



Knowledge-4-Nature: Provisioning the biodiversity data behind global goals for nature

Part I: Project Information

GEF ID

Project Type

MSP

Type of Trust Fund

GET

CBIT/NGI

CBIT No

NGI No

Project Title

Knowledge-4-Nature: Provisioning the biodiversity data behind global goals for nature

Countries

Global

Agency(ies)

IUCN

Other Executing Partner(s)

IUCN

Executing Partner Type

GEF Agency

GEF Focal Area

Biodiversity

Taxonomy

Focal Areas, Influencing models, Stakeholders, Gender Equality, Capacity, Knowledge and Research

Rio Markers

Climate Change Mitigation

Climate Change Mitigation 0

Climate Change Adaptation

Climate Change Adaptation 0

Duration

24 In Months

Agency Fee(\$)

165,138.00

Submission Date

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
BD-1-1	GET	1,834,862.00	9,380,000.00
Total Project Cost (\$)		1,834,862.00	9,380,000.00

B. Indicative Project description summary

Project Objective

To strengthen delivery of the global biodiversity species data through the IUCN Red List in the most comprehensive, sustainable, convenient and interoperable way for the many existing and planned platforms and users

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
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Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
Component 1: Providing state-of-the-art data services	Investment	<p>Outcome 1.1: Data availability is strengthened for decision-making in conservation and sustainable development, facilitating the establishment, tracking and verification of NBSAPs and science-based targets for biodiversity</p> <p>Outcome 1.2: Science-based targets for species biodiversity are extended to marine environments</p> <p>Outcome 1.3: Biodiversity data is tailored for and served to the Task Force on Nature-Related Financial Disclosure (TNFD), building on IUCN engagement with TNFD</p>	<p>Output 1.1.1: Mechanisms are built and implemented to automatically generate the Red List Index on demand and serve it through webservices to relevant platforms</p> <p>Output 1.1.2: Development and implementation of plan for automated recalculation, updating, and maintaining Species Threat Abatement and Restoration metric and serving it through web services to relevant platforms such as IBAT</p> <p>Output 1.2.1: A marine layer is developed for the Species Threat Abatement and Restoration metric, incorporated into the global heat map and published in the literature</p>	GET	670,000.00	3,200,000.00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
Component 2: Addressing urgent knowledge needs	Investment	Outcome 2.1: Critical biodiversity datasets are expanded for accelerated action on issues of highest conservation concern	<p>Output 2.1.1: Data for species in aquatic ecosystems are generated to support the safeguard of freshwater and marine environments and the livelihoods that depend on them</p> <p>Output 2.1.2: Fungi species assessments are undertaken to guide soil and land health</p> <p>Output 2.1.3: Dung beetle species assessments are undertaken to guide soil and land health</p>	GET	613,000.00	3,310,000.00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
Component 3: Strengthening sustainability including by exploiting new technologies and applications	Investment	<p>Outcome 3.1: The production of high-quality biodiversity data is broadened by exploiting new technologies and methods</p> <p>Outcome 3.2: Development and implementation of a sustainability plan for Red List</p>	<p>Output 3.1.1: Incorporation of knowledge frontiers (e.g., remote sensing, national linkages, etc.) analyzed to catalyze more efficient responses to biodiversity species data demands, and scoping review published in the literature</p> <p>Output 3.1.2: Current and historical Area of Habitat (AoH) are incorporated into Red List species pages and mechanisms developed for streamlining input of spatial information, maintenance and recalculation of AoH</p> <p>Output 3.1.3: Strengthened connections between national red lists and the IUCN Red List of Threatened Species to allow interoperability</p>	GET	385,056.00	1,932,000.00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
				Sub Total (\$)	1,668,056.00	8,442,000.00
Project Management Cost (PMC)						
GET			166,806.00		938,000.00	
Sub Total(\$)			166,806.00		938,000.00	
Total Project Cost(\$)			1,834,862.00		9,380,000.00	

C. Indicative sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Private Sector	Licensing of commercial use of the IUCN Red List through the Integrated Biodiversity Assessment Tool	Equity	Investment mobilized	630,000.00
Civil Society Organization	Grant from CSO Re:wild	Equity	Investment mobilized	450,000.00
GEF Agency	IUCN Framework funding	Equity	Investment mobilized	3,500,000.00
Civil Society Organization	Red List Partnership encompassing 12 biodiversity organizations	In-kind	Investment mobilized	4,800,000.00
Total Project Cost(\$)				9,380,000.00

Describe how any "Investment Mobilized" was identified

The IUCN Red List benefits from significant volunteer time but it is not straightforward to capture it as normal co-financing. Juffe-Bignoli et al. (2016) estimated the annual (in 2013) amount of volunteer time for the IUCN Red List to be \$504,000 (2,274 days). The anticipated volunteer contribution for the PIF could amount to \$663,000 (\$221 daily rate x 1.5 person days per species x 2000 species).

D. Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
IUCN	GET	Global	Biodiversity	BD Global/Regional Set-Aside	1,834,862	165,138	2,000,000.00
Total GEF Resources(\$)					1,834,862.00	165,138.00	2,000,000.00

E. Project Preparation Grant (PPG)

PPG Required **false**

PPG Amount (\$)

PPG Agency Fee (\$)

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
Total Project Costs(\$)					0.00	0.00	0.00

Core Indicators

Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	1,500			
Male	1,500			
Total	3000	0	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

This non-area-based project focuses on data quality, availability and networks. While ultimately the IUCN Science and Data Centre will have a global array of multi-sectoral beneficiaries (relevant to Core Indicator 11), at this early roll-out stage it is challenging to conclusively quantify the ultimate number of direct beneficiaries. At this stage, IUCN will be working with a small group of researchers, data providers and global partners. However, we will over the lifetime of this MSP be able to measure beneficiaries through submissions to the complementary Contributions for Nature Platform which will help serve the outputs of this MSP. In this light, we anticipate a target of at least three thousand people will be directly measurable gender-disaggregated beneficiaries of this MSP, comprising half each women and men. This estimate is derived by sampling typical medium-sized projects reported to the GEF by IUCN Member organisations, and multiplying this by a conservative estimate of the number of contributions which will likely be documented through the Contributions for Nature platform.

Part II. Project Justification

1a. Project Description

(1) Global environmental problems, root causes and barriers to be addressed:

The full extent of the biodiversity crisis is now recognised alongside the climate crisis. A quarter of species in well-known groups are threatened, and extinction rates are approaching a thousand times higher than normal. This loss of nature has profound negative consequences for communities, societies, and economies ? and indeed for humanity and all life on Earth. These consequences have been underscored by the emergence of the COVID-19 pandemic. As the world emerges from the pandemic, it is crucial that decision-makers from both the public and private sectors seek to make the recovery nature-based and nature-positive, with the short and long-term impacts in mind.

For the world to understand the status of nature in a way that can support decision making for sustainable development, it is essential that data are readily available, relevant, up-to-date and robust. To successfully mainstream the biodiversity and climate crises in all decision-making, the world needs leadership and input from multiple sectors that have not, traditionally, engaged in biodiversity conservation and environmental management. Only with reliable, timely and relevant data can these new cohorts of decision-makers and leaders effectively contribute to coordinated biodiversity and climate solutions.

Currently there are global challenges that prevent a smooth pathway from data collection and processing (eg. through Red List assessments), to reaching the right target audience and public and private sector decision-makers to support informed policy, and therefore ultimately, to having a positive impact on nature and our environment.

First, there are no common, well-understood metrics that all stakeholders from multiple sectors can use to measure the status of biodiversity and set appropriate targets. This is an important bottleneck to mobilising a global movement towards the common cause of conserving nature and protecting our planet. Second, data are outdated faster than they are being updated. For example, the [IUCN Red List of Threatened Species](#) recommends re-assessment once every four years, and requires it at least once every ten years, for data to remain current and relevant to ongoing decision-making. However, to date less than a quarter of the species assessed for the IUCN Red List have repeat assessments in place. Third, the services provided to apply the data for timely decision-making are limited. While the data based on or derived from IUCN standards are already put to a wide variety of uses across different sectors, the pathway from data generation to environmental impact should be improved. In particular, rather little has been invested in improving access to species data that Parties will need to monitor the post-2020 Global Biodiversity Framework (aside from supporting biodiversity risk screening through the [Integrated Biodiversity Assessment Tool](#)).

