**Template for the review of the document on scientific and technical information to support the review of the proposed goals and targets in the updated zero draft of the post-2020 global biodiversity framework**

**TEMPLATE FOR COMMENTS**

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| ***General comments*** |
| CETAF, the Consortium of European Taxonomic Facilities represents the European Natural History Collections. The research and collection-based work carried out at CETAF institutions is guided by the CETAF Code of Conduct, the first officially acknowledged Best Practise under the European ABS regulation (EU) No. 511/2014. Non-commercial biodiversity research at CETAF is directed towards the three goals of the CBD, and delivers benchmarks and baselines for metrics relevant for Aichi Goals and Targets and Sustainable Development Goals 14 and 15. Our research adds to the scientific basis and expertise for many of the goals and targets of the post-2020 GBF, we are engaged in capacity building, training and research collaborations with scientists worldwide and welcome the opportunity to comment on the monitoring framework for the post-2020 global biodiversity framework. With our comments we want to support the work of the SBSTTA-24 to improve the present draft monitoring framework for the 2050 Goals and the 2030 targets.By introducing the post-2020 GBF goals and targets, contributions that increase the knowledge of biodiversity and their sustainable use should be measured in a wide range of habitats and landscapes around the world. We welcome these efforts which – among other items – put a focus to scientific contributions, non-monetary benefit sharing and engagement in capacity building, education, training and scientific collaboration within the context of the CBD and beyond. The introduction of the proposed goals and targets will increase the visibility of taxonomic research, its contributions and engagement for the goals of the CBD, SDGs and post-2020 GBF, which broadly overlap. The efforts to increase the knowledge on biodiversity, habitats and their functions and ecosystem-services undoubtedly need to be intensified. The Nagoya Protocol aimed to stimulate this by fostering scientific collaborations and benefit sharing. The diverse regulatory landscape in CBD and NP as well as non-NP/CBD countries however slowed down (taxonomic) research. This led to the perception in many biodiversity-rich countries that ‘barely no benefits were delivered’ and among scientists engaged in biodiversity research, which find it increasingly difficult to engage in international research projects. The post-2020 GBF has the potential to heal some of obvious deficiencies and frustrations through the introduction of indicators and parameters that are designed to objectively and jointly measure the desired and necessary progress, aiming to slow down biodiversity loss and to increase the scientific capacities and expertise to understand, sustainably use and conserve global biodiversity. However, there is also the risk that imprecise alignment of goals and targets with monitoring elements, indicators and 2030 milestones could perpetuate or even lead to new frustration, which would be unfortunate. |
| The time-scale for figure 1 (page 3) for measuring of the post-2020 GBF Indicators of Biodiversity is unclear. The current graph implies that the starting point for measuring would be 2010. Several baselines have been suggested, for example a *pre-human disturbance, pre-industrial*, *IPEBES 1970*-*baseline* or more recent baselines like *CBD-adoption* or “*2000*” (cf. point 5 in *Information Document prepared for SBSTTA24 by UNEP-WCMC in collaboration with the Biodiversity Indicators Partnership*). Moving the starting point further into the 21st century seems to be unhelpful, because the baseline for the measures would correspond with already a degraded, largely impoverished condition of biodiversity and habitats as of 2010. It is obvious to us that well-defined, relevant and broadly accepted baselines that recognise the original biodiversity on Earth are needed to set the context in, which trends for individual indicators should be evaluated. This applies specifically for any measure on “trends in biodiversity”, species abundance and species occurrence that should be able to reflect change in species composition and occurrence in suited time intervals to detect ‘loss’, ‘change’ or an ‘increase’ with regard to the original, undisturbed condition. |
