

3 February 2020

Submission of views on possible targets, indicators and baselines for the post-2020 global biodiversity framework and peer review of a document on indicators

(Notification 2019-108 from the Executive Secretary of the Secretariat of the Convention on Biological Diversity)

Goals

Goal 1: No net loss by 2030 in the area and integrity of freshwater, marine and terrestrial ecosystems, and increases of at least [20%] by 2050, ensuring ecosystem resilience (paragraph 10(a)).

Goal 1, Monitoring Element 1, Indicators: Change, and rate of change, in extent of natural ecosystems and biomes (overall, for each biome/ecosystem type, and for intact areas, e.g. primary forests).

Proposed Indicators:

- System of Experimental Ecosystem Accounting (SEEA) Experimental Ecosystem Accounts (EEA) Indicators¹
- Indicators on non-forest ecosystems such as grasslands, shrublands, and other major terrestrial vegetation types using the SEEA EEA Indicators
- Indicators specific to high-carbon ecosystems beyond forests (mangroves, peatlands, seagrasses)

Comments:

For consistent and repeated national and international reporting, we recommend the adoption of the System of Experimental Ecosystem Accounting (SEEA) Experimental Ecosystem Accounting (EEA) as the mechanism and approach used to track and monitor proposed indicators (e.g., ecosystem extent account (area), diversity (biodiversity accounting), integrity (condition account), ecosystem services (ecosystem services accounts) and thematic accounts (e.g., biodiversity)).

The definition and differentiation of ecosystem types will matter significantly in monitoring, impacting whether some ecosystems are included or excluded from this goal. The original list of indicators largely omits non-forests ecosystems. Therefore, we recommend including indicators that address grasslands, shrublands, and other major terrestrial vegetation types using the SEEA EEA Indicators to track the extent of fragmentation, biodiversity, degradation of different ecosystem types in terms of area, measuring the overall quality of an ecosystem asset and capturing the state or functioning of the ecosystem in relation to both its naturalness and its potential to supply ecosystem services. Given the importance of addressing climate issues, we also recommend the specific tracking of carbon-rich ecosystems (mangroves, peatlands, seagrasses).

¹ <https://seea.un.org/ecosystem-accounting>

Goal 1, Monitoring Element 2, Indicators: Change in ecosystem connectivity and fragmentation.

Proposed Indicators:

- We recommend using a separate indicator for connectivity in freshwater systems, such as the River Connectivity Status Index².
- We recommend developing a marine connectivity indicator.

Comments:

Connectivity is an important indicator for ecosystem health and we welcome the inclusion of this ecological characteristic in the monitoring framework. We note the importance of assessing marine and freshwater connectivity separately from terrestrial connectivity. Currently, there is no global marine connectivity indicator so we highly recommend its development through a scientific body and partnership, including the IUCN Marine Connectivity Working Group. The indicator of this monitoring element should include protected area network structures, circuit flow and habitat cover.

Goal 1, Monitoring Element 3, Indicators: Change in ecosystem integrity resilience and degradation and rate of ecosystem restoration.

Proposed Indicators:

- We recommend potential indicators from Trends.Earth³ which calculates metrics following indicators used in the SDGs 15.3.1 on land degradation. Specific indices include changes in primary productivity, land cover and soil organic carbon.
- Freshwater Health Index⁴
- We recommend retaining the Ocean Health index⁵ to track this element.

Goal 2: The percentage of species threatened with extinction is reduced by [X%] and the abundance of species has increased on average by [X%] by 2030 and by [X%] by 2050 (paragraph 10(b)).

Goal 2, Monitoring Element 1, Indicators: Number of extinctions.

Proposed Indicators:

- We recommend using global taxonomical data to group the species and organisms included in this target. Possible groupings could be mammals, birds, amphibians, crabs, shrimps, crayfishes, fishes, dragonflies/damselflies, molluscs, and freshwater plants.