Fourth, there is insufficient investment to maintain and promote the application of data. A recent study by [Juffe-Bignoli *et al.*](#) (2016) found that US\$35 million, plus 209 person-years of volunteer time were invested in maintaining the IUCN Red List of Threatened Species between 1979 and 2013. More than half of this financing was provided through philanthropy, and nearly three-quarters was spent on personnel costs. The estimated annual cost of maintaining data and platforms for the IUCN Red List is around US\$4.7 million. An additional US\$38 million will be needed to reach pre-defined baselines of data coverage and, once achieved, annual maintenance costs will be approximately US\$5.4 million; much lower than the costs of many other knowledge products from other sectors. Finally, new technologies and methods have not been used to their full potential to strengthen the gathering, access and use of species data. There are currently too few pathways deploying technology such as remote sensing in order to generate efficiencies in data maintenance, and increase the frequency and reduce the cost of biodiversity assessments.

These barriers are hindering the confidence with which governments, and even companies and non-profits, can make trackable commitments towards nature conservation and the post-2020 Global Biodiversity Framework, at a time when such commitments, and stronger ambitions, are urgently needed. How these barriers limit national capacities for monitoring and reporting is visible with several Multi-lateral Environmental Agreements (MEAs), where biodiversity conservation faces tracking challenges due to the lack of pre-agreed metrics and their ease of access. Without the right data, governments and other stakeholders are also limited in their capacity to plan and take management and investment decisions to build, implement and monitor a strong post-2020 GBF.

Although the Global Biodiversity Framework will only be agreed in Kunming in 2022, based on the current draft framework, this proposed work will intersect with a variety of different pieces of the framework. For example, Goals A and B, in particular its components and milestones related to species, such as action targets 1-8 related to reducing threats to biodiversity, as well as by extension SDG 15. In addition, certain of the outputs that this work will strengthen, such as the Red List Index, are already explicitly identified as proposed indicators in the draft monitoring framework. Moreover, there will be the potential for the outputs to interact with the Sharm El Sheikh to Kunming Action Agenda Platform.

(2) Baseline scenario and projects:

As indicated in the GEF 2020 Strategy "Environmental pressures are increasing across all the GEF's areas of focus, including accelerating biodiversity loss, climate change, deforestation, degradation of international water bodies, land degradation, and chemical pollution". Without robust data on our natural world, work to arrest its decline, let alone reverse the trend, would be little more than guesswork.

IUCN has a long history of establishing and applying standards to measure the state of nature, and, through partnerships, of mobilising large volumes of data under these standards. Thanks to these standards and datasets, some long-lived, others more recent, conservation work can take place through

an informed process. The best-known of these 'IUCN knowledge products' is the IUCN Red List of Threatened Species, including the IUCN Red List Categories & Criteria approved in 2000 as the global standard for measurement of species extinction risk. The standard is maintained by the IUCN Species Survival Commission and implemented by the Red List Partnership of 12 organisations to generate assessments of extinction risk for over 130,000 species that today comprise the IUCN Red List of Threatened Species. The [IUCN Red List Index](#), for which the Red List is the basis, reveals a deeply worrying increase in extinction risk by 10% over the last three decades.

IUCN's data form the backbone of decision-making in conservation and sustainable development. They are used by governments to establish targets and track progress towards global goals for nature. For example, five of the official UN Sustainable Development Goal (SDG) indicators are derived directly from the data measured against IUCN standards: including indicator 15.5.1 (the Red List Index). They are similarly used for tracking progress towards targets under MEAs, such as the Convention on Biological Diversity (CBD), the UN Convention to Combat Desertification (UNCCD), and the Convention on Migratory Species (CMS). The data also feature prominently in the 2019 Global Assessment of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), and are widely used by non-state actors including civil society organisations and corporations.

The data can be used by the private sector to screen and manage biodiversity risk via the Integrated Biodiversity Assessment Tool, a data search service for global biodiversity information. This tool is maintained by IUCN in partnership with BirdLife International, Conservation International, and UNEP-WCMC. The recently launched [Species Threat Abatement & Restoration metric](#), a collaboration of more than 50 institutions, derived directly from the IUCN Red List with support from the GEF, allows companies and other non-state actors to establish science-based targets for their potential contributions towards global goals. The data are also used by regions, cities, and local communities to support land- and water-use planning, advance nature-related employment, and inspire pride in natural heritage. Finally, they are used to inform the investment strategies of financial institutions, including the GEF itself. For example, spatial data on threatened species from the IUCN Red List are used as a key factor in calculating GEF's Global Benefits Index for Biodiversity as part of the System for Transparent Allocation of Resources to recipient countries. The most recent iteration of the System for Transparent Allocation of Resource omitted freshwater species because the global comprehensive assessment was incomplete.

A recent study, presented as an information document to CBD SBSTTA24, noted that the demand for indicators is often not matched by adequate resources for long-term production of underlying data and the indicators themselves. Many Parties to MEAs have limited capacity to monitor changes or trends in the status of biodiversity at regular intervals, which coupled with a lack of data analysis and root cause analysis, is conducive to a pervasive lack of evidence-based reporting and decision-making at the national level. Indeed, even with credible global datasets available, CBD Parties tend to use mostly their own indicator methodologies, making it difficult to aggregate collective national progress in way that can account for global progress. Investing in the availability and uptake of global species data would help to remediate some of the capacity gaps faced by developing countries for the generation of their own biodiversity data. In the absence of such investments, the baseline scenario would tend to maintain current barriers to the effective monitoring of progress towards goals and targets adopted

globally, in particular those stemming from the Post-2020 Global Biodiversity Framework soon to be finalised.

There are, notwithstanding, a number of ongoing efforts to improve the uptake and usability of IUCN and other knowledge products among government entities, such as in Fiji and Uganda for national conservation decision-making, and through regional approaches such as in the Asia Protected Areas Partnership (APAP), and the Biodiversity and Protected Area Management (BIOPAMA) Programme for African, Caribbean and Pacific countries. As part of baseline efforts, these IUCN initiatives serve to bridge information gaps within governments that lack national datasets or present poor data quality but that can use global datasets as proxies or complements, thus helping to improve management decisions. In addition, there are a number of GEF-7 and GEF-6 projects that aim to address the lack of environmental data, enable the use of global data sources, and improve information management and access for decision-making and MEA reporting in specific countries or regionally (such as the 'Inform' project in Pacific island countries; GEF ID 5195 'Building National and Regional Capacity to Implement MEAs by Strengthening Planning, and State of Environment Assessment and Reporting in the Pacific Islands'- UNEP (2016-2022)). The Restoration Initiative (GEF ID 9264 'TRI The Restoration Initiative 'Fostering Innovation and Integration in Support of the Bonn Challenge'- IUCN) as well as the Fashion Pact (GEF ID 10658 'Transforming the Fashion Sector to Drive Positive Outcomes for Biodiversity, Climate, and Oceans'- CI (2020-2022)) and the LDN platform (GEF ID 10230 'Strengthening Land Degradation Neutrality data and decision-making through free and open access platform'- CI (2019-2023)), funded by the GEF and implemented by Conservation International, also have important elements of knowledge management. The recently launched UN Biodiversity Lab, which draws heavily from data based on IUCN standards, also emphasises the value of using spatial data and was a tool tapped into by many CBD Parties for the purpose of preparing their 6th National Reports.

While the proposed work is unique and fills a particularly important niche related to strengthening and serving species data, it is not happening in a vacuum and will exist amongst and interact with a constellation of existing and planned complementary parallel initiatives. Some of these comprise upstream species data to better provision and more efficiently feed all possible downstream uses including major data initiatives such as GBIF, LPI, and GEO BON, as well as major citizen science platforms such as iNaturalist. These have been inventoried by IUCN's Species Monitoring Specialist Group^[1]. However, none of these provide assessment of species extinction risk, the distinctive 'indeed unique' feature of the Red List, and the increment provided by this project. This is particularly important given the GEF's mandate on providing *global* environmental benefits, and notably on providing benefits for biodiversity of *global* relevance, including the documentation and thence safeguard of globally threatened species.

Others encompass platforms that aim to help various types of state and non-actors support, implement and monitor the post-2020 GBF. For example:

' Protected Planet - Nationally reported data on protected and conserved area targets, maintained by the IUCN World Commission on Protected Areas and the UNEP World Conservation Monitoring Centre (UNEP-WCMC). The platform already exists and aims to support reporting, monitoring and

tracking progress towards the GBF. While the proposed work in the MSP focuses on strengthening the serving and interpretation of species data, there is a natural and obvious interaction with protected area commitments. One of the potential synergies that the proposed outputs will further is the ability to use the Species Threat Abatement and Restoration metric to connect protected and conserved area targets back to potential changes in species extinction risk.

? UN Biodiversity Lab. Convened by UNDP, CBD, GEF, and UNEP-WCMC. Its new iteration aims to serve and visualize global spatial data with country workspaces for national data to help the planning and implementation of the GBF, in particular linking through to the 6th/7th National Reporting through the CBD official reporting processes.

