**Table 1. Indicators for monitoring elements of the draft goals**

| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Components of the draft Goals****(copy/paste text from** [**CBD/SBSTTA-24/post-2020-monitoring.en.pdf**](https://www.cbd.int/sbstta/sbstta-24/post2020-monitoring-en.pdf)**)** | **Goal Monitoring Elements****(copy/paste text from** [**CBD/SBSTTA-24/post-2020-monitoring.en.pdf**](https://www.cbd.int/sbstta/sbstta-24/post2020-monitoring-en.pdf)**)** | **Indicator name** | **Responsible Institution for the indicator** | **Available today (X) or under active development (Y)** | **Date of availability for indicator in development (Year)** | **Year of last update (e.g. 2019)** | **Time series and frequency of updates (e.g. 1985-2019, annually)** | **Methodology available for national use (Y/N)** | **Global indicator can be disaggregated for national use (Y/N)** | **National data aggregated to form global indicator (Y/N)** | **Used in GBO-4 (Y/N)** | **SDG indicator (Y/N)** | **Indicator used to measure other MEAs or processes (e.g. Ramsar Convention, IPBES, CMS)** | **Comments** |
| *GA1. Increased extent of natural ecosystems (terrestrial, freshwater and marine ecosystems)* | *Trends in area of forest ecosystems* | *Forest area as a percentage of total land area* | *FAO* | *X* |  | *2020* | *1990-2015* | Y | Y | N | N | *Y* *SDG indicator 15.1.1* |  |  |
| *GA4. Increase the number and health of common species* | *Trends in species abundance* | *Living Planet Index (LPI)* | *ZSL/WWF* | X |  | *2020* | *1970-2020, available every 2 years* | Y | Y | N | Y | N | *CMS, Ramsar, IPBES* |  |
| *GA5. Maintain**Genetic**diversity* | *Trends in**the diversity**of wild**species* | **Number of genetically resilient populations:**The number of populations [or breeds] within species with an effectivepopulation size (Ne) above 500 compared to the number below 500  | Proposed by Hoban et al (2020) | Y | 2021 | 2020 |  | N | Y |  | N | N |  |  |
| *GA5. Maintain**Genetic**diversity* | *Trends in**the diversity**of wild**species* | The proportion of populations [or geographic range] maintained within species | Proposed by Hoban et al (2020) | y | 2021 | 2020 |  | y | N |  | N | N |  |  |
| *GA5. Maintain**Genetic**diversity* | *Trends in**the diversity**of wild**species* | **genetic monitoring index:**The number of species and populations in which genetic diversity isbeing monitored using DNA based methods | Proposed by Hoban et al (2020) | y | 2021 | 2020 |  | y | N |  | N | N |  |  |
|  | *Trends in the diversity of wild relatives*  | **Indicators as same as above** because It has been shown that genetic diversity does not correlate to the Red List status (Willoughby et al 2015).  A change in the Red List status indicates a nearness to extinction.  It does not necessarily relate to loss of geneticdiversity within and among populations. |  |  | 2021 |  |  |  |  |  |  |  |  |  |

**Table 2. Indicators for monitoring elements of the draft targets**

| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Components of the draft Targets****(copy/paste text from** [**CBD/SBSTTA-24/post-2020-monitoring.en.pdf**](https://www.cbd.int/sbstta/sbstta-24/post2020-monitoring-en.pdf)**)** | **Target Monitoring Elements****(copy/paste text from** [**CBD/SBSTTA-24/post-2020-monitoring.en.pdf**](https://www.cbd.int/sbstta/sbstta-24/post2020-monitoring-en.pdf)**)** | **Indicator name** | **Responsible Institution for the indicator** | **Available today (X) or under active development (Y)** | **Date of availability for indicator in development (Year)** | **Year of last update (e.g. 2019)** | **Time series and frequency of updates (e.g. 1985-2019, annually)** | **Methodology available for national use (Y/N)** | **Global indicator can be disaggregated for national use (Y/N)** | **National data aggregated to form global indicator (Y/N)** | **Used in GBO-4 (Y/N)** | **SDG indicator (Y/N)** | **Indicator used to measure other MEAs or processes (e.g. Ramsar Convention, IPBES, CMS)** | **Comments** |
| *T3.1. Active**recovery and**conservation**management**actions* | *Trend in exsitu**conservation**measures* | Number of plant and animal **resilient, representative and redundant** genetic resources for food and agriculture secured in medium or long term conservation facilities  |  |  |  |  |  |  |  |  |  |  |  |  |
| *T4.1. Harvest is legal, sustainable and safe for human health and biodiversity* | *Trends in proportion of biological resources harvested legally* | *Red List Index*  | *IUCN & BirdLife International* | *X* |  | *2020* | *1993-2020, updated annually* | Y | Y | N | Y | *Y**SDG indicator 15.5.1* | *CMS, IPBES, Ramsar* |  |
| *T6.4. Reduction of pollution from other sources* | *Trends in levels of pollution from sediments* | *Index of Coastal Eutrophication* | *UNEP / IOC-UNESCO* | Y | *2021* |  | *Every 5 years* |  |  |  |  | *Y**SDG indicator 14.1.1a* |  |  |

