UNBiodiversity Lab

UNDP

Empowered lives.
Resilient nations.

MAPPING NATURE FOR PEOPLE AND PLANET

A CONCEPT NOTE

OVERVIEW

The United Nations Development Programme (UNDP) will work in partnership with UN Environment, the Secretariat of the Convention on Biological Diversity (CBD), and governments of several GEF-eligible Parties to the CBD to build on the success of UN Biodiversity Lab to create a tool that helps Parties prioritize nature-based actions for conservation and sustainable development. The tool will help policymakers and decision makers identify ecosystems essential for the achievement of the nature-dependent Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development, while delivering on the three Rio Conventions. It will also help governments determine how to most effectively prioritize actions to protect, restore, and sustainably manage these key ecosystems. Policymakers will be able to use the tool to analyze progress to implement National Biodiversity Strategies and Action Plans (NBSAPs) in their country, and to better monitor the integration of biodiversity-based strategies and actions into sustainable development plans and poverty eradication strategies, as called for in CBD Conference of Parties Decision 14/1.

PROTECTING ECOSYSTEM SERVICES TO DELIVER ON INTERNATIONAL AGREEMENTS

The world's natural capital underpins sustainable development and provides essential life support services (ecosystem services) without which life cannot exist. Forests supply timber and wood fiber, purify water, and regulate climate. River systems provide freshwater, power, and recreation. Coastal wetlands filter waste, mitigate floods, and serve as nurseries for commercial fisheries. Yet nature is in steep decline. The landmark reports from the Intergovernmental Panel on Climate Change (IPCC) and the Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES), both released in the past year, have impressed upon the global community the importance of taking immediate action to combat climate change and the decline of nature. The IPCC report shows that humanity has only 12 years to prevent planetary warning from exceeding 1.5°C. The IPBES report documents an unprecedented decline of nature that is putting 1 million species at risk of extinction. The Millennium Ecosystem Assessment offers further evidence of this crisis, demonstrating that over the past 50 years, 15 of 24 ecosystem services have been degraded. In this time period, we have also lost nearly 60 percent of the populations of more than 16,000 species, lost half of the world's tropical forests, and degraded 40 percent of all land on Earth.

These losses jeopardize the livelihoods of the more than 3 billion people who depend on healthy farms, forests, and fisheries to survive. Investing in actions to protect and restore ecosystems with high conservation value, including intact tropical forests, peatlands, and mangroves, are among the most efficient pathways to secure essential ecosystem services while also sequestering carbon from the atmosphere. Restoring forests, for example, could improve water security by more than 10 percent for more than 3,200 cities around the world, at a cost of less than US$2 per person annually. Investing in natural climate solutions will store as much as 90 gigatons of carbon annually, a value equal to almost 40 percent of the carbon dioxide mitigation needed through 2030 to hold warming below two degrees.

Supporting countries to prioritize the implementation of actions to protect, manage, and restore ecosystems will enhance well-being and livelihood opportunities available around the world, while also helping Parties to deliver on their commitments to the three Rio Conventions and the 2030 Agenda for Sustainable Development.

THE CHALLENGE

Maintaining a healthy planet where people and ecosystems thrive requires reliable, timely, decision-relevant information. While the number of global, biodiversity-based information sources grows daily, few are accessible and curated in ways that meet the needs of policymakers at the national scale. In a review of over 120 post-2010 NBSAPS, UNDP determined that GEF-eligible countries included an average of fewer than four maps per national biodiversity plan. Only one in three of these maps can be used to guide conservation and sustainable development decision making and policy development. Resources such as UN Biodiversity Lab (www.unbiodiversitylab.org) have played a key role in building spatial literacy among policymakers, but focus primarily on biodiversity and do not provide the tools needed to prioritize specific areas that can be conserved or restored to achieve optimal results for climate change mitigation and ecosystem service provision. As a result, development decisions that negatively affect biodiversity are often made without an awareness of its benefit to society, or potential impacts to the long-term delivery of ecosystem services.

In developing and middle income nations, natural capital is typically high, while development needs are significant, and data are often scarce or inaccessible. The number of global, biodiversity-based data sources and decision support systems grows daily, but few are developed in consultation with the Ministries of Environment that need this scientific support. They therefore are not officially validated for use by governments. There does not yet exist a decision support system that guides policymakers to prioritize actions for the conservation and restoration of ecosystem services that deliver on national development priorities. Policymakers and land managers need access to accurate spatial data on ecosystem service conditions and trends, and guidance and tools to help transform commitments into action.

In 2018, UNDP completed a user needs assessment with over 60 Parties to the CBD. Respondents identified four common challenges to accessing and applying spatial data when developing, implementing, and reporting on conservation and sustainable development policies. These include:

- **Data is inaccessible:** Available data are often scattered among ministries or multiple data providers and require complicated sharing agreements.
- **Data is unusable:** Accessible data are often in unusable formats that are inconsistent, inaccurate, of low spatial resolution, incompatible in format, at the wrong timescale, or out-of-date.
- **Data is not nationally validated:** Accessible, useable data is often not validated. Internationally developed data must be nationally validated through collaborations between data providers and governments.
- **Governments lack capacity to use data:** Government agencies often lack experience using software and equipment to process accessible, usable, validated data, analyze it, and apply results.

