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

Part I: Project Information

GEF ID
10897

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, Biodiversity, Species, Threatened Species, Mainstreaming, Capacity, Knowledge and Research, Knowledge Exchange, Knowledge Generation

Sector

Rio Markers
Climate Change Mitigation
Climate Change Mitigation 0

Climate Change Adaptation
Climate Change Adaptation 0

Submission Date
5/31/2022

Expected Implementation Start
11/1/2022

Expected Completion Date
10/31/2024

Duration
24 In Months

Agency Fee($)
165,138.00

A. FOCAL/NON-FOCAL AREA ELEMENTS

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount($)	Co-Fin Amount($)
BD-1-1		GET	1,834,862.00	9,348,000.00
		Total Project Cost($)	**1,834,862.00**	**9,348,000.00**

B. 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	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
1. Providing state-of-the-art data services	Technical Assistance	**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 **Outcome 1.2:** Science-based targets for species biodiversity are extended to marine environments **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	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 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 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 Output 1.3.1: Robust, scientifically-anchored and spatially-	GET	671,662.00	3,200,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
2. Addressing urgent knowledge needs	Technical Assistance	**Outcome 2.1:** Critical biodiversity datasets are expanded for accelerated actions on issues of highest conservation concern	**Output 2.1.1:** Data for species in aquatic ecosystems are generated to support the safeguarding of freshwater and marine environments and the livelihoods that depend on them **Output 2.1.2:** Fungi species assessments are undertaken to guide soil and land health **Output 2.1.3:** Dung beetle species assessments are undertaken to guide soil and land health	GET	574,175.00	3,310,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
3. Strengthening sustainability including by exploiting new technologies and applications	Technical Assistance	**Outcome 3.1:** The production of high-quality biodiversity data is broadened by exploiting new technologies and methods **Outcome 3.2**: Development and implementation of a sustainability plan for Red List **Outcome 3.3:** Project effectively monitored and adaptively managed to achieve desired outcomes through implementation of Monitoring and Evaluation (see F9)	Output 3.1.1: Incorporation of knowledge frontiers (e.g., remote sensing, national linkages, etc.) analysed to catalyze more efficient responses to biodiversity species data demands, and scoping review published in the literature 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 Output 3.1.3: Strengthened connections between national red lists and the IUCN Red List of Threatened Species to allow interoperability Output 3.2.1: Sustainability plan	GET	422,223.00	1,900,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
			Sub Total ($)		1,668,060.00	8,410,000.00

Project Management Cost (PMC)

	GET		166,802.00			938,000.00
	Sub Total($)		**166,802.00**			**938,000.00**
	Total Project Cost($)		**1,834,862.00**			**9,348,000.00**

Please provide justification

C. 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	Grant	Recurrent expenditures	630,000.00
Civil Society Organization	Grant from CSO Re:wild	Grant	Investment mobilized	418,000.00
GEF Agency	IUCN	In-kind	Recurrent expenditures	3,500,000.00
Civil Society Organization	Red List Partnership encompassing 12 biodiversity organizations	In-kind	Recurrent expenditures	4,800,000.00

			Total Co-Financing($)	**9,348,000.00**

Describe how any "Investment Mobilized" was identified

The investment mobilized co-financing through a grant to IUCN from Re:wild. This was identified through discussions between the Director of the IUCN Science and Data Centre, the Chair of the Species Survival Commission and Re:wild. 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. 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($)
IUCN	GET	Global	Biodiversity	BD Global/Regional Set-Aside	1,834,862	165,138	2,000,000.00
				Total Grant Resources($)	**1,834,862.00**	**165,138.00**	**2,000,000.00**

E. Non Grant Instrument

NON-GRANT INSTRUMENT at CEO Endorsement

Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

F. 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	2,000,000	2,000,000		
Male	2,000,000	2,000,000		
Total	4000000	4000000	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 it 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 use of the IUCN Red List website is closely tracked, and so we harness these data to provide Core Indicator 11. Specifically, annual unique visitors to the IUCN Red List website over 2015?2020 ranged from 3.8 million up to 5.3 million. We therefore specify an expected value of 4 million direct beneficiaries. These data are harvested from IP addresses and so no bottom-up gender disaggregation is available, but we have no reason not to assume a 50% gender balance in terms of Red List users.

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 Montreal 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 IUCN 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. IUCN?s staff play a key role in underpinning the IUCN Red List through maintaining and annually updating systems and datasets, as well as upholding the scientific integrity at all stages of Red List operations. In this project, these functions are included through IUCN co-finance for its Chief Scientist, Head of the Red List Unit and Head of Biodiversity Systems. 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 emphasizes 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. This increasingly robust approach is supported by recent re-organization of the IUCN Secretariat?s global programmes into four interacting centers: for Science & Data (which will lead execution of this project), Finance & Economy, Conservation Action, and Governance & Rights.

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 usability, 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:

COMPONENT 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?2?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.

Activity 1.1.1.i: Quality control and processing RLI data for calculating the index.
Activity 1.1.1.ii: Develop software that will disaggregate RLI by geography
Activity 1.1.1.iii: Program code to generate RLI automatically in centralized system
Activity 1.1.1.iv: Develop API to serve RLI that is generated on demand

The planned work will involve four activities. The first activity concerns the data used to generate the RLI; the data that has been entered into the RLI module (in SIS) for the species in the comprehensively assessed taxonomic groups used for the RLI has to be quality checked and marked as finalised for use in the calculation of the RLI. The second activity involves turning the R-script used to generate the RLI into code within a system so that the process of extracting the data from SIS and generating the RLI can be automated as much as possible. The third activity is to ensure that the system developed includes functionality to generate geographic disaggregations of the RLI based on the Red List spatial data (the system needs to calculate the proportion of each species? range in each geographic unit) and a set of agreed thematic disaggregations based on the tabular data in the published species assessments in SIS. The last activity is to make the RLI data easily available to external users by developing one or more APIs to serve up the RLI and its disaggregations (both the graphics and the underlying data).

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 web-services to relevant platforms such as IBAT.

Activity 1.1.2.i: Software development to abstract STAR calculation from using spatial rasters, to using sparse matrices for more efficient computation

The planned work will navigate a computational bottleneck stemming from calculations that involve large spatial datasets, which currently require significant super-computing power and limit the possibility of on demand or site-based calculations. By applying new techniques to abstract spatial data into sparse matrices, computations will be much more efficient and limit unsustainable reliance on super-computing, significantly increasing speed. Software development is anticipated to be conducted in R.

Activity 1.1.2.ii: Software development for centralized capability to automatically update and calculate STAR in order for it to become a dynamic layer

A limitation of the current STAR layer is that it remains static, even though the underlying data is changing multiple times a year. However, there is currently no method or capability for centralized updating to bring the new layer in line with underlying develops, eg. The new biomes such as the marine layer described in outcome 1.2. This activity will primarily be software development using R and other languages to develop the capability to produce new layers on demand drawing from updated underlying data.

Activity 1.1.2.iii: Software development of API that can serve dynamic STAR to other platforms

Once the above activities have developed more efficient and nimble computational strategies for calculating STAR in a dynamic way, this activity will develop web-services that allow updated STAR layers to be provisioned to other platforms on demand, in order for the underlying calculations to be as widely disseminated as possible.

Activity 1.1.2.iv: Testing and methodology validation of the STAR calculation

Once STAR is able to be re-calculated and served on demand as a result of the preceding activities, this activity will involve extensive evaluation of methods development with previous STAR results, through sample calculations and comparisons

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 web-services 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. An essential component of this development will be developing standardized methods for generating Area of Habitat in marine environments in order to refine the spatial resolution of the metric, as well as scientific development of the theoretical meaning of restorable area of habitat for marine species.

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.

Activity 1.2.1.i: Develop standardized methods for generating Area of Habitat for marine species and present them to the Red List Technical Working Group

A key element of developing a STAR layer for the marine environment is standard input data into the calculation in the form of area of habitat. Currently this does not exist, so this activity will require scientific and theoretical discussions and video calls in order to develop a consensus method for current and historical area of habitat in marine environments.

