Submission of WWF in response to Notifications 2020-045 and 2020-053, *"Peer review of draft documents for the twenty-fourth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA 24)."*

WWF peer review of the draft monitoring framework for the post-2020 global biodiversity framework

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Key messages from WWF on the draft monitoring framework

WWF welcomes the publication of the draft monitoring framework for the post-2020 Global Biodiversity Framework and the opportunity to provide feedback on it.

WWF's key messages are as follows:

1. 2030 goals instead of 2050 goals
Given the urgency of the current ongoing catastrophic loss of biodiversity, WWF strongly suggests focusing on global goals (and targets) with a 2030 deadline or, whenever possible, earlier deadlines. With the little negotiation time remaining before COP15, it is critical to focus all our efforts to get the core and urgent elements of the framework right, i.e. the goals and targets that need to guide action until 2030. Finally, we anticipate that SBSTTA24 will provide advice on whether the 2030 targets proposed in the draft monitoring framework will be ambitious enough to put us on a path towards a nature positive world by 2030 and towards achieving the 2050 Vision of 'living in harmony with nature'. This will ensure that 2030 goals and targets are linked with the Vision for 2050.

2. The scope of the review
The request for peer review is limited to reviewing the components of goals, milestones and targets, the monitoring elements, the indicators and associated information. The language of the goals and targets, their levels of ambition, plus gaps in what they collectively cover, are not being reviewed.

WWF is concerned that indicators are being developed before goals and targets have been agreed. Parties have not yet negotiated the complete set of goals, milestones and targets, nor the specific formulation of each goal, milestone and target, and one assumes that these will substantially change during the course of the negotiations. A very likely challenge may occur that new or substantially altered goals, milestones and targets are agreed by parties but that there will be no opportunity to discuss indicators for these new elements, at least not in SBSTTA24. For example, the third report of the panel of experts on RM (CBD/SBI/3/5/Add. 3) as well as the document on the long-term approach on mainstreaming biodiversity (CBD/SBI/3/13/Add.1) contain numerous components that we suggest should be integrated at a goal or target level as well as measured through indicators. We have made several suggestions to that effect in the tables below.

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We therefore recommend that goals and targets (language, ambition, gaps) be reviewed at SBSTTA24 (and SBI3) and not be delayed until OEWG3[1]. This would be in line with the OEWG2 recommendation (CBD/WG2020/REC/2/1) which '*Invites the Subsidiary Body on Scientific, Technical and Technological Advice at its twenty-fourth meeting to carry out a scientific and technical review of the updated goals and targets, and related indicators and baselines, of the draft global biodiversity framework.*'

3.   *Gaps in the set of goals and targets*
WWF has identified a number of gaps in the framework that cannot be addressed by adding components to the updated goals and targets. These gaps relate to:
- A goal to reduce the footprint of production and consumption. We appreciate that sustainable production and consumption and sustainable use are addressed in various targets in the monitoring framework. Reducing the footprint of production and consumption is essential to address the drivers of biodiversity loss. It captures, at a high level, actions to be taken by productive sectors, amongst others. Therefore, WWF proposes that reducing the footprint of production and consumption needs to be addressed, in a comprehensive manner, at the goal level.
- A goal to share nature's benefits fairly and equitably, in support of the right to a healthy environment for all.
- An infrastructure target. Infrastructure development is an important driver of biodiversity loss and habitat fragmentation. We propose that this should be recognised in the framework through a dedicated action target for this sector.

WWF will produce a comprehensive review of the updated goals, milestones and targets separately in a short while.

4. *Criteria for the selection of indicators*
The selection of the right set of indicators is essential for the GBF. We recognise the challenge of striking a balance between including a comprehensive set of indicators and keeping the types of motoring data to be gathered at a reasonable number. We believe that the list of criteria proposed in section 2.2. of the information document *indicators for the post-2020 global biodiversity framework* can form a good basis for the selection of indicators, and we suggest to fine-tune this list as follows:
- We agree with the criteria *Data availability anticipated for the time period post-2020* in principle but caution not to apply this criterion too absolutely. The adoption of new goals and targets (or additional/new components of goals and targets) that cover new areas in the GBF may require, in some cases, the development of new indicators, which may take some time. This should not prevent the adoption of these new goals and targets. This is for example the case with current target 14, where we propose to include a target component on material consumption inequality, which will require a new indicator. This new indicator does not yet exist, but it can be developed. We have inserted similar suggestions in a limited number of places in our feedback on the monitoring framework.
- The criteria 'Indicator already in use at global or national level (e.g. GBO, IPBES, and SDGs)' is appropriate. The list of indicators already in use could be expanded to include e.g. the UNFF monitoring framework, the NY Declaration on Forest and various FAO and

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[1] As proposed in the draft monitoring framework, which states: *'The updated formulations of the proposed 2050 goals and the 2030 targets as well as proposed 2030 milestones are provided for context only. Consideration of these will take place at the third meeting of the open-ended working group.'*

> IFA statistics. We have identified some of these existing indicators in our feedback on the draft monitoring framework.
> - Finally, it may be useful to add in the list a criterion that indicators should be mutually exclusive and collectively exhaustive, to avoid overlap and redundancies between indicators and to ensure that the achievement of the indicators represents the achievement of targets and goals.
>
> 5. *The link between the monitoring framework and the information document on indicators.* We have noted several differences between the two documents; in particular, they present different sets of indicators. We understand that the documents fulfil different purposes, and that the timeline for producing the two documents was not conducive to an alignment. Nevertheless, we suggest that it could be helpful if the monitoring framework contains a rationale for the selection of indicators, in particular where there is a difference with the information document.