This 'data gap' takes a toll on national efforts to protect and restore nature and related ecosystem services. Regardless of how much data is generated at the global scale, countries need a mechanism to assess its relevancy to their country, supplement it with local data, prioritize areas essential for protection and restoration, and engage with diverse stakeholders to demonstrate the importance of nature to society.

PROJECT DESCRIPTION

UNDP will work with partners to leverage advances in information and communication technologies, as well as cutting-edge science, to strengthen the capacity of policymakers to better manage their natural resources for people and the planet. Working together with an expert scientific advisory group and selected pilot countries, we will build on the UN Biodiversity Lab to support countries to use spatial data to identify 'Essential Life Support Areas' (ELSAs). We define ELSAs as areas that together conserve critical biodiversity and provide humans with essential ecosystem services, such as carbon storage, food, fresh water, water filtration, and disaster risk reduction (Fig. 1). There does not yet exist a scientific framework or decision support tools that can help policymakers to identify ELSAs, and to take appropriate action to prioritize conservation and restoration based on their national needs and priorities. The project team will work with countries to address this gap.

**The proposed project has three objectives:**
- *Consolidation of national level data to create a biodiversity baseline.* Many countries have rich national data on biodiversity, land use change, and human pressure, however it is often siloed and inaccessible. Multi-stakeholder groups will come together to identify the best sources of national level data, facilitate access, and ensure that it is validated for use in government decision-making.
- *More informed national decision making.* Governments will be able to apply rigorous scientific methodology to identify ELSAs. They will be able to better determine risks and opportunities related to their natural capital, prioritize areas for protection, restoration and sustainable management, and align their policies and decisions to advance the three Rio Conventions and the 2030 Agenda for Sustainable Development.
- *Enhanced data-driven monitoring and reporting.* National policymakers will be able to use spatial data and maps to monitor and report their progress to implement their NBSAPs and integrate biodiversity considerations into sustainable development and poverty eradication strategies, as called for in CBD Conference of Parties Decision 14/1.

The project will support a select number of GEF-eligible pilot countries that are committed to the evidence-based management of natural resources, with the goal of learning from these pilot projects to refine the approach and share with all Parties to the CBD by 2020. They will be supported to use decision support systems to map intact, as well as restorable, natural capital, biodiversity, and ecosystems.

The pilot phase will involve:

- *Identifying and curating relevant datasets* by working closely with the project team in pilot countries to build a baseline of biodiversity and sustainable development data using existing national-level datasets.
- *Developing rigorous science-based approaches to identify ELSAs* in partnership with premier researchers.
- *Creating an ELSA decision support system* based on UN Blodiversity Lab that enables countries to identify ELSAs and prioritize action based on national priorities to improve conservation and development outcomes.
- *Building the necessary in-country technical capacity* to use spatial data to accelerate NBSAP implementation in light of international commitments around all three Rio Conventions and the 2030 Agenda.