Activity 1.2.1.ii: Code calculation of STAR layer for marine environments and update global STAR layer to include marine STAR

This activity will involve software development in R to generate the area of habitat for marine environments using the methods standardized in activity 1.2.1.i in order to generate a new global STAR layer that includes marine environments as well as terrestrial ones

Activity 1.2.1.iii: Draft and submit manuscript of STAR marine layer for publication

This activity will involve drafting, revising, and submitting a scientific manuscript that includes the marine layer for STAR

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

Activity 1.3.1.i: Actively engage with TNFD solicitations for comment from technical partners

This activity will involve internal and external meetings and workshops both with TNFD and amongst IUCN constituents in order to proactively respond to all solicitations and documents from TNFD

Activity 1.3.1.ii: Develop further joint communications with TNFD

This activity will take the outputs of 1.3.1.i and continue to develop joint communications with TNFD building on the many channels of engagement and reinforcing the underlying data upon which the TNFD frameworks will be based

Building from IUCN?s participation in the [TNFD Forum](#) and [TNFD Informal Technical Expert Group](#) (ITEG) and through participation in the relevant Working Groups as a core Knowledge Partner of TNFD, in particular Working Group 2 on Data and Working Group 3 on Standards and Metrics, 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, dependencies, impacts, and risks, and also enable them to identify means to manage and mitigate these issues.

IUCN has engaged in explicit discussion on this with TNFD, modified the output description further to specific edits received from TNFD (13 Dec 2021), and continued this dialogue in designing activities during project preparation to ensure that the output is maximally useful. IUCN has similarly reached out to WWF-US as the Implementing Agency for the project GEF ID 10755 ? ?Establishing the Taskforce on Nature-related Financial Disclosures (TNFD)?- WWF (2021-2024), received written thanks from them (5 Jan 2022).

Since approval of the Knowldedge4Nature PIF, TNFD has evolved rapidly and substantially. IUCN has now been appointed as a official TNFD Knowledge Partner, formalised through a Memorandum of Understanding, and cementing the pipeline for the uptake of Knowledge4Nature outputs into the taskforce. In this light, IUCN has provided extensive comments to TNFD advance drafts of the TNFD Working Group 1 ?Key Definitions Outcome Document? and Working Group 3 ?TNFD Approach to Metrics and Targets?. TNFD and IUCN have also developed joint communications such as featuring IUCN in the TNFD newsletter. More generally, TNFD have released a beta framework for the work of the taskforce overall, and documentation of ?A Landscape Assessment of Nature-related Data and Analytics Availability?; Knowledge4Nature will help respond and build on the issues identified herein,

such as the need for standardized measurement approaches, spatial biases, and the need for spatially explicit data to respond to the highly-location specific nature of drivers of nature loss and risk. The easy provisioning of robust, standardized, scale-independent, spatially explicit data provided by this project will help address these issues.

Finally, and most important, IUCN has now announced plans to convene an IUCN Leaders Forum on Jeju Island, Republic of Korea, 13-15 October 2022, with TNFD to serve as a Content Partner for the event. The event will serve as a lynchpin in strengthening the flow of outputs from Knowledge4Nature into TNFD, and indeed (on the condition that the timing is appropriate), we intend to announce the Knowledge4Nature project at the event which will be included in IUCN?s co-finance.

COMPONENT 2. Addressing urgent knowledge needs:

OUTCOME 2.1: 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 2.1.1.: Data for aquatic ecosystems are generated to support the protection of aquatic environments and the livelihoods that depend on them.

Activity 2.1.1.i: Inception meetings with IUCN marine (goby) experts

This activity will consist of a meeting of goby experts, facilitated by an implementing partner, where the Red List assessment process will explained, and role and responsibilities agreed.

Activity 2.1.1.ii: Drafting Red List assessments and expert review workshops

This will consist of a collation of all relevant data on the biology, threats, distribution and ongoing conservation for each species. This information will be used to create draft Red List assessments which will be presented to experts for their review.

Activity 2.1.1.iii: Assessment submission using SIS Connect

Batches of fish Red List assessments will be submitted to the IUCN Red List team using SIS Connect.

Activity 2.1.1.iv: Quality control and processing by the IUCN Red List unit

Submitted assessments will be checked for consistency and content so that they uphold the required scientific standards. Exchanges with experts and the submitting entity will take place in the case of queries or errors.

Activity 2.1.1.v: Publication of new fish assessments on the IUCN Red List website

All new fish assessments that are accepted for publication will be released on the IUCN Red List website in one of the two annual updates.

Activity 2.1.1.vi: Communication around completion of the global freshwater biodiversity assessment

The global freshwater biodiversity assessment will be communicated to the public through an IUCN media release. It will highlight the plight of freshwater fish and invertebrates and act as a catalyst for their conservation.

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 focused 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 2.1.2: Fungi species assessments are undertaken to guide soil and land health.

Activity 2.1.2.i: Inception meeting with IUCN fungi experts

This activity will consist of an on-line meeting of fungi experts, facilitated by an IUCN, where the Red List assessment process will explained, and role and responsibilities agreed in relation to the project?s timeline.

Activity 2.1.2.ii: Drafting Red List assessments and expert review using the ?fungi forum? platform

This will consist of a collation of all relevant data on the biology, threats, distribution and ongoing conservation for each species. This information will be used to create draft assessments in a ?fungi forum? which is an online repository of information for IUCN fungi experts.

Activity 2.1.2.iii: Deployment of new functionality to link the ?fungi forum? to SIS Connect

Software developments will enable assessments in the ?fungi forum? to be pushed directly into SIS Connect. This will require a series of meetings with the information systems experts from both the ?fungi forum? and IUCN to discuss the requirements. Development of the existing functionality in the ?fungi forum? will take place before a phase of testing.

Activity 2.1.2.iv: Assessment submission to the IUCN Red List

Batches of fungi Red List assessments will be submitted to the IUCN Red List team using SIS Connect.

Activity 2.1.2.v: Quality control and processing by the IUCN Red List unit

Submitted assessments will be checked for consistency and content so that they uphold the required scientific standards. Exchanges with experts and the submitting entity will take place in the case of queries or errors.

Activity 2.1.2.vi: Publication of new fungi assessments on the IUCN Red List website

All new fungi assessments that are accepted for publication will be released on the IUCN Red List website in one of the two annual updates.

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 Congo Basin, Himalayan foothills and southern-eastern Africa.

Output 2.1.3: Dung beetle species assessments are undertaken to guide soil and land health.

Activity 2.1.3.i: Inception meeting with IUCN dung beetle experts

This activity will consist of an online meeting of dung beetle experts, facilitated by an IUCN where the Red List assessment process will explained, and role and responsibilities agreed.

Activity 2.1.3.ii: Drafting Red List assessments for dung beetles

This will consist of a collation of all relevant data on the biology, threats, distribution and ongoing conservation for each species. This information will be used to create draft Red List assessments.

Activity 2.1.3.iii: Review workshop of dung beetles with regional and species experts

Draft Red List assessments for each species resulting from Activity 2.1.3.ii will be presented to experts for their review. Updated assessments will then be prepared for submission to the IUCN Red List.

Activity 2.1.3.iv: Assessment submission using SIS Connect

Batches of dung beetle Red List assessments will be submitted to the IUCN Red List team using SIS Connect.

Activity 2.1.3.v: Quality control by the IUCN Red List unit

Submitted assessments will be checked for consistency and content so that they uphold the required scientific standards. Exchanges with experts and the submitting entity will take place in the case of queries or errors.

Activity 2.1.3.vi: Publication of new dung beetle assessments on the IUCN Red List website

All new dung beetle assessments that are accepted for publication will be released on the IUCN Red List website in one of the two annual updates.

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.

COMPONENT 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.

Activity 3.1.1.i: Convene virtual workshop of co-authors who are experts in respective knowledge frontiers

Virtual workshop held over MS-teams with co-authors and experts representing the different types of knowledge frontiers in order to present developments and approaches in the different categories

Activity 3.1.1.ii: Draft scoping review drawing from individual contributions

Following up on the workshop, individual written contributions will be dovetailed into a comprehensive scoping review manuscript reviewing how to increase efficiency and impact of Red List assessments.

Activity 3.1.1.iii: Submit scoping review manuscript for publication 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. It is anticipated that this review would build on a broader workshop that was convened during project preparation and permit the sustainability of those ideas that were generated in that original brainstorming.:

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: Mechanisms developed for streamlining input of spatial information, maintenance and recalculation of AoH.