| The role, need and relevancy of non-monetary benefits for capacity building has repeatedly been highlighted, for example in the GBO-5, in Aichi Targets and in section III in Annex 1 of the report of ‘DSI’ AHTEG (CBD/DSI/AHTEG/2020/1/7). Natural History Museums and Botanic Gardens are essential research infrastructures to sustain these achievements and collaborate closely to develop and strengthen endogenous research capacities that enable countries to identify, understand, monitor and manage their own biodiversity. We agree to the goals and targets and the outlined approach how these elements should be implemented to achieve the 2050 Vision. From our view, however, it would be worth connecting some targets more closely, and we made respective comments. We feel this would be relevant especially in the light of the 2030 mission targets and milestones. Assessments and programs in the post-2020 GBF process require experts and respective academic expertise. Therefore, a specific focus on scientific collaborations with researchers from different countries and education and training would be useful (e.g. bachelor, master and PhD degrees in biodiversity related areas such as taxonomy, as well as education and training under target T19.3.). Even though this is reflected under goal 5 and target 11 in the zero draft (CBD/WG2020/2/3/Add.1), no such elements are included in sections II, III and IV, even though the need for ***increased investment in education, training and career opportunities in taxonomy*** has repeatedly been addressed in GBO-4, GBO-5, in Annex 1 of the report of ‘DSI’ AHTEG (CBD/DSI/AHTEG/2020/1/7) and in Goal 5 and Target 11 of the post-2020 GBF itself. ***We would welcome respective amendments to this draft version that reflect this need***. This should also be reflected in Target 13 especially with regard to policies and regulatory measures. ***Because of an increasingly complex regulatory landscape, research collaborations chilled down globally***. ***If net loss of biodiversity should be inverted, more joint efforts and international collaboration is needed. Without this, it will be difficult to reach the 2030 goals and targets and 2050 Vision****.* |
| ***Specific comments*** |
| **Page**  | **Paragraph** | **Comment** |
| 3-4 | 11 | The graph implies that the baseline for the measuring of monitoring elements would be 2010. This benchmark would in our view reflect a largely degraded and impoverished biodiversity landscape as starting point to evaluate the condition of global biodiversity (see also general comments). A starting point in the 21st century fails to reflect the immense biodiversity loss and tentatively delivers biased data on a potential inflexion point and net gains of biodiversity.In line with IPBES, we propose to choose a baseline that is capable to reflect the true degree of biodiversity loss on earth. This would be crucial for the detection of the anticipated trend reversal, and would have high relevancy for SDGs and Aichi Targets as well. Baselines for the original state of biodiversity should be closely linked and backed with data of preserved specimens in Natural History Collections worldwide. Such data is for example provided by our member institutions to GBIF or BOLD. |
| 4 | ***Goal A*** | To evaluate the genetic diversity of populations, wide application of population genetics is required in order to understand the genetic diversity within and among populations, as well as that of species globally. The genetic diversity of populations can be (rapidly) affected by various, often detrimental factors, such as fast dispersal of invasive species (founder effects), fragmentation and/or subsequent isolation of species (due to habitat degradation or loss) or adaptation to new or changed environmental parameters (different environmental or climate regimes). Even though coarse data may be available for selected (often farmed, cultivated or otherwise commercially exploited) species, such data is largely unavailable for most species on Earth.Evaluation of the genetic diversity of organisms requires analysis of huge datasets of samples obtained from the wild and thus increased access to such samples, comparison of genetic information obtained from them, and analytical software tools to investigate and compare them. Without access to such information and especially Genomic Sequence Information deposited on and freely accessible via data platforms such as INSDC (e.g. GenBank, EMBL) or BOLD, the measuring of any effects (positive and negative) under Goal A is impossible.Without specimen-based data, measures on “health”, “resilience” or “threats” of the genetic diversity of populations are unmeaningful. With regard to the current debate to restrict access to ‘DSI’, we wonder how Goal A, associated targets and aligned monitoring elements in the post-2020 GBF, Aichi Targets 9, 11 and 19 specifically contributions to SDG targets 14&15 should reasonably be measured. We would therefore appreciate the consideration by SBSTTA-24 on how essential the free, unrestricted access to ‘DSI’ for non-commercial taxonomic and biodiversity research is, to deliver the baselines and metrics for the different goals and targets. |