? Target tracker: still under development platform led by UNEP-WCMC that hopes to support the monitoring and tracking of the post-2020 framework, and could benefit from the strengthened species data provided by this work.

? Data and Reporting Tool (DaRT): Funded by the EU and Switzerland, and implemented by the UNEP Law Division, DaRT aims to facilitate documentation and information management by parties for multiple MEAs including the CBD by providing national workspaces. It is currently in a phase where it is hoping to increase interoperability with other tools and could be a useful and complementary parallel platform for the outputs of this proposed work, which will improve the underlying species data and serve it in useful ways to parties. The proposed work is anticipated to be a useful input to strengthening DaRT.

? Online Reporting System (ORS): In a similar vein, UNEP-WCMC supports the ORS, a survey-based tool for streamlining MEA reporting for agreements such as CITES, CMS, and Ramsar.

? CITES Wildlife TradeView: new initiative under development that hopes to use nationally reported data to explore and visualize CITES trade data, and help with the monitoring/tracking.

? Sharm El-Sheikh to Kunming Action Agenda for Nature and People: CBD initiative invites positive action in support of nature in line with the Global Biodiversity Framework to be adopted in 2021. Commitments are displayed to inspire others and create a groundswell of action for nature. The commitments are categories in a similar manner as the transition pathways to inspire further actions from non-state actors. The outputs of the proposed work will further catalyse and enable commitments by providing better underlying data served in more appropriate and easily usable ways.

? Science-Based Targets Network: Collaboration of many different NGO and corporate partners aiming to generalize the science-based targets for climate to biodiversity, oceans, freshwater, and land environmental dimensions for the private sector. Methods for setting these targets currently under development, including through the support of complementary GEF projects, notably GEF ID 10309 ? Staying within Sustainable Limits: Advancing Leadership of the Private Sector and Cities?- CI (2019-2022). The proposed work will strengthen the underlying data that could then be used to assess, implement and monitor these types of private sector biodiversity commitments. In particular, the focus on freshwater (output 2.1) and marine systems (output 1.2.1) are two of the primary missing species data gaps in the interim SBTN guidance.

? Integrated Biodiversity Assessment Tool: A longstanding partnership UNEP-WCMC, Conservation International, Birdlife, and IUCN, IBAT is the tool for serving biodiversity data such as the world database on protected areas, world database on KBAs, and IUCN Red List of Threatened Species for commercial use. Also provides country profiles. IBAT is anticipated to be an important consumer of the outputs of this work, and this project is anticipated to further strengthen and streamline that process.

As much as these combined efforts are insufficient to close all data gaps globally, they are nevertheless timely, relevant and allow for ground-truthing through national lenses and better understanding of government and private sector data needs and capacities. However, with the need for full mainstreaming of biodiversity now emerging, the demands for data to serve the needs of different actors in this context still remain beyond the supply. This project's baseline scenario contemplates a rise in demand for data on the risk of species extinctions and ecosystem collapse, important sites for biodiversity, protected areas, the impacts of invasive alien species, areas with high restoration potential, and others, without a corresponding rise in national capacities for data management in developing countries or a significant rise in globally available, up-to-date and high quality biodiversity data to inform progress against the various MEAs.

To begin close to home, the recently approved [IUCN Nature 2030 Programme](#), which represents the collective vision of IUCN's membership base (close to 1,400) and expert Commissions, aims to inform on the impact of its collective action, and for this, mandates the development of a digital platform where all parts of the Union can voluntarily share their committed and realised contributions to meeting the Impact Targets as well as commitments against global policy targets such as the Post-2020 Global Biodiversity Framework. This [Contributions for Nature platform](#) was launched at the IUCN World Conservation Congress (Sept 2021) and allows constituents of the Union, and eventually other non-state actors, to document spatially their intended contributions towards the IUCN Programme and by extension, towards the Global Biodiversity Framework, Paris Agreement, and SDGs. Within the IUCN house, the adoption of clear, common and realistic metrics is clearly on the table.

Overall, biodiversity data demands exist across many regulatory and policy contexts, with data currently being demanded by governments (to establish targets, track progress and raise accountability), by the private sector (to screen and manage risk), by regions, cities (furthered by a new IUCN resolution adding sub-national governments as a new category of IUCN Member), and local communities (to support planning, advance nature-related employment, and inspire pride), and by financial institutions, including the GEF (to inform investment strategies and help countries meet the objectives of international environmental conventions and agreements). This demand will increase sharply over the coming years, as governments and non-state actors seek to deliver under new global frameworks for nature (especially the Post-2020 Global Biodiversity Framework) - especially in the context of investment in recovery from the COVID19 pandemic. In the absence of critical investments in data generation and management, the offer, however, will not increase concomitantly. The baseline tendency will likely maintain a slow improvement curve in data quality, availability and useability, and a heterogeneous - if not sui generis - approach to data use in both decision-making (in the public and private sectors) and reporting. The Post-2020 Global Biodiversity Framework in particular is looking to strengthen transparency and responsibility on progress towards meeting its ambitions. Yet, in the absence of trusted, comprehensive and accessible biodiversity datasets, the greater consistency between this global framework and the national planning, delivery and reporting mechanisms that is required to attain transparency, will remain elusive.

(3) Proposed alternative scenario and expected results:

With an investment of more than US\$11 million (from the GEF Trust fund and co-financing), the alternative scenario proposes to strengthen the delivery of global biodiversity species data services in the most comprehensive, sustainable, convenient, and interoperable way, at low cost, and from a trusted source:

- State-of-the-art data services that strengthen data availability for decision-making and reporting in conservation, restoration and sustainable development, with a particular focus on the data that will be required for implementing and monitoring the post-2020 Global Biodiversity Framework (GBF). This consists in support for setting science-based targets and monitoring indicators, deploying new technologies potentially with private sector actors to provide rapid and easy access to data and its analysis, and overall improving data usability.
- Expanding critical data to accelerate action on issues of highest conservation concern. Addressing urgent knowledge needs requires enhancing data coverage for at-risk key taxonomic groups, such as providing substantial expansion of knowledge through the IUCN Red List and incorporating comprehensive datasets into taxonomic groups and biomes that are relatively under-represented and/or highly threatened.
- Broadening the production of high quality biodiversity data by exploiting cutting edge new technologies, methods, and applications to expand and facilitate its serving, maintenance, and sustainability.

The alternative global scenario proposed is time-sensitive, given the imperative of aligning with the initiation of major mechanisms like the Post-2020 Global Biodiversity Framework. There is also opportunity in ensuring relevance to the GEF replenishment cycles and the programming of other major donors, and in creating synergies to support the process of integrated national reporting to the various biodiversity-related MEAs, which countries are increasingly looking to deploy.

Through this work, decision-makers provided with sustainable, robust and accessible biodiversity data. This would be underpinned by clear processes and services to apply that data in policy and economic decisions for nature conservation, restoration and sustainable development. The proposed work would provide countries with credible information to promote environmental outcomes and sustainability for the wellbeing of its people, and of global biodiversity and the natural resource base, as a global environmental benefit. In line with IUCN's and the GEF's mandate, and with the scope of the IUCN Nature 2030 programme (People, Land, Water, Oceans, Climate) endorsed in February 2021 by IUCN's State, government and non-state members, ensuring data availability and quality for all sectors concerned with nature conservation and sustainable development. The three areas of work (three components) will focus on delivering the following results:

- **COMP 1.** Providing state-of-the-art data services:

- OUTCOME 1.1: Data availability is strengthened for decision-making in conservation and sustainable development, facilitating the establishment, tracking and verification of NBSAPs and science-based targets for biodiversity.

The 2015 Paris Agreement of the United Nations Framework Convention on Climate Change was game-changing in establishing three overarching goals for a societal response to climate change: one each for mitigation (the 1.5°C target), adaptation, and financing. The global goal for mitigation is structured to allow disaggregation into specific science-based targets, such that any actor can identify the actions that they have the opportunity and responsibility to deliver, if the global goal is to be reached overall (see [Andersen et al.](#))^[2].

This Outcome would build on the strong momentum that now exists towards applying similar approaches across other global goals for nature, in particular in the context of the ongoing negotiations to develop a Post-2020 Global Biodiversity Framework and the emphasis being placed on transparency. The aim is for this process to yield goals or milestones for halting the loss and advancing the recovery of ecosystems, species, and genetic diversity. Through the Species Threat Abatement & Restoration metric, developed with support from the GEF, the mechanism already exists to support all actors in setting science-based targets for biodiversity at the species level. This is already served in an early access form for private sector use through the Integrated Biodiversity Assessment Tool, and a linked mechanism to allow civil society and governments to determine their potential contributions is in the process of being established as an IUCN Contributions for Nature platform. Through critical improvements in the development, updating and delivery of these services that draw from the IUCN Red List, this outcome will expand and facilitate the ability of State and non-state actors to implement and monitor the post-2020 GBF.