Goal 2, Monitoring Element 2, Indicators: Change in conservation status.

² https://www.researchgate.net/publication/332961728_Mapping_the_world's_free-flowing_rivers

³ <http://trends.earth/docs/en/>

⁴ <https://www.freshwaterhealthindex.org/>

⁵ <http://www.oceanhealthindex.org/>

Proposed Indicators:

- We recommend estimating extinction risk through use of species and population models.

Comments:

Preventing extinctions is the critical aspect of monitoring this goal. In addition to using the IUCN Red List of Species, we recommend using models that estimate extinction risk for species and populations, particularly when it comes to extinction risk from climate change, which may occur on a faster timeline than other indicators will be able to capture.

Goal 2, Monitoring Element 3, Indicators: Change in species abundance.

Proposed Indicators:

- We recommend using the Wildlife Picture Index⁶, which will be launched at start of 2021.

Comments:

The picture index will provide additional data for tracking species numbers, enhancing capacities to track progress on this goal.

Goal 4: Nature provides benefits to people contributing (i): Improvements in nutrition for at least [X million] people by 2030 and [Y million] by 2050;

Goal 4, Monitoring Element 2, Indicator. Change in access to water.

Suggested Text Change⁷:

- "Proportion of important sites ~~for~~ *delivering ecosystem services providing nutrition-related benefits to people terrestrial and freshwater biodiversity* that are covered by protected *and conserved areas including OECMs*, by ecosystem type."

Goal 4 (ii): Improvements in sustainable access to safe and drinkable water for at least [X million] people, by 2030 and [Y million] by 2050;

Goal 4, Monitoring Element 2, Indicator. Change in access to water.

Proposed Indicator:

- Proportion of important sites delivering ecosystem services providing freshwater benefits to people that are covered by protected and conserved areas including OECMs, by ecosystem type

⁶ Ahumada et al. 2013. Monitoring the Status and Trends of Tropical Forest Terrestrial Vertebrate Communities from Camera Trap Data. PLOS One.

⁷ Note that we differentiate changes to the text of Zero Draft suggested indicators by putting them in quotations here. All additional proposed indicators are in plain text.

Targets

Target 1: Retain and restore freshwater, marine and terrestrial ecosystems, increasing by at least [50%] the land and sea area under comprehensive spatial planning addressing land/sea use change, achieving by 2030 a net increase in area, connectivity and integrity and retaining existing intact areas and wilderness (paragraph 12(a)(1)).

Target 1, Element 1, Indicators: Change in extent and rate of change of natural ecosystems and biomes.

Proposed Indicators:

- Global Water Surface Explorer⁸
- Forest area as a proportion of total land area
- Intact Forest Landscapes⁹

Comments:

In accordance with SDG indicator 6.6.1, indicators for this target should measure the change in extent and integrity of water-related freshwater ecosystems over time, possibly using the Global Water Surface Explorer as an indicator for the extent of change to lakes/wetlands. We also recommend critical attention to how natural forest area is defined to ensure it does not include plantation forest. Currently, we recommend using the intact forest landscapes¹⁰ process.

Target 1, Element 2, Indicators: Spatial planning.

Suggested Text Change and Proposed Indicator:

- “Proportion of ~~land and sea~~ *terrestrial, freshwater and marine* area under spatial planning regimes that adequately integrate biodiversity, *including through requirements for strategic environmental assessments and a mitigation hierarchy approach for all infrastructure and development with potential direct, indirect or cumulative impacts on achievement of 2030 and 2050 goals.*”
- Number of river basins with integrated river basin plans

Comments:

In addition to monitoring percentage of land under spatial planning, we recommend greater specificity in the elements of spatial planning required to “adequately integrate biodiversity”. For monitoring freshwater, we recommend using river basin planning.

Target 1, Element 3, Indicators: Change in ecosystem connectivity.