General comments				
Table	Page	Column letter	Row number	Comment
0	0	0	0	In reviewing the components of goals, milestones and targets, the monitoring elements, the indicators, we have made suggestions for either (1) revisions; (2) deletions or (3) additions to parts of the draft framework. As part of the review, we have proposed several additional indicators, increasing the total number of indicators for the framework. Whilst we believe that the WWF proposals are useful additions, we are also conscious of the need to keep the total number manageable. The criteria for selection of indicators are therefore important and we have made proposals to strengthen the selection criteria in our feedback on the indicators info document.

Table 1 2050 goals and milestones				
Table	Page	Column	Row	Comment
1	2	C	1	Add following indicators below to differentiate between net and gross forest cover loss as well as Tropical forest loss: *Global Annual Gross Tree Cover Loss (Ha) - Hansen/GFW *Global Annual Tropical Primary Tree Cover Loss (Ha) - Univ of Maryland
1	2	C	15	Add under Goal A2 row 15 (quality of forest ecosystems) indicator: Forest Specialist Living Planet Index (LPI) "This indicator is included in the UNEP-WCMC/BIP Information Document and has been published in a peer reviewed journal as Green et al 2020 (https://royalsocietypublishing.org/doi/10.1098/rspb.2020.0533)
1	2	B	15-25	Given that CBD/SBSTTA/24/INF/11 defines connectivity as 'structural' and 'functional', we propose to organise the monitoring elements around these concepts as follows: * Trends in structural connectivity (terrestrial, freshwater, marine). and * Trends in functional connectivity (terrestrial, freshwater, marine)
1	2	C	15-25	Proposed indicators for 'Trends in structural connectivity (terrestrial, freshwater, marine) are under development by the IUCN Connectivity Conservation Specialists Group, but could include: For terrestrial connectivity: o Bioclimatic Ecosystem Resilience Index (BERI) to assesses the extent to which a given spatial configuration of natural habitat will promote or hinder climate-induced shifts in biological distributions, https://www.biorxiv.org/content/10.1101/795377v1 o Local permeability of landscapes to animal movement, indicated for example by the Human Modification map (HM), https://figshare.com/articles/Global_Human_Modification/7283087) For freshwater connectivity:

				o Connectivity Status Index (CSI) as per "Mapping the World's Free-flowing Rivers", https://www.nature.com/articles/s41586-019-1111-9
1	2	C	15-25	Proposed indicators for 'Trends in functional connectivity' are under development by the IUCN Connectivity Conservation Specialist Group, but could include: o Observed emigration, immigration, or dispersal rates for measuring the intensity of movement between core habitat areas o Number of NBSAPs documenting an increase in functional connectivity between core habitat areas
1	2	A	15-28	Goal A, component A2: 'Ecosystem connectivity' is not a defined term, based on CBD/SBSTTA/24/INF/11 'Ecological connectivity' is the term to be used. Therefore we suggest rewording component A2 to "Ecosystem integrity and ecological connectivity (terrestrial, freshwater and marine ecosystems) of all areas of remaining habitat"
1	2	B	16bis	Goal A component A2. We suggest to add the following monitoring element: 'Trends in fragmentation from farmland and the contribution of agricultural lands to functional connectivity of natural ecosystems"
1	4	B and C	41bis	We propose an additional monitoring element for A5: "Trends in the strength of the role and agency of custodians (IPLC, women)" Additional (new) indicator: - Traditional knowledge strength index Data sources: - Local Biodiversity Outlooks - ICCA Registry and national registries
1	4	A	42-49	Goal A, component 6. KBAs are used to monitor the protected area coverage of 4 major ecosystems for the SDGs (terrestrial, marine, freshwater and mountains). We therefore propose that the component GA.6 should be reworded as "Protection of key biodiversity areas and other areas of importance for biodiversity".
1	4	B	46	Goal A, component 6. KBAs represent the most comprehensive and systematic site-scale dataset of areas of particular importance for biodiversity. The Global Standard for their identification was developed through extensive consultations across the conservation community. As such we suggest that this monitoring element should be reworded as "Trends in conservation of key biodiversity areas and other areas of particular importance for biodiversity"
1	5	C	51-53	Goal B, component 1: Include forest restoration indicators for "habitat creation" from UNFF's monitoring framework and New York Declaration on Forests.
1	5	C	51,56	Goal B, component 1: Complement forest related indicators on sustainable forest management and forest restoration with existing indicators under UNFF's monitoring framework and New York Declaration on Forests.
1	5	B	55	element: Trends in regulation of air quality add indicator: Air pollution regulation standard levels
1	5	B	57	element: Trends in regulation of ocean acidification add indicator: Ocean Health Index
1	5	B	60	element: Trends in regulation of coastal water quality add indicator: Proportion of domestic and industrial wastewater flows safely treated