Activity 3.1.2.i: Results of Output 3.1.1. used to develop new workflow to generate historical AoH of selected terrestrial groups

A particular challenge for the recalculation of STAR and complementary analysis is the lack of standardized historical (restorable) AoH. This activity will primarily be scientific and technical discussions and software development to coalesce on a new robust method for generating this key layer

Activity 3.1.2.ii: Develop new workflow to generate current AoH of selected terrestrial groups

This activity is complementary to 3.1.2.i, and will focus on scientific and technical discussions and software development to coalesce on a new robust method for generating the layer of current AoH for the relevant species

Activity 3.1.2.iii: Incorporation of historical and current AoH of selected terrestrial groups into the Red List website

Drawing from activities 3.1.2.i and 3.1.2.ii this activity will calculate standard AoH for these groups and incorporate them into the public Red List website, where they can be downloaded.

Using these new mechanisms, current and historical Area of Habitat (AoH) for selected terrestrial groups will be incorporated into the Red List website.

Building from the review conducted in Output 3.1.1, Output 3.1.2 would incorporate historical AOH into the Red List, drawing from remote sensing and Red List data for comprehensively assessed terrestrial groups (see Brooks *et al*.)[1]. 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.

Activity 3.1.3.i: Support three countries in the use of SIS Connect to supply national Red Listed endemic species to the IUCN Red List.

This activity will consist of virtual meetings and calls supporting the accession of the national red list species from specific countries to the Red List

Activity 3.1.3.ii: Enhance SIS Connect functionality allowing for import and export of national Red List endemics, and allowing editing of assessment directly in SIS Connect.

Building from the review conducted in Output 3.1.1, Output 3.1.3 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

Activity 3.2.1.i: Running of a workshop to identify and prioritise actions to maximize new and sustainable funding, building on the new data and tools and the strategic engagement with TNFD mobilized through the incremental activities in this project.

This project will result in new and improved marketable offerings from the IUCN Red List that will be used to improve its sustainability, performance and relevance. A workshop will be convened and facilitated by a consultant to discuss the new opportunities for funding the Red List through various models, ranging from a service-based approach to enhanced support from government and philanthropists.

Activity 3.2.1.ii: Assessment of different funding models to meet costs identified through Activities 3.2.1.i

As in input into 3.2.1.i a scenario-analysis will be undertaken by a consultant to explore the different financial models for making the IUCN Red List more sustainable. This will be written-up as a briefing document.

Activity 3.2.1.i11: Production of Red List sustainability plan incorporating the new opportunities arising from this project?s outputs

A Red List sustainability plan will be produced through a process led by a consultant that includes the opportunities created through the incremental activities in this project. This will be developed by IUCN teams responsible for delivering and resourcing the Red List and discussed with senior management.

Activity 3.2.1.iv: Review of sustainability plan by IUCN and Red List partners.

The sustainability plan will be discussed by the IUCN Red List group of partners at their annual meeting.

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. The plan will explicitly include strategic actions needed to maximize income generation building on the tools and data mobilised from this project. For the expenditure side, it will draw from existing documentation of the costs of maintaining the Red List[2], 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.

<u>Output 3.2.2</u>: Outreach to selected stakeholders in support of implementation of the plan, generating initial incremental revenue.

Activity 3.2.2.i: Create reporting framework for IUCN and Red List partners that allows income generated building from the project outputs to be identified

The sustainability plan will underpin the reporting framework of the IUCN Red List going forwards, capturing the resources raised from different sources by IUCN and partners to deliver the Red List. The implementation of the plan will be discussed in Red List partnership governance meetings.

Building on Output 3.2.1, actions will be taken to begin the implementation of the sustainability plan, including the creation of a reporting framework for Red List partnership, and the inclusion of fundraising goals into IUCN targets and workplans.

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.

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[1] Brooks, T.M., Pimm, S.L., Ak?akaya, 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-Pe?uela, 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.

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

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.

Summary table clarifying the responsibilities for each activity (see separate terms of reference document for % of staff time being covered and new staff being hired through GEF funds)

Outcome	Output and Activities	Responsible Position
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.	**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.**	
	Activity 1.1.1.i: Quality control and processing RLI data for calculating the index	Head Red List Unit
	Activity 1.1.1.ii: Develop software that will disaggregate RLI by geography	Head Biodiversity Systems
	Activity 1.1.1.iii: Program code to generate RLI automatically in centralized system	Head Biodiversity Systems
	Activity 1.1.1.iv: Develop API to serve RLI that is generated on demand	Head Biodiversity Systems
	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 web-services to relevant platforms such as IBAT.	
	Activity 1.1.2.i: Software development to extract STAR calculation from using spatial rasters, to using sparse matrices for more efficient computation	Head Biodiversity Systems
	Activity 1.1.2.ii: Software development for centralized capability to automatically update and calculate STAR in order for it to become a dynamic layer	Head Biodiversity Systems
	Activity 1.1.2.iii: Software development of API that can serve dynamic STAR to other platforms	Head Biodiversity Systems
	Activity 1.1.2.iv: Testing and methodology validation of the STAR calculation	Senior Scientist and Programme Manager
Outcome 1.2: Science-based targets for species biodiversity are extended to marine environments.	**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.**	
	Activity 1.2.1.i: Develop standardized methods for generating Area of Habitat for marine species and present them to the Red List Technical Working Group	Senior Scientist and Programme Manager
	Activity 1.2.1.ii: Code calculation of STAR layer for marine environments and update global STAR layer to include marine STAR	Senior Scientist and Programme Manager

Outcome	Output and Activities	Responsible Position
	Activity 1.2.1.iii: Draft and submit manuscript of STAR marine layer for publication	Senior Scientist and Programme Manager
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	**Output 1.3.1: Robust, scientifically anchored and spatially explicit biodiversity metrics are proposed for inclusion in the TNFD Reporting Framework**	
	Activity 1.3.1.i: Actively engage with TNFD solicitations for comment from technical partners	Chief Scientist
	Activity 1.3.1.ii: Develop further joint communications with TNFD	Chief Scientist
Outcome 2.1: Critical biodiversity datasets are expanded for accelerated action on issues of highest conservation concern.	**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.**	
	Activity 2.1.1.i: Inception meetings with IUCN marine (goby) and freshwater fish experts	Freshwater Programme Officer (P2)
	Activity 2.1.1.ii: Drafting Red List assessments and expert review workshops	Freshwater Programme Officer (P2)
	Activity 2.1.1.iii: Assessment submission using SIS Connect	Freshwater Programme Officer (P2) and Implementing Partner (Old Dominian)
	Activity 2.1.1.iv: Publication of new fish assessments on the IUCN Red List website	Head Biodiversity Systems
	Activity 2.1.1.v: Quality control and processing by the IUCN Red List unit	Head Red List Unit
	Activity 2.1.1.vi: Communication around completion of the global freshwater biodiversity assessment	Freshwater Programme Officer (P2)
	Output 2.1.2: Fungi species assessments are undertaken to guide soil and land health.	
	Activity 2.1.2.i: Inception meeting with IUCN fungi experts	Head Red List Unit
	Activity 2.1.2.ii: Drafting Red List assessments and expert review using the ?fungi forum? platform	Red list Programme Officer
	Activity 2.1.2.iii: Deployment of new functionality to link the ?fungi forum? to SIS Connect	Head Biodiversity Systems
	Activity 2.1.2.iv: Assessment submission to the IUCN Red List	Red list Programme Officer

Outcome	Output and Activities	Responsible Position
	Activity 2.1.2.v: Quality control and processing by the IUCN Red List unit	Head Red List Unit
	Activity 2.1.2.vi: Publication of new fungi assessments on the IUCN Red List website	Head Biodiversity Systems
	Output 2.1.3: Dung beetle species assessments are undertaken to guide soil and land health.	
	Activity 2.1.3.i: Inception meeting with IUCN dung beetle experts	Manager Biodiversity Assessment Unit
	Activity 2.1.3.ii: Drafting Red List assessments for dung beetles	Red list Programme Officer
	Activity 2.1.3.iii: Review workshop of dung beetles with regional and species experts	Red list Programme Officer
	Activity 2.1.3.iv: Assessment submission using SIS Connect	Red list Programme Officer
	Activity 2.1.3.v: Quality control by the IUCN Red List unit	Head Red List Unit
	Activity 2.1.3.vi: Publication of new dung beetle assessments on the IUCN Red List website	Head Biodiversity Systems
Outcome 3.1: The production of high quality biodiversity data is broadened by exploiting new technologies and methods	**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.**	
	Activity 3.1.1.i: Convene virtual workshop of co-authors who are experts in respective knowledge frontiers	Chief Scientist
	Activity 3.1.1.ii: Draft scoping review drawing from individual contributions	Senior Scientist and Programme Manager
	Activity 3.1.1.iii: Submit scoping review manuscript for publication in the literature	Senior Scientist and Programme Manager
	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.	
	Activity 3.1.2.i: Results of Output 3.1.1. used to develop new workflow to generate historical AoH of selected terrestrial groups	Head Biodiversity Systems
	Activity 3.1.2.ii: Develop new workflow to generate current AoH of selected terrestrial groups	Head Biodiversity Systems