Proposed Indicators:

⁸ <https://global-surface-water.appspot.com/>

⁹ www.intactforests.org/

¹⁰ www.intactforests.org/

- Connectivity Status Index¹¹ (for rivers)
- We recommend developing a marine connectivity indicator.

Target 1, Element 4, Indicators: Change in rate of habitat degradation.

Proposed Indicators:

- Freshwater Health Index¹²
- Biodiversity Threat Index¹³
- The susceptibility of ecosystems to fire can be tracked using area and frequency of occurrence and/or post-fire recoverability

Target 1, Element 5, Indicators: Area of land restored, by ecosystem (and resulting benefits).

Suggested Text Change:

- “Area *and extent of land natural terrestrial, including freshwater, and marine systems* restored, by ecosystem....”

Comments:

We recommend this text change so that freshwater systems are included in monitoring. It’s important to expand the scope of this element beyond area-based indicators because the restoration of rivers is measured in kilometres. We also recommend adding specific mention of marine systems because they are also capable of being resorted to health.

Target 2: Protect sites of particular importance for biodiversity through protected areas and other effective area-based conservation measures, by 2030 covering at least [60%] of such sites and at least [30%] of land and sea areas with at least [10%] under strict protection (paragraph 12(a)(2)).

Target 2, Element 1, Indicators: Change in extent of protected areas and other area-based conservation measures.

Proposed Indicators:

- Losses in coverage due to downsizing and degazettement
- Change in status and rules within protected areas, including downgrades to protected areas and other area-based conservation measures
- Extent of IPLCs lands secured via recognition documentation and titling

Comments:

While protected area downsizing and degazettements are captured in the term “extent”, we propose using an indicator for tracking of protected area downgrades. This is important because downgrades influence

¹¹ https://www.researchgate.net/publication/332961728_Mapping_the_world's_free-flowing_rivers

¹² <https://www.freshwaterhealthindex.org/>

¹³ www.riverthreat.net

the quality and reality of protection and conservation in these sites. An opportunity for doing this is through reporting of Protected Area Downgrading Downsizing and Degazettement (PADDD)¹⁴ events including location, extent, timing, and proximate cause/rationale for each PADDD event, with associated legal documentation. The reporting of these should be led by Parties and submitted to UNEP-WCMC. We recommend Parties consider proposed changes to protected area rules and boundaries through transparent, participatory, evidence-and rights-based processes that are equivalent to those governing protected area establishment, and that are separate from other decisions to ensure compatibility with conservation objectives (e.g. conservation planning or resolving land claims or restoring rights for indigenous communities).

Target 2, Element 2, Indicators: Coverage and representativity of protected areas and other area-based conservation measures (ecosystems, and key areas).

Proposed Indicators:

- We recommend using freshwater ecoregions as well as terrestrial and marine: www.feow.org.
- Protected area and OECM coverage of priority areas delivering ecosystem services for climate, food and water

Comments:

We recommend using existing information to support the development of an indicator including research on areas that provide essential ecosystem services, such as the Critical Natural Capital project¹⁵. This process can help illustrate the importance of including ecosystem services in land and sea use planning and spatial prioritization. Currently in development is a methodology for calculating an aggregate metric or indicator that would be useful for monitoring and evaluation. Individual services have indices already in existence or in various stages of development.

Target 2, Element 3, Indicators: Connectivity of protected areas.

Proposed Indicator:

- We recommend including an indicator on connectivity of OECMs

Comments:

We note that the protected area connectedness (PARC) indicator¹⁶ only assesses how well-connected protected areas are to each other and does not account for ecosystem connectivity. We recommend that indicators take account of the greater landscape and seascape.

Target 2, Element 4, Indicators: Protected area management.

Suggested Text Change and Proposed Indicator:

- "Protected area management *effectiveness scores*"

¹⁴ <https://www.conservation.org/projects/paddd-protected-area-downgrading-downsizing-and-degazettement>

¹⁵ Chaplin-Kramer, et al. Where is the nature people need? *in prep for Science/Nature*.