1	6	B	63bis	Goal B. component 1: Add monitoring element: * Trend in **natural** forest cover from forest (landscape) restoration (ha)
		B and C	64	Goal B.2: Monitoring element: Trends in the provision of energy supply from biological resources. Suggestion to use instead: Trends in Biomass footprint per capita. Proposed Indicator: Percentage primary biomass used in energy production
1	6	C	65	Goal B.2: proposed indicators for the monitoring element Trends in the provision of food and feed from biodiversity: Number of people nourished per ha agricultural land; Proportion of agricultural area under sustainable agriculture; Proportion of depleted fish stocks with recovery plans in place and under implementation; proportion of surveyed plant genetic resources for food and agriculture that is threatened.
1	6	B and C	66	Comments on proposed monitoring elements and indicators for Goal B.2: - Trends in the provision of materials and assistance from biodiversity. Suggest instead: Trends in material footprint per capita. Proposed indicators: Recycling rate; Number of countries developing, adopting or implementing policy instruments aimed at supporting the shift to sustainable consumption and production
1	6	C	67	element: Trends in the provision of medicinal, biochemical and genetic resources from biodiversity add indicator: Level of implementation of global plan of actions on genetic resources for food and agriculture
1	6	C	72	element: Trends in access to genetic resources add indicator: Level of implementation of global plan of actions on genetic resources for food and agriculture
1	6	B and C	74-76	Goal C component 2 the monitoring elements are not sufficient to ensure fair and equitable benefits are shared to the entitled beneficiaries. We suggest an additional monitoring element: "Trends in old and new institutions and mechanisms to ensure fair and equitable benefits" Proposed indicators for this monitoring element: # of IPLC communities benefiting; # of Community Protocols with specific provisions on sharing benefits
1	6	B and C	77-80	Goal D, component 1: Additional monitoring element and indicator could read as follows: B: New monitoring element: Trends in public domestic resource mobilization C: New indicator: revenue generated from biodiversity -relevant financial instruments (taxes, fees, adjusted capital requirements, biodiversity-themed green bonds, biodiversity-based funds, lending for natural infrastructure solutions etc.)
1	6	C	78	Goal D, component 1: Trends in public domestic resource mobilization: new indicator recommended: Finance mobilized from economic instruments for biodiversity-positive actions, including from domestic public sector budgets"
1	6	A	79bis	Goal D. New Monitoring Element: Trends in countries that align their financial flows with biodiversity conservation and restoration. New Indicator: Number of countries with legislative and regulatory standards or taxonomies to measure global financials flows with alignment of biodiversity conservation, sustainable use and restoration.

Table 2 2030 targets and components

Table	Page	Column	Row	Comment
2	8	B	1-5	Propose additional monitoring element under T1.1, as follows: "Trends in number of areas delineated as ecological corridors, and incorporated into spatial plans to ensure land/sea use in those areas is compatible with its ecological connectivity function." The recently released IUCN Guidelines for Connectivity Conservation provides robust guidance on delineating ecological corridors, and ensuring their functionality. https://portals.iucn.org/library/node/49061
2	8	C	1	It is crucial that the 'spatial planning' referred to in T1.1 mainstreams and reduces impacts on biodiversity. If countries assess KBAs nationally across multiple taxonomic groups and ecosystems and incorporate them in national spatial plans this will contribute greatly to achieving several of the CBD targets and goals. We therefore believe adding the following indicator (under component T1.1) proposed by BIP would help CBD track progress in achieving these targets and goals: "Percentage of spatial plans utilising information on key biodiversity areas". This indicator is being tracked by the KBA Partnership who will be able to provide data from 2019 onwards.
2	8	C	2	T1.1 Under Indicators: Suggest adding here reference to competent organisations in addition to countries, to cover all marine areas and regions.
2	8	B	3	T1.1 Under Monitoring Elements: Suggest including 'ocean' in reference to integrated coastal and ocean management to be comprehensive, and suggest adding a new monitoring element on: -Trends in cross-sectoral cooperation and collaboration at the regional (ocean basin/sub-basin) and global levels
2	8	B	4	T1.1 Under Monitoring Elements: Suggest to add 'Trends in area under **ecosystem-based** marine spatial planning'
2	8	C	6-7	T1.2 Add following indicators below to differentiate between net and gross forest cover loss as well as Tropical forest loss: *Global Annual Gross Tree Cover Loss (Ha) - Hansen/GFW *Annual Tropical Primary Tree Cover Loss (Ha) - Univ of Maryland (see NYDF Indicators for Goal 1: https://forestdeclaration.org/goals/goal-1)
2	9	C	13	T1.2 Under Indicators: Suggest also including: Hard coral genera richness Structural complexity of coral reefs Collaborative and Annotation Tools for Analysis of Marine Imagery and Video - CATAMI classification Scheme Carbonate budgets
2	9	B	16-18	T1.2 Under monitoring elements: Suggest include either here or as an additional monitoring element express reference to deep sea ecosystems, including cold water areas (below 200m) and vulnerable marine ecosystems (e.g. deep water corals, sponges, hydrothermal vents, seamounts, underwater canyon heads, etc.). Suggested indicators for deep sea ecosystems, should include degree of implementation by States and competent organisations of: (i) UNGA resolutions on VMEs (resolutions 61/105, 64/72, 66/68, 71/123, and posterior reviews); (ii) the FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas; (iii) the CBD Voluntary specific workplan on biodiversity in cold water areas within the jurisdictional scope of the Convention; (iv) as well as the degree of which non-fisheries bodies are taking measures to also avoid impacts on VMEs (in accordance with UNGA resolution 71/123, para 184) .