Outcome	Output and Activities	Responsible Position
	Activity 3.1.2.iii: Incorporation of historical and current AoH of selected terrestrial groups into the Red List website	Head Biodiversity Systems
	Output 3.1.3: Strengthened connections between national red lists and the IUCN Red List of Threatened Species to allow interoperability.	
	Activity 3.1.3.i: Support three countries in the use of SIS Connect to supply national Red Listed endemic species to the IUCN Red List	Senior Program Coordinator
	Activity 3.1.3.ii: Enhance SIS Connect functionality allowing for import and export of national Red List endemics, and allowing editing of assessment directly in SIS Connect	Head Biodiversity Systems
Outcome 3.2: Development and implementation of a sustainability plan for Red List	**Outputs 3.2.1: Sustainability plan developed for the Red List**	
	Activity 3.2.1.i: Running of a workshop to identify what costs are required to fund the Red List over the next 10 years	Head Red List Unit
	Activity 3.2.1.ii: Assessment of different funding models to meet costs identified through Activities 3.2.1.i and 3.2.1.ii.	Head Biodiversity Assessment and Knowledge Team
	Activity 3.2.1.iii: Production of sustainability plan	Senior Data Impact Officer
	Activity 3.2.1.v: Review of sustainability plan by IUCN and Red List partners	Head Biodiversity Assessment and Knowledge Team
	Output 3.2.2: Outreach to selected stakeholders in support of implementation of the plan, generating initial incremental revenue	
	Activity 3.2.2.i: Create reporting framework for IUCN and Red List partners to report on progress made to meet funding goals set out in the sustainability plan.	Senior Data Impact Officer

(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 provide novel tools and data for 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 transform IUCN?s support to science-based targets, monitoring indicators, and implementation of the GBF. By tapping into new approaches to data generation, the proposed work 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. However, the full potential of the IUCN Red List for supporting the GBF will not be realised as it currently has out-of-date and fragmented data delivery and access mechanisms, slow computational process and critical data gaps in the system. 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. 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.

This GEF project is incremental because it is directly supporting new activities and outputs that would not otherwise be possible. The specific incremental outputs and activities listed below will require the expertise of existing IUCN staff because of the highly specialised nature of the technical work relating to generating and disseminating IUCN Red List assessments and derivatives. This GEF project will also support the recruitment of two new roles, one of which will be dedicated to the delivery of expanded data sets and derivatives using new, automated processes to a wide range of stakeholder, including the private sector.

All positions detailed here and listed in the budget, and the actions and outputs that they will deliver, are fully incremental. The proposed new staff would not be hired and the outcomes proposed to be delivered under this project would not be delivered.

In relation to IUCN co-finance, this will provide the project with legal, finance, representation on the project steering committee, private sector engagement, IT support, and also IUCN convening and stakeholder engagement activities (e.g. leaders' forums)

The status quo and incremental benefit of each Output are described below.

? The calculation and dissemination of the IUCN Red List Index (Output 1.1.1) would remain a complicated and time-consuming manual process requiring substantial input across teams and institutions. This project will deliver a new mechanism to automatically generate the Red List Index on demand, which is robust to hardware failure, and serve it through web-services

? The updating of STAR would remain a fragmented, manual and slow process, requiring considerable inter-institutional discussion, super-computer time, cost, and effort for each update, (Output 1.1.2). This would impede the delivery of STAR and its use by the private sector as well as other key stakeholders. This project will automate and centralise the process, enabling efficient, cost-effective updating of the STAR layers and reliable dissemination to users, both this year and into the future

? The global STAR layer would be restricted to terrestrial, with no provision for marine taxa (Output 1.2.1) or freshwater taxa (Output 2.2.1). This would deter uptake of these data sets in some key sectors and fundamentally limit the utility of STAR. The project will deliver the first marine layer and the first comprehensive assessment of freshwater fish so that future STAR layers will include marine, freshwater and terrestrial species.

? TNFD?s Reporting Framework, most notably on Metrics and Targets, would not include scientifically anchored and spatially explicit biodiversity metrics based on IUCN?s standards (Output 1.3.1). This would ?lower the bar? with respect to requirements for organisational disclosure and reporting on nature-related risks, resulting in negative, significant, and long-term impacts on biodiversity. The project will forge an alignment between the emerging TNFD approach and IUCN?s global datasets and standards, thus moving disclosure requirements to be spatially explicit and linked to measurable impacts on biodiversity.

? The taxonomic coverage of the IUCN Red List would not adequately represent all biodiversity due to insufficient assessments completed for fish (marine and freshwater), invertebrates and fungi (Outputs 2.1.1, 2.1.2, 2.1.3). This would undermine conservation efforts for these taxa and their realms, and perpetuate a perception that IUCN is not striving to make its Red List more representative of all biodiversity. This project will complete priority assessments to broaden the taxonomic coverage of the IUCN Red List. Without this project, the IUCN Red List would not contain a globally representative sample of freshwater fish by 2024, nor would it make significant progress to completing globally representative samples for marine fish and terrestrial invertebrates.

? The technologies used to conduct and disseminate assessments would become obsolete, exacerbating inefficiencies and the frustrations of contributors to the Red List. This project will give the strategic impetus needed to identify and plan for the incorporation of the most suitable new technology (Output 3.1.1).

? IUCN is unable to centralise the delivery or standardise the methodology for producing Area of Habitat maps, which are the cornerstone to producing STAR and one of the most sought after derivatives from a Red List assessment (Output 3.1.2). This project will automate the

process of generating Area of Habitat maps, thus revolutionising the consistency and dissemination of the maps.

? Information on globally endemic species from national Red List assessments are not systematically incorporated into the IUCN Red List (Output 3.1.3). This project will provide a system for efficiently allowing information collected through national processes to be used in global assessments.

? There is no plan that sets out the business model for the IUCN Red List. Information on the costs to IUCN and others for producing the IUCN Red List are not transparent and there is insufficient clarity on the resource mobilization plan (Outcome 3.2.1, 3.2.2). This project will produce the first Sustainability Plan for the IUCN Red List leading to effective target setting and increased revenue generation by the end of the project.

The whole incremental value of this GEF project is clear when the Outcomes are viewed together. Put simply, without this GEF project the IUCN Red List would continue to maintain its core datasets (mostly terrestrial vertebrates) and deliver the derivatives (i.e. STAR, RLI, Area of Habitat) in a very inefficient manner that is far from ?best practice? in 2022 (and would become progressively worse as the technology used by IUCN becomes obsolete). This would incur significant transaction costs at every step, and be based on datasets that continue to underrepresent major taxonomic groups (i.e. fungi, fish and invertebrates). Fund raising efforts to support the IUCN Red List will not be based on a clear costing or plan. Rather than continuing with this business as usual, this project will radically transform the provisioning of these data by improving and installing new automation processes for the derivatives, increasing taxonomic coverage, and adopting a new approach to resource mobilization.

(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 licensing 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.

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[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., Rockstr?m, 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., Ak?akaya, 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-Pe?uela, 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

1c. Child Project?

If this is a child project under a program, describe how the components contribute to the overall program impact.

2. Stakeholders

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

Civil Society Organizations Yes

Indigenous Peoples and Local Communities Yes

Private Sector Entities Yes

If none of the above, please explain why:

Please provide the Stakeholder Engagement Plan or equivalent assessment.

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, 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). 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 were identified in the project preparation phase and have been expanded on since the PIF, following the ESMS Guidance Note on Stakeholder Engagement available at https://www.iucn.org/sites/dev/files/esms_stakeholder_engagement_guidance_note.pdf. They are listed in the ?Coordination? section (Part II ? 6.).