¹⁶ <https://www.bjpinidicators.net/indicators/protected-area-connectedness-index-parc-connectedness>

- We recommend developing a governance indicator.

Comments:

We note the difference between management AND governance and highly recommend the inclusion of differentiated indicators. In particular, we recommend the development of a governance indicator for protected and conserved areas. Two groups are currently working on this, including a long-standing partnership on social assessment of protected areas (see Site-level Assessment of Governance and Equity (SAGE)¹⁷) and the Alliance for Conservation Evidence and Sustainability (ACES)¹⁸ of which CI is a partner.

Target 4: Reduce by 2030, pollution from excess nutrients, biocides, plastic waste and other sources by at least [50%] (paragraph 12(a)(4)).

Target 4, Element 1, Indicators: Change in the trends in nitrogen waste.

Proposed Indicators:

- We propose to use the Rivers in Crisis¹⁹ data set which records the following indicators of water pollution: Soil Salinisation, Nitrogen Loading, Phosphorus Loading, Mercury Deposition, Pesticide Loading, Sediment Loading, Organic Loading, Potential Acidification, Thermal Alteration. This resource also aggregates the data into single values for biodiversity threat, and human water security.

Target 6: Contribute to climate change mitigation and adaptation and disaster risk reduction through nature-based solutions providing by 2030 [about 30%] [at least XXX MT CO2=] of the mitigation effort needed to achieve the goals of the Paris Agreement, complementing stringent emission reductions, and avoiding negative impacts on biodiversity and food security (paragraph 12(a)(6)).

Target 6, Element 1: Trends in the amount of carbon stored in ecosystems and emissions avoided.

Suggested Text Change and Proposed Indicator:

- "Trends in the amount of carbon stored in ecosystems *globally* and emission *reductions from natural systems loss or degradation avoided*".
- Carbon sequestration from restoration activities

Comments:

We recommend monitoring both the reduction in emissions through protection of high carbon ecosystems from conversion and the increased carbon sequestration occurring through restoration as these are both important elements of nature's contribution to a stable climate.

¹⁷ <https://www.iied.org/assessing-governance-protected-conserved-areas-gapa>

¹⁸ <https://www.allianceconservationevidence.org/>

¹⁹ www.riverthreat.net

Target 7: Enhance the sustainable use of wild species providing, by 2030, benefits, including enhanced nutrition, food security and livelihoods for at least [X million] people, especially for the most vulnerable, and reduce human-wildlife conflict by [X%] (paragraph 12(b)(7)).

Target 7, Element 2: Change in incidence of human-wildlife conflict.

Proposed Indicators:

- Psychological stress due to loss of income or fear of encounters
- Positive benefit from human-wildlife encounters

Comments:

We note the importance of monitoring for direct (monetary, loss of life) and indirect impacts from conflicts, such as psychological stress due to loss of income or fear of encounters. Human-wildlife encounters can be split into conflict and co-existence. The latter is when actions by humans or wildlife have beneficial effects on the other.

Target 8: Conserve and enhance the sustainable use of biodiversity in agricultural and other managed ecosystems to support the productivity, sustainability and resilience of such systems, reducing by 2030 related productivity gaps by at least [50%] (paragraph 12(b)(8)).

Proposed Indicator:

- Indicators from the ecosystem services layers in Critical Natural Capital²⁰ project

Comments:

We recommend using existing information regarding individual ecosystem services that have well-developed indices, such as carbon.

Target 8, Element 5, Indicators: Change in the agricultural area under sustainable management.

Proposed Indicator:

- Indicator that shows how much land area is under regenerative agriculture which then could feed into soil health and soil carbon storage

Target 9: Enhance nature-based solutions contributing, by 2030, to clean water provision for at least [XXX million] people.

Target 9, Element 2, Indicators: Change in the number protected forested watershed, and inland water ecosystems essential for the provision of water.