| 4 | 15 | With regard to *integrity of ecosytems* in item 15 it would in our view be worth keeping in mind that ecosystems usually continue to maintain some sort of equilibrium, even though this may be on a low, impoverished, level with less species or lower ecosystem-services in degraded habitats. Major threats for ‘*natural ecosystems*’ and the ‘*genetic diversity*’ undoubtedly are habitat loss and loss of habitat quality. We suggest to reword this this sentence to reflect this: “*The extent****,*** *~~and~~ integrity* ***and quality*** *of* ***natural habitats*** *are essential* for the protection …”.  |
| 4 | 16 | *“Natural” ecosystems are understood to be those whose species composition is predominantly native …”* – In our view it might be worth changing this to: *“Natural” ecosystems are understood to be those whose* ***original*** *species composition is predominantly native…”* **Rationale:** The sentence implies that the return of just 1 species in an impoverished ecosystem with 2 instead of originally 10 species would be a gain of 50 %, while the actual improvement is only 10 %. |
| 4 | 17 | *“While the status and trends of ecosystem****s*** *vary by ecosystem type …”* (minor typo); […] *“area, ~~overall, currently,~~ both the extent and integrity”* – there seems to be a minor glitch, we suggest deletion of *“overall, currently”* or rewording; […] “*This would lead to further extinctions, further reductions in the abundance of species populations and genetic diversity and continued decline*” – even though we understand the reasoning in CBD/SBSTTA/24/INF/9 and the reference to “abundance”, the improvement is closely linked with more breeding success (i.e. recruitment); it might be worth changing the text to: “*This would lead to further extinctions, further reductions in the abundance of species****, recruitment of*** *populations ~~and~~* ***, loss of*** *genetic diversity and continued decline*” |
| 5 | 18 | Second sentence *“… elsewhere, and restoring both converted and degraded ecosystems in order to reverse overall trends.”* – the element “*reverse overall trends*” is rather unspecific and general and could imply a simple reversal of trends. We therefore suggest rewording this to: *“elsewhere, and restoring both converted and degraded ecosystems in order to reverse overall* ***negative*** *trends.”* […] *“Models, scenarios and other studies suggest that an increase in the extent of natural ecosystems of the order …”* – it is unclear what exactly is meant here, the increase and *extent of natural habitats*, or the *restoration of original natural ecosystems*. It might be worth rephrasing this sentence to *“Models, scenarios and other studies suggest that an increase* ***and*** *extent of natural* ***habitats******and restoration of original natural*** *ecosystems of the order …”* to reflect both parameters (which should be measured by independent indicators). |
| 5 | 19 | Third sentence to last. *“So, achieving no net loss in biodiversity by a certain date would require achieving no net loss in ecosystem extent at an earlier date.”* – Because the main drivers are loss of ***quality and integrity*** *of* ***natural habitats***, we suggest adjusting this sentence to: *“So, achieving no net loss in biodiversity by a certain date would require achieving no net loss in* ***the quality and integrity of natural habitats*** *at an earlier date.”* For example, the spraying of pesticides negatively impacts the quality of adjacent habitats. Even though it might not result in immediate loss of specific species, it potentially impacts the recruitment and abundance of species in the long run (same equilibrium of species, but on a lower level), while the spatial extent of the ecosystem remains unchanged.  |
| 6 | 24 | *“The status of threatened species continues to decline and will continue to do …”* – the wording of this sentence might cause misunderstandings. If the number of threatened species *decreases*, less species are threatened and thus the overall situation *improves*. It seems the obvious is meant here and we suggest to rephrase this sentence to *“The ~~status~~* ***number*** *of threatened species continues to* ***increase*** *~~decline~~ and will continue to do …”* |