Please see attached Stakeholder Engagement Plan

In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement

Stakeholder engagement plan during project implementation ? by Stakeholder Category (including subset of key strategic stakeholders)

Stakeholder	Purpose of Engagement	Mechanism/process of Engagement	Responsible Entity	Resources	Frequency/Timing/Key Indicators
CSOs	CSOs are an essential category of stakeholder for both the development of the underlying data, as well as the consumption of the data whose provisioning the project is extending.	Taking advantage of the IUCN Membership (>1000 CSO Members). Engagement both through partnerships and consultancies as well as regular webinars and communications materials and stand-alone events, such as IUCN?s Leaders Forum convening in Korea in October	IUCN	IUCN co-financing	Quarterly Key Indicators: number of consultations, webinars, communications and stand-alone events, reported to project Steering Committee

Red List Partnership	The Red List Partners are charged with maintaining and stewarding the Red List. Not only are they important co-financing for this project, but they are essential for the developing of the Red List,	The Red List Partners will be involved directly in delivering specific outputs of the project, such as those outputs related to sustainability of the Red List. There is already direct discussion with the Red List Chair, and periodic updates at Red List Committee Meetings are anticipated.	IUCN PMU	IUCN co-financing	Quarterly Key Indicators: number relevant agenda items at Red List Committee meetings, reported to project Steering Committee
Birdlife International	Contributing essential technical and scientific expertise on Red List Index and Area of Habitat incorporation into the Red List, particularly Outputs 1.1.1, and 3.1.2. Also an essential data provider to the Red List and consumer of this project?s outputs	In addition to the engagement included under their status as an IBAT Partner, Red List Partner, and IUCN Member described above, continuous communication via email and video calls between the technical experts on this project and BirdLife technical staff	IUCN PMU and Project technical leads	IUCN co-financing	Ad libitum/quarterly Key indicators: number of joint webinars and bilateral meetings, reported to project Steering Committee
Re:Wild	Contributing essential technical and scientific expertise on amphibian data, which will be necessary for Output 1.1.1. Also an essential data provider to the Red List and anticipated consumer of this project?s outputs	In addition to the engagement included under their status as a Red List Partner, and IUCN Member described above, continuous communication via email and video calls between the technical experts on this project and Re:Wild technical staff	IUCN PMU and Project technical leads	IUCN co-financing	Ad libitum/quarterly Key indicators: number of joint webinars and bilateral meetings, reported to project Steering Committee

Private Sector Entities	The private sector are key consumers of the data provisioned by this project, particular current IBAT subscribers (>100) and other IUCN corporate partners. They have been part of extensive consultations throughout the project preparation phases, and will be recipients of strengthened services through the data provided by this project.	Engagement through regular webinars, consultations, guidance documents and related partnerships that capitalize on the data provisioned through this project.	IUCN PMU, liaising with IBAT	IUCN co-financing	Quarterly Key Indicators: number of consultations, webinars, communications and stand-alone events, reported to project Steering Committee
TNFD	TNFD and the finance sector are anticipated to be a key consumers of data served through this project. Therefore, continuous engagement is essential to ensure that provisioning is fit for purpose, and the two streams evolve together.	Continuous engagement through IUCN?s appointment as a TNFD Knowledge Partner, formalised through an MOU. Commenting on drafts of TNFD documents, dedicated phone and video calls, emails and active participation. In addition, TNFD are no a Content Partner at IUCN Leaders Forum to take place in Korea in October, which will serve as a lynchpin in strengthening the flow of outputs from this project to TNFD	IUCN PMU and IUCN Centre for Finance and Economics	IUCN co-financing	Ad Libitum/quarterly Key Indicators: number of consultations, responses to documents, webinars, communications and stand-alone events, reported to project Steering Committee

IBAT Partners	IBAT is the tool that allows Red List data to be used for commercial use, so they are the essential link between the outputs of the project and the private sector. They are a key data output for this project and deeply involved in the development and maintenance of STAR. IBAT subscriptions are providing project co-financing	Continuous communication with the IBAT Manager as well as updates presented at quarterly IBAT Governance Committee Meetings	IUCN PMU	IUCN co-financing	Quarterly Key Indicators: number of STAR reports generated by IBAT subscribers. Number of consultations, webinars, communications and bilateral discussions, reported to project Steering Committee
Governments	Governments are both essential consumers and producers of the data whose provision is being enhanced through this project, and it is important for them to have input into and understand the improvements delivered through this project?s outcomes.	Regular engagement through formal IUCN channels as well as informal consultations, Member briefings, talks, and webinars	IUCN PMU and IUCN Member services unit, and International Policy Centre	IUCN co-financing	Quarterly Key indicators: number of webinars, workshops and IUCN communications, reported to project Steering Committee

IUCN Members	IUCN?s Membership (>200 State and Government Agencies) are essential consumers of Red List data and derived projects, and it is important for data to be served in ways that are most effective	Regular engagement through formal IUCN channels as well as informal consultations, Member briefings, talks, and webinars	IUCN PMU and IUCN Member services unit	IUCN co-financing	Quarterly Key indicators: number of webinars, workshops and IUCN communications, reported to project Steering Committee
National Statistical Offices	Recipient for IUCN SDG Custodian Agency roles for metrics whose provision will be enhanced via this project	Regular engagement relating to SDG updates	IUCN Science Team	IUCN co-financing	Bi-annually Key indicators: number of SDG indicators using data from this project reported to project Steering Committee
Academic Institutions	IUCN Commissions comprising approx 15,000 individual specialists, primarily from academia. Significant participation in the Red List assessments and technical extensions of the STAR metric.	Engagement through regular meetings, talks, webinars, and workshops.	IUCN PMY	IUCN co-financing	Quarterly Key indicators: number of webinars, workshops and IUCN communications, reported to project Steering Committee

Newcastle University	Contributing essential technical and scientific expertise the species threat abatement and restoration metric, particularly Output 1.2.1 and leading complementary workstreams around the extension of STAR to freshwater environments that will be incorporated into this work.	Continuous communication with Dr. Louise Mair and her group through email and video calls	IUCN PMU	IUCN co-financing	Ad libitum/quarterly Key indicators: number of joint webinars and bilateral meetings, reported to project Steering Committee
Old Dominion University	Contributing essential technical and scientific expertise on marine data, which will be necessary for Output 1.2.1 and 2.1.1. Also an essential data provider to the Red List and anticipated consumer of this project?s outputs	Continuous communication via email and video calls between the technical experts on this project and Old Dominion technical staff	IUCN PMU	IUCN co-financing	Ad libitum/quarterly Key indicators: number of joint webinars and bilateral meetings, reported to project Steering Committee

Sapienza University	Contributing essential technical and scientific expertise on Red List Index and Area of Habitat incorporation into the Red List, particularly Outputs 1.1.1, and 3.1.2. Also an essential data provider to the Red List and consumer of this project?s outputs	In addition to the engagement included under their status as an a Red List Partner described above, continuous communication via email and video calls between the technical experts on this project and Sapienza technical staff	IUCN PMU	IUCN co-financing	Ad libitum/quarterly Key indicators: number of joint webinars and bilateral meetings, reported to project Steering Committee
Arizona State University	Contributing essential scientific expertise on marine species for creation of the STAR marine layer	In addition to the engagement included under their status as an a Red List Partner described above, continuous communication via email and video calls between the technical experts on this project and ASU technical staff	IUCN PMU	IUCN co-financing	Ad libitum/quarterly Key indicators: number of joint webinars and bilateral meetings, reported to project Steering Committee
Simon Fraser University	Contributing essential scientific expertise on marine species for creation of the STAR marine layer	Continuous email communication with SFU technical staff involved in the shark specialist group	IUCN PMU	IUCN co-financing	Ad libitum/quarterly Key indicators: number of joint webinars and bilateral meetings, reported to project Steering Committee

| IUCN Species Survival Commission Experts | Expertise from IUCN's Species Survival Commission taxonomic specialist groups lead, or contribute, to the drafting, assessing or reviewing stages of Red List assessments for fish, fungi and beetles (Outputs 2.1.1, 2.1.2, 2.1.3). Also essential consumers of the project outputs, who will need to be kept up to date as data provision extends. | Continuous email communication via email and video calls between project staff and technical experts in SSC | IUCN PMU | IUCN co-financing | Ad libitum/quarterly

Key indicators: number of joint webinars and bilateral meetings, reported to project Steering Committee |
|---|---|---|---|---|---|

Select what role civil society will play in the project:

Consulted only; Yes

Member of Advisory Body; Contractor; Yes

Co-financier; Yes

Member of project steering committee or equivalent decision-making body;

Executor or co-executor;

Other (Please explain)

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assesment.