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| **General Comments** |
| **Page** | **Comment** |
| 10 | There is a problem of consistency among the five A components (species, genes and ecosystems). Genetic diversity needs **a milestone for 2030***Maintaining [95%] of genetic diversity and halting any further loss, within at least [90%] of all species by 2030, with a goal by 2050 of developing and initiating strategies that achieve conditions that prevent any future loss of genetic diversity for all species* |
| 12 | **Pre-human disturbance**: In his book “Half-Earth, Our Planet’s Fight for Life” (2016) Edward O. Wilson (often called the ‘father of biodiversity’) states that “Even in the most favorable of circumstances, a nagging problem in biodiversity restoration is determining its baseline. (…) The seeming arbitrariness of the baseline has been used by Anthropocene enthusiasts to accept pauperized floras and faunas as they are, so infiltrated by invasive species as to constitute “novel ecosystems.” To lower the bar in such a manner reflects ignorance and unacceptable carelessness. (…) The species composition immediately prior to the first major shift that can be ascribed to human activity on the basis of fossil and present-day evidence is the baseline tested and preferred by scientists. For Gorongosa National Park, it is the late Pleistocene prior to invasions by Neolithic people from western Africa. On the U.S. Gulf of Mexico coast, it would be just before either the start of the European incursion or the later clear-cutting of the longleaf pine, the keystone species of the great savanna. (…) From a scientist’s point of view, the problem of establishing a baseline is not an argument against restoration but a series of fascinating challenges deserving combined research in biodiversity, paleontology, and ecology. (…)”.  |
| 12 | **Pre-industrial (e.g. c1750)**: Global impacts to biodiversity are pre-industrial, that is, they are prior to 1750. Simon Lewis and Mark A. Maslin point out in their paper entitled “Defining the Anthropocene” (2015 Nature 519: 171-180) that besides the use of fire by early humans, the Megafauna Extinction between 50000 and 10000 years ago (when about half of all large-bodied mammals were lost) and the development of agriculture (that replaces natural vegetation, increases species extinction rates and alters biogeochemical cycles), “The arrival of the Europeans, in the Caribbean in 1492, and subsequent annexing of the Americas, led to the largest human population replacement in the past 13,000 years, the first global trade networks linking Europe, China, Africa and the Americas, and the resultant mixing of previously separate biotas, known as the Colombian Exchange. One biological result of the exchange was the globalization of human foodstuffs. The New World crops maize/corn, potatoes and the tropical staple manioc/cassava were subsequently grown across Europe, Asia and Africa. Meanwhile, Old World crops such as sugarcane and wheat were planted in the New World. The cross-continental movement of dozens of other food species (such as the common bean, to the New World), domesticated animals (such as the horse, cow, goat and pig, all to the Americas) and human commensals (the black rat, to the Americas), plus accidental transfers (many species of earthworms, to North America; American mink to Europe) contributed to a swift, ongoing, radical reorganization of life on Earth without geological precedent.” In these authors’ book “The Human Planet, How We Created the Anthropocene” (2018) they further state that “The impacts of the Columbian Exchange set Earth on a new evolutionary trajectory. (…) Two hundred million years ago, all of Earth’s land was linked together in the supercontinent of Pangea, which then broke into separate pieces, with these new continents slowly moving to the positions on the Earth that we are familiar with today. The genetic material left on each separating continent has been evolving largely independently ever since. Transcontinental shipping began to link the continents back together, both deliberately as people moved selected species and inadvertently as stowaway species smuggled themselves to new lands. What plate tectonics did over tens of millions of years is being undone by shipping in a few centuries and aviation in a few decades. We are creating a new Pangea. (…) Alongside globalization there is homogenization. As more distantly related species come into contact and mix, genetic distinctiveness – that is, genetic diversity – is lost at the global scale. At the level of ecosystems, those separated by long distances are becoming more similar. At the species level, common species are becoming ever more common, often at the expense of the globally rare, meaning diversity is lost. (…) As science writer Charles C. Mann, who updated and expanded on Alfred Crosby’s original Columbian Exchange story, has written, ‘To ecologists, the Columbian Exchange is arguably the most important event since the death of the dinosaurs. (…)”. |

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