Output 1.1.1: Mechanisms are built and implemented to automatically generate the Red List Index on demand, and serve it through web services to relevant platforms.

The incorporation of indicators based on IUCN standards into the official processes for tracking progress towards intergovernmental targets (SDGs, MEAs, etc) is a loud endorsement of the confidence that governments and other stakeholders have in the robustness of the underlying data. However, current mechanisms for the use of the Red List Index to track targets is inadequate: indicator updates are provided manually from laptop calculations, which is opaque, inefficient, and time consuming, and risks introducing errors. Building from the existing API for the Red List itself (<http://apiv3.iucnredlist.org>) as well as recent innovations in providing policy-relevant disaggregation of the Red List Index (e.g. for freshwater species under the Ramsar Convention, or migratory species for the CMS), this output will build both geographic and thematic disaggregation into the early stages of indicator production and will develop and implement the automatic and on demand generation of this critical indicator that is, one or more APIs for the RLI.

Output 1.1.2: Development and implementation of plan for automated re-calculation updating, and maintaining Species Threat Abatement and Restoration metric and serving it through webservices to relevant platforms such as IBAT.

The Species Threat Abatement and Restoration metric, developed with the support of the GEF is game-changing in its ability to quantify how specific actions in specific places can contribute to reducing global species extinction risk. Through a static layer it has been incorporated into IBAT, and it is already being tested by hundreds of organizations. A recurring question from end-users during

stakeholder consultation phase around the metric revolves around the plan for keeping the global layer up to date with the latest information from the IUCN Red List. This output would unlock the full potential of the metric by planning for and implementing the automatic updating of the layer to move from the static to the dynamic and develop the webservice necessary to serve it to relevant platforms that need to use it.

OUTCOME 1.2: Science-based targets for species biodiversity are extended to marine environments

Currently the Species Threat Abatement and Restoration metric is limited to terrestrial environments. A recurring demand from current and potential end-users during stakeholder consultations has been the incorporation of marine and coastal environments into the global layer. This extension is especially critical and urgent to forestall the risk that science-based targets for biodiversity leave marine environments behind and are set without taking them into consideration.

Output 1.2.1: A marine layer is developed for the Species Threat Abatement and Restoration metric, incorporated into the global heat map and published in the literature.

Drawing from marine taxonomic groups, this output will create a marine version of the global layer, incorporate it into the terrestrial layer that is being maintained in Output 1.1.2 and publish it in the literature.

OUTCOME 1.3: Biodiversity data is tailored for and served to the Task Force on Nature-Related Financial Disclosure (TNFD), building on IUCN engagement with TNFD

IUCN will support TNFD's biodiversity accounting through the provision of biodiversity metrics. These will be designed to enable governments, the finance sector and companies to quantify, analyse and react to the impacts of flows of finance on core aspects of biodiversity. It will capitalize where possible on lessons learned from the parallel Taskforce on Climate-Related Financial Disclosure. Through TNFD, this will permit nature-related disclosure by finance companies to accurately reflect opportunities, impacts, and risks for biodiversity, measured at a geographical scale and over time periods relevant to investment.

Output 1.3.1 - Robust, scientifically anchored and spatially explicit biodiversity metrics are proposed for inclusion in the TNFD Reporting Framework

Building from IUCN's participation in the [TNFD Forum](#) and [TNFD Informal Technical Expert Group](#) (ITEG) and through participation in the anticipated Technical Working Groups/ Technical Partnerships of TNFD, IUCN will draw from the proposed work on strengthening the IUCN Red List and providing the Species Threat Abatement and Restoration metric as a service, to support the inclusion of robust, scientifically anchored and spatially explicit biodiversity metrics in the Reporting Framework. In collaboration with TNFD Taskforce Members, appropriate TNFD Working Groups, the Forum, and the secretariat, we will strengthen access mechanisms and analytical tools for these metrics in ways that

will enable finance institutions to examine their biodiversity-related opportunities, impacts, and risks, and also enable them to identify means to manage and mitigate these issues.

- **COMP 2.** Addressing urgent knowledge needs:

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OUTCOME 2: Critical biodiversity datasets are expanded for accelerated action on issues of highest conservation concern.

The IUCN Red List of Threatened Species, as the centerpiece among all biodiversity datasets, needs to be regularly updated and representative of biodiversity to best inform and influence decisions that benefit nature conservation. This is achieved by regularly re-assessing species - at least once every decade - and by adding other species from taxonomic groups and geographies that are relatively under-represented. Each species assessment applies the IUCN Red List Categories and Criteria to the best information available from field surveys, published literature and expert knowledge. For some taxonomic groups and geographies, capacity building of the expert network is required to assist the assessment process but new fieldwork is not required. Broadly, the aim is to include all vertebrate species and representative samples of invertebrates, plants, and fungi. Immediate investment would allow IUCN to fill crucial gaps by incorporating additional taxonomic groups from selected geographic areas into the Red List, and to make these data available for decision-making.

Output 2.1: Data for aquatic ecosystems are generated to support the protection of aquatic environments and the livelihoods that depend on them.

Global pressures on aquatic ecosystems are high and rising despite their importance as a source of food, livelihoods, recreation, clean water, and critical role in ecosystem function and global environmental cycles. Viewed primarily as a resource for humans, current practices of water use have led to catastrophic declines in many fish species, as well as the degradation of marine and freshwater ecosystems, including their genetic and functional diversity.

There are currently 10,943 freshwater fish on the IUCN Red List, plus a further 5,280 assessments to be published, out of approximately 18,000 described species. This proposal seeks to complete assessments for the remaining 1,777 freshwater fish species, which are mostly from South America and China. Moreover, there are currently 10,789 marine fish on the IUCN Red List out of approximately 18,200 described species. This proposal seeks to add to these, the completed assessments of 1,000 gobies. These assessments will be focussed on the Coral Triangle (Indonesia, Philippines, Malaysia, Timor-Leste, Papua New Guinea and Solomon Islands) and help fill a key geographic gap for marine fish. This addition will allow the services mapped out under Outcome 1 to provide better insight for decision-making in aquatic biomes, over and above their current coverage of the terrestrial environment.

Output 2.2: Fungi species assessments are undertaken to guide soil and land health.

Fungi are essential to such crucial activities as decomposition, recycling nutrients, and bringing nutrients from the environment into the food chain. They are of great economic importance, having

both positive and negative effects on human activities. They are the most visible link to the vast biodiversity underground and provide food and medicinal benefits to human societies.

There are currently 450 fungi assessed out of the estimated 100,000 described species. This proposal seeks to assess 500 fungi species that were identified as strategic priorities for Red List assessments by the IUCN Species Survival Commission's fungi specialists. These include mushroom species from semi-natural grasslands; lungworts, used globally as a source of food, medicine, dye, and perfume (their harvesting is not well regulated in most countries and could lead to the extinction of some species); and chanterelle mushrooms: an iconic group of harvested species that form close relationships with forest trees and are thought to be impacted by anthropogenic nitrogen deposition. Priority fungi are anticipated to be assessed in the Galapagos, Congo Basin, Himalayan foothills and southern-eastern Africa.

Output 2.3: Dung beetle species assessments are undertaken to guide soil and land health.

Dung beetles primarily use the dung of mammals for feeding and nesting. These beetles are important for the breakdown and recycling of dung into the soil, enabling the nutrients in the dung to cycle through the ecosystem. They provide many benefits for the health and functioning of both ecosystems, such as dispersing seeds, reducing livestock parasites and promoting plant growth.

There are 750 species of dung beetle on the IUCN Red List out of the approximately 5,000 species. This proposal aims to assess 500 species, including taxa from South and Central America where a particular need to focus was identified by the IUCN Terrestrial Invertebrate Red List Authority.

- **COMP 3.** Strengthening sustainability including by exploiting new technologies and applications:

-
OUTCOME 3.1: The production of high quality biodiversity data is broadened by exploiting new technologies and methods (?knowledge frontiers?).