The Gender Mainstreaming Plan (GMP)

The Gender Mainstreaming Plan consists of a Gender Analysis and a Gender Action Plan. The Gender Analysis presents the projects gender differences, gender-differentiated impacts and risks, and outlines opportunities to address potential gender gaps and promote gender balance across project activities. The Gender Action Plan details gender responsive measures aimed to address potential impacts and risks, and promote opportunities presented in the Gender Analysis.

Gender Analysis

IUCN?s Environmental and Social Management System (ESMS)[1] process which screens IUCN projects for potential adverse environmental and social (incl. gender) impacts, classifies this project as a ?non-area-based? project. These are projects that do not provide resources for activities on the ground, and do not deploy inputs such as technical assistance, physical investment or financing in a defined geographical area, and therefore are very unlikely to have adverse gender-related impacts. Based on this, initial stakeholder consultations on gender considerations have not been undertaken for the development of the PIF for this project.

The project beneficiaries are broad stakeholder groups (see stakeholder engagement plan) and they cannot easily be disaggregated by gender due to the mechanisms in which they will access project outputs. The beneficiaries will engage with the project outputs, data and tools are primarily through online web-services, such as the IUCN Red List of Threatened Species, or the Integrated Biodiversity Assessment Tool (IBAT), which do not record the gender of people accessing, downloading, or using the data. For most of the beneficiaries (e.g. private sector and Government/State agencies) the engagement will be based on an institutional/company level need, even though the intermediary downloading the data will be an individual.

The work implemented through the project will follow the principles set out through *IUCN Resolution Establishing gender equity as a mandate in the strategic activities and themes of IUCN* (WCC 2004 Res 009)[2], and in the *IUCN Policy on Gender Equity and Equality*[3], and the *IUCN Gender Equality and Women?s Empowerment Policy: Mainstreaming gender-responsiveness within the IUCN programme of work*[4]. We will therefore take a gender-responsive approach to all decision making forums, workshops and meetings organised by IUCN to implement the project. This includes:

- Screening for gender gaps in such activities and working to ensure that women and men have equal opportunities in terms of participation and decision-making. This will include the attendance of experts from the Species Survival Commissions Specialist Groups at Red List assessment and review workshops (Outcomes 2.1/2,2/2.3).

- Structuring inclusive and gender-sensitive project teams across the project

- Where possible collect and analyse gender disaggregated data for project forums, workshops and meetings.

Gender Action Plan

Using the results of the Gender Analysis, and considering the project context and limited opportunities to address potential gender gaps and promote gender balance across project activities, the Gender Action Plan outlines how the project will facilitate active and meaningful participation of both women and men, and access to outputs from the project.

Output	Gender responsive activities	Target	Means of verification/ indicator	Resources	Responsible Entity
2.1.1.	Aim for a gender balance across Species Survival Commission experts used to assess and review aquatic species Red List assessments	SSC experts used to assess and review Red List assessments are 50% men, 50% women	Disaggregate SSC experts used to assess and review Red List assessments by gender	IUCN co-financing	IUCN PMU
2.1.2.	Aim for a gender balance across Species Survival Commission experts used to review fungi species Red List assessments	SSC experts used to review Red List assessments are 50% men, 50% women	Disaggregate SSC experts used to review Red List assessments by gender	IUCN co-financing	IUCN PMU
2.1.3.	Aim for a gender balance across Species Survival Commission experts used to review dung beetle species Red List assessments	SSC experts used to review Red List assessments are 50% men, 50% women	Disaggregate SSC experts used to review Red List assessments by gender	IUCN co-financing	IUCN PMU

[1] IUCN ESMS https://www.iucn.org/resources/project-management-tools/environmental-and-social-management-system

[2] IUCN Resolution WCC 2004 Res 009 https://portals.iucn.org/library/node/44295

[3] IUCN Policy on Gender Equity and Equality 2007 https://www.iucn.org/sites/dev/files/content/documents/iucn_gender_policy.pdf

[4] Gender Equality and Women?s Empowerment Policy 2018 https://www.iucn.org/sites/dev/files/annex_9_to_c_95_8_iucn_gender_equality_and_womens_empowerment_policy.pdf

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

Generating socio-economic benefits or services or women

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

Yes

4. Private sector engagement

Elaborate on the private sector's engagement in the project, if any.

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 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

Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

Given the nature of the project, there are no anticipated negative environmental or social impacts from the project?s low-risk activities; execution will comply with IUCN ESS policy, and ESS screening has been carried out following IUCN practice. There are several potential other 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 then 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 project will either be undertaken through (i) correspondence (ii) online workshops or (iii) in person workshops.

6. Institutional Arrangement and Coordination

Describe the institutional arrangement for project implementation. Elaborate on the planned 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 WFF, 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, and participation in the TNFD Forum, as well as previous service on the TNFD Informal Technical Expert 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 through the separation of implementation and executing functions in different departments of the GEF Agency, and clear lines of responsibility, reporting, monitoring and evaluation and accountability within the GEF Agency between the project implementation and execution functions. The project execution responsibility will be under the IUCN Science and Data Centre, which comprises teams in 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. The project will be co-ordinated by a defined project management unit (PMU), which will include the Project Coordinator, the Chief Scientist and Senior Scientist and Programme Manager from the Science Team, the Head of Biodiversity Assessment and Knowledge Team and its Senior Data Impact Officer. The activities of the PMU in relation to project coordination, monitoring, and donor reporting will be funded by the PMC costs in the budget. All financial, administrative and legal support for the project will be provided by IUCN co-finance.

The project will also have a Project Steering Committee (PSC) whose role will be to provide support, guidance, and oversight for the project activities and its coordination. Members of the PSC will include IUCN staff, including the Deputy Director General ? Programmes, Director of Science and Data Centre (in which the Science and Biodiversity Assessment and Knowledge Teams fall), the Head of the Business and

Enterprise Team and the Head of Multilateral Finance & Business Development Team. Their contributions to the project will be funded by IUCN co-finance. Two members of the PMU, the Chief Scientist and Head of Biodiversity Assessment and Knowledge Team will also attend PSC.
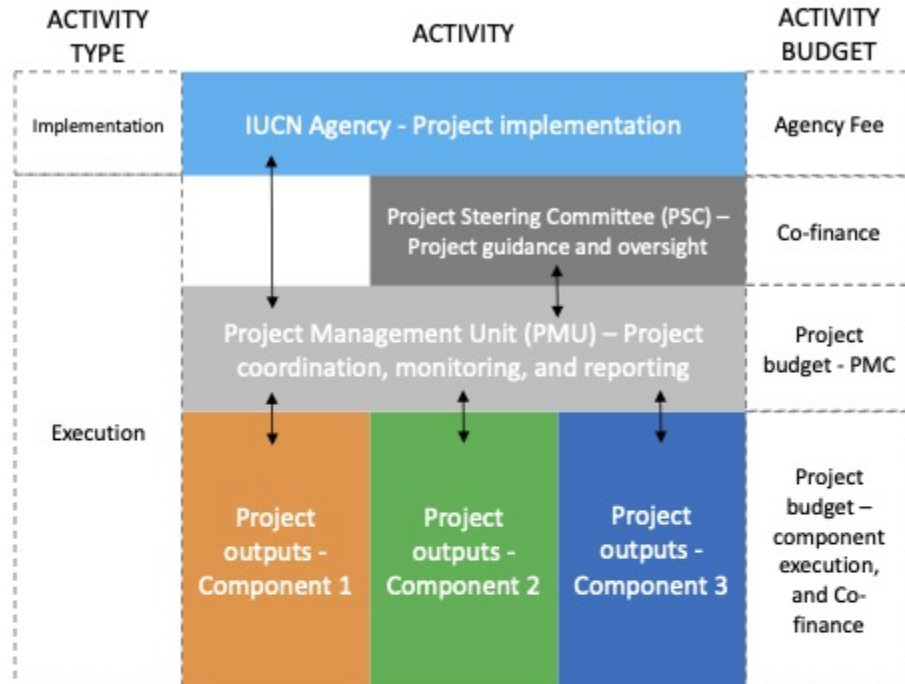
ACTIVITY TYPE	ACTIVITY	ACTIVITY BUDGET
Implementation	IUCN Agency - Project implementation	Agency Fee
Execution	Project Steering Committee (PSC) – Project guidance and oversight	Co-finance
	Project Management Unit (PMU) – Project coordination, monitoring, and reporting	Project budget - PMC
	Project outputs - Component 1 / Project outputs - Component 2 / Project outputs - Component 3	Project budget – component execution, and Co-finance

Figure 1: Diagram presenting relationship between project activities, lines of communication (arrows), and sources of funding.