2	9	C	22	T 1.2 We propose to add the following indicators to differentiate between net and gross forest cover loss as well as tropical forest loss: *Global Annual Gross Tree Cover Loss (Ha) - data source: Hansen/Global Forest Watch *Annual Tropical Primary Tree Cover Loss (Ha) - data source: Univ of Maryland (see NYDF Indicators for Goal 1: https://forestdeclaration.org/goals/goal-1)
2	9	C	22bis	T 1.2 We propose an additional indicator: Agricultural area as proportion of total land area. This would help to measure progress towards achieving zero conversion of natural ecosystems for agriculture.
2	9	B	23	T 1.3 We suggest to add the following monitoring element: Trends in area change of Intact Forest Landscapes (IFLs)
2	10	B and C	24bis	T 1.4 We suggest to include monitoring elements and indicators for forest restoration from UNFF's monitoring framework and New York Declaration on Forests: B: Monitoring element: 1. Rate of forest cover and tree cover gain (hectares established over time) C: Indicators for this new monitoring element: 1.1 Natural forest cover gain from FLR (ha) 1.2 Tree cover gain inside and outside the forest (ha) B: Monitoring element: 2. Forest landscape restoration efforts (political and socioeconomic advancements towards) C: Indicators for this new monitoring element: 2.1 High-level pledges 2.2 Planning and implementation steps 2.3 Finance for FLR activities and we suggest to add an indicator on connectivity
2	9	C	25	T1.4 Suggested indicators include: fleshy algae cover, cover of key benthic groups and fish abundance and biomass
2	10	B	30-34	Propose splitting the component T1.5 into two monitoring elements, replacing 'trends in habitat connectivity' with 'Trends in structural ecological connectivity' and 'Trends in functional ecological connectivity'.
2	11	C	35	T 2.2. Suggest indicators include: Protected area coverage at national and regional scale.
2	10	A, B & C	38bis	Propose an additional monitoring element for T2.1 after row 38: "Trends in extent of areas under Indigenous and community conserved areas" Additional indicator: - Coverage of Indigenous and community conserved areas (ICCA Registry)
2	11	A	39-42	We suggest that component T2.2 should be reworded as "Trends in conservation of key biodiversity areas and other areas of particular importance for biodiversity". This is because KBAs represent the most comprehensive and systematic site-scale dataset of areas of particular

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				importance for biodiversity, although it is clear that many countries need to update their KBA identification based on the new Global Standard and as such there are gaps in the database. The Global Standard for their identification was developed through extensive consultations across the conservation community. Their coverage by protected areas provides three of the official SDG indicators (14.5.1, 15.1.2 and 15.4.1).
2	11	B	39-42	We believe this monitoring element for T2.2 should be expanded as follows; "Trends in the proportion of key biodiversity areas and other areas of particular importance for biodiversity that are protected and conserved" This is because KBAs represent the most comprehensive and systematic site-scale dataset of areas of particular importance for biodiversity. The Global Standard for their identification was developed through extensive consultations across the conservation community. Their coverage by protected areas provides three of the official SDG indicators (14.5.1, 15.1.2 and 15.4.1). We furthermore suggest to include at the end of the sentence: "from multiple pressures" to convey the notion that cross-sectoral measures are needed for effective MPAs and OECMs as per multiple IUCN guidance on MPAs/PAs and OECMs, as well as CBD decision 14/8. So the monitoring element for T2.2 would read in full: "Trends in the proportion of key biodiversity areas and other areas of particular importance for biodiversity that are protected and conserved from multiple pressures".
2	11	C	39-42	Propose adding the additional indicator suggested by BIP for Component T2.2: "Proportion of key biodiversity areas in favourable condition" - this indicator is being measured by the KBA Partnership and data can be provided from the World Database of KBAs. We believe it is important to not only measure protected area coverage but also have an indicator of impact – for example, there remain large numbers of "paper parks" where the biodiversity impact is minimal.
2	11	C	39-42	T 2.2. Under indicators: It will be very important to include also other classifications, including EBSAs, VMEs, IMMAs, IBAs,
2	11	C	40	T 2.2.Under indicators: Suggest adding 'marine' in this sentence 'Proportion of important sites for terrestrial and freshwater and **marine** biodiversity that are covered by protected areas, by ecosystem type Suggest including here marine sites by ecosystem type too. These could include proportion of ecosystems such as coral reefs, deep-sea ecosystems (by type, depth, and strata), mangroves, seagrasses, saltmarshes, etc. included in effectively managed MPAs and OECMs.
2	11	C	44	T 2.3 Under indicators: Suggest including here reference to GOODS as one of the potential biogeographic classification for assessing ecological representativity. (See UNESCO. 2009. Global Open Oceans and Deep Seabed (GOODS) – Biogeographic Classification. Paris, UNESCO-IOC. (IOC Technical Series, 84.)
2	11	B and C	45bis	T.2.3 Not only trends in ecological representativeness should be measured; OECMs address a broader set of objectives that should be measured to assess the 'representative system' of column A. Therefore we suggest: B. an additional monitoring element: Trends in total area, number and quality of OECMs C. with an additional indicator: area, number and quality of OECMs
2	12	C	48	T 2.4 Suggest removing indicator on sustainable forest certification for PCA / OECMs (see IUCN - OECM guidelines:

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				Effective conservation outcomes may arise from strict protection or certain forms of sustainable management consistent with the CBD definitions of "in-situ conservation" and "biodiversity". However, most areas managed for industrial production, even if they have some biodiversity benefits, should not be considered as OECMs. Sustainably managed commercial fisheries and commercial forests, for instance, should be reported under Aichi Target 6 and 7, respectively, or other appropriate targets.)
2	11-12	A,B & C	48bis	Propose additional monitoring element for T2.4: "Trends in land tenure security for IPLCs" Additional Indicators: - SDGs indicator 1.4.2, notably part b (collective tenure rights); - Indigenous Peoples Navigator (land, territories and resources indicators- under development) and International Land Coalition LANDEx (under development).
2	12	B	49	Propose an additional monitoring element under component T2.5 as follows: ""Trend in existence of national plans for entire ecologically connected systems of protected areas and OECMs"
2	12	C	52	T 2.7 Suggested indicators: i) Degree of implementation by States and competent organisations of: - The ecosystem approach (CBD decisions V/6 and VII/11) - CBD decision 14/8 on protected areas and OECMs and integration into landscapes/seascapes ii) # of ha of ICCAs
2	13	B	53	In-situ measures are just as if not more important for the recovery and conservation of wild species of fauna and flora than ex-situ measures. They are more cost effective and overall more likely to succeed. Ex-situ measures should be reserved as a 'last resort'. Thus in addition to the monitoring element 'Trend in ex-situ conservation measures' we propose adding an additional monitoring element 'Trend in in-situ conservation measures'.
2	12	C	54	T.3.1 We suggest an additional indicator: # of species recovery plans (for highly threatened species) adopted and being implemented' (Data source: National reports)
2	12	A	55	Human wildlife conflict incidents can reduce for several reasons - including the reduction or loss of the wildlife population causing the conflict. As such when measuring levels of human wildlife conflict, it is also critical to measure levels of co-existence. As such we propose rewording this component as ""strengthened co-existence as a result of reduced human-wildlife conflicts"
2	12	C	55	We propose that an indicator for this component should be developed as follows: "A composite HWC Index including metrics for the human (mortality, injury and perceptions around safety), economic (livelihoods and opportunity costs), and contextual (wildlife and human populations, reprisal killing, and ecosystem health) dimensions of HWC."
2	13	B	56-66	This target now refers to ensuring wildlife trade is 'safe for human health', which is critical in the current context of human tragedy and economic devastation posed by COVID-19. We therefore propose an additional monitoring element that should be included under the 'Harvest', 'Trade' and 'Use' components: "Number of known zoonotic spill over events linked to wildlife trade"
2	12	B and C	56	T.4.1 Proposal for additional monitoring element: Trends in customary use. Indicator: trends could be monitored by IPLC and practices reported in LBO reports

2	13	C	58	We propose two new indicators: # of threatened species in the IUCN Red List, which list 'biological resource use' as a threat. # of countries with legislation under category 1 of CITES NPL
2	14	C	68	Suggested additional indicator: # of countries that apply relevant international legal instruments for controlling pathways (BWM Convention; IPPC, OIE, Biofouling guidelines; World Customs Organization Safe Framework of Standards)
2	14	C	68-69	T 5.1 Suggest adding an additional indicator: # of states that have become parties to the International Convention for the Control and Management of Ships' Ballast Water and Sediments
2	14	C	72	T.5.2 We believe it is important to monitor invasive and alien species impacts on sites of particular importance for biodiversity. We therefore support the inclusion of the BIP proposed indicator for target 5 component T5.2: "Proportion of key biodiversity areas threatened by invasive alien species" which is being monitored by the KBA Partnership using data from the World Database of KBAs. Another suggested additional indicator for T5.2: # of countries monitoring priority invasive alien species. Data source: national reports
2	15	B	81	T 6.1 Under monitoring elements: Suggest including a global threshold and associated indicator based on the planetary boundaries framework, which in this case would be - Nitrogen global in terms of industrial and intentional biological nitrogen fixation (control variable): 62 Tg Nyr-1 (62-82 Tg N yr-1). (See Will Steffen et al, "Planetary Boundaries: Guiding Human Development on a Changing Planet" (2015) 347 Science 1259855; and D Diz "Nitrogen and Phosphorus Flows to the Biosphere and Oceans" in D French, LJ Kotze (eds), Research Handbook on Law, Governance and Planetary Boundaries (Edward Elgar Publishing, forthcoming).
2	15	C	81	T 6.1 Under indicators: Suggest including the following regional (sub)indicators related to eutrophication (based on regional seas indicators for SDG 14.1 (see UN Environment Regional Seas Follow Up and Review of the Sustainable Development Goals (SDGS) (UN Environment Regional Seas Reports and Studies No. 208, 2018): -Chlorophyll concentration as an indicator of phytoplankton biomass; -Locations and frequency of algal blooms reported; -Pollution hotspots: concentration of status of selected pollutant contamination in biota and sediments and temporal trends, and number of hotspots; -% of national action plans ratified and operational; -Waste water: % of coastal population connected to sewage facilities; % of waste facilities complying with adequate standards; and % of untreated waste water. Suggest also including as indicators (based on regional seas indicators under development (see UN Environment (2018). Regional Seas Follow Up and Review of the Sustainable Development Goals (SDGS). UN Environment Regional Seas Reports and Studies No. 208):