Suggested Text Change:

- "Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, ~~by ecosystem type~~ *critical for water-related ecosystem services.*"

²⁰ Chaplin-Kramer, et al. Where is the nature people need? *in prep for Science/Nature.*

Comments:

We recommend adding an indicator that tracks the areas most critical for provision of ecosystem services.

Target 12: Reform incentives, eliminating the subsidies that are most harmful for biodiversity, ensuring by 2030, that incentives, including public and private economic and regulatory incentives are either positive or neutral for biodiversity (paragraph 12(c)(12)).

Target 12, Element 1, Indicators: Change in the value of subsidies harmful to biodiversity.

Proposed Indicators:

- Trends in fossil-fuel related subsidies including for plastics, transportation, and other sectors
- Number of countries/ states that use some form of certification schemes – FSC²¹, MSC²², for biodiversity friendly resource harvesting practices

Target 14: Reform economic sectors towards sustainable practices, including along their national and transnational supply chains, achieving by 2030 a reduction of at least [50%] in negative impacts on biodiversity (paragraph 12(c)(14)).

Target 14, Element 2, Indicators: Change in the number of private-sector organizations which reflect biodiversity in their planning, valuation, and impact assessment processes.

Proposed Indicators:

- Number of countries applying systematically ex ante and ex post impact assessment that include biodiversity considerations

Comments:

We note that consumption patterns of major markets have negative impacts on ecosystems that deliver nature-based solutions, which are not in their territories. Biodiversity considerations must be mainstreamed across all sectors and activities, including international trade and imports.

Target 17: People everywhere take measurable steps towards sustainable consumption and lifestyles, taking into account individual and national cultural and socioeconomic conditions, achieving by 2030, just and sustainable consumption levels (paragraph 12(c)(17)).

Target 17, Element 1, Indicators: Change in the trends in the use of resources.

Proposed Indicators:

- Water footprint²³
- Water depletion metric²⁴

²¹ <https://us.fsc.org/en-us>

²² <https://www.msc.org/home>

²³ <https://waterfootprint.org/en/water-footprint/global-water-footprint-standard/>

²⁴ <https://www.elementascience.org/articles/10.12952/journal.elementa.000083/>

Comments:

We recommend using the water footprint because it helps quantify the hidden effects of water use behind consumption and trade of products²⁵. This provides a more holistic understanding of sustainable use for water management. We also recommend including an indicator specific to sustainable water use which could be derived from Brauman and Richter's water depletion metric.

Target 19: Promote the full and effective participation of indigenous peoples and local communities, and of women and girls as well as youth, in decision making related to the conservation and sustainable use of biodiversity, ensuring by 2030, equitable participation and rights over relevant resources (paragraph 12(c)(19)).

Target 19, Element 1, Indicators: Change in the number of countries involving indigenous peoples and local communities in decision-making processes.

Proposed Indicators:

- Number of legal court cases on issues of resource rights and land conflicts
- Number of countries having IP representatives in their official delegations to the CBD
- Number of countries having local community representatives in their official delegations to the CBD

Target 19, Element 2, Indicators: Change in the number of countries recognising traditional knowledge, practices and innovations, traditional occupations and customary use.

Proposed Indicators:

- Number of countries contributing to the UNFCCC LCIP Knowledge Sharing Platform²⁶

Comments:

This area of study regarding recognition of traditional knowledge at national levels is underdeveloped, therefore we suggest research and exploration of additional indicators, either existing or newly created. Indicators will need to be clearly defined to support adequate tracking.

Target 19, Element 4, Indicators: Change in the participation of women in environmental governance.

Proposed Text Change:

- "Change in the *leadership and* participation of women in environmental governance."

Comments:

We recommend this element include change in participation of women in decision making on environmental governance instead of only participation in environmental governance.

²⁵ <https://www.pnas.org/content/109/9/3232>

²⁶ <https://unfccc.int/LCIPP>

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