



Convention on
Biological Diversity



UN Biodiversity

Lab

2023 Annual Report

Executive Summary

The relationship between nature and human development is that of a history constantly reshaping our societies, economies, and the planet. To help achieve sustainable outcomes, access to reliable and timely spatial data on biodiversity is fundamental. Spatial data enables stakeholders to visualize interactions between human activities and environmental trends on interactive maps, prioritize action, and monitor and report on trends over time. This use of spatial data is increasingly central to public and private decision-making.

Parties to the Convention on Biological Diversity (CBD) adopted the Kunming – Montreal Global Biodiversity Framework and associated package of decisions at the 15th meeting of the Conference of the Parties (COP15). The [Kunming – Montreal Global Biodiversity Framework](#) (KM-GBF), also known as the Biodiversity Plan, comprises four overarching goals and 23 action-oriented targets that seek to address the biodiversity crisis, promote sustainable use, and encourage the fair and equitable sharing of benefits arising from the use of biodiversity and, in particular, genetic resources. Target 1 of the Framework calls on countries to undertake participatory, integrated, and biodiversity-inclusive spatial planning, for which spatial data is crucial. Likewise, the application of the [Monitoring Framework of the KM-GBF](#) at the national level will require spatial data availability, among others, to provide consistent, standardized, and scalable tracking of the goals and targets. To create sustained impacts towards the achievement of the KM-GBF, as well as related international agreements, it is essential that national decision-makers have access to spatial data for planning, monitoring, and reporting. Many countries have robust national spatial data, but it may be siloed across servers and not easily accessible. For other countries, access to accurate spatial data remains out of reach due to major capacity gaps, high server costs, and expensive software. Additionally, technical expertise to analyse the data may not be available and, in any case, facilitating automated analyses could be advantageous for rapid decision-making for countries.

The [UN Biodiversity Lab \(UNBL\)](#) was created to enable governments and other non-commercial stakeholders to have access to the best available global data to support action for nature, climate, and sustainable development.

The UNBL mission is three-fold:

1. To democratize access to spatial data and analytic tools as a digital public good.
2. To support decision-makers to leverage spatial data for insight, priority-setting, and implementation at the national level.
3. To empower stakeholders to use spatial data for nationally-led monitoring and reporting.

UNBL is a free, open-source platform that contains the data needed to support country-led efforts to use spatial data and analytic tools to generate insight that can lead to the implementation of impactful measures for sustainable development. The platform drives this transformation by enabling national experts to combine user-provided national data in a single repository, supplement them as needed with UN-vetted global datasets, and use one-click tools to combine and analyze them for national decision-making. UNBL strives to develop functionality that does not require GIS expertise and is fully available in English, French, Portuguese, Russian, and Spanish.

UNBL is overseen by a partnership between the CBD Secretariat, the UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC), the UN Development Programme (UNDP) and the UN Environment Programme (UNEP).

This annual report presents the key activities, outcomes and achievements of the UNBL Partnership in 2023.

UNBL combines the latest technology, the best available global data, password-protected workspaces to upload users' own data, user-friendly analytics, and a powerful UN-led partnership.

UNBL by the numbers in 2023



189,972

platform views from

72,646

unique users.



1,000+

attendees to

13

UNBL events and trainings.



2,662

registered users from

153

countries.



204

UNBL workspaces that allow non-commercial users to incorporate national data alongside global data.



650+

global data layers, including **250+** new data layers added in 2023.



250+

responses to user questions.



9

new communication products.



1

accreditation as a digital public good by the Digital Public Goods Alliance.

Key UNBL activities in 2023 included:

1 | UNBL governance

The UNBL Partnership secured US\$2 million in funding from the Gordon and Betty Moore Foundation to support countries in their efforts to achieve the goals and targets of the KM-GBF. This provides UNBL with the ability to leverage the previous multi-million-dollar investment to develop the cutting-edge technology behind UNBL to provide customized services to support national-level planning, monitoring, and reporting for the KM-GBF

2 | UNBL development

UNBL partner UNEP-WCMC took on the maintenance and new software developments for UNBL, utilizing the expertise of their Digital Transformation team which includes over 30 developers, designers, data scientists, and web tool experts. This transition places full governance of UNBL development in the hands of the UNBL Partnership.

3 | UNBL data

The UNBL Partnership added 250+ new data layers to the UNBL public platform, primarily oriented around the KM-GBF and its Monitoring Framework. In addition, we launched two new data collections: (1) [Ecosystem Restoration Data Collection](#), which explores opportunities to restore ecosystems for the benefit of nature and people and relates to Target 2 of the KM-GBF; and (2) [KM-GBF Monitoring Framework Data Collection](#), which provides a curated list of global spatial datasets that are referenced in the official metadata associated with the Monitoring Framework and that can be used at the national level in planning, monitoring, and reporting on the national goals and targets aligned with the KM-GBF. These data collections complement the existing ones to support national planning around [Protection](#) (Target 3) and [Nature-based Solutions for Climate Change](#) (Target 8).