Figure 1. Theoretical example of steps to identify and prioritize areas that deliver essential ecosystem services for people and the planet.
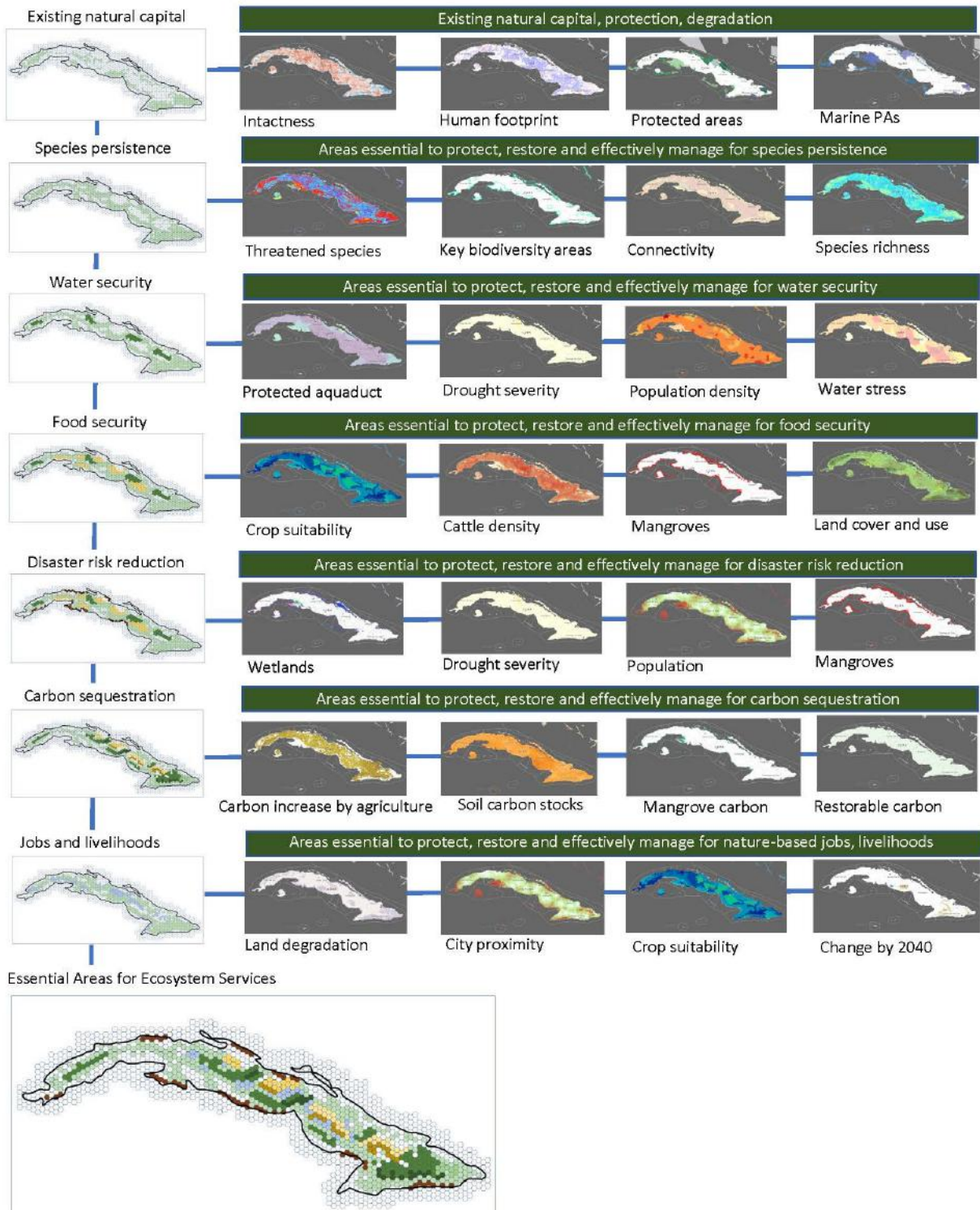
THEORY OF CHANGE

Our theory of change is that map-based, credible, high-quality information combined with direct relationship and capacity building at the national level will drive change. Global level data are incredibly important to drive the creation of rigorous targets for the post-2020 global biodiversity framework and to assess our collective progress towards the Rio Conventions and the 2030 Agenda. To drive action on the ground, however, governments need nationally-relevant, usable information to identify threats and implement policy change that drive solutions for nature and people.

BUILDING ON EXISTING PLATFORMS, PARTNERSHIPS & IMPACTS

The UN Biodiversity Lab (www.unbiodiversitylab.org) is a free, open-source online platform that allows policymakers to access essential global data layers, to upload national datasets, and to analyze multiple datasets in order to be able to provide key information on the CBD's Aichi Biodiversity Targets (ABTs) and on nature-based Sustainable Development Goals (SDGs). Through UNDP and UN Environment's work to support Parties in the preparation of a data-driven Sixth National Report to the Convention on Biological Diversity, the UN Biodiversity Lab provides a key mechanism to enhance spatial literacy and to ensure spatial data is used to inform conservation planning and reporting. The platform has been rolled out to nearly 140 countries, through a series of technical workshops, webinars and trainings.

The UN Biodiversity Lab supports policymakers to:
- Access > 100 global spatial data layers for conservation and development
- Access 18 draft biodiversity status maps on ABTs 5, 11, 12, 14, & 15
- Access high-quality spatial data on forest cover, connectivity, and integrity developed by NASA
- Upload national datasets to private workspaces
- Conduct basic analyses in a GIS-free environment to answer essential questions for conservation and development
- Export maps, data layers, and datasets for reporting and further analysis. Supported export formats: PDF, shapefile, GeoJSON, DXF, SQLite, & KML
- Create story maps to tell the story of conservation successes

216 policy-relevant users from 52 countries.

Over 11,000 views of UN Biodiversity Lab public website

114 global data layers; 36 national layers

3X increase in maps from 5NR to 6NR

Direct support to 137 countries from UNDP and UN Environment

1,400 views of webinar series

285 attendees at regional training workshops

250 attendees at UN Biodiversity Conference, UN General Assembly, and UN World Data Forum Events

PRESS & RECOGNITION

- Short-listed for UN Secretary-General's Innovation Award
- Featured on the UNDP Administrator's monthly innovation call
- Winner of two of the highly coveted grants from the UNDP Innovation Facility
- Featured in the UNDP Innovation Facility's annual report
- Approached by Microsoft to explore future collaborations
- Awarded two NASA grants, in partnership with top-tier researchers

- Press release for UN Biodiversity Lab Launch
  http://bit.ly/UNBL_PressRelease
- What Can Data Do for Climate Change?
  http://bit.ly/Data4ClimateChange
- Addressing the Biodiversity Crisis
  http://bit.ly/BiodiversityCrisis
- How Data Can Protect Wildlife
  http://bit.ly/Dataforwildlife
- UN Biodiversity Lab at the UN Biodiversity Conference
  http://bit.ly/UNBL_COP14