| 6 | 25 | *“… as well as to maintain or improve the population abundances and the natural geographical extent of all species.”* – even though we understand why abundances are mentioned here, the recruitment has to grow if abundances should increase again; otherwise abundances will remain stagnant on a low level. We therefore suggest adjusting the text to: *“… as well as to maintain or improve the population abundances****, species recruitment*** *and the natural geographical extent of all species.”* |
| 6 | 27 | Many freshwater or marine species have an important economic role as protein resources besides their ecological role. Even though we understand the reasoning in this section the formulation “*retaining and storing local population diversity, abundancies and ranges*” less likely will reverse the negative trends, if there is no concrete action and effective management of applied measures to improve the situation. We suggest to reword this sentence slightly to *“Efforts should prioritize* ***tools that manage to*** *retain~~ing~~ and restore~~ing~~ local population diversity, abundances and ranges of species …”* **Rationale:** prioritizing to retain and restore populations alone will not lead to immediate action, and without application of appropriate tools the situation less likely improves (see also item 28, where “management interventions” are explicitly mentioned). |
| 7 | 29 | It is unclear which type of “Genetic diversity” is exactly meant here: the overall genetic diversity of organismal life on earth, the genetic diversity within species, the genetic diversity between or within populations, etc.. It might be worth clarifying this. |
| 7 | 30 | Small typo in last sentence: *“…continue, including on farm****s*** *and ex situ for domesticated species.*” |
| 7 | 34 | “… *(b) regulating services, such as*…”might be worth changing to “… (b) ***regulatory*** services, such as …” ? |
| 8 | 37 | Second to last sentence: “*However, the continued provision of these contributions may be compromised by the ongoing decline in ecosystems extent and integrity as well as in the decline of the regulating services that support such provision*.” – It might be worth changing this to: “*However, the continued provision of these contributions may be compromised by the ongoing* ***loss and degradation of habitats which lead to*** *decline in ecosystems extent and integrity as well as in the decline of the regulating services that support such provision*.” **Rationale:** the key drivers in the loss of vital ecosystem services are habitat loss and habitat degradation. As a direct result, respective ecosystems are no longer functioning properly and thus deliver fewer benefits to people. |
| 9 | ***Goal C*** | A more refined approach that would reflect the differences of commercial and non-commercial access as well as monetary and non-monetary benefits sharing contributions would be helpful. This is relevant specifically for Goal C and associated targets, even though we know that data on non- monetary benefit sharing currently is incomplete. Such a refined approach would better reflect the core principles of the Nagoya Protocol that distinguishes between commercial and non-commercial utilization that delivers different kinds of monetary and non-monetary benefit. Non-monetary benefits are essential for the post-2020 GFB, SDGs and the CBD. The positive effects of non-monetary benefit sharing (e.g. capacity building, training and joint research) are reflected in the gains of Aichi Targets 9, 11 and 19 between 2011 and 2020. To reach 2030 milestones and the 2050 vision, capacity building, training and research collaborations in biodiversity research must be intensified further. We are concerned that non-monetary benefit sharing is rated as “nice to have” by some, which seems unfortunate, as most of the currently generated non-monetary benefits generated by taxonomic research is shared largely unnoticed. |
| 10 | 45 | Second sentence: the wording “*Further proposed targets related to the integration of biodiversity values in planning processes (target 13),* ...” - the current formulation implies that biodiversity would have an intrinsic (monetary) value, which is not the case. We agree that biodiversity should be valued more, but with regard to non-monetary benefit sharing, the problem seems to be that shared benefits, i.e. knowledge provided by basic research that better understand biodiversity, are delivered but not valued. |