4 | UNBL training and capacity building

The UNBL Partnership provided training on-demand, as well as a webinar for the Global Biodiversity Framework Early Action Support Project under the Global Environment Facility and an expansion of the micro-course [Using Spatial Data for Biodiversity](#), now available in all five UNBL languages. In addition, UNBL maintained a visible presence at strategic events, including the [Land and Carbon Lab Summit](#), the twenty-fifth meeting of the Subsidiary Body on Scientific, Technical, and Technological Advice to the Convention on Biological Diversity ([CBD SBSTTA-25](#)), the 6th [UN Environment Assembly](#) and the [UN SDG Digital event](#) on the side lines of the UN General Assembly.

5 | UNBL user outreach

The UNBL Partnership provided direct support to over 250 email requests from users around accessing data, creating workspaces, uploading data, and general troubleshooting.

6 | UNBL communications

UNBL was recognized as [one of the 34 digital solutions driving SDG progress](#) at a high-level event on the sidelines of the UN General Assembly. In addition, the UNBL Partnership continued to release high-quality communication products to share UNBL with new audiences, including the UNBL use case brochure.

Key UNBL activities on the horizon for 2024 include:

1 | UNBL governance

The UNBL Partnership will continue to build relationships with key partners supporting national action around the KM-GBF and its Monitoring Framework, to refine activities in support of the UNBL Strategic Plan 2022-2030, and to fundraise for sustained engagement.

2 | UNBL development

The UNBL Partnership will develop and test a variety of new features on UNBL to support planning, monitoring, and reporting on the KM-GBF.

3 | UNBL data

The UNBL Partnership will work to enhance data standards and back-end programming to enable users to seamlessly combine national and global data layers for national and sub-national spatial analyses. In addition, it will work towards including all data officially recommended for planning, monitoring, and reporting on the KM-GBF so it is available to users.

4 | UNBL training and capacity building

The UNBL Partnership will focus training and capacity building to support low- and middle-income countries to use spatial data as part of their development of plans for national monitoring systems for the KM-GBF.

5 | UNBL user outreach

The UNBL Partnership will continue to provide high-quality assistance to users in planning, monitoring, and reporting on the KM-GBF, as well as be present at selected events on biodiversity conservation and sustainable development.

6 | UNBL communications

The UNBL Partnership will focus on the development of user feature stories that communicate how countries are using UNBL to support national action on the KM-GBF, as well as strategic events at meetings of the CBD SBSTTA and Sixteenth Conference of the Parties to the CBD (COP16).

