Integrating Spatial Data into the Convention on Biological Diversity’s post-2020 Monitoring and Reporting Framework

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**BACKGROUND**

To more effectively plan, implement and evaluate the impacts of measures taken to achieve the Convention on Biodiversity Diversity’s (CBD) post-2020 Global Biodiversity Framework (GBF), Parties will need to more fully integrate spatial data and tools into existing monitoring and reporting efforts. Through the United Nations Development Programme’s (UNDP) work to support Parties to meet their obligations to the CBD, we have identified that while technology is revolutionizing our ability to map nature, there is still a gap in how widely Parties are integrating the resulting information into national monitoring and reporting efforts.

Without support to access and utilize spatial data, it will remain challenging for Parties to accurately and systematically track the measures they are taking to implement the provisions of the CBD and their effectiveness in meeting CBD objectives. A pervasive lack of baseline spatial data on biodiversity in many countries must also be addressed. Overcoming these limitations will improve global efforts to monitor and report on biodiversity. Spatial data and analyses can also help to visually showcase the importance of biodiversity in ways that politicians, policymakers and the general public can understand, and that inspire people to take action.

**USE OF SPATIAL DATA TO MONITOR AND REPORT ON THE AICHI BIODIVERSITY TARGETS**

In a review of over 120 post-2010 National Biodiversity Strategies and Action Plans (NBSAPs), UNDP determined that GEF-eligible countries included an average of fewer than four spatial analyses per NBSAP. Only one in three of these maps can be used to guide conservation and sustainable development decision making and policy development. To learn more about this trend, in 2018, UNDP completed a user needs assessment with over 60 Parties to the CBD. We identified four common challenges to developing, implementing, and reporting on conservation and sustainable development policies. These include:

* **Spatial data is inaccessible:** Available data are often scattered among ministries or multiple data providers and require complicated data sharing agreements to access.
* **Spatial data is unusable:** Accessible data are often in formats that are inconsistent, inaccurate, of low spatial resolution, incompatible in format, at the wrong timescale, or out-of-date, which make them unusable for many purposes.
* **Spatial data is not nationally validated:** Accessible, useable data is often not validated. Global datasets must be nationally validated through collaborations between data providers and governments before they can be used for national monitoring and reporting purposes.
* **Governments lack capacity to use spatial data:** Government agencies often lack experience using software and equipment to process accessible, usable, validated data, analyze it, and apply results for biodiversity planning and reporting purposes.

Technical resources and capacity building opportunities designed to overcome these gaps during the CBD’S Sixth National Reporting (6NR) period led to a drastic increase in the use of spatial data and analyses between the Fifth National Reporting and 6NR periods. UNDP analyzed the 1,840 maps that are found in the 134 6NRs submitted to the CBD Secretariat between December 2018 and November 2019. The average number of spatial analyses increased 150 percent for GEF-eligible countries, leading to more high quality, data-driven national reports.

**OPPORTUNITIES TO USE SPATIAL DATA DURING IMPLEMENTATION OF THE POST-2020 GBF**

Parties need access to reliable and timely data on biodiversity, its benefits to humanity, and the pressures affecting its decline. To accurately assess the effectiveness of measures to implement the post-2020 GBF, persistent gaps will need to be overcome related to inaccessible data, unusable data, non-nationally validated data, and a lack of capacity to use data. Policymakers without advanced technical training will also need to be able to more frequently access and use tools that monitor and report on biodiversity, and to use this information to better communicate the contributions of biodiversity to humanity through compelling stories, visual aids, and maps.

While the post-2020 GBF is being developed, there is an opportunity to ensure that related monitoring and reporting methods rely on spatial data to help accurately and systematically track the measures that are being taken to implement the CBD, and their effectiveness, around the globe. There is also an opportunity to ensure that policymakers have access to the tools they need to support implementation.

The spatial elements of the framework could be oriented around the following components:

* Developing spatially explicit, national baselines of biodiversity data.
* Systematically collecting, monitoring, sharing, and analyzing spatial data using national data management mechanisms.
* Ensuring that national indicators are designed to monitor spatially explicit, measurable changes in the status of nature.
* Determining mechanisms to capture and spatialize biodiversity data from indigenous and local communities while maintaining and protecting ownership and cultural knowledge.
* Working with governments and data providers to validate, access, and use global datasets that are beneficial to national monitoring and reporting efforts.
* Obtaining political support for comprehensive access, validation, and use of national spatial data layers for decision making.
* Demonstrating, through capacity building activities, the importance of using spatial data for monitoring and reporting purpose.
* Developing automated reporting systems against each country’s national targets and indicators using real-time spatial data on biodiversity and ecosystem service conditions and trends.
* Providing access to online tools such as UN Biodiversity Lab to support policymakers to identify where to implement measures to achieve targets, and to monitor their effectiveness.
* Developing decision support tools that guide policymakers to use the principles of systematic conservation to better identify where to protect, restore, and sustainably manage biodiversity.
* Using spatial data to help identify synergies in action across the CBD, UN Framework Convention on Climate Change, and 2030 Agenda for Sustainable Development.