				-quantification and classification of beach litter items; -amount of recycled waste on land (%) -% of port facilities available
2	15	B and C	85	T.6.1 Under monitoring element, we suggest adding global thresholds consistent with the planetary boundaries framework: phosphorus global in terms of its flow from freshwater systems into the ocean (control variable): 11 Tg P yr-1 (11-100 Tg P yr-1), and to add the following associated indicator: Total phosphorus flows from freshwater systems into the ocean
2	15	C	86	Suggested indicator: Quantity of chemical pesticides and fertilizers used (FAO and IFA statistics)
2	15	c	88	T6.3. Reduction of pollution from plastic element: Trends in levels of pollution from plastic in terrestrial and freshwater ecosystems suggest to add indicators: • Recycling rate • Average lifespan of products (by product type) • Number of countries developing, adopting or implementing policy instruments aimed at supporting the shift to sustainable consumption and production
2	16	C	91	T.6.4 Under indicators: Suggest as indicators (as per UNEP 2018 supra row 81): -% of waste water facilities complying with adequate standards; -% of untreated waste water details on page 75 of: https://wedocs.unep.org/bitstream/handle/20.500.11822/27295/ocean_SDG.pdf?sequence=1&isAllowed=y
2	16	B	93	T.6.4 Under monitoring element: Suggest adding explicit reference to underwater noise, by adding "including anthropogenic underwater noise" in the end of the sentence.
2	16	C	93	T.6.4 Under indicators: Suggest including: -Proportion of countries and competent organisations applying mitigation and management measures to prevent or minimise anthropogenic underwater noise consistent with best available science and standards, including those contained in: - the CBD Technical Series report on the impacts of anthropogenic underwater noise on marine and coastal biodiversity (which will be issued as an information document for SBSTTA-24). - the Convention on Conservation of Migratory Species of Wild Animals (CMS) Family Guidelines on Environmental Impact Assessments for Marine Noise-generating Activities and the Technical Support Information to these guidelines (CMS Resolution 12.14 (2017).
2	16	B	92-95	T 6.4 Monitoring element could include: Trends in levels of pollution from non-ionizing radiation
2	16	B	97	T 7.1 Under monitoring elements: suggest adding: "including mangroves, seagrasses, coral reefs, deep water corals, the abyssal plain"

2	16	C	97	T 7.1 Suggest - Indicator on above ground biomass stock in forests (Global Core Set of Forest Indicators, UNFF)
2	16	B	98	T 7.1 Under monitoring elements: Trends in contribution to climate change adaptation Suggest adding "and ocean acidification" but not with the prefix: "contribution to..." Also suggest adding a new monitoring element on trends in the identification of refugia sites and the corresponding adoption of conservation and management measures. This is consistent with the CBD Voluntary specific workplan on biodiversity in cold water areas within the jurisdictional scope of the Convention.
2	16	C	97-98	T.7.1 Proposal for additional indicators: trends in ICCAs could be a good indicator #ha, forest cover, ecosystem quality; and formal recognition
2	16	C	98	T.7. 1 Under indicator: Suggest an indicator on aragonite saturation.
2	17	C	101	T.7.2 Indicators should not only include the # of least developed countries and SIDS but all countries, including OECD countries that have to report on trends how to integrate biodiversity into mitigation, adaptation and DRR projects through either their NDCs or similar strategies.
2	17	B	102	T.7.2 Under monitoring element suggest add trends in ocean acidification
2	18	C	105-109	T8.1 Monitoring Element: Trends in sustainable fisheries management Indicators: Suggest adding a new indicator on: the degree of which States and competent organisations are implementing an ecosystem approach to fisheries (See FAO, The Ecosystem Approach to Fisheries, Technical Guidelines for Responsible Fisheries, No. 4 Suppl.2, 2003). This would be consistent with Aichi Target 6 and the efforts by FAO to align their Code of Conduct reporting mechanisms with Aichi Target 6. Additional recommended indicators (aligned with Aichi Target 6) include: * the status of target and non-target stocks * The status of threatened species and vulnerable ecosystems and corresponding conservation and management measures applied to those; * Trends and status of ecosystem structure and function (see Garcia, S.M. and Rice, J. Assessing Progress towards Aichi Biodiversity Target 6 on Sustainable Marine Fisheries. Technical Series No. 87. Secretariat of the Convention on Biological Diversity, Montreal, 103 pages) * Degree of implementation by States and competent organisations of measures to: (a) eliminate or minimise bycatch, (b) require impact assessments (as per UNFSA, Art. 5(d)); (c) impose rebuilding plans with the shortest feasible timeframes; (d) protect habitats; (e) eliminate destructive fishing practices; (f) prioritise small scale fishing that supports livelihoods of indigenous peoples and local communities over industrial fishing in the territorial seas.
2	17-19	B and C	105,114	T.8.1 and T.8.2 Proposal for additional monitoring element and indicator, to ensure that benefits from sustainable use are accruing "especially for the most vulnerable": B: Monitoring element: Trends in use of customary practices (ICCAs, LMMAs) to manage aquatic and terrestrial wild species