2023 | Key activities

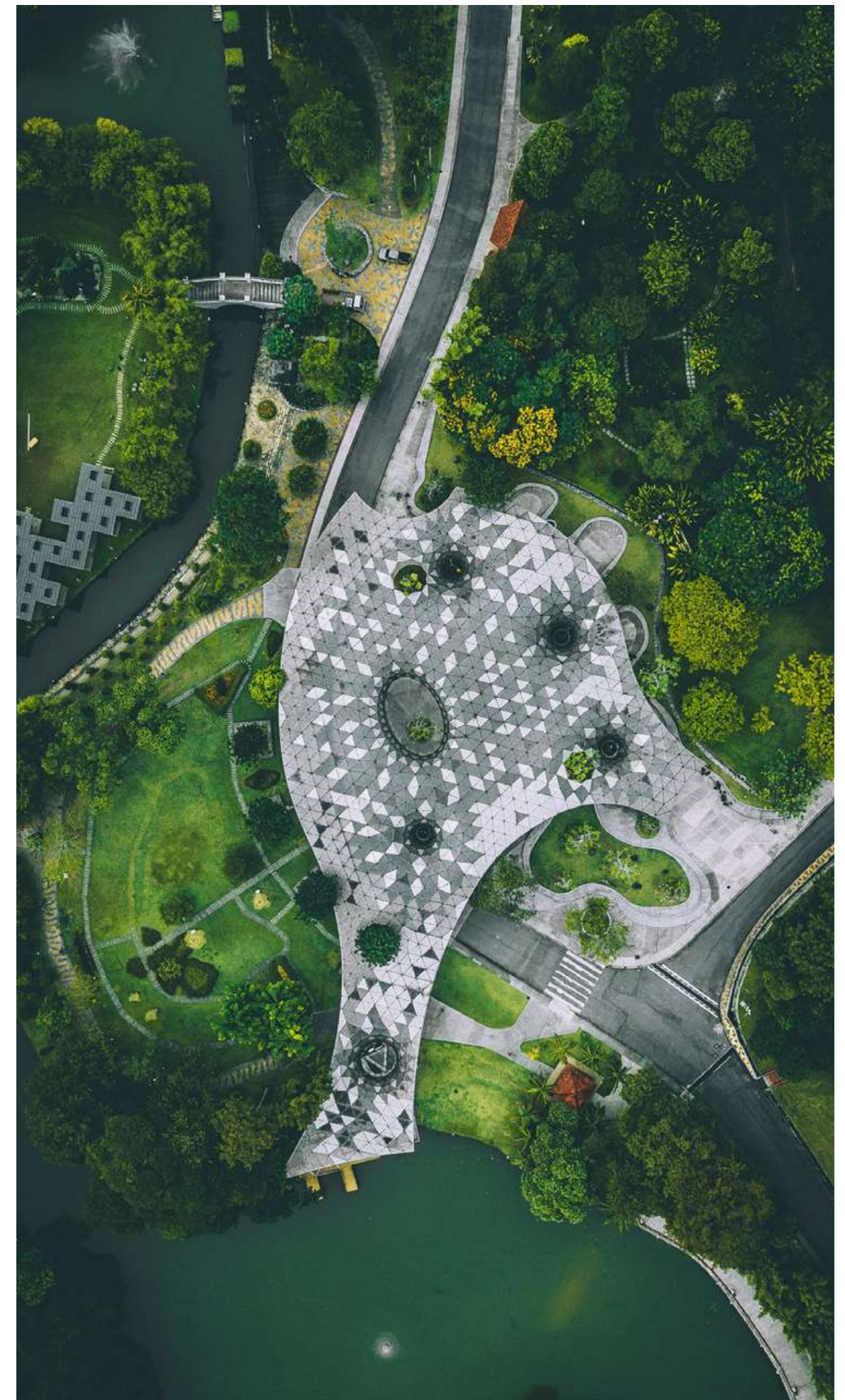
➔ 1 | UNBL governance

The UNBL Partnership works together to shape the UNBL vision, mission, and activities to support the use of spatial data to generate insight and impact for conservation and sustainable development. Our governance activities include strategic planning, priority setting, relationship building, and fundraising.

In 2023, the UNBL Partnership focused on fundraising to support implementation of our 2022-2030 Strategic Plan. Through these efforts, we successfully secured US\$2 million in funding from the Gordon and Betty Moore Foundation to further develop UNBL to support governments in their work around planning, monitoring, and reporting on the landmark Kunming-Montreal Global Biodiversity Framework and the Convention on Biological Diversity.

Congratulations to the UN Biodiversity Lab on reaching its fifth birthday. This milestone marks a significant achievement in [UNBL's] journey. And we, the UNDP South Africa country office are proud to celebrate alongside with you our collaboration with UNBL particularly on the mapping of Essential Life Support Areas.... The lab has been instrumental in advancing conservation efforts and sustainable development in South Africa, through the invaluable support in harnessing spatial data and analytical tools and contributing to the country's effort to utilize the data for generating insights. This tangible impact cannot be overstated

– Mr. Gabriel Dava, Acting Resident Representative
for the UNDP South Africa Country Office

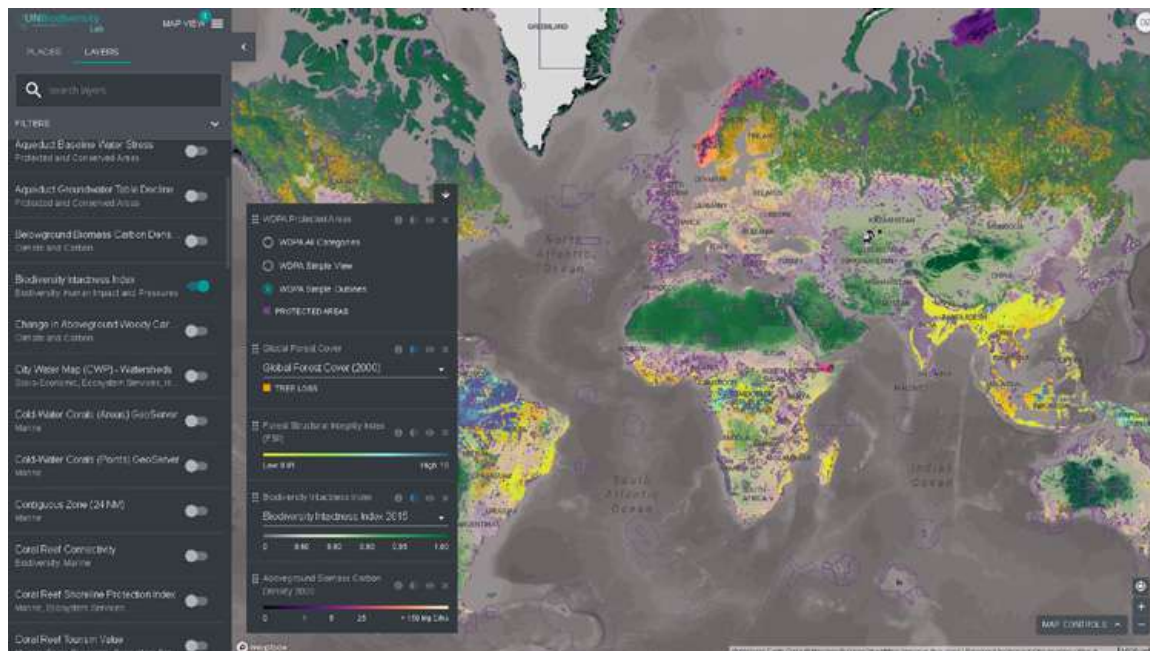


2 | UNBL development

UNBL is one of the most technologically advanced platforms in terms of geospatial visualization and analytics available.