| 14 | 59 | First sentence: *“Relevant actions related to this aspect of the proposed target include species reintroductions, species recovery actions (such as vaccinations, supplementary feeding, provision of breeding sites, planting and protection of seedlings) and ex situ conservation.”* – “provision of breeding sites” seems to refer to artificially restored breeding sites, while the protection of (existing) natural breeding sites should preferably receive more attention. We propose to change this to: “*, supplementary feeding,* ***protection and restoration*** *of breeding sites, planting and protection of seedlings) and ex situ conservation.”* **Rationale:** Species recovery is undoubtedly closely linked to the protection of existing breeding and nursing sites and their restoration, if these are dysfunctional or degraded. |
| 15 | 63 | 6th sentence: *“About a third of the worlds’ marine fish stocks are overfished …”* – this seems to available fishery statistics of commercially exploited species, and not to marine life as such (e.g. impacts of deep sea fisheries on habitats and unwanted bycatch species: <http://firms.fao.org/firms/fishery/755/en>) – We suggest to connect Target 4 more closely with Targets1-3 and to adjust the second to last sentence so that these secondary aspects of commercial exploitation are reflected: “*Promoting sustainable* ***harvesting and*** *use* ***that reduces direct and indirect negative effects on natural ecosystems and habitats*** *is therefore integral to achieving the 2050 Vision and the proposed Goals of the post-2020 global biodiversity framework*.” |
| 16 | ***Target 5*** | The component elements “*Identification, control and management of pathways for introduction of invasive alien species*” (T5.1.) and “*Effective detection, identification, prioritization and monitoring of invasive alien species*” (T5.2.) for the 2030 targets are currently not covered, even though they have high relevance. Both are key components for Aichi Target 9 and target 19 as well (cf. GBO-5), for components A4 & A5 under Goal A (see [comments](https://www.cbd.int/api/v2013/documents/CE1A46BD-2E76-1AAD-A356-351CED9203BD/attachments/CETAF.docx) on 1/3/C/34-35 & 1/4/A/36) and SDGs 14 & 15. ***Identification*** of *invasive alien species* broadly overlaps with species identification in general and requires taxonomic expertise. ***The need to quantify the abundance undesirable and/or costly alien and invasive species is highlighted in CBD/SBSTTA/24/INF/9 on page 12 a well, but this item is not covered in this current draft version, and we suggest its inclusion***. We suggest modification to the second sentence in item 68: “*This requires limiting new introductions****, increased taxonomic expertise for identifying,*** *~~and~~ eradicating or controlling those invasive alien species that pose a significant risk for threatened species or the provision of ecosystem services.*” **Rationale:** CBD/SBSTTA/24/INF/9 highlights the close connection of *Goal A* and Target 5. Without (increased) taxonomic expertise it will be difficult to detect and to respond to IASs timely. |
| 17 | 71 | Second sentence: “*Pesticides, a type of biocide, directly kill some organisms and indirectly harm others*.” – pesticides affect both targeted and untargeted organisms, therefore it would be worth rephrasing this to “*Pesticides, a type of biocide, directly kill ~~some~~* ***targeted and untargeted*** *organisms and indirectly harm others*.” instead of saying just “some organisms”.Fourth sentence: “*Artisanal mining often pollutes freshwater ecosystems with hazardous materials like mercury and cyanide*.” – this applies to mining in general, not only artisanal mining; we propose to delete “artisanal”: “*~~Artisanal~~ Mining often pollutes freshwater ecosystems with hazardous materials like mercury and cyanide*.” |
| 22 | ***Target 12*** | Target 12, Goal A and all targets that monitor species (e.g. Target 5) are closely connected. Taxonomic research is directed towards the first two goals of the CBD, SDG 14&15 and Aichi Targets 9 & 19. It relies on access to biological material and research partnerships with scientists form Provider Countries and collaborations directed towards Aichi Targets 9 & 19 (see also section III in CBD/DSI/AHTEG/2020/1/7). Since 2014, international [scientific collaborations slowed down](https://link.springer.com/article/10.1007/s13127-017-0347-1). ***We suggest connecting target 12 more closely with targets 3, 5 & 13*** and adjusting item 90 as follows: “*However, there is little systematic information on benefits shared (see Goal C).* ***Especially the role of non-monetary benefit sharing through international scientific collaboration, joint research and publication, technology transfer and education and capacity building is undervalued besides its key contributions for the post-2020 monitoring****. This …*”. |
