

Dialogue Proposal: Biodiversity collaboration between UNCBD, GEO BON, GEO, FAO, UNSEEA and CEOS

This document is meant to present a proposal for a Joint initiative between UNCBD, GEO BON, GEO, FAO, UNSEEA and CEOS and its agencies, to be led by the CSA acting as 2024 CEOS Chair. The overarching question these organisations will seek to answer is “**How can spaceborne Earth Observation have more impact to help monitoring, protect and conserve biodiversity, with particular focus on supporting GEO BON in addressing the goals and the targets of the UNCBD Global Biodiversity Framework¹?**”

Capitalizing on the exchanges between the UNCBD and the CEOS carried out in 2018², efforts will be made to outline a pathway to a well-grounded status for biodiversity within CEOS, to help support a more formal cooperation between the UNCBD, GEO BON, GEO, FAO, UNSEEA and the CEOS and its agencies. The aim is to jointly address the common challenges and potential areas of cooperation, with a view to maximize the utilization of Earth Observation data by the Parties of the Convention and other biodiversity-related conventions.

Context:

The Kunming-Montréal Global Biodiversity Framework (KMGBF) lays out a set of global goals and targets to halt and reverse biodiversity loss by 2030 and put the world on a path to living in harmony with nature by 2050. The Parties to the UNCBD are obligated to report on progress made towards the biodiversity targets they have committed to achieve and are expected to update their National Biodiversity Strategy and Action Plans to reflect implementing the KMGBF domestically. *Nature* suggests considering the framework example found in this paper: <http://dx.doi.org/10.32942/X2130Z>, as it outlines the *Biodiversity Indicators Program* used to design national biodiversity monitoring and reporting frameworks in other countries.

EO datasets, collected by satellites and other remote sensing technologies, have become indispensable for mapping ecosystem extent and fragmentation or drivers of biodiversity loss, to name just a few examples of use. Space-based Earth Observation data generated by CEOS agencies are a key source of information for tracking progress of many of the Biodiversity Targets. Along with awareness-raising and capacity-strengthening efforts, they represent major incentive for countries to invest in using EO to monitor, protect and conserve their biodiversity.

A formal cooperation framework between UNCBD, GEO BON, GEO, FAO, UNSEEA and CEOS (and its agencies) would help the Convention and its Parties to maximize the use of Space-based Earth Observation data for biodiversity monitoring, benefitting all countries, especially those with limited capacity that require assistance to meet reporting expectations.

¹ CEOS has the following criteria for a new initiative: 1) alignment with CEOS strategic goals; 2) Benefit to internal and external holders; 3) Feasibility and affordability.

² Letter of the Executive Secretary of UNCBD to CEOS (SCBD/OES/PPP/DC/RH/87529), August 13, 2018; Letter of the CEOS SIT Chair to UNCBD (2018-2019), December 4, 2018.

Such formal cooperation would significantly facilitate the communication of EO needs (observations, products, and tools) of the biodiversity community to space agencies and thus enable the development of high-quality EO solutions that would enable Parties to the Convention to integrate effectively EO in their policies and processes. This will greatly benefit Parties by enabling them to better track progress towards their biodiversity targets, thus helping them to meet both their biodiversity conservation goals and their reporting obligations.

According to the 2018 *Letter of the Executive Secretary of UNCBD to CEOS*, **accurate data, monitoring, and analysis tools are needed to protect and conserve biodiversity effectively**. Despite the great potential of Earth Observation satellites for biodiversity monitoring, their exploitation by the Convention Parties is hindered by **several challenges that need to be jointly addressed**, such as:

- data access,
- the availability of analysis ready data and fit for purpose products,
- integration of products so that, together, they can be used to inform decision makers about changes in biodiversity at national and global levels,
- limited capacity available in emerging user countries

Five years later, these challenges remain valid, and the headline goal of the Kunming-Montreal Global Biodiversity Framework is to “ensure and enable that by 2030 at least 30 percent of terrestrial, inland water, and coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed,” while recognizing “indigenous and traditional territories, where applicable”.

CEOS, in collaboration with the partners, could help solve these critical barriers which, if not addressed properly, can undermine the full use of satellite data products by the Parties to the Convention.

The **main objectives of this collaboration** are proposed as follows:

1. Understanding at the outset the biodiversity EO needs of the CBD and its members.
2. Identify specific priority collaboration areas between UNCBD, GEO BON, GEO, UNSEEA, FAO and CEOS (and its agencies) that will contribute to support national members with national reporting on biodiversity.
3. Identify potential capacity building initiatives (ex: BON in a Box, regional reporting toolkit, CBD’s planned regional and/or subregional technical and scientific cooperation support centre to support implementation of the Kunming-Montreal Global Biodiversity Framework, UNEP-WCMC’s Global Knowledge Support Service for Biodiversity, country pilots under the Global Ecosystems Atlas, inventory of available public & commercial data, etc)
4. Agreement on a mechanism which crystallizes the working relationship between participants.

Proposed workplan

1. Joint workshop on biodiversity

Format: 2-day event, hybrid format

Dates: 10 & 11 June 2024

Location: UNCBD HQ, Montréal, Québec, Canada

Targeted participants:

By invitation only: CEOS CSA Chair Team, CEOS CEO + CEOS Space Agencies + Ecosystem Extent Task Team co-leads (Gary Geller/NASA + Shaun Levick/CSIRO + Sandra Luque/CNES & INRAE + Roger Sayre/USGS) + SIT Chair, Marc Paganini/ESA, UNCBD, GEO BON, FAO, UN Stats division, GEO, Environment and Climate Change Canada (ECCC), Statistics Canada, International SMEs (Mike Gill, Andrew Skidmore, Nicholas Coops).

Workshop structure

Session 1	Exploring how existing and the future space assets can be mainstreamed into biodiversity monitoring at all levels (global, regional, national).
Session 2	Reviewing the biodiversity observation requirements to address unmet needs related to monitoring and understanding biodiversity change.
Session 3	Support the development and engineering of EBVs defined by GEO BON to unify, harmonize, and standardize biodiversity monitoring, and in particular deriving EBVs from EO measurements; developing processing and validation standards for biodiversity-relevant EO products, with specific focus on satellite-based EBVs and make these available on the new EBV portal.
Session 4	Contribution of satellite assets to biodiversity monitoring and conservation - use-case examples of how EO datasets have been used for biodiversity protection and conservation, featuring projects from different regions and ecosystems: <ul style="list-style-type: none"> • CEOS Ecosystem Extent Task Team demonstrators - developed through CEOS agencies and funded beyond 2024. They can serve as pathfinders: <ul style="list-style-type: none"> ○ Demonstrator in Hudson Bay Lowlands (ECCC) ○ Demonstrator in Australia (CSIRO) ○ Demonstrator in Costa Rica (CNES) • German Aerospace Center (DLR) • European Space Agency (ESA) • Indian Space Research Organization (ISRO)

2. Joint Conference on Biodiversity - Formal Statement of collaboration between CEOS (and its agencies) and the partners - TBD

Format: 2 days event, hybrid format

Dates: 12 & 13 September 2024

Location: CSA HQ, Saint Hubert, Québec, Canada

Targeted participants and audience: same as above

Agenda topics: tbd (outcomes from the workshop, proposed areas and principles of collaboration, sharing info, etc...)