- Our last full update of the platform, released in October 2021, included updates to transition UNBL to STAC (SpatioTemporal Asset Catalogue) and COG (Cloud-Optimised GeoTIFF) based backend. This makes UNBL compatible with the latest advances in geospatial technology, enhances speed and quality of visualization and analytics, and provides foundation for better connections and collaborations to push/pull data to other platforms.
- Other new developments included updating the tiling server, geoserver, and zonal statistics services.
- These developments were undertaken in collaboration with Microsoft's Planetary Computer team.

By the end of 2023, UNEP-WCMC took on maintenance and new developments for UNBL, utilizing the expertise of their Digital Transformation team which includes over 30 developers, data scientists, and web tool experts. This shift places full control of UNBL development in the hands of the UNBL Partnership.



This new report [SDG Digital Acceleration Agenda] provides countries with a range of real-world examples that can accelerate progress on literally 70% of the 169 SDG targets. Please allow me to highlight just a few, consider the UN Biodiversity Lab that provide decision makers with spatial data that put nature at the heart of the sustainable development.

– Achim Steiner, UNDP Administrator

What Key Features Does UNBL Offer?

The [UN Biodiversity Lab \(UNBL\)](#) provides a set of features that support country-led efforts to use spatial data and analytic tools for planning, monitoring, and reporting on their national biodiversity strategies and action plans. These features can also support other user groups working at the intersection of biodiversity, climate change, and sustainable development. The platform is available in English, French, Portuguese, Russian and Spanish and does not require GIS experience to use. UNBL features will be updated in 2024-2025.

Current Features

[Secure workspaces](#) for non-commercial users to upload and manage national spatial data

[Push-button calculation of dynamic metrics](#) at the national level

[Access to over 600 global spatial data layers](#) curated for national use on biodiversity, ecosystem services, and human well-being to fill national data gaps, as needed.

[Extensive documentation and guidance](#) to enable new users to easily apply UNBL for their needs.

Curated [data collections](#) for policymakers that could be used to calculate indicators to monitor implementation of the KM-GBF at national level as well as on objectives related to protected areas (Target 3), restoration (Target 2), and nature-based solutions for climate change (Target 8).

Future Developments

Secure workspaces will be enhanced with user-friendly features to seamlessly connect to data from diverse national and global repositories in a single workspace, share privately with a curated group of users, and tag by NBSAP target and indicator.

New metrics will be added for calculation of the headline indicators.

Data catalogue will be enriched with data tags to easily reference spatial datasets to make them more findable, and that could be used to fill national gaps, as needed.

Dedicated technical support will be provided to countries on spatial data relevant for the KM-GBF, including at meetings of the SBSTTA and COP.

Data collections will be updated based on relevant CBD decisions and recommendations.

Ability to develop prioritized spatial plans for KM-GBF Targets 1, 2 and 3, that provide powerful co-benefits for Targets 4-12 (ELSA for All).

Streamlined connections to other relevant tools for monitoring and reporting, e.g. [DaRT](#), [Target Tracker](#), and [CBD Online Reporting Tool](#).

3 | UNBL data

The UNBL Partnership is continuously performing ‘horizon scans’ to guarantee that the platform contains newly available data relevant to nature, climate, and sustainable development; that all UNBL data is up to date; and that all UNBL data meets our quality standards. Global data on offer via the platform are intended to support countries to fill national data gaps, as appropriate, for work at the national level. Over the past year, this work focused on adding data that can be used in the context of the Monitoring Framework for the KM-GBF to support governments in their early action around the KM-GBF.