				C. Indicator: Quality and vitality of customary practices (ICCAs, LMMAs) used to manage aquatic and terrestrial wild species. LBO (produced every 4 years) is a source of this data, plus documentation that might be in local registries and the ICCAs registry.
2	18	C	108	T.8.1 indicator: We suggest not using MSC certified catch as an indicator. We have suggested a number of more appropriate, science-based indicators for rows 105-109 (above).
2	19	B	110-111	T.8.1 Monitoring elements: Suggest adding "target" and "non-target (bycatch)" species.
2	19	B	110	This target now refers to ensuring wildlife trade is 'safe for human health', which is critical in the current context of human tragedy and economic devastation posed by COVID-19. We therefore propose to include an additional monitoring element under the 'Harvest', 'Trade' and 'Use' components: "Number of known zoonotic spill over events linked to wildlife trade"
2	19	C	111	Under indicators: Additional indicators should include reference to: CMS listed species CITES listed species Species and stocks listed by national, regional or other global processes.
2	20	C	119	T.9.1 We propose to revise the indactor a follows: *Areas under agro ecological approaches, including agro-forestry and other highly sustainable practices.* This indicator should be broader that just conservation agriculture and encompass all proven sustainable agriculture approaches and practices.
2	20	C	117-119	T.9.1 Proposal for additional indicators: #ha under agro ecological practices; agro-biodiversity index; SDG 2.4.1 as indicator
2	20	A and B and C	126	Science is very clear: we need to reduce the footprint of our diets to halt and reverse biodiversity loss (a major driver of natural ecosystems conversion). This can be measured through trends in consumption pattern (via survey data), adoption of guidelines for sustainable and healthy diets (via national reporting) and consumption of animal feed per capita (FAO stats). Therefore, we propose: An additional target component (after row 126): T.9.4 transforming all food systems Monitoring elements associated with this additional component · Trends in food waste and post-harvest loss; · Trends in the global footprint of diets and food consumption · Trends In area under agro-ecology Suggested indicators for this additional target component · SDGs 12.3.1 (Global Food Loss and Waste Indexes); · adoption of sustainable and healthy diets guidelines (via national reporting) · Sample country food consumption survey data · Global volume of animal feed per capita (FAO statistics)

				· Area under agro-ecology or quantity of chemical pesticides and fertilizers used (FAO and IFA statistics) as a proxy · SDGs indicator 2.4.1 (proportion of agricultural area under productive and sustainable agriculture) · Area of habitat conversion and agricultural soils restoration and rehabilitation · Soil fertility and pollinator health · Area of agriculture soils restoration and rehabilitation.
2	20	A	117-125	Add an additional component as follows: "T9.4. Contribution of agricultural lands to the structural and/or functional ecological connectivity of natural ecosystems."
2	21	C	126	T.9.3 Complement forest related indicators on sustainable forest management with agreed indicators under UNFF's monitoring framework: - Forest area under independently verified forest management certification scheme (incl. FSC) - Proportion of forest area under a long-term forest management plan. - Existence of traceability system(s) for wood products - Employment related to the forest sector - Add: Existence of robust legal, policy and institutional framework and enforcement mechanism at national level
2	21-22	B & C	132	T.11.1 Proposed monitoring element: Trends in biodiversity in urban areas Indicator could include: Number of cities or federal entities with green space management plans, dedicated budgets and monitoring frameworks in place
2	22	C	134	T.11.2 Suggest adding indicators related to well-being as defined under the Global Core Set of Forest Indicators (UNFF), including: - employment related to forest sector - Number of forest-dependent people in extreme poverty - Contribution of forests to food security
2	24	C	150	T.12.3 Proposed indicator: # of countries with policy framework for appropriate recognition and protection of traditional knowledge systems
2	25	B	152-156	T13. 1 We believe a link needs to be made between the spatial planning in target 1 and mainstreaming in target 13. Spatial plans for biodiversity conservation need to be adopted and applied across multiple sectors of government to guide development in ways that will reduce negative impacts on biodiversity. We believe this component should be reworded as; "*Trends in integration of biodiversity and ecosystem service values, including spatial biodiversity values such as Key Biodiversity Areas and other sites of importance for biodiversity, as well as areas important for ecological connectivity, into cross-sectoral and other planning processes.*"
2	25	C	152-156	We believe a useful indicator for target 13 component T13.1 could be; "*The proportion of policies and plans that incorporate spatial assessments of KBAs and other areas of importance for biodiversity*". Identification and conservation of KBAs would achieve many of the CBD goals and targets. Using spatial mapping of KBAs and other areas of importance for biodiversity to guide policy would contribute greatly to mainstreaming biodiversity. The KBA Partnership will be monitoring this indicator and will be able to provide the data.
2	25-26	B	153-156	T.13.1 Monitoring elements should include: Trends in assessing and mitigating risks of environmental collapse by Central Banks

				Indicator should include: *Number of countries with disclosure requirements on financial sector to account for dependencies, impacts and risks associated with biodiversity loss *Number of countries with taxonomies to navigate the transition to a low-carbon, resilient and resource-efficient economy that preserves and enhances biodiversity *Number of countries with Central Banks and regulators assessing risks and mitigating them associated with biodiversity loss *Number of countries with Central Banks and regulators accounting for biodiversity-related financial risks as part of the fiduciary duty *Number of countries with Central Banks and regulators with stress-tests related to biodiversity loss and ecosystem collapse (as outlined in CBD/SBI/3/5/Add.3, para 23)
2	26	C	155	T.13.1 Tenure security is recognized as necessary factor in enabling sustainable natural resource management and eradicating poverty. It is an indicator under SDG1. There for we propose an indicator on secure tenure rights to land: "the proportion of total adult population with secure tenure rights to land, (a) with legally recognized documentation, and (b) who perceive their rights to land as secure, by sex and type of tenure (SDG Indicator 1.4.2)
2	26	C	156	We propose the following indicator: # of sector-specific and inclusive national, regional and global plans of action for food and agriculture, forestry, fisheries, infrastructure and energy, extractives, and manufacturing developed and implemented. Data source: national reports
2	27	C	159	T.13.3 Under indicators: Number of countries and competent organisations that that have integrated and applied into their decision-making processes, generally agreed standards, including those contained in: -the 2012 CBD Voluntary Guidelines for the Consideration of Biodiversity in Environmental Impact Assessments and Strategic Environmental Assessments in Marine and Coastal Areas; -The 2008 FAO International Guidelines for the Management of Deep Sea Fisheries in the High Seas
2	27	A, B & C	161 bis	In order to clearly reflect the whole-of-society approach and to ensure policy coherence, coordination and effectiveness of the implementation of the framework, we propose: A. An additional target component: Comprehensive stakeholder engagement in the implementation of the GBF B. Related monitoring element: Trends in quantity and quality of multistakeholder and multisectoral platforms and processes for the implementation and monitoring of the GBF C. Related indicators: # and quality of multi-stakeholder and multisectoral platforms and processes on biodiversity at national and regional level set up and strengthened Data source: national reports, stakeholder reports
2	27	C	162	T14.1. Monitoring element: Trends in ecological limits reached or surpassed We suggest to add the following indicators: • Material footprint per capita • Material consumption inequality
2	27	C	164	T.14.1 Under indicators: Suggest also including: -implementation of circular economy principles through policies and legal frameworks.