Building from the acceleration of impacts through enhanced services, the third component of the proposed work would make the maintenance and scaling the use of data technology and methods more efficient and sustainable. This would mean scoping pathways for new technologies such as remote sensing, machine learning, artificial intelligence, environmental DNA, and citizen science to generate efficiencies in data maintenance, and increase the frequency and reduce the cost of assessments. The explosive growth of new technologies and information frontiers opens a wealth of opportunities for strengthening conservation knowledge, but, crucially, these opportunities themselves remain unavailable without start-up investment. The proposed work will concentrate on two of the most urgent frontiers, namely (i) Area of Habitat (AoH) (ii) Linking national and global Red Lists, whilst also producing a Scoping Document that includes a review of how the other ?frontiers? can deliver greater efficiency and impact.:

Output 3.1.1 Incorporation of knowledge frontiers (eg. remote sensing, national linkages, etc.) analysed to catalyse more efficient responses to biodiversity species data demands, and scoping review

published in the literature. This output would produce a scoping review to consider how the following ?frontiers? can contribute to more efficient and effective Red Listing:

- ? a) remote sensing, which provides essential input into mapping both the habitats of species themselves, and crucially, how these are changing over time, to feed into the documentation of AoH and of changes in AoH;
- ? b) modelling, primarily to prioritise filling of data gaps, building from existing efforts through the [RedList programme](#);
- ? c) genomics, in particular through harnessing environmental DNA to strengthen detection of hard-to-sample, cryptic, and poorly-known biodiversity and reduce spatial uncertainty in distribution data, through the [eBioAtlas](#), and to establish protocols to standardise development of eDNA data input into the IUCN Red List of Threatened Species and other datasets;
- ? d) citizen science, working with platforms like [iNaturalist](#) to accelerate input of primary data for easily-detected and identifiable species, and to diagnose situations of rapid biodiversity change (sudden declines, spread of invasive species, etc);
- ? e) social media, to crowd-source spatial information on changing interactions between biodiversity and people, especially as relate to increasing threats and very high visitation rates (see [Hausmann *et al.*](#))^[3];

Output 3.1.2: Current and historical Area of Habitat (AoH) are incorporated into Red List species website pages and mechanisms developed for streamlining input of spatial information, maintenance and recalculation of AoH.

Building from the review conducted in Output 3.1.1, Output 3.1.2 would incorporate current and historical AOH into the Red List, drawing from remote sensing and Red List data for comprehensively assessed groups (see [Brooks *et al.*](#))^[4]. This output will lay the groundwork for the serving of essential species data and derived information such as the Species Threat Abatement and Restoration metric and other outputs of component 1.

Output 3.1.3: Strengthened connections between national red lists and the IUCN Red List of Threatened Species to allow interoperability.

Building from the review conducted in Output 3.1.1, Output 3.1.2 will strengthen the connections between national and global red lists, enhancing the [SIS Connect tool](#) to allow greater interoperability and support the establishment of services to support countries in the ongoing revision of their NBSAPs, outlined in Outcome 1.1.1.

Mechanisms will be developed to facilitate the import of national Red List datasets using SIS Connect. This will provide countries with a system for holding national Red List data, whilst also encouraging the application of IUCN Red List standards. Functionalities could include a mechanism for national Red List coordinators to export data from the global Red List. This approach will also contribute to Project Component 2 in cases where national Red List assessments exist for taxonomic or geographic gaps.

OUTCOME 3.2: Development and implementation of a sustainability plan for Red List

Output 3.2.1: Sustainability plan developed for the Red List

Long-term stability is key for the IUCN Red List to deliver species biodiversity assessment into the future. A 'Sustainability Plan' will be developed that lays out the underlying business models that will support the IUCN Red List. For the income side, it will include sections on (i) revised IUCN budget for delivering the Red List (ii) income from commercial use, building from existing revenue generation for the Red List through the Integrated Biodiversity Assessment Tool (iii) in-kind contribution (iv) IUCN investment and (v) income from philanthropic sources. For the expenditure side, it will draw from existing documentation of the costs of maintaining the Red List^[5], refined to account for the efficiency gains in data generation to be identified and developed under Outcome 3.1. This will be the first such plan for the IUCN Red List and will underpin fundraising and operations for the remainder of the decade.

Output 3.2.2: Outreach to selected stakeholders in support of the plan, generating initial incremental revenue

Stakeholder outreach will be essential in enabling implementation of the Red List sustainability plan, across all four arenas documented as sections (ii)-(v) of the plan, above. For section (ii), income from commercial use, the Red List is served through the Integrated Biodiversity Assessment Tool under license, both through a subscription service (primarily for large private sector users), and through a pay-as-you-go model (primarily for consultancies). Numerous opportunities have already been identified to expand this private sector use; more will doubtless emerge from the planning process. Possibilities already under discussion include a) strengthening applications by corporates for assessment of biodiversity impacts and opportunities in their value chains, setting science-based biodiversity targets, and for corporate reporting and disclosure (including for marine environments). These are rapidly growing areas of private sector use of biodiversity data which have not yet drawn heavily from the Red List (services from IBAT currently focus on assessing site-based risks and impacts, rather than corporate, portfolio or supply chain / value chain assessment). They would draw heavily from Outputs 1.1.2 and 1.2.1, as well as Output 2.1.1. b) use by financial sector for screening of investment portfolios for biodiversity opportunity and risk. This is a fast-moving field and one where derived datasets like STAR have significant potential to be adopted; it would draw heavily from Output 1.3.1. c) increased use for risk screening and project design for agribusiness, forestry, and fisheries, where certification is the predominant sustainability approach, but there has in many cases been limited incorporation of data products based on IUCN Standards to date (private sector uptake of IBAT-supplied data has been greatest in the development finance and large extractives sectors). Outputs 2.1.2 and 2.1.3 will be important in supporting this uptake for agriculture and forestry, and Output 2.1.1 important regarding fisheries.

Substantial opportunities are also apparent regarding the remaining three components of the plan. Regarding section (iii), there is considerable but as-yet-untapped potential to expand the Red List Partnership, yielding additional in-kind support. Particularly encouraging avenues here include addition of partners from emerging economies in the Global South, and from additional sectors (eg zoos and

botanical gardens). Regarding section (iv), strengthening the pathway for use of the Red List to support the IUCN Membership as a service for documenting Contributions for Nature, will in turn bolster the business case for investment of a portion of IUCN Membership fees back into the maintenance of the underlying data. Regarding section (v), the Red List has a strong history of philanthropic support (with >40% of resource mobilization to date, approximately \$15m, having been from philanthropic sources), and we anticipate expanding this through the sustainability plan. Moreover, IUCN has already engaged the Union's Patrons of Nature into discussion of Red List sustainability, including on the possibility of developing an endowment campaign, which could emerge as the central pillar of the plan over coming years.



(4) Alignment with GEF Focal Area:

The project is aligned with the Biodiversity Focal Area of the GEF-7 Programming Directions. The proposed work will increase the capacity of governments and other stakeholders to use biodiversity data to better guide their decisions so that biodiversity may be mainstreamed across sectors as well as landscapes and seascapes (BD 1-1, 1-2 and 1-4). The project will also contribute relevant data for natural capital assessments and accounting (BD 1-3). The availability of relevant, robust and up-to-date data in the long-term will be critical for governments, the private sector and other stakeholders to prioritize and design investments addressing the drivers of degradation (BD 2-6 and 2-7).

(5) Incremental /Additional cost reasoning:

For over 70 years, IUCN has served as the global Union for sharing data and knowledge that advances nature conservation and sustainable development, while the GEF ensures incremental investments over and above national expenditures in nature as a global public good. GEF's core mandate ? to generate global environment benefits in specific focal areas ? is at the heart of this effort, which targets data generation and availability that sheds light on a specific and important subset of globally significant biodiversity: globally threatened species, in line with GEF's mandate.

At the G20 Environment Ministers meeting (July 2021), a number of governments clearly stated that data for nature is imperative for the achievement of nature and climate commitments; this proposal responds to this government need. This concept therefore proposes a crucial and timely collaboration between the GEF and IUCN to enhance the quality and relevance of conservation knowledge and data that is available to a range of decision-makers.

At this critical time, the proposed work will strengthen and support the ability of governments and other stakeholders to obtain information that can guide their planning and investment decisions in nature-based recovery, climate change adaptation and biodiversity conservation. Governments will be able to improve and simplify the way they track progress towards global goals for nature, including those under the UN Sustainable Development Agenda, CBD, UNCCD, CMS and IUCN Nature 2030 Programme. The opportunity to contribute to integrated monitoring and reporting mechanisms across

the biodiversity-related MEAs is widely supported by governments and is part of this incremental investment for more concerted and coordinated action in favour of the global environment.

This investment will allow IUCN to better support science-based targets, monitoring indicators, and implementation of the GBF. By tapping into new approaches to data generation, the proposed work and the Centre will broaden the production of and demand for high quality biodiversity data in more efficient ways. For this, IUCN will seek new partnerships and exploit innovative techniques and methods to apply these to a wide-range of use cases across the economy.