In 2023, this included:

- **Newly released data collections:** The [UNBL Ecosystem Restoration Data Collection](#), released in July 2023, explores opportunities to restore ecosystems for the benefit of nature and people. The UNBL [Monitoring Framework for the Kunming-Montreal Biodiversity Framework Data Collection](#), developed throughout 2023 and released in April 2024, provides a curated list of global spatial datasets that could be used to calculate indicators to monitor implementation of national biodiversity strategies and action plans. The KM-GBF data collection has gathered the current available and sharable datasets from different custodian agencies and will be updated based on the outcomes of the 26th meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA26) and the 16th Conference of the Parties (COP16) to the Convention on Biological Diversity.
- **Data filtering and tagging system:** the hierarchical data filter has been updated to enable users to easily identify spatial data that can be used for calculation of headline, component, and complementary indicators in the Monitoring Framework. In addition, we have implemented a non-hierarchical data tagging system, enabling users to easily identify and view spatial data layers of interest, including: Digital Public Good Open Data, NatureMap data, WePlan Forests data, Global Safety Net data, and more.
- **New data identified by the UNBL Team:** 60+ new datasets, primarily associated with the KM-GBF, were identified by the UNBL Data Team, reviewed against our [UNBL data criteria](#), and added to UNBL.
- **New data submissions received from users and partners:** In 2023,
 - 8 new dataset submission requests were received from UNBL users and partners;
 - 3 dataset submissions met our UNBL data criteria and were added to the UNBL public platform.
- **UNBL accreditation as a digital public good:** UNBL was reaccredited in 2023 in the [digital public good registry](#). Digital public goods (DPGs) are defined as open-source software, open data, open AI models, open standards, and open content that adhere to privacy and other applicable best practices, do no harm by design and are of high relevance for attainment of the Sustainable Development Goals. In effect, this designation recognizes UNBL’s role in bringing together 650+ of the world’s best global spatial data layers from more than 60 data providers for use in research, policymaking and innovative software applications.