2	29	C	174	T.8.1 indicator: We suggest not using MSC certified catch as an indicator. We have suggested a number of more appropriate, science-based indicators for rows 105-109 (above).
2	29	C	177	T.14.3 additional indicators: # of adopted PGS (participatory guarantee systems) for Non timber forest products; #ha under community management (source: RRI, WRI)
2	29	B and C	177-178	T.14.3 Suggest adding a new monitoring element: *Trends in area change of natural ecosystems through production and consumption of agricultural commodities.* Suggested Indicators: Indicator 1 (for producer countries): 1.1 Tree cover loss driven by agricultural / commodity production (ha) 1.2: natural vegetation cover loss driven by agricultural / commodity production (ha) Indicator 2 (for importing countries): Proportion (%) of imports of (agricultural) commodities verified as not from land converted from natural vegetation, including forests.
2	29	B	178	T.14.3 Replace monitoring element with Trends by financial sector in integrating biodiversity risks into conventional risk management processes in financial markets. New indicator: Number of countries with regulatory requirements (e.g. taxonomies) for the financial sector to report on risks, impacts, dependencies associated with biodiversity loss.
2	29	B and C	178 bis	T.14.3 New monitoring element: Trends in adopting stress-tests related to biodiversity New indicator: Number of Central Banks and supervisors integrating biodiversity-related financial risks into capital and solvency requirements (RM report Para 23.e)
2	29	C	179	T.14.3 Under indicator: WWF suggest not using MSC certified catch as an indicator here.
2	33	C	206	T.17.2 We propose the following additional indicators: # of countries with biodiversity positive charges and fees.
2	33-34	C	208	T.17.2 monitoring agricultural subsidies is only partially covers this target. Therefore, we suggest to add indicators to measure trends in fishery subsidies and forest plantation subsidies that harm biodiversity
2	34	C	211	T.18.1 this indicator is very useful and should be obligatory for all parties. Replace word "needs" with "gaps" (T18.1 identification of funding gaps to meet ...) Add monitoring elements: Trends in concessional finance Trends in non-concessional finance Trends in private sector finance for biodiversity conservation, sustainable use and restoration. Delete Trends in mobilization of financial resources from charitable organization (this is unspecified)
2	36	C	222+223	T.18.4 similar to indicators in rows 213 and 214, indicators here may be: Dollar value targeted to capacity building

2	36	C	226-231	Given the increasing use of KBAs by financial institutions, corporates and donors to assess biodiversity risk or target funding, the existence of accurate and up to date national maps of KBAs is a crucial component of T19 in terms of 'ensuring quality information … is available to decision makers for… for the effective management of biodiversity.' We therefore propose an additional indicator for target 19 component T19.1 here as follows; "Number of countries in which comprehensive national key biodiversity area assessments have been updated using the KBA Global Standard"
2	36	C	226-231	Most conservation action is driven by what we know about mammals and birds. There is a need to more comprehensively assess biodiversity and use the information to guide policy. We therefore propose an additional indicator for target 19 component T19.1 as; "Percentage of taxonomic classes and ecosystem types for which comprehensive national key biodiversity area assessments have been undertaken"
2	38	C	236-238	T.19.4 Proposal for additional indicators: # of countries adopting formal FPIC protocols; # of formally adopted and recognized community protocols (mandated by Nagoya Protocol) Additional sources of possible indicators: Local Biodiversity Outlook (LBO)on traditional knowledge and practices; ICCA Registry
2	39	C	241	T20.1 proposed new indicators: - Trends in formal recognition of ICCAs and IP's territories - % of IPLC in management bodies/boards/governance institutions of natural resources (source could be ICCA Registry) - # of IPLC relocated/displaced from their territories; zero victims among environmental defenders
2	39	C	242	Suggest to add SDG indicator 1.4.2 (proportion of total adult population with secure tenure rights to land, with legally recognized documentation and who perceive their rights to land as secure, by sex and by type of tenure)

Table 3 Global indicators				
Table	Page	Column	Row	Comment
3	0	0	0	New indicators proposed in tables 1 and 2 may also be useful as global indicators (table 3), for example indicators from the Global Core Set of Forest Indicators for the UNFF's Strategic Plan on Forests 2017-2030 and from the New York Declaration on Forests.