The IUCN Red List of Threatened Species is the oldest (since 1964), most comprehensive (138,374 species), most up to date (annual updates with new and re-assessments) and authoritative global species data set. Based on an objective standard it provides an approach to assessing extinction risk that is applicable to all wild species and geographies. As such, it is likely to become a bedrock for supporting the monitoring and implementation of the Post 2020 Biodiversity Framework. This project will significantly enhance the ability of state and non-state actors to access, use and understand the IUCN Red List, including the Red List Index and STAR metric, and contribute to the GBF. The proposed work will transform these Red List data and metrics into a globally comprehensive data set by closing gaps in taxonomic and geographic coverages. Most critically, it will deliver updated global data sets for comprehensively assessed groups from freshwater and marine, bringing these realms into parity with terrestrial systems for the first time with respect to the IUCN Red List.

(6) Global Environmental Benefits:

Scientifically robust data on the status of biodiversity is today needed across many sectors, as much for informed decision-making, as for responding to MEA obligations. Global environmental benefits will be derived from this project by supporting public, private and non-profit sectors to take conservation decisions for sustainable development and for the protection of globally significant biodiversity.

(7) Innovation, Sustainability and Scaling-up potential:

Sustainability and proactive resource mobilisation:

Juffe-Bignoli *et al.* showed that investment into the mobilisation of biodiversity and conservation information has to date been primarily a philanthropic exercise, with more than half of investment to date derived from foundations. This is, perhaps, appropriate for the start-up funding required for the development of standards themselves, implementation of the first assessments against these, or granting data access to low-income countries. It is not, however, a recipe for sustainability or for mainstreaming of biodiversity knowledge into economic decision-making and opportunities for private financing are perhaps the most significant.

The continuity of the essential species data provided by the Red List hinges on an appropriate sustainability and resource mobilisation strategy, which will be developed during project implementation and will include both the concretion and exploration of different funding avenues. This IUCN-GEF project therefore commits to developing a Sustainability Plan (Outcome 3.2) for the IUCN

Red List to guide future investment and resource mobilization efforts, as well as simultaneously expanding and improving the dissemination of data and services that improve the overall product. Key elements of the Sustainability Plan will cover (i) private sector (ii) in-kind (iii) IUCN and (iv) philanthropic forms of resource mobilization.

Currently, the terms and conditions of use of the datasets based on IUCN standards allow for commercial use under license, through the Integrated Biodiversity Assessment Tool. This generates net revenue of approximately \$175,000 annually for the IUCN Red List. Through greatly expanded offerings of services, there is immense potential to increase this revenue by orders of magnitude. This alone may well be sufficient to deliver the incremental annual resourcing necessary to maintain the datasets, especially when supported by the improvements to the data and systems described in this PIF. Additional service-based income streams, based on the provision of Red List data and metrics tailored biodiversity datasets aimed at government and not-for-profit organisations will also be explored.

Additional streams of revenue, such as philanthropic sponsorship, will be explored to ensure that biodiversity data continues to be accessible as a global public good to otherwise marginalised stakeholders. A further prospect is exploration of endowments, trust funds, or similar mechanisms. Such financing mechanisms are certainly possible, with the endowment of university chair positions perhaps the closest analogy. An endowment of \$200 million, within the reach of single high net-worth individuals or small groups of peer investors such as the [IUCN Patrons of Nature](#), would yield an annual return sufficient to maintain the IUCN Red List in perpetuity. Such an endowment could also be used to explore lifting the current commercial use licencing restrictions on the datasets.

Innovation:

The entire concept of the proposed work is founded on innovation, by extending, amplifying, and refining existing approaches to mobilising knowledge for conservation and sustainable development. However, the specific aspects of innovation vary between components and outcomes. For Outcome 1.1, the concept of science-based targets is very new, introduced in 2015 for climate change, and even more recently for other dimensions of nature, stimulated by the IUCN implemented 'Global Commons' medium-sized project (GEF ID 9391 - 'The Global Environmental Commons. Solutions for a Crowded Planet'- IUCN (2016-2019)). It stands to gain great momentum with the anticipated adoption of the Post-2020 Global Biodiversity Framework in 2021. Likewise, while the generation of indicators based on IUCN standards has been underway for several decades, harnessing new technologies to provide these as automated services will be a key new innovation. For Outcome 1.3, uptake into financial systems will be essential for effectively implementing and scaling the GBF; by ensuring that TNFD has the most innovative and robust biodiversity data available, this output enhances the ability of financial actors to base decisions on the best possible information. Meanwhile for Component 2, the innovation comes in taxonomic coverage, extending Red List species assessments to groups that are often neglected forms of 'biodiversity', and unavailable for incorporation into decision-making. Finally, Component 3 explores innovation in knowledge, methods and technology (Outcome 3.1) and finance (Outcome 3.2 to ensure the quality, currency, and cost-efficiency of the data mobilisation that is needed to drive the services to be developed in Component 1.

The innovation proposed under this project is not just development for the sake of innovation, rather it is mission critical innovation to support the implementation of the GBF.

[1] Stephenson, P. J., & Stengel, C. (2020) An inventory of biodiversity data sources for conservation monitoring. PLoS ONE 15(12): e0242923. <https://doi.org/10.1371/journal.pone.0242923>.

[2] Andersen, I., Ishii, N., Brooks, T., Cummis, C., Fonseca, G., Hillers, A., Macfarlane, N., Nakicenovic, N., Moss, K., Rockström, J., Steer, A., Waughray, D. & Zimm, C. (2020) Defining Science-based Targets?. National Science Reviews. <https://doi.org/10.1093/nsr/nwaa186>.

[3] Hausmann, A., Toivonen, T., Fink, C., Heikinheimo, V., Tenkanen, H., Butchart, S.H.M., Brooks, T.M. & Di Minin, E. (2019) Assessing global popularity and threats to Important Bird and Biodiversity Areas using social media data. Science of the Total Environment. 683: 617-623. <https://doi.org/10.1016/j.scitotenv.2019.05.268>.

[4] Brooks, T.M., Pimm, S.L., Akçaya, H.R., Buchanan, G.M., Butchart, S.H.M., Foden, W., Hilton-Taylor, C., Hoffmann, M., Jenkins, C.N., Joppa, L., Li, B.V., Menon, V., Ocampo-Peñuela, N. & Rondinini, C. (2019) Measuring terrestrial Area of Habitat (AOH) and its utility for the IUCN Red List. Trends in Ecology & Evolution 34: 977-986. <https://doi.org/10.1016/j.tree.2019.06.009>.

[5] Juffe-Bignoli, D. et al. (2016) Op. cit.

1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

N/A

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Indigenous Peoples and Local Communities

Civil Society Organizations Yes

Private Sector Entities Yes

If none of the above, please explain why:

IUCN is a global Union where governments command half its governance weight, and civil society and indigenous peoples' organisations the other half, coupled with six expert Commissions that provide the scientific and academic backbone that underlies the Union. A wide array of stakeholders is therefore fundamentally involved at the level of approving the Union's Programme, which encompasses much of the work proposed here, and which, in its latest iteration as the IUCN Nature 2030 Programme, puts forward a Union-wide agenda for collective implementation.

As part of the project identification phase, over the last 3 months, IUCN conducted an extensive stakeholder consultation process, including interviews with 29 high level informants from 20 stakeholder organizations from Public and Private Finance, the Private Sector, Governments, IGOs, NGOs, and Foundations. This process was carried out in order to map the landscape of current and emerging demands for biodiversity data to support the post-2020 GBF and appropriately scope and position this proposal to have the greatest possible impact.

In addition, a broad group of stakeholders will be engaged in both project preparation and execution (see Table). Numerous civil society and academic organizations are already involved in maintaining the data based on IUCN standards (e.g. 11 civil society organisations in the Red List Partnership, and also 11 as KBA Partners), while the application of indigenous and local knowledge is an important component of data generation in these IUCN standards. Governments also work closely with IUCN on various levels, from site-based conservation actions to national accounting, to the drafting or revision of regulatory and policy frameworks. Key partnerships for project delivery that can be readily identified at this early stage, are listed in the 'Coordination' section (Part II ? 6.).

Table: anticipated stakeholder engagement.

Stakeholder category	Anticipated means of engagement	Project preparation role	Project execution role
CSOs	IUCN Membership (>1,000 CSO Members)	Co-financing through Red List Partnership contributions	Direct engagement of Red List Partnership in delivering outputs
Private Sector Entities	Current IBAT subscribers (>100); IUCN corporate partners	Co-financing through IBAT subscriptions	Recipients of strengthened services through, especially, TNFD; engagement in implementation of sustainability plan
Indigenous Peoples and Local Communities	IUCN Membership ? Indigenous Peoples? Organizations category (>20)	None	Application of Indigenous and Local Knowledge provides important input to Red List
Governments	IUCN Membership (>200 States and Government Agencies); National Statistical Offices via IUCN SDG Custodian Agency roles	None	Consultation in developing public sector-facing outputs, especially services in support of post-2020 GBF implementation

In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement

3. Gender Equality and Women's Empowerment

Briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).