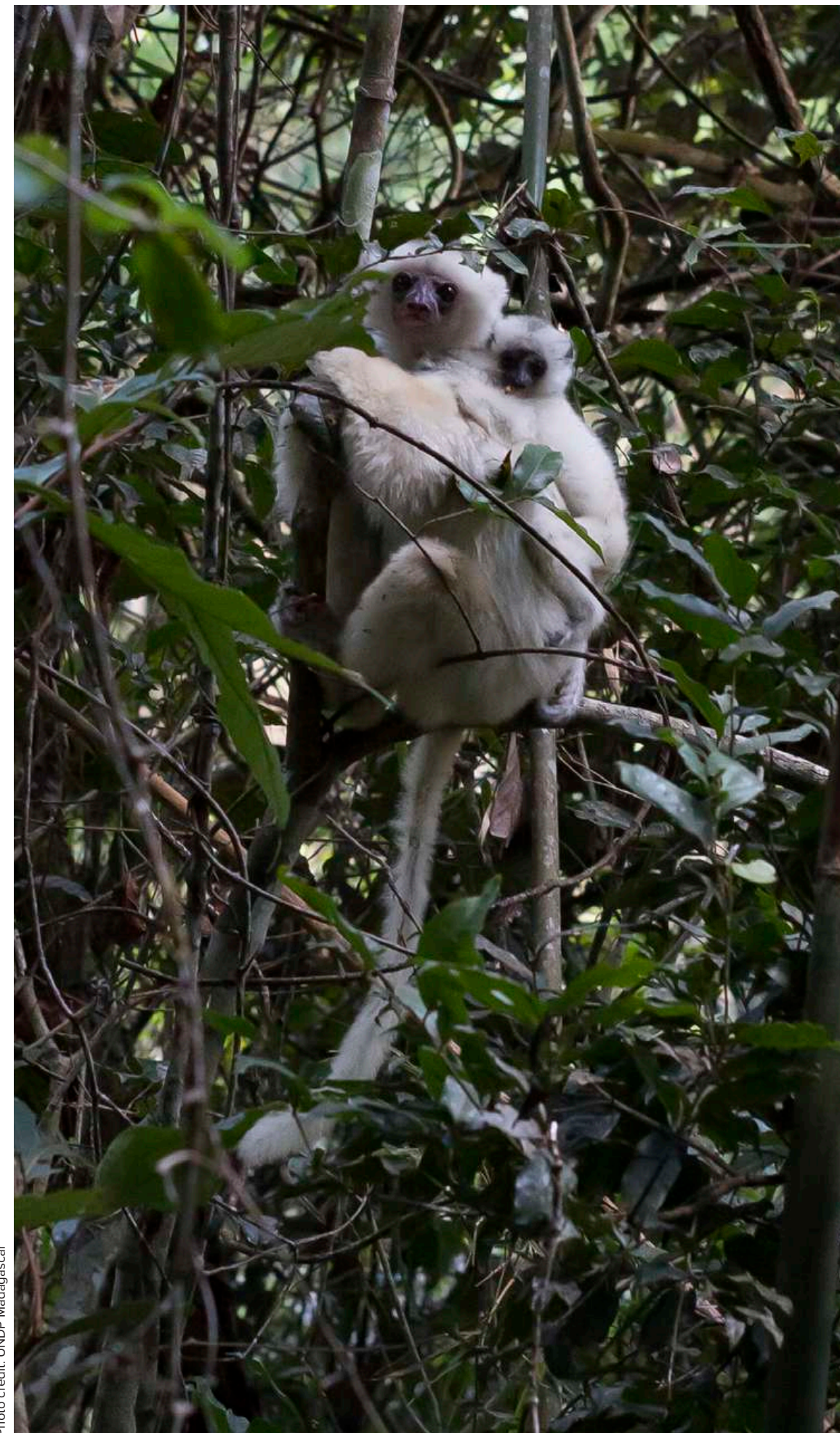


Photo credit: UNDP Madagascar

4 | UNBL training and capacity-building

In 2023, the UNBL Partnership provided training and capacity building, including on an on-demand basis. We concentrated on raising awareness and equipping users with resources to apply UNBL for a variety of use cases, enabling the use of spatial data to support initiatives focused on the conservation and sustainable use of biodiversity.

Technical guidance developed in 2023 include:



[Using Spatial Data to Support the Development of Plans for National Monitoring Systems for the Kunming-Montreal Global Biodiversity Framework](#)

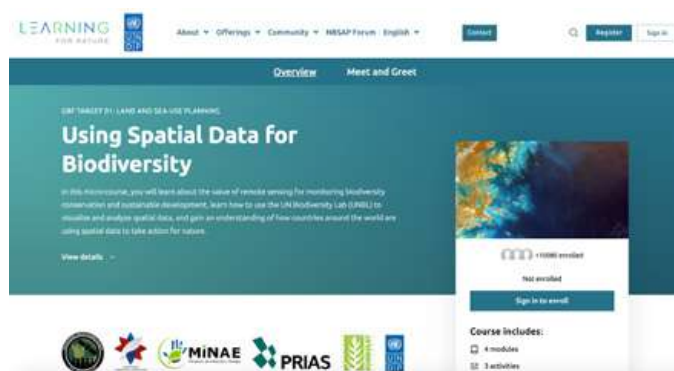
This guidance aims to support Parties to undertake a detailed assessment of available national spatial data and spatial tools that can be used as part of a national monitoring system for the Kunming-Montreal Global Biodiversity Framework. Parties can use this document to: (1) review indicators that require spatial data for their calculation, (2) identify, view, and download the spatial global data that are referenced in the indicator metadata associated with Decision 15/5 and that could be used to calculate indicators to monitor the implementation of national biodiversity strategies and

action plans, and (3) access checklists and guidance to identify existing national spatial data as well as national data gaps. Parties can also view current and forthcoming resources available through the UN Biodiversity Lab (UNBL) spatial data platform that could be used, subject to their national needs and preferences, as part of a monitoring action plan in support of national implementation of the Kunming-Montreal Global Biodiversity Framework and its Monitoring Framework.

This guidance, developed in 2023 and released in 2024, was an offering for the Global Biodiversity Framework Early Action Support (EAS) Project.

Self-paced online courses expanded in 2023 included:

Micro-course: Using Spatial Data for Biodiversity



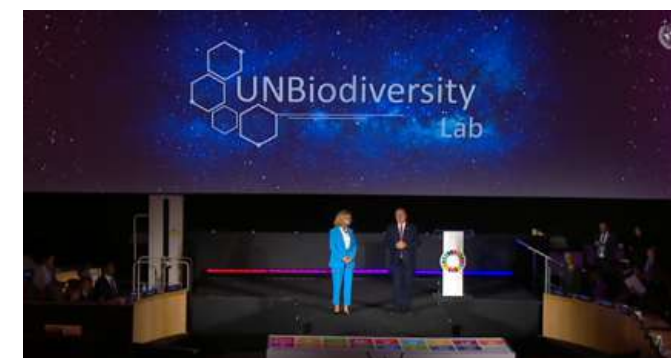
This ongoing self-paced [course](#) available in English, French, Russian, Spanish, and Portuguese introduces the value of remote sensing for biodiversity conservation and sustainable development, builds participants' skills in using UNBL for spatial data visualization and analysis, and explores dynamic use cases from around the world. In 2023, the course was updated based on the content of KM-GBF and released for the first time in Portuguese. It also now includes

micro-lectures and advanced labs for participants to dive into hands-on optional learning opportunities.

Join the 12,175 participants from 180 countries who have registered to date!

One-time events and trainings held in 2023:

SDG Digital Event during the UN SDG Action Weekend



On 17 September, the International Telecommunication Union (ITU), UNDP, and partners convened for [SDG Digital](#) at United Nations Headquarters in New York. UNBL was selected as an UN SDG digital solution and featured by Achim Steiner in his [opening speech](#). This event reached 100+ attendees including governments, UN agencies, and civil society.

CBD Webinar Series: Knowledge Management for Biodiversity (KM4B). Webinar 11: Leveraging Knowledge Management Lessons from the Sustainable Development Goals to Strengthen Integrated National Implementation, Monitoring and Reporting on the Kunming-Montreal Global Biodiversity Framework



UNBL was presented as an open platform supporting KM-GBF policymaking through global/national data and spatial analysis. The [webinar](#) was attended by 30+ participants and viewed by 80+ people online.

