elements, i.e. the number of countries that have developed national finance plans for biodiversity and the number of countries that have been provided with the necessary funding and capacity building do not measure the number of countries that have assessed finding needs. These things are however, useful to measure, These indicators may be more appropriate for goal D.
2	36	C	219	Proposed indicator ‘number of parties with a nationally determined target for increasing levels of domestic resources, does not measure the increase in public domestic financial resources.
2	36	C	228	Illogical to use the contents of one indicator to create another – this is a circular argument which will not give a separate signal. If you want the number of records available – use the availability of information through GBIF, or perhaps more usefully, the proportion that are used to build species indicators.
2	36	C	233	This is a repetition from target 15 A 190-192, Indicators C 232 and 233 are already listed under target 15 and fit better there.
2	36	C	234	Indicators associated with component A 234 would be better placed under target 15 since education is crucial to facilitate the aims of target 15. Indicators C 234-235 are a repetition.
				Additional rows can be added to this table by selecting “Table” followed by “insert” and “rows below”

Comments should be sent by e-mail to [secretariat@cbd.int](mailto:secretariat@cbd.int) no later than 25 July 2020.

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<sup>i</sup> \***SCP HAT** (Sustainable Consumption and Production Hotspot Analysis Tool) provides data on a number of environmental pressures and impacts (including biodiversity loss) resulting from the consumption and supply chains of each UN recognised country.

<http://scp-hat.lifecycleinitiative.org/module-2-scp-hotspots/>

It is a currently operational metric, although with additional developmental improvements still taking place (i.e. it works now but the methods will continue to be updated with further research and recorded in a change log). It was commissioned by the Life Cycle Initiative (hosted by United Nations Environment) together with the One Planet Network and the International Resource Panel, and developed by WU Vienna, in collaboration with CSIRO kindly supported by KGM & Associates who provided the Eora database. The baseline data is 1990, with trends presented from 1990-2015. Update frequency unclear.

SCP-HAT is based on **MRIO**<sup>\*\*</sup>. There are several other options based on MRIO that could also be used, although SCP-HAT is the only one we are aware of that currently estimates biodiversity specifically (biodiversity loss from land use change is one of their specific indicators).

If interested in sustainability impacts more widely, data directly from Exiobase, EORA or a number of other MRIOs could be used to provide data on e.g. The area of land used, the amount of water used and the emission of specific pollutants associated with the consumption of one country, broken down by sector. In general, the current indicators suggested within the CBD framework are mainly focused on production rather than supply chains. Use of MRIO could help solve this.

**Species Threat Abatement and Recovery (STAR)**. Previous name: Biodiversity Return on Investment Metric (BRIM) (IUCN) possible indicator for 14.2/14.3 to address financial sector - global version now exists - which links risk of species loss. The STAR apportions the relative contribution of threats (pressures) to each threatened species' extinction risk. For a particular site, land management unit, or administrative region (country or province), the STAR shows the potential for reducing extinction risk before investment activities start (ex-ante measure), or can measure the achieved impact of conservation interventions on extinction risk over time (ex-post measure). We are aware of a few use cases here but STAR doesn't yet have a strong online presence.

<https://www.iucn.org/regions/washington-dc-office/our-work/species-threat-abatement-and-recovery-star-metric>

<sup>\*\*</sup>Multi-regional input-output (MRIO) models are an economic tool used to model global trade flows. They do this through tables representing the monetary inputs and outputs across different countries and their commercial sectors (e.g. oilseeds, cattle farming, paddy rice, etc).

MRIOs can be used to estimate the sourcing patterns of a country's consumption. For example, they can show the likely proportion of a commodity consumed in the UK that was originally grown in any country or region of the world.

There are two main advantages of using MRIO modelling over conventional trade data (which is recorded bilaterally between the two trading countries). First, they allow for **prediction of the true country of origin**, rather than the final country from which a product was directly imported (which may have been an intermediate trader or involved in processing rather than initial production). Secondly, they estimate total consumption of raw commodities, rather than relying on import data based on final product. This allows for **analysis of products that are embedded within other products** (e.g. oilseeds within cosmetics).

The modelling assumes that a country's exports of a particular commodity are proportional to the total of the country's own imports of this commodity, plus its domestic production. Therefore, MRIOs show the most likely source country, rather than the true source country.

MRIOs are an important and widespread tool within the field of sustainable production and consumption, as they allow for commodity production to be linked to final consumers. This allows consuming countries to take responsibility for the likely impact they have overseas. They may use this as a hot-spotting tool in order to identify areas and sectors in which they have the highest risk of impact, in order to focus on implementing solutions where they are most needed.

It is possible to hybridise financial data with physical data to get better geographic and commodity resolution.

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