7. Consistency with National Priorities

Describe the consistency of the project with national strategies and plans or reports and assesments under relevant conventions from below:

NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

Describe the consistency of the project with national strategies and plans or reports and assessments under relevant conventions from below:
- National Action Plan for Adaptation (NAPA) under LDCF/UNFCCC
? National Action Program (NAP) under UNCCD
- ASGM NAP (Artisanal and Small-scale Gold Mining) under Mercury
- Minamata Initial Assessment (MIA) under Minamata Convention
? National Biodiversity Strategies and Action Plan (NBSAP) under UNCBD
- National Communications (NC) under UNFCCC
- Technology Needs Assessment (TNA) under UNFCCC
- National Capacity Self-Assessment (NCSA) under UNCBD, UNFCCC, UNCCD
- National Implementation Plan (NIP) under POPs
- Poverty Reduction Strategy Paper (PRSP)
- National Portfolio Formulation Exercise (NPFE) under GEFSEC
- Biennial Update Report (BUR) under UNFCCC
? CBD National Report

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

Elaborate the "Knowledge Management Approach" for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project's overall impact.

This project is, in-of-itself, a knowledge management approach, and the key deliverables, budget and timeline are those of the project as a whole. 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 proposal. 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 us 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 raison-d?etre 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. Monitoring and Evaluation

Describe the budgeted M and E plan

Monitoring: A virtual inception workshop will be held to outline the objectives, deliverables and timeframe of the project. It will be attended by IUCN staff, consultants and implementing partners. Annual Project Implementation Reports will cover the context on the challenges encountered during implementation, progress made in implementing the stakeholder engagement plan, gender action plan, ESS and knowledge management activities and updates on the Core Indicators. Evaluation: An Independent Terminal Evaluation will be conducted, covering achievements against the Core Indicator results and details on co-finance (i.e. amounts, sources and types). M&E budget included under component 3 in table B.

Table 2. Summary of budgeted M&E plan

M&E activity	Frequency	Responsible entity	GEF Budget (USD)	Cofinancing (IUCN; USD)
Inception Workshop	Once	IUCN - PMU	0	2000
Inception Report	Once	IUCN - PMU	0	1000
M&E of Core Indicators and project results framework	Annually	IUCN - PMU		6000
Project Implementation Reports	Annually	IUCN ? PMU/GEF Unit	0	7000
Monitoring of ESS and management plans	Bi-annually	IUCN ? PMU/GEF Unit	0	4000
Independent Terminal Evaluation	Once	Consultant procured by IUCN GEF Unit	29,500	

Total			29,500	20,000

10. Benefits

Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

The Dasgupta Review highlighted that the species extinction crisis is undermining the productivity, resilience and adaptability of nature. This, in turn, puts local and national economies, livelihoods and wellbeing at serious risk. The project will assist countries to make better informed decisions and plans for the safeguarding and recovery of nature.

Through the further development of IUCN?s species datasets and derivatives, this project will contribute to the *Conservation of Globally Significant Biodiversity,* which is a *Global Environment Benefit.* The IUCN Red List is used to conserve global biodiversity through its use as an indicator, in raising awareness on the nature crisis, informed priority setting, identifying Key Biodiversity Areas, influencing resource allocation and availability, improving legislation and policy, and conservation action leading to positive change (Betts et al. 2020[1]).

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[1] Betts, J., Young, R. P., Hilton?Taylor, C., Hoffmann, M., Rodr?guez, J. P., Stuart, S. N., & Milner?Gulland, E. J. (2020). A framework for evaluating the impact of the IUCN Red List of threatened species. Conservation Biology, 34(3), 632-643.

11. 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	Low		

Measures to address identified risks and impacts

Elaborate on the types and risk classifications/ratings of any identified environmental and social risks and impacts (considering the GEF ESS Minimum Standards) and any measures undertaken as well as planned management measures to address these risks during implementation.

Supporting Documents

Upload available ESS supporting documents.

Title	Module	Submitted
Appendix 5 ESMS screening report_K4N 010722	**CEO Endorsement ESS**	
ESMS Screening Report_GEFID 10897	**Project PIF ESS**	

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

<u>Project Results Framework</u>

	Objective/ Outcome	Indicators	Baseline	Target(s)	Source of verification	Assumptions / Risks	Responsibility for Reporting on Indicator
	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**	Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment [Core indicator 11]	**0**	Approx 4,000,000 people over the course of the projet including 50% each women and men	IUCN Red List user data	Assume a 50% gender balance in terms of Red List users, as gender disaggregation of users is not possible.	<u>IUCN Project Coordinator</u>

Component 1	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.	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. Output Indicator: The number of mechanisms that exist to automatically generate and serve the Red List Index	1.1.1: No mechanism exists to automatically generate the RLI	1.1.1 : One mechanism for automatically generating the RLI on demand exists	1.1.1 iucnredlist.org	<u>Assumptions:</u> NBSAPs and science-based targets will require well provisioned, spatially explicit species biodiversity data. <u>Risk:</u> There is the risk that the Post-2020 Global Biodiversity Framework negotiations stall, fail or produce a weak agreement. This	<u>IUCN Project Coordinator</u>

		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 web-services to relevant platforms such as IBAT. Output Indicator: The existence of an implemented plan for updating and serving the Species Threat Abatement and Restorat	1.1.2: No mechanism exists to automatically update STAR	1.1.2: One mechanism for automatically generating STAR exists	1.1.2 iucnredlist.org		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. 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.	IUCN Project Coordinator

	Outcome 1.2: Science-based targets for species biodiversity are extended to marine environments.	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. Output Indicator: Whether or not the STAR metric is extended to marine environments	1.2.1: STAR is limited to terrestrial biomes, and no marine layer exists for STAR	1.2.1 One marine layer for STAR developed	1.2.1: iucnredlist.org	An important assumption is that methods will be able to be developed in order to extend AoH from terrestrial environments to marine environments. There is good evidence that approaches will be possible; however, there is a risk that the differences in data and range throughout marine environments might require a more adaptive extension of the STAR metric.	IUCN Project Coordinator

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

Output Indicator: Proposal of robust, scientifically anchored spatially explicit metrics for inclusion in TNFD Reporting Framework | 1.3.1: No spatially explicit scalable global biodiversity metrics incorporated into TNFD reporting framework | 1.3.1: Robust, scientifically anchored and spatially explicit biodiversity metrics are proposed for inclusion in the TNFD Reporting Framework | 1.3.1: TNFD reporting framework | An important assumption is that the TNFD partners will be undaunted by the use of spatially explicit data | IUCN Chief Scientist |

Component 2	Outcome 2.1: Critical biodiversity datasets are expanded for accelerated action on issues of highest conservation concern.	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. Output Indicator: Number of species assessed	2.1.1: 12,000 marine fishes published on RL website; 11,000 freshwater fishes published on the RL website	2.1.1: 13,000 marine fishes published on RL website; 12,777 freshwater fishes published on the RL website	2.1.1: iucnredlist.org	<u>Assumption:</u> The required volunteer species experts across the selected taxonomic groups are available to engage in accordance with the project timeframe <u>Risk:</u> Delays to the availability of key experts	<u>IUCN Senior Data Impact Officer</u>

| | | Output 2.1.2: Fungi species assessments are undertaken to guide soil and land health.

Output Indicator: Number of species assessed | 2.1.2: 550 fungi published on the RL website | 2.1.2: 1,050 fungi published on the RL website | 2.1.2: iucnredlist.org | during the drafting and reviewing phases will hinder the timely final validation an publication of the results. | IUCN Senior Data Impact Officer |

| | | Output 2.1.3: Dung beetle species assessments are undertaken to guide soil and land health.