UNBL 5th Anniversary Lighting Talk hosted by Nature for Life Hub



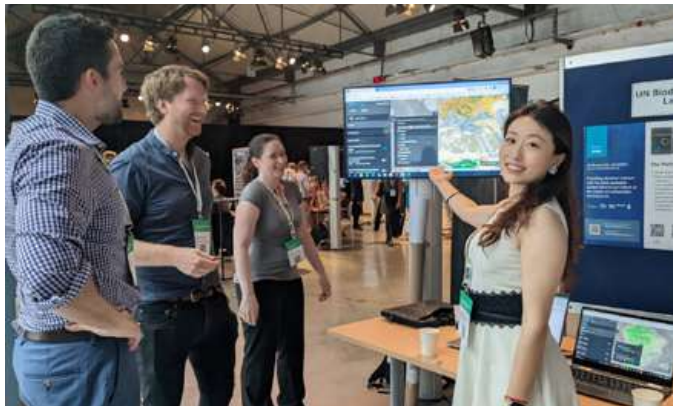
This lightning [talk](#) reflected on 5 years of UNBL, highlighting the UNBL vision, the importance of supporting countries to use spatial data at the national level, and use cases from countries using UNBL. The Hub was attended by 197 participating countries, more than 93,000 unique visitors on the site, more than 69,000 livestream viewers.

Help Desk of the Early Action Support (EAS) Project, CBD SBSTTA-25, UNEP Headquarters, Nairobi



UNBL was highlighted as a tool to support Parties in the use of spatial data for the EAS for the Global Biodiversity Framework. The help desk was attended by 60 GEF-eligible Parties

UNBL Booth, Land and Carbon Lab Summit



[Land & Carbon Lab's Summit 2023](#) Summit brought together policymakers, practitioners, and innovators seeking to harness the power of geospatial data to achieve this decade's climate, nature and sustainable development goals. UNBL was presented in the Data & Research Marketplace that features the latest geospatial monitoring data and research globally. The UNBL booth was visited by 50+ participants during the two-day event.

Restoring Hope Project Stakeholder Consultations



UNBL was introduced to five countries – Colombia, Chile, Ecuador, South Africa, and Kazakhstan – through the [Restoring Hope Project national consultations](#). These presentations showcased how UNBL can support national level work via its secure workspaces, visualize spatial data, and calculate dynamic metrics as part of efforts to help countries identify areas for restoration. The workshops were attended by 192 national stakeholders and experts.

Equator Initiative Community Dialogues 2023

Equator Prize Community Dialogues 2023

275 Equator Prize-winning organizations and thousands of community members have participated in 16th Forum since 2006, forging meaningful partnerships and friendships among these organizations and taking local leaders with policy makers at the national and international level. This year, the Equator Prize Community Orientation, Dialogues and Training will take place virtually.

Dialogues overview:
2 October – 10 October 2023,
3-hour sessions

Key details:

- Dates:** 2, 3, 5, 6 and 10 October, 3-hour sessions
- Languages:** English, Spanish, French and Portuguese
- Modality:** Virtual interactive sessions
- Estimated effort:** 18 hours live sessions + 10 hours offline homework

During the Equator Prize Community Orientation, Dialogues and Training, the Nature for Development programme provided training on available resources that could support prize-winning Indigenous Peoples and local communities in their work at the intersection of biodiversity and sustainable development. UNBL was featured alongside other tools and platforms that Equator Prize winning communities can use to advance their work. 31 participants attended the dialogues.

UNBL has created invaluable support to Nashulai by helping us create [digital] maps for our Conservancy. It has encouraged young Masai people to learn new skills and also to embrace more on digital solutions.

– Naieku Parate, Project Officer of Nashulai Maasai Conservancy

5 | UNBL user outreach

The UNBL Partnership supports users directly to access and leverage UNBL's functionalities to advance national and sub-national work towards conservation and sustainable development. In addition to our training and capacity building program, we work one-on-one with our users to create workspaces tailored to meet their needs and address their inquiries.

In 2023, this included:

- **Workspaces:** The UNBL Partnership created 42 secure workspaces requested by users to create a community of practice, upload their own data, and calculate dynamic metrics for specific areas of interest, leading to a total of 204 workspaces active on the platform. In addition, 5 workspaces created for UNDP country offices and governments were updated through UNDP's [Restoring Hope Project](#) that mapped national restoration priority areas. Across the 204 workspaces granted on UNBL, 17% are for government users, 37% are for academic users in universities and research institutes, 29% are for NGOs including the Worldwide Fund for Nature (WWF), World Resources Institute (WRI), Wildlife Conservation Society (WCS), Birdlife International, etc., and 6% are for UN agencies.
- **One-on-one support:** The UNBL Partnership responded to **250+** email requests for support from users around accessing data, creating workspaces, uploading data, and general troubleshooting.