The project will focus its activities on knowledge and data related to nature and biodiversity, in particular as regards globally threatened species as documented on the IUCN Red List, but nevertheless a gender plan will be established in the project development phase, drawing from the elements outlined below. Key decision making on Project Component 2 will be undertaken by female leaders in the IUCN network, including through the relevant Species Survival Commissions Specialist Groups on terrestrial invertebrates and lichens. These decisions pertain to species selection and validation of the Red List assessments. Female participation in the Red List assessment drafting and review process, whether by correspondence, in-person workshop or virtual meeting will be guided by IUCN's Gender Policy so that the project will promote and demonstrate equitable and inclusive decision-making, participation and representation of women.

The proposed work will be designed to support decision making. In that context, where the objective of gender equality is an IUCN objective, the proposed work will strengthen and provide data that can inform stakeholders on the investments, which can achieve this goal. At the same time, throughout the project, gender equality will be promoted at every stage, including in the leadership of the science and data centre under which the proposed work would be conducted. That promotion will stem from ensuring gender balance during any outreach and strategic communications (talks, panels, etc), or ensuring that the reviewers suggested and requested for any publications stemming from Outputs 1.2.1, Outputs 3.1.1 are also gender balanced, in addition to the authors of the collaborative scoping review. Finally, Gender-disaggregated metrics of direct beneficiaries will be collected through Contributions for Nature platform.

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? Yes

closing gender gaps in access to and control over natural resources;

improving women's participation and decision-making; and/or

generating socio-economic benefits or services for women.

Will the project's results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Will there be private sector engagement in the project?

Please briefly explain the rationale behind your answer.

Private sector engagement has, and will be, an integral component of this project from the very beginning, with private sector engagement playing a critical role during the project identification phase outlined under stakeholder engagement. As part of the proposal preparatory process, we conducted 29 interviews with many different types of end-users including the private sector, to understand the demand and gaps in the provisioning of biodiversity data necessary for supporting and monitoring the post-2020 GBF. We mapped current and emerging demands for biodiversity data for four user groups: site-based private sector projects and project finance (e.g. proponents of, or investors in, large new infrastructure, mining or energy projects; agriculture, forestry and fisheries; corporates (e.g. typically larger/multinational companies across a wide range of sectors; and institutional investors (e.g. asset managers, impact investors). Data uses varied substantially between different user groups, as did the data requirements in terms of both spatial scale and degree of interpretation/aggregation/simplification required to convert the raw biodiversity data into a Knowledge Product that the consumer would be able to use.

As well as considering the principal data uses, drivers and data requirements, we assessed the relevance of the existing biodiversity against user needs. Drawing from this strategic review, all of the proposed work will be crafted to directly meet the demands of end-users such as governments and the private sector, for example through supporting the setting of science-based targets.

Indeed, private sector companies are already major consumers of the data based on IUCN standards, served under licence through the Integrated Biodiversity Assessment Tool. In addition, the IUCN knowledge products maintain various mechanisms for soliciting and receiving private inputs. The project will seek to strengthen this uptake, and feedback mechanisms, while supporting currency and quality of the data (Outcome 3.2).

5. Risks to Achieving Project Objectives

Indicate risks, including climate change, potential social and environmental risks that might prevent the Project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the Project design (table format acceptable)

There are several potential risks that must be considered for the effective implementation of this project:

Uncertainty on the content and institutional arrangements for the monitoring framework for the post-2020 GBF;

There is the risk that the Post-2020 Global Biodiversity Framework negotiations stall, fail or produce a weak agreement. This risk is made more tangible by the COVID19 pandemic, which has impacted already challenging discussions, and may have a knock-on effect on the project by reducing or

deferring the demand for biodiversity data. This risk can be mitigated by improving the offer of high-quality, timely, relevant and useable biodiversity data packaged in ways that support the Post-2020 Global Biodiversity Framework, thus giving negotiators the confidence of having the right metrics and tools to implement this agreement whenever adopted. A related, more specific risk is that generated by the fact decisions on the monitoring framework for the post-2020 GBF have not yet been made. To mitigate this risk, project preparation will thus to monitor negotiations closely and ensure that project design is most relevant to the negotiation outcomes, including on how and what platform(s) to feed with the data made available through this project.

Internal capacity and ability to secure the right external expertise for the most innovative parts of the project;

There is the risk that delays in securing the appropriate expertise for the most innovative parts of the project impedes progress. This could be exacerbated by the challenge to recruit IT professionals into the conservation sector due to significantly more lucrative offers in the commercial sectors for the same skill-set. This is not a risk that is specific to this project and will be mitigated by early development of any Terms of Reference (e.g. consultants) to launch key activities soon after the project starts. Also, through the IUCN Red List Partnership, which includes a network of science and technology professionals, there is considerable 'in-house' expertise with the added advantage of a strong understanding of the data.

Co-financing, longer-term financial sustainability and dependance on partner organizations and on volunteer work;

IUCN's Species Survival Commission's volunteers are a key component of efforts to expand and update the IUCN Red List. These volunteers accept a Terms of Reference for each quadrennium that includes Red List assessments and the reliance on the SSC network is therefore a relatively low risk. That said, the volunteer network is limited to what it can deliver so the project will include support contracts to SSC persons to facilitate the provision of data and reviewing assessments. The IUCN Red List Partnership generates crucial in-kind funding and this is absolutely pivotal for the success of the project. The new partnership agreement is currently under negotiation but all existing partners have committed to renewal and there are a number of new partners who have expressed an interest.

IUCN will need to capitalise on existing partnerships and build new ones, as well as be client-oriented in order to secure a wide group of data users. The Union structure of IUCN is a value addition in this scenario, seeing as its fabric consists of a network of organisations that offers built-in conservation-oriented partnerships and can bring celerity to this project. Key existing partnerships, stemming from the IUCN Commissions and their sub-structures, the IUCN membership (government and non-state), and IUCN's strategic or project-based collaborations, will be crucial to achieving enough traction and buy-in of metric and services based on the IUCN Red List.

IUCN's Secretariat team (Red List Unit) is the bedrock of the IUCN Red List, responsible for quality control and data dissemination. This unit is chronically under-funded and any further denudation of the team poses a risk to the IUCN Red List. This will be mitigated by a significant short-term investment by IUCN, as outlined in the co-financing table.

With increased interest for data and anticipated more private sector demand and offer on data services; increased competition with other players, platforms and data sources, difficulty in leveraging partnerships;

There is a risk that the increased interest in data and demand for services from the private sector that IUCN's Red List is side-lined by competitors or otherwise weakened by a proliferation of platforms that purport to offer similar services and data quality. There is a very real risk that the interest in biodiversity from the private sector will catalyse a plethora of start-ups offering various services and new data offerings. This will be mitigated by continuing to work in partnership and by offering joint products underpinned by strong brands and globally trusted datasets. IBAT is a good example because it unites three global datasets that are based on IUCN standards and benefits from the institutional reputation, intellect and data from four partners. Additionally, the IBAT partners are developing new approaches though collaborating with other data providers to further strengthen the combined offerings.

IUCN will also engage in proactive outreach and marketing, particularly with respect to the use of the Red List and STAR by the finance sector (including TNFD) and government. An updated IBAT Strategic Review will direct future areas of investment and innovation and enable IUCN to focus its resources in areas of agreed strategic priority. Opportunities for reducing barriers to data integration will be explored to further enhance the uptake of the IUCN Red List. Finally, IUCN will consider producing new industry-relevant guidelines that will assist state and non-state actors to understand how to use biodiversity data whilst simultaneously setting the IUCN Red List as the benchmark data product. Combined, these approaches will consolidate the Red List's position in a crowded field.

Engagement with and funding from the private sector - risk of conflicts of interest;

There may be a reputational risk to IUCN of engaging with the private sector given the role the sector has in biodiversity loss. This risk is largely mitigated through the provision of Red List data and metrics through IBAT because (i) the services are directed at improving the biodiversity performance of its private sector users and (ii) the delivery model of IBAT is based on pay-as-you-go and service subscription rather than engagement with individual companies at specific sites.

Risks stemming from the COVID pandemic.

Red List assessments are traditionally undertaken in a workshop setting where all relevant experts and stakeholders consider the species in question. The move to 'online' meetings and workshops has required a change to this approach. Depending on the pace at which the world recovers from COVID, the Red List assessment part of the PIF will either be undertaken through (i) correspondence (ii) online workshops or (iii) in person workshops.

6. Coordination

Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe possible coordination with other relevant GEF-financed projects and other initiatives.