Output Indicator: Number of species assessed | 2.1.3: 750 dung beetles on the RL website | 2.1.3: 1,250 dung beetles on the RL website | 2.1.3: iucnredlist.org | | IUCN Senior Data Impact Officer |

Component 3	Outcome 3.1: The production of high quality biodiversity data is broadened by exploiting new technologies and methods	Output 3.1.1: Incorporation of knowledge frontiers (e.g. remote sensing, national linkages, etc.) analysed to catalyse more efficient responses to biodiversity species data demands, and scoping review published in the literature. Output Indicator: number of scoping reviews for incorporating knowledge frontiers into species data provisioning	3.1.1: No scoping review exists for the incorporation of knowledge frontiers into species data provisioning	3.1.1: One scoping review submitted for publication that analyses knowledge frontiers for more effecting species data provisioning	3.1.1: record of submission	Assumption: Current gaps in the mapping of extinct ranges is resolved. It is assumed that an increasing number of countries will want to make use of the functionality offered to undertake their national Red List process using SIS and/or will use SIS Connect to upload their national Red List data into SIS for management and storage.	IUCN Conservation Scientist

| | | 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.

Output Indicator: Existence of AoH on Red List species pages | 3.1.2.1: No system available to automatically generate current or historical AoH maps from distribution data

3.1.2.2: No AoH maps on RL website | 3.1.2.1: Automated system for generating current and historical AoH maps for one 'type' of dataset (e.g. terrestrial polygons) produced

3.1.2.2: Current and historical AoH maps for terrestrial mammals and birds made available on the RL website | 3.1.2.1: iucnredlist.org

3.1.2.2: iucnredlist.org | That countries will happily accept the taxonomy used by the IUCN Red List.

That national assessments of endemics will not conflict with global assessments done by IUCN or one of the Red List Partners.

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Risk:

The mapping of extinct ranges is not done for most species.

The interest from | IUCN Head Biodiversity Systems |

| | | Output 3.1.3: Strengthened connections between national red lists and the IUCN Red List of Threatened Species to allow interoperability. | 3.1.3.1: SIS connect does not allow editing of data, and does not allow automated import of national RL data | 3.1.3.1: Improved SIS Connect tool that allows automated import and editing of National RL data. With 'self-assessment' for encouraging adoption of IUCN RL standards. | 3.1.3.1:

https://connect.iucnredlist.org/

https://sis.iucnsis.org/apps/org.iucn.sis.server/SIS/index.html

3.1.3.2

https://connect.iucnredlist.org/

https://sis.iucnsis.org/apps/org.iucn.sis.server/SIS/index.html | countries exceeds the capacity and resources of the Red List Unit to provide adequate support.

That imports via SIS Connect result in conflicting taxonomy and overlapping taxonomic concepts.

An increasing number of petitions against global assessments submitted by national experts. | IUCN Head Biodiversity Systems |
| | | Output Indicator:
 Number of countries using the SIS systems to undertake assessments and manage their data | 3.1.3.2: Limited functionality across RLTS systems to support NBSAP process | 3.1.3.2: New functions to allow national users to generate and download into SIS Connect nationally relevant species data from | | | |

	Outcome 3.2: Development and implementation of a sustainability plan for Red List	Outputs 3.2.1: Sustainability plan developed for the Red List Output Indicator: Number of Sustainability Plans developed for the Red List	3.2.1: No Sustainability plan for the Red List	3.2.1: Sustainability plan developed for the Red List	3.2.1: Unpublished IUCN Document	<u>Assumption</u>: By 2023 the IUCN Red List Partnership will be expanded and renewed. <u>Risk</u>: Implementation of the Sustainability Plan is	<u>IUCN Senior Data Impact Officer</u>

		Output 3.2.2: Outreach to selected stakeholders in support of implementation of the plan, generating initial incremental revenue Output Indicator: Whether or not the total Red List income generated against the Sustainability plan is reported to the Red List Governance Structure	3.2.2: Reporting on total RL income generated not reported to RL governance structure	3.2.2: Reporting, annually on income generated against projected income required to meet the target set in the Sustainability plan	3.2.2: Reports to the Red List Committee	delayed	IUCN Senior Data Impact Officer

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

ANNEX C: Status of Utilization of Project Preparation Grant (PPG). (Provide detailed funding amount of the PPG activities financing status in the table below:

ANNEX D: Project Map(s) and Coordinates

Please attach the geographical location of the project area, if possible.

ANNEX E: Project Budget Table

Please attach a project budget table.

Appendix E, GEF CEO Endorsement Request: Project Budget, Knowledge 4 Nature (GEFID 10897)

Expenditure Category	Detailed Description	Component 1			Component 2	Component 3		M&E (Under Component 3)	PMD	Total (USD)
		Outcome 1.1.	Outcome 1.2.	Outcome 1.3	Outcome 2.1	Outcome 3.1	Outcome 3.2			
Sub-contract to executing partner/ entity	BirdLife International - executing partner contributing essential technical and scientifc expertise on Red List Index and Area of Habitat incorporation into the Red List (Outputs 1.1.1, 3.1.2)	27,720				42,085				69,805
Sub-contract to executing partner/ entity	Sapienza University - executing partner contributing essential technical and scientifc expertise on Red List Index and Area of Habitat incorporation into the Red List (Outputs 1.1.1, 3.1.2)	27,720				26,950				54,670
Sub-contract to executing partner/ entity	Re:wild - executing partner contributing essential expertise for amphibian data in the Red List Index (Output 1.1.1)	27,720								27,720
Sub-contract to executing partner/ entity	Newcastle University. One senior scientist and 1 year of postdoctoral associate time for supporting the scientific and technical delivery of the extension of the terrestrial STAR framework and area of habitat (Mair et al., 2021) to marine environments and producing a new global STAR layer for incorporation into the complementary outputs. (Output 1.2.1)		97,350							97,350
Sub-contract to executing partner/ entity	Old Dominion University. One senior scientist and 2 years of postdoctoral researcher time for assessing marine fish species and technical delivery of the extension of the terrestrial STAR framework and area of habitat to marine environments (Outputs 1.2.1, 2.1.1)		11,550		187,000					198,550
Sub-contract to executing partner/ entity	Arizona State University - contributing essential scientific expertise on marine species for creation of the STAR marine layer		11,550							11,550
Sub-contract to executing partner/ entity	Simon Fraser University - contributing essential scientific expertise on marine species (sharks and rays) for development of STAR marine layer		11,550							11,550
Contractual Services – Company	Cloud Provider. Hosting services to support applications developed and deployed for calculating RLIs (Output 1.1.1)	35,000								35,000
Contractual Services – Company	Developers. Up to 2 software developers over 2 years for the generation of AoH maps, automated	115,000				64,000				179,000

ANNEX F: (For NGI only) Termsheet

<u>Instructions</u>. Please submit an finalized termsheet in this section. The NGI Program Call for Proposals provided a template in Annex A of the Call for Proposals that can be used by the Agency. Agencies can use their own termsheets but must add sections on Currency Risk, Co-financing Ratio and Financial Additionality as defined in the template provided in Annex A of the Call for proposals. Termsheets submitted at CEO endorsement stage should include final terms and conditions of the financing.

ANNEX G: (For NGI only) Reflows

Instructions. Please submit a reflows table as provided in Annex B of the NGI Program Call for Proposals and the Trustee excel sheet for reflows (as provided by the Secretariat or the Trustee) in the Document Section of the CEO endorsement. The Agencys is required to quantify any expected financial return/gains/interests earned on non-grant instruments that will be transferred to the GEF Trust Fund as noted in the Guidelines on the Project and Program Cycle Policy. Partner Agencies will be required to comply with the reflows procedures established in their respective Financial Procedures Agreement with the GEF Trustee. Agencies are welcomed to provide assumptions that explain expected financial reflow schedules.

ANNEX H: (For NGI only) Agency Capacity to generate reflows
Instructions. The GEF Agency submitting the CEO endorsement request is required to respond to any questions raised as part of the PIF review process that required clarifications on the Agency Capacity to manage reflows. This Annex seeks to demonstrate Agencies? capacity and eligibility to administer NGI resources as established in the Guidelines on the Project and Program Cycle Policy, GEF/C.52/Inf.06/Rev.01, June 9, 2017 (Annex 5).