| 23 | 91 | ***We suggest connecting target 13 more closely with targets 3, 5 & 12.***Monitoring of Goal A and most elements in the post-2020 GBF requires joint international efforts, in-situ collecting and free unrestricted access to ‘DSI’ on INSDC databases. To reflect this, we suggest changing the last sentence in item 91 to: “***Joint*** *progress towards this and* ***closely connected*** *target****s*** *will support the attainment of most of the proposed goals and targets of the post-2020 global biodiversity framework.*” (cf. the necessity for joint engagement is repeatedly mentioned on various occasions in CBD/SBSTTA/24/INF/9).  |
| 24 | 95 | There seems to be a minor typo in the last sentence “*and agreements.98 The actions taken the reach this target could directly …*” – should likely read “*and agreements.98 The actions taken ~~the~~* ***to*** *reach this target could directly …*” |
| 25 | 98 | Several minor typosFirst sentence – likely a comma instead of a period after “Generally”: “Generally~~.~~**,** actions towards…”Second sentence – likely should read “*This will ~~be required~~* ***require*** *action across society, with governments having a particularly important role to play in …*”Last sentence – likely should read “*and/or produced.102 The actions taken ~~the~~* ***to*** *reach this target could…”*We suggest closer ***connection of Target 15 and Target 13***.  |
| 27 | ***Target 18*** | The proposed 2030 milestones that are mentioned in the second half of the proposed target are currently not covered in the text (“*implement the strategy for capacity-building and technology transfer and scientific cooperation to meet the needs for implementing the post-2020 global biodiversity framework*”). We agree that it would be worth redirecting damaging subsidies into funds that support the post-2020 GBF as suggested, however, we think that this section should specifically address the need for capacity building in the biodiversity research sector and relevant research infrastructures as well. This has been emphasized not only in the AHTEG on ‘DSI’ (see section III in CBD/DSI/AHTEG/2020/1/7), but also in the [call for action](https://www.cbd.int/gti/doc/gti_forum_2020_statement.pdf) of scientists around the globe that participated in the meeting of the Global Taxonomy Initiative in Berlin in December 2020. Without adequate funding of research infrastructures and capacity building initiatives it remains unclear how the post-2020 GBF monitoring should be operational. Also, related SDGs cannot be sustained. ***We therefore encourage adjusting of item 110***: “*In addition, processes related to access and benefit sharing (proposed target 12) have the potential to generate some of the funding necessary to address the funding needs associated with the implementation of the post-2020 global biodiversity framework****, especially the joint collaboration that fosters generation, sharing and assessment of knowledge and data on biodiversity****. Furthermore, this target will support all of the other proposed targets.*” |
| 29 | 114 | Ex-situ facilities such as Natural History Collections and Botanic Gardens are important aggregators of biodiversity related knowledge worldwide. They compile and aggregate the relevant biodiversity data for platforms like GBIF or BOLD that directly contributes to the measuring of post-2020 goals, targets and indicators, but also for Aichi Targets 19 & 9 and SDGs 14 & 15. We therefore suggest to expand the last sentence to “*Scaling up* ***access,*** *use and support of* ***relevant research infrastructures promoting*** *~~recent~~ technological advances in monitoring, cataloguing and sharing biodiversity information will be important to filling information gaps*. **Rationale**: The Target elements “*promotion of research and education*” currently are not covered in this section, even though the 2030 milestones T19.3 (promotion of biodiversity in education) and T19.4 (availability of research and knowledge…) specifically refer to these. It might be worth covering promotion of research in this section, because it seems to be covered nowhere else in depth. Without qualified and trained researchers, most of the monitoring elements can hardly be sufficiently monitored. |

*Comments should be sent by e-mail to* *secretariat@cbd.int* *by 22 March 2021*