[UNBL] is designed to be applicable to countries implementing the Global Biodiversity Framework. [...] UNBL will serve as a pathway to link diverse national efforts on nature, and support decision-makers to leverage spatial data for insight, priority-setting, and implementation at the national level.

– Neil Burgess, Chief Scientist of UNEP-WCMC

Photo credit: Andrés Estefan/UNDP Colombia.



6 | UNBL communications

The UNBL Partnership builds high-level communication resources to raise awareness of the platform and encourage its use. It also aims to establish the UNBL as a trustworthy resource for national-level planning, implementation, monitoring and reporting for the KM-GBF.

In 2023, we produced brochures, press releases, and white papers. These included:

Brochures

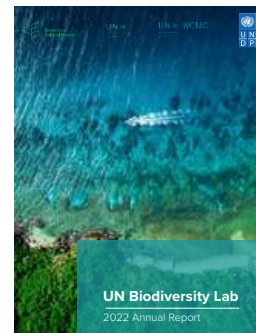
UNBL Use Case Brochure

Presents examples of current and past uses of the UNBL platform, showing how the platform's user-friendly interface and specialized features make it ideal for a wide variety of applications by national governments, UN agencies, civil society organizations, indigenous peoples, local communities, and researchers.



UNBL 2022 Annual Report

Highlights key activities and accomplishments of the UNBL Partnership in 2022.



Publications

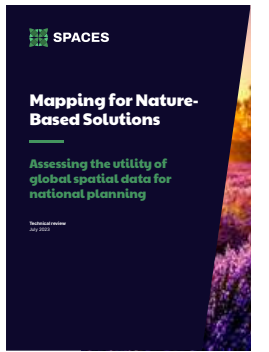
Accelerating The SDGs Through Digital Public Infrastructure: A Compendium of The Potential of Digital Public Infrastructure

UNBL was highlighted as Digital Public Infrastructure tool that curates geospatial data, providing global data layers as well as metrics on biodiversity, climate and carbon, land use, and ecosystem services to support governments to plan, monitor, and report on the state of nature.



Mapping for Nature-based Solutions: Assessing the Utility of Global Spatial Data for National Planning

This policy brief aims to encourage decision makers in governments to deploy integrated spatial planning to operationalize their commitments for nature and climate. This brief highlights UNBL as one of the tools used by countries to map nature and ecosystem services for national action.



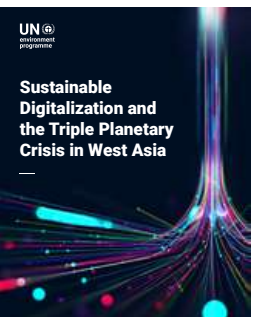
SDG Digital Acceleration Agenda

UNBL was featured as one of the 34 digital solutions driving SDG progress, specifically for the reporting of SDG 15 Life on Land – Goal 15: Protect, restore and promote the sustainable use of terrestrial ecosystems.



Sustainable Digitalization and the Triple Planetary Crisis in West Asia

UNBL was referenced as an emerging technology that can facilitate sustainability through spatial planning, enabling governments and other organizations to access maps and data on biodiversity, climate change, and human development in new ways to generate insight for nature and sustainable development.



State of the Digital Public Goods Ecosystem 2023

UNBL was highlighted as a UNDP Digital Public Good champion, including highlights on its forthcoming work to align with the landmark Kunming-Montreal Global Biodiversity Framework through the inclusion of new data and features that can support governments in their efforts for national action to put nature on a path to recovery by 2030.



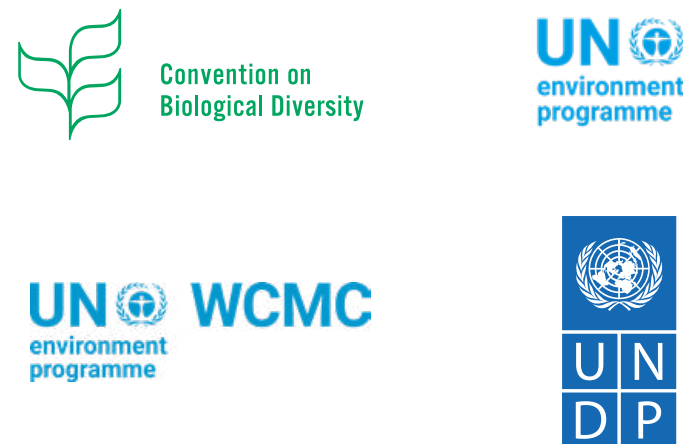
Partners & Donors

Special thanks go to the following donors and partners who have made the UNBL Partnership's achievements possible:

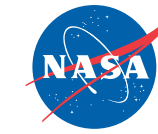
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UNBL Team

Learn about the team behind this work on the [UNBL team page](#).

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