Coordination with other relevant GEF projects that address the use of IUCN data by governments and the private sector is contemplated specifically for: (i) "Staying within Sustainable Limits: Advancing leadership of the private sector and cities" implemented by Conservation International, for which IUCN

is one of two Executing Agencies (GEF ID 10309 ? ?Staying within Sustainable Limits: Advancing leadership of the private sector and cities?- CI (2019-2022)), (ii) The Restoration Initiative and its child projects, where IUCN is the Implementing Agency (GEF ID 9264 ? ?TRI The Restoration Initiative ? Fostering Innovation and Integration in Support of the Bonn Challenge?- IUCN); (iii) the Fashion Pact project (GEF ID 10658 ? ?Transforming the Fashion Sector to Drive Positive Outcomes for Biodiversity, Climate, and Oceans? - CI (2020-2022)), implemented by Conservation International. and (iv) Establishing the Taskforce on Nature-related Financial Disclosures (TNFD), implemented by WWF, executed by UNEP-FI (GEF ID 10755 ? ?Establishing the Taskforce on Nature-related Financial Disclosures (TNFD)?- WWF (2021-2024)).

In each of these cases, regular communication is underway and will continue between project staff on this proposal and those projects currently under implementation in order to ensure synergies are taken advantage of. This will be particularly relevant for Components 1 and 3. The project on TNFD deserves special mention, and it will be especially important for Outcome 1.3 to coordinate with that project through the IUCN personnel already involved in the Task Force through direct engagement with the Secretariat, participation in the [TNFD Forum](#), and service on the [TNFD Informal Technical Working Group](#), as that has the potential to be an important conduit through which the biodiversity data from this project will impact the financial sector.

As explained above, many academic and international organisations (including GEF agencies such as Conservation International, WWF and UNEP) are today involved in the partnerships that maintain data against IUCN standards, or manage platforms that draw biodiversity data components from the IUCN standards. Many of these organisations are IUCN Members, or part of the IUCN Commissions network. This project entails strong coordination with the IUCN Commissions (and their supporting institutions), in particular the IUCN Species Survival Commission for the Red List of Threatened Species, KBAs, and invasive species; the IUCN World Commission on Protected Areas for ?Protected Planet? and KBAs; and the IUCN Commission on Ecosystem Management for the Red List of Ecosystems.

IUCN will be the project agency for this project. Given its experience and expertise in the area of knowledge generation and data for nature, as well as the specific products proposed in this project, it will be also the project executing agency. IUCN's responsibilities as a partner agency and an executing agency will be performed by different teams with separate reporting lines, ensuring a firewall is maintained. The project execution responsibility will be under the IUCN Science and Data Centre, which the teams are based across Headquarters and Cambridge. The oversight function will be under the responsibility of the IUCN Centre for Finance and Economics, which encompasses the GEF/GCF Coordination Unit and the Chief Economist and Economics team teams based in Washington DC and Headquarters. Global Corporate Services (finance, legal) will complement the team in charge of oversight to ensure the project is implemented according to the GEF minimum fiduciary standards.

7. Consistency with National Priorities

Is the Project consistent with the National Strategies and plans or reports and assessments under relevant conventions?

Yes

If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc

- ? - National Bio Strategy Action Plan (NBSAP)
- ? - CBD National Report
- Cartagena Protocol National Report
- Nagoya Protocol National Report
- UNFCCC National Communications (NC)
- UNFCCC Biennial Update Report (BUR)
 - UNFCCC National Determined Contribution
- UNFCCC Technology Needs Assessment
 - ? - UNCCD Reporting:
- ASGM National Action Plan (ASGM NAP)
- Minamata Initial Assessment (MIA)
- Stockholm National Implementation Plan (NIP)
- Stockholm National Implementation Plan Update
 - National Adaptation Programme of Action Update
- Others

The species data being strengthened and produced by this project are being designed explicitly to facilitate and support the setting of National Biodiversity Strategy Action Plans and CBD reports; for example, five of the official UN Sustainable Development Goal (SDG) indicators are derived directly from the data measured against IUCN standards: including indicator 15.5.1 (the Red List Index). The data being strengthened by this work are similarly used for tracking progress towards targets under MEAs, such as the Convention on Biological Diversity (CBD), and the UN Convention to Combat Desertification (UNCCD) which uses the RLI as an indicator for its Strategic Objective 4. This project will enhance the underlying data for future Red List Indices and improve the methods for generating and delivering the current RLIs to UNCCD

8. Knowledge Management

Outline the knowledge management approach for the Project, including, if any, plans for the Project to learn from other relevant Projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

This project is, in-of-itself, a knowledge management approach. It pivots around strengthening data and knowledge management for biodiversity conservation, and on understanding the data needs of different users. It is therefore fundamentally a knowledge management project for the benefit of nature (the global environment). ????

Overview of existing lessons and best practice that inform the project concept. This knowledge management approach has been framed during the project identification phase by a strategic review of knowledge and data products that are based on IUCN standards with a view to identifying gap and opportunities for increasing the efficiency, effectiveness and usefulness of the data produced during

this project. In particular, the review identified four major opportunities for increasing uptake and conservation impact from the knowledge produced by this project 1) use by corporates for assessment of biodiversity impacts and opportunities in their value chains, setting science-based biodiversity targets, and for corporate reporting and disclosure. 2) Use by the financial sector for screening of investment portfolios for biodiversity opportunity and risk. 3) increased use for risk screening and project design for non-state actors such as agribusiness, forestry, and fisheries, and 4) increased use by governments for Strategic Environmental Assessment and systematic conservation planning (eg. NBSAP services). A particular lesson from the consultation was that the IUCN species data is recognized as the gold standard, but would benefit from simpler licensing agreements and more efficient and on-demand services of the type this project is designed to solve.

Plans to learn from relevant projects, programs, initiatives and evaluations. Every piece of this project is designed to respond to and improve upon relevant complementary work that has either been consulted during the project identification phase (eg. UNEP-WCMC, BirdLife, Government of Canada, European Environment Agency, etc.) or IUCN is already involved in (eg. SBTN, fashion pact, TNFD, etc.). The coordination outlined under #6 above will be especially important for building on and learning from this complementary work, as will, for example, the scoping review of knowledge frontiers outlined in Output 3.1.1 prior to the deeper dives into 3.1.2 and 3.1.3.

Proposed processes to capture, assess and document info, lessons, best practice & expertise generated during implementation. The majority of the processes captured to document and improve on data will flow through standard and well-functioning existing processes, eg. through the IUCN Red List, IBAT, and the Contributions for Nature Platform. However, in addition, a number of outputs will result in peer reviewed publications in the literature, capturing the learnings and knowledge for all and placing it in the public domain (eg. Outputs 1.2.1, Output 2.1, Output 2.2, Output 2.3, Output 3.1.1).

Proposed tools and methods for knowledge exchange, learning & collaboration. Publications are anticipated to be the primary mechanism for knowledge exchange; extensive presentations and communications are anticipated to play a major role in increasing uptake of the strengthened and improved data; for example, Output 1.1.1, Output 1.1.2, Output 1.2.1, Output 1.3.1. Wherever possible, the intention will be to take advantage of already existing pipelines and dissemination platforms rather than re-inventing processes that already exist.

Proposed knowledge outputs to be produced and shared with stakeholders. As this project is fundamentally about strengthening and improving data generation, the outputs will be shared primarily through the established biodiversity data pipelines, as well as potentially other platforms explored during the baseline landscape mapping exercise. In addition to the peer-reviewed publications described above, the sustainability plan developed in Outcome 3.2, is anticipated to be communicated to a variety of stakeholders through presentations and dissemination rather than through the scientific literature.

Contribution of knowledge and learning to the overall project impact and sustainability. The rationale of this project is to produce new knowledge to meet urgent and critical data gaps that will

strengthen the red list species data and provide essential services to state and non-state actors to implement and monitor the GBF. This is the entire project.

Strategic Communications. Working with IUCN's global communications team, knowledge management, and library teams, the project is anticipated to rely heavily on strategic communications to ensure that new knowledge is as widely disseminated as possible. In addition, IUCN's member services and regional offices are anticipated to play essential roles in working with CBD Parties in their regions to ensure that any NBSAP services that are developed will be widely understood and broadcast.

9. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification*

PIF	CEO Endorsement/Approval	MTR	TE
Low			

Measures to address identified risks and impacts

Provide preliminary information on the types and levels of risk classifications/ratings of any identified environmental and social risks and potential impacts associated with the project (considering the GEF ESS Minimum Standards) and describe measures to address these risks during the project design.

Supporting Documents

Upload available ESS supporting documents.

Title

Submitted

Part III: Approval/Endorsement By GEF Operational Focal Point(S) And GEF Agency(ies)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter with this template).

Name	Position	Ministry	Date
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ANNEX A: Project Map and Geographic Coordinates

Please provide geo-referenced information and map